Final Paper Coding

Group four

July 2021

Objectives

1. Conduct EDA (you can use the techniques in the slides; you are also encouraged to be creative and use other techniques).
2. Fit ARMA models. Pre-specify the orders. Try different order combinations and see which one provides the best fitting.

```
summary(nurse)
```

```
##      Sample          Time.used.s.          Hopital            Age
##  Min.   :   1.0   Min.   :    301.0   Min.   :1.000   Min.   :18.00
##  1st Qu.: 183.2   1st Qu.:    662.0   1st Qu.:1.000   1st Qu.:26.00
##  Median : 448.0   Median :    864.5   Median :1.000   Median :30.00
##  Mean   : 476.8   Mean   :   1246.1   Mean   :1.223   Mean   :30.99
##  3rd Qu.: 713.0   3rd Qu.:   1155.5   3rd Qu.:1.000   3rd Qu.:35.00
##  Max.   :1173.0   Max.   : 207090.0   Max.   :2.000   Max.   :64.00
##       Sex          marital.status    child.rearing
##  Min.   :0.0000   Min.   :0.0000   Min.   :0.0000
##  1st Qu.:1.0000   1st Qu.:0.0000   1st Qu.:0.0000
##  Median :1.0000   Median :1.0000   Median :1.0000
##  Mean   :0.8709   Mean   :0.6107   Mean   :0.5462
##  3rd Qu.:1.0000   3rd Qu.:1.0000   3rd Qu.:1.0000
##  Max.   :1.0000   Max.   :1.0000   Max.   :1.0000
##  education.Bachelor.or.higher.2_Diploma1.
##  Min.   :1.000
##  1st Qu.:2.000
##  Median :2.000
##  Mean   :1.781
##  3rd Qu.:2.000
##  Max.   :2.000
##  Prodessional.title..Junior1.intermediate.and.senior0.
##  Min.   :0.0000
##  1st Qu.:0.0000
##  Median :1.0000
##  Mean   :0.7423
##  3rd Qu.:1.0000
##  Max.   :1.0000
##  Monthly.household.income.USD.month..1440 Clinical.experience.m.
##  Min.   :0.0000                           Min.   :  3.0
##  1st Qu.:0.0000                           1st Qu.: 49.0
##  Median :0.0000                           Median : 92.0
##  Mean   :0.4494                           Mean   :107.8
##  3rd Qu.:1.0000                           3rd Qu.:147.0
##  Max.   :1.0000                           Max.   :481.0
##  Frontline.working.duration.d. Average.working.hours.shift
##  Min.   :  1.00                Min.   : 2.000
##  1st Qu.: 13.00                1st Qu.: 6.000
##  Median : 20.00                Median : 6.000
##  Mean   : 20.72                Mean   : 6.568
##  3rd Qu.: 30.00                3rd Qu.: 8.000
##  Max.   :300.00                Max.   :16.000
##  Wuhan.as.origin..ys1. Original.position..head.1. Position.in.Wuhan...head.1.
##  Min.   :0.0000        Min.   :0.00000            Min.   :0.00000
##  1st Qu.:0.0000        1st Qu.:0.00000            1st Qu.:0.00000
##  Median :1.0000        Median :0.00000            Median :0.00000
##  Mean   :0.6574        Mean   :0.09732            Mean   :0.05958
##  3rd Qu.:1.0000        3rd Qu.:0.00000            3rd Qu.:0.00000
##  Max.   :1.0000        Max.   :1.00000            Max.   :1.00000
##  Working.wards.changed.yes1 Prior.traning    Prior.experience
##  Min.   :0.0000             Min.   :0.0000   Min.   :0.0000
##  1st Qu.:0.0000             1st Qu.:1.0000   1st Qu.:0.0000
##  Median :0.0000             Median :1.0000   Median :0.0000
```

```
##      Mean    :0.3709                 Mean    :0.8213    Mean    :0.3898
##      3rd Qu.:1.0000               3rd Qu.:1.0000    3rd Qu.:1.0000
##      Max.    :1.0000               Max.    :1.0000    Max.    :1.0000
##    Confidence.in.caring Confidence.in.self.protection
##      Min.    :0.0000       Min.    :0.0000
##      1st Qu.:0.0000       1st Qu.:0.0000
##      Median :1.0000       Median :1.0000
##      Mean    :0.6048       Mean    :0.5715
##      3rd Qu.:1.0000       3rd Qu.:1.0000
##      Max.    :1.0000       Max.    :1.0000
##    Evalution.of.work.safety.while.caring Belief.family.s.readiness.to.cope
##      Min.    :0.0000                       Min.    :0.000
##      1st Qu.:0.0000                       1st Qu.:0.000
##      Median :1.0000                       Median :1.000
##      Mean    :0.5809                       Mean    :0.709
##      3rd Qu.:1.0000                       3rd Qu.:1.000
##      Max.    :1.0000                       Max.    :1.000
##    Belief.colleagues..readiness.to.cope Belief.hospitals..readiness.to.cope
##      Min.    :0.0000                       Min.    :0.0000
##      1st Qu.:1.0000                       1st Qu.:1.0000
##      Median :1.0000                       Median :1.0000
##      Mean    :0.7949                       Mean    :0.8208
##      3rd Qu.:1.0000                       3rd Qu.:1.0000
##      Max.    :1.0000                       Max.    :1.0000
##    Willingness.to.participate.in.frontline      Mild            Medium
##      Min.    :0.0000                       Min.    :0.0000    Min.    :0.0000
##      1st Qu.:1.0000                       1st Qu.:0.0000    1st Qu.:1.0000
##      Median :1.0000                       Median :1.0000    Median :1.0000
##      Mean    :0.9682                       Mean    :0.6048    Mean    :0.8098
##      3rd Qu.:1.0000                       3rd Qu.:1.0000    3rd Qu.:1.0000
##      Max.    :1.0000                       Max.    :1.0000    Max.    :1.0000
##        Severe         emotionalexhaustion    Mild.1          Medium.1
##      Min.    :0.0000    Min.    : 0.00      Min.    :0.0000    Min.    :0.0000
##      1st Qu.:0.0000    1st Qu.:13.00      1st Qu.:0.0000    1st Qu.:1.0000
##      Median :1.0000    Median :23.00      Median :0.0000    Median :1.0000
##      Mean    :0.5854    Mean    :23.44      Mean    :0.4235    Mean    :0.8525
##      3rd Qu.:1.0000    3rd Qu.:34.00      3rd Qu.:1.0000    3rd Qu.:1.0000
##      Max.    :1.0000    Max.    :54.00      Max.    :1.0000    Max.    :1.0000
##      Severe.1         depersonalisation highacc.lowexh    midacc.midexh
##      Min.    :0.0000    Min.    : 0.000    Min.    :0.0000    Min.    :0.0000
##      1st Qu.:0.0000    1st Qu.: 1.000    1st Qu.:0.0000    1st Qu.:1.0000
##      Median :1.0000    Median : 4.000    Median :1.0000    Median :1.0000
##      Mean    :0.7239    Mean    : 6.768    Mean    :0.6053    Mean    :0.7776
##      3rd Qu.:1.0000    3rd Qu.:10.000    3rd Qu.:1.0000    3rd Qu.:1.0000
##      Max.    :1.0000    Max.    :30.000    Max.    :1.0000    Max.    :1.0000
##    lowacc.highexh     personalaccomplishment MBIHSSMP_burnout_total
##      Min.    :0.0000    Min.    : 0.00      Min.    :   0.00
##      1st Qu.:0.0000    1st Qu.:29.00      1st Qu.: 52.00
##      Median :1.0000    Median :37.00      Median : 64.00
##      Mean    :0.6172    Mean    :34.83      Mean    : 65.03
##      3rd Qu.:1.0000    3rd Qu.:42.00      3rd Qu.: 77.00
##      Max.    :1.0000    Max.    :48.00      Max.    :132.00
##        no_anx          mild_anx          medi_anx          sev_anx
##      Min.    :0.0000    Min.    :0.0000    Min.    :0.0000    Min.    :0.0000
```

```
##     1st Qu.:0.0000    1st Qu.:0.0000    1st Qu.:1.0000    1st Qu.:1.0000
##     Median :0.0000    Median :1.0000    Median :1.0000    Median :1.0000
##     Mean   :0.4136    Mean   :0.7294    Mean   :0.8903    Mean   :0.9667
##     3rd Qu.:1.0000    3rd Qu.:1.0000    3rd Qu.:1.0000    3rd Qu.:1.0000
##     Max.   :1.0000    Max.   :1.0000    Max.   :1.0000    Max.   :1.0000
##      SAS_total         no_dep            mild_dep          medi_dep
##     Min.   :25.0    Min.   :0.0000    Min.   :0.0000    Min.   :0.0000
##     1st Qu.:39.0    1st Qu.:0.0000    1st Qu.:0.0000    1st Qu.:1.0000
##     Median :46.0    Median :0.0000    Median :1.0000    Median :1.0000
##     Mean   :47.8    Mean   :0.4359    Mean   :0.6718    Mean   :0.9037
##     3rd Qu.:55.0    3rd Qu.:1.0000    3rd Qu.:1.0000    3rd Qu.:1.0000
##     Max.   :90.0    Max.   :1.0000    Max.   :1.0000    Max.   :1.0000
##      sev_dep          SDS_total          mild_Fear          med_Fear
##     Min.   :0.0000    Min.   :25.00    Min.   :0.00000    Min.   :0.00
##     1st Qu.:1.0000    1st Qu.:42.50    1st Qu.:0.00000    1st Qu.:0.00
##     Median :1.0000    Median :51.25    Median :0.00000    Median :0.00
##     Mean   :0.9886    Mean   :50.50    Mean   :0.08788    Mean   :0.28
##     3rd Qu.:1.0000    3rd Qu.:60.00    3rd Qu.:0.00000    3rd Qu.:1.00
##     Max.   :1.0000    Max.   :96.25    Max.   :1.00000    Max.   :1.00
##      sev_Fear         FSHPs_total     selfefficacy_total  CDRISC_resilience_total
##     Min.   :0.0000    Min.   : 8.00    Min.   :10.00      Min.   : 0.00
##     1st Qu.:0.0000    1st Qu.:26.00    1st Qu.:22.00      1st Qu.:21.00
##     Median :1.0000    Median :32.00    Median :27.00      Median :27.00
##     Mean   :0.6321    Mean   :30.41    Mean   :26.87      Mean   :26.14
##     3rd Qu.:1.0000    3rd Qu.:36.00    3rd Qu.:30.00      3rd Qu.:30.00
##     Max.   :1.0000    Max.   :40.00    Max.   :40.00      Max.   :40.00
##      anx_group          dep_group           fear_group
##     Length:2014       Length:2014         Length:2014
##     Class :character  Class :character    Class :character
##     Mode  :character  Mode  :character    Mode  :character
##
##
##
```

Description of the responses

In order to address our topic and research, we selected four responses: anxiety, depression, fear, and self-efficacy. With the standard scores

0.586395233 0.564051639 0.087884806 0.27060576 0.328202582 0.280039722 0.109731877 0.09632572 0.632075472 0.03326713 0.01142006

```
nurse$anx_group <- NA
nurse$dep_group <- NA
nurse$fear_group <- NA

nurse$anx_group[nurse$SAS_total<50]<-'no anxiety'
nurse$anx_group[nurse$SAS_total>=50&nurse$SAS_total<60]<-'mild anxiety'
nurse$anx_group[nurse$SAS_total>=60&nurse$SAS_total<70]<-'moderate anxiety'
nurse$anx_group[nurse$SAS_total>=70]<-'severe anxiety'

nurse$dep_group[nurse$SDS_total<53]<-'no depression'
nurse$dep_group[nurse$SDS_total>=53&nurse$SDS_total<63]<-'mild depression'
nurse$dep_group[nurse$SDS_total>=63&nurse$SDS_total<73]<-'moderate depression'
nurse$dep_group[nurse$SDS_total>=73]<-'severe depression'

nurse$fear_group[nurse$FSHPs_total<20]<-'mild fear'
nurse$fear_group[nurse$FSHPs_total>=20&nurse$FSHPs_total<30]<-'moderate fear'
nurse$fear_group[nurse$FSHPs_total>=30]<-'severe fear'

#ar(mfrow=c(3,1))

pielabels1<-c('no anxiety \n 58.6%','mild anxiety\n 27.1%','moderate anxiety\n 11.0%','severe an
xiety\n 3.3%')
pie3D(table(nurse$anx_group),explode=0.1,labels=pielabels1,main="Anxiety level distribution", co
l=c("#AFEEEE","#48D1CC","#4169E1","#0000CD"))
```
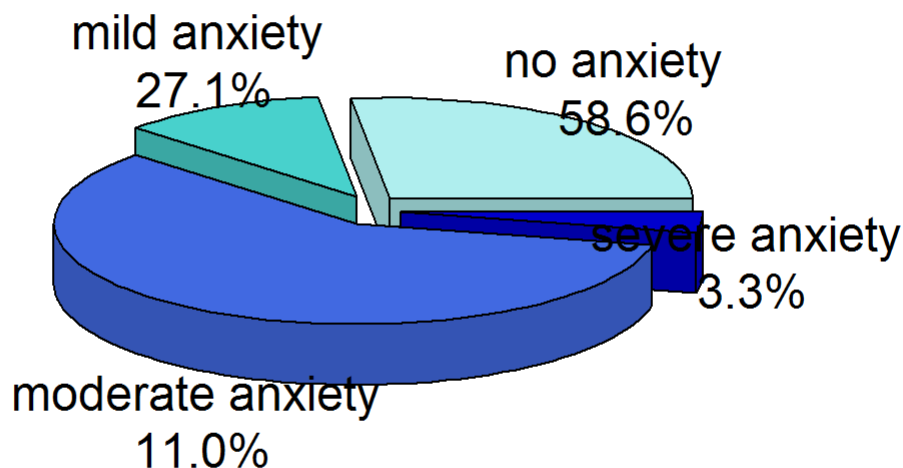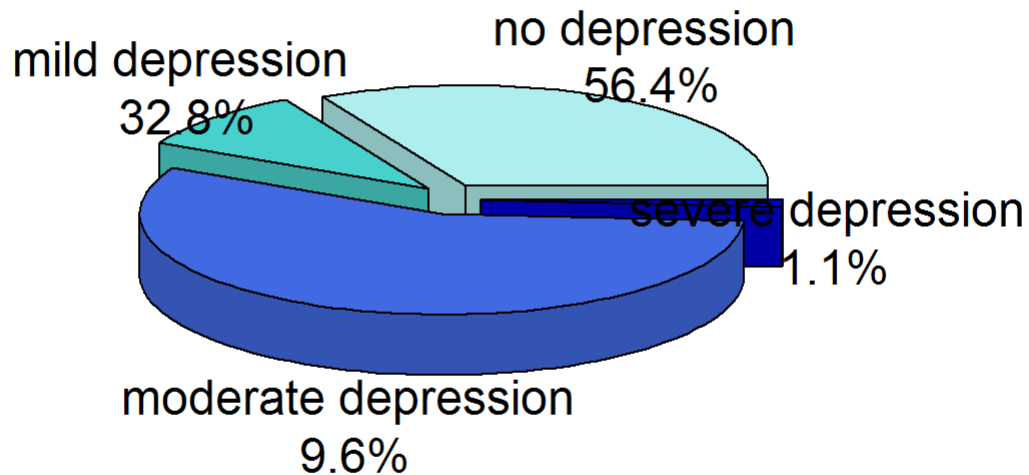
Anxiety level distribution

```
pielabels2<-c('no depression\n 56.4%','mild depression\n 32.8%','moderate depression\n 9.6%','se
vere depression\n 1.1%')
pie3D(table(nurse$dep_group),explode=0.1,labels=pielabels2,main="Depression level distribution",
col=c("#AFEEEE","#48D1CC","#4169E1","#0000CD"))
```

Depression level distribution


```
pielabels3<-c('mild fear\n 8.8%','moderate fear\n 28.0%','severe fear\n 63.2%')
pie3D(table(nurse$fear_group),explode=0.1,labels=(pielabels3),main="Fear level distribution", ce
x = 0.01,col=c("#48D1CC","#4169E1","#0000CD"))
```

Fear level distribution
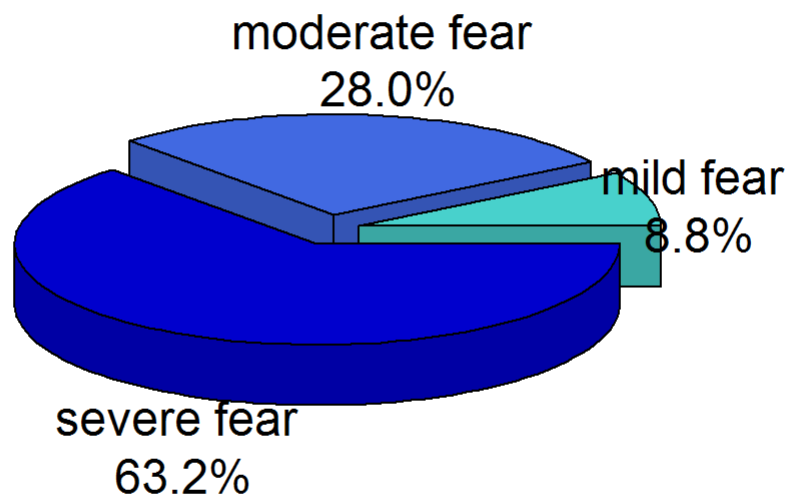

```
Age <- as.numeric(nurse$Age)
hist_boxplot(Age,col="lightblue",freq=FALSE,density=TRUE, xlab = 'Age level')
```

Histogram of Age


```
Depression <- as.numeric(nurse$SDS_total)
hist_boxplot(Depression,col="lightblue",freq=FALSE,density=TRUE, xlab = 'Depression level')
```

Histogram of Depression
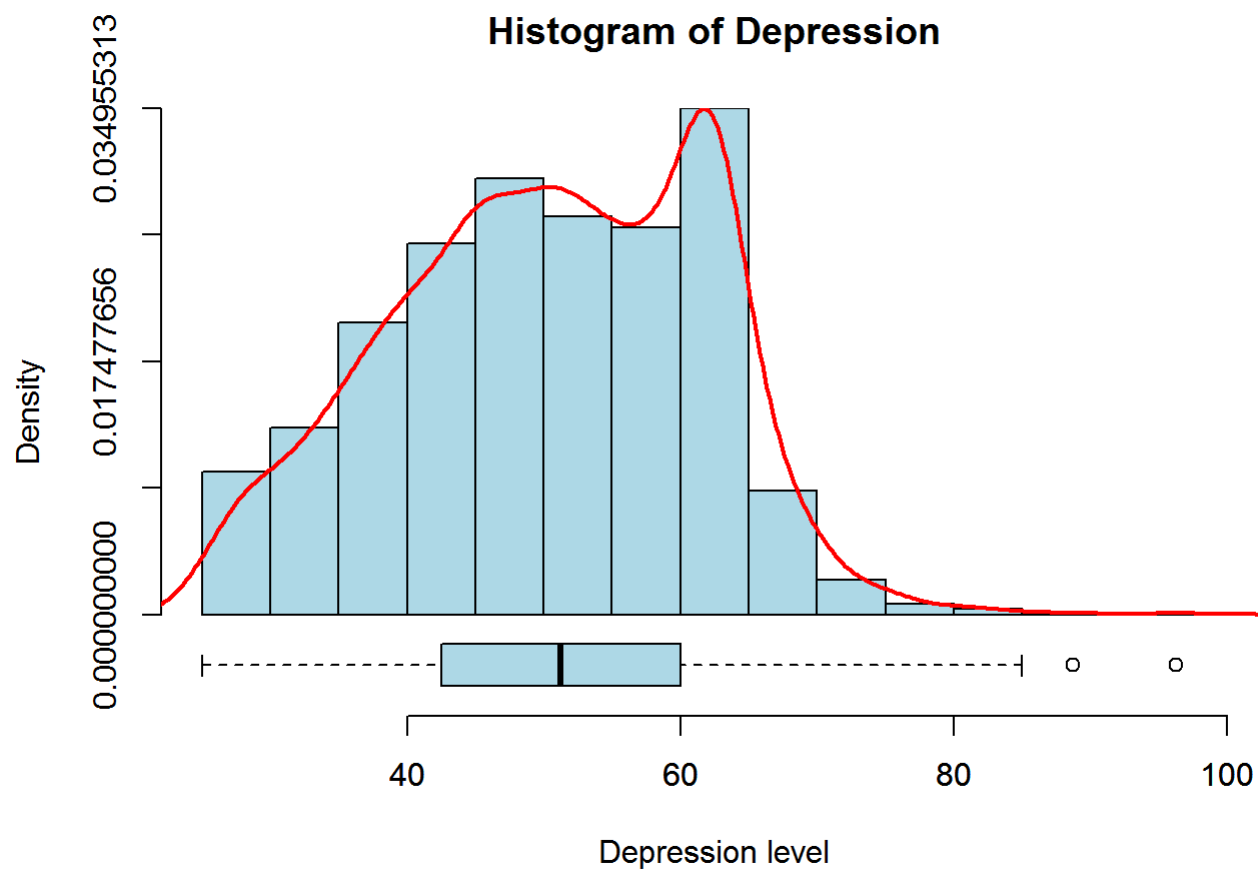
```
Fear <- as.numeric(nurse$FSHPs_total)
hist_boxplot(Fear,col="lightblue",freq=FALSE,density=TRUE, xlab = 'Fear level')
```

Histogram of Fear
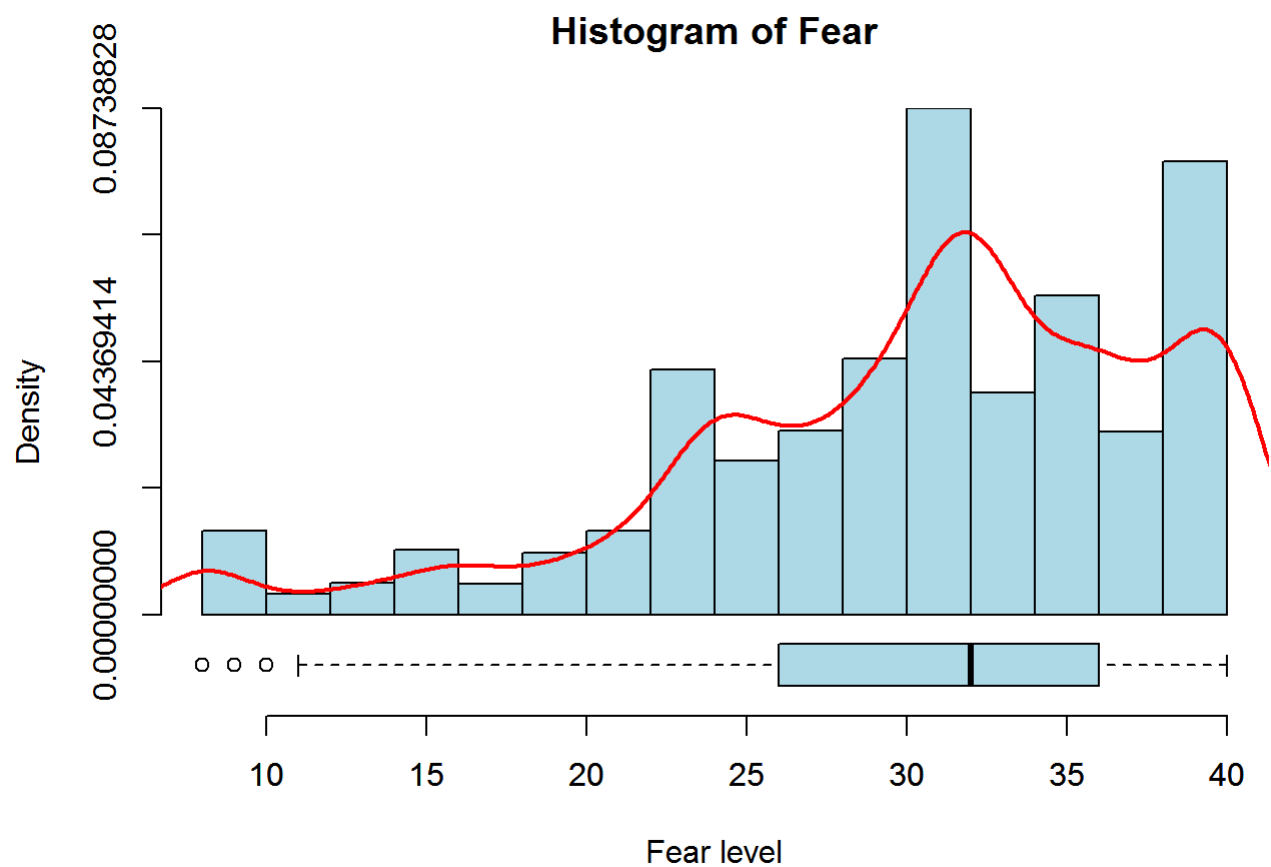

```
Anxiety <- as.numeric(nurse$SAS_total)
hist_boxplot(Anxiety,col="lightblue",freq=FALSE,density=TRUE, xlab = 'Anxiety level')
```

Histogram of Anxiety
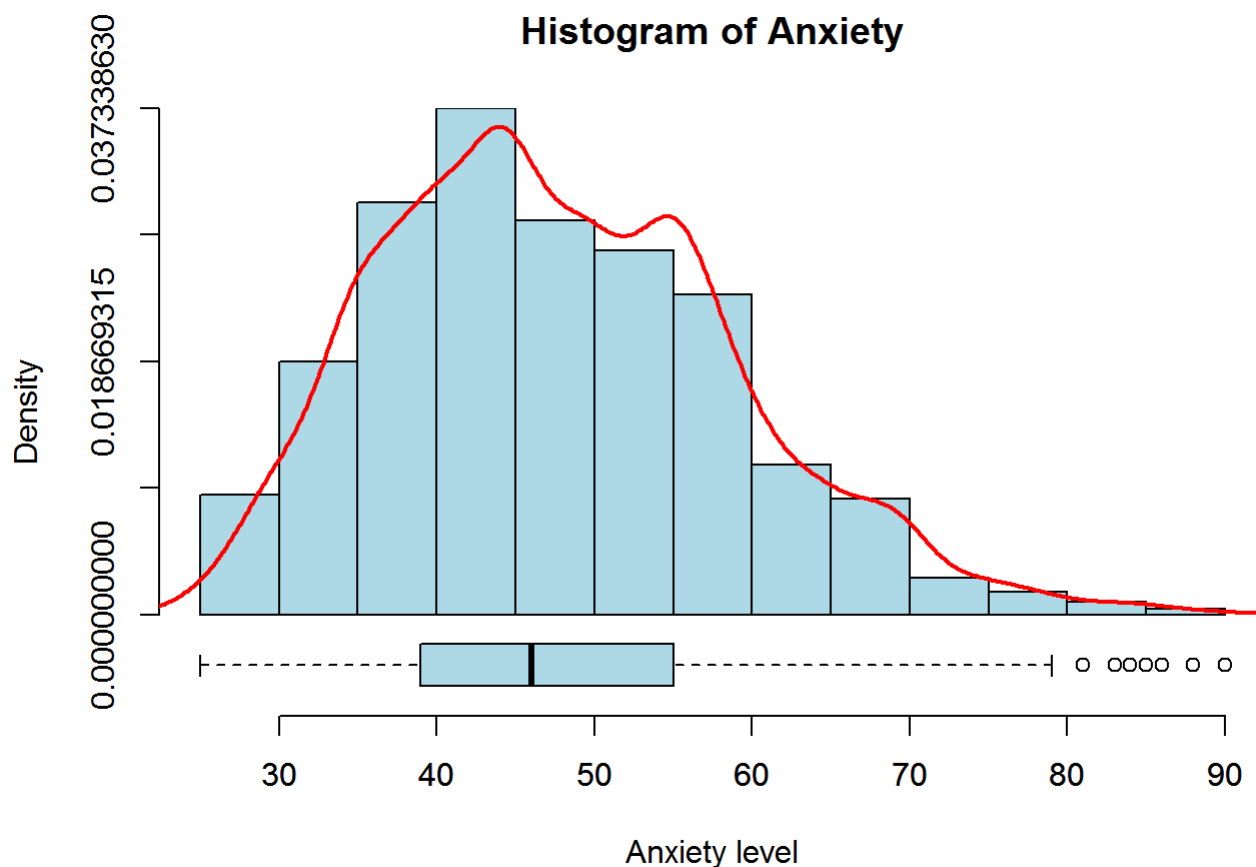
Linear regression

You can also embed plots, for example: ### Anxiety

```
naomit<-na.omit(nurse)
lianx<- lm(formula= SAS_total ~ Age+Sex+marital.status+child.rearing+education.Bachelor.or.highe
r.2_Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.household.income.US
D.month..1440 + Clinical.experience.m. + Frontline.working.duration.d.+Average.working.hours.shi
ft+Wuhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1. + Working.ward
s.changed.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.frontline,data
= naomit)
summary(lianx)
```

```
## 
## Call:
## lm(formula = SAS_total ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline, data = naomit)
## 
## Residuals:
##     Min      1Q  Median      3Q     Max
## -25.238  -7.753  -1.125   7.082  38.764
## 
## Coefficients:
##                                                     Estimate Std. Error
## (Intercept)                                         51.934956   3.464797
## Age                                                  0.113310   0.107922
## Sex                                                  1.621057   0.751035
## marital.status                                      -1.364764   0.862047
## child.rearing                                        2.391142   0.879758
## education.Bachelor.or.higher.2_Diploma1.             0.475731   0.629387
## Prodessional.title..Junior1.intermediate.and.senior0.   0.452709   0.748376
## Monthly.household.income.USD.month..1440            -1.719777   0.526168
## Clinical.experience.m.                              -0.011024   0.008505
## Frontline.working.duration.d.                        0.040196   0.019054
## Average.working.hours.shift                         -0.003149   0.135840
## Wuhan.as.origin..ys1.                                3.435669   0.557753
## Original.position..head.1.                          -2.022592   1.264459
## Position.in.Wuhan...head.1.                          3.094855   1.514446
## Working.wards.changed.yes1                           1.251631   0.528732
## Prior.traning                                       -2.226660   0.666239
## Prior.experience                                     0.102800   0.535351
## Willingness.to.participate.in.frontline            -10.833563   1.377252
##                                                     t value Pr(>|t|)
## (Intercept)                                          14.989  < 2e-16 ***
## Age                                                   1.050 0.293882
## Sex                                                   2.158 0.031013 *
## marital.status                                       -1.583 0.113542
## child.rearing                                         2.718 0.006626 **
## education.Bachelor.or.higher.2_Diploma1.              0.756 0.449819
## Prodessional.title..Junior1.intermediate.and.senior0.   0.605 0.545299
## Monthly.household.income.USD.month..1440             -3.268 0.001100 **
## Clinical.experience.m.                               -1.296 0.195039
## Frontline.working.duration.d.                         2.110 0.035023 *
## Average.working.hours.shift                          -0.023 0.981510
## Wuhan.as.origin..ys1.                                 6.160 8.78e-10 ***
## Original.position..head.1.                           -1.600 0.109852
## Position.in.Wuhan...head.1.                           2.044 0.041128 *
## Working.wards.changed.yes1                            2.367 0.018017 *
## Prior.traning                                        -3.342 0.000847 ***
## Prior.experience                                      0.192 0.847744
```

```
## Willingness.to.participate.in.frontline                      -7.866 5.94e-15 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 10.76 on 1996 degrees of freedom
## Multiple R-squared:  0.08523,    Adjusted R-squared:  0.07744
## F-statistic: 10.94 on 17 and 1996 DF,  p-value: < 2.2e-16
```

```
confint(lianx)
```

```
##                                                        2.5 %       97.5 %
## (Intercept)                                        45.13995830 58.729952956
## Age                                                -0.09834240  0.324962050
## Sex                                                 0.14816163  3.093952563
## marital.status                                     -3.05537013  0.325842522
## child.rearing                                       0.66580109  4.116482318
## education.Bachelor.or.higher.2_Diploma1.           -0.75859222  1.710054616
## Prodessional.title..Junior1.intermediate.and.senior0. -1.01497022  1.920388840
## Monthly.household.income.USD.month..1440           -2.75167263 -0.687881966
## Clinical.experience.m.                             -0.02770375  0.005654901
## Frontline.working.duration.d.                       0.00282730  0.077564590
## Average.working.hours.shift                        -0.26955221  0.263255045
## Wuhan.as.origin..ys1.                               2.34182936  4.529507972
## Original.position..head.1.                         -4.50239035  0.457205660
## Position.in.Wuhan...head.1.                         0.12479479  6.064915844
## Working.wards.changed.yes1                          0.21470568  2.288555724
## Prior.traning                                      -3.53325772 -0.920062266
## Prior.experience                                   -0.94710473  1.152704040
## Willingness.to.participate.in.frontline           -13.53456588 -8.132561118
```

```
summary(lianx)
```

```
##
## Call:
## lm(formula = SAS_total ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline, data = naomit)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -25.238  -7.753  -1.125   7.082  38.764
##
## Coefficients:
##                                                      Estimate Std. Error
## (Intercept)                                          51.934956   3.464797
## Age                                                   0.113310   0.107922
## Sex                                                   1.621057   0.751035
## marital.status                                       -1.364764   0.862047
## child.rearing                                         2.391142   0.879758
## education.Bachelor.or.higher.2_Diploma1.              0.475731   0.629387
## Prodessional.title..Junior1.intermediate.and.senior0.  0.452709   0.748376
## Monthly.household.income.USD.month..1440             -1.719777   0.526168
## Clinical.experience.m.                               -0.011024   0.008505
## Frontline.working.duration.d.                         0.040196   0.019054
## Average.working.hours.shift                          -0.003149   0.135840
## Wuhan.as.origin..ys1.                                 3.435669   0.557753
## Original.position..head.1.                           -2.022592   1.264459
## Position.in.Wuhan...head.1.                           3.094855   1.514446
## Working.wards.changed.yes1                            1.251631   0.528732
## Prior.traning                                        -2.226660   0.666239
## Prior.experience                                      0.102800   0.535351
## Willingness.to.participate.in.frontline             -10.833563   1.377252
##                                                      t value Pr(>|t|)
## (Intercept)                                           14.989  < 2e-16 ***
## Age                                                    1.050 0.293882
## Sex                                                    2.158 0.031013 *
## marital.status                                        -1.583 0.113542
## child.rearing                                          2.718 0.006626 **
## education.Bachelor.or.higher.2_Diploma1.               0.756 0.449819
## Prodessional.title..Junior1.intermediate.and.senior0.  0.605 0.545299
## Monthly.household.income.USD.month..1440              -3.268 0.001100 **
## Clinical.experience.m.                                -1.296 0.195039
## Frontline.working.duration.d.                          2.110 0.035023 *
## Average.working.hours.shift                           -0.023 0.981510
## Wuhan.as.origin..ys1.                                  6.160 8.78e-10 ***
## Original.position..head.1.                            -1.600 0.109852
## Position.in.Wuhan...head.1.                            2.044 0.041128 *
## Working.wards.changed.yes1                             2.367 0.018017 *
## Prior.traning                                         -3.342 0.000847 ***
## Prior.experience                                       0.192 0.847744
```

```
## Willingness.to.participate.in.frontline                 -7.866 5.94e-15 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 10.76 on 1996 degrees of freedom
## Multiple R-squared:  0.08523,    Adjusted R-squared:  0.07744
## F-statistic: 10.94 on 17 and 1996 DF,  p-value: < 2.2e-16
```

```
confint(lianx)
```

```
##                                                          2.5 %        97.5 %
## (Intercept)                                          45.13995830 58.729952956
## Age                                                  -0.09834240  0.324962050
## Sex                                                   0.14816163  3.093952563
## marital.status                                       -3.05537013  0.325842522
## child.rearing                                         0.66580109  4.116482318
## education.Bachelor.or.higher.2_Diploma1.             -0.75859222  1.710054616
## Prodessional.title..Junior1.intermediate.and.senior0. -1.01497022  1.920388840
## Monthly.household.income.USD.month..1440             -2.75167263 -0.687881966
## Clinical.experience.m.                               -0.02770375  0.005654901
## Frontline.working.duration.d.                         0.00282730  0.077564590
## Average.working.hours.shift                          -0.26955221  0.263255045
## Wuhan.as.origin..ys1.                                 2.34182936  4.529507972
## Original.position..head.1.                           -4.50239035  0.457205660
## Position.in.Wuhan...head.1.                           0.12479479  6.064915844
## Working.wards.changed.yes1                            0.21470568  2.288555724
## Prior.traning                                        -3.53325772 -0.920062266
## Prior.experience                                     -0.94710473  1.152704040
## Willingness.to.participate.in.frontline             -13.53456588 -8.132561118
```

BIC for linear regression of anxiety

```
anx_bic <- step(lianx,k=sqrt(nrow(naomit)))
```

```
## Start:   AIC=10357.84
## SAS_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Diplo
ma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                         Df Sum of Sq    RSS
## - Average.working.hours.shift                            1       0.1 230892
## - Prior.experience                                       1       4.3 230896
## - Prodessional.title..Junior1.intermediate.and.senior0.  1      42.3 230934
## - education.Bachelor.or.higher.2_Diploma1.               1      66.1 230958
## - Age                                                    1     127.5 231019
## - Clinical.experience.m.                                 1     194.4 231086
## - marital.status                                         1     289.9 231182
## - Original.position..head.1.                             1     296.0 231188
## - Position.in.Wuhan...head.1.                            1     483.1 231375
## - Frontline.working.duration.d.                          1     514.8 231407
## - Sex                                                    1     538.9 231431
## - Working.wards.changed.yes1                             1     648.2 231540
## - child.rearing                                          1     854.5 231746
## - Monthly.household.income.USD.month..1440               1    1235.8 232128
## - Prior.traning                                          1    1292.1 232184
## - Wuhan.as.origin..ys1.                                  1    4389.2 235281
## <none>                                                               230892
## - Willingness.to.participate.in.frontline                1    7157.5 238049
##                                                         AIC
## - Average.working.hours.shift                           10313
## - Prior.experience                                      10313
## - Prodessional.title..Junior1.intermediate.and.senior0. 10313
## - education.Bachelor.or.higher.2_Diploma1.              10314
## - Age                                                   10314
## - Clinical.experience.m.                                10315
## - marital.status                                        10316
## - Original.position..head.1.                            10316
## - Position.in.Wuhan...head.1.                           10317
## - Frontline.working.duration.d.                         10317
## - Sex                                                   10318
## - Working.wards.changed.yes1                            10319
## - child.rearing                                         10320
## - Monthly.household.income.USD.month..1440              10324
## - Prior.traning                                         10324
## - Wuhan.as.origin..ys1.                                 10351
## <none>                                                  10358
## - Willingness.to.participate.in.frontline               10374
##
## Step:   AIC=10312.96
## SAS_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Diplo
ma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
```

```
           h..1440 +
##       Clinical.experience.m. + Frontline.working.duration.d. +
##       Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##       Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##       Willingness.to.participate.in.frontline
##
##                                                           Df Sum of Sq    RSS
## - Prior.experience                                         1       4.2 230896
## - Prodessional.title..Junior1.intermediate.and.senior0.    1      42.3 230934
## - education.Bachelor.or.higher.2_Diploma1.                 1      67.6 230959
## - Age                                                      1     127.5 231019
## - Clinical.experience.m.                                   1     194.4 231086
## - marital.status                                           1     289.9 231182
## - Original.position..head.1.                               1     297.2 231189
## - Position.in.Wuhan...head.1.                              1     485.2 231377
## - Frontline.working.duration.d.                            1     517.1 231409
## - Sex                                                      1     540.7 231433
## - Working.wards.changed.yes1                               1     674.1 231566
## - child.rearing                                            1     854.6 231746
## - Monthly.household.income.USD.month..1440                 1    1235.8 232128
## - Prior.traning                                            1    1292.1 232184
## - Wuhan.as.origin..ys1.                                    1    4450.9 235343
## <none>                                                                 230892
## - Willingness.to.participate.in.frontline                  1    7166.3 238058
##                                                            AIC
## - Prior.experience                                       10268
## - Prodessional.title..Junior1.intermediate.and.senior0.  10268
## - education.Bachelor.or.higher.2_Diploma1.               10269
## - Age                                                    10269
## - Clinical.experience.m.                                 10270
## - marital.status                                         10271
## - Original.position..head.1.                             10271
## - Position.in.Wuhan...head.1.                            10272
## - Frontline.working.duration.d.                          10273
## - Sex                                                    10273
## - Working.wards.changed.yes1                             10274
## - child.rearing                                          10276
## - Monthly.household.income.USD.month..1440               10279
## - Prior.traning                                          10279
## - Wuhan.as.origin..ys1.                                  10306
## <none>                                                   10313
## - Willingness.to.participate.in.frontline                10330
##
## Step:  AIC=10268.12
## SAS_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Diplo
ma1. +
##       Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##       Clinical.experience.m. + Frontline.working.duration.d. +
##       Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##       Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                           Df Sum of Sq    RSS
## - Prodessional.title..Junior1.intermediate.and.senior0.    1      41.8 230938
```

```
## - education.Bachelor.or.higher.2_Diploma1.             1       65.6 230962
## - Age                                                  1      128.3 231024
## - Clinical.experience.m.                               1      195.5 231092
## - marital.status                                       1      288.9 231185
## - Original.position..head.1.                           1      295.4 231191
## - Position.in.Wuhan...head.1.                           1      486.0 231382
## - Frontline.working.duration.d.                        1      525.5 231422
## - Sex                                                  1      536.6 231433
## - Working.wards.changed.yes1                           1      708.2 231604
## - child.rearing                                        1      857.3 231753
## - Monthly.household.income.USD.month..1440             1     1236.5 232133
## - Prior.traning                                        1     1377.3 232273
## - Wuhan.as.origin..ys1.                                1     4452.8 235349
## <none>                                                                230896
## - Willingness.to.participate.in.frontline              1     7162.1 238058
##                                                        AIC
## - Prodessional.title..Junior1.intermediate.and.senior0. 10224
## - education.Bachelor.or.higher.2_Diploma1.             10224
## - Age                                                  10224
## - Clinical.experience.m.                               10225
## - marital.status                                       10226
## - Original.position..head.1.                           10226
## - Position.in.Wuhan...head.1.                           10228
## - Frontline.working.duration.d.                        10228
## - Sex                                                  10228
## - Working.wards.changed.yes1                           10229
## - child.rearing                                        10231
## - Monthly.household.income.USD.month..1440             10234
## - Prior.traning                                        10235
## - Wuhan.as.origin..ys1.                                10262
## <none>                                                 10268
## - Willingness.to.participate.in.frontline              10285
##
## Step:  AIC=10223.6
## SAS_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Diplo
ma1. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS   AIC
## - education.Bachelor.or.higher.2_Diploma1.    1      52.6 230991 10179
## - Age                                         1     120.8 231059 10180
## - Clinical.experience.m.                      1     248.2 231186 10181
## - marital.status                              1     284.0 231222 10181
## - Original.position..head.1.                  1     322.2 231260 10182
## - Position.in.Wuhan...head.1.                  1     480.6 231419 10183
## - Frontline.working.duration.d.               1     520.9 231459 10183
## - Sex                                         1     547.8 231486 10184
## - Working.wards.changed.yes1                  1     700.3 231638 10185
## - child.rearing                               1     840.6 231779 10186
## - Monthly.household.income.USD.month..1440    1    1255.5 232193 10190
## - Prior.traning                               1    1378.0 232316 10191
```

```
## - Wuhan.as.origin..ys1.                       1    4793.4 235731 10220
## <none>                                                   230938 10224
## - Willingness.to.participate.in.frontline      1    7157.5 238095 10240
##
## Step:  AIC=10179.19
## SAS_total ~ Age + Sex + marital.status + child.rearing + Monthly.household.income.USD.month..
1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS    AIC
## - Age                                       1     127.8 231118 10135
## - Clinical.experience.m.                    1     246.8 231237 10136
## - marital.status                            1     274.6 231265 10137
## - Original.position..head.1.                1     308.8 231299 10137
## - Position.in.Wuhan...head.1.               1     464.7 231455 10138
## - Frontline.working.duration.d.             1     515.1 231506 10139
## - Sex                                       1     559.5 231550 10139
## - Working.wards.changed.yes1                1     681.8 231672 10140
## - child.rearing                             1     831.8 231822 10142
## - Monthly.household.income.USD.month..1440  1    1204.7 232195 10145
## - Prior.traning                             1    1354.9 232345 10146
## - Wuhan.as.origin..ys1.                     1    5136.0 236127 10179
## <none>                                                  230991 10179
## - Willingness.to.participate.in.frontline   1    7135.0 238126 10196
##
## Step:  AIC=10135.42
## SAS_total ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.month..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS    AIC
## - Clinical.experience.m.                    1     144.3 231263 10092
## - marital.status                            1     251.9 231370 10093
## - Original.position..head.1.                1     300.2 231419 10093
## - Position.in.Wuhan...head.1.               1     480.0 231598 10095
## - Frontline.working.duration.d.             1     494.9 231613 10095
## - Sex                                       1     499.8 231618 10095
## - Working.wards.changed.yes1                1     696.5 231815 10097
## - child.rearing                             1     934.0 232052 10099
## - Monthly.household.income.USD.month..1440  1    1195.0 232313 10101
## - Prior.traning                             1    1332.4 232451 10102
## - Wuhan.as.origin..ys1.                     1    5113.7 236232 10135
## <none>                                                  231118 10135
## - Willingness.to.participate.in.frontline   1    7188.4 238307 10152
##
## Step:  AIC=10091.8
## SAS_total ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.month..1440 +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Willingness.to.participate.in.frontline
##
```

```
##                                        Df Sum of Sq    RSS   AIC
## - marital.status                        1     293.1 231556 10050
## - Original.position..head.1.            1     425.5 231688 10051
## - Sex                                   1     436.7 231699 10051
## - Frontline.working.duration.d.         1     474.4 231737 10051
## - Position.in.Wuhan...head.1.           1     503.2 231766 10051
## - Working.wards.changed.yes1            1     686.8 231949 10053
## - child.rearing                         1     803.0 232066 10054
## - Prior.traning                         1    1303.7 232566 10058
## - Monthly.household.income.USD.month..1440  1  1346.2 232609 10059
## - Wuhan.as.origin..ys1.                 1    5194.5 236457 10092
## <none>                                             231263 10092
## - Willingness.to.participate.in.frontline 1   7239.2 238502 10109
##
## Step:  AIC=10049.48
## SAS_total ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                        Df Sum of Sq    RSS   AIC
## - Original.position..head.1.            1     443.2 231999 10008
## - Sex                                   1     451.5 232007 10008
## - Frontline.working.duration.d.         1     486.8 232043 10009
## - Position.in.Wuhan...head.1.           1     509.7 232065 10009
## - child.rearing                         1     588.3 232144 10010
## - Working.wards.changed.yes1            1     680.2 232236 10010
## - Prior.traning                         1    1322.2 232878 10016
## - Monthly.household.income.USD.month..1440  1  1532.4 233088 10018
## - Wuhan.as.origin..ys1.                 1    5194.4 236750 10049
## <none>                                             231556 10050
## - Willingness.to.participate.in.frontline 1   7231.1 238787 10066
##
## Step:  AIC=10008.45
## SAS_total ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                        Df Sum of Sq    RSS    AIC
## - Position.in.Wuhan...head.1.           1     112.3 232111 9964.5
## - Sex                                   1     423.4 232422 9967.2
## - child.rearing                         1     460.1 232459 9967.6
## - Frontline.working.duration.d.         1     465.1 232464 9967.6
## - Working.wards.changed.yes1            1     755.9 232755 9970.1
## - Prior.traning                         1    1307.9 233307 9974.9
## - Monthly.household.income.USD.month..1440  1  1617.2 233616 9977.6
## <none>                                             231999 10008.4
## - Wuhan.as.origin..ys1.                 1    6447.4 238446 10018.8
## - Willingness.to.participate.in.frontline 1   7303.0 239302 10026.0
##
## Step:  AIC=9964.55
## SAS_total ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
```

```
##
##                                                Df Sum of Sq    RSS    AIC
## - Sex                                          1     385.7 232497 9923.0
## - Frontline.working.duration.d.                1     508.0 232619 9924.1
## - child.rearing                                1     533.7 232645 9924.3
## - Working.wards.changed.yes1                    1     759.3 232871 9926.2
## - Prior.traning                                1    1267.7 233379 9930.6
## - Monthly.household.income.USD.month..1440      1    1640.5 233752 9933.9
## <none>                                                     232111 9964.5
## - Wuhan.as.origin..ys1.                         1    6581.4 238693 9976.0
## - Willingness.to.participate.in.frontline       1    7278.2 239389 9981.9
##
## Step:  AIC=9923.01
## SAS_total ~ child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                                Df Sum of Sq    RSS    AIC
## - Frontline.working.duration.d.                1     474.3 232971 9882.2
## - child.rearing                                1     596.0 233093 9883.3
## - Working.wards.changed.yes1                    1     629.9 233127 9883.6
## - Prior.traning                                1    1319.5 233816 9889.5
## - Monthly.household.income.USD.month..1440      1    1600.0 234097 9891.9
## <none>                                                     232497 9923.0
## - Wuhan.as.origin..ys1.                         1    6918.0 239415 9937.2
## - Willingness.to.participate.in.frontline       1    7188.0 239685 9939.5
##
## Step:  AIC=9882.24
## SAS_total ~ child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1 + Prior.traning +
##     Willingness.to.participate.in.frontline
##
##                                                Df Sum of Sq    RSS    AIC
## - child.rearing                                1     630.5 233602 9842.8
## - Working.wards.changed.yes1                    1     774.4 233746 9844.0
## - Prior.traning                                1    1383.0 234354 9849.3
## - Monthly.household.income.USD.month..1440      1    1832.3 234804 9853.1
## <none>                                                     232971 9882.2
## - Willingness.to.participate.in.frontline       1    7139.5 240111 9898.2
## - Wuhan.as.origin..ys1.                         1    7144.4 240116 9898.2
##
## Step:  AIC=9842.8
## SAS_total ~ Monthly.household.income.USD.month..1440 + Wuhan.as.origin..ys1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                Df Sum of Sq    RSS    AIC
## - Working.wards.changed.yes1                    1     751.6 234353 9804.4
## - Prior.traning                                1    1317.2 234919 9809.3
## - Monthly.household.income.USD.month..1440      1    1435.9 235038 9810.3
## <none>                                                     233602 9842.8
## - Wuhan.as.origin..ys1.                         1    7125.9 240728 9858.4
## - Willingness.to.participate.in.frontline       1    7200.0 240802 9859.1
##
## Step:  AIC=9804.4
```

```
## SAS_total ~ Monthly.household.income.USD.month..1440 + Wuhan.as.origin..ys1. +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                             Df Sum of Sq    RSS    AIC
## - Prior.traning                             1     1155.6 235509 9769.4
## - Monthly.household.income.USD.month..1440  1     1671.7 236025 9773.8
## <none>                                                   234353 9804.4
## - Wuhan.as.origin..ys1.                     1     7140.7 241494 9820.0
## - Willingness.to.participate.in.frontline   1     7193.7 241547 9820.4
##
## Step:  AIC=9769.43
## SAS_total ~ Monthly.household.income.USD.month..1440 + Wuhan.as.origin..ys1. +
##     Willingness.to.participate.in.frontline
##
##                                             Df Sum of Sq    RSS    AIC
## - Monthly.household.income.USD.month..1440  1     1809.6 237319 9740.0
## <none>                                                   235509 9769.4
## - Wuhan.as.origin..ys1.                     1     7446.5 242955 9787.2
## - Willingness.to.participate.in.frontline   1     7480.1 242989 9787.5
##
## Step:  AIC=9739.96
## SAS_total ~ Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline
##
##                                             Df Sum of Sq    RSS    AIC
## <none>                                                   237319 9740.0
## - Wuhan.as.origin..ys1.                     1     6605.4 243924 9750.4
## - Willingness.to.participate.in.frontline   1     7228.1 244547 9755.5
```

```
# Step:  AIC=9739.96
# SAS_total ~ Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline
```

```
summary(anx_bic)
```

```
##
## Call:
## lm(formula = SAS_total ~ Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline,
##     data = naomit)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -24.604  -7.766  -0.937   7.234  41.234
##
## Coefficients:
##                                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)                              55.7744     1.4299  39.007  < 2e-16
## Wuhan.as.origin..ys1.                     3.8293     0.5118   7.482 1.09e-13
## Willingness.to.participate.in.frontline -10.8377     1.3848  -7.826 8.06e-15
##
## (Intercept)                             ***
## Wuhan.as.origin..ys1.                   ***
## Willingness.to.participate.in.frontline ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 10.86 on 2011 degrees of freedom
## Multiple R-squared:  0.05977,    Adjusted R-squared:  0.05883
## F-statistic: 63.92 on 2 and 2011 DF,  p-value: < 2.2e-16
```

AIC for linear regression of anxiety

```
anx_aic <-step(lianx,k =2)
```

```
## Start:  AIC=9586.04
## SAS_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Diplo
ma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - Average.working.hours.shift                            1       0.1 230892
## - Prior.experience                                       1       4.3 230896
## - Prodessional.title..Junior1.intermediate.and.senior0.  1      42.3 230934
## - education.Bachelor.or.higher.2_Diploma1.               1      66.1 230958
## - Age                                                    1     127.5 231019
## - Clinical.experience.m.                                 1     194.4 231086
## <none>                                                                230892
## - marital.status                                         1     289.9 231182
## - Original.position..head.1.                             1     296.0 231188
## - Position.in.Wuhan...head.1.                            1     483.1 231375
## - Frontline.working.duration.d.                          1     514.8 231407
## - Sex                                                    1     538.9 231431
## - Working.wards.changed.yes1                             1     648.2 231540
## - child.rearing                                          1     854.5 231746
## - Monthly.household.income.USD.month..1440               1    1235.8 232128
## - Prior.traning                                          1    1292.1 232184
## - Wuhan.as.origin..ys1.                                  1    4389.2 235281
## - Willingness.to.participate.in.frontline                1    7157.5 238049
##                                                             AIC
## - Average.working.hours.shift                            9584.0
## - Prior.experience                                       9584.1
## - Prodessional.title..Junior1.intermediate.and.senior0. 9584.4
## - education.Bachelor.or.higher.2_Diploma1.               9584.6
## - Age                                                    9585.2
## - Clinical.experience.m.                                 9585.7
## <none>                                                   9586.0
## - marital.status                                         9586.6
## - Original.position..head.1.                             9586.6
## - Position.in.Wuhan...head.1.                            9588.2
## - Frontline.working.duration.d.                          9588.5
## - Sex                                                    9588.7
## - Working.wards.changed.yes1                             9589.7
## - child.rearing                                          9591.5
## - Monthly.household.income.USD.month..1440               9594.8
## - Prior.traning                                          9595.3
## - Wuhan.as.origin..ys1.                                  9622.0
## - Willingness.to.participate.in.frontline                9645.5
##
## Step:  AIC=9584.04
## SAS_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Diplo
ma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
```

```
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                      Df Sum of Sq    RSS
## - Prior.experience                                   1       4.2 230896
## - Prodessional.title..Junior1.intermediate.and.senior0.  1      42.3 230934
## - education.Bachelor.or.higher.2_Diploma1.            1      67.6 230959
## - Age                                                 1     127.5 231019
## - Clinical.experience.m.                              1     194.4 231086
## <none>                                                          230892
## - marital.status                                      1     289.9 231182
## - Original.position..head.1.                          1     297.2 231189
## - Position.in.Wuhan...head.1.                         1     485.2 231377
## - Frontline.working.duration.d.                       1     517.1 231409
## - Sex                                                 1     540.7 231433
## - Working.wards.changed.yes1                          1     674.1 231566
## - child.rearing                                       1     854.6 231746
## - Monthly.household.income.USD.month..1440            1    1235.8 232128
## - Prior.traning                                       1    1292.1 232184
## - Wuhan.as.origin..ys1.                               1    4450.9 235343
## - Willingness.to.participate.in.frontline             1    7166.3 238058
##                                                      AIC
## - Prior.experience                                9582.1
## - Prodessional.title..Junior1.intermediate.and.senior0. 9582.4
## - education.Bachelor.or.higher.2_Diploma1.        9582.6
## - Age                                             9583.2
## - Clinical.experience.m.                          9583.7
## <none>                                            9584.0
## - marital.status                                  9584.6
## - Original.position..head.1.                      9584.6
## - Position.in.Wuhan...head.1.                     9586.3
## - Frontline.working.duration.d.                   9586.5
## - Sex                                             9586.7
## - Working.wards.changed.yes1                      9587.9
## - child.rearing                                   9589.5
## - Monthly.household.income.USD.month..1440        9592.8
## - Prior.traning                                   9593.3
## - Wuhan.as.origin..ys1.                           9620.5
## - Willingness.to.participate.in.frontline         9643.6
##
## Step:  AIC=9582.08
## SAS_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Diplo
ma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                      Df Sum of Sq    RSS
## - Prodessional.title..Junior1.intermediate.and.senior0.  1      41.8 230938
```

```
## - education.Bachelor.or.higher.2_Diploma1.              1        65.6 230962
## - Age                                                   1       128.3 231024
## - Clinical.experience.m.                                1       195.5 231092
## <none>                                                                230896
## - marital.status                                        1       288.9 231185
## - Original.position..head.1.                            1       295.4 231191
## - Position.in.Wuhan...head.1.                           1       486.0 231382
## - Frontline.working.duration.d.                         1       525.5 231422
## - Sex                                                   1       536.6 231433
## - Working.wards.changed.yes1                            1       708.2 231604
## - child.rearing                                         1       857.3 231753
## - Monthly.household.income.USD.month..1440              1      1236.5 232133
## - Prior.traning                                         1      1377.3 232273
## - Wuhan.as.origin..ys1.                                 1      4452.8 235349
## - Willingness.to.participate.in.frontline               1      7162.1 238058
##                                                              AIC
## - Prodessional.title..Junior1.intermediate.and.senior0. 9580.4
## - education.Bachelor.or.higher.2_Diploma1.              9580.6
## - Age                                                   9581.2
## - Clinical.experience.m.                                9581.8
## <none>                                                  9582.1
## - marital.status                                        9582.6
## - Original.position..head.1.                            9582.7
## - Position.in.Wuhan...head.1.                           9584.3
## - Frontline.working.duration.d.                         9584.7
## - Sex                                                   9584.8
## - Working.wards.changed.yes1                            9586.2
## - child.rearing                                         9587.5
## - Monthly.household.income.USD.month..1440              9590.8
## - Prior.traning                                         9592.1
## - Wuhan.as.origin..ys1.                                 9618.5
## - Willingness.to.participate.in.frontline               9641.6
##
## Step:  AIC=9580.44
## SAS_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Diplo
ma1. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq   RSS    AIC
## - education.Bachelor.or.higher.2_Diploma1.    1      52.6 230991 9578.9
## - Age                                         1     120.8 231059 9579.5
## <none>                                                    230938 9580.4
## - Clinical.experience.m.                      1     248.2 231186 9580.6
## - marital.status                              1     284.0 231222 9580.9
## - Original.position..head.1.                  1     322.2 231260 9581.2
## - Position.in.Wuhan...head.1.                 1     480.6 231419 9582.6
## - Frontline.working.duration.d.               1     520.9 231459 9583.0
## - Sex                                         1     547.8 231486 9583.2
## - Working.wards.changed.yes1                  1     700.3 231638 9584.5
## - child.rearing                               1     840.6 231779 9585.8
## - Monthly.household.income.USD.month..1440    1    1255.5 232193 9589.4
```

```
## - Prior.traning                                1    1378.0 232316 9590.4
## - Wuhan.as.origin..ys1.                         1    4793.4 235731 9619.8
## - Willingness.to.participate.in.frontline       1    7157.5 238095 9639.9
##
## Step:  AIC=9578.9
## SAS_total ~ Age + Sex + marital.status + child.rearing + Monthly.household.income.USD.month..
1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                               Df Sum of Sq    RSS    AIC
## - Age                                          1     127.8 231118 9578.0
## <none>                                                      230991 9578.9
## - Clinical.experience.m.                       1     246.8 231237 9579.1
## - marital.status                               1     274.6 231265 9579.3
## - Original.position..head.1.                   1     308.8 231299 9579.6
## - Position.in.Wuhan...head.1.                  1     464.7 231455 9580.9
## - Frontline.working.duration.d.                1     515.1 231506 9581.4
## - Sex                                          1     559.5 231550 9581.8
## - Working.wards.changed.yes1                   1     681.8 231672 9582.8
## - child.rearing                                1     831.8 231822 9584.1
## - Monthly.household.income.USD.month..1440     1    1204.7 232195 9587.4
## - Prior.traning                                1    1354.9 232345 9588.7
## - Wuhan.as.origin..ys1.                        1    5136.0 236127 9621.2
## - Willingness.to.participate.in.frontline      1    7135.0 238126 9638.2
##
## Step:  AIC=9578.01
## SAS_total ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.month..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                               Df Sum of Sq    RSS    AIC
## - Clinical.experience.m.                       1     144.3 231263 9577.3
## <none>                                                      231118 9578.0
## - marital.status                               1     251.9 231370 9578.2
## - Original.position..head.1.                   1     300.2 231419 9578.6
## - Position.in.Wuhan...head.1.                  1     480.0 231598 9580.2
## - Frontline.working.duration.d.                1     494.9 231613 9580.3
## - Sex                                          1     499.8 231618 9580.4
## - Working.wards.changed.yes1                   1     696.5 231815 9582.1
## - child.rearing                                1     934.0 232052 9584.1
## - Monthly.household.income.USD.month..1440     1    1195.0 232313 9586.4
## - Prior.traning                                1    1332.4 232451 9587.6
## - Wuhan.as.origin..ys1.                        1    5113.7 236232 9620.1
## - Willingness.to.participate.in.frontline      1    7188.4 238307 9637.7
##
## Step:  AIC=9577.27
## SAS_total ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
```

```
##                                         Df  Sum of Sq     RSS     AIC
## <none>                                               231263  9577.3
## - marital.status                        1       293.1 231556  9577.8
## - Original.position..head.1.            1       425.5 231688  9579.0
## - Sex                                   1       436.7 231699  9579.1
## - Frontline.working.duration.d.         1       474.4 231737  9579.4
## - Position.in.Wuhan...head.1.           1       503.2 231766  9579.6
## - Working.wards.changed.yes1            1       686.8 231949  9581.2
## - child.rearing                         1       803.0 232066  9582.3
## - Prior.traning                         1      1303.7 232566  9586.6
## - Monthly.household.income.USD.month..1440  1   1346.2 232609  9587.0
## - Wuhan.as.origin..ys1.                 1      5194.5 236457  9620.0
## - Willingness.to.participate.in.frontline  1   7239.2 238502  9637.3
```

```
# Step:  AIC=9577.27
# SAS_total ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.month..1440 +
 Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. + Position.i
n.Wuhan...head.1. + Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.f
rontline
```

```
summary(anx_aic)
```

```
##
## Call:
## lm(formula = SAS_total ~ Sex + marital.status + child.rearing +
##     Monthly.household.income.USD.month..1440 + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline,
##     data = naomit)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -25.305  -7.757  -1.115   7.214  38.890
##
## Coefficients:
##                                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)                               55.67640    1.69083  32.928  < 2e-16
## Sex                                        1.42541    0.73308   1.944 0.051988
## marital.status                            -1.36125    0.85450  -1.593 0.111311
## child.rearing                              2.20340    0.83569   2.637 0.008438
## Monthly.household.income.USD.month..1440  -1.75003    0.51264  -3.414 0.000654
## Frontline.working.duration.d.              0.03831    0.01890   2.026 0.042850
## Wuhan.as.origin..ys1.                      3.58020    0.53390   6.706 2.60e-11
## Original.position..head.1.                -2.33968    1.21906  -1.919 0.055095
## Position.in.Wuhan...head.1.                3.13940    1.50417   2.087 0.037003
## Working.wards.changed.yes1                 1.24262    0.50961   2.438 0.014839
## Prior.traning                             -2.12339    0.63205  -3.360 0.000795
## Willingness.to.participate.in.frontline  -10.87454    1.37368  -7.916 4.01e-15
##
## (Intercept)                              ***
## Sex                                       .
## marital.status
## child.rearing                            **
## Monthly.household.income.USD.month..1440 ***
## Frontline.working.duration.d.            *
## Wuhan.as.origin..ys1.                    ***
## Original.position..head.1.                .
## Position.in.Wuhan...head.1.              *
## Working.wards.changed.yes1               *
## Prior.traning                            ***
## Willingness.to.participate.in.frontline  ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 10.75 on 2002 degrees of freedom
## Multiple R-squared:  0.08376,    Adjusted R-squared:  0.07873
## F-statistic: 16.64 on 11 and 2002 DF,  p-value: < 2.2e-16
```

Diagnose for linear regression of anxiety

```
par(mfrow=c(1,2))
plot(lianx)
```

Residuals vs Fitted

Normal Q-Q

Scale-Location

Residuals vs Leverage
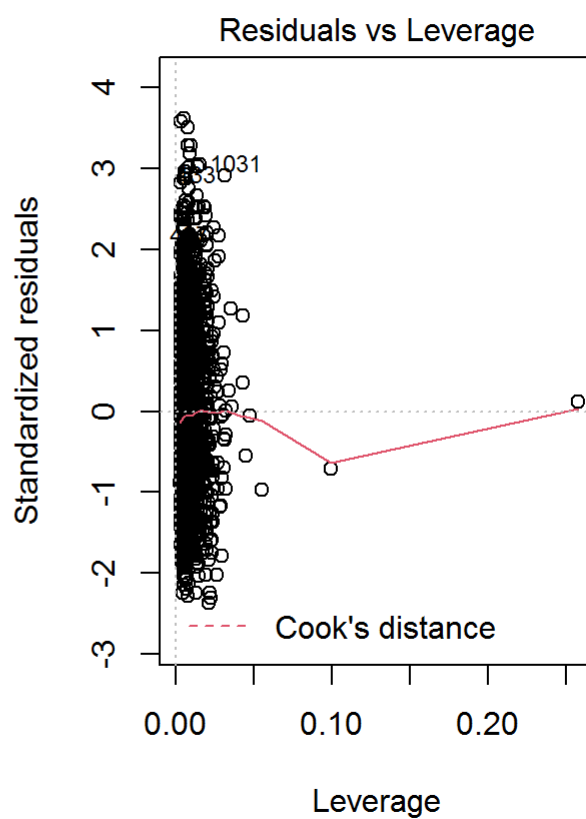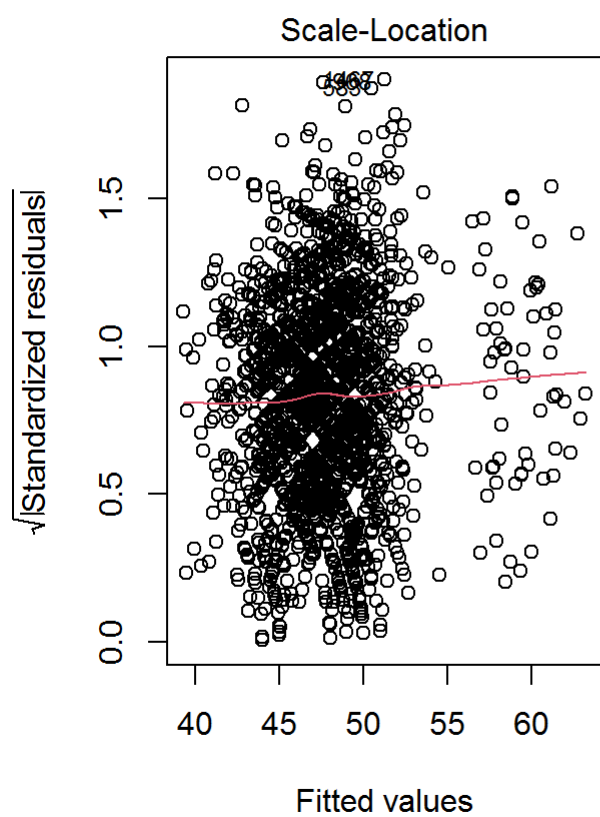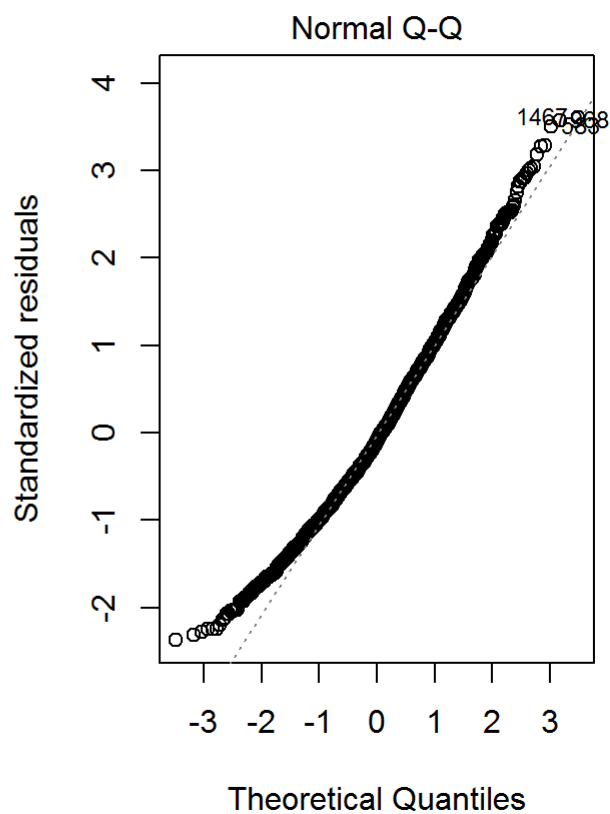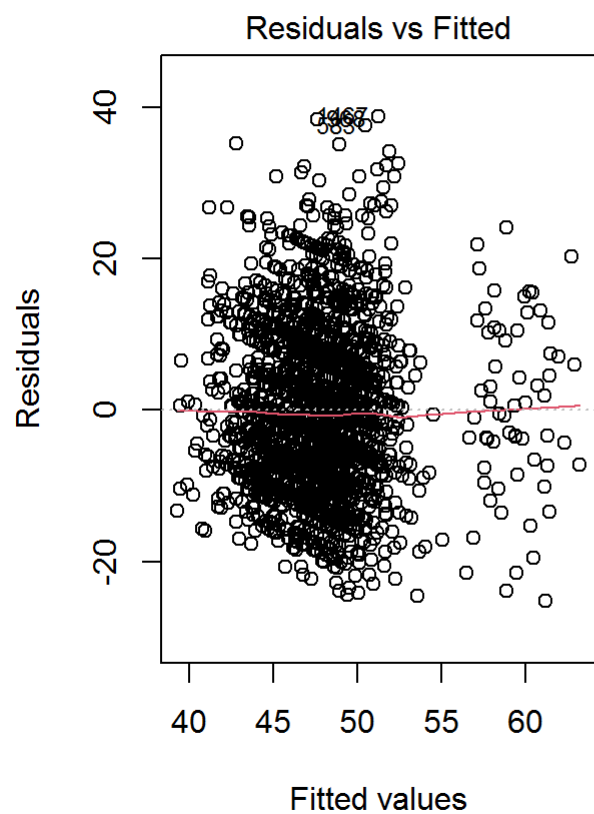
equal variance for linear regression of anxiety

```
summary(lianx)$r.squared
```

```
## [1] 0.08522988
```

The R^2(equals to r^2) here is 0.0852, which is far from 1, and the line is flat (which supposed to be linearly increasing to be a good fit), so this model is not a good fit. A better model is needed for fitting.

```r
library(car)
```

```
## Loading required package: carData
```

```
##
## Attaching package: 'car'
```

```
## The following object is masked from 'package:dplyr':
##
##     recode
```

```
## The following object is masked from 'package:purrr':
##
##     some
```

```
vif(lm(formula= SAS_total ~ Age+Sex+marital.status+child.rearing+education.Bachelor.or.higher.2_
Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.household.income.USD.mo
nth..1440 + Clinical.experience.m. + Frontline.working.duration.d.+Average.working.hours.shift+W
uhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1. + Working.wards.ch
anged.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.frontline,data = na
omit))
```

```
##                                                      Age
##                                                 7.708207
##                                                      Sex
##                                                 1.104120
##                                           marital.status
##                                                 3.075925
##                                             child.rearing
##                                                 3.340090
##            education.Bachelor.or.higher.2_Diploma1.
##                                                 1.179491
## Prodessional.title..Junior1.intermediate.and.senior0.
##                                                 1.865265
##            Monthly.household.income.USD.month..1440
##                                                 1.192672
##                                   Clinical.experience.m.
##                                                 7.674971
##                              Frontline.working.duration.d.
##                                                 1.058136
##                               Average.working.hours.shift
##                                                 1.152705
##                                 Wuhan.as.origin..ys1.
##                                                 1.219870
##                              Original.position..head.1.
##                                                 2.445412
##                                 Position.in.Wuhan...head.1.
##                                                 2.237491
##                                 Working.wards.changed.yes1
##                                                 1.135694
##                                           Prior.traning
##                                                 1.134466
##                                        Prior.experience
##                                                 1.186836
##             Willingness.to.participate.in.frontline
##                                                 1.016094
```

Transformation with log

model 1 (only log y)

```
log_anxiety1 = lm(formula= log1p(SAS_total) ~ Age+Sex+marital.status+child.rearing+education.Bac
helor.or.higher.2_Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.house
hold.income.USD.month..1440 + Clinical.experience.m. + Frontline.working.duration.d.+Average.wor
king.hours.shift+Wuhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1.
+ Working.wards.changed.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.f
rontline, data = naomit)
summary(log_anxiety1)
```

```
## 
## Call:
## lm(formula = log1p(SAS_total) ~ Age + Sex + marital.status +
##     child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline,
##     data = naomit)
## 
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.63688 -0.15030  0.00059  0.15986  0.61164
## 
## Coefficients:
##                                                        Estimate Std. Error
## (Intercept)                                           3.9206104  0.0711022
## Age                                                   0.0025027  0.0022147
## Sex                                                   0.0364333  0.0154122
## marital.status                                       -0.0288519  0.0176903
## child.rearing                                         0.0519170  0.0180538
## education.Bachelor.or.higher.2_Diploma1.              0.0084234  0.0129158
## Prodessional.title..Junior1.intermediate.and.senior0. 0.0106963  0.0153577
## Monthly.household.income.USD.month..1440             -0.0337062  0.0107977
## Clinical.experience.m.                               -0.0002500  0.0001745
## Frontline.working.duration.d.                         0.0007884  0.0003910
## Average.working.hours.shift                          -0.0005020  0.0027876
## Wuhan.as.origin..ys1.                                 0.0717173  0.0114458
## Original.position..head.1.                           -0.0431562  0.0259484
## Position.in.Wuhan...head.1.                           0.0563742  0.0310784
## Working.wards.changed.yes1                            0.0273818  0.0108503
## Prior.traning                                        -0.0431556  0.0136721
## Prior.experience                                      0.0036448  0.0109861
## Willingness.to.participate.in.frontline              -0.2018048  0.0282630
##                                                       t value Pr(>|t|)
## (Intercept)                                            55.140  < 2e-16 ***
## Age                                                     1.130  0.25860
## Sex                                                     2.364  0.01818 *
## marital.status                                         -1.631  0.10306
## child.rearing                                           2.876  0.00407 **
## education.Bachelor.or.higher.2_Diploma1.                0.652  0.51436
## Prodessional.title..Junior1.intermediate.and.senior0.   0.696  0.48621
## Monthly.household.income.USD.month..1440               -3.122  0.00182 **
## Clinical.experience.m.                                 -1.432  0.15226
## Frontline.working.duration.d.                           2.016  0.04392 *
## Average.working.hours.shift                            -0.180  0.85711
## Wuhan.as.origin..ys1.                                   6.266 4.53e-10 ***
## Original.position..head.1.                             -1.663  0.09644 .
## Position.in.Wuhan...head.1.                             1.814  0.06984 .
## Working.wards.changed.yes1                              2.524  0.01169 *
## Prior.traning                                          -3.156  0.00162 **
```
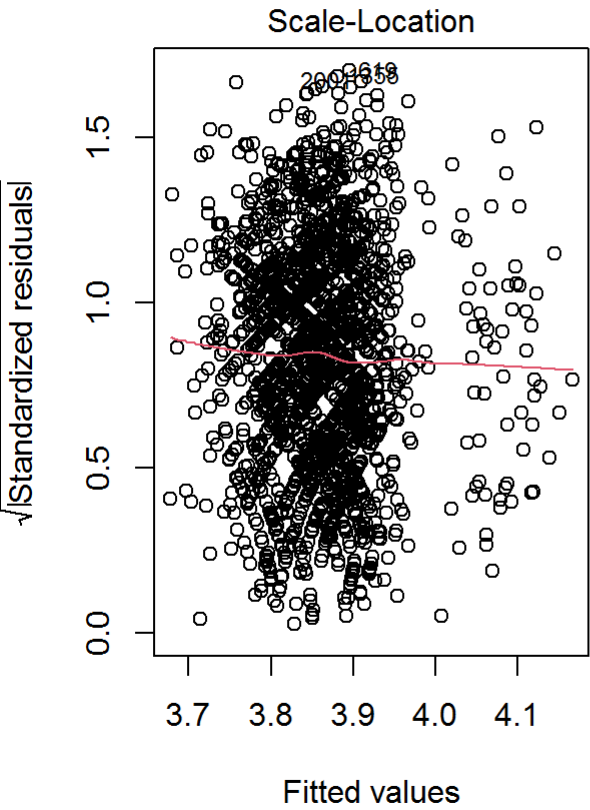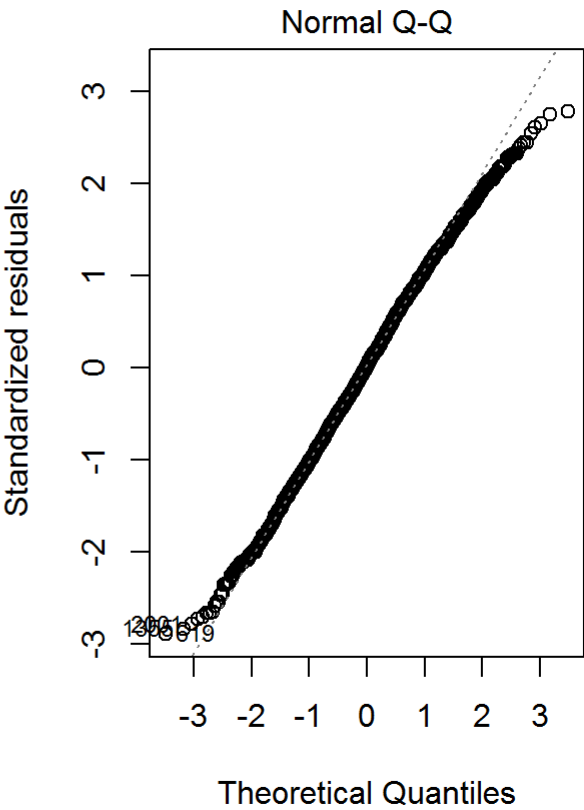
```
## Prior.experience                              0.332  0.74010
## Willingness.to.participate.in.frontline      -7.140 1.30e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2207 on 1996 degrees of freedom
## Multiple R-squared:  0.08072,    Adjusted R-squared:  0.07289
## F-statistic: 10.31 on 17 and 1996 DF,  p-value: < 2.2e-16
```

```
par(mfrow=c(1,2))
plot(log_anxiety1)
```

Residuals vs Fitted

Normal Q-Q

Scale-Location

Residuals vs Leverage

Cook's distance

####
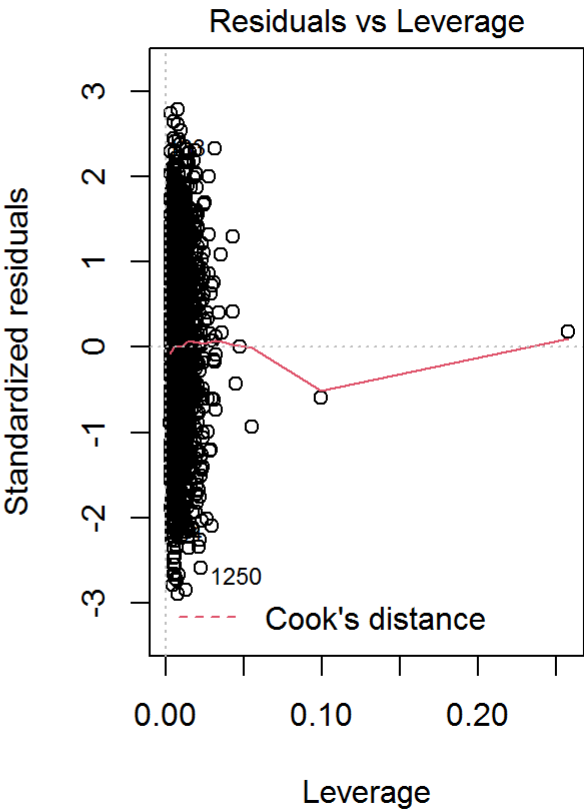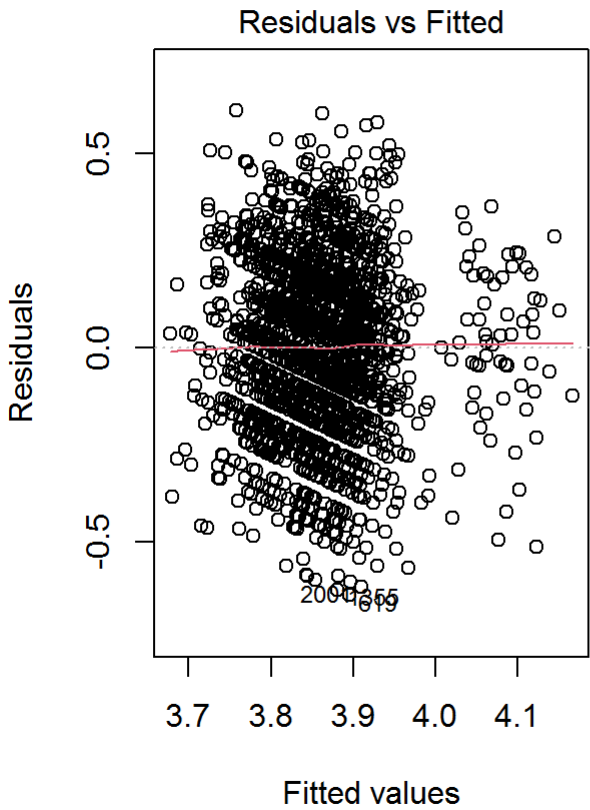
equal variance for log transformation of anxiety

```
summary(log_anxiety1)$r.squared
```

```
## [1] 0.08071963
```

```
round(exp(cbind(coef(log_anxiety1), confint(log_anxiety1)) - 1) * 100, 2)
```

```
##                                                          2.5 %   97.5 %
## (Intercept)                                    1855.26 1613.79 2132.87
## Age                                              36.88   36.72   37.04
## Sex                                              38.15   37.02   39.32
## marital.status                                   35.74   34.52   37.00
## child.rearing                                    38.75   37.40   40.14
## education.Bachelor.or.higher.2_Diploma1.         37.10   36.17   38.05
## Prodessional.title..Junior1.intermediate.and.senior0.  37.18   36.08   38.32
## Monthly.household.income.USD.month..1440         35.57   34.82   36.33
## Clinical.experience.m.                           36.78   36.77   36.79
## Frontline.working.duration.d.                    36.82   36.79   36.85
## Average.working.hours.shift                      36.77   36.57   36.97
## Wuhan.as.origin..ys1.                            39.52   38.65   40.42
## Original.position..head.1.                       35.23   33.49   37.07
## Position.in.Wuhan...head.1.                      38.92   36.62   41.37
## Working.wards.changed.yes1                       37.81   37.01   38.62
## Prior.traning                                    35.23   34.30   36.19
## Prior.experience                                 36.92   36.14   37.73
## Willingness.to.participate.in.frontline          30.07   28.44   31.78
```

BIC for log transformation of anxiety

```
log_anx_bic <- step(log_anxiety1,k=sqrt(nrow(naomit)))
```

```
## Start:  AIC=-5296.14
## log1p(SAS_total) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                                           Df Sum of Sq    RSS
## - Average.working.hours.shift                              1   0.00158 97.236
## - Prior.experience                                         1   0.00536 97.240
## - education.Bachelor.or.higher.2_Diploma1.                 1   0.02072 97.255
## - Prodessional.title..Junior1.intermediate.and.senior0.   1   0.02363 97.258
## - Age                                                      1   0.06221 97.296
## - Clinical.experience.m.                                   1   0.09992 97.334
## - marital.status                                           1   0.12958 97.364
## - Original.position..head.1.                               1   0.13475 97.369
## - Position.in.Wuhan...head.1.                              1   0.16029 97.395
## - Frontline.working.duration.d.                            1   0.19802 97.432
## - Sex                                                      1   0.27222 97.506
## - Working.wards.changed.yes1                               1   0.31024 97.545
## - child.rearing                                            1   0.40285 97.637
## - Monthly.household.income.USD.month..1440                 1   0.47470 97.709
## - Prior.traning                                            1   0.48536 97.720
## - Wuhan.as.origin..ys1.                                    1   1.91255 99.147
## <none>                                                                 97.234
## - Willingness.to.participate.in.frontline                  1   2.48361 99.718
##                                                           AIC
## - Average.working.hours.shift                            -5341.0
## - Prior.experience                                       -5340.9
## - education.Bachelor.or.higher.2_Diploma1.               -5340.6
## - Prodessional.title..Junior1.intermediate.and.senior0.  -5340.5
## - Age                                                    -5339.7
## - Clinical.experience.m.                                 -5339.0
## - marital.status                                         -5338.3
## - Original.position..head.1.                             -5338.2
## - Position.in.Wuhan...head.1.                            -5337.7
## - Frontline.working.duration.d.                          -5336.9
## - Sex                                                    -5335.4
## - Working.wards.changed.yes1                             -5334.6
## - child.rearing                                          -5332.7
## - Monthly.household.income.USD.month..1440               -5331.2
## - Prior.traning                                          -5331.0
## - Wuhan.as.origin..ys1.                                  -5301.8
## <none>                                                   -5296.1
## - Willingness.to.participate.in.frontline                -5290.2
##
## Step:  AIC=-5340.99
## log1p(SAS_total) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
```

```
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                      Df Sum of Sq    RSS
## - Prior.experience                                    1   0.00506 97.241
## - education.Bachelor.or.higher.2_Diploma1.            1   0.02246 97.258
## - Prodessional.title..Junior1.intermediate.and.senior0.  1   0.02351 97.259
## - Age                                                 1   0.06171 97.298
## - Clinical.experience.m.                              1   0.09902 97.335
## - marital.status                                      1   0.12957 97.365
## - Original.position..head.1.                          1   0.13662 97.372
## - Position.in.Wuhan...head.1.                         1   0.15878 97.395
## - Frontline.working.duration.d.                       1   0.19646 97.432
## - Sex                                                 1   0.27483 97.511
## - Working.wards.changed.yes1                          1   0.31450 97.550
## - child.rearing                                       1   0.40193 97.638
## - Monthly.household.income.USD.month..1440            1   0.47481 97.711
## - Prior.traning                                       1   0.48462 97.720
## - Wuhan.as.origin..ys1.                               1   1.92767 99.164
## <none>                                                          97.236
## - Willingness.to.participate.in.frontline             1   2.48244 99.718
##                                                           AIC
## - Prior.experience                                    -5385.8
## - education.Bachelor.or.higher.2_Diploma1.            -5385.4
## - Prodessional.title..Junior1.intermediate.and.senior0.  -5385.4
## - Age                                                 -5384.6
## - Clinical.experience.m.                              -5383.8
## - marital.status                                      -5383.2
## - Original.position..head.1.                          -5383.0
## - Position.in.Wuhan...head.1.                         -5382.6
## - Frontline.working.duration.d.                       -5381.8
## - Sex                                                 -5380.2
## - Working.wards.changed.yes1                          -5379.4
## - child.rearing                                       -5377.6
## - Monthly.household.income.USD.month..1440            -5376.1
## - Prior.traning                                       -5375.9
## - Wuhan.as.origin..ys1.                               -5346.3
## <none>                                                -5341.0
## - Willingness.to.participate.in.frontline             -5335.1
##
## Step:  AIC=-5385.76
## log1p(SAS_total) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Willingness.to.participate.in.frontline
##
##                                                      Df Sum of Sq    RSS
## - education.Bachelor.or.higher.2_Diploma1.            1   0.02115 97.262
## - Prodessional.title..Junior1.intermediate.and.senior0.  1   0.02313 97.264
```

```
## - Age                                            1    0.06238 97.303
## - Clinical.experience.m.                         1    0.09982 97.341
## - marital.status                                 1    0.12878 97.370
## - Original.position..head.1.                     1    0.13521 97.376
## - Position.in.Wuhan...head.1.                    1    0.15932 97.400
## - Frontline.working.duration.d.                  1    0.20149 97.442
## - Sex                                            1    0.27080 97.512
## - Working.wards.changed.yes1                      1    0.33530 97.576
## - child.rearing                                  1    0.40384 97.645
## - Monthly.household.income.USD.month..1440        1    0.47528 97.716
## - Prior.traning                                  1    0.50213 97.743
## - Wuhan.as.origin..ys1.                          1    1.92896 99.170
## <none>                                                        97.241
## - Willingness.to.participate.in.frontline        1    2.47821 99.719
##                                                          AIC
## - education.Bachelor.or.higher.2_Diploma1.              -5430.2
## - Prodessional.title..Junior1.intermediate.and.senior0. -5430.2
## - Age                                                   -5429.3
## - Clinical.experience.m.                                -5428.6
## - marital.status                                        -5428.0
## - Original.position..head.1.                            -5427.8
## - Position.in.Wuhan...head.1.                           -5427.3
## - Frontline.working.duration.d.                         -5426.5
## - Sex                                                   -5425.0
## - Working.wards.changed.yes1                            -5423.7
## - child.rearing                                         -5422.3
## - Monthly.household.income.USD.month..1440              -5420.8
## - Prior.traning                                         -5420.3
## - Wuhan.as.origin..ys1.                                 -5391.1
## <none>                                                  -5385.8
## - Willingness.to.participate.in.frontline               -5380.0
##
## Step:  AIC=-5430.2
## log1p(SAS_total) ~ Age + Sex + marital.status + child.rearing +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                        Df Sum of Sq    RSS
## - Prodessional.title..Junior1.intermediate.and.senior0. 1    0.01763 97.280
## - Age                                                   1    0.06491 97.327
## - Clinical.experience.m.                                1    0.10218 97.364
## - marital.status                                        1    0.12449 97.387
## - Original.position..head.1.                            1    0.13118 97.393
## - Position.in.Wuhan...head.1.                           1    0.15324 97.415
## - Frontline.working.duration.d.                         1    0.19893 97.461
## - Sex                                                   1    0.27683 97.539
## - Working.wards.changed.yes1                            1    0.32687 97.589
## - child.rearing                                         1    0.39885 97.661
## - Monthly.household.income.USD.month..1440              1    0.45544 97.718
## - Prior.traning                                         1    0.49334 97.755
## - Wuhan.as.origin..ys1.                                 1    2.09418 99.356
```

```
## <none>                                                      97.262
## - Willingness.to.participate.in.frontline            1   2.46959 99.732
##                                                                    AIC
## - Prodessional.title..Junior1.intermediate.and.senior0. -5474.7
## - Age                                                          -5473.7
## - Clinical.experience.m.                                       -5473.0
## - marital.status                                               -5472.5
## - Original.position..head.1.                                   -5472.4
## - Position.in.Wuhan...head.1.                                  -5471.9
## - Frontline.working.duration.d.                                -5471.0
## - Sex                                                          -5469.4
## - Working.wards.changed.yes1                                   -5468.3
## - child.rearing                                                -5466.8
## - Monthly.household.income.USD.month..1440                     -5465.7
## - Prior.traning                                                -5464.9
## - Wuhan.as.origin..ys1.                                        -5432.2
## <none>                                                         -5430.2
## - Willingness.to.participate.in.frontline                      -5424.6
##
## Step:  AIC=-5474.71
## log1p(SAS_total) ~ Age + Sex + marital.status + child.rearing +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq   RSS     AIC
## - Age                                         1   0.06112 97.341 -5518.3
## - marital.status                              1   0.12296 97.403 -5517.0
## - Clinical.experience.m.                      1   0.12714 97.407 -5517.0
## - Original.position..head.1.                  1   0.14369 97.423 -5516.6
## - Position.in.Wuhan...head.1.                 1   0.15206 97.432 -5516.4
## - Frontline.working.duration.d.               1   0.19741 97.477 -5515.5
## - Sex                                         1   0.28129 97.561 -5513.8
## - Working.wards.changed.yes1                  1   0.32446 97.604 -5512.9
## - child.rearing                               1   0.39199 97.672 -5511.5
## - Monthly.household.income.USD.month..1440    1   0.46832 97.748 -5509.9
## - Prior.traning                               1   0.49494 97.775 -5509.4
## <none>                                                    97.280 -5474.7
## - Wuhan.as.origin..ys1.                       1   2.22125 99.501 -5474.1
## - Willingness.to.participate.in.frontline     1   2.46906 99.749 -5469.1
##
## Step:  AIC=-5518.33
## log1p(SAS_total) ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq   RSS     AIC
## - Clinical.experience.m.                      1   0.08377 97.425 -5561.5
## - marital.status                              1   0.11246 97.453 -5560.9
## - Original.position..head.1.                  1   0.13960 97.480 -5560.3
## - Position.in.Wuhan...head.1.                 1   0.15809 97.499 -5559.9
```

```
## - Frontline.working.duration.d.                1  0.18876 97.530 -5559.3
## - Sex                                          1  0.25211 97.593 -5558.0
## - Working.wards.changed.yes1                    1  0.33151 97.672 -5556.4
## - child.rearing                                1  0.44047 97.781 -5554.1
## - Monthly.household.income.USD.month..1440      1  0.46411 97.805 -5553.6
## - Prior.traning                                1  0.48548 97.826 -5553.2
## <none>                                                    97.341 -5518.3
## - Wuhan.as.origin..ys1.                         1  2.21107 99.552 -5518.0
## - Willingness.to.participate.in.frontline       1  2.49050 99.831 -5512.3
##
## Step:  AIC=-5561.47
## log1p(SAS_total) ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.mont
h..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                           Df Sum of Sq   RSS     AIC
## - marital.status                          1  0.13341 97.558 -5603.6
## - Position.in.Wuhan...head.1.             1  0.16819 97.593 -5602.9
## - Frontline.working.duration.d.           1  0.17905 97.604 -5602.7
## - Original.position..head.1.              1  0.20431 97.629 -5602.1
## - Sex                                     1  0.21775 97.642 -5601.9
## - Working.wards.changed.yes1              1  0.32640 97.751 -5599.6
## - child.rearing                           1  0.36858 97.793 -5598.7
## - Prior.traning                           1  0.47218 97.897 -5596.6
## - Monthly.household.income.USD.month..1440 1  0.53401 97.959 -5595.3
## <none>                                               97.425 -5561.5
## - Wuhan.as.origin..ys1.                   1  2.25100 99.676 -5560.3
## - Willingness.to.participate.in.frontline 1  2.51292 99.938 -5555.1
##
## Step:  AIC=-5603.59
## log1p(SAS_total) ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                           Df Sum of Sq    RSS     AIC
## - Position.in.Wuhan...head.1.             1  0.17073  97.729 -5644.9
## - Frontline.working.duration.d.           1  0.18418  97.742 -5644.7
## - Original.position..head.1.              1  0.21258  97.771 -5644.1
## - Sex                                     1  0.22480  97.783 -5643.8
## - child.rearing                           1  0.27214  97.830 -5642.9
## - Working.wards.changed.yes1              1  0.32331  97.881 -5641.8
## - Prior.traning                           1  0.47964  98.038 -5638.6
## - Monthly.household.income.USD.month..1440 1  0.61269  98.171 -5635.9
## <none>                                                97.558 -5603.6
## - Wuhan.as.origin..ys1.                   1  2.25095  99.809 -5602.5
## - Willingness.to.participate.in.frontline 1  2.50970 100.068 -5597.3
##
## Step:  AIC=-5644.95
## log1p(SAS_total) ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
```

```
##
##                                               Df Sum of Sq      RSS      AIC
## - Original.position..head.1.                   1   0.05481   97.784 -5688.7
## - Sex                                          1   0.19235   97.921 -5685.9
## - Frontline.working.duration.d.                1   0.19916   97.928 -5685.7
## - child.rearing                                1   0.26696   97.996 -5684.3
## - Working.wards.changed.yes1                   1   0.34850   98.077 -5682.7
## - Prior.traning                                1   0.45407   98.183 -5680.5
## - Monthly.household.income.USD.month..1440     1   0.64927   98.378 -5676.5
## <none>                                                       97.729 -5644.9
## - Willingness.to.participate.in.frontline      1   2.51494  100.244 -5638.7
## - Wuhan.as.origin..ys1.                        1   2.68874  100.417 -5635.2
##
## Step:  AIC=-5688.7
## log1p(SAS_total) ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                               Df Sum of Sq      RSS      AIC
## - Frontline.working.duration.d.                1   0.18437   97.968 -5729.8
## - Sex                                          1   0.20291   97.986 -5729.4
## - child.rearing                                1   0.23045   98.014 -5728.8
## - Working.wards.changed.yes1                   1   0.36028   98.144 -5726.2
## - Prior.traning                                1   0.46615   98.250 -5724.0
## - Monthly.household.income.USD.month..1440     1   0.65492   98.438 -5720.1
## <none>                                                       97.784 -5688.7
## - Willingness.to.participate.in.frontline      1   2.53413  100.318 -5682.0
## - Wuhan.as.origin..ys1.                        1   2.84997  100.633 -5675.7
##
## Step:  AIC=-5729.78
## log1p(SAS_total) ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1 + Prior.traning +
##     Willingness.to.participate.in.frontline
##
##                                               Df Sum of Sq      RSS      AIC
## - Sex                                          1   0.18817   98.156 -5770.8
## - child.rearing                                1   0.24489   98.213 -5769.6
## - Working.wards.changed.yes1                   1   0.42436   98.392 -5766.0
## - Prior.traning                                1   0.49052   98.458 -5764.6
## - Monthly.household.income.USD.month..1440     1   0.74668   98.715 -5759.4
## <none>                                                       97.968 -5729.8
## - Willingness.to.participate.in.frontline      1   2.51471  100.483 -5723.6
## - Wuhan.as.origin..ys1.                        1   2.94668  100.915 -5715.0
##
## Step:  AIC=-5770.79
## log1p(SAS_total) ~ child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1 + Prior.traning +
##     Willingness.to.participate.in.frontline
##
##                                               Df Sum of Sq      RSS      AIC
## - child.rearing                                1   0.27373   98.430 -5810.1
## - Working.wards.changed.yes1                   1   0.35479   98.511 -5808.4
## - Prior.traning                                1   0.51196   98.668 -5805.2
## - Monthly.household.income.USD.month..1440     1   0.72428   98.880 -5800.9
```

```
## <none>                                                     98.156 -5770.8
## - Willingness.to.participate.in.frontline    1    2.47801 100.634 -5765.5
## - Wuhan.as.origin..ys1.                      1    3.09864 101.255 -5753.1
##
## Step:  AIC=-5810.06
## log1p(SAS_total) ~ Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1 + Prior.traning +
##     Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq     RSS     AIC
## - Working.wards.changed.yes1                1    0.34465  98.774 -5847.9
## - Prior.traning                            1    0.48557  98.915 -5845.0
## - Monthly.household.income.USD.month..1440  1    0.55870  98.989 -5843.5
## <none>                                                    98.430 -5810.1
## - Willingness.to.participate.in.frontline   1    2.50143 100.931 -5804.4
## - Wuhan.as.origin..ys1.                     1    3.09061 101.520 -5792.7
##
## Step:  AIC=-5847.9
## log1p(SAS_total) ~ Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Prior.traning + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq     RSS     AIC
## - Prior.traning                             1    0.41897  99.193 -5884.3
## - Monthly.household.income.USD.month..1440  1    0.65810  99.433 -5879.4
## <none>                                                    98.774 -5847.9
## - Willingness.to.participate.in.frontline   1    2.49890 101.273 -5842.5
## - Wuhan.as.origin..ys1.                     1    3.09720 101.872 -5830.6
##
## Step:  AIC=-5884.25
## log1p(SAS_total) ~ Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq     RSS     AIC
## - Monthly.household.income.USD.month..1440  1    0.7102  99.904 -5914.8
## <none>                                                   99.193 -5884.3
## - Willingness.to.participate.in.frontline   1    2.6005 101.794 -5877.0
## - Wuhan.as.origin..ys1.                     1    3.2190 102.412 -5864.8
##
## Step:  AIC=-5914.76
## log1p(SAS_total) ~ Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq     RSS     AIC
## <none>                                                   99.904 -5914.8
## - Willingness.to.participate.in.frontline   1    2.5072 102.411 -5909.7
## - Wuhan.as.origin..ys1.                     1    2.8748 102.778 -5902.5
```

```
# Step:  AIC=-5914.76
# log1p(SAS_total) ~ Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline
```

```
round(exp(cbind(coef(log_anx_bic), confint(log_anx_bic)) - 1) * 100, 2)
```

```
##                                              2.5 %  97.5 %
## (Intercept)                              2017.63 1904.82 2137.11
## Wuhan.as.origin..ys1.                      39.85   39.04   40.68
## Willingness.to.participate.in.frontline   30.06   28.43   31.79
```

```
summary(log_anx_bic)
```

```
##
## Call:
## lm(formula = log1p(SAS_total) ~ Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontli
ne,
##      data = naomit)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.6244 -0.1449  0.0040  0.1605  0.6283
##
## Coefficients:
##                                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)                                4.00451    0.02934 136.500  < 2e-16
## Wuhan.as.origin..ys1.                      0.07989    0.01050   7.607 4.28e-14
## Willingness.to.participate.in.frontline -0.20185    0.02841  -7.104 1.67e-12
##
## (Intercept)                             ***
## Wuhan.as.origin..ys1.                   ***
## Willingness.to.participate.in.frontline ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2229 on 2011 degrees of freedom
## Multiple R-squared:  0.05548,    Adjusted R-squared:  0.05454
## F-statistic: 59.06 on 2 and 2011 DF,  p-value: < 2.2e-16
```

AIC for log transformation of anxiety

```
log_anx_aic <-step(log_anxiety1,k =2)
```

```
## Start:  AIC=-6067.94
## log1p(SAS_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                            Df Sum of Sq    RSS
## - Average.working.hours.shift                               1   0.00158 97.236
## - Prior.experience                                          1   0.00536 97.240
## - education.Bachelor.or.higher.2_Diploma1.                  1   0.02072 97.255
## - Prodessional.title..Junior1.intermediate.and.senior0.    1   0.02363 97.258
## - Age                                                       1   0.06221 97.296
## <none>                                                                  97.234
## - Clinical.experience.m.                                    1   0.09992 97.334
## - marital.status                                            1   0.12958 97.364
## - Original.position..head.1.                                1   0.13475 97.369
## - Position.in.Wuhan...head.1.                               1   0.16029 97.395
## - Frontline.working.duration.d.                             1   0.19802 97.432
## - Sex                                                       1   0.27222 97.506
## - Working.wards.changed.yes1                                1   0.31024 97.545
## - child.rearing                                             1   0.40285 97.637
## - Monthly.household.income.USD.month..1440                  1   0.47470 97.709
## - Prior.traning                                             1   0.48536 97.720
## - Wuhan.as.origin..ys1.                                     1   1.91255 99.147
## - Willingness.to.participate.in.frontline                   1   2.48361 99.718
##                                                           AIC
## - Average.working.hours.shift                           -6069.9
## - Prior.experience                                      -6069.8
## - education.Bachelor.or.higher.2_Diploma1.              -6069.5
## - Prodessional.title..Junior1.intermediate.and.senior0. -6069.5
## - Age                                                   -6068.7
## <none>                                                  -6067.9
## - Clinical.experience.m.                                -6067.9
## - marital.status                                        -6067.3
## - Original.position..head.1.                            -6067.2
## - Position.in.Wuhan...head.1.                           -6066.6
## - Frontline.working.duration.d.                         -6065.8
## - Sex                                                   -6064.3
## - Working.wards.changed.yes1                            -6063.5
## - child.rearing                                         -6061.6
## - Monthly.household.income.USD.month..1440              -6060.1
## - Prior.traning                                         -6059.9
## - Wuhan.as.origin..ys1.                                 -6030.7
## - Willingness.to.participate.in.frontline               -6019.1
##
## Step:  AIC=-6069.91
## log1p(SAS_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
```

```
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - Prior.experience                                        1   0.00506 97.241
## - education.Bachelor.or.higher.2_Diploma1.                1   0.02246 97.258
## - Prodessional.title..Junior1.intermediate.and.senior0.   1   0.02351 97.259
## - Age                                                     1   0.06171 97.298
## <none>                                                                97.236
## - Clinical.experience.m.                                  1   0.09902 97.335
## - marital.status                                          1   0.12957 97.365
## - Original.position..head.1.                              1   0.13662 97.372
## - Position.in.Wuhan...head.1.                             1   0.15878 97.395
## - Frontline.working.duration.d.                           1   0.19646 97.432
## - Sex                                                     1   0.27483 97.511
## - Working.wards.changed.yes1                              1   0.31450 97.550
## - child.rearing                                           1   0.40193 97.638
## - Monthly.household.income.USD.month..1440                1   0.47481 97.711
## - Prior.traning                                           1   0.48462 97.720
## - Wuhan.as.origin..ys1.                                   1   1.92767 99.164
## - Willingness.to.participate.in.frontline                 1   2.48244 99.718
##                                                                       AIC
## - Prior.experience                                       -6071.8
## - education.Bachelor.or.higher.2_Diploma1.               -6071.4
## - Prodessional.title..Junior1.intermediate.and.senior0.  -6071.4
## - Age                                                    -6070.6
## <none>                                                   -6069.9
## - Clinical.experience.m.                                 -6069.9
## - marital.status                                         -6069.2
## - Original.position..head.1.                             -6069.1
## - Position.in.Wuhan...head.1.                            -6068.6
## - Frontline.working.duration.d.                          -6067.8
## - Sex                                                    -6066.2
## - Working.wards.changed.yes1                             -6065.4
## - child.rearing                                          -6063.6
## - Monthly.household.income.USD.month..1440               -6062.1
## - Prior.traning                                          -6061.9
## - Wuhan.as.origin..ys1.                                  -6032.4
## - Willingness.to.participate.in.frontline                -6021.1
##
## Step:  AIC=-6071.8
## log1p(SAS_total) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - education.Bachelor.or.higher.2_Diploma1.                1   0.02115 97.262
## - Prodessional.title..Junior1.intermediate.and.senior0.   1   0.02313 97.264
```

```
## - Age                                              1    0.06238 97.303
## <none>                                                          97.241
## - Clinical.experience.m.                            1    0.09982 97.341
## - marital.status                                    1    0.12878 97.370
## - Original.position..head.1.                        1    0.13521 97.376
## - Position.in.Wuhan...head.1.                       1    0.15932 97.400
## - Frontline.working.duration.d.                     1    0.20149 97.442
## - Sex                                               1    0.27080 97.512
## - Working.wards.changed.yes1                        1    0.33530 97.576
## - child.rearing                                     1    0.40384 97.645
## - Monthly.household.income.USD.month..1440          1    0.47528 97.716
## - Prior.traning                                     1    0.50213 97.743
## - Wuhan.as.origin..ys1.                             1    1.92896 99.170
## - Willingness.to.participate.in.frontline           1    2.47821 99.719
##                                                             AIC
## - education.Bachelor.or.higher.2_Diploma1.               -6073.4
## - Prodessional.title..Junior1.intermediate.and.senior0.  -6073.3
## - Age                                                    -6072.5
## <none>                                                   -6071.8
## - Clinical.experience.m.                                 -6071.7
## - marital.status                                         -6071.1
## - Original.position..head.1.                             -6071.0
## - Position.in.Wuhan...head.1.                            -6070.5
## - Frontline.working.duration.d.                          -6069.6
## - Sex                                                    -6068.2
## - Working.wards.changed.yes1                             -6066.9
## - child.rearing                                          -6065.5
## - Monthly.household.income.USD.month..1440               -6064.0
## - Prior.traning                                          -6063.4
## - Wuhan.as.origin..ys1.                                  -6034.2
## - Willingness.to.participate.in.frontline                -6023.1
##
## Step:  AIC=-6073.36
## log1p(SAS_total) ~ Age + Sex + marital.status + child.rearing +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                     Df Sum of Sq    RSS
## - Prodessional.title..Junior1.intermediate.and.senior0. 1  0.01763 97.280
## - Age                                               1    0.06491 97.327
## <none>                                                          97.262
## - Clinical.experience.m.                            1    0.10218 97.364
## - marital.status                                    1    0.12449 97.387
## - Original.position..head.1.                        1    0.13118 97.393
## - Position.in.Wuhan...head.1.                       1    0.15324 97.415
## - Frontline.working.duration.d.                     1    0.19893 97.461
## - Sex                                               1    0.27683 97.539
## - Working.wards.changed.yes1                        1    0.32687 97.589
## - child.rearing                                     1    0.39885 97.661
## - Monthly.household.income.USD.month..1440          1    0.45544 97.718
## - Prior.traning                                     1    0.49334 97.755
```

```
## - Wuhan.as.origin..ys1.                                     1    2.09418 99.356
## - Willingness.to.participate.in.frontline                   1    2.46959 99.732
##                                                                       AIC
## - Prodessional.title..Junior1.intermediate.and.senior0. -6075.0
## - Age                                                    -6074.0
## <none>                                                   -6073.4
## - Clinical.experience.m.                                 -6073.3
## - marital.status                                         -6072.8
## - Original.position..head.1.                             -6072.7
## - Position.in.Wuhan...head.1.                            -6072.2
## - Frontline.working.duration.d.                          -6071.2
## - Sex                                                    -6069.6
## - Working.wards.changed.yes1                             -6068.6
## - child.rearing                                          -6067.1
## - Monthly.household.income.USD.month..1440               -6066.0
## - Prior.traning                                          -6065.2
## - Wuhan.as.origin..ys1.                                  -6032.5
## - Willingness.to.participate.in.frontline                -6024.9
##
## Step:   AIC=-6075
## log1p(SAS_total) ~ Age + Sex + marital.status + child.rearing +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS     AIC
## - Age                                         1   0.06112 97.341 -6075.7
## <none>                                                    97.280 -6075.0
## - marital.status                              1   0.12296 97.403 -6074.5
## - Clinical.experience.m.                      1   0.12714 97.407 -6074.4
## - Original.position..head.1.                  1   0.14369 97.423 -6074.0
## - Position.in.Wuhan...head.1.                 1   0.15206 97.432 -6073.9
## - Frontline.working.duration.d.               1   0.19741 97.477 -6072.9
## - Sex                                         1   0.28129 97.561 -6071.2
## - Working.wards.changed.yes1                  1   0.32446 97.604 -6070.3
## - child.rearing                               1   0.39199 97.672 -6068.9
## - Monthly.household.income.USD.month..1440    1   0.46832 97.748 -6067.3
## - Prior.traning                               1   0.49494 97.775 -6066.8
## - Wuhan.as.origin..ys1.                       1   2.22125 99.501 -6031.5
## - Willingness.to.participate.in.frontline     1   2.46906 99.749 -6026.5
##
## Step:   AIC=-6075.73
## log1p(SAS_total) ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS     AIC
## - Clinical.experience.m.                      1   0.08377 97.425 -6076.0
## <none>                                                    97.341 -6075.7
## - marital.status                              1   0.11246 97.453 -6075.4
## - Original.position..head.1.                  1   0.13960 97.480 -6074.8
```

```
## - Position.in.Wuhan...head.1.                    1   0.15809 97.499 -6074.5
## - Frontline.working.duration.d.                  1   0.18876 97.530 -6073.8
## - Sex                                            1   0.25211 97.593 -6072.5
## - Working.wards.changed.yes1                     1   0.33151 97.672 -6070.9
## - child.rearing                                  1   0.44047 97.781 -6068.6
## - Monthly.household.income.USD.month..1440       1   0.46411 97.805 -6068.2
## - Prior.traning                                  1   0.48548 97.826 -6067.7
## - Wuhan.as.origin..ys1.                          1   2.21107 99.552 -6032.5
## - Willingness.to.participate.in.frontline        1   2.49050 99.831 -6026.9
##
## Step:  AIC=-6076
## log1p(SAS_total) ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.mont
h..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                               Df Sum of Sq    RSS     AIC
## <none>                                                     97.425 -6076.0
## - marital.status                              1   0.13341 97.558 -6075.2
## - Position.in.Wuhan...head.1.                 1   0.16819 97.593 -6074.5
## - Frontline.working.duration.d.               1   0.17905 97.604 -6074.3
## - Original.position..head.1.                  1   0.20431 97.629 -6073.8
## - Sex                                         1   0.21775 97.642 -6073.5
## - Working.wards.changed.yes1                  1   0.32640 97.751 -6071.3
## - child.rearing                              1   0.36858 97.793 -6070.4
## - Prior.traning                              1   0.47218 97.897 -6068.3
## - Monthly.household.income.USD.month..1440    1   0.53401 97.959 -6067.0
## - Wuhan.as.origin..ys1.                       1   2.25100 99.676 -6032.0
## - Willingness.to.participate.in.frontline     1   2.51292 99.938 -6026.7
```

```
# Step:  AIC=-6076
# log1p(SAS_total) ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.month..
1440 + Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +  Pos
ition.in.Wuhan...head.1. + Working.wards.changed.yes1 + Prior.traning + Willingness.to.participa
te.in.frontline
```

```
summary(log_anx_aic)
```

```
##
## Call:
## lm(formula = log1p(SAS_total) ~ Sex + marital.status + child.rearing +
##     Monthly.household.income.USD.month..1440 + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline,
##     data = naomit)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.65886 -0.14988  0.00125  0.16005  0.61387
##
## Coefficients:
##                                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)                              3.9979465  0.0347042 115.201  < 2e-16
## Sex                                      0.0318280  0.0150465   2.115 0.034527
## marital.status                          -0.0290392  0.0175386  -1.656 0.097934
## child.rearing                            0.0472054  0.0171525   2.752 0.005975
## Monthly.household.income.USD.month..1440 -0.0348555  0.0105220  -3.313 0.000941
## Frontline.working.duration.d.            0.0007443  0.0003880   1.918 0.055236
## Wuhan.as.origin..ys1.                    0.0745286  0.0109582   6.801 1.37e-11
## Original.position..head.1.              -0.0512688  0.0250211  -2.049 0.040590
## Position.in.Wuhan...head.1.              0.0573945  0.0308730   1.859 0.063166
## Working.wards.changed.yes1               0.0270887  0.0104596   2.590 0.009672
## Prior.traning                           -0.0404098  0.0129728  -3.115 0.001866
## Willingness.to.participate.in.frontline -0.2026068  0.0281946  -7.186 9.37e-13
##
## (Intercept)                             ***
## Sex                                     *
## marital.status                          .
## child.rearing                           **
## Monthly.household.income.USD.month..1440 ***
## Frontline.working.duration.d.           .
## Wuhan.as.origin..ys1.                   ***
## Original.position..head.1.              *
## Position.in.Wuhan...head.1.             .
## Working.wards.changed.yes1              **
## Prior.traning                           **
## Willingness.to.participate.in.frontline ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2206 on 2002 degrees of freedom
## Multiple R-squared:  0.07892,    Adjusted R-squared:  0.07386
## F-statistic: 15.59 on 11 and 2002 DF,  p-value: < 2.2e-16
```

```
round(exp(cbind(coef(log_anx_aic), confint(log_anx_aic)) - 1) * 100, 2)
```

```
##                                             2.5 %  97.5 %
## (Intercept)                           2004.43 1872.55 2145.61
## Sex                                     37.98   36.87   39.12
## marital.status                          35.74   34.53   36.99
## child.rearing                           38.57   37.29   39.89
## Monthly.household.income.USD.month..1440 35.53   34.80   36.27
## Frontline.working.duration.d.           36.82   36.79   36.84
## Wuhan.as.origin..ys1.                   39.63   38.79   40.50
## Original.position..head.1.              34.95   33.28   36.71
## Position.in.Wuhan...head.1.             38.96   36.67   41.39
## Working.wards.changed.yes1              37.80   37.03   38.58
## Prior.traning                           35.33   34.44   36.24
## Willingness.to.participate.in.frontline 30.04   28.43   31.75
```

ORDINAL LOGISTIC REGRESSION

Since the anxiety is a group of ordered variables ranging no anxiety, mild anxiety, moderate anxiety to severe anxiety, so we choose to use ordinal logistic regression.

```r
library(foreign)
library(ggplot2)
library(MASS)
```

```
##
## Attaching package: 'MASS'
```

```
## The following object is masked from 'package:dplyr':
##
##     select
```

```r
library(Hmisc)
```

```
## Loading required package: lattice
```

```
## Loading required package: Formula
```

```
##
## Attaching package: 'Hmisc'
```

```
## The following objects are masked from 'package:dplyr':
##
##     src, summarize
```

```
## The following objects are masked from 'package:base':
##
##     format.pval, units
```

```
library(reshape2)
```

```
##
## Attaching package: 'reshape2'
```

```
## The following object is masked from 'package:tidyr':
##
##     smiths
```

```
anx.polr=polr(factor(anx_group)~Age+Sex+marital.status+child.rearing+education.Bachelor.or.highe
r.2_Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.household.income.US
D.month..1440  + Clinical.experience.m.+ Frontline.working.duration.d.+Average.working.hours.shi
ft+Wuhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1. + Working.ward
s.changed.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.frontline,data
= naomit)
summary(anx.polr)
```

```
##
## Re-fitting to get Hessian
```

```
## Call:
## polr(formula = factor(anx_group) ~ Age + Sex + marital.status +
##     child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline,
##     data = naomit)
##
## Coefficients:
##                                                        Value Std. Error
## Age                                                0.0009802   0.020143
## Sex                                               -0.0591379   0.136961
## marital.status                                     0.0095913   0.156582
## child.rearing                                     -0.0574890   0.160258
## education.Bachelor.or.higher.2_Diploma1.           0.1480262   0.115553
## Prodessional.title..Junior1.intermediate.and.senior0.  0.2210558   0.136140
## Monthly.household.income.USD.month..1440           0.1150663   0.096727
## Clinical.experience.m.                             0.0003360   0.001579
## Frontline.working.duration.d.                     -0.0023008   0.003484
## Average.working.hours.shift                        0.0219570   0.025081
## Wuhan.as.origin..ys1.                             -0.4272717   0.103740
## Original.position..head.1.                         0.1184618   0.239007
## Position.in.Wuhan...head.1.                        0.0753763   0.285434
## Working.wards.changed.yes1                        -0.2143060   0.096352
## Prior.traning                                      0.0375601   0.122992
## Prior.experience                                  -0.0728831   0.097864
## Willingness.to.participate.in.frontline            0.1409789   0.255157
##                                                    t value
## Age                                                0.04866
## Sex                                               -0.43179
## marital.status                                     0.06125
## child.rearing                                     -0.35873
## education.Bachelor.or.higher.2_Diploma1.           1.28102
## Prodessional.title..Junior1.intermediate.and.senior0.  1.62374
## Monthly.household.income.USD.month..1440           1.18960
## Clinical.experience.m.                             0.21276
## Frontline.working.duration.d.                     -0.66042
## Average.working.hours.shift                        0.87544
## Wuhan.as.origin..ys1.                             -4.11867
## Original.position..head.1.                         0.49564
## Position.in.Wuhan...head.1.                        0.26408
## Working.wards.changed.yes1                         -2.22420
## Prior.traning                                      0.30539
## Prior.experience                                  -0.74474
## Willingness.to.participate.in.frontline            0.55252
##
## Intercepts:
##                              Value    Std. Error t value
## mild anxiety|moderate anxiety -0.6474   0.6472     -1.0002
## moderate anxiety|no anxiety   -0.1357   0.6471     -0.2097
```

```
## no anxiety|severe anxiety        3.7614  0.6587      5.7106
##
## Residual Deviance: 4087.832
## AIC: 4127.832
```

p-value for model 1

```
(ptable1 <- coef(summary(anx.polr)))
```

```
##
## Re-fitting to get Hessian
```

```
##                                                             Value  Std. Error
## Age                                                  0.0009802084 0.020143298
## Sex                                                 -0.0591378963 0.136960911
## marital.status                                       0.0095913355 0.156581924
## child.rearing                                       -0.0574890441 0.160257666
## education.Bachelor.or.higher.2_Diploma1.             0.1480262497 0.115553225
## Prodessional.title..Junior1.intermediate.and.senior0. 0.2210557502 0.136139694
## Monthly.household.income.USD.month..1440             0.1150663343 0.096726606
## Clinical.experience.m.                               0.0003360291 0.001579359
## Frontline.working.duration.d.                       -0.0023007630 0.003483787
## Average.working.hours.shift                          0.0219569875 0.025081203
## Wuhan.as.origin..ys1.                               -0.4272716590 0.103740257
## Original.position..head.1.                           0.1184618457 0.239006820
## Position.in.Wuhan...head.1.                          0.0753762551 0.285434371
## Working.wards.changed.yes1                          -0.2143059983 0.096351882
## Prior.traning                                        0.0375601161 0.122991881
## Prior.experience                                    -0.0728830777 0.097863680
## Willingness.to.participate.in.frontline              0.1409789412 0.255157193
## mild anxiety|moderate anxiety                       -0.6473606724 0.647245476
## moderate anxiety|no anxiety                         -0.1356859888 0.647137119
## no anxiety|severe anxiety                            3.7614417470 0.658681783
##                                                            t value
## Age                                                     0.04866176
## Sex                                                    -0.43178667
## marital.status                                          0.06125442
## child.rearing                                          -0.35872882
## education.Bachelor.or.higher.2_Diploma1.                1.28102222
## Prodessional.title..Junior1.intermediate.and.senior0.   1.62374209
## Monthly.household.income.USD.month..1440                1.18960376
## Clinical.experience.m.                                  0.21276305
## Frontline.working.duration.d.                          -0.66042011
## Average.working.hours.shift                             0.87543598
## Wuhan.as.origin..ys1.                                  -4.11866783
## Original.position..head.1.                              0.49564211
## Position.in.Wuhan...head.1.                             0.26407561
## Working.wards.changed.yes1                             -2.22420148
## Prior.traning                                           0.30538696
## Prior.experience                                       -0.74474082
## Willingness.to.participate.in.frontline                 0.55251800
## mild anxiety|moderate anxiety                          -1.00017798
## moderate anxiety|no anxiety                            -0.20967116
## no anxiety|severe anxiety                               5.71055986
```

```
p1 <- pnorm(abs(ptable1[, "t value"]), lower.tail = FALSE) * 2
(ptable1 <- cbind(ptable1, "p value" = p1))
```

```
##                                                            Value  Std. Error
## Age                                                   0.0009802084 0.020143298
## Sex                                                  -0.0591378963 0.136960911
## marital.status                                        0.0095913355 0.156581924
## child.rearing                                        -0.0574890441 0.160257666
## education.Bachelor.or.higher.2_Diploma1.              0.1480262497 0.115553225
## Prodessional.title..Junior1.intermediate.and.senior0. 0.2210557502 0.136139694
## Monthly.household.income.USD.month..1440              0.1150663343 0.096726606
## Clinical.experience.m.                                0.0003360291 0.001579359
## Frontline.working.duration.d.                        -0.0023007630 0.003483787
## Average.working.hours.shift                           0.0219569875 0.025081203
## Wuhan.as.origin..ys1.                                -0.4272716590 0.103740257
## Original.position..head.1.                            0.1184618457 0.239006820
## Position.in.Wuhan...head.1.                           0.0753762551 0.285434371
## Working.wards.changed.yes1                           -0.2143059983 0.096351882
## Prior.traning                                         0.0375601161 0.122991881
## Prior.experience                                     -0.0728830777 0.097863680
## Willingness.to.participate.in.frontline               0.1409789412 0.255157193
## mild anxiety|moderate anxiety                        -0.6473606724 0.647245476
## moderate anxiety|no anxiety                          -0.1356859888 0.647137119
## no anxiety|severe anxiety                             3.7614417470 0.658681783
##                                                          t value      p value
## Age                                                   0.04866176 9.611888e-01
## Sex                                                  -0.43178667 6.658965e-01
## marital.status                                        0.06125442 9.511566e-01
## child.rearing                                        -0.35872882 7.197980e-01
## education.Bachelor.or.higher.2_Diploma1.              1.28102222 2.001859e-01
## Prodessional.title..Junior1.intermediate.and.senior0. 1.62374209 1.044309e-01
## Monthly.household.income.USD.month..1440              1.18960376 2.342022e-01
## Clinical.experience.m.                                0.21276305 8.315118e-01
## Frontline.working.duration.d.                        -0.66042011 5.089843e-01
## Average.working.hours.shift                           0.87543598 3.813367e-01
## Wuhan.as.origin..ys1.                                -4.11866783 3.810690e-05
## Original.position..head.1.                            0.49564211 6.201469e-01
## Position.in.Wuhan...head.1.                           0.26407561 7.917217e-01
## Working.wards.changed.yes1                           -2.22420148 2.613489e-02
## Prior.traning                                         0.30538696 7.600715e-01
## Prior.experience                                     -0.74474082 4.564284e-01
## Willingness.to.participate.in.frontline               0.55251800 5.805935e-01
## mild anxiety|moderate anxiety                        -1.00017798 3.172244e-01
## moderate anxiety|no anxiety                          -0.20967116 8.339243e-01
## no anxiety|severe anxiety                             5.71055986 1.126051e-08
```

CI

```
anx.ci <- confint(anx.polr)
```

```
## Waiting for profiling to be done...
```

```
##
## Re-fitting to get Hessian
```

OR & CI

```
exp(cbind(OR = coef(anx.polr), anx.ci))
```

```
##                                                              OR      2.5 %
## Age                                                    1.0009807 0.9624563
## Sex                                                    0.9425768 0.7194263
## marital.status                                         1.0096375 0.7433764
## child.rearing                                          0.9441322 0.6884937
## education.Bachelor.or.higher.2_Diploma1.               1.1595433 0.9240020
## Prodessional.title..Junior1.intermediate.and.senior0. 1.2473930 0.9549845
## Monthly.household.income.USD.month..1440               1.1219479 0.9283070
## Clinical.experience.m.                                 1.0003361 0.9972351
## Frontline.working.duration.d.                          0.9977019 0.9909152
## Average.working.hours.shift                            1.0221998 0.9733011
## Wuhan.as.origin..ys1.                                  0.6522863 0.5317843
## Original.position..head.1.                             1.1257639 0.7077513
## Position.in.Wuhan...head.1.                            1.0782898 0.6155976
## Working.wards.changed.yes1                             0.8071014 0.6682200
## Prior.traning                                          1.0382744 0.8150326
## Prior.experience                                       0.9297095 0.7674593
## Willingness.to.participate.in.frontline                1.1514004 0.6917621
##                                                          97.5 %
## Age                                                    1.0417156
## Sex                                                    1.2310552
## marital.status                                         1.3739639
## child.rearing                                          1.2909616
## education.Bachelor.or.higher.2_Diploma1.               1.4536716
## Prodessional.title..Junior1.intermediate.and.senior0. 1.6287752
## Monthly.household.income.USD.month..1440               1.3564182
## Clinical.experience.m.                                 1.0034218
## Frontline.working.duration.d.                          1.0047271
## Average.working.hours.shift                            1.0738954
## Wuhan.as.origin..ys1.                                  0.7987269
## Original.position..head.1.                             1.8080119
## Position.in.Wuhan...head.1.                            1.8866941
## Working.wards.changed.yes1                             0.9749599
## Prior.traning                                          1.3202141
## Prior.experience                                       1.1264077
## Willingness.to.participate.in.frontline                1.8873326
```

BIC for ordinal

```
or_anx_bic <- step(anx.polr,k=sqrt(nrow(naomit)))
```

```
## Start:   AIC=4985.38
## factor(anx_group) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                                         Df   AIC
## - Age                                                    1 4940.5
## - marital.status                                         1 4940.5
## - Clinical.experience.m.                                 1 4940.6
## - Position.in.Wuhan...head.1.                            1 4940.6
## - Prior.traning                                          1 4940.6
## - child.rearing                                          1 4940.6
## - Sex                                                    1 4940.7
## - Original.position..head.1.                             1 4940.8
## - Willingness.to.participate.in.frontline                1 4940.8
## - Frontline.working.duration.d.                          1 4940.9
## - Prior.experience                                       1 4941.1
## - Average.working.hours.shift                            1 4941.3
## - Monthly.household.income.USD.month..1440               1 4941.9
## - education.Bachelor.or.higher.2_Diploma1.               1 4942.1
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4943.1
## - Working.wards.changed.yes1                             1 4945.4
## - Wuhan.as.origin..ys1.                                  1 4957.7
## <none>                                                     4985.4
##
## Step:   AIC=4940.51
## factor(anx_group) ~ Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Dip
loma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                         Df   AIC
## - marital.status                                         1 4895.6
## - Position.in.Wuhan...head.1.                            1 4895.7
## - Prior.traning                                          1 4895.7
## - child.rearing                                          1 4895.8
## - Sex                                                    1 4895.8
## - Clinical.experience.m.                                 1 4895.9
## - Original.position..head.1.                             1 4895.9
## - Willingness.to.participate.in.frontline                1 4895.9
## - Frontline.working.duration.d.                          1 4896.1
## - Prior.experience                                       1 4896.2
## - Average.working.hours.shift                            1 4896.4
## - Monthly.household.income.USD.month..1440               1 4897.0
```

```
## - education.Bachelor.or.higher.2_Diploma1.              1 4897.3
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4898.3
## - Working.wards.changed.yes1                             1 4900.6
## - Wuhan.as.origin..ys1.                                  1 4912.9
## <none>                                                     4940.5
##
## Step:  AIC=4895.64
## factor(anx_group) ~ Sex + child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                         Df    AIC
## - Position.in.Wuhan...head.1.                            1 4850.8
## - Prior.traning                                          1 4850.9
## - Sex                                                    1 4851.0
## - child.rearing                                          1 4851.0
## - Clinical.experience.m.                                 1 4851.0
## - Original.position..head.1.                             1 4851.0
## - Willingness.to.participate.in.frontline                1 4851.1
## - Frontline.working.duration.d.                          1 4851.2
## - Prior.experience                                       1 4851.3
## - Average.working.hours.shift                            1 4851.5
## - Monthly.household.income.USD.month..1440               1 4852.2
## - education.Bachelor.or.higher.2_Diploma1.               1 4852.4
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4853.4
## - Working.wards.changed.yes1                             1 4855.7
## - Wuhan.as.origin..ys1.                                  1 4868.0
## <none>                                                     4895.6
##
## Step:  AIC=4850.83
## factor(anx_group) ~ Sex + child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                         Df    AIC
## - Prior.traning                                          1 4806.1
## - child.rearing                                          1 4806.2
## - Sex                                                    1 4806.2
## - Clinical.experience.m.                                 1 4806.2
## - Willingness.to.participate.in.frontline                1 4806.3
## - Frontline.working.duration.d.                          1 4806.4
## - Prior.experience                                       1 4806.5
## - Average.working.hours.shift                            1 4806.8
## - Original.position..head.1.                             1 4806.9
## - Monthly.household.income.USD.month..1440               1 4807.4
## - education.Bachelor.or.higher.2_Diploma1.               1 4807.6
```

```
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4808.6
## - Working.wards.changed.yes1                              1 4810.9
## - Wuhan.as.origin..ys1.                                   1 4823.6
## <none>                                                      4850.8
##
## Step:  AIC=4806.05
## factor(anx_group) ~ Sex + child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Working.wards.changed.yes1 + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                         Df    AIC
## - child.rearing                                          1 4761.4
## - Clinical.experience.m.                                 1 4761.4
## - Sex                                                    1 4761.4
## - Willingness.to.participate.in.frontline                1 4761.5
## - Frontline.working.duration.d.                          1 4761.6
## - Prior.experience                                       1 4761.6
## - Average.working.hours.shift                            1 4762.0
## - Original.position..head.1.                             1 4762.2
## - Monthly.household.income.USD.month..1440               1 4762.6
## - education.Bachelor.or.higher.2_Diploma1.               1 4762.9
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4763.8
## - Working.wards.changed.yes1                             1 4766.0
## - Wuhan.as.origin..ys1.                                  1 4779.0
## <none>                                                     4806.1
##
## Step:  AIC=4761.37
## factor(anx_group) ~ Sex + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Working.wards.changed.yes1 + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                         Df    AIC
## - Clinical.experience.m.                                 1 4716.6
## - Sex                                                    1 4716.7
## - Willingness.to.participate.in.frontline                1 4716.8
## - Frontline.working.duration.d.                          1 4716.9
## - Prior.experience                                       1 4717.0
## - Average.working.hours.shift                            1 4717.3
## - Original.position..head.1.                             1 4717.5
## - Monthly.household.income.USD.month..1440               1 4717.8
## - education.Bachelor.or.higher.2_Diploma1.               1 4718.2
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4719.2
## - Working.wards.changed.yes1                             1 4721.3
## - Wuhan.as.origin..ys1.                                  1 4734.5
## <none>                                                     4761.4
##
## Step:  AIC=4716.59
## factor(anx_group) ~ Sex + education.Bachelor.or.higher.2_Diploma1. +
```

```
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Working.wards.changed.yes1 +
##      Prior.experience + Willingness.to.participate.in.frontline
##
##                                                              Df    AIC
## - Sex                                                         1 4671.9
## - Willingness.to.participate.in.frontline                     1 4672.0
## - Frontline.working.duration.d.                               1 4672.1
## - Prior.experience                                            1 4672.2
## - Average.working.hours.shift                                 1 4672.5
## - Original.position..head.1.                                  1 4672.9
## - Monthly.household.income.USD.month..1440                    1 4673.2
## - education.Bachelor.or.higher.2_Diploma1.                    1 4673.4
## - Prodessional.title..Junior1.intermediate.and.senior0.       1 4674.9
## - Working.wards.changed.yes1                                  1 4676.5
## - Wuhan.as.origin..ys1.                                       1 4689.6
## <none>                                                          4716.6
##
## Step:   AIC=4671.89
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Working.wards.changed.yes1 +
##      Prior.experience + Willingness.to.participate.in.frontline
##
##                                                              Df    AIC
## - Willingness.to.participate.in.frontline                     1 4627.3
## - Frontline.working.duration.d.                               1 4627.4
## - Prior.experience                                            1 4627.5
## - Average.working.hours.shift                                 1 4627.8
## - Original.position..head.1.                                  1 4628.2
## - Monthly.household.income.USD.month..1440                    1 4628.5
## - education.Bachelor.or.higher.2_Diploma1.                    1 4628.7
## - Prodessional.title..Junior1.intermediate.and.senior0.       1 4630.3
## - Working.wards.changed.yes1                                  1 4631.7
## - Wuhan.as.origin..ys1.                                       1 4645.4
## <none>                                                          4671.9
##
## Step:   AIC=4627.33
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Working.wards.changed.yes1 +
##      Prior.experience
##
##                                                              Df    AIC
## - Frontline.working.duration.d.                               1 4582.8
## - Prior.experience                                            1 4582.9
## - Average.working.hours.shift                                 1 4583.2
## - Original.position..head.1.                                  1 4583.7
```

```
## - Monthly.household.income.USD.month..1440              1 4583.9
## - education.Bachelor.or.higher.2_Diploma1.              1 4584.1
## - Prodessional.title..Junior1.intermediate.and.senior0. 1 4585.7
## - Working.wards.changed.yes1                            1 4587.0
## - Wuhan.as.origin..ys1.                                 1 4601.3
## <none>                                                    4627.3
##
## Step:  AIC=4582.85
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Working.wards.changed.yes1 + Prior.experience
##
##                                                        Df    AIC
## - Prior.experience                                      1 4538.4
## - Average.working.hours.shift                           1 4538.6
## - Original.position..head.1.                            1 4539.1
## - Monthly.household.income.USD.month..1440              1 4539.6
## - education.Bachelor.or.higher.2_Diploma1.              1 4539.7
## - Prodessional.title..Junior1.intermediate.and.senior0. 1 4541.3
## - Working.wards.changed.yes1                            1 4542.8
## - Wuhan.as.origin..ys1.                                 1 4557.2
## <none>                                                    4582.8
##
## Step:  AIC=4538.45
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Working.wards.changed.yes1
##
##                                                        Df    AIC
## - Average.working.hours.shift                           1 4494.2
## - Original.position..head.1.                            1 4494.7
## - Monthly.household.income.USD.month..1440              1 4495.2
## - education.Bachelor.or.higher.2_Diploma1.              1 4495.4
## - Prodessional.title..Junior1.intermediate.and.senior0. 1 4497.0
## - Working.wards.changed.yes1                            1 4499.2
## - Wuhan.as.origin..ys1.                                 1 4512.7
## <none>                                                    4538.4
##
## Step:  AIC=4494.18
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Working.wards.changed.yes1
##
##                                                        Df    AIC
## - Original.position..head.1.                            1 4450.7
## - education.Bachelor.or.higher.2_Diploma1.              1 4450.9
## - Monthly.household.income.USD.month..1440              1 4450.9
## - Prodessional.title..Junior1.intermediate.and.senior0. 1 4452.9
## - Working.wards.changed.yes1                            1 4454.3
```

```
## - Wuhan.as.origin..ys1.                                              1 4467.9
## <none>                                                                 4494.2
##
## Step:  AIC=4450.72
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Wuhan.as.origin..ys1. + Working.wards.changed.yes1
##
##                                                              Df    AIC
## - Monthly.household.income.USD.month..1440                    1 4407.4
## - education.Bachelor.or.higher.2_Diploma1.                    1 4407.4
## - Prodessional.title..Junior1.intermediate.and.senior0.      1 4408.3
## - Working.wards.changed.yes1                                  1 4411.0
## - Wuhan.as.origin..ys1.                                       1 4425.3
## <none>                                                          4450.7
##
## Step:  AIC=4407.39
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Wuhan.as.origin..ys1. +
##      Working.wards.changed.yes1
##
##                                                              Df    AIC
## - Prodessional.title..Junior1.intermediate.and.senior0.      1 4364.4
## - education.Bachelor.or.higher.2_Diploma1.                    1 4364.8
## - Working.wards.changed.yes1                                  1 4368.2
## - Wuhan.as.origin..ys1.                                       1 4381.0
## <none>                                                          4407.4
##
## Step:  AIC=4364.44
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Wuhan.as.origin..ys1. + Working.wards.changed.yes1
##
##                                              Df    AIC
## - education.Bachelor.or.higher.2_Diploma1.    1 4321.1
## - Working.wards.changed.yes1                  1 4325.4
## - Wuhan.as.origin..ys1.                       1 4336.4
## <none>                                          4364.4
##
## Step:  AIC=4321.09
## factor(anx_group) ~ Wuhan.as.origin..ys1. + Working.wards.changed.yes1
##
##                               Df    AIC
## - Working.wards.changed.yes1   1 4282.5
## - Wuhan.as.origin..ys1.        1 4291.8
## <none>                           4321.1
##
## Step:  AIC=4282.55
## factor(anx_group) ~ Wuhan.as.origin..ys1.
##
##                          Df    AIC
## - Wuhan.as.origin..ys1.   1 4252.8
## <none>                      4282.5
##
```

```
## Step:   AIC=4252.83
## factor(anx_group) ~ 1
```

```
# Step:   AIC=4252.83
# factor(anx_group) ~ 1
```

```
summary(or_anx_bic)
```

```
##
## Re-fitting to get Hessian
```

```
## Call:
## polr(formula = factor(anx_group) ~ 1, data = naomit)
##
## No coefficients
##
## Intercepts:
##                                Value    Std. Error t value
## mild anxiety|moderate anxiety  -0.9916   0.0502    -19.7695
## moderate anxiety|no anxiety    -0.4881   0.0459    -10.6344
## no anxiety|severe anxiety       3.3694   0.1243     27.1167
##
## Residual Deviance: 4118.196
## AIC: 4124.196
```

```
(ptable1 <- coef(summary(or_anx_bic)))
```

```
##
## Re-fitting to get Hessian
```

```
##                                 Value Std. Error    t value
## mild anxiety|moderate anxiety -0.9915513 0.05015573 -19.76945
## moderate anxiety|no anxiety   -0.4881154 0.04589951 -10.63443
## no anxiety|severe anxiety      3.3693522 0.12425373  27.11671
```

```
p1 <- pnorm(abs(ptable1[, "t value"]), lower.tail = FALSE) * 2
(ptable1 <- cbind(ptable1, "p value" = p1))
```

```
##                                 Value Std. Error    t value       p value
## mild anxiety|moderate anxiety -0.9915513 0.05015573 -19.76945  5.456714e-87
## moderate anxiety|no anxiety   -0.4881154 0.04589951 -10.63443  2.060743e-26
## no anxiety|severe anxiety      3.3693522 0.12425373  27.11671 6.255956e-162
```

AIC for ordinal

```
or_anx_aic <- step(anx.polr,k =2)
```

```
## Start:   AIC=4127.83
## factor(anx_group) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                                         Df    AIC
## - Age                                                    1 4125.8
## - marital.status                                         1 4125.8
## - Clinical.experience.m.                                 1 4125.9
## - Position.in.Wuhan...head.1.                            1 4125.9
## - Prior.traning                                          1 4125.9
## - child.rearing                                          1 4126.0
## - Sex                                                    1 4126.0
## - Original.position..head.1.                             1 4126.1
## - Willingness.to.participate.in.frontline                1 4126.1
## - Frontline.working.duration.d.                          1 4126.3
## - Prior.experience                                       1 4126.4
## - Average.working.hours.shift                            1 4126.6
## - Monthly.household.income.USD.month..1440               1 4127.2
## - education.Bachelor.or.higher.2_Diploma1.               1 4127.5
## <none>                                                     4127.8
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4128.5
## - Working.wards.changed.yes1                             1 4130.8
## - Wuhan.as.origin..ys1.                                  1 4143.1
##
## Step:   AIC=4125.83
## factor(anx_group) ~ Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Dip
loma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                         Df    AIC
## - marital.status                                         1 4123.8
## - Position.in.Wuhan...head.1.                            1 4123.9
## - Prior.traning                                          1 4123.9
## - child.rearing                                          1 4124.0
## - Sex                                                    1 4124.0
## - Clinical.experience.m.                                 1 4124.1
## - Original.position..head.1.                             1 4124.1
## - Willingness.to.participate.in.frontline                1 4124.1
## - Frontline.working.duration.d.                          1 4124.3
## - Prior.experience                                       1 4124.4
## - Average.working.hours.shift                            1 4124.6
## - Monthly.household.income.USD.month..1440               1 4125.3
```

```
## - education.Bachelor.or.higher.2_Diploma1.                  1 4125.5
## <none>                                                        4125.8
## - Prodessional.title..Junior1.intermediate.and.senior0.      1 4126.5
## - Working.wards.changed.yes1                                  1 4128.8
## - Wuhan.as.origin..ys1.                                       1 4141.1
##
## Step:   AIC=4123.84
## factor(anx_group) ~ Sex + child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                             Df    AIC
## - Position.in.Wuhan...head.1.                                1 4121.9
## - Prior.traning                                              1 4121.9
## - Sex                                                        1 4122.0
## - child.rearing                                              1 4122.0
## - Clinical.experience.m.                                     1 4122.1
## - Original.position..head.1.                                 1 4122.1
## - Willingness.to.participate.in.frontline                    1 4122.1
## - Frontline.working.duration.d.                              1 4122.3
## - Prior.experience                                           1 4122.4
## - Average.working.hours.shift                                1 4122.6
## - Monthly.household.income.USD.month..1440                   1 4123.3
## - education.Bachelor.or.higher.2_Diploma1.                   1 4123.5
## <none>                                                         4123.8
## - Prodessional.title..Junior1.intermediate.and.senior0.      1 4124.5
## - Working.wards.changed.yes1                                  1 4126.8
## - Wuhan.as.origin..ys1.                                       1 4139.1
##
## Step:   AIC=4121.91
## factor(anx_group) ~ Sex + child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                                             Df    AIC
## - Prior.traning                                              1 4120.0
## - child.rearing                                              1 4120.1
## - Sex                                                        1 4120.1
## - Clinical.experience.m.                                     1 4120.1
## - Willingness.to.participate.in.frontline                    1 4120.2
## - Frontline.working.duration.d.                              1 4120.3
## - Prior.experience                                           1 4120.5
## - Average.working.hours.shift                                1 4120.7
## - Original.position..head.1.                                 1 4120.9
## - Monthly.household.income.USD.month..1440                   1 4121.3
## - education.Bachelor.or.higher.2_Diploma1.                   1 4121.5
```

```
## <none>                                                     4121.9
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4122.5
## - Working.wards.changed.yes1                              1 4124.8
## - Wuhan.as.origin..ys1.                                   1 4137.6
##
## Step:   AIC=4120.01
## factor(anx_group) ~ Sex + child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Working.wards.changed.yes1 + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                          Df    AIC
## - child.rearing                                           1 4118.2
## - Clinical.experience.m.                                  1 4118.2
## - Sex                                                     1 4118.2
## - Willingness.to.participate.in.frontline                 1 4118.3
## - Frontline.working.duration.d.                           1 4118.5
## - Prior.experience                                        1 4118.5
## - Average.working.hours.shift                             1 4118.8
## - Original.position..head.1.                              1 4119.0
## - Monthly.household.income.USD.month..1440                1 4119.5
## - education.Bachelor.or.higher.2_Diploma1.                1 4119.7
## <none>                                                      4120.0
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4120.6
## - Working.wards.changed.yes1                              1 4122.9
## - Wuhan.as.origin..ys1.                                   1 4135.9
##
## Step:   AIC=4118.2
## factor(anx_group) ~ Sex + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Working.wards.changed.yes1 + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                          Df    AIC
## - Clinical.experience.m.                                  1 4116.3
## - Sex                                                     1 4116.4
## - Willingness.to.participate.in.frontline                 1 4116.5
## - Frontline.working.duration.d.                           1 4116.6
## - Prior.experience                                        1 4116.7
## - Average.working.hours.shift                             1 4117.0
## - Original.position..head.1.                              1 4117.2
## - Monthly.household.income.USD.month..1440                1 4117.6
## - education.Bachelor.or.higher.2_Diploma1.                1 4117.9
## <none>                                                      4118.2
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4118.9
## - Working.wards.changed.yes1                              1 4121.0
## - Wuhan.as.origin..ys1.                                   1 4134.2
##
## Step:   AIC=4116.3
## factor(anx_group) ~ Sex + education.Bachelor.or.higher.2_Diploma1. +
```

```
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Working.wards.changed.yes1 +
##      Prior.experience + Willingness.to.participate.in.frontline
##
##                                                             Df   AIC
## - Sex                                                        1 4114.5
## - Willingness.to.participate.in.frontline                    1 4114.6
## - Frontline.working.duration.d.                              1 4114.7
## - Prior.experience                                           1 4114.8
## - Average.working.hours.shift                                1 4115.1
## - Original.position..head.1.                                 1 4115.5
## - Monthly.household.income.USD.month..1440                   1 4115.8
## - education.Bachelor.or.higher.2_Diploma1.                   1 4116.0
## <none>                                                         4116.3
## - Prodessional.title..Junior1.intermediate.and.senior0.      1 4117.5
## - Working.wards.changed.yes1                                 1 4119.1
## - Wuhan.as.origin..ys1.                                      1 4132.2
##
## Step:   AIC=4114.48
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Working.wards.changed.yes1 +
##      Prior.experience + Willingness.to.participate.in.frontline
##
##                                                             Df   AIC
## - Willingness.to.participate.in.frontline                    1 4112.8
## - Frontline.working.duration.d.                              1 4112.9
## - Prior.experience                                           1 4112.9
## - Average.working.hours.shift                                1 4113.3
## - Original.position..head.1.                                 1 4113.7
## - Monthly.household.income.USD.month..1440                   1 4114.0
## - education.Bachelor.or.higher.2_Diploma1.                   1 4114.1
## <none>                                                         4114.5
## - Prodessional.title..Junior1.intermediate.and.senior0.      1 4115.8
## - Working.wards.changed.yes1                                 1 4117.1
## - Wuhan.as.origin..ys1.                                      1 4130.8
##
## Step:   AIC=4112.8
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Working.wards.changed.yes1 +
##      Prior.experience
##
##                                                             Df   AIC
## - Frontline.working.duration.d.                              1 4111.2
## - Prior.experience                                           1 4111.2
## - Average.working.hours.shift                                1 4111.6
## - Original.position..head.1.                                 1 4112.0
```

```
## - Monthly.household.income.USD.month..1440          1 4112.3
## - education.Bachelor.or.higher.2_Diploma1.           1 4112.5
## <none>                                                 4112.8
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4114.1
## - Working.wards.changed.yes1                         1 4115.4
## - Wuhan.as.origin..ys1.                              1 4129.6
##
## Step:   AIC=4111.19
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Working.wards.changed.yes1 + Prior.experience
##
##                                                        Df    AIC
## - Prior.experience                                    1 4109.7
## - Average.working.hours.shift                         1 4109.9
## - Original.position..head.1.                          1 4110.4
## - Monthly.household.income.USD.month..1440            1 4110.8
## - education.Bachelor.or.higher.2_Diploma1.            1 4110.9
## <none>                                                  4111.2
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4112.6
## - Working.wards.changed.yes1                          1 4114.1
## - Wuhan.as.origin..ys1.                               1 4128.5
##
## Step:   AIC=4109.67
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Working.wards.changed.yes1
##
##                                                        Df    AIC
## - Average.working.hours.shift                         1 4108.3
## - Original.position..head.1.                          1 4108.8
## - Monthly.household.income.USD.month..1440            1 4109.3
## - education.Bachelor.or.higher.2_Diploma1.            1 4109.5
## <none>                                                  4109.7
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4111.1
## - Working.wards.changed.yes1                          1 4113.3
## - Wuhan.as.origin..ys1.                               1 4126.8
##
## Step:   AIC=4108.28
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Working.wards.changed.yes1
##
##                                                        Df    AIC
## - Original.position..head.1.                          1 4107.7
## - education.Bachelor.or.higher.2_Diploma1.            1 4107.9
## - Monthly.household.income.USD.month..1440            1 4107.9
## <none>                                                  4108.3
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 4109.8
```

```
## - Working.wards.changed.yes1                                  1 4111.3
## - Wuhan.as.origin..ys1.                                       1 4124.9
##
## Step:  AIC=4107.7
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1
##
##                                                             Df    AIC
## - Monthly.household.income.USD.month..1440                   1 4107.2
## - education.Bachelor.or.higher.2_Diploma1.                   1 4107.3
## <none>                                                         4107.7
## - Prodessional.title..Junior1.intermediate.and.senior0.     1 4108.2
## - Working.wards.changed.yes1                                 1 4110.9
## - Wuhan.as.origin..ys1.                                      1 4125.2
##
## Step:  AIC=4107.25
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Wuhan.as.origin..ys1. +
##     Working.wards.changed.yes1
##
##                                                             Df    AIC
## - Prodessional.title..Junior1.intermediate.and.senior0.     1 4107.2
## <none>                                                         4107.2
## - education.Bachelor.or.higher.2_Diploma1.                   1 4107.6
## - Working.wards.changed.yes1                                 1 4110.9
## - Wuhan.as.origin..ys1.                                      1 4123.7
##
## Step:  AIC=4107.18
## factor(anx_group) ~ education.Bachelor.or.higher.2_Diploma1. +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1
##
##                                                   Df    AIC
## - education.Bachelor.or.higher.2_Diploma1.         1 4106.7
## <none>                                               4107.2
## - Working.wards.changed.yes1                       1 4111.0
## - Wuhan.as.origin..ys1.                            1 4122.0
##
## Step:  AIC=4106.7
## factor(anx_group) ~ Wuhan.as.origin..ys1. + Working.wards.changed.yes1
##
##                                Df    AIC
## <none>                           4106.7
## - Working.wards.changed.yes1    1 4111.0
## - Wuhan.as.origin..ys1.         1 4120.2
```

```
#  AIC=4106.7
# factor(anx_group) ~ Wuhan.as.origin..ys1. + Working.wards.changed.yes1
```

```
summary(or_anx_aic)
```

```
##
## Re-fitting to get Hessian
```

```
## Call:
## polr(formula = factor(anx_group) ~ Wuhan.as.origin..ys1. + Working.wards.changed.yes1,
##     data = naomit)
##
## Coefficients:
##                               Value Std. Error t value
## Wuhan.as.origin..ys1.        -0.3684    0.09404  -3.918
## Working.wards.changed.yes1 -0.2281     0.09046  -2.522
##
## Intercepts:
##                                Value    Std. Error t value
## mild anxiety|moderate anxiety  -1.3290   0.0901   -14.7499
## moderate anxiety|no anxiety    -0.8196   0.0866    -9.4623
## no anxiety|severe anxiety       3.0666   0.1396    21.9682
##
## Residual Deviance: 4096.703
## AIC: 4106.703
```

```
(ptable1 <- coef(summary(or_anx_aic)))
```

```
##
## Re-fitting to get Hessian
```

```
##                                    Value Std. Error     t value
## Wuhan.as.origin..ys1.          -0.3684244 0.09403997   -3.917743
## Working.wards.changed.yes1     -0.2281321 0.09046219   -2.521850
## mild anxiety|moderate anxiety  -1.3290449 0.09010531 -14.749907
## moderate anxiety|no anxiety    -0.8196004 0.08661713   -9.462336
## no anxiety|severe anxiety       3.0666078 0.13959326   21.968165
```

```
p1 <- pnorm(abs(ptable1[, "t value"]), lower.tail = FALSE) * 2
(ptable1 <- cbind(ptable1, "p value" = p1))
```

```
##                                    Value Std. Error     t value       p value
## Wuhan.as.origin..ys1.          -0.3684244 0.09403997   -3.917743  8.938198e-05
## Working.wards.changed.yes1     -0.2281321 0.09046219   -2.521850  1.167394e-02
## mild anxiety|moderate anxiety  -1.3290449 0.09010531 -14.749907  3.080868e-49
## moderate anxiety|no anxiety    -0.8196004 0.08661713   -9.462336  3.011403e-21
## no anxiety|severe anxiety       3.0666078 0.13959326   21.968165 5.806693e-107
```

```
vif(anx.polr)
```

```
##
## Re-fitting to get Hessian
```

```
##                                                      Age
##                                                 8.021131
##                                                      Sex
##                                                 1.108260
##                                           marital.status
##                                                 3.007699
##                                             child.rearing
##                                                 3.292448
##               education.Bachelor.or.higher.2_Diploma1.
##                                                 1.185025
## Prodessional.title..Junior1.intermediate.and.senior0.
##                                                 1.870763
##               Monthly.household.income.USD.month..1440
##                                                 1.196860
##                                    Clinical.experience.m.
##                                                 7.936029
##                         Frontline.working.duration.d.
##                                                 1.060139
##                        Average.working.hours.shift
##                                                 1.143154
##                              Wuhan.as.origin..ys1.
##                                                 1.215162
##                        Original.position..head.1.
##                                                 2.545538
##                        Position.in.Wuhan...head.1.
##                                                 2.348288
##                        Working.wards.changed.yes1
##                                                 1.132272
##                                      Prior.traning
##                                                 1.140415
##                                   Prior.experience
##                                                 1.189547
##           Willingness.to.participate.in.frontline
##                                                 1.018363
```

depression

```
lidep<- lm(formula= SDS_total ~ Age+Sex+marital.status+child.rearing+education.Bachelor.or.highe
r.2_Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.household.income.US
D.month..1440 + Clinical.experience.m. + Frontline.working.duration.d.+Average.working.hours.shi
ft+Wuhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1. + Working.ward
s.changed.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.frontline,data
= naomit)
summary(lidep)
```

```
## 
## Call:
## lm(formula = SDS_total ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline, data = naomit)
## 
## Residuals:
##     Min      1Q  Median      3Q     Max 
## -26.184  -7.808   0.467   8.554  39.601 
## 
## Coefficients:
##                                                      Estimate Std. Error
## (Intercept)                                         51.765299   3.491084
## Age                                                  0.217459   0.108741
## Sex                                                  2.058817   0.756733
## marital.status                                      -1.433173   0.868587
## child.rearing                                        2.440686   0.886433
## education.Bachelor.or.higher.2_Diploma1.             0.084583   0.634162
## Prodessional.title..Junior1.intermediate.and.senior0. 1.083696   0.754054
## Monthly.household.income.USD.month..1440            -2.409908   0.530160
## Clinical.experience.m.                              -0.011530   0.008569
## Frontline.working.duration.d.                        0.035583   0.019199
## Average.working.hours.shift                         -0.073144   0.136871
## Wuhan.as.origin..ys1.                                3.438000   0.561985
## Original.position..head.1.                          -1.680750   1.274052
## Position.in.Wuhan...head.1.                          3.163347   1.525936
## Working.wards.changed.yes1                           1.554035   0.532744
## Prior.traning                                       -2.427759   0.671294
## Prior.experience                                     0.178908   0.539412
## Willingness.to.participate.in.frontline            -10.414922   1.387701
##                                                     t value Pr(>|t|)
## (Intercept)                                          14.828  < 2e-16 ***
## Age                                                   2.000 0.045659 *
## Sex                                                   2.721 0.006572 **
## marital.status                                       -1.650 0.099099 .
## child.rearing                                         2.753 0.005952 **
## education.Bachelor.or.higher.2_Diploma1.              0.133 0.893908
## Prodessional.title..Junior1.intermediate.and.senior0. 1.437 0.150829
## Monthly.household.income.USD.month..1440             -4.546 5.81e-06 ***
## Clinical.experience.m.                               -1.345 0.178631
## Frontline.working.duration.d.                         1.853 0.063979 .
## Average.working.hours.shift                          -0.534 0.593123
## Wuhan.as.origin..ys1.                                 6.118 1.14e-09 ***
## Original.position..head.1.                           -1.319 0.187248
## Position.in.Wuhan...head.1.                           2.073 0.038295 *
## Working.wards.changed.yes1                            2.917 0.003573 **
## Prior.traning                                        -3.617 0.000306 ***
## Prior.experience                                      0.332 0.740172
```

```
## Willingness.to.participate.in.frontline                    -7.505 9.19e-14 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 10.84 on 1996 degrees of freedom
## Multiple R-squared:  0.08961,    Adjusted R-squared:  0.08186
## F-statistic: 11.56 on 17 and 1996 DF,  p-value: < 2.2e-16
```

```
confint(lidep)
```

```
##                                                                2.5 %
## (Intercept)                                               44.918748346
## Age                                                        0.004200503
## Sex                                                        0.574747049
## marital.status                                            -3.136606315
## child.rearing                                              0.702255309
## education.Bachelor.or.higher.2_Diploma1.                  -1.159104932
## Prodessional.title..Junior1.intermediate.and.senior0.     -0.395119166
## Monthly.household.income.USD.month..1440                  -3.449631880
## Clinical.experience.m.                                    -0.028335604
## Frontline.working.duration.d.                             -0.002069617
## Average.working.hours.shift                               -0.341568910
## Wuhan.as.origin..ys1.                                      2.335861610
## Original.position..head.1.                                -4.179362335
## Position.in.Wuhan...head.1.                                0.170752456
## Working.wards.changed.yes1                                 0.509242449
## Prior.traning                                             -3.744270051
## Prior.experience                                          -0.878962375
## Willingness.to.participate.in.frontline                  -13.136417165
##                                                               97.5 %
## (Intercept)                                               58.611849565
## Age                                                        0.430716540
## Sex                                                        3.542887542
## marital.status                                             0.270259417
## child.rearing                                              4.179116673
## education.Bachelor.or.higher.2_Diploma1.                   1.328271392
## Prodessional.title..Junior1.intermediate.and.senior0.      2.562510309
## Monthly.household.income.USD.month..1440                  -1.370183347
## Clinical.experience.m.                                     0.005276141
## Frontline.working.duration.d.                              0.073234701
## Average.working.hours.shift                                0.195280720
## Wuhan.as.origin..ys1.                                      4.540138019
## Original.position..head.1.                                 0.817861859
## Position.in.Wuhan...head.1.                                6.155940885
## Working.wards.changed.yes1                                 2.598826678
## Prior.traning                                             -1.111248421
## Prior.experience                                           1.236777531
## Willingness.to.participate.in.frontline                   -7.693427687
```

BIC for linear regression of depression

```
dep_bic <- step(lidep,k=sqrt(nrow(naomit)))
```

```
## Start:   AIC=10388.28
## SDS_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Diplo
ma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - education.Bachelor.or.higher.2_Diploma1.                1       2.1 234411
## - Prior.experience                                        1      12.9 234422
## - Average.working.hours.shift                             1      33.5 234442
## - Original.position..head.1.                              1     204.4 234613
## - Clinical.experience.m.                                  1     212.6 234621
## - Prodessional.title..Junior1.intermediate.and.senior0.   1     242.6 234651
## - marital.status                                          1     319.7 234728
## - Frontline.working.duration.d.                           1     403.4 234812
## - Age                                                     1     469.7 234878
## - Position.in.Wuhan...head.1.                             1     504.7 234913
## - Sex                                                     1     869.3 235278
## - child.rearing                                           1     890.3 235299
## - Working.wards.changed.yes1                              1     999.3 235408
## - Prior.traning                                           1    1536.0 235945
## - Monthly.household.income.USD.month..1440                1    2426.6 236835
## - Wuhan.as.origin..ys1.                                   1    4395.2 238804
## <none>                                                                234409
## - Willingness.to.participate.in.frontline                 1    6615.0 241024
##                                                          AIC
## - education.Bachelor.or.higher.2_Diploma1.               10343
## - Prior.experience                                       10344
## - Average.working.hours.shift                            10344
## - Original.position..head.1.                             10345
## - Clinical.experience.m.                                 10345
## - Prodessional.title..Junior1.intermediate.and.senior0.  10346
## - marital.status                                         10346
## - Frontline.working.duration.d.                          10347
## - Age                                                    10347
## - Position.in.Wuhan...head.1.                            10348
## - Sex                                                    10351
## - child.rearing                                          10351
## - Working.wards.changed.yes1                             10352
## - Prior.traning                                          10357
## - Monthly.household.income.USD.month..1440               10364
## - Wuhan.as.origin..ys1.                                  10381
## <none>                                                   10388
## - Willingness.to.participate.in.frontline                10400
##
## Step:   AIC=10343.42
## SDS_total ~ Age + Sex + marital.status + child.rearing + Prodessional.title..Junior1.intermed
iate.and.senior0. +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
```

```
##       Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##       Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##       Willingness.to.participate.in.frontline
##
##                                                           Df Sum of Sq    RSS
## - Prior.experience                                         1      12.4 234423
## - Average.working.hours.shift                              1      36.1 234447
## - Original.position..head.1.                               1     202.9 234614
## - Clinical.experience.m.                                   1     214.1 234625
## - Prodessional.title..Junior1.intermediate.and.senior0.    1     241.0 234652
## - marital.status                                           1     318.1 234729
## - Frontline.working.duration.d.                            1     403.1 234814
## - Age                                                      1     472.7 234883
## - Position.in.Wuhan...head.1.                              1     502.8 234913
## - Sex                                                      1     872.1 235283
## - child.rearing                                            1     888.7 235299
## - Working.wards.changed.yes1                               1     997.9 235409
## - Prior.traning                                            1    1535.1 235946
## - Monthly.household.income.USD.month..1440                 1    2465.3 236876
## - Wuhan.as.origin..ys1.                                    1    4643.7 239054
## <none>                                                                  234411
## - Willingness.to.participate.in.frontline                  1    6613.0 241024
##                                                           AIC
## - Prior.experience                                        10299
## - Average.working.hours.shift                             10299
## - Original.position..head.1.                              10300
## - Clinical.experience.m.                                  10300
## - Prodessional.title..Junior1.intermediate.and.senior0.   10301
## - marital.status                                          10301
## - Frontline.working.duration.d.                           10302
## - Age                                                     10303
## - Position.in.Wuhan...head.1.                             10303
## - Sex                                                     10306
## - child.rearing                                           10306
## - Working.wards.changed.yes1                              10307
## - Prior.traning                                           10312
## - Monthly.household.income.USD.month..1440                10320
## - Wuhan.as.origin..ys1.                                   10338
## <none>                                                    10343
## - Willingness.to.participate.in.frontline                 10355
##
## Step:  AIC=10298.65
## SDS_total ~ Age + Sex + marital.status + child.rearing + Prodessional.title..Junior1.intermed
iate.and.senior0. +
##       Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##       Frontline.working.duration.d. + Average.working.hours.shift +
##       Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##       Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                           Df Sum of Sq    RSS
## - Average.working.hours.shift                              1      33.6 234457
## - Original.position..head.1.                               1     200.6 234624
## - Clinical.experience.m.                                   1     215.5 234639
## - Prodessional.title..Junior1.intermediate.and.senior0.    1     240.0 234663
```

```
## - marital.status                                       1      316.4 234739
## - Frontline.working.duration.d.                        1      413.3 234836
## - Age                                                  1      475.0 234898
## - Position.in.Wuhan...head.1.                          1      504.0 234927
## - Sex                                                  1      861.5 235285
## - child.rearing                                        1      893.2 235316
## - Working.wards.changed.yes1                           1     1051.2 235474
## - Prior.traning                                        1     1601.3 236024
## - Monthly.household.income.USD.month..1440             1     2470.8 236894
## - Wuhan.as.origin..ys1.                                1     4638.1 239061
## <none>                                                                234423
## - Willingness.to.participate.in.frontline              1     6602.2 241025
##                                                              AIC
## - Average.working.hours.shift                          10254
## - Original.position..head.1.                           10256
## - Clinical.experience.m.                               10256
## - Prodessional.title..Junior1.intermediate.and.senior0. 10256
## - marital.status                                       10256
## - Frontline.working.duration.d.                        10257
## - Age                                                  10258
## - Position.in.Wuhan...head.1.                          10258
## - Sex                                                  10261
## - child.rearing                                        10261
## - Working.wards.changed.yes1                           10263
## - Prior.traning                                        10268
## - Monthly.household.income.USD.month..1440             10275
## - Wuhan.as.origin..ys1.                                10293
## <none>                                                 10299
## - Willingness.to.participate.in.frontline              10310
##
## Step:  AIC=10254.06
## SDS_total ~ Age + Sex + marital.status + child.rearing + Prodessional.title..Junior1.intermed
iate.and.senior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                                        Df Sum of Sq    RSS
## - Clinical.experience.m.                               1      208.9 234666
## - Original.position..head.1.                           1      209.1 234666
## - Prodessional.title..Junior1.intermediate.and.senior0. 1    235.3 234692
## - marital.status                                       1      315.4 234772
## - Frontline.working.duration.d.                        1      396.6 234853
## - Age                                                  1      469.3 234926
## - Position.in.Wuhan...head.1.                          1      485.7 234942
## - Sex                                                  1      883.6 235340
## - child.rearing                                        1      884.6 235341
## - Working.wards.changed.yes1                           1     1019.6 235476
## - Prior.traning                                        1     1599.5 236056
## - Monthly.household.income.USD.month..1440             1     2461.0 236918
## - Wuhan.as.origin..ys1.                                1     4605.2 239062
## <none>                                                                234457
## - Willingness.to.participate.in.frontline              1     6575.6 241032
```

```
##                                                        AIC
## - Clinical.experience.m.                             10211
## - Original.position..head.1.                         10211
## - Prodessional.title..Junior1.intermediate.and.senior0. 10211
## - marital.status                                     10212
## - Frontline.working.duration.d.                      10213
## - Age                                                10213
## - Position.in.Wuhan...head.1.                        10213
## - Sex                                                10217
## - child.rearing                                      10217
## - Working.wards.changed.yes1                         10218
## - Prior.traning                                      10223
## - Monthly.household.income.USD.month..1440           10230
## - Wuhan.as.origin..ys1.                              10248
## <none>                                               10254
## - Willingness.to.participate.in.frontline            10265
##
## Step:   AIC=10210.98
## SDS_total ~ Age + Sex + marital.status + child.rearing + Prodessional.title..Junior1.intermed
iate.and.senior0. +
##     Monthly.household.income.USD.month..1440 + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                      Df Sum of Sq    RSS
## - Original.position..head.1.                          1     238.2 234904
## - Age                                                 1     307.5 234973
## - marital.status                                      1     312.5 234978
## - Prodessional.title..Junior1.intermediate.and.senior0. 1   356.9 235022
## - Frontline.working.duration.d.                       1     368.5 235034
## - Position.in.Wuhan...head.1.                         1     518.1 235184
## - Sex                                                 1     758.2 235424
## - child.rearing                                       1     876.0 235542
## - Working.wards.changed.yes1                          1    1035.5 235701
## - Prior.traning                                       1    1553.5 236219
## - Monthly.household.income.USD.month..1440            1    2529.8 237195
## - Wuhan.as.origin..ys1.                               1    4552.8 239218
## <none>                                                            234666
## - Willingness.to.participate.in.frontline             1    6660.2 241326
##                                                      AIC
## - Original.position..head.1.                         10168
## - Age                                                10169
## - marital.status                                     10169
## - Prodessional.title..Junior1.intermediate.and.senior0. 10169
## - Frontline.working.duration.d.                      10169
## - Position.in.Wuhan...head.1.                        10170
## - Sex                                                10173
## - child.rearing                                      10174
## - Working.wards.changed.yes1                         10175
## - Prior.traning                                      10179
## - Monthly.household.income.USD.month..1440           10188
## - Wuhan.as.origin..ys1.                              10205
## <none>                                               10211
## - Willingness.to.participate.in.frontline            10222
```

```
##
## Step:  AIC=10168.14
## SDS_total ~ Age + Sex + marital.status + child.rearing + Prodessional.title..Junior1.intermed
iate.and.senior0. +
##     Monthly.household.income.USD.month..1440 + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - Age                                                     1     245.4 235149
## - Position.in.Wuhan...head.1.                             1     280.8 235185
## - marital.status                                          1     313.3 235217
## - Frontline.working.duration.d.                           1     358.5 235262
## - Prodessional.title..Junior1.intermediate.and.senior0.   1     442.0 235346
## - Sex                                                     1     742.6 235646
## - child.rearing                                           1     882.9 235787
## - Working.wards.changed.yes1                              1    1111.2 236015
## - Prior.traning                                           1    1546.4 236450
## - Monthly.household.income.USD.month..1440                1    2539.2 237443
## - Wuhan.as.origin..ys1.                                   1    5268.5 240172
## <none>                                                                234904
## - Willingness.to.participate.in.frontline                 1    6703.3 241607
##                                                          AIC
## - Age                                                    10125
## - Position.in.Wuhan...head.1.                            10126
## - marital.status                                         10126
## - Frontline.working.duration.d.                          10126
## - Prodessional.title..Junior1.intermediate.and.senior0.  10127
## - Sex                                                    10130
## - child.rearing                                          10131
## - Working.wards.changed.yes1                             10133
## - Prior.traning                                          10136
## - Monthly.household.income.USD.month..1440               10145
## - Wuhan.as.origin..ys1.                                  10168
## <none>                                                   10168
## - Willingness.to.participate.in.frontline                10180
##
## Step:  AIC=10125.37
## SDS_total ~ Sex + marital.status + child.rearing + Prodessional.title..Junior1.intermediate.a
nd.senior0. +
##     Monthly.household.income.USD.month..1440 + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - Prodessional.title..Junior1.intermediate.and.senior0.   1     237.4 235387
## - marital.status                                          1     256.9 235406
## - Position.in.Wuhan...head.1.                             1     340.8 235490
## - Frontline.working.duration.d.                           1     361.2 235510
## - Sex                                                     1     786.6 235936
## - Working.wards.changed.yes1                              1    1119.4 236269
## - child.rearing                                           1    1205.4 236355
## - Prior.traning                                           1    1565.5 236715
## - Monthly.household.income.USD.month..1440                1    2422.7 237572
```

```
## - Wuhan.as.origin..ys1.                                    1    5288.8 240438
## <none>                                                               235149
## - Willingness.to.participate.in.frontline                  1    6687.1 241836
##                                                            AIC
## - Prodessional.title..Junior1.intermediate.and.senior0.   10082
## - marital.status                                          10083
## - Position.in.Wuhan...head.1.                             10083
## - Frontline.working.duration.d.                           10084
## - Sex                                                     10087
## - Working.wards.changed.yes1                              10090
## - child.rearing                                           10091
## - Prior.traning                                           10094
## - Monthly.household.income.USD.month..1440                10101
## - Wuhan.as.origin..ys1.                                   10125
## <none>                                                    10125
## - Willingness.to.participate.in.frontline                 10137
##
## Step:  AIC=10082.52
## SDS_total ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.month..1440 +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS    AIC
## - Position.in.Wuhan...head.1.                 1     244.2 235631 10040
## - marital.status                              1     278.0 235665 10040
## - Frontline.working.duration.d.               1     342.2 235729 10041
## - Sex                                         1     753.0 236140 10044
## - child.rearing                               1    1043.9 236431 10047
## - Working.wards.changed.yes1                  1    1110.0 236497 10047
## - Prior.traning                               1    1553.4 236940 10051
## - Monthly.household.income.USD.month..1440    1    2673.9 238061 10060
## <none>                                                   235387 10082
## - Wuhan.as.origin..ys1.                       1    6099.2 241486 10089
## - Willingness.to.participate.in.frontline     1    6720.2 242107 10094
##
## Step:  AIC=10039.73
## SDS_total ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.month..1440 +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Working.wards.changed.yes1 +
##      Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS    AIC
## - marital.status                              1     271.1 235902  9997.2
## - Frontline.working.duration.d.               1     395.6 236026  9998.2
## - Sex                                         1     678.5 236309 10000.6
## - Working.wards.changed.yes1                  1    1116.0 236747 10004.4
## - child.rearing                               1    1122.5 236753 10004.4
## - Prior.traning                               1    1487.4 237118 10007.5
## - Monthly.household.income.USD.month..1440    1    2720.4 238351 10018.0
## <none>                                                   235631 10039.7
## - Wuhan.as.origin..ys1.                       1    6279.3 241910 10047.8
## - Willingness.to.participate.in.frontline     1    6684.2 242315 10051.2
##
## Step:  AIC=9997.17
## SDS_total ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
```

```
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS    AIC
## - Frontline.working.duration.d.               1     405.3 236307  9955.8
## - Sex                                         1     696.9 236599  9958.2
## - Working.wards.changed.yes1                  1    1109.4 237011  9961.7
## - child.rearing                              1    1151.3 237053  9962.1
## - Prior.traning                               1    1507.1 237409  9965.1
## - Monthly.household.income.USD.month..1440   1    2989.4 238891  9977.7
## <none>                                                     235902  9997.2
## - Wuhan.as.origin..ys1.                      1    6294.3 242196 10005.3
## - Willingness.to.participate.in.frontline    1    6678.5 242580 10008.5
##
## Step:   AIC=9955.75
## SDS_total ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1 + Prior.traning +
##     Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS    AIC
## - Sex                                         1     656.4 236964 9916.5
## - child.rearing                              1    1199.4 237507 9921.1
## - Working.wards.changed.yes1                  1    1277.4 237585 9921.7
## - Prior.traning                               1    1572.4 237880 9924.2
## - Monthly.household.income.USD.month..1440   1    3289.9 239597 9938.7
## <none>                                                     236307 9955.8
## - Wuhan.as.origin..ys1.                      1    6507.5 242815 9965.6
## - Willingness.to.participate.in.frontline    1    6631.8 242939 9966.6
##
## Step:   AIC=9916.46
## SDS_total ~ child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1 + Prior.traning +
##     Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS    AIC
## - Working.wards.changed.yes1                  1    1050.9 238015 9880.5
## - child.rearing                              1    1318.9 238283 9882.8
## - Prior.traning                               1    1644.0 238608 9885.5
## - Monthly.household.income.USD.month..1440   1    3202.3 240166 9898.6
## <none>                                                     236964 9916.5
## - Willingness.to.participate.in.frontline    1    6519.8 243483 9926.2
## - Wuhan.as.origin..ys1.                      1    6917.9 243882 9929.5
##
## Step:   AIC=9880.49
## SDS_total ~ child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS    AIC
## - child.rearing                              1    1280.6 239295 9846.4
## - Prior.traning                               1    1429.1 239444 9847.7
##
## - Monthly.household.income.USD.month..1440   1    3590.7 241605 9865.8
## <none>                                                     238015 9880.5
## - Willingness.to.participate.in.frontline    1    6513.9 244528 9890.0
## - Wuhan.as.origin..ys1.                      1    6934.7 244949 9893.5
```

```
##
## Step:  AIC=9846.42
## SDS_total ~ Monthly.household.income.USD.month..1440 + Wuhan.as.origin..ys1. +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS    AIC
## - Prior.traning                             1    1336.9 240632 9812.8
## - Monthly.household.income.USD.month..1440  1    2790.7 242086 9824.9
## <none>                                                  239295 9846.4
## - Willingness.to.participate.in.frontline   1    6595.8 245891 9856.3
## - Wuhan.as.origin..ys1.                     1    6908.3 246203 9858.9
##
## Step:  AIC=9812.77
## SDS_total ~ Monthly.household.income.USD.month..1440 + Wuhan.as.origin..ys1. +
##     Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS    AIC
## - Monthly.household.income.USD.month..1440  1    2982.7 243615 9792.7
## <none>                                                  240632 9812.8
## - Willingness.to.participate.in.frontline   1    6889.4 247521 9824.7
## - Wuhan.as.origin..ys1.                     1    7230.6 247863 9827.5
##
## Step:  AIC=9792.7
## SDS_total ~ Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS    AIC
## <none>                                                  243615 9792.7
## - Wuhan.as.origin..ys1.                     1    6138.5 249753 9797.9
## - Willingness.to.participate.in.frontline   1    6576.8 250192 9801.5
```

```
# Step:  AIC=Step:  AIC=9792.7
# SDS_total ~ Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline
```

```
summary(dep_bic)
```

```
##
## Call:
## lm(formula = SDS_total ~ Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline,
##     data = naomit)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -26.770  -7.741   0.730   8.568  44.818
##
## Coefficients:
##                                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)                              58.0786     1.4487  40.090  < 2e-16
## Wuhan.as.origin..ys1.                     3.6914     0.5186   7.118 1.51e-12
## Willingness.to.participate.in.frontline -10.3379     1.4030  -7.368 2.51e-13
##
## (Intercept)                             ***
## Wuhan.as.origin..ys1.                   ***
## Willingness.to.participate.in.frontline ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11.01 on 2011 degrees of freedom
## Multiple R-squared:  0.05385,    Adjusted R-squared:  0.05291
## F-statistic: 57.23 on 2 and 2011 DF,  p-value: < 2.2e-16
```

AIC for linear regression of depression

```
dep_aic <-step(lidep,k =2)
```

```
## Start:   AIC=9616.48
## SDS_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Diplo
ma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                        Df Sum of Sq    RSS
## - education.Bachelor.or.higher.2_Diploma1.              1       2.1 234411
## - Prior.experience                                      1      12.9 234422
## - Average.working.hours.shift                           1      33.5 234442
## - Original.position..head.1.                            1     204.4 234613
## - Clinical.experience.m.                                1     212.6 234621
## <none>                                                              234409
## - Prodessional.title..Junior1.intermediate.and.senior0.  1    242.6 234651
## - marital.status                                        1     319.7 234728
## - Frontline.working.duration.d.                         1     403.4 234812
## - Age                                                   1     469.7 234878
## - Position.in.Wuhan...head.1.                           1     504.7 234913
## - Sex                                                   1     869.3 235278
## - child.rearing                                         1     890.3 235299
## - Working.wards.changed.yes1                            1     999.3 235408
## - Prior.traning                                         1    1536.0 235945
## - Monthly.household.income.USD.month..1440              1    2426.6 236835
## - Wuhan.as.origin..ys1.                                 1    4395.2 238804
## - Willingness.to.participate.in.frontline               1    6615.0 241024
##                                                        AIC
## - education.Bachelor.or.higher.2_Diploma1.             9614.5
## - Prior.experience                                     9614.6
## - Average.working.hours.shift                          9614.8
## - Original.position..head.1.                           9616.2
## - Clinical.experience.m.                               9616.3
## <none>                                                 9616.5
## - Prodessional.title..Junior1.intermediate.and.senior0. 9616.6
## - marital.status                                       9617.2
## - Frontline.working.duration.d.                        9617.9
## - Age                                                  9618.5
## - Position.in.Wuhan...head.1.                          9618.8
## - Sex                                                  9621.9
## - child.rearing                                        9622.1
## - Working.wards.changed.yes1                           9623.1
## - Prior.traning                                        9627.6
## - Monthly.household.income.USD.month..1440             9635.2
## - Wuhan.as.origin..ys1.                                9651.9
## - Willingness.to.participate.in.frontline              9670.5
##
## Step:   AIC=9614.5
## SDS_total ~ Age + Sex + marital.status + child.rearing + Prodessional.title..Junior1.intermed
iate.and.senior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
```

```
##       Frontline.working.duration.d. + Average.working.hours.shift +
##       Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##       Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##       Willingness.to.participate.in.frontline
##
##                                                             Df Sum of Sq    RSS
## - Prior.experience                                          1      12.4 234423
## - Average.working.hours.shift                               1      36.1 234447
## - Original.position..head.1.                                1     202.9 234614
## - Clinical.experience.m.                                    1     214.1 234625
## <none>                                                                  234411
## - Prodessional.title..Junior1.intermediate.and.senior0.     1     241.0 234652
## - marital.status                                            1     318.1 234729
## - Frontline.working.duration.d.                             1     403.1 234814
## - Age                                                       1     472.7 234883
## - Position.in.Wuhan...head.1.                               1     502.8 234913
## - Sex                                                       1     872.1 235283
## - child.rearing                                             1     888.7 235299
## - Working.wards.changed.yes1                                1     997.9 235409
## - Prior.traning                                             1    1535.1 235946
## - Monthly.household.income.USD.month..1440                  1    2465.3 236876
## - Wuhan.as.origin..ys1.                                     1    4643.7 239054
## - Willingness.to.participate.in.frontline                   1    6613.0 241024
##                                                            AIC
## - Prior.experience                                       9612.6
## - Average.working.hours.shift                            9612.8
## - Original.position..head.1.                             9614.2
## - Clinical.experience.m.                                 9614.3
## <none>                                                   9614.5
## - Prodessional.title..Junior1.intermediate.and.senior0. 9614.6
## - marital.status                                         9615.2
## - Frontline.working.duration.d.                          9616.0
## - Age                                                    9616.6
## - Position.in.Wuhan...head.1.                            9616.8
## - Sex                                                    9620.0
## - child.rearing                                          9620.1
## - Working.wards.changed.yes1                             9621.1
## - Prior.traning                                          9625.6
## - Monthly.household.income.USD.month..1440               9633.6
## - Wuhan.as.origin..ys1.                                  9652.0
## - Willingness.to.participate.in.frontline                9668.5
##
## Step:  AIC=9612.61
## SDS_total ~ Age + Sex + marital.status + child.rearing + Prodessional.title..Junior1.intermed
iate.and.senior0. +
##       Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##       Frontline.working.duration.d. + Average.working.hours.shift +
##       Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##       Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                             Df Sum of Sq    RSS
## - Average.working.hours.shift                               1      33.6 234457
## - Original.position..head.1.                                1     200.6 234624
## - Clinical.experience.m.                                    1     215.5 234639
```

```
## <none>                                                            234423
## - Prodessional.title..Junior1.intermediate.and.senior0.  1     240.0 234663
## - marital.status                                          1     316.4 234739
## - Frontline.working.duration.d.                           1     413.3 234836
## - Age                                                     1     475.0 234898
## - Position.in.Wuhan...head.1.                             1     504.0 234927
## - Sex                                                     1     861.5 235285
## - child.rearing                                           1     893.2 235316
## - Working.wards.changed.yes1                              1    1051.2 235474
## - Prior.traning                                           1    1601.3 236024
## - Monthly.household.income.USD.month..1440                1    2470.8 236894
## - Wuhan.as.origin..ys1.                                   1    4638.1 239061
## - Willingness.to.participate.in.frontline                 1    6602.2 241025
##                                                              AIC
## - Average.working.hours.shift                            9610.9
## - Original.position..head.1.                             9612.3
## - Clinical.experience.m.                                 9612.5
## <none>                                                   9612.6
## - Prodessional.title..Junior1.intermediate.and.senior0. 9612.7
## - marital.status                                         9613.3
## - Frontline.working.duration.d.                          9614.2
## - Age                                                    9614.7
## - Position.in.Wuhan...head.1.                            9614.9
## - Sex                                                    9618.0
## - child.rearing                                          9618.3
## - Working.wards.changed.yes1                             9619.6
## - Prior.traning                                          9624.3
## - Monthly.household.income.USD.month..1440               9631.7
## - Wuhan.as.origin..ys1.                                  9650.1
## - Willingness.to.participate.in.frontline                9666.5
##
## Step:  AIC=9610.9
## SDS_total ~ Age + Sex + marital.status + child.rearing + Prodessional.title..Junior1.intermed
iate.and.senior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - Clinical.experience.m.                                  1     208.9 234666
## - Original.position..head.1.                             1     209.1 234666
## <none>                                                              234457
## - Prodessional.title..Junior1.intermediate.and.senior0.  1     235.3 234692
## - marital.status                                          1     315.4 234772
## - Frontline.working.duration.d.                           1     396.6 234853
## - Age                                                     1     469.3 234926
## - Position.in.Wuhan...head.1.                             1     485.7 234942
## - Sex                                                     1     883.6 235340
## - child.rearing                                           1     884.6 235341
## - Working.wards.changed.yes1                              1    1019.6 235476
## - Prior.traning                                           1    1599.5 236056
## - Monthly.household.income.USD.month..1440                1    2461.0 236918
## - Wuhan.as.origin..ys1.                                   1    4605.2 239062
```

```
## - Willingness.to.participate.in.frontline                    1    6575.6 241032
##                                                                    AIC
## - Clinical.experience.m.                                      9610.7
## - Original.position..head.1.                                  9610.7
## <none>                                                        9610.9
## - Prodessional.title..Junior1.intermediate.and.senior0.       9610.9
## - marital.status                                              9611.6
## - Frontline.working.duration.d.                               9612.3
## - Age                                                         9612.9
## - Position.in.Wuhan...head.1.                                 9613.1
## - Sex                                                         9616.5
## - child.rearing                                               9616.5
## - Working.wards.changed.yes1                                  9617.6
## - Prior.traning                                               9622.6
## - Monthly.household.income.USD.month..1440                    9629.9
## - Wuhan.as.origin..ys1.                                       9648.1
## - Willingness.to.participate.in.frontline                     9664.6
##
## Step:  AIC=9610.69
## SDS_total ~ Age + Sex + marital.status + child.rearing + Prodessional.title..Junior1.intermed
iate.and.senior0. +
##      Monthly.household.income.USD.month..1440 + Frontline.working.duration.d. +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                              Df Sum of Sq    RSS
## <none>                                                                    234666
## - Original.position..head.1.                                  1     238.2 234904
## - Age                                                         1     307.5 234973
## - marital.status                                              1     312.5 234978
## - Prodessional.title..Junior1.intermediate.and.senior0.       1     356.9 235022
## - Frontline.working.duration.d.                               1     368.5 235034
## - Position.in.Wuhan...head.1.                                 1     518.1 235184
## - Sex                                                         1     758.2 235424
## - child.rearing                                               1     876.0 235542
## - Working.wards.changed.yes1                                  1    1035.5 235701
## - Prior.traning                                               1    1553.5 236219
## - Monthly.household.income.USD.month..1440                    1    2529.8 237195
## - Wuhan.as.origin..ys1.                                       1    4552.8 239218
## - Willingness.to.participate.in.frontline                     1    6660.2 241326
##                                                                    AIC
## <none>                                                        9610.7
## - Original.position..head.1.                                  9610.7
## - Age                                                         9611.3
## - marital.status                                              9611.4
## - Prodessional.title..Junior1.intermediate.and.senior0.       9611.8
## - Frontline.working.duration.d.                               9611.8
## - Position.in.Wuhan...head.1.                                 9613.1
## - Sex                                                         9615.2
## - child.rearing                                               9616.2
## - Working.wards.changed.yes1                                  9617.6
## - Prior.traning                                               9622.0
## - Monthly.household.income.USD.month..1440                    9630.3
```

```
## - Wuhan.as.origin..ys1.                          9647.4
## - Willingness.to.participate.in.frontline        9665.1
```

```
# Step:  AIC=9610.69
# SDS_total ~ Age + Sex + marital.status + child.rearing + Prodessional.title..Junior1.intermedi
ate.and.senior0. + Monthly.household.income.USD.month..1440 + Frontline.working.duration.d. + Wu
han.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. + Working.wards.c
hanged.yes1 + Prior.traning + Willingness.to.participate.in.frontline
```

```
summary(dep_aic)
```

```
##
## Call:
## lm(formula = SDS_total ~ Age + Sex + marital.status + child.rearing +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline,
##     data = naomit)
##
## Residuals:
##     Min     1Q Median     3Q    Max
## -26.704  -7.800  0.508  8.605  40.443
##
## Coefficients:
##                                                        Estimate Std. Error
## (Intercept)                                             54.07609    2.56779
## Age                                                      0.09548    0.05898
## Sex                                                      1.88123    0.74005
## marital.status                                          -1.41536    0.86723
## child.rearing                                            2.41874    0.88523
## Prodessional.title..Junior1.intermediate.and.senior0.   1.27040    0.72843
## Monthly.household.income.USD.month..1440                -2.42692    0.52267
## Frontline.working.duration.d.                            0.03378    0.01906
## Wuhan.as.origin..ys1.                                    3.40165    0.54609
## Original.position..head.1.                              -1.80611    1.26752
## Position.in.Wuhan...head.1.                              3.18618    1.51632
## Working.wards.changed.yes1                               1.52640    0.51381
## Prior.traning                                           -2.31817    0.63709
## Willingness.to.participate.in.frontline                -10.43108    1.38451
##                                                        t value Pr(>|t|)
## (Intercept)                                             21.059  < 2e-16 ***
## Age                                                      1.619 0.105621
## Sex                                                      2.542 0.011095 *
## marital.status                                          -1.632 0.102830
## child.rearing                                            2.732 0.006344 **
## Prodessional.title..Junior1.intermediate.and.senior0.   1.744 0.081310 .
## Monthly.household.income.USD.month..1440                -4.643 3.65e-06 ***
## Frontline.working.duration.d.                            1.772 0.076533 .
## Wuhan.as.origin..ys1.                                    6.229 5.70e-10 ***
## Original.position..head.1.                              -1.425 0.154335
## Position.in.Wuhan...head.1.                              2.101 0.035743 *
## Working.wards.changed.yes1                               2.971 0.003006 **
## Prior.traning                                           -3.639 0.000281 ***
## Willingness.to.participate.in.frontline                 -7.534 7.40e-14 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 10.83 on 2000 degrees of freedom
## Multiple R-squared:  0.08861,    Adjusted R-squared:  0.08269
## F-statistic: 14.96 on 13 and 2000 DF,  p-value: < 2.2e-16
```

Diagnose for linear regression of depression

```
par(mfrow=c(1,2))
plot(lidep)
```

Residuals vs Fitted

Normal Q-Q

Scale-Location

Residuals vs Leverage
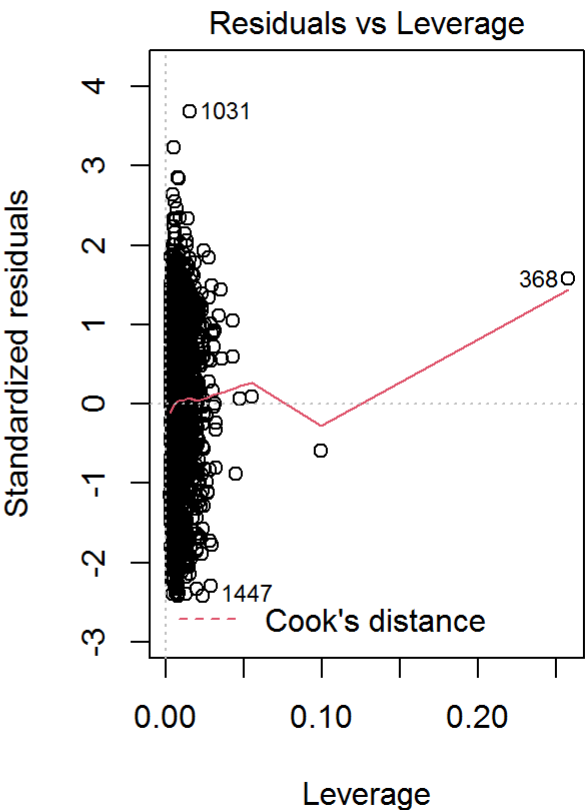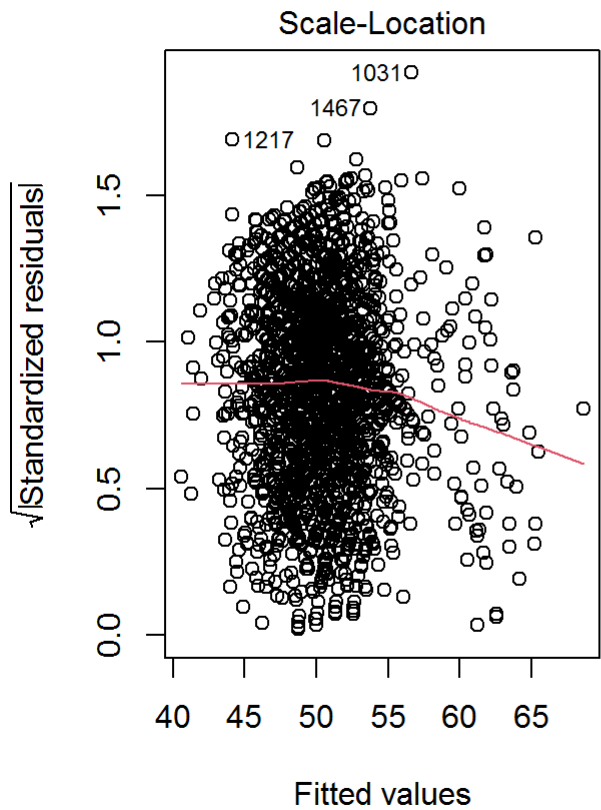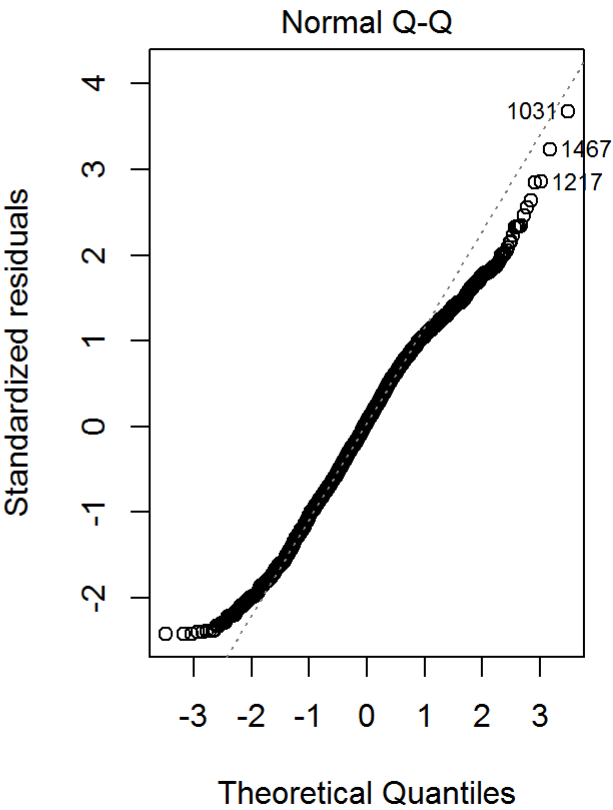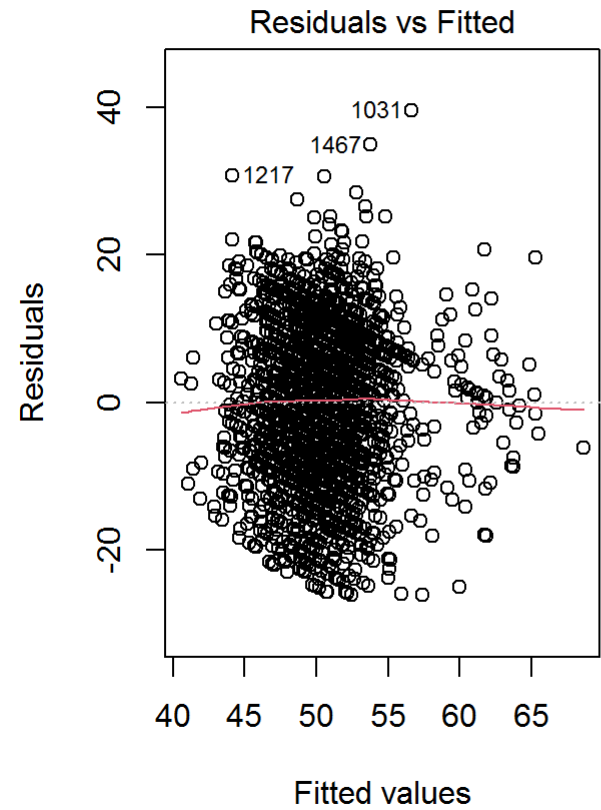
equal variance for linear regression of depression

```
summary(lidep)$r.squared
```

```
## [1] 0.08960916
```

The R^2(equals to r^2) here is 0.0896, which is far from 1, and the line is flat (which supposed to be linearly increasing to be a good fit), so this model is not a good fit. A better model is needed for fitting.

```
library(car)
vif(lm(formula= SDS_total ~ Age+Sex+marital.status+child.rearing+education.Bachelor.or.higher.2_
Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.household.income.USD.mo
nth..1440 + Clinical.experience.m. + Frontline.working.duration.d.+Average.working.hours.shift+W
uhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1. + Working.wards.ch
anged.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.frontline,data = na
omit))
```

```
##                                                      Age
##                                                 7.708207
##                                                      Sex
##                                                 1.104120
##                                           marital.status
##                                                 3.075925
##                                            child.rearing
##                                                 3.340090
##               education.Bachelor.or.higher.2_Diploma1.
##                                                 1.179491
## Prodessional.title..Junior1.intermediate.and.senior0.
##                                                 1.865265
##               Monthly.household.income.USD.month..1440
##                                                 1.192672
##                                    Clinical.experience.m.
##                                                 7.674971
##                             Frontline.working.duration.d.
##                                                 1.058136
##                               Average.working.hours.shift
##                                                 1.152705
##                                   Wuhan.as.origin..ys1.
##                                                 1.219870
##                                 Original.position..head.1.
##                                                 2.445412
##                                 Position.in.Wuhan...head.1.
##                                                 2.237491
##                                 Working.wards.changed.yes1
##                                                 1.135694
##                                            Prior.traning
##                                                 1.134466
##                                          Prior.experience
##                                                 1.186836
##               Willingness.to.participate.in.frontline
##                                                 1.016094
```
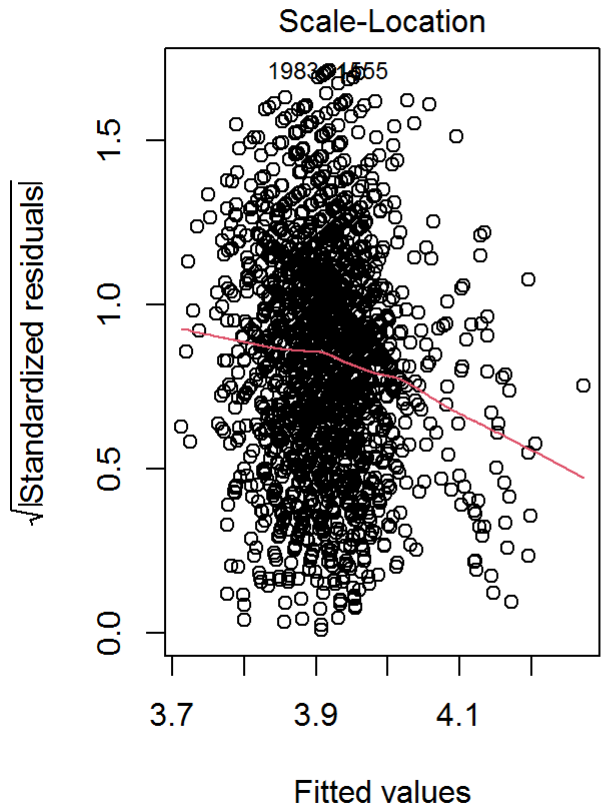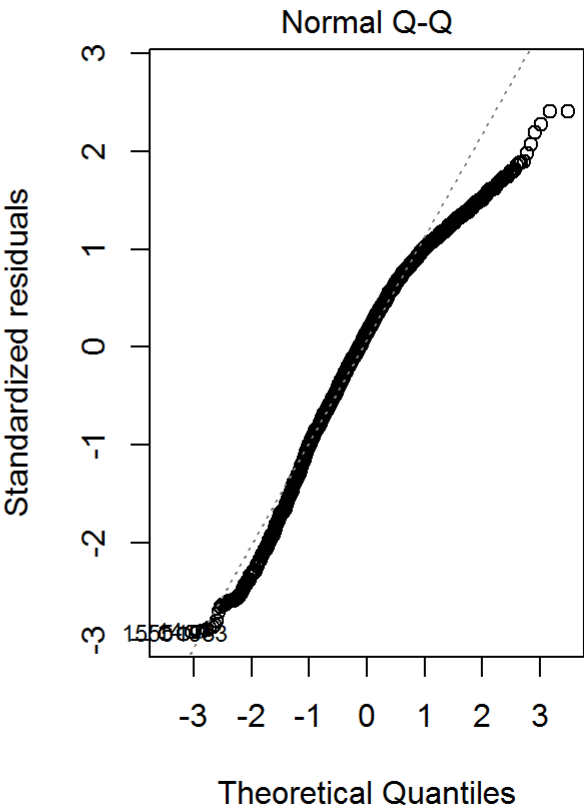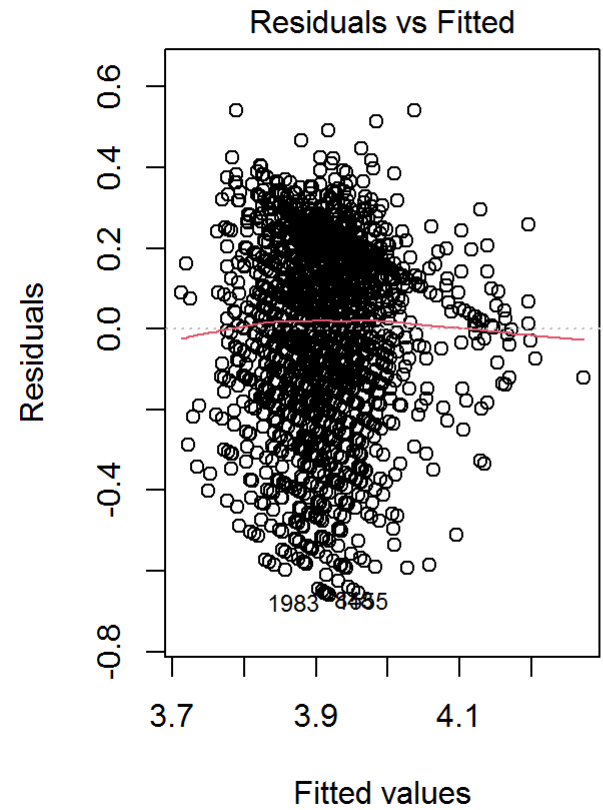
Transformation with log

model 1 (only log y)

```
log_dep1 = lm(formula= log1p(SDS_total) ~ Age+Sex+marital.status+child.rearing+education.Bachelo
r.or.higher.2_Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.househol
d.income.USD.month..1440 + Clinical.experience.m. + Frontline.working.duration.d.+Average.workin
g.hours.shift+Wuhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1. + W
orking.wards.changed.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.fron
tline, data = naomit)
summary(log_dep1)
```

```
##
## Call:
## lm(formula = log1p(SDS_total) ~ Age + Sex + marital.status +
##     child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline,
##     data = naomit)
##
## Residuals:
##      Min      1Q   Median      3Q     Max
## -0.66043 -0.14154  0.03044  0.17650  0.54116
##
## Coefficients:
##                                                       Estimate Std. Error
## (Intercept)                                          3.9197528  0.0727034
## Age                                                  0.0044312  0.0022646
## Sex                                                  0.0478861  0.0157593
## marital.status                                      -0.0289903  0.0180887
## child.rearing                                        0.0492610  0.0184604
## education.Bachelor.or.higher.2_Diploma1.             0.0052127  0.0132067
## Prodessional.title..Junior1.intermediate.and.senior0. 0.0214332 0.0157035
## Monthly.household.income.USD.month..1440            -0.0493451  0.0110408
## Clinical.experience.m.                              -0.0002363  0.0001785
## Frontline.working.duration.d.                        0.0006109  0.0003998
## Average.working.hours.shift                         -0.0017955  0.0028504
## Wuhan.as.origin..ys1.                                0.0701919  0.0117036
## Original.position..head.1.                          -0.0413789  0.0265327
## Position.in.Wuhan...head.1.                          0.0642805  0.0317783
## Working.wards.changed.yes1                           0.0318478  0.0110946
## Prior.traning                                       -0.0496004  0.0139800
## Prior.experience                                     0.0040493  0.0112335
## Willingness.to.participate.in.frontline             -0.1959299  0.0288995
##                                                       t value Pr(>|t|)
## (Intercept)                                           53.914  < 2e-16 ***
## Age                                                    1.957 0.050516 .
## Sex                                                    3.039 0.002408 **
## marital.status                                        -1.603 0.109165
## child.rearing                                          2.668 0.007681 **
## education.Bachelor.or.higher.2_Diploma1.              0.395 0.693108
## Prodessional.title..Junior1.intermediate.and.senior0. 1.365 0.172449
## Monthly.household.income.USD.month..1440             -4.469 8.29e-06 ***
## Clinical.experience.m.                               -1.324 0.185630
## Frontline.working.duration.d.                          1.528 0.126695
## Average.working.hours.shift                          -0.630 0.528830
## Wuhan.as.origin..ys1.                                  5.997 2.37e-09 ***
## Original.position..head.1.                           -1.560 0.119026
## Position.in.Wuhan...head.1.                            2.023 0.043229 *
## Working.wards.changed.yes1                             2.871 0.004141 **
## Prior.traning                                        -3.548 0.000397 ***
```

```
## Prior.experience                                        0.360 0.718538
## Willingness.to.participate.in.frontline                -6.780 1.58e-11 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2257 on 1996 degrees of freedom
## Multiple R-squared:  0.08303,    Adjusted R-squared:  0.07522
## F-statistic: 10.63 on 17 and 1996 DF,  p-value: < 2.2e-16
```

```
par(mfrow=c(1,2))
plot(log_dep1)
```

Residuals vs Fitted

Normal Q-Q

Scale-Location

Residuals vs Leverage
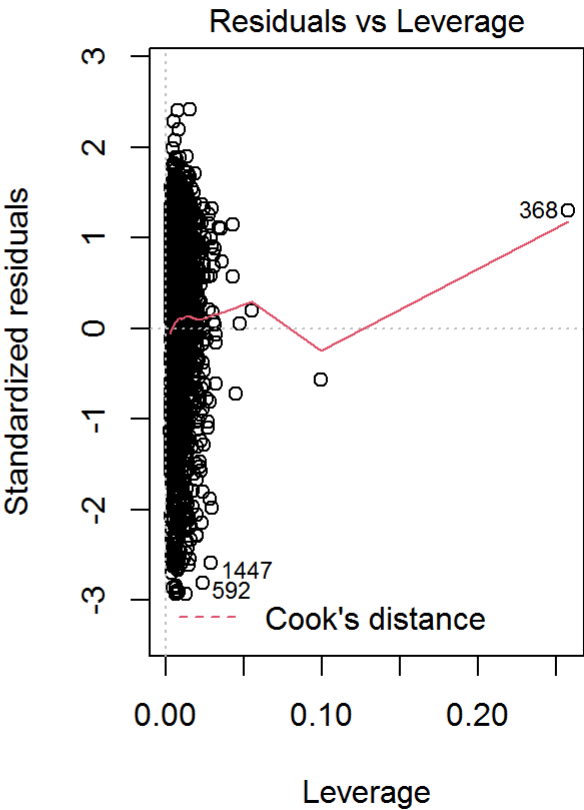
equal variance for log transformation of depression

```
summary(log_dep1)$r.squared
```

```
## [1] 0.08303325
```

```
round(exp(cbind(coef(log_dep1), confint(log_dep1)) - 1) * 100, 2)
```

```
##                                                         2.5 %   97.5 %
## (Intercept)                                  1853.67 1607.35 2137.74
## Age                                            36.95   36.79   37.12
## Sex                                            38.59   37.42   39.80
## marital.status                                 35.74   34.49   37.03
## child.rearing                                  38.65   37.27   40.07
## education.Bachelor.or.higher.2_Diploma1.       36.98   36.03   37.95
## Prodessional.title..Junior1.intermediate.and.senior0.   37.58   36.45   38.76
## Monthly.household.income.USD.month..1440       35.02   34.27   35.78
## Clinical.experience.m.                         36.78   36.77   36.79
## Frontline.working.duration.d.                  36.81   36.78   36.84
## Average.working.hours.shift                    36.72   36.52   36.93
## Wuhan.as.origin..ys1.                          39.46   38.57   40.38
## Original.position..head.1.                     35.30   33.51   37.18
## Position.in.Wuhan...head.1.                    39.23   36.86   41.75
## Working.wards.changed.yes1                     37.98   37.16   38.81
## Prior.traning                                  35.01   34.06   35.98
## Prior.experience                               36.94   36.13   37.76
## Willingness.to.participate.in.frontline        30.24   28.58   32.01
```

BIC for log transformation of depression

```
log_dep_bic <- step(log_dep1,k=sqrt(nrow(naomit)))
```

```
## Start:  AIC=-5206.44
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - Prior.experience                                        1   0.00662 101.67
## - education.Bachelor.or.higher.2_Diploma1.                1   0.00793 101.67
## - Average.working.hours.shift                             1   0.02021 101.68
## - Clinical.experience.m.                                  1   0.08930 101.75
## - Prodessional.title..Junior1.intermediate.and.senior0.   1   0.09488 101.76
## - Frontline.working.duration.d.                           1   0.11890 101.78
## - Original.position..head.1.                              1   0.12388 101.79
## - marital.status                                          1   0.13083 101.79
## - Age                                                     1   0.19502 101.86
## - Position.in.Wuhan...head.1.                             1   0.20840 101.87
## - child.rearing                                           1   0.36268 102.03
## - Working.wards.changed.yes1                              1   0.41970 102.08
## - Sex                                                     1   0.47027 102.13
## - Prior.traning                                           1   0.64115 102.30
## - Monthly.household.income.USD.month..1440                1   1.01739 102.68
## - Wuhan.as.origin..ys1.                                   1   1.83205 103.50
## <none>                                                                 101.66
## - Willingness.to.participate.in.frontline                 1   2.34111 104.00
##                                                          AIC
## - Prior.experience                                       -5251.2
## - education.Bachelor.or.higher.2_Diploma1.               -5251.2
## - Average.working.hours.shift                            -5250.9
## - Clinical.experience.m.                                 -5249.5
## - Prodessional.title..Junior1.intermediate.and.senior0.  -5249.4
## - Frontline.working.duration.d.                          -5249.0
## - Original.position..head.1.                             -5248.9
## - marital.status                                         -5248.7
## - Age                                                    -5247.5
## - Position.in.Wuhan...head.1.                            -5247.2
## - child.rearing                                          -5244.1
## - Working.wards.changed.yes1                             -5243.0
## - Sex                                                    -5242.0
## - Prior.traning                                          -5238.7
## - Monthly.household.income.USD.month..1440               -5231.3
## - Wuhan.as.origin..ys1.                                  -5215.3
## <none>                                                   -5206.4
## - Willingness.to.participate.in.frontline                -5205.5
##
## Step:  AIC=-5251.19
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
```

```
##       Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##       Frontline.working.duration.d. + Average.working.hours.shift +
##       Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##       Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - education.Bachelor.or.higher.2_Diploma1.                1   0.00712 101.68
## - Average.working.hours.shift                             1   0.01899 101.69
## - Clinical.experience.m.                                  1   0.09003 101.76
## - Prodessional.title..Junior1.intermediate.and.senior0.   1   0.09401 101.76
## - Original.position..head.1.                              1   0.12247 101.79
## - Frontline.working.duration.d.                           1   0.12280 101.79
## - marital.status                                          1   0.12992 101.80
## - Age                                                     1   0.19626 101.87
## - Position.in.Wuhan...head.1.                             1   0.20876 101.88
## - child.rearing                                           1   0.36459 102.03
## - Working.wards.changed.yes1                              1   0.44357 102.11
## - Sex                                                     1   0.46469 102.13
## - Prior.traning                                           1   0.66464 102.33
## - Monthly.household.income.USD.month..1440                1   1.01820 102.69
## - Wuhan.as.origin..ys1.                                   1   1.83189 103.50
## <none>                                                                101.67
## - Willingness.to.participate.in.frontline                 1   2.33587 104.00
##                                                          AIC
## - education.Bachelor.or.higher.2_Diploma1.               -5295.9
## - Average.working.hours.shift                            -5295.7
## - Clinical.experience.m.                                 -5294.3
## - Prodessional.title..Junior1.intermediate.and.senior0.  -5294.2
## - Original.position..head.1.                             -5293.6
## - Frontline.working.duration.d.                          -5293.6
## - marital.status                                         -5293.5
## - Age                                                    -5292.2
## - Position.in.Wuhan...head.1.                            -5291.9
## - child.rearing                                          -5288.9
## - Working.wards.changed.yes1                             -5287.3
## - Sex                                                    -5286.9
## - Prior.traning                                          -5282.9
## - Monthly.household.income.USD.month..1440               -5276.0
## - Wuhan.as.origin..ys1.                                  -5260.1
## <none>                                                   -5251.2
## - Willingness.to.participate.in.frontline                -5250.3
##
## Step:  AIC=-5295.92
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - Average.working.hours.shift                             1   0.02236 101.70
## - Prodessional.title..Junior1.intermediate.and.senior0.   1   0.08864 101.77
```

```
## - Clinical.experience.m.                                    1    0.09165 101.77
## - Original.position..head.1.                                1    0.12001 101.80
## - Frontline.working.duration.d.                             1    0.12223 101.80
## - marital.status                                            1    0.12752 101.80
## - Age                                                       1    0.19929 101.88
## - Position.in.Wuhan...head.1.                               1    0.20561 101.88
## - child.rearing                                             1    0.36221 102.04
## - Working.wards.changed.yes1                                1    0.44078 102.12
## - Sex                                                       1    0.46861 102.14
## - Prior.traning                                             1    0.65954 102.34
## - Monthly.household.income.USD.month..1440                  1    1.01683 102.69
## - Wuhan.as.origin..ys1.                                     1    1.96917 103.65
## <none>                                                                   101.68
## - Willingness.to.participate.in.frontline                   1    2.33224 104.01
##                                                            AIC
## - Average.working.hours.shift                           -5340.4
## - Prodessional.title..Junior1.intermediate.and.senior0. -5339.0
## - Clinical.experience.m.                                -5339.0
## - Original.position..head.1.                            -5338.4
## - Frontline.working.duration.d.                         -5338.4
## - marital.status                                        -5338.3
## - Age                                                   -5336.9
## - Position.in.Wuhan...head.1.                           -5336.7
## - child.rearing                                         -5333.6
## - Working.wards.changed.yes1                            -5332.1
## - Sex                                                   -5331.5
## - Prior.traning                                         -5327.8
## - Monthly.household.income.USD.month..1440              -5320.8
## - Wuhan.as.origin..ys1.                                 -5302.2
## <none>                                                  -5295.9
## - Willingness.to.participate.in.frontline               -5295.1
##
## Step:  AIC=-5340.36
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - Prodessional.title..Junior1.intermediate.and.senior0.   1   0.08628 101.78
## - Clinical.experience.m.                                  1   0.08814 101.79
## - Frontline.working.duration.d.                           1   0.11443 101.81
## - Original.position..head.1.                              1   0.12530 101.82
## - marital.status                                          1   0.12700 101.83
## - Position.in.Wuhan...head.1.                             1   0.19569 101.89
## - Age                                                     1   0.19624 101.89
## - child.rearing                                           1   0.35769 102.06
## - Working.wards.changed.yes1                              1   0.41842 102.12
## - Sex                                                     1   0.48171 102.18
## - Prior.traning                                           1   0.65858 102.36
## - Monthly.household.income.USD.month..1440                1   1.01160 102.71
## - Wuhan.as.origin..ys1.                                   1   1.94695 103.65
```

```
## <none>                                                       101.70
## - Willingness.to.participate.in.frontline            1    2.31805 104.02
##                                                               AIC
## - Prodessional.title..Junior1.intermediate.and.senior0. -5383.5
## - Clinical.experience.m.                               -5383.5
## - Frontline.working.duration.d.                        -5383.0
## - Original.position..head.1.                           -5382.8
## - marital.status                                       -5382.7
## - Position.in.Wuhan...head.1.                          -5381.4
## - Age                                                  -5381.4
## - child.rearing                                        -5378.2
## - Working.wards.changed.yes1                           -5377.0
## - Sex                                                  -5375.7
## - Prior.traning                                        -5372.2
## - Monthly.household.income.USD.month..1440             -5365.3
## - Wuhan.as.origin..ys1.                                -5347.0
## <none>                                                 -5340.4
## - Willingness.to.participate.in.frontline              -5339.8
##
## Step:  AIC=-5383.53
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Willingness.to.participate.in.frontline
##
##                                               Df Sum of Sq   RSS    AIC
## - Frontline.working.duration.d.                1    0.11186 101.90 -5426.2
## - marital.status                               1    0.12355 101.91 -5426.0
## - Clinical.experience.m.                       1    0.13597 101.92 -5425.7
## - Original.position..head.1.                   1    0.15101 101.94 -5425.4
## - Age                                          1    0.18156 101.97 -5424.8
## - Position.in.Wuhan...head.1.                  1    0.19272 101.98 -5424.6
## - child.rearing                                1    0.34240 102.13 -5421.6
## - Working.wards.changed.yes1                   1    0.41230 102.20 -5420.3
## - Sex                                          1    0.49446 102.28 -5418.6
## - Prior.traning                                1    0.66263 102.45 -5415.3
## - Monthly.household.income.USD.month..1440     1    1.05229 102.84 -5407.7
## - Wuhan.as.origin..ys1.                        1    2.14675 103.93 -5386.4
## <none>                                                      101.78 -5383.5
## - Willingness.to.participate.in.frontline      1    2.31689 104.10 -5383.1
##
## Step:  AIC=-5426.19
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                               Df Sum of Sq   RSS    AIC
## - Clinical.experience.m.                       1    0.12297 102.02 -5468.6
## - marital.status                               1    0.12772 102.03 -5468.5
## - Original.position..head.1.                   1    0.14710 102.04 -5468.2
## - Age                                          1    0.17027 102.07 -5467.7
## - Position.in.Wuhan...head.1.                  1    0.20599 102.10 -5467.0
```

```
## - child.rearing                               1   0.34925 102.25 -5464.2
## - Working.wards.changed.yes1                   1   0.46692 102.36 -5461.9
## - Sex                                          1   0.47554 102.37 -5461.7
## - Prior.traning                                1   0.68648 102.58 -5457.5
## - Monthly.household.income.USD.month..1440     1   1.14673 103.04 -5448.5
## - Wuhan.as.origin..ys1.                        1   2.21239 104.11 -5427.8
## <none>                                                    101.90 -5426.2
## - Willingness.to.participate.in.frontline      1   2.30615 104.20 -5426.0
##
## Step:  AIC=-5468.64
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##     Monthly.household.income.USD.month..1440 + Wuhan.as.origin..ys1. +
##     Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS     AIC
## - Age                                         1   0.04774 102.07 -5512.6
## - marital.status                              1   0.12511 102.14 -5511.1
## - Original.position..head.1.                  1   0.17455 102.19 -5510.1
## - Position.in.Wuhan...head.1.                 1   0.22083 102.24 -5509.2
## - child.rearing                               1   0.34050 102.36 -5506.8
## - Sex                                         1   0.40562 102.43 -5505.5
## - Working.wards.changed.yes1                  1   0.47055 102.49 -5504.3
## - Prior.traning                               1   0.66238 102.68 -5500.5
## - Monthly.household.income.USD.month..1440    1   1.19029 103.21 -5490.2
## - Wuhan.as.origin..ys1.                       1   2.21693 104.24 -5470.2
## <none>                                                   102.02 -5468.6
## - Willingness.to.participate.in.frontline     1   2.34534 104.36 -5467.7
##
## Step:  AIC=-5512.58
## log1p(SDS_total) ~ Sex + marital.status + child.rearing + Monthly.household.income.USD.mont
h..1440 +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS     AIC
## - marital.status                              1   0.10928 102.18 -5555.3
## - Original.position..head.1.                  1   0.14443 102.21 -5554.6
## - Position.in.Wuhan...head.1.                 1   0.21655 102.28 -5553.2
## - Sex                                         1   0.42269 102.49 -5549.1
## - child.rearing                               1   0.46581 102.53 -5548.3
## - Working.wards.changed.yes1                  1   0.47911 102.55 -5548.0
## - Prior.traning                               1   0.66869 102.74 -5544.3
## - Monthly.household.income.USD.month..1440    1   1.14821 103.22 -5534.9
## - Wuhan.as.origin..ys1.                       1   2.19326 104.26 -5514.6
## <none>                                                   102.07 -5512.6
## - Willingness.to.participate.in.frontline     1   2.34015 104.41 -5511.8
##
## Step:  AIC=-5555.3
## log1p(SDS_total) ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS     AIC
```

```
## - Original.position..head.1.              1   0.15062 102.33 -5597.2
## - Position.in.Wuhan...head.1.             1   0.21937 102.40 -5595.9
## - Sex                                     1   0.43139 102.61 -5591.7
## - Working.wards.changed.yes1              1   0.47652 102.65 -5590.8
## - child.rearing                           1   0.47744 102.66 -5590.8
## - Prior.traning                           1   0.67717 102.85 -5586.9
## - Monthly.household.income.USD.month..1440 1  1.26134 103.44 -5575.5
## - Wuhan.as.origin..ys1.                   1   2.19415 104.37 -5557.4
## <none>                                             102.18 -5555.3
## - Willingness.to.participate.in.frontline 1   2.33712 104.51 -5554.6
##
## Step:  AIC=-5597.21
## log1p(SDS_total) ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                           Df Sum of Sq    RSS     AIC
## - Position.in.Wuhan...head.1.             1   0.07346 102.40 -5640.6
## - child.rearing                           1   0.41175 102.74 -5634.0
## - Sex                                     1   0.41578 102.74 -5633.9
## - Working.wards.changed.yes1              1   0.51242 102.84 -5632.0
## - Prior.traning                           1   0.67056 103.00 -5628.9
## - Monthly.household.income.USD.month..1440 1  1.30462 103.63 -5616.6
## <none>                                             102.33 -5597.2
## - Willingness.to.participate.in.frontline 1   2.36134 104.69 -5596.1
## - Wuhan.as.origin..ys1.                   1   2.68155 105.01 -5590.0
##
## Step:  AIC=-5640.64
## log1p(SDS_total) ~ Sex + child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1 + Prior.traning +
##     Willingness.to.participate.in.frontline
##
##                                           Df Sum of Sq    RSS     AIC
## - Sex                                     1   0.38534 102.79 -5678.0
## - child.rearing                           1   0.47017 102.87 -5676.3
## - Working.wards.changed.yes1              1   0.51841 102.92 -5675.4
## - Prior.traning                           1   0.64829 103.05 -5672.8
## - Monthly.household.income.USD.month..1440 1  1.32848 103.73 -5659.6
## <none>                                             102.40 -5640.6
## - Willingness.to.participate.in.frontline 1   2.34879 104.75 -5639.8
## - Wuhan.as.origin..ys1.                   1   2.75487 105.16 -5632.1
##
## Step:  AIC=-5677.96
## log1p(SDS_total) ~ child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1 + Prior.traning +
##     Willingness.to.participate.in.frontline
##
##                                           Df Sum of Sq    RSS     AIC
## - Working.wards.changed.yes1              1   0.40703 103.19 -5714.9
## - child.rearing                           1   0.52732 103.31 -5712.5
## - Prior.traning                           1   0.68347 103.47 -5709.5
## - Monthly.household.income.USD.month..1440 1  1.28565 104.07 -5697.8
## - Willingness.to.participate.in.frontline 1   2.29724 105.08 -5678.3
## <none>                                             102.79 -5678.0
```

```
## - Wuhan.as.origin..ys1.                               1    2.95625 105.74 -5665.7
##
## Step:  AIC=-5714.87
## log1p(SDS_total) ~ child.rearing + Monthly.household.income.USD.month..1440 +
##      Wuhan.as.origin..ys1. + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                   Df Sum of Sq    RSS     AIC
## - child.rearing                                    1   0.51225 103.71 -5749.8
## - Prior.traning                                    1   0.59730 103.79 -5748.1
## - Monthly.household.income.USD.month..1440         1   1.43896 104.63 -5731.9
## - Willingness.to.participate.in.frontline          1   2.29505 105.49 -5715.5
## <none>                                                          103.19 -5714.9
## - Wuhan.as.origin..ys1.                            1   2.96308 106.16 -5702.7
##
## Step:  AIC=-5749.78
## log1p(SDS_total) ~ Monthly.household.income.USD.month..1440 +
##      Wuhan.as.origin..ys1. + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                   Df Sum of Sq    RSS     AIC
## - Prior.traning                                    1    0.5596 104.27 -5783.8
## - Monthly.household.income.USD.month..1440         1    1.1187 104.83 -5773.0
## - Willingness.to.participate.in.frontline          1    2.3258 106.03 -5750.0
## <none>                                                          103.71 -5749.8
## - Wuhan.as.origin..ys1.                            1    2.9522 106.66 -5738.1
##
## Step:  AIC=-5783.82
## log1p(SDS_total) ~ Monthly.household.income.USD.month..1440 +
##      Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline
##
##                                                   Df Sum of Sq    RSS     AIC
## - Monthly.household.income.USD.month..1440         1    1.1973 105.46 -5805.7
## <none>                                                          104.27 -5783.8
## - Willingness.to.participate.in.frontline          1    2.4382 106.70 -5782.1
## - Wuhan.as.origin..ys1.                            1    3.0886 107.35 -5769.9
##
## Step:  AIC=-5805.7
## log1p(SDS_total) ~ Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline
##
##                                                   Df Sum of Sq    RSS     AIC
## - Willingness.to.participate.in.frontline          1    2.3203 107.78 -5806.7
## <none>                                                          105.46 -5805.7
## - Wuhan.as.origin..ys1.                            1    2.6374 108.10 -5800.8
##
## Step:  AIC=-5806.75
## log1p(SDS_total) ~ Wuhan.as.origin..ys1.
##
##                             Df Sum of Sq    RSS     AIC
## <none>                                     107.78 -5806.7
## - Wuhan.as.origin..ys1.  1     3.0857 110.87 -5794.8
```

```
# Step:  AIC=-5805.7
# log1p(SDS_total) ~ Wuhan.as.origin..ys1. + Willingness.to.participate.in.frontline
```

```
summary(log_dep_bic)
```

```
##
## Call:
## lm(formula = log1p(SDS_total) ~ Wuhan.as.origin..ys1., data = naomit)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.68548 -0.14248  0.03611  0.18758  0.63371
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           3.861098   0.008811 438.202  < 2e-16 ***
## Wuhan.as.origin..ys1. 0.082478   0.010867   7.589 4.88e-14 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2315 on 2012 degrees of freedom
## Multiple R-squared:  0.02783,    Adjusted R-squared:  0.02735
## F-statistic:  57.6 on 1 and 2012 DF,  p-value: 4.881e-14
```

```
round(exp(cbind(coef(log_dep_bic), confint(log_dep_bic)) - 1) * 100, 2)
```

```
##                                2.5 %  97.5 %
## (Intercept)           1748.07 1718.12 1778.54
## Wuhan.as.origin..ys1.   39.95   39.11   40.81
```

AIC for log transformation of depression

```
log_dep_aic <-step(log_dep1,k =2)
```

```
## Start:  AIC=-5978.24
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - Prior.experience                                        1   0.00662 101.67
## - education.Bachelor.or.higher.2_Diploma1.                1   0.00793 101.67
## - Average.working.hours.shift                             1   0.02021 101.68
## - Clinical.experience.m.                                  1   0.08930 101.75
## - Prodessional.title..Junior1.intermediate.and.senior0.   1   0.09488 101.76
## <none>                                                                101.66
## - Frontline.working.duration.d.                           1   0.11890 101.78
## - Original.position..head.1.                              1   0.12388 101.79
## - marital.status                                          1   0.13083 101.79
## - Age                                                     1   0.19502 101.86
## - Position.in.Wuhan...head.1.                             1   0.20840 101.87
## - child.rearing                                           1   0.36268 102.03
## - Working.wards.changed.yes1                              1   0.41970 102.08
## - Sex                                                     1   0.47027 102.13
## - Prior.traning                                           1   0.64115 102.30
## - Monthly.household.income.USD.month..1440                1   1.01739 102.68
## - Wuhan.as.origin..ys1.                                   1   1.83205 103.50
## - Willingness.to.participate.in.frontline                 1   2.34111 104.00
##                                                              AIC
## - Prior.experience                                       -5980.1
## - education.Bachelor.or.higher.2_Diploma1.               -5980.1
## - Average.working.hours.shift                            -5979.8
## - Clinical.experience.m.                                 -5978.5
## - Prodessional.title..Junior1.intermediate.and.senior0.  -5978.4
## <none>                                                   -5978.2
## - Frontline.working.duration.d.                          -5977.9
## - Original.position..head.1.                             -5977.8
## - marital.status                                         -5977.6
## - Age                                                    -5976.4
## - Position.in.Wuhan...head.1.                            -5976.1
## - child.rearing                                          -5973.1
## - Working.wards.changed.yes1                             -5971.9
## - Sex                                                    -5970.9
## - Prior.traning                                          -5967.6
## - Monthly.household.income.USD.month..1440               -5960.2
## - Wuhan.as.origin..ys1.                                  -5944.3
## - Willingness.to.participate.in.frontline                -5934.4
##
## Step:  AIC=-5980.11
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
```

```
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - education.Bachelor.or.higher.2_Diploma1.               1     0.00712 101.68
## - Average.working.hours.shift                            1     0.01899 101.69
## - Clinical.experience.m.                                 1     0.09003 101.76
## - Prodessional.title..Junior1.intermediate.and.senior0.  1     0.09401 101.76
## <none>                                                                 101.67
## - Original.position..head.1.                             1     0.12247 101.79
## - Frontline.working.duration.d.                          1     0.12280 101.79
## - marital.status                                         1     0.12992 101.80
## - Age                                                    1     0.19626 101.87
## - Position.in.Wuhan...head.1.                            1     0.20876 101.88
## - child.rearing                                          1     0.36459 102.03
## - Working.wards.changed.yes1                             1     0.44357 102.11
## - Sex                                                    1     0.46469 102.13
## - Prior.traning                                          1     0.66464 102.33
## - Monthly.household.income.USD.month..1440               1     1.01820 102.69
## - Wuhan.as.origin..ys1.                                  1     1.83189 103.50
## - Willingness.to.participate.in.frontline                1     2.33587 104.00
##                                                               AIC
## - education.Bachelor.or.higher.2_Diploma1.              -5982.0
## - Average.working.hours.shift                           -5981.7
## - Clinical.experience.m.                                -5980.3
## - Prodessional.title..Junior1.intermediate.and.senior0. -5980.2
## <none>                                                  -5980.1
## - Original.position..head.1.                            -5979.7
## - Frontline.working.duration.d.                         -5979.7
## - marital.status                                        -5979.5
## - Age                                                   -5978.2
## - Position.in.Wuhan...head.1.                           -5978.0
## - child.rearing                                         -5974.9
## - Working.wards.changed.yes1                            -5973.3
## - Sex                                                   -5972.9
## - Prior.traning                                         -5969.0
## - Monthly.household.income.USD.month..1440              -5962.0
## - Wuhan.as.origin..ys1.                                 -5946.1
## - Willingness.to.participate.in.frontline               -5936.4
##
## Step:  AIC=-5981.97
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - Average.working.hours.shift                            1     0.02236 101.70
## - Prodessional.title..Junior1.intermediate.and.senior0.  1     0.08864 101.77
```

```
## - Clinical.experience.m.                                   1   0.09165 101.77
## <none>                                                                101.68
## - Original.position..head.1.                               1   0.12001 101.80
## - Frontline.working.duration.d.                            1   0.12223 101.80
## - marital.status                                           1   0.12752 101.80
## - Age                                                       1   0.19929 101.88
## - Position.in.Wuhan...head.1.                              1   0.20561 101.88
## - child.rearing                                            1   0.36221 102.04
## - Working.wards.changed.yes1                               1   0.44078 102.12
## - Sex                                                       1   0.46861 102.14
## - Prior.traning                                            1   0.65954 102.34
## - Monthly.household.income.USD.month..1440                 1   1.01683 102.69
## - Wuhan.as.origin..ys1.                                    1   1.96917 103.65
## - Willingness.to.participate.in.frontline                  1   2.33224 104.01
##                                                               AIC
## - Average.working.hours.shift                            -5983.5
## - Prodessional.title..Junior1.intermediate.and.senior0.  -5982.2
## - Clinical.experience.m.                                 -5982.2
## <none>                                                   -5982.0
## - Original.position..head.1.                             -5981.6
## - Frontline.working.duration.d.                          -5981.5
## - marital.status                                         -5981.4
## - Age                                                    -5980.0
## - Position.in.Wuhan...head.1.                            -5979.9
## - child.rearing                                          -5976.8
## - Working.wards.changed.yes1                             -5975.3
## - Sex                                                    -5974.7
## - Prior.traning                                          -5970.9
## - Monthly.household.income.USD.month..1440               -5963.9
## - Wuhan.as.origin..ys1.                                  -5945.3
## - Willingness.to.participate.in.frontline                -5938.3
##
## Step:  AIC=-5983.52
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                         Df Sum of Sq    RSS
## - Prodessional.title..Junior1.intermediate.and.senior0.  1   0.08628 101.78
## - Clinical.experience.m.                                 1   0.08814 101.79
## <none>                                                               101.70
## - Frontline.working.duration.d.                          1   0.11443 101.81
## - Original.position..head.1.                             1   0.12530 101.82
## - marital.status                                         1   0.12700 101.83
## - Position.in.Wuhan...head.1.                            1   0.19569 101.89
## - Age                                                    1   0.19624 101.89
## - child.rearing                                          1   0.35769 102.06
## - Working.wards.changed.yes1                             1   0.41842 102.12
## - Sex                                                    1   0.48171 102.18
## - Prior.traning                                          1   0.65858 102.36
## - Monthly.household.income.USD.month..1440               1   1.01160 102.71
```

```
## - Wuhan.as.origin..ys1.                                      1   1.94695 103.65
## - Willingness.to.participate.in.frontline                    1   2.31805 104.02
##                                                                        AIC
## - Prodessional.title..Junior1.intermediate.and.senior0.  -5983.8
## - Clinical.experience.m.                                  -5983.8
## <none>                                                    -5983.5
## - Frontline.working.duration.d.                           -5983.3
## - Original.position..head.1.                              -5983.0
## - marital.status                                          -5983.0
## - Position.in.Wuhan...head.1.                             -5981.7
## - Age                                                     -5981.6
## - child.rearing                                           -5978.5
## - Working.wards.changed.yes1                              -5977.3
## - Sex                                                     -5976.0
## - Prior.traning                                           -5972.5
## - Monthly.household.income.USD.month..1440                -5965.6
## - Wuhan.as.origin..ys1.                                   -5947.3
## - Willingness.to.participate.in.frontline                 -5940.1
##
## Step:  AIC=-5983.81
## log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                             Df Sum of Sq    RSS     AIC
## <none>                                                   101.78 -5983.8
## - Frontline.working.duration.d.              1   0.11186 101.90 -5983.6
## - marital.status                             1   0.12355 101.91 -5983.4
## - Clinical.experience.m.                     1   0.13597 101.92 -5983.1
## - Original.position..head.1.                 1   0.15101 101.94 -5982.8
## - Age                                        1   0.18156 101.97 -5982.2
## - Position.in.Wuhan...head.1.                1   0.19272 101.98 -5982.0
## - child.rearing                              1   0.34240 102.13 -5979.1
## - Working.wards.changed.yes1                 1   0.41230 102.20 -5977.7
## - Sex                                        1   0.49446 102.28 -5976.1
## - Prior.traning                              1   0.66263 102.45 -5972.7
## - Monthly.household.income.USD.month..1440   1   1.05229 102.84 -5965.1
## - Wuhan.as.origin..ys1.                      1   2.14675 103.93 -5943.8
## - Willingness.to.participate.in.frontline    1   2.31689 104.10 -5940.5
```

```
# Step:  AIC=-5983.81
# log1p(SDS_total) ~ Age + Sex + marital.status + child.rearing + Monthly.household.income.USD.m
onth..1440 + Clinical.experience.m. + Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Or
iginal.position..head.1. + Position.in.Wuhan...head.1. + Working.wards.changed.yes1 + Prior.tran
ing + Willingness.to.participate.in.frontline
```

```
summary(log_dep_aic)
```

```
##
## Call:
## lm(formula = log1p(SDS_total) ~ Age + Sex + marital.status +
##     child.rearing + Monthly.household.income.USD.month..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline,
##     data = naomit)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.66453 -0.14153  0.03122  0.17585  0.55694
##
## Coefficients:
##                                            Estimate Std. Error t value Pr(>|t|)
## (Intercept)                               3.9417640  0.0645790  61.038  < 2e-16
## Age                                       0.0042632  0.0022571   1.889 0.059064
## Sex                                       0.0488538  0.0156733   3.117 0.001853
## marital.status                           -0.0281381  0.0180593  -1.558 0.119369
## child.rearing                             0.0477720  0.0184177   2.594 0.009561
## Monthly.household.income.USD.month..1440 -0.0494519  0.0108753  -4.547 5.76e-06
## Clinical.experience.m.                   -0.0002844  0.0001740  -1.635 0.102306
## Frontline.working.duration.d.             0.0005893  0.0003975   1.483 0.138355
## Wuhan.as.origin..ys1.                     0.0728531  0.0112172   6.495 1.05e-10
## Original.position..head.1.               -0.0452931  0.0262942  -1.723 0.085124
## Position.in.Wuhan...head.1.               0.0615203  0.0316144   1.946 0.051800
## Working.wards.changed.yes1                0.0304578  0.0107009   2.846 0.004468
## Prior.traning                            -0.0479188  0.0132800  -3.608 0.000316
## Willingness.to.participate.in.frontline  -0.1946585  0.0288502  -6.747 1.97e-11
##
## (Intercept)                              ***
## Age                                      .
## Sex                                      **
## marital.status
## child.rearing                            **
## Monthly.household.income.USD.month..1440 ***
## Clinical.experience.m.
## Frontline.working.duration.d.
## Wuhan.as.origin..ys1.                    ***
## Original.position..head.1.               .
## Position.in.Wuhan...head.1.              .
## Working.wards.changed.yes1               **
## Prior.traning                            ***
## Willingness.to.participate.in.frontline  ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2256 on 2000 degrees of freedom
## Multiple R-squared:  0.08193,    Adjusted R-squared:  0.07596
## F-statistic: 13.73 on 13 and 2000 DF,  p-value: < 2.2e-16
```

```
round(exp(cbind(coef(log_dep_aic), confint(log_dep_aic)) - 1) * 100, 2)
```

```
##                                              2.5 %  97.5 %
## (Intercept)                              1894.92 1669.51 2150.77
## Age                                        36.95   36.78   37.11
## Sex                                        38.63   37.46   39.84
## marital.status                             35.77   34.52   37.06
## child.rearing                              38.59   37.22   40.01
## Monthly.household.income.USD.month..1440   35.01   34.27   35.77
## Clinical.experience.m.                     36.78   36.76   36.79
## Frontline.working.duration.d.              36.81   36.78   36.84
## Wuhan.as.origin..ys1.                      39.57   38.71   40.45
## Original.position..head.1.                 35.16   33.39   37.02
## Position.in.Wuhan...head.1.                39.12   36.77   41.62
## Working.wards.changed.yes1                 37.93   37.14   38.73
## Prior.traning                              35.07   34.17   35.99
## Willingness.to.participate.in.frontline    30.28   28.62   32.04
```

ORDINAL LOGISTIC REGRESSION

Since the depression is a group of ordered variables ranging from no depression, mild depression, moderate depression to severe depression, so we choose to use ordinal logistic regression.

```
dep.polr=polr(factor(dep_group)~Age+Sex+marital.status+child.rearing+education.Bachelor.or.highe
r.2_Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.household.income.US
D.month..1440  + Clinical.experience.m.+ Frontline.working.duration.d.+Average.working.hours.shi
ft+Wuhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1. + Working.ward
s.changed.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.frontline,data
= naomit)
summary(dep.polr)
```

```
##
## Re-fitting to get Hessian
```

```
## Call:
## polr(formula = factor(dep_group) ~ Age + Sex + marital.status +
##     child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline,
##     data = naomit)
##
## Coefficients:
##                                                          Value Std. Error
## Age                                                  0.0043538   0.019702
## Sex                                                  0.0612087   0.138595
## marital.status                                       0.0902431   0.160409
## child.rearing                                       -0.4488357   0.163544
## education.Bachelor.or.higher.2_Diploma1.            -0.0286779   0.116455
## Prodessional.title..Junior1.intermediate.and.senior0.  0.0266740   0.137421
## Monthly.household.income.USD.month..1440             0.2645764   0.097316
## Clinical.experience.m.                               0.0003775   0.001569
## Frontline.working.duration.d.                        0.0063114   0.003839
## Average.working.hours.shift                         -0.0192349   0.025177
## Wuhan.as.origin..ys1.                               -0.5183903   0.104517
## Original.position..head.1.                           0.2057830   0.246285
## Position.in.Wuhan...head.1.                         -0.4459305   0.287495
## Working.wards.changed.yes1                          -0.2597063   0.097139
## Prior.traning                                        0.2674249   0.121940
## Prior.experience                                    -0.0528563   0.098817
## Willingness.to.participate.in.frontline              0.5347430   0.234428
##                                                      t value
## Age                                                   0.2210
## Sex                                                   0.4416
## marital.status                                        0.5626
## child.rearing                                        -2.7444
## education.Bachelor.or.higher.2_Diploma1.             -0.2463
## Prodessional.title..Junior1.intermediate.and.senior0.  0.1941
## Monthly.household.income.USD.month..1440              2.7187
## Clinical.experience.m.                                0.2406
## Frontline.working.duration.d.                         1.6441
## Average.working.hours.shift                          -0.7640
## Wuhan.as.origin..ys1.                                -4.9599
## Original.position..head.1.                            0.8355
## Position.in.Wuhan...head.1.                          -1.5511
## Working.wards.changed.yes1                           -2.6736
## Prior.traning                                         2.1931
## Prior.experience                                     -0.5349
## Willingness.to.participate.in.frontline               2.2811
##
## Intercepts:
##                                     Value   Std. Error t value
## mild depression|moderate depression -0.3405  0.6221     -0.5474
## moderate depression|no depression    0.0869  0.6221      0.1397
```

```
## no depression|severe depression        4.9429  0.6556      7.5391
##
## Residual Deviance: 3811.802
## AIC: 3851.802
```

p-value

```
(ptable1 <- coef(summary(dep.polr)))
```

```
##
## Re-fitting to get Hessian
```

```
##                                                                Value   Std. Error
## Age                                                       0.0043537658 0.019701960
## Sex                                                       0.0612086521 0.138595256
## marital.status                                            0.0902431368 0.160408576
## child.rearing                                            -0.4488356642 0.163544114
## education.Bachelor.or.higher.2_Diploma1.                 -0.0286778519 0.116454506
## Prodessional.title..Junior1.intermediate.and.senior0.    0.0266739870 0.137420544
## Monthly.household.income.USD.month..1440                  0.2645764016 0.097315603
## Clinical.experience.m.                                    0.0003774635 0.001569090
## Frontline.working.duration.d.                             0.0063114124 0.003838842
## Average.working.hours.shift                              -0.0192348894 0.025177001
## Wuhan.as.origin..ys1.                                    -0.5183903394 0.104517252
## Original.position..head.1.                                0.2057830090 0.246285366
## Position.in.Wuhan...head.1.                              -0.4459304908 0.287494659
## Working.wards.changed.yes1                               -0.2597062939 0.097138550
## Prior.traning                                             0.2674249076 0.121940413
## Prior.experience                                         -0.0528563306 0.098817184
## Willingness.to.participate.in.frontline                   0.5347430246 0.234427801
## mild depression|moderate depression                      -0.3405449937 0.622139270
## moderate depression|no depression                         0.0869300357 0.622118643
## no depression|severe depression                           4.9429310148 0.655643711
##                                                              t value
## Age                                                        0.2209814
## Sex                                                        0.4416360
## marital.status                                             0.5625830
## child.rearing                                             -2.7444318
## education.Bachelor.or.higher.2_Diploma1.                  -0.2462580
## Prodessional.title..Junior1.intermediate.and.senior0.     0.1941048
## Monthly.household.income.USD.month..1440                   2.7187459
## Clinical.experience.m.                                     0.2405620
## Frontline.working.duration.d.                              1.6440927
## Average.working.hours.shift                               -0.7639865
## Wuhan.as.origin..ys1.                                     -4.9598543
## Original.position..head.1.                                 0.8355470
## Position.in.Wuhan...head.1.                               -1.5510914
## Working.wards.changed.yes1                                -2.6735657
## Prior.traning                                              2.1930786
## Prior.experience                                          -0.5348901
## Willingness.to.participate.in.frontline                    2.2810564
## mild depression|moderate depression                       -0.5473774
## moderate depression|no depression                          0.1397322
## no depression|severe depression                            7.5390504
```

```
p1 <- pnorm(abs(ptable1[, "t value"]), lower.tail = FALSE) * 2
(ptable1 <- cbind(ptable1, "p value" = p1))
```

```
##                                                               Value   Std. Error
## Age                                                    0.0043537658  0.019701960
## Sex                                                    0.0612086521  0.138595256
## marital.status                                         0.0902431368  0.160408576
## child.rearing                                         -0.4488356642  0.163544114
## education.Bachelor.or.higher.2_Diploma1.              -0.0286778519  0.116454506
## Prodessional.title..Junior1.intermediate.and.senior0.  0.0266739870  0.137420544
## Monthly.household.income.USD.month..1440               0.2645764016  0.097315603
## Clinical.experience.m.                                 0.0003774635  0.001569090
## Frontline.working.duration.d.                          0.0063114124  0.003838842
## Average.working.hours.shift                           -0.0192348894  0.025177001
## Wuhan.as.origin..ys1.                                 -0.5183903394  0.104517252
## Original.position..head.1.                             0.2057830090  0.246285366
## Position.in.Wuhan...head.1.                           -0.4459304908  0.287494659
## Working.wards.changed.yes1                            -0.2597062939  0.097138550
## Prior.traning                                          0.2674249076  0.121940413
## Prior.experience                                      -0.0528563306  0.098817184
## Willingness.to.participate.in.frontline                0.5347430246  0.234427801
## mild depression|moderate depression                   -0.3405449937  0.622139270
## moderate depression|no depression                      0.0869300357  0.622118643
## no depression|severe depression                        4.9429310148  0.655643711
##                                                           t value       p value
## Age                                                     0.2209814  8.251069e-01
## Sex                                                     0.4416360  6.587526e-01
## marital.status                                         0.5625830  5.737189e-01
## child.rearing                                         -2.7444318  6.061575e-03
## education.Bachelor.or.higher.2_Diploma1.              -0.2462580  8.054825e-01
## Prodessional.title..Junior1.intermediate.and.senior0.  0.1941048  8.460938e-01
## Monthly.household.income.USD.month..1440               2.7187459  6.552992e-03
## Clinical.experience.m.                                 0.2405620  8.098946e-01
## Frontline.working.duration.d.                          1.6440927  1.001570e-01
## Average.working.hours.shift                           -0.7639865  4.448753e-01
## Wuhan.as.origin..ys1.                                 -4.9598543  7.054608e-07
## Original.position..head.1.                             0.8355470  4.034098e-01
## Position.in.Wuhan...head.1.                           -1.5510914  1.208798e-01
## Working.wards.changed.yes1                            -2.6735657  7.504958e-03
## Prior.traning                                          2.1930786  2.830172e-02
## Prior.experience                                      -0.5348901  5.927259e-01
## Willingness.to.participate.in.frontline                2.2810564  2.254511e-02
## mild depression|moderate depression                   -0.5473774  5.841195e-01
## moderate depression|no depression                      0.1397322  8.888715e-01
## no depression|severe depression                        7.5390504  4.734058e-14
```

CI

```
dep.ci <- confint(dep.polr)
```

```
## Waiting for profiling to be done...
```

```
##
## Re-fitting to get Hessian
```

OR & CI

```
exp(cbind(OR = coef(dep.polr), dep.ci))
```

```
##                                                          OR      2.5 %
## Age                                               1.0043633 0.9662581
## Sex                                               1.0631207 0.8091541
## marital.status                                    1.0944404 0.8004108
## child.rearing                                     0.6383710 0.4620310
## education.Bachelor.or.higher.2_Diploma1.          0.9717295 0.7728767
## Prodessional.title..Junior1.intermediate.and.senior0. 1.0270329 0.7842856
## Monthly.household.income.USD.month..1440          1.3028790 1.0769382
## Clinical.experience.m.                            1.0003775 0.9973120
## Frontline.working.duration.d.                     1.0063314 0.9986532
## Average.working.hours.shift                       0.9809489 0.9337927
## Wuhan.as.origin..ys1.                             0.5954783 0.4846803
## Original.position..head.1.                        1.2284866 0.7631704
## Position.in.Wuhan...head.1.                       0.6402283 0.3627016
## Working.wards.changed.yes1                        0.7712781 0.6375280
## Prior.traning                                     1.3065955 1.0283046
## Prior.experience                                  0.9485163 0.7815376
## Willingness.to.participate.in.frontline           1.7070095 1.0779935
##                                                      97.5 %
## Age                                               1.0441115
## Sex                                               1.3936048
## marital.status                                    1.5020205
## child.rearing                                     0.8777030
## education.Bachelor.or.higher.2_Diploma1.          1.2202547
## Prodessional.title..Junior1.intermediate.and.senior0. 1.3443664
## Monthly.household.income.USD.month..1440          1.5772393
## Clinical.experience.m.                            1.0034583
## Frontline.working.duration.d.                     1.0137155
## Average.working.hours.shift                       1.0307065
## Wuhan.as.origin..ys1.                             0.7302202
## Original.position..head.1.                        2.0080447
## Position.in.Wuhan...head.1.                       1.1216929
## Working.wards.changed.yes1                        0.9330426
## Prior.traning                                     1.6588735
## Prior.experience                                  1.1513758
## Willingness.to.participate.in.frontline           2.7105662
```

BIC for ordinal

```
or_dep_bic <-  step(dep.polr,k=sqrt(nrow(naomit)))
```

```
## Start:   AIC=4709.35
## factor(dep_group) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                                        Df    AIC
## - Prodessional.title..Junior1.intermediate.and.senior0.   1 4664.5
## - Age                                                     1 4664.5
## - Clinical.experience.m.                                  1 4664.5
## - education.Bachelor.or.higher.2_Diploma1.                1 4664.5
## - Sex                                                     1 4664.7
## - Prior.experience                                        1 4664.8
## - marital.status                                          1 4664.8
## - Average.working.hours.shift                             1 4665.1
## - Original.position..head.1.                              1 4665.2
## - Position.in.Wuhan...head.1.                             1 4666.9
## - Frontline.working.duration.d.                           1 4667.1
## - Prior.traning                                           1 4669.3
## - Willingness.to.participate.in.frontline                 1 4669.7
## - Working.wards.changed.yes1                              1 4671.6
## - Monthly.household.income.USD.month..1440                1 4671.9
## - child.rearing                                           1 4672.1
## - Wuhan.as.origin..ys1.                                   1 4689.5
## <none>                                                      4709.4
##
## Step:   AIC=4664.51
## factor(dep_group) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Monthly.household.income.USD.month..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                        Df    AIC
## - Clinical.experience.m.                                  1 4619.7
## - Age                                                     1 4619.7
## - education.Bachelor.or.higher.2_Diploma1.                1 4619.7
## - Sex                                                     1 4619.8
## - Prior.experience                                        1 4619.9
## - marital.status                                          1 4620.0
## - Average.working.hours.shift                             1 4620.2
## - Original.position..head.1.                              1 4620.3
## - Position.in.Wuhan...head.1.                             1 4622.1
## - Frontline.working.duration.d.                           1 4622.2
## - Prior.traning                                           1 4624.4
## - Willingness.to.participate.in.frontline                 1 4624.8
## - Working.wards.changed.yes1                              1 4626.8
## - Monthly.household.income.USD.month..1440                1 4627.0
```

```
## - child.rearing                                 1 4627.4
## - Wuhan.as.origin..ys1.                         1 4645.1
## <none>                                            4664.5
##
## Step:   AIC=4619.68
## factor(dep_group) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                 Df    AIC
## - education.Bachelor.or.higher.2_Diploma1.      1 4574.9
## - Sex                                            1 4575.0
## - Prior.experience                              1 4575.1
## - marital.status                                1 4575.1
## - Average.working.hours.shift                   1 4575.4
## - Age                                            1 4575.5
## - Original.position..head.1.                    1 4575.5
## - Position.in.Wuhan...head.1.                   1 4577.3
## - Frontline.working.duration.d.                 1 4577.5
## - Prior.traning                                 1 4579.6
## - Willingness.to.participate.in.frontline       1 4580.0
## - Working.wards.changed.yes1                    1 4582.0
## - Monthly.household.income.USD.month..1440      1 4582.3
## - child.rearing                                 1 4582.5
## - Wuhan.as.origin..ys1.                         1 4600.3
## <none>                                            4619.7
##
## Step:   AIC=4574.88
## factor(dep_group) ~ Age + Sex + marital.status + child.rearing +
##     Monthly.household.income.USD.month..1440 + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                 Df    AIC
## - Sex                                            1 4530.2
## - Prior.experience                              1 4530.3
## - marital.status                                1 4530.3
## - Average.working.hours.shift                   1 4530.6
## - Age                                            1 4530.6
## - Original.position..head.1.                    1 4530.7
## - Position.in.Wuhan...head.1.                   1 4532.4
## - Frontline.working.duration.d.                 1 4532.7
## - Prior.traning                                 1 4534.7
## - Willingness.to.participate.in.frontline       1 4535.2
## - Working.wards.changed.yes1                    1 4537.1
## - Monthly.household.income.USD.month..1440      1 4537.4
## - child.rearing                                 1 4537.7
## - Wuhan.as.origin..ys1.                         1 4556.9
## <none>                                            4574.9
##
```

```
## Step:   AIC=4530.24
## factor(dep_group) ~ Age + marital.status + child.rearing + Monthly.household.income.USD.mont
h..1440 +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                            Df    AIC
## - marital.status                           1 4485.7
## - Prior.experience                         1 4485.7
## - Average.working.hours.shift              1 4486.0
## - Age                                      1 4486.0
## - Original.position..head.1.               1 4486.1
## - Position.in.Wuhan...head.1.              1 4488.0
## - Frontline.working.duration.d.            1 4488.0
## - Prior.traning                            1 4490.1
## - Willingness.to.participate.in.frontline  1 4490.6
## - Monthly.household.income.USD.month..1440 1 4492.8
## - Working.wards.changed.yes1               1 4492.8
## - child.rearing                            1 4493.0
## - Wuhan.as.origin..ys1.                    1 4512.0
## <none>                                       4530.2
##
## Step:   AIC=4485.65
## factor(dep_group) ~ Age + child.rearing + Monthly.household.income.USD.month..1440 +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                            Df    AIC
## - Prior.experience                         1 4441.1
## - Average.working.hours.shift              1 4441.4
## - Original.position..head.1.               1 4441.5
## - Age                                      1 4441.6
## - Frontline.working.duration.d.            1 4443.4
## - Position.in.Wuhan...head.1.              1 4443.4
## - Prior.traning                            1 4445.5
## - Willingness.to.participate.in.frontline  1 4446.0
## - Working.wards.changed.yes1               1 4448.2
## - Monthly.household.income.USD.month..1440 1 4448.6
## - child.rearing                            1 4452.4
## - Wuhan.as.origin..ys1.                    1 4467.4
## <none>                                       4485.7
##
## Step:   AIC=4441.1
## factor(dep_group) ~ Age + child.rearing + Monthly.household.income.USD.month..1440 +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                            Df    AIC
## - Average.working.hours.shift              1 4396.9
```

```
## - Original.position..head.1.                     1 4396.9
## - Age                                            1 4397.0
## - Frontline.working.duration.d.                  1 4398.7
## - Position.in.Wuhan...head.1.                    1 4398.9
## - Prior.traning                                  1 4400.6
## - Willingness.to.participate.in.frontline        1 4401.4
## - Monthly.household.income.USD.month..1440       1 4404.0
## - Working.wards.changed.yes1                     1 4404.3
## - child.rearing                                  1 4408.1
## - Wuhan.as.origin..ys1.                          1 4422.7
## <none>                                             4441.1
##
## Step:  AIC=4396.9
## factor(dep_group) ~ Age + child.rearing + Monthly.household.income.USD.month..1440 +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df    AIC
## - Original.position..head.1.                  1 4352.7
## - Age                                         1 4352.9
## - Frontline.working.duration.d.               1 4354.2
## - Position.in.Wuhan...head.1.                 1 4354.9
## - Prior.traning                               1 4356.4
## - Willingness.to.participate.in.frontline     1 4357.4
## - Monthly.household.income.USD.month..1440    1 4359.9
## - Working.wards.changed.yes1                  1 4361.7
## - child.rearing                               1 4364.0
## - Wuhan.as.origin..ys1.                       1 4379.7
## <none>                                          4396.9
##
## Step:  AIC=4352.66
## factor(dep_group) ~ Age + child.rearing + Monthly.household.income.USD.month..1440 +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df    AIC
## - Age                                         1 4309.0
## - Frontline.working.duration.d.               1 4310.1
## - Position.in.Wuhan...head.1.                 1 4310.6
## - Prior.traning                               1 4312.2
## - Willingness.to.participate.in.frontline     1 4313.2
## - Monthly.household.income.USD.month..1440    1 4315.8
## - Working.wards.changed.yes1                  1 4317.9
## - child.rearing                               1 4319.8
## - Wuhan.as.origin..ys1.                       1 4339.3
## <none>                                          4352.7
##
## Step:  AIC=4309.01
## factor(dep_group) ~ child.rearing + Monthly.household.income.USD.month..1440 +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df    AIC
```

```
## - Position.in.Wuhan...head.1.                 1 4266.4
## - Frontline.working.duration.d.               1 4266.5
## - Prior.traning                               1 4268.5
## - Willingness.to.participate.in.frontline     1 4269.7
## - Monthly.household.income.USD.month..1440    1 4273.3
## - Working.wards.changed.yes1                  1 4274.1
## - child.rearing                               1 4275.9
## - Wuhan.as.origin..ys1.                       1 4297.2
## <none>                                          4309.0
##
## Step:  AIC=4266.35
## factor(dep_group) ~ child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df    AIC
## - Frontline.working.duration.d.               1 4223.4
## - Prior.traning                               1 4225.4
## - Willingness.to.participate.in.frontline     1 4226.9
## - Monthly.household.income.USD.month..1440    1 4230.8
## - Working.wards.changed.yes1                  1 4231.6
## - child.rearing                               1 4234.7
## - Wuhan.as.origin..ys1.                       1 4255.4
## <none>                                          4266.4
##
## Step:  AIC=4223.38
## factor(dep_group) ~ child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1 + Prior.traning +
##     Willingness.to.participate.in.frontline
##
##                                              Df    AIC
## - Prior.traning                               1 4182.2
## - Willingness.to.participate.in.frontline     1 4184.0
## - Monthly.household.income.USD.month..1440    1 4186.8
## - Working.wards.changed.yes1                  1 4187.5
## - child.rearing                               1 4191.3
## - Wuhan.as.origin..ys1.                       1 4211.5
## <none>                                          4223.4
##
## Step:  AIC=4182.19
## factor(dep_group) ~ child.rearing + Monthly.household.income.USD.month..1440 +
##     Wuhan.as.origin..ys1. + Working.wards.changed.yes1 + Willingness.to.participate.in.frontl
## ine
##
##                                              Df    AIC
## - Willingness.to.participate.in.frontline     1 4143.4
## - Working.wards.changed.yes1                  1 4145.4
## - Monthly.household.income.USD.month..1440    1 4146.1
## - child.rearing                               1 4149.6
## - Wuhan.as.origin..ys1.                       1 4171.4
## <none>                                          4182.2
##
## Step:  AIC=4143.38
## factor(dep_group) ~ child.rearing + Monthly.household.income.USD.month..1440 +
```

```
##      Wuhan.as.origin..ys1. + Working.wards.changed.yes1
##
##                                          Df    AIC
## - Working.wards.changed.yes1              1 4106.2
## - Monthly.household.income.USD.month..1440 1 4106.9
## - child.rearing                          1 4110.9
## - Wuhan.as.origin..ys1.                   1 4135.3
## <none>                                      4143.4
##
## Step:  AIC=4106.2
## factor(dep_group) ~ child.rearing + Monthly.household.income.USD.month..1440 +
##      Wuhan.as.origin..ys1.
##
##                                          Df    AIC
## - Monthly.household.income.USD.month..1440 1 4071.3
## - child.rearing                          1 4073.2
## - Wuhan.as.origin..ys1.                   1 4098.1
## <none>                                      4106.2
##
## Step:  AIC=4071.29
## factor(dep_group) ~ child.rearing + Wuhan.as.origin..ys1.
##
##                          Df    AIC
## - child.rearing           1 4034.0
## - Wuhan.as.origin..ys1.   1 4059.0
## <none>                      4071.3
##
## Step:  AIC=4034.01
## factor(dep_group) ~ Wuhan.as.origin..ys1.
##
##                          Df    AIC
## - Wuhan.as.origin..ys1.   1 4022.1
## <none>                      4034.0
##
## Step:  AIC=4022.13
## factor(dep_group) ~ 1
```

```
# Step:  AIC=4034.01
# factor(dep_group) ~ Wuhan.as.origin..ys1.
```

```
summary(or_dep_bic)
```

```
##
## Re-fitting to get Hessian
```

```
## Call:
## polr(formula = factor(dep_group) ~ 1, data = naomit)
##
## No coefficients
##
## Intercepts:
##                                         Value    Std. Error t value
## mild depression|moderate depression   -0.7163    0.0475   -15.0949
## moderate depression|no depression     -0.3042    0.0451    -6.7479
## no depression|severe depression        4.4609    0.2097    21.2712
##
## Residual Deviance: 3887.498
## AIC: 3893.498
```

```
(ptable1 <- coef(summary(or_dep_bic)))
```

```
##
## Re-fitting to get Hessian
```

```
##                                        Value Std. Error    t value
## mild depression|moderate depression -0.7163260 0.04745480 -15.09491
## moderate depression|no depression   -0.3042114 0.04508219  -6.74793
## no depression|severe depression      4.4608976 0.20971531  21.27121
```

```
p1 <- pnorm(abs(ptable1[, "t value"]), lower.tail = FALSE) * 2
(ptable1 <- cbind(ptable1, "p value" = p1))
```

```
##                                        Value Std. Error    t value
## mild depression|moderate depression -0.7163260 0.04745480 -15.09491
## moderate depression|no depression   -0.3042114 0.04508219  -6.74793
## no depression|severe depression      4.4608976 0.20971531  21.27121
##                                         p value
## mild depression|moderate depression  1.749189e-51
## moderate depression|no depression    1.499695e-11
## no depression|severe depression      2.098168e-100
```

AIC for ordinal

```
or_dep_aic <- step(dep.polr,k =2)
```

```
## Start:   AIC=3851.8
## factor(dep_group) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                                         Df    AIC
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 3849.8
## - Age                                                    1 3849.9
## - Clinical.experience.m.                                 1 3849.9
## - education.Bachelor.or.higher.2_Diploma1.               1 3849.9
## - Sex                                                    1 3850.0
## - Prior.experience                                       1 3850.1
## - marital.status                                         1 3850.1
## - Average.working.hours.shift                            1 3850.4
## - Original.position..head.1.                             1 3850.5
## <none>                                                     3851.8
## - Position.in.Wuhan...head.1.                            1 3852.2
## - Frontline.working.duration.d.                          1 3852.4
## - Prior.traning                                          1 3854.6
## - Willingness.to.participate.in.frontline                1 3855.0
## - Working.wards.changed.yes1                             1 3856.9
## - Monthly.household.income.USD.month..1440               1 3857.2
## - child.rearing                                          1 3857.5
## - Wuhan.as.origin..ys1.                                  1 3874.9
##
## Step:   AIC=3849.84
## factor(dep_group) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Monthly.household.income.USD.month..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                              Df    AIC
## - Clinical.experience.m.                      1 3847.9
## - Age                                         1 3847.9
## - education.Bachelor.or.higher.2_Diploma1.    1 3847.9
## - Sex                                         1 3848.0
## - Prior.experience                            1 3848.1
## - marital.status                              1 3848.2
## - Average.working.hours.shift                 1 3848.4
## - Original.position..head.1.                  1 3848.5
## <none>                                          3849.8
## - Position.in.Wuhan...head.1.                 1 3850.3
## - Frontline.working.duration.d.               1 3850.4
## - Prior.traning                               1 3852.6
## - Willingness.to.participate.in.frontline     1 3853.0
## - Working.wards.changed.yes1                  1 3855.0
```

```
## - Monthly.household.income.USD.month..1440  1 3855.2
## - child.rearing                               1 3855.6
## - Wuhan.as.origin..ys1.                       1 3873.3
##
## Step:  AIC=3847.88
## factor(dep_group) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                          Df   AIC
## - education.Bachelor.or.higher.2_Diploma1.  1 3846.0
## - Sex                                       1 3846.1
## - Prior.experience                          1 3846.2
## - marital.status                            1 3846.2
## - Average.working.hours.shift               1 3846.5
## - Age                                       1 3846.5
## - Original.position..head.1.                1 3846.6
## <none>                                        3847.9
## - Position.in.Wuhan...head.1.               1 3848.4
## - Frontline.working.duration.d.             1 3848.6
## - Prior.traning                             1 3850.6
## - Willingness.to.participate.in.frontline   1 3851.1
## - Working.wards.changed.yes1                1 3853.1
## - Monthly.household.income.USD.month..1440  1 3853.4
## - child.rearing                             1 3853.6
## - Wuhan.as.origin..ys1.                     1 3871.4
##
## Step:  AIC=3845.96
## factor(dep_group) ~ Age + Sex + marital.status + child.rearing +
##     Monthly.household.income.USD.month..1440 + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                          Df   AIC
## - Sex                                       1 3844.2
## - Prior.experience                          1 3844.2
## - marital.status                            1 3844.3
## - Average.working.hours.shift               1 3844.5
## - Age                                       1 3844.6
## - Original.position..head.1.                1 3844.7
## <none>                                        3846.0
## - Position.in.Wuhan...head.1.               1 3846.4
## - Frontline.working.duration.d.             1 3846.6
## - Prior.traning                             1 3848.7
## - Willingness.to.participate.in.frontline   1 3849.1
## - Working.wards.changed.yes1                1 3851.1
## - Monthly.household.income.USD.month..1440  1 3851.4
## - child.rearing                             1 3851.6
## - Wuhan.as.origin..ys1.                     1 3870.9
##
```

```
## Step:   AIC=3844.19
## factor(dep_group) ~ Age + marital.status + child.rearing + Monthly.household.income.USD.mont
h..1440 +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                              Df   AIC
## - marital.status                             1 3842.5
## - Prior.experience                           1 3842.5
## - Average.working.hours.shift                1 3842.8
## - Age                                        1 3842.9
## - Original.position..head.1.                 1 3842.9
## <none>                                         3844.2
## - Position.in.Wuhan...head.1.                1 3844.8
## - Frontline.working.duration.d.              1 3844.8
## - Prior.traning                              1 3846.9
## - Willingness.to.participate.in.frontline    1 3847.5
## - Monthly.household.income.USD.month..1440   1 3849.7
## - Working.wards.changed.yes1                 1 3849.7
## - child.rearing                              1 3849.8
## - Wuhan.as.origin..ys1.                      1 3868.9
##
## Step:   AIC=3842.49
## factor(dep_group) ~ Age + child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                              Df   AIC
## - Prior.experience                           1 3840.8
## - Average.working.hours.shift                1 3841.1
## - Original.position..head.1.                 1 3841.2
## - Age                                        1 3841.3
## <none>                                         3842.5
## - Frontline.working.duration.d.              1 3843.1
## - Position.in.Wuhan...head.1.                1 3843.1
## - Prior.traning                              1 3845.2
## - Willingness.to.participate.in.frontline    1 3845.7
## - Working.wards.changed.yes1                 1 3847.9
## - Monthly.household.income.USD.month..1440   1 3848.3
## - child.rearing                              1 3852.1
## - Wuhan.as.origin..ys1.                      1 3867.1
##
## Step:   AIC=3840.81
## factor(dep_group) ~ Age + child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                              Df   AIC
## - Average.working.hours.shift                1 3839.5
```

```
## - Original.position..head.1.                   1 3839.5
## - Age                                          1 3839.6
## <none>                                           3840.8
## - Frontline.working.duration.d.                1 3841.3
## - Position.in.Wuhan...head.1.                  1 3841.5
## - Prior.traning                                1 3843.2
## - Willingness.to.participate.in.frontline      1 3844.0
## - Monthly.household.income.USD.month..1440     1 3846.6
## - Working.wards.changed.yes1                   1 3846.9
## - child.rearing                                1 3850.7
## - Wuhan.as.origin..ys1.                        1 3865.3
##
## Step:  AIC=3839.49
## factor(dep_group) ~ Age + child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Willingness.to.participate.in.frontline
##
##                                                Df    AIC
## - Original.position..head.1.                   1 3838.1
## - Age                                          1 3838.3
## <none>                                           3839.5
## - Frontline.working.duration.d.                1 3839.7
## - Position.in.Wuhan...head.1.                  1 3840.4
## - Prior.traning                                1 3841.9
## - Willingness.to.participate.in.frontline      1 3842.8
## - Monthly.household.income.USD.month..1440     1 3845.4
## - Working.wards.changed.yes1                   1 3847.2
## - child.rearing                                1 3849.5
## - Wuhan.as.origin..ys1.                        1 3865.2
##
## Step:  AIC=3838.13
## factor(dep_group) ~ Age + child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                Df    AIC
## - Age                                          1 3837.4
## <none>                                           3838.1
## - Frontline.working.duration.d.                1 3838.4
## - Position.in.Wuhan...head.1.                  1 3838.9
## - Prior.traning                                1 3840.5
## - Willingness.to.participate.in.frontline      1 3841.6
## - Monthly.household.income.USD.month..1440     1 3844.1
## - Working.wards.changed.yes1                   1 3846.2
## - child.rearing                                1 3848.1
## - Wuhan.as.origin..ys1.                        1 3867.7
##
## Step:  AIC=3837.36
## factor(dep_group) ~ child.rearing + Monthly.household.income.USD.month..1440 +
##     Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline
##
##                                                Df    AIC
```

```
## <none>                                            3837.4
## - Position.in.Wuhan...head.1.              1 3837.6
## - Frontline.working.duration.d.            1 3837.7
## - Prior.traning                            1 3839.7
## - Willingness.to.participate.in.frontline  1 3840.9
## - Monthly.household.income.USD.month..1440  1 3844.5
## - Working.wards.changed.yes1               1 3845.3
## - child.rearing                            1 3847.2
## - Wuhan.as.origin..ys1.                    1 3868.4
```

```
# Step:   AIC=3837.36
# factor(dep_group) ~ child.rearing + Monthly.household.income.USD.month..1440 + Frontline.worki
ng.duration.d. + Wuhan.as.origin..ys1. + Position.in.Wuhan...head.1. + Working.wards.changed.yes
1 + Prior.traning + Willingness.to.participate.in.frontline
```

```
summary(or_dep_aic)
```

```
##
## Re-fitting to get Hessian
```

```
## Call:
## polr(formula = factor(dep_group) ~ child.rearing + Monthly.household.income.USD.month..1440 +
##      Frontline.working.duration.d. + Wuhan.as.origin..ys1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Willingness.to.participate.in.frontline,
##      data = naomit)
##
## Coefficients:
##                                                Value Std. Error t value
## child.rearing                               -0.317252    0.092547    -3.428
## Monthly.household.income.USD.month..1440     0.283845    0.094069     3.017
## Frontline.working.duration.d.                0.005891    0.003821     1.542
## Wuhan.as.origin..ys1.                       -0.549922    0.096752    -5.684
## Position.in.Wuhan...head.1.                 -0.276488    0.184821    -1.496
## Working.wards.changed.yes1                  -0.293058    0.092757    -3.159
## Prior.traning                                0.241423    0.115624     2.088
## Willingness.to.participate.in.frontline      0.553272    0.233754     2.367
##
## Intercepts:
##                                          Value   Std. Error t value
## mild depression|moderate depression     -0.4207  0.2746      -1.5318
## moderate depression|no depression        0.0062  0.2746       0.0225
## no depression|severe depression          4.8580  0.3440      14.1231
##
## Residual Deviance: 3815.356
## AIC: 3837.356
```

```
(ptable1 <- coef(summary(or_dep_aic)))
```

```
##
## Re-fitting to get Hessian
```

```
##                                           Value   Std. Error     t value
## child.rearing                        -0.317252243 0.092546508 -3.42803039
## Monthly.household.income.USD.month..1440  0.283844560 0.094069224  3.01740088
## Frontline.working.duration.d.          0.005891378 0.003820953  1.54186082
## Wuhan.as.origin..ys1.                 -0.549922225 0.096752255 -5.68381815
## Position.in.Wuhan...head.1.           -0.276487884 0.184820646 -1.49597943
## Working.wards.changed.yes1            -0.293058492 0.092756960 -3.15942322
## Prior.traning                          0.241423024 0.115623812  2.08800436
## Willingness.to.participate.in.frontline  0.553272362 0.233754235  2.36689770
## mild depression|moderate depression   -0.420678411 0.274629845 -1.53180151
## moderate depression|no depression      0.006172930 0.274627930  0.02247743
## no depression|severe depression        4.857977690 0.343974413 14.12307864
```

```
p1 <- pnorm(abs(ptable1[, "t value"]), lower.tail = FALSE) * 2
(ptable1 <- cbind(ptable1, "p value" = p1))
```

```
##                                           Value   Std. Error     t value
## child.rearing                        -0.317252243 0.092546508 -3.42803039
## Monthly.household.income.USD.month..1440  0.283844560 0.094069224  3.01740088
## Frontline.working.duration.d.          0.005891378 0.003820953  1.54186082
## Wuhan.as.origin..ys1.                 -0.549922225 0.096752255 -5.68381815
## Position.in.Wuhan...head.1.           -0.276487884 0.184820646 -1.49597943
## Working.wards.changed.yes1            -0.293058492 0.092756960 -3.15942322
## Prior.traning                          0.241423024 0.115623812  2.08800436
## Willingness.to.participate.in.frontline  0.553272362 0.233754235  2.36689770
## mild depression|moderate depression   -0.420678411 0.274629845 -1.53180151
## moderate depression|no depression      0.006172930 0.274627930  0.02247743
## no depression|severe depression        4.857977690 0.343974413 14.12307864
##                                             p value
## child.rearing                        6.079774e-04
## Monthly.household.income.USD.month..1440 2.549524e-03
## Frontline.working.duration.d.          1.231074e-01
## Wuhan.as.origin..ys1.                 1.317203e-08
## Position.in.Wuhan...head.1.           1.346590e-01
## Working.wards.changed.yes1            1.580817e-03
## Prior.traning                          3.679744e-02
## Willingness.to.participate.in.frontline  1.793789e-02
## mild depression|moderate depression   1.255714e-01
## moderate depression|no depression      9.820671e-01
## no depression|severe depression        2.737651e-45
```

```
vif(dep.polr)
```

```
##
## Re-fitting to get Hessian
```

```
##                                                     Age
##                                                7.642159
##                                                     Sex
##                                                1.116124
##                                          marital.status
##                                                3.121146
##                                            child.rearing
##                                                3.389680
##               education.Bachelor.or.higher.2_Diploma1.
##                                                1.175037
## Prodessional.title..Junior1.intermediate.and.senior0.
##                                                1.833577
##               Monthly.household.income.USD.month..1440
##                                                1.198201
##                                    Clinical.experience.m.
##                                                7.672549
##                            Frontline.working.duration.d.
##                                                1.087971
##                             Average.working.hours.shift
##                                                1.162309
##                                   Wuhan.as.origin..ys1.
##                                                1.203009
##                                Original.position..head.1.
##                                                2.688412
##                                 Position.in.Wuhan...head.1.
##                                                2.507390
##                                Working.wards.changed.yes1
##                                                1.144196
##                                            Prior.traning
##                                                1.139888
##                                         Prior.experience
##                                                1.197025
##                    Willingness.to.participate.in.frontline
##                                                1.020631
```

fear

```
lifear<- lm(formula= FSHPs_total ~ Age+Sex+marital.status+child.rearing+education.Bachelor.or.hi
gher.2_Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.household.incom
e.USD.month..1440 + Clinical.experience.m. + Frontline.working.duration.d.+Average.working.hour
s.shift+Wuhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1. + Workin
g.wards.changed.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.frontlin
e,data = naomit)
summary(lifear)
```

```
## 
## Call:
## lm(formula = FSHPs_total ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline, data = naomit)
## 
## Residuals:
##      Min      1Q  Median      3Q     Max
## -26.1446  -3.7347   0.9777   5.1424  18.3049
## 
## Coefficients:
##                                                      Estimate Std. Error
## (Intercept)                                          32.816034   2.300939
## Age                                                  -0.155337   0.071670
## Sex                                                   2.637410   0.498755
## marital.status                                        1.091480   0.572477
## child.rearing                                        -0.126619   0.584239
## education.Bachelor.or.higher.2_Diploma1.              0.884376   0.417970
## Prodessional.title..Junior1.intermediate.and.senior0.  0.023854   0.496989
## Monthly.household.income.USD.month..1440              0.197063   0.349423
## Clinical.experience.m.                                0.007583   0.005648
## Frontline.working.duration.d.                         0.015038   0.012654
## Average.working.hours.shift                          -0.337354   0.090210
## Wuhan.as.origin..ys1.                                 3.339066   0.370399
## Original.position..head.1.                           -2.317399   0.839715
## Position.in.Wuhan...head.1.                          -0.496744   1.005729
## Working.wards.changed.yes1                           -0.063763   0.351126
## Prior.traning                                        -0.637079   0.442443
## Prior.experience                                     -1.214343   0.355521
## Willingness.to.participate.in.frontline              -2.069287   0.914620
##                                                      t value Pr(>|t|)
## (Intercept)                                           14.262  < 2e-16 ***
## Age                                                   -2.167 0.030324 *
## Sex                                                    5.288 1.37e-07 ***
## marital.status                                         1.907 0.056717 .
## child.rearing                                         -0.217 0.828445
## education.Bachelor.or.higher.2_Diploma1.               2.116 0.034478 *
## Prodessional.title..Junior1.intermediate.and.senior0.  0.048 0.961723
## Monthly.household.income.USD.month..1440               0.564 0.572841
## Clinical.experience.m.                                 1.343 0.179554
## Frontline.working.duration.d.                          1.188 0.234827
## Average.working.hours.shift                           -3.740 0.000189 ***
## Wuhan.as.origin..ys1.                                  9.015  < 2e-16 ***
## Original.position..head.1.                            -2.760 0.005838 **
## Position.in.Wuhan...head.1.                           -0.494 0.621421
## Working.wards.changed.yes1                            -0.182 0.855919
## Prior.traning                                         -1.440 0.150049
## Prior.experience                                      -3.416 0.000649 ***
```

```
## Willingness.to.participate.in.frontline                    -2.262 0.023776 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7.143 on 1996 degrees of freedom
## Multiple R-squared:  0.1243, Adjusted R-squared:  0.1168
## F-statistic: 16.66 on 17 and 1996 DF,  p-value: < 2.2e-16
```

```
confint(lifear)
```

```
##                                                        2.5 %       97.5 %
## (Intercept)                                       28.303540429 37.32852678
## Age                                               -0.295892931 -0.01478047
## Sex                                                1.659274503  3.61554628
## marital.status                                    -0.031235466  2.21419574
## child.rearing                                     -1.272401690  1.01916293
## education.Bachelor.or.higher.2_Diploma1.           0.064673496  1.70407841
## Prodessional.title..Junior1.intermediate.and.senior0. -0.950817785  0.99852628
## Monthly.household.income.USD.month..1440          -0.488209358  0.88233442
## Clinical.experience.m.                            -0.003493578  0.01865959
## Frontline.working.duration.d.                     -0.009778635  0.03985369
## Average.working.hours.shift                       -0.514270227 -0.16043799
## Wuhan.as.origin..ys1.                              2.612657465  4.06547405
## Original.position..head.1.                        -3.964209657 -0.67058907
## Position.in.Wuhan...head.1.                       -2.469133362  1.47564460
## Working.wards.changed.yes1                        -0.752374692  0.62484942
## Prior.traning                                     -1.504778122  0.23062016
## Prior.experience                                  -1.911574170 -0.51711111
## Willingness.to.participate.in.frontline           -3.862996800 -0.27557676
```

BIC for linear regression of fear

```
fear_bic<-step(lifear,k=sqrt(nrow(naomit)))
```

```
## Start:  AIC=8709.03
## FSHPs_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Dip
loma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                          Df Sum of Sq    RSS
## - Prodessional.title..Junior1.intermediate.and.senior0.   1       0.1 101827
## - Working.wards.changed.yes1                               1       1.7 101829
## - child.rearing                                            1       2.4 101829
## - Position.in.Wuhan...head.1.                              1      12.4 101839
## - Monthly.household.income.USD.month..1440                 1      16.2 101843
## - Frontline.working.duration.d.                            1      72.0 101899
## - Clinical.experience.m.                                   1      92.0 101919
## - Prior.traning                                            1     105.8 101933
## - marital.status                                           1     185.4 102012
## - education.Bachelor.or.higher.2_Diploma1.                 1     228.4 102055
## - Age                                                      1     239.6 102067
## - Willingness.to.participate.in.frontline                  1     261.1 102088
## - Original.position..head.1.                               1     388.5 102216
## - Prior.experience                                         1     595.2 102422
## - Average.working.hours.shift                              1     713.4 102540
## - Sex                                                      1    1426.5 103254
## <none>                                                                 101827
## - Wuhan.as.origin..ys1.                                    1    4145.9 105973
##                                                          AIC
## - Prodessional.title..Junior1.intermediate.and.senior0. 8664.2
## - Working.wards.changed.yes1                             8664.2
## - child.rearing                                          8664.2
## - Position.in.Wuhan...head.1.                            8664.4
## - Monthly.household.income.USD.month..1440               8664.5
## - Frontline.working.duration.d.                          8665.6
## - Clinical.experience.m.                                 8666.0
## - Prior.traning                                          8666.2
## - marital.status                                         8667.8
## - education.Bachelor.or.higher.2_Diploma1.               8668.7
## - Age                                                    8668.9
## - Willingness.to.participate.in.frontline                8669.3
## - Original.position..head.1.                             8671.8
## - Prior.experience                                       8675.9
## - Average.working.hours.shift                            8678.2
## - Sex                                                    8692.2
## <none>                                                   8709.0
## - Wuhan.as.origin..ys1.                                  8744.5
##
## Step:  AIC=8664.15
## FSHPs_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Dip
loma1. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
```

```
##        Frontline.working.duration.d. + Average.working.hours.shift +
##        Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##        Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##        Willingness.to.participate.in.frontline
##
##                                                 Df Sum of Sq    RSS    AIC
## - Working.wards.changed.yes1                     1       1.7 101829 8619.3
## - child.rearing                                  1       2.5 101830 8619.3
## - Position.in.Wuhan...head.1.                    1      12.5 101840 8619.5
## - Monthly.household.income.USD.month..1440       1      16.1 101843 8619.6
## - Frontline.working.duration.d.                  1      72.0 101899 8620.7
## - Clinical.experience.m.                         1      95.0 101922 8621.2
## - Prior.traning                                  1     105.7 101933 8621.4
## - marital.status                                 1     185.8 102013 8622.9
## - education.Bachelor.or.higher.2_Diploma1.       1     231.5 102059 8623.8
## - Age                                            1     240.9 102068 8624.0
## - Willingness.to.participate.in.frontline        1     261.1 102088 8624.4
## - Original.position..head.1.                     1     394.1 102221 8627.1
## - Prior.experience                               1     595.7 102423 8631.0
## - Average.working.hours.shift                    1     713.3 102540 8633.3
## - Sex                                            1    1429.1 103256 8647.3
## <none>                                                     101827 8664.2
## - Wuhan.as.origin..ys1.                          1    4306.6 106134 8702.7
##
## Step:  AIC=8619.31
## FSHPs_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Dip
loma1. +
##        Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##        Frontline.working.duration.d. + Average.working.hours.shift +
##        Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##        Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                 Df Sum of Sq    RSS    AIC
## - child.rearing                                  1       2.4 101831 8574.5
## - Position.in.Wuhan...head.1.                    1      12.8 101842 8574.7
## - Monthly.household.income.USD.month..1440       1      16.9 101846 8574.8
## - Frontline.working.duration.d.                  1      70.7 101900 8575.8
## - Clinical.experience.m.                         1      95.0 101924 8576.3
## - Prior.traning                                  1     106.9 101936 8576.5
## - marital.status                                 1     185.6 102014 8578.1
## - education.Bachelor.or.higher.2_Diploma1.       1     232.2 102061 8579.0
## - Age                                            1     241.7 102071 8579.2
## - Willingness.to.participate.in.frontline        1     261.5 102090 8579.6
## - Original.position..head.1.                     1     392.4 102221 8582.2
## - Prior.experience                               1     617.1 102446 8586.6
## - Average.working.hours.shift                    1     759.8 102589 8589.4
## - Sex                                            1    1454.2 103283 8603.0
## <none>                                                     101829 8619.3
## - Wuhan.as.origin..ys1.                          1    4313.3 106142 8658.0
##
## Step:  AIC=8574.48
## FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##        Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##        Frontline.working.duration.d. + Average.working.hours.shift +
```

```
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                             Df Sum of Sq    RSS    AIC
## - Position.in.Wuhan...head.1.               1      12.8 101844 8529.9
## - Monthly.household.income.USD.month..1440  1      16.8 101848 8529.9
## - Frontline.working.duration.d.            1      70.4 101902 8531.0
## - Clinical.experience.m.                    1      94.4 101926 8531.5
## - Prior.traning                             1     107.1 101938 8531.7
## - education.Bachelor.or.higher.2_Diploma1.  1     233.1 102064 8534.2
## - Age                                       1     252.1 102083 8534.6
## - Willingness.to.participate.in.frontline   1     260.9 102092 8534.8
## - marital.status                            1     321.3 102153 8535.9
## - Original.position..head.1.                1     392.3 102224 8537.3
## - Prior.experience                          1     618.5 102450 8541.8
## - Average.working.hours.shift               1     761.5 102593 8544.6
## - Sex                                       1    1451.9 103283 8558.1
## <none>                                                   101831 8574.5
## - Wuhan.as.origin..ys1.                     1    4311.0 106142 8613.1
##
## Step:  AIC=8529.85
## FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.traning +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                             Df Sum of Sq    RSS    AIC
## - Monthly.household.income.USD.month..1440  1      18.0 101862 8485.3
## - Frontline.working.duration.d.            1      68.2 101912 8486.3
## - Clinical.experience.m.                    1      97.5 101942 8486.9
## - Prior.traning                             1     110.6 101955 8487.2
## - education.Bachelor.or.higher.2_Diploma1.  1     238.5 102083 8489.7
## - Age                                       1     255.9 102100 8490.0
## - Willingness.to.participate.in.frontline   1     261.1 102105 8490.1
## - marital.status                            1     321.6 102166 8491.3
## - Prior.experience                          1     620.2 102464 8497.2
## - Average.working.hours.shift               1     784.1 102628 8500.4
## - Original.position..head.1.                1    1001.7 102846 8504.7
## - Sex                                       1    1480.9 103325 8514.0
## <none>                                                   101844 8529.9
## - Wuhan.as.origin..ys1.                     1    4425.0 106269 8570.6
##
## Step:  AIC=8485.33
## FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                             Df Sum of Sq    RSS    AIC
## - Frontline.working.duration.d.            1      61.2 101923 8441.7
## - Clinical.experience.m.                    1     102.9 101965 8442.5
## - Prior.traning                             1     107.9 101970 8442.6
## - Age                                       1     255.4 102117 8445.5
```

```
## - Willingness.to.participate.in.frontline   1      266.8 102129 8445.7
## - education.Bachelor.or.higher.2_Diploma1.   1      268.5 102130 8445.8
## - marital.status                            1      351.2 102213 8447.4
## - Prior.experience                          1      623.2 102485 8452.7
## - Average.working.hours.shift               1      787.8 102650 8456.0
## - Original.position..head.1.                1     1010.6 102873 8460.3
## - Sex                                       1     1484.0 103346 8469.6
## <none>                                                  101862 8485.3
## - Wuhan.as.origin..ys1.                     1     4543.1 106405 8528.3
##
## Step:   AIC=8441.66
## FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##      Clinical.experience.m. + Average.working.hours.shift + Wuhan.as.origin..ys1. +
##      Original.position..head.1. + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS    AIC
## - Clinical.experience.m.                    1      111.7 102035 8399.0
## - Prior.traning                             1      117.7 102041 8399.1
## - education.Bachelor.or.higher.2_Diploma1.   1      261.8 102185 8402.0
## - Willingness.to.participate.in.frontline   1      262.4 102186 8402.0
## - Age                                       1      266.2 102189 8402.0
## - marital.status                            1      342.8 102266 8403.5
## - Prior.experience                          1      597.3 102520 8408.6
## - Average.working.hours.shift               1      751.2 102674 8411.6
## - Original.position..head.1.                1      989.5 102913 8416.2
## - Sex                                       1     1459.9 103383 8425.4
## <none>                                                  101923 8441.7
## - Wuhan.as.origin..ys1.                     1     4602.2 106525 8485.7
##
## Step:   AIC=8398.99
## FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS    AIC
## - Prior.traning                             1      127.2 102162 8356.6
## - Age                                       1      224.1 102259 8358.5
## - Willingness.to.participate.in.frontline   1      252.4 102287 8359.1
## - education.Bachelor.or.higher.2_Diploma1.   1      265.1 102300 8359.3
## - marital.status                            1      349.3 102384 8361.0
## - Prior.experience                          1      601.5 102636 8366.0
## - Average.working.hours.shift               1      780.5 102815 8369.5
## - Original.position..head.1.                1      937.3 102972 8372.5
## - Sex                                       1     1666.3 103701 8386.7
## <none>                                                  102035 8399.0
## - Wuhan.as.origin..ys1.                     1     4598.3 106633 8442.9
##
## Step:   AIC=8356.62
## FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Prior.experience + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS    AIC
```

```
## - Age                                             1    217.2 102379 8316.0
## - education.Bachelor.or.higher.2_Diploma1.        1    241.3 102403 8316.5
## - Willingness.to.participate.in.frontline         1    264.9 102427 8317.0
## - marital.status                                  1    338.7 102501 8318.4
## - Average.working.hours.shift                     1    775.2 102937 8327.0
## - Prior.experience                                1    874.9 103037 8328.9
## - Original.position..head.1.                      1    947.3 103109 8330.3
## - Sex                                             1   1675.0 103837 8344.5
## <none>                                                      102162 8356.6
## - Wuhan.as.origin..ys1.                           1   4675.5 106838 8401.9
##
## Step:  AIC=8316.02
## FSHPs_total ~ Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                             Df Sum of Sq    RSS    AIC
## - marital.status                                  1    157.9 102537 8274.2
## - education.Bachelor.or.higher.2_Diploma1.        1    194.7 102574 8275.0
## - Willingness.to.participate.in.frontline         1    263.0 102642 8276.3
## - Average.working.hours.shift                     1    758.7 103138 8286.0
## - Prior.experience                                1    894.0 103273 8288.7
## - Original.position..head.1.                      1   1341.7 103721 8297.4
## - Sex                                             1   1599.4 103979 8302.4
## <none>                                                      102379 8316.0
## - Wuhan.as.origin..ys1.                           1   4768.5 107148 8362.8
##
## Step:  AIC=8274.25
## FSHPs_total ~ Sex + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                             Df Sum of Sq    RSS    AIC
## - education.Bachelor.or.higher.2_Diploma1.        1    258.0 102795 8234.4
## - Willingness.to.participate.in.frontline         1    275.9 102813 8234.8
## - Average.working.hours.shift                     1    757.1 103294 8244.2
## - Prior.experience                                1    847.9 103385 8246.0
## - Original.position..head.1.                      1   1227.1 103764 8253.3
## - Sex                                             1   1661.6 104199 8261.7
## <none>                                                      102537 8274.2
## - Wuhan.as.origin..ys1.                           1   4799.0 107336 8321.5
##
## Step:  AIC=8234.43
## FSHPs_total ~ Sex + Average.working.hours.shift + Wuhan.as.origin..ys1. +
##     Original.position..head.1. + Prior.experience + Willingness.to.participate.in.frontline
##
##                                             Df Sum of Sq    RSS    AIC
## - Willingness.to.participate.in.frontline         1    271.3 103067 8194.9
## - Prior.experience                                1    882.3 103678 8206.8
## - Average.working.hours.shift                     1    915.1 103710 8207.4
## - Original.position..head.1.                      1   1121.5 103917 8211.4
## - Sex                                             1   1729.5 104525 8223.2
## <none>                                                      102795 8234.4
## - Wuhan.as.origin..ys1.                           1   5504.6 108300 8294.6
```

```
## 
## Step:  AIC=8194.86
## FSHPs_total ~ Sex + Average.working.hours.shift + Wuhan.as.origin..ys1. +
##     Original.position..head.1. + Prior.experience
## 
##                               Df Sum of Sq    RSS    AIC
## - Average.working.hours.shift  1     878.6 103945 8167.1
## - Prior.experience             1     926.3 103993 8168.0
## - Original.position..head.1.   1    1146.9 104213 8172.3
## - Sex                          1    1698.5 104765 8182.9
## <none>                                     103067 8194.9
## - Wuhan.as.origin..ys1.        1    5722.6 108789 8258.8
## 
## Step:  AIC=8167.08
## FSHPs_total ~ Sex + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience
## 
##                              Df Sum of Sq    RSS    AIC
## - Prior.experience            1    1140.5 105086 8144.2
## - Original.position..head.1.  1    1439.3 105384 8149.9
## - Sex                         1    1980.8 105926 8160.2
## <none>                                    103945 8167.1
## - Wuhan.as.origin..ys1.       1    5241.4 109187 8221.3
## 
## Step:  AIC=8144.18
## FSHPs_total ~ Sex + Wuhan.as.origin..ys1. + Original.position..head.1.
## 
##                              Df Sum of Sq    RSS    AIC
## - Original.position..head.1.  1    1654.3 106740 8130.8
## - Sex                         1    2363.1 107449 8144.1
## <none>                                    105086 8144.2
## - Wuhan.as.origin..ys1.       1    5319.6 110405 8198.8
## 
## Step:  AIC=8130.76
## FSHPs_total ~ Sex + Wuhan.as.origin..ys1.
## 
##                          Df Sum of Sq    RSS    AIC
## <none>                                 106740 8130.8
## - Sex                     1    2491.4 109231 8132.4
## - Wuhan.as.origin..ys1.   1    6226.0 112966 8200.1
```

```
# Step:  AIC=8130.76
# FSHPs_total ~ Sex + Wuhan.as.origin..ys1.
```

```
summary(fear_bic)
```

```
##
## Call:
## lm(formula = FSHPs_total ~ Sex + Wuhan.as.origin..ys1., data = naomit)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -24.1116  -4.1116   0.8884   5.6095  14.9410
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)              25.0590     0.4887  51.273  < 2e-16 ***
## Sex                       3.3316     0.4863   6.851 9.71e-12 ***
## Wuhan.as.origin..ys1.     3.7211     0.3436  10.831  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7.285 on 2011 degrees of freedom
## Multiple R-squared:  0.08201,    Adjusted R-squared:  0.0811
## F-statistic: 89.83 on 2 and 2011 DF,  p-value: < 2.2e-16
```

AIC for linear regression of fear

```
fear_aic<-step(lifear,k =2)
```

```
## Start:  AIC=7937.23
## FSHPs_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Dip
loma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                           Df Sum of Sq    RSS
## - Prodessional.title..Junior1.intermediate.and.senior0.  1       0.1 101827
## - Working.wards.changed.yes1                             1       1.7 101829
## - child.rearing                                          1       2.4 101829
## - Position.in.Wuhan...head.1.                            1      12.4 101839
## - Monthly.household.income.USD.month..1440               1      16.2 101843
## - Frontline.working.duration.d.                          1      72.0 101899
## - Clinical.experience.m.                                 1      92.0 101919
## <none>                                                               101827
## - Prior.traning                                          1     105.8 101933
## - marital.status                                         1     185.4 102012
## - education.Bachelor.or.higher.2_Diploma1.               1     228.4 102055
## - Age                                                    1     239.6 102067
## - Willingness.to.participate.in.frontline                1     261.1 102088
## - Original.position..head.1.                             1     388.5 102216
## - Prior.experience                                       1     595.2 102422
## - Average.working.hours.shift                            1     713.4 102540
## - Sex                                                    1    1426.5 103254
## - Wuhan.as.origin..ys1.                                  1    4145.9 105973
##                                                          AIC
## - Prodessional.title..Junior1.intermediate.and.senior0. 7935.2
## - Working.wards.changed.yes1                             7935.3
## - child.rearing                                          7935.3
## - Position.in.Wuhan...head.1.                            7935.5
## - Monthly.household.income.USD.month..1440               7935.6
## - Frontline.working.duration.d.                          7936.7
## - Clinical.experience.m.                                 7937.0
## <none>                                                   7937.2
## - Prior.traning                                          7937.3
## - marital.status                                         7938.9
## - education.Bachelor.or.higher.2_Diploma1.               7939.7
## - Age                                                    7940.0
## - Willingness.to.participate.in.frontline                7940.4
## - Original.position..head.1.                             7942.9
## - Prior.experience                                       7947.0
## - Average.working.hours.shift                            7949.3
## - Sex                                                    7963.2
## - Wuhan.as.origin..ys1.                                  8015.6
##
## Step:  AIC=7935.23
## FSHPs_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Dip
loma1. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
```

```
##       Frontline.working.duration.d. + Average.working.hours.shift +
##       Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##       Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##       Willingness.to.participate.in.frontline
##
##                                                 Df Sum of Sq    RSS    AIC
## - Working.wards.changed.yes1                    1       1.7 101829 7933.3
## - child.rearing                                 1       2.5 101830 7933.3
## - Position.in.Wuhan...head.1.                   1      12.5 101840 7933.5
## - Monthly.household.income.USD.month..1440      1      16.1 101843 7933.6
## - Frontline.working.duration.d.                 1      72.0 101899 7934.7
## - Clinical.experience.m.                        1      95.0 101922 7935.1
## <none>                                                      101827 7935.2
## - Prior.traning                                 1     105.7 101933 7935.3
## - marital.status                                1     185.8 102013 7936.9
## - education.Bachelor.or.higher.2_Diploma1.      1     231.5 102059 7937.8
## - Age                                           1     240.9 102068 7938.0
## - Willingness.to.participate.in.frontline       1     261.1 102088 7938.4
## - Original.position..head.1.                    1     394.1 102221 7941.0
## - Prior.experience                              1     595.7 102423 7945.0
## - Average.working.hours.shift                   1     713.3 102540 7947.3
## - Sex                                           1    1429.1 103256 7961.3
## - Wuhan.as.origin..ys1.                         1    4306.6 106134 8016.7
##
## Step:  AIC=7933.27
## FSHPs_total ~ Age + Sex + marital.status + child.rearing + education.Bachelor.or.higher.2_Dip
loma1. +
##       Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##       Frontline.working.duration.d. + Average.working.hours.shift +
##       Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##       Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                 Df Sum of Sq    RSS    AIC
## - child.rearing                                 1       2.4 101831 7931.3
## - Position.in.Wuhan...head.1.                   1      12.8 101842 7931.5
## - Monthly.household.income.USD.month..1440      1      16.9 101846 7931.6
## - Frontline.working.duration.d.                 1      70.7 101900 7932.7
## - Clinical.experience.m.                        1      95.0 101924 7933.1
## <none>                                                      101829 7933.3
## - Prior.traning                                 1     106.9 101936 7933.4
## - marital.status                                1     185.6 102014 7934.9
## - education.Bachelor.or.higher.2_Diploma1.      1     232.2 102061 7935.9
## - Age                                           1     241.7 102071 7936.0
## - Willingness.to.participate.in.frontline       1     261.5 102090 7936.4
## - Original.position..head.1.                    1     392.4 102221 7939.0
## - Prior.experience                              1     617.1 102446 7943.4
## - Average.working.hours.shift                   1     759.8 102589 7946.2
## - Sex                                           1    1454.2 103283 7959.8
## - Wuhan.as.origin..ys1.                         1    4313.3 106142 8014.8
##
## Step:  AIC=7931.31
## FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##       Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##       Frontline.working.duration.d. + Average.working.hours.shift +
```

```
##       Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##       Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                           Df Sum of Sq    RSS    AIC
## - Position.in.Wuhan...head.1.              1      12.8 101844 7929.6
## - Monthly.household.income.USD.month..1440 1      16.8 101848 7929.6
## - Frontline.working.duration.d.            1      70.4 101902 7930.7
## - Clinical.experience.m.                   1      94.4 101926 7931.2
## <none>                                                  101831 7931.3
## - Prior.traning                            1     107.1 101938 7931.4
## - education.Bachelor.or.higher.2_Diploma1. 1     233.1 102064 7933.9
## - Age                                      1     252.1 102083 7934.3
## - Willingness.to.participate.in.frontline  1     260.9 102092 7934.5
## - marital.status                           1     321.3 102153 7935.7
## - Original.position..head.1.               1     392.3 102224 7937.1
## - Prior.experience                         1     618.5 102450 7941.5
## - Average.working.hours.shift              1     761.5 102593 7944.3
## - Sex                                      1    1451.9 103283 7957.8
## - Wuhan.as.origin..ys1.                    1    4311.0 106142 8012.8
##
## Step:  AIC=7929.57
## FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##       Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##       Frontline.working.duration.d. + Average.working.hours.shift +
##       Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.traning +
##       Prior.experience + Willingness.to.participate.in.frontline
##
##                                           Df Sum of Sq    RSS    AIC
## - Monthly.household.income.USD.month..1440 1      18.0 101862 7927.9
## - Frontline.working.duration.d.            1      68.2 101912 7928.9
## - Clinical.experience.m.                   1      97.5 101942 7929.5
## <none>                                                  101844 7929.6
## - Prior.traning                            1     110.6 101955 7929.8
## - education.Bachelor.or.higher.2_Diploma1. 1     238.5 102083 7932.3
## - Age                                      1     255.9 102100 7932.6
## - Willingness.to.participate.in.frontline  1     261.1 102105 7932.7
## - marital.status                           1     321.6 102166 7933.9
## - Prior.experience                         1     620.2 102464 7939.8
## - Average.working.hours.shift              1     784.1 102628 7943.0
## - Original.position..head.1.               1    1001.7 102846 7947.3
## - Sex                                      1    1480.9 103325 7956.6
## - Wuhan.as.origin..ys1.                    1    4425.0 106269 8013.2
##
## Step:  AIC=7927.92
## FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##       Clinical.experience.m. + Frontline.working.duration.d. +
##       Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##       Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                           Df Sum of Sq    RSS    AIC
## - Frontline.working.duration.d.            1      61.2 101923 7927.1
## <none>                                                  101862 7927.9
## - Clinical.experience.m.                   1     102.9 101965 7928.0
## - Prior.traning                            1     107.9 101970 7928.1
```

```
## - Age                                         1      255.4 102117 7931.0
## - Willingness.to.participate.in.frontline     1      266.8 102129 7931.2
## - education.Bachelor.or.higher.2_Diploma1.    1      268.5 102130 7931.2
## - marital.status                              1      351.2 102213 7932.9
## - Prior.experience                            1      623.2 102485 7938.2
## - Average.working.hours.shift                 1      787.8 102650 7941.4
## - Original.position..head.1.                  1     1010.6 102873 7945.8
## - Sex                                         1     1484.0 103346 7955.1
## - Wuhan.as.origin..ys1.                       1     4543.1 106405 8013.8
##
## Step:  AIC=7927.13
## FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Average.working.hours.shift + Wuhan.as.origin..ys1. +
##     Original.position..head.1. + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS    AIC
## <none>                                                     101923 7927.1
## - Clinical.experience.m.                      1      111.7 102035 7927.3
## - Prior.traning                               1      117.7 102041 7927.5
## - education.Bachelor.or.higher.2_Diploma1.    1      261.8 102185 7930.3
## - Willingness.to.participate.in.frontline     1      262.4 102186 7930.3
## - Age                                         1      266.2 102189 7930.4
## - marital.status                              1      342.8 102266 7931.9
## - Prior.experience                            1      597.3 102520 7936.9
## - Average.working.hours.shift                 1      751.2 102674 7939.9
## - Original.position..head.1.                  1      989.5 102913 7944.6
## - Sex                                         1     1459.9 103383 7953.8
## - Wuhan.as.origin..ys1.                       1     4602.2 106525 8014.1
```
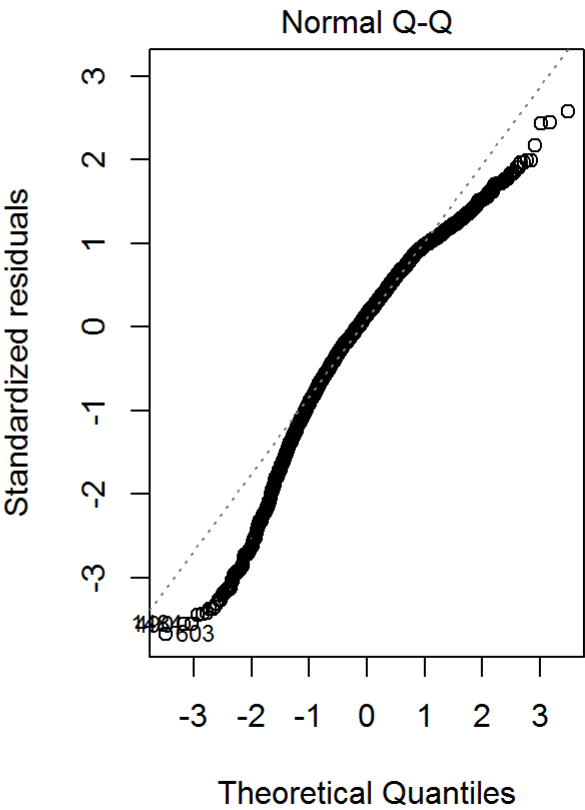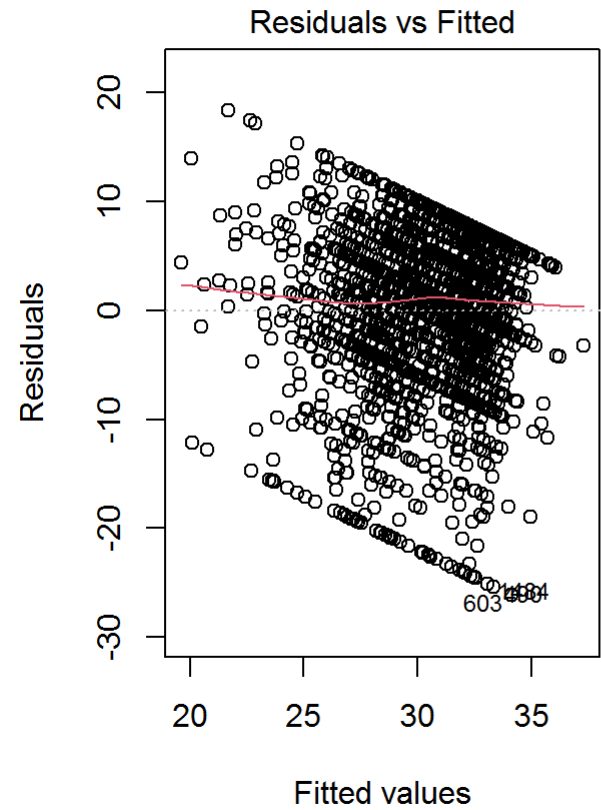
```
# Step:  AIC=7927.13
# FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. + Clinica
l.experience.m. + Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.
1. + Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
```

```
summary(fear_aic)
```

```
##
## Call:
## lm(formula = FSHPs_total ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diplom
a1. +
##     Clinical.experience.m. + Average.working.hours.shift + Wuhan.as.origin..ys1. +
##     Original.position..head.1. + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline, data = naomit)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -25.9187  -3.6748   0.9795   5.2224  18.3577
##
## Coefficients:
##                                            Estimate Std. Error t value Pr(>|t|)
## (Intercept)                                33.261566   2.158713  15.408  < 2e-16
## Age                                        -0.161863   0.070790  -2.287 0.022327
## Sex                                         2.640154   0.493029   5.355 9.54e-08
## marital.status                              1.025278   0.395102   2.595 0.009529
## education.Bachelor.or.higher.2_Diploma1.    0.922604   0.406870   2.268 0.023462
## Clinical.experience.m.                      0.008125   0.005485   1.481 0.138694
## Average.working.hours.shift                -0.335646   0.087380  -3.841 0.000126
## Wuhan.as.origin..ys1.                       3.342891   0.351595   9.508  < 2e-16
## Original.position..head.1.                 -2.585047   0.586374  -4.409 1.10e-05
## Prior.traning                              -0.669591   0.440293  -1.521 0.128472
## Prior.experience                           -1.200170   0.350402  -3.425 0.000627
## Willingness.to.participate.in.frontline    -2.072194   0.912747  -2.270 0.023296
##
## (Intercept)                               ***
## Age                                       *
## Sex                                       ***
## marital.status                            **
## education.Bachelor.or.higher.2_Diploma1.  *
## Clinical.experience.m.
## Average.working.hours.shift               ***
## Wuhan.as.origin..ys1.                     ***
## Original.position..head.1.                ***
## Prior.traning
## Prior.experience                          ***
## Willingness.to.participate.in.frontline   *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7.135 on 2002 degrees of freedom
## Multiple R-squared:  0.1234, Adjusted R-squared:  0.1186
## F-statistic: 25.63 on 11 and 2002 DF,  p-value: < 2.2e-16
```

Diagnose for linear regression of fear

```
par(mfrow=c(1,2))
plot(lifear)
```

Residuals vs Fitted

Normal Q-Q

Scale-Location

Residuals vs Leverage
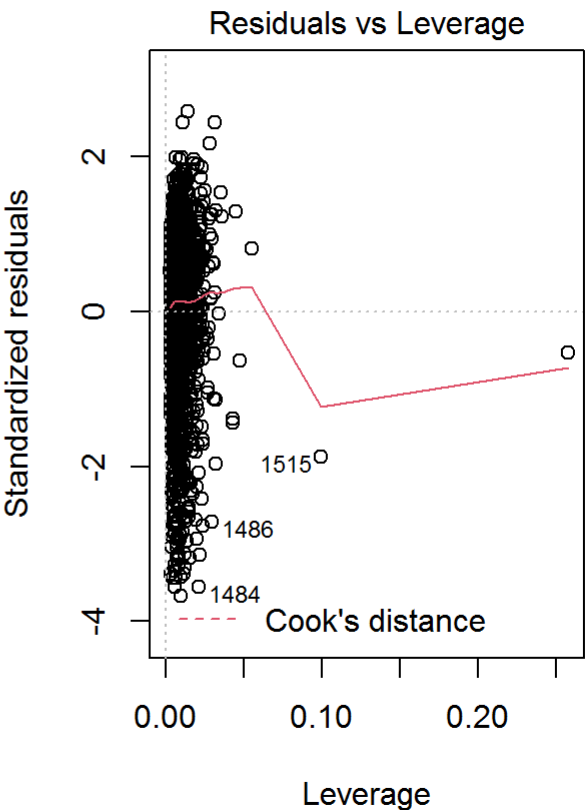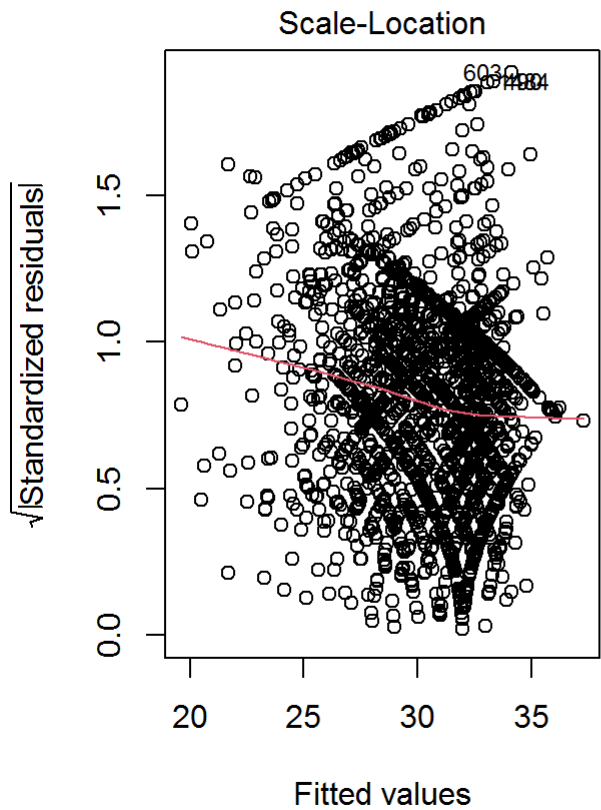
equal variance for linear regression of fear

```
summary(lifear)$r.squared
```

```
## [1] 0.1242642
```

The R^2(equals to r^2) here is 0.1242, which is far from 1, and the line is flat (which supposed to be linearly increasing to be a good fit), so this model is not a good fit. A better model is needed for fitting.

```
library(car)
vif(lm(formula= FSHPs_total ~ Age+Sex+marital.status+child.rearing+education.Bachelor.or.higher.
2_Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.household.income.USD.
month..1440 + Clinical.experience.m. + Frontline.working.duration.d.+Average.working.hours.shift
+Wuhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1. + Working.wards.
changed.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.frontline,data =
 naomit))
```

```
##                                                     Age
##                                                7.708207
##                                                     Sex
##                                                1.104120
##                                          marital.status
##                                                3.075925
##                                           child.rearing
##                                                3.340090
##             education.Bachelor.or.higher.2_Diploma1.
##                                                1.179491
## Prodessional.title..Junior1.intermediate.and.senior0.
##                                                1.865265
##             Monthly.household.income.USD.month..1440
##                                                1.192672
##                                  Clinical.experience.m.
##                                                7.674971
##                             Frontline.working.duration.d.
##                                                1.058136
##                            Average.working.hours.shift
##                                                1.152705
##                                 Wuhan.as.origin..ys1.
##                                                1.219870
##                            Original.position..head.1.
##                                                2.445412
##                            Position.in.Wuhan...head.1.
##                                                2.237491
##                             Working.wards.changed.yes1
##                                                1.135694
##                                          Prior.traning
##                                                1.134466
##                                        Prior.experience
##                                                1.186836
##                   Willingness.to.participate.in.frontline
##                                                1.016094
```

Transformation with log

model 1 (only log y)

```
log_fear1 = lm(formula= log1p(FSHPs_total) ~ Age+Sex+marital.status+child.rearing+education.Bach
elor.or.higher.2_Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.househ
old.income.USD.month..1440 + Clinical.experience.m. + Frontline.working.duration.d.+Average.work
ing.hours.shift+Wuhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1. +
Working.wards.changed.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.fro
ntline, data = naomit)
summary(log_fear1)
```

```
## 
## Call:
## lm(formula = log1p(FSHPs_total) ~ Age + Sex + marital.status +
##     child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline,
##     data = naomit)
## 
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.35664 -0.09110  0.06497  0.18696  0.65333
## 
## Coefficients:
##                                                        Estimate Std. Error
## (Intercept)                                           3.4674014  0.0949839
## Age                                                  -0.0059599  0.0029586
## Sex                                                   0.1178361  0.0205889
## marital.status                                        0.0465312  0.0236321
## child.rearing                                        -0.0110189  0.0241177
## education.Bachelor.or.higher.2_Diploma1.              0.0385426  0.0172540
## Prodessional.title..Junior1.intermediate.and.senior0. -0.0079064  0.0205160
## Monthly.household.income.USD.month..1440              0.0050803  0.0144244
## Clinical.experience.m.                                0.0002335  0.0002332
## Frontline.working.duration.d.                         0.0005588  0.0005224
## Average.working.hours.shift                          -0.0129631  0.0037239
## Wuhan.as.origin..ys1.                                 0.1200861  0.0152902
## Original.position..head.1.                           -0.0869150  0.0346639
## Position.in.Wuhan...head.1.                          -0.0235509  0.0415170
## Working.wards.changed.yes1                            0.0013880  0.0144947
## Prior.traning                                        -0.0178253  0.0182643
## Prior.experience                                     -0.0546171  0.0146761
## Willingness.to.participate.in.frontline              -0.0527550  0.0377560
##                                                        t value Pr(>|t|)
## (Intercept)                                            36.505  < 2e-16 ***
## Age                                                    -2.014 0.044095 *
## Sex                                                     5.723 1.20e-08 ***
## marital.status                                          1.969 0.049094 *
## child.rearing                                          -0.457 0.647805
## education.Bachelor.or.higher.2_Diploma1.                2.234 0.025604 *
## Prodessional.title..Junior1.intermediate.and.senior0.  -0.385 0.699998
## Monthly.household.income.USD.month..1440                0.352 0.724721
## Clinical.experience.m.                                  1.002 0.316688
## Frontline.working.duration.d.                           1.070 0.284870
## Average.working.hours.shift                            -3.481 0.000510 ***
## Wuhan.as.origin..ys1.                                   7.854 6.54e-15 ***
## Original.position..head.1.                             -2.507 0.012242 *
## Position.in.Wuhan...head.1.                            -0.567 0.570601
## Working.wards.changed.yes1                              0.096 0.923720
## Prior.traning                                          -0.976 0.329200
```

```
## Prior.experience                                    -3.722 0.000204 ***
## Willingness.to.participate.in.frontline             -1.397 0.162490
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2948 on 1996 degrees of freedom
## Multiple R-squared:  0.1097, Adjusted R-squared:  0.1021
## F-statistic: 14.46 on 17 and 1996 DF,  p-value: < 2.2e-16
```

```
par(mfrow=c(1,2))
plot(log_fear1)
```

Residuals vs Fitted

Normal Q-Q

Scale-Location

Residuals vs Leverage
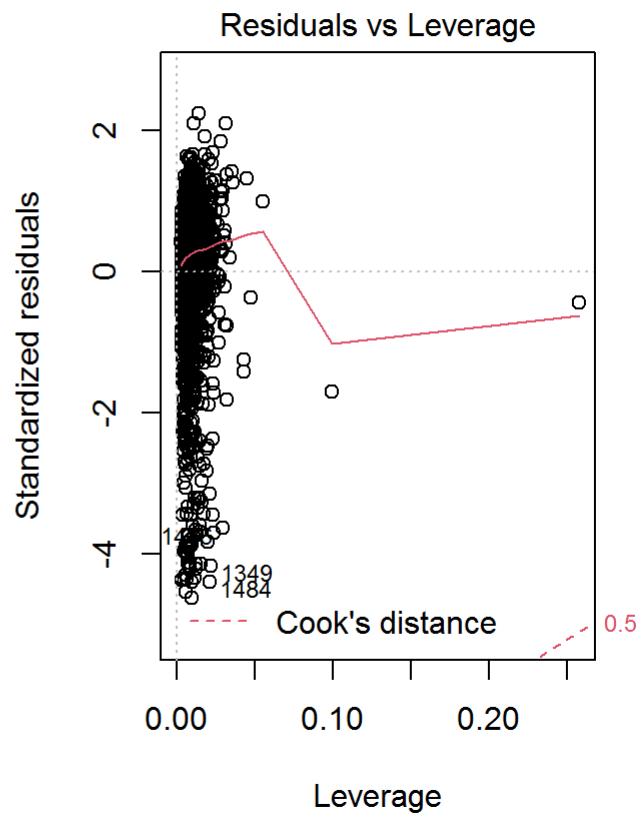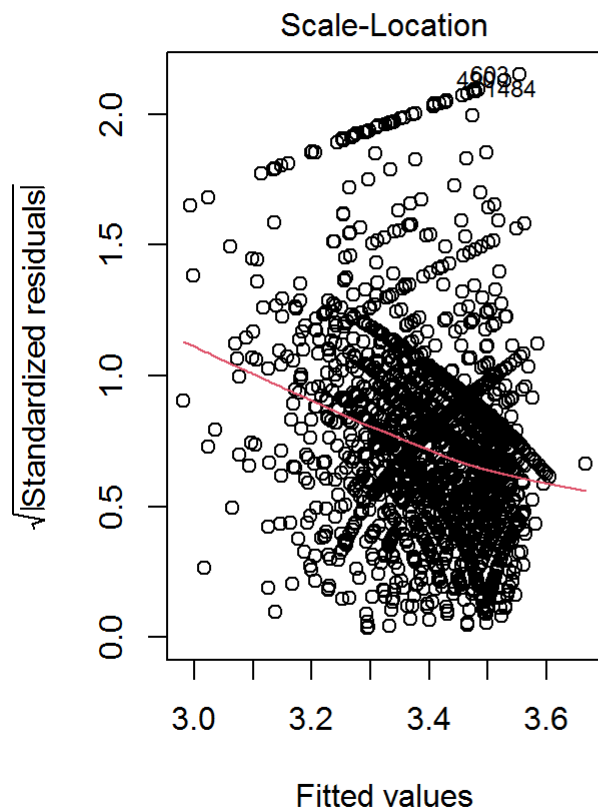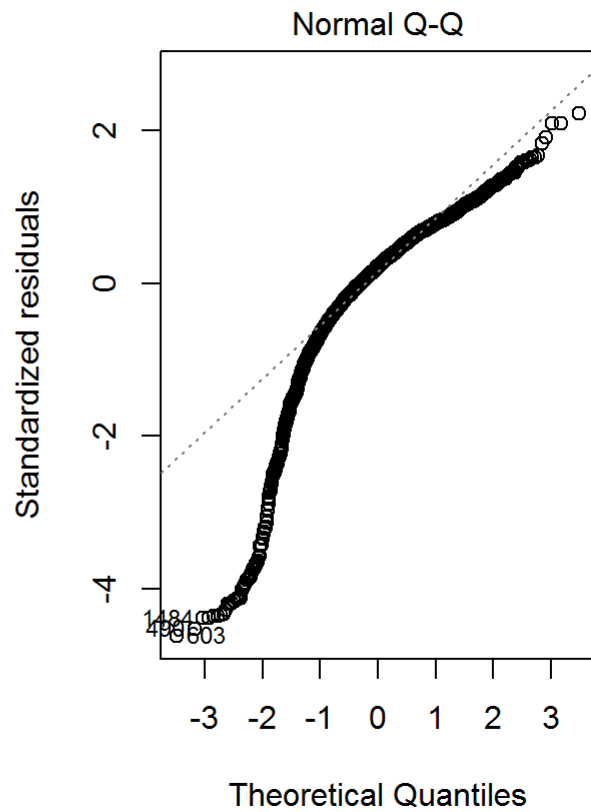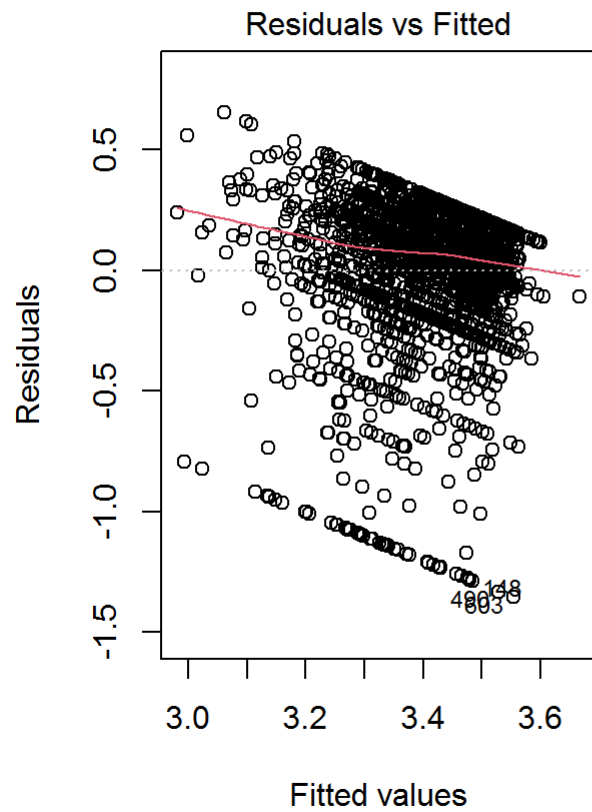
```
round(exp(cbind(coef(log_fear1), confint(log_fear1)) - 1) * 100, 2)
```

```
##                                                           2.5 %  97.5 %
## (Intercept)                                     1179.18 978.77 1420.62
## Age                                               36.57  36.36   36.78
## Sex                                               41.39  39.75   43.09
## marital.status                                    38.54  36.79   40.37
## child.rearing                                     36.38  34.70   38.15
## education.Bachelor.or.higher.2_Diploma1.          38.23  36.96   39.55
## Prodessional.title..Junior1.intermediate.and.senior0.  36.50  35.06   38.00
## Monthly.household.income.USD.month..1440          36.98  35.94   38.04
## Clinical.experience.m.                            36.80  36.78   36.81
## Frontline.working.duration.d.                     36.81  36.77   36.85
## Average.working.hours.shift                       36.31  36.05   36.58
## Wuhan.as.origin..ys1.                             41.48  40.26   42.74
## Original.position..head.1.                        33.73  31.51   36.10
## Position.in.Wuhan...head.1.                       35.93  33.12   38.98
## Working.wards.changed.yes1                        36.84  35.81   37.90
## Prior.traning                                     36.14  34.87   37.46
## Prior.experience                                  34.83  33.84   35.85
## Willingness.to.participate.in.frontline           34.90  32.41   37.58
```

equal variance for log transformation of fear

```
summary(log_fear1)$r.squared
```

```
## [1] 0.1096556
```

BIC for log transformation of fear

```
log_fear_bic <- step(log_fear1,k=sqrt(nrow(naomit)))
```

```
## Start:  AIC=-4129.68
## log1p(FSHPs_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                        Df Sum of Sq    RSS
## - Working.wards.changed.yes1                            1    0.0008 173.52
## - Monthly.household.income.USD.month..1440              1    0.0108 173.53
## - Prodessional.title..Junior1.intermediate.and.senior0. 1    0.0129 173.53
## - child.rearing                                         1    0.0181 173.54
## - Position.in.Wuhan...head.1.                           1    0.0280 173.55
## - Prior.traning                                         1    0.0828 173.60
## - Clinical.experience.m.                                1    0.0872 173.61
## - Frontline.working.duration.d.                         1    0.0995 173.62
## - Willingness.to.participate.in.frontline               1    0.1697 173.69
## - marital.status                                        1    0.3370 173.86
## - Age                                                   1    0.3528 173.87
## - education.Bachelor.or.higher.2_Diploma1.              1    0.4338 173.96
## - Original.position..head.1.                            1    0.5465 174.07
## - Average.working.hours.shift                           1    1.0534 174.57
## - Prior.experience                                      1    1.2040 174.72
## - Sex                                                   1    2.8476 176.37
## <none>                                                              173.52
## - Wuhan.as.origin..ys1.                                 1    5.3623 178.88
##                                                         AIC
## - Working.wards.changed.yes1                          -4174.5
## - Monthly.household.income.USD.month..1440            -4174.4
## - Prodessional.title..Junior1.intermediate.and.senior0. -4174.4
## - child.rearing                                       -4174.3
## - Position.in.Wuhan...head.1.                         -4174.2
## - Prior.traning                                       -4173.6
## - Clinical.experience.m.                              -4173.5
## - Frontline.working.duration.d.                       -4173.4
## - Willingness.to.participate.in.frontline             -4172.6
## - marital.status                                      -4170.6
## - Age                                                 -4170.5
## - education.Bachelor.or.higher.2_Diploma1.            -4169.5
## - Original.position..head.1.                          -4168.2
## - Average.working.hours.shift                         -4162.4
## - Prior.experience                                    -4160.6
## - Sex                                                 -4141.8
## <none>                                                -4129.7
## - Wuhan.as.origin..ys1.                               -4113.3
##
## Step:  AIC=-4174.55
## log1p(FSHPs_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
```

```
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                        Df Sum of Sq    RSS
## - Monthly.household.income.USD.month..1440             1     0.0105 173.53
## - Prodessional.title..Junior1.intermediate.and.senior0. 1    0.0131 173.53
## - child.rearing                                        1     0.0183 173.54
## - Position.in.Wuhan...head.1.                          1     0.0277 173.55
## - Prior.traning                                        1     0.0823 173.60
## - Clinical.experience.m.                               1     0.0871 173.61
## - Frontline.working.duration.d.                        1     0.1015 173.62
## - Willingness.to.participate.in.frontline              1     0.1695 173.69
## - marital.status                                       1     0.3372 173.86
## - Age                                                  1     0.3523 173.87
## - education.Bachelor.or.higher.2_Diploma1.             1     0.4333 173.96
## - Original.position..head.1.                           1     0.5533 174.07
## - Average.working.hours.shift                          1     1.0875 174.61
## - Prior.experience                                     1     1.2196 174.74
## - Sex                                                  1     2.8673 176.39
## <none>                                                               173.52
## - Wuhan.as.origin..ys1.                                1     5.3618 178.88
##                                                            AIC
## - Monthly.household.income.USD.month..1440             -4219.3
## - Prodessional.title..Junior1.intermediate.and.senior0. -4219.3
## - child.rearing                                        -4219.2
## - Position.in.Wuhan...head.1.                          -4219.1
## - Prior.traning                                        -4218.5
## - Clinical.experience.m.                               -4218.4
## - Frontline.working.duration.d.                        -4218.2
## - Willingness.to.participate.in.frontline              -4217.5
## - marital.status                                       -4215.5
## - Age                                                  -4215.3
## - education.Bachelor.or.higher.2_Diploma1.             -4214.4
## - Original.position..head.1.                           -4213.0
## - Average.working.hours.shift                          -4206.8
## - Prior.experience                                     -4205.3
## - Sex                                                  -4186.4
## <none>                                                 -4174.5
## - Wuhan.as.origin..ys1.                                -4158.1
##
## Step:  AIC=-4219.3
## log1p(FSHPs_total) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                                        Df Sum of Sq    RSS
## - Prodessional.title..Junior1.intermediate.and.senior0. 1    0.0139 173.55
## - child.rearing                                        1     0.0184 173.55
```

```
## - Position.in.Wuhan...head.1.                            1      0.0291 173.56
## - Prior.traning                                          1      0.0804 173.61
## - Clinical.experience.m.                                 1      0.0902 173.62
## - Frontline.working.duration.d.                          1      0.0954 173.63
## - Willingness.to.participate.in.frontline                1      0.1730 173.71
## - Age                                                    1      0.3520 173.88
## - marital.status                                         1      0.3528 173.88
## - education.Bachelor.or.higher.2_Diploma1.               1      0.4667 174.00
## - Original.position..head.1.                             1      0.5530 174.09
## - Average.working.hours.shift                            1      1.0901 174.62
## - Prior.experience                                       1      1.2229 174.76
## - Sex                                                    1      2.8700 176.40
## <none>                                                                 173.53
## - Wuhan.as.origin..ys1.                                  1      5.4991 179.03
##                                                              AIC
## - Prodessional.title..Junior1.intermediate.and.senior0. -4264.0
## - child.rearing                                         -4264.0
## - Position.in.Wuhan...head.1.                           -4263.8
## - Prior.traning                                         -4263.2
## - Clinical.experience.m.                                -4263.1
## - Frontline.working.duration.d.                         -4263.1
## - Willingness.to.participate.in.frontline               -4262.2
## - Age                                                   -4260.1
## - marital.status                                        -4260.1
## - education.Bachelor.or.higher.2_Diploma1.              -4258.8
## - Original.position..head.1.                            -4257.8
## - Average.working.hours.shift                           -4251.6
## - Prior.experience                                      -4250.0
## - Sex                                                   -4231.1
## <none>                                                  -4219.3
## - Wuhan.as.origin..ys1.                                 -4201.4
##
## Step:  AIC=-4264.02
## log1p(FSHPs_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS      AIC
## - child.rearing                             1     0.0169 173.56 -4308.7
## - Position.in.Wuhan...head.1.               1     0.0283 173.57 -4308.6
## - Prior.traning                             1     0.0806 173.63 -4308.0
## - Frontline.working.duration.d.             1     0.0964 173.64 -4307.8
## - Clinical.experience.m.                    1     0.1117 173.66 -4307.6
## - Willingness.to.participate.in.frontline   1     0.1736 173.72 -4306.9
## - Age                                       1     0.3454 173.89 -4304.9
## - marital.status                            1     0.3502 173.90 -4304.8
## - education.Bachelor.or.higher.2_Diploma1.  1     0.5018 174.05 -4303.1
## - Original.position..head.1.                1     0.5409 174.09 -4302.6
## - Average.working.hours.shift               1     1.0917 174.64 -4296.3
## - Prior.experience                          1     1.2180 174.76 -4294.8
## - Sex                                       1     2.8593 176.41 -4276.0
## <none>                                                   173.55 -4264.0
```

```
## - Wuhan.as.origin..ys1.                              1    5.5895 179.14 -4245.1
##
## Step:  AIC=-4308.7
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                     Df Sum of Sq    RSS     AIC
## - Position.in.Wuhan...head.1.                        1    0.0285 173.59 -4353.3
## - Prior.traning                                      1    0.0811 173.65 -4352.6
## - Frontline.working.duration.d.                      1    0.0955 173.66 -4352.5
## - Clinical.experience.m.                             1    0.1098 173.67 -4352.3
## - Willingness.to.participate.in.frontline            1    0.1723 173.74 -4351.6
## - Age                                                1    0.3715 173.94 -4349.3
## - education.Bachelor.or.higher.2_Diploma1.           1    0.5052 174.07 -4347.7
## - marital.status                                     1    0.5145 174.08 -4347.6
## - Original.position..head.1.                         1    0.5405 174.10 -4347.3
## - Average.working.hours.shift                        1    1.0967 174.66 -4340.9
## - Prior.experience                                   1    1.2229 174.79 -4339.4
## - Sex                                                1    2.8462 176.41 -4320.8
## <none>                                                           173.56 -4308.7
## - Wuhan.as.origin..ys1.                              1    5.5776 179.14 -4289.9
##
## Step:  AIC=-4353.25
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                     Df Sum of Sq    RSS     AIC
## - Prior.traning                                      1    0.0855 173.68 -4397.1
## - Frontline.working.duration.d.                      1    0.0913 173.68 -4397.1
## - Clinical.experience.m.                             1    0.1151 173.71 -4396.8
## - Willingness.to.participate.in.frontline            1    0.1728 173.76 -4396.1
## - Age                                                1    0.3783 173.97 -4393.7
## - marital.status                                     1    0.5164 174.11 -4392.1
## - education.Bachelor.or.higher.2_Diploma1.           1    0.5191 174.11 -4392.1
## - Average.working.hours.shift                        1    1.1355 174.73 -4385.0
## - Prior.experience                                   1    1.2267 174.82 -4383.9
## - Original.position..head.1.                         1    1.4673 175.06 -4381.2
## - Sex                                                1    2.9061 176.50 -4364.7
## <none>                                                           173.59 -4353.3
## - Wuhan.as.origin..ys1.                              1    5.6769 179.27 -4333.3
##
## Step:  AIC=-4397.14
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                                     Df Sum of Sq    RSS     AIC
## - Frontline.working.duration.d.                      1    0.1020 173.78 -4440.8
```

```
## - Clinical.experience.m.                       1      0.1226 173.80 -4440.6
## - Willingness.to.participate.in.frontline      1      0.1818 173.86 -4439.9
## - Age                                          1      0.3868 174.06 -4437.5
## - education.Bachelor.or.higher.2_Diploma1.     1      0.4930 174.17 -4436.3
## - marital.status                               1      0.5064 174.18 -4436.1
## - Average.working.hours.shift                  1      1.1328 174.81 -4428.9
## - Original.position..head.1.                   1      1.4824 175.16 -4424.9
## - Prior.experience                             1      1.6016 175.28 -4423.5
## - Sex                                          1      2.9106 176.59 -4408.5
## <none>                                                        173.68 -4397.1
## - Wuhan.as.origin..ys1.                        1      5.7450 179.42 -4376.5
##
## Step:  AIC=-4440.83
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Average.working.hours.shift + Wuhan.as.origin..ys1. +
##     Original.position..head.1. + Prior.experience + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS     AIC
## - Clinical.experience.m.                       1      0.1355 173.91 -4484.1
## - Willingness.to.participate.in.frontline      1      0.1776 173.96 -4483.7
## - Age                                          1      0.4044 174.18 -4481.0
## - education.Bachelor.or.higher.2_Diploma1.     1      0.4796 174.26 -4480.2
## - marital.status                               1      0.4928 174.27 -4480.0
## - Average.working.hours.shift                  1      1.0751 174.85 -4473.3
## - Original.position..head.1.                   1      1.4498 175.23 -4469.0
## - Prior.experience                             1      1.5583 175.34 -4467.7
## - Sex                                          1      2.8676 176.65 -4452.7
## <none>                                                        173.78 -4440.8
## - Wuhan.as.origin..ys1.                        1      5.8342 179.61 -4419.2
##
## Step:  AIC=-4484.14
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                              Df Sum of Sq    RSS     AIC
## - Willingness.to.participate.in.frontline      1      0.1689 174.08 -4527.1
## - Age                                          1      0.4450 174.36 -4523.9
## - education.Bachelor.or.higher.2_Diploma1.     1      0.4832 174.40 -4523.4
## - marital.status                               1      0.5007 174.42 -4523.2
## - Average.working.hours.shift                  1      1.1136 175.03 -4516.2
## - Original.position..head.1.                   1      1.3816 175.30 -4513.1
## - Prior.experience                             1      1.5791 175.49 -4510.8
## - Sex                                          1      3.2067 177.12 -4492.2
## <none>                                                        173.91 -4484.1
## - Wuhan.as.origin..ys1.                        1      5.8324 179.75 -4462.6
##
## Step:  AIC=-4527.06
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience
##
##                                              Df Sum of Sq    RSS     AIC
## - Age                                          1      0.4429 174.53 -4566.8
```

```
## - education.Bachelor.or.higher.2_Diploma1.  1    0.4755 174.56 -4566.4
## - marital.status                            1    0.5152 174.60 -4566.0
## - Average.working.hours.shift               1    1.0836 175.17 -4559.4
## - Original.position..head.1.                1    1.4079 175.49 -4555.7
## - Prior.experience                          1    1.6292 175.71 -4553.2
## - Sex                                       1    3.1722 177.26 -4535.6
## <none>                                                  174.08 -4527.1
## - Wuhan.as.origin..ys1.                     1    6.0161 180.10 -4503.5
##
## Step:  AIC=-4566.82
## log1p(FSHPs_total) ~ Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience
##
##                                            Df Sum of Sq    RSS     AIC
## - marital.status                            1    0.1888 174.72 -4609.5
## - education.Bachelor.or.higher.2_Diploma1.  1    0.3820 174.91 -4607.3
## - Average.working.hours.shift               1    1.0558 175.58 -4599.6
## - Prior.experience                          1    1.6660 176.19 -4592.6
## - Original.position..head.1.                1    2.0783 176.60 -4587.9
## - Sex                                       1    3.0234 177.55 -4577.1
## <none>                                                  174.53 -4566.8
## - Wuhan.as.origin..ys1.                     1    6.1635 180.69 -4541.8
##
## Step:  AIC=-4609.52
## log1p(FSHPs_total) ~ Sex + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience
##
##                                            Df Sum of Sq    RSS     AIC
## - education.Bachelor.or.higher.2_Diploma1.  1    0.4795 175.19 -4648.9
## - Average.working.hours.shift               1    1.0527 175.77 -4642.3
## - Prior.experience                          1    1.5996 176.31 -4636.0
## - Original.position..head.1.                1    1.9292 176.65 -4632.3
## - Sex                                       1    3.1173 177.83 -4618.8
## <none>                                                  174.72 -4609.5
## - Wuhan.as.origin..ys1.                     1    6.2071 180.92 -4584.1
##
## Step:  AIC=-4648.88
## log1p(FSHPs_total) ~ Sex + Average.working.hours.shift + Wuhan.as.origin..ys1. +
##     Original.position..head.1. + Prior.experience
##
##                               Df Sum of Sq    RSS     AIC
## - Average.working.hours.shift  1    1.3053 176.50 -4678.8
## - Prior.experience             1    1.6636 176.86 -4674.7
## - Original.position..head.1.   1    1.7467 176.94 -4673.8
## - Sex                          1    3.2447 178.44 -4656.8
## <none>                                     175.19 -4648.9
## - Wuhan.as.origin..ys1.        1    7.2492 182.44 -4612.1
##
## Step:  AIC=-4678.81
## log1p(FSHPs_total) ~ Sex + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience
##
```

```
##                                  Df Sum of Sq    RSS     AIC
## - Prior.experience              1    2.0137 178.51 -4700.8
## - Original.position..head.1.    1    2.1866 178.69 -4698.9
## - Sex                           1    3.7226 180.22 -4681.6
## <none>                                          176.50 -4678.8
## - Wuhan.as.origin..ys1.         1    6.5803 183.08 -4650.0
##
## Step:  AIC=-4700.84
## log1p(FSHPs_total) ~ Sex + Wuhan.as.origin..ys1. + Original.position..head.1.
##
##                                  Df Sum of Sq    RSS     AIC
## - Original.position..head.1.    1    2.5385 181.05 -4717.3
## <none>                                          178.51 -4700.8
## - Sex                           1    4.4196 182.93 -4696.5
## - Wuhan.as.origin..ys1.         1    6.6966 185.21 -4671.5
##
## Step:  AIC=-4717.28
## log1p(FSHPs_total) ~ Sex + Wuhan.as.origin..ys1.
##
##                            Df Sum of Sq    RSS     AIC
## <none>                                    181.05 -4717.3
## - Sex                       1    4.6370 185.69 -4711.2
## - Wuhan.as.origin..ys1.     1    7.9485 189.00 -4675.6
```

```
# Step:  AIC=-4717.28
# log1p(FSHPs_total) ~ Sex + Wuhan.as.origin..ys1.
```

```
summary(log_fear_bic)
```

```
##
## Call:
## lm(formula = log1p(FSHPs_total) ~ Sex + Wuhan.as.origin..ys1.,
##     data = naomit)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.27384 -0.10377  0.06309  0.19250  0.51919
##
## Coefficients:
##                        Estimate Std. Error t value Pr(>|t|)
## (Intercept)            3.19438    0.02013 158.699   <2e-16 ***
## Sex                    0.14373    0.02003   7.177    1e-12 ***
## Wuhan.as.origin..ys1.  0.13296    0.01415   9.396   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.3001 on 2011 degrees of freedom
## Multiple R-squared:  0.07101,   Adjusted R-squared:  0.07009
## F-statistic: 76.86 on 2 and 2011 DF,  p-value: < 2.2e-16
```

```
round(exp(cbind(coef(log_fear_bic), confint(log_fear_bic)) - 1) * 100, 2)
```

```
##                           2.5 % 97.5 %
## (Intercept)          897.44 862.71 933.58
## Sex                   42.47  40.84  44.18
## Wuhan.as.origin..ys1.  42.02  40.87  43.20
```

AIC for log transformation of fear

```
log_fear_aic <- step(log_fear1,k =2)
```

```
## Start:  AIC=-4901.48
## log1p(FSHPs_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                        Df Sum of Sq    RSS
## - Working.wards.changed.yes1                            1    0.0008 173.52
## - Monthly.household.income.USD.month..1440              1    0.0108 173.53
## - Prodessional.title..Junior1.intermediate.and.senior0. 1    0.0129 173.53
## - child.rearing                                         1    0.0181 173.54
## - Position.in.Wuhan...head.1.                           1    0.0280 173.55
## - Prior.traning                                         1    0.0828 173.60
## - Clinical.experience.m.                                1    0.0872 173.61
## - Frontline.working.duration.d.                         1    0.0995 173.62
## - Willingness.to.participate.in.frontline               1    0.1697 173.69
## <none>                                                                173.52
## - marital.status                                        1    0.3370 173.86
## - Age                                                   1    0.3528 173.87
## - education.Bachelor.or.higher.2_Diploma1.              1    0.4338 173.96
## - Original.position..head.1.                            1    0.5465 174.07
## - Average.working.hours.shift                           1    1.0534 174.57
## - Prior.experience                                      1    1.2040 174.72
## - Sex                                                   1    2.8476 176.37
## - Wuhan.as.origin..ys1.                                 1    5.3623 178.88
##                                                              AIC
## - Working.wards.changed.yes1                            -4903.5
## - Monthly.household.income.USD.month..1440              -4903.4
## - Prodessional.title..Junior1.intermediate.and.senior0. -4903.3
## - child.rearing                                         -4903.3
## - Position.in.Wuhan...head.1.                           -4903.2
## - Prior.traning                                         -4902.5
## - Clinical.experience.m.                                -4902.5
## - Frontline.working.duration.d.                         -4902.3
## - Willingness.to.participate.in.frontline               -4901.5
## <none>                                                  -4901.5
## - marital.status                                        -4899.6
## - Age                                                   -4899.4
## - education.Bachelor.or.higher.2_Diploma1.              -4898.4
## - Original.position..head.1.                            -4897.1
## - Average.working.hours.shift                           -4891.3
## - Prior.experience                                      -4889.6
## - Sex                                                   -4870.7
## - Wuhan.as.origin..ys1.                                 -4842.2
##
## Step:  AIC=-4903.47
## log1p(FSHPs_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
```

```
##     Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                      Df Sum of Sq    RSS
## - Monthly.household.income.USD.month..1440            1    0.0105 173.53
## - Prodessional.title..Junior1.intermediate.and.senior0.  1    0.0131 173.53
## - child.rearing                                       1    0.0183 173.54
## - Position.in.Wuhan...head.1.                         1    0.0277 173.55
## - Prior.traning                                       1    0.0823 173.60
## - Clinical.experience.m.                              1    0.0871 173.61
## - Frontline.working.duration.d.                       1    0.1015 173.62
## - Willingness.to.participate.in.frontline             1    0.1695 173.69
## <none>                                                            173.52
## - marital.status                                      1    0.3372 173.86
## - Age                                                 1    0.3523 173.87
## - education.Bachelor.or.higher.2_Diploma1.            1    0.4333 173.96
## - Original.position..head.1.                          1    0.5533 174.07
## - Average.working.hours.shift                         1    1.0875 174.61
## - Prior.experience                                    1    1.2196 174.74
## - Sex                                                 1    2.8673 176.39
## - Wuhan.as.origin..ys1.                               1    5.3618 178.88
##                                                            AIC
## - Monthly.household.income.USD.month..1440          -4905.3
## - Prodessional.title..Junior1.intermediate.and.senior0. -4905.3
## - child.rearing                                     -4905.3
## - Position.in.Wuhan...head.1.                       -4905.1
## - Prior.traning                                     -4904.5
## - Clinical.experience.m.                            -4904.5
## - Frontline.working.duration.d.                     -4904.3
## - Willingness.to.participate.in.frontline           -4903.5
## <none>                                              -4903.5
## - marital.status                                    -4901.6
## - Age                                               -4901.4
## - education.Bachelor.or.higher.2_Diploma1.           -4900.4
## - Original.position..head.1.                        -4899.1
## - Average.working.hours.shift                       -4892.9
## - Prior.experience                                  -4891.4
## - Sex                                               -4872.5
## - Wuhan.as.origin..ys1.                             -4844.2
##
## Step:  AIC=-4905.35
## log1p(FSHPs_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                      Df Sum of Sq    RSS
## - Prodessional.title..Junior1.intermediate.and.senior0.  1    0.0139 173.55
## - child.rearing                                       1    0.0184 173.55
```

```
## - Position.in.Wuhan...head.1.                           1     0.0291 173.56
## - Prior.traning                                         1     0.0804 173.61
## - Clinical.experience.m.                                1     0.0902 173.62
## - Frontline.working.duration.d.                         1     0.0954 173.63
## <none>                                                                173.53
## - Willingness.to.participate.in.frontline               1     0.1730 173.71
## - Age                                                   1     0.3520 173.88
## - marital.status                                        1     0.3528 173.88
## - education.Bachelor.or.higher.2_Diploma1.              1     0.4667 174.00
## - Original.position..head.1.                            1     0.5530 174.09
## - Average.working.hours.shift                           1     1.0901 174.62
## - Prior.experience                                      1     1.2229 174.76
## - Sex                                                   1     2.8700 176.40
## - Wuhan.as.origin..ys1.                                 1     5.4991 179.03
##                                                              AIC
## - Prodessional.title..Junior1.intermediate.and.senior0. -4907.2
## - child.rearing                                         -4907.1
## - Position.in.Wuhan...head.1.                           -4907.0
## - Prior.traning                                         -4906.4
## - Clinical.experience.m.                                -4906.3
## - Frontline.working.duration.d.                         -4906.2
## <none>                                                  -4905.3
## - Willingness.to.participate.in.frontline               -4905.3
## - Age                                                   -4903.3
## - marital.status                                        -4903.3
## - education.Bachelor.or.higher.2_Diploma1.              -4901.9
## - Original.position..head.1.                            -4900.9
## - Average.working.hours.shift                           -4894.7
## - Prior.experience                                      -4893.2
## - Sex                                                   -4874.3
## - Wuhan.as.origin..ys1.                                 -4844.5
##
## Step:   AIC=-4907.18
## log1p(FSHPs_total) ~ Age + Sex + marital.status + child.rearing +
##     education.Bachelor.or.higher.2_Diploma1. + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                          Df Sum of Sq    RSS      AIC
## - child.rearing                           1    0.0169 173.56 -4909.0
## - Position.in.Wuhan...head.1.             1    0.0283 173.57 -4908.9
## - Prior.traning                           1    0.0806 173.63 -4908.2
## - Frontline.working.duration.d.           1    0.0964 173.64 -4908.1
## - Clinical.experience.m.                  1    0.1117 173.66 -4907.9
## <none>                                               173.55 -4907.2
## - Willingness.to.participate.in.frontline 1    0.1736 173.72 -4907.2
## - Age                                     1    0.3454 173.89 -4905.2
## - marital.status                          1    0.3502 173.90 -4905.1
## - education.Bachelor.or.higher.2_Diploma1. 1   0.5018 174.05 -4903.4
## - Original.position..head.1.              1    0.5409 174.09 -4902.9
## - Average.working.hours.shift             1    1.0917 174.64 -4896.6
## - Prior.experience                        1    1.2180 174.76 -4895.1
## - Sex                                     1    2.8593 176.41 -4876.3
```

```
## - Wuhan.as.origin..ys1.                          1     5.5895 179.14 -4845.3
##
## Step:  AIC=-4908.99
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Prior.traning + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS      AIC
## - Position.in.Wuhan...head.1.               1     0.0285 173.59 -4910.7
## - Prior.traning                             1     0.0811 173.65 -4910.0
## - Frontline.working.duration.d.             1     0.0955 173.66 -4909.9
## - Clinical.experience.m.                    1     0.1098 173.67 -4909.7
## - Willingness.to.participate.in.frontline   1     0.1723 173.74 -4909.0
## <none>                                                   173.56 -4909.0
## - Age                                       1     0.3715 173.94 -4906.7
## - education.Bachelor.or.higher.2_Diploma1.  1     0.5052 174.07 -4905.1
## - marital.status                            1     0.5145 174.08 -4905.0
## - Original.position..head.1.                1     0.5405 174.10 -4904.7
## - Average.working.hours.shift               1     1.0967 174.66 -4898.3
## - Prior.experience                          1     1.2229 174.79 -4896.8
## - Sex                                       1     2.8462 176.41 -4878.2
## - Wuhan.as.origin..ys1.                     1     5.5776 179.14 -4847.3
##
## Step:  AIC=-4910.66
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS      AIC
## - Prior.traning                             1     0.0855 173.68 -4911.7
## - Frontline.working.duration.d.             1     0.0913 173.68 -4911.6
## - Clinical.experience.m.                    1     0.1151 173.71 -4911.3
## <none>                                                   173.59 -4910.7
## - Willingness.to.participate.in.frontline   1     0.1728 173.76 -4910.7
## - Age                                       1     0.3783 173.97 -4908.3
## - marital.status                            1     0.5164 174.11 -4906.7
## - education.Bachelor.or.higher.2_Diploma1.  1     0.5191 174.11 -4906.6
## - Average.working.hours.shift               1     1.1355 174.73 -4899.5
## - Prior.experience                          1     1.2267 174.82 -4898.5
## - Original.position..head.1.                1     1.4673 175.06 -4895.7
## - Sex                                       1     2.9061 176.50 -4879.2
## - Wuhan.as.origin..ys1.                     1     5.6769 179.27 -4847.8
##
## Step:  AIC=-4911.67
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                            Df Sum of Sq    RSS      AIC
## - Frontline.working.duration.d.             1     0.1020 173.78 -4912.5
```

```
## - Clinical.experience.m.                             1    0.1226 173.80 -4912.2
## <none>                                                          173.68 -4911.7
## - Willingness.to.participate.in.frontline            1    0.1818 173.86 -4911.6
## - Age                                                1    0.3868 174.06 -4909.2
## - education.Bachelor.or.higher.2_Diploma1.           1    0.4930 174.17 -4908.0
## - marital.status                                     1    0.5064 174.18 -4907.8
## - Average.working.hours.shift                        1    1.1328 174.81 -4900.6
## - Original.position..head.1.                         1    1.4824 175.16 -4896.6
## - Prior.experience                                   1    1.6016 175.28 -4895.2
## - Sex                                                1    2.9106 176.59 -4880.2
## - Wuhan.as.origin..ys1.                              1    5.7450 179.42 -4848.1
##
## Step:  AIC=-4912.49
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Average.working.hours.shift + Wuhan.as.origin..ys1. +
##     Original.position..head.1. + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                    Df Sum of Sq    RSS     AIC
## - Clinical.experience.m.                             1    0.1355 173.91 -4912.9
## <none>                                                          173.78 -4912.5
## - Willingness.to.participate.in.frontline            1    0.1776 173.96 -4912.4
## - Age                                                1    0.4044 174.18 -4909.8
## - education.Bachelor.or.higher.2_Diploma1.           1    0.4796 174.26 -4908.9
## - marital.status                                     1    0.4928 174.27 -4908.8
## - Average.working.hours.shift                        1    1.0751 174.85 -4902.1
## - Original.position..head.1.                         1    1.4498 175.23 -4897.8
## - Prior.experience                                   1    1.5583 175.34 -4896.5
## - Sex                                                1    2.8676 176.65 -4881.5
## - Wuhan.as.origin..ys1.                              1    5.8342 179.61 -4848.0
##
## Step:  AIC=-4912.91
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                                    Df Sum of Sq    RSS     AIC
## - Willingness.to.participate.in.frontline            1    0.1689 174.08 -4913.0
## <none>                                                          173.91 -4912.9
## - Age                                                1    0.4450 174.36 -4909.8
## - education.Bachelor.or.higher.2_Diploma1.           1    0.4832 174.40 -4909.3
## - marital.status                                     1    0.5007 174.42 -4909.1
## - Average.working.hours.shift                        1    1.1136 175.03 -4902.1
## - Original.position..head.1.                         1    1.3816 175.30 -4899.0
## - Prior.experience                                   1    1.5791 175.49 -4896.7
## - Sex                                                1    3.2067 177.12 -4878.1
## - Wuhan.as.origin..ys1.                              1    5.8324 179.75 -4848.5
##
## Step:  AIC=-4912.96
## log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience
##
##                                                    Df Sum of Sq    RSS     AIC
## <none>                                                          174.08 -4913.0
```

```
## - Age                                      1    0.4429 174.53 -4909.8
## - education.Bachelor.or.higher.2_Diploma1.  1    0.4755 174.56 -4909.5
## - marital.status                           1    0.5152 174.60 -4909.0
## - Average.working.hours.shift              1    1.0836 175.17 -4902.5
## - Original.position..head.1.               1    1.4079 175.49 -4898.7
## - Prior.experience                         1    1.6292 175.71 -4896.2
## - Sex                                      1    3.1722 177.26 -4878.6
## - Wuhan.as.origin..ys1.                    1    6.0161 180.10 -4846.5
```

```
# Step:   AIC=-4912.96
# log1p(FSHPs_total) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. + A
verage.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.experien
ce
```

```
summary(log_fear_aic)
```

```
##
## Call:
## lm(formula = log1p(FSHPs_total) ~ Age + Sex + marital.status +
##     education.Bachelor.or.higher.2_Diploma1. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.experience,
##     data = naomit)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.35239 -0.09047  0.06373  0.18896  0.63583
##
## Coefficients:
##                                            Estimate Std. Error t value Pr(>|t|)
## (Intercept)                                3.339588   0.054261  61.547  < 2e-16
## Age                                       -0.003067   0.001358  -2.259 0.024021
## Sex                                        0.120963   0.020012   6.044 1.78e-09
## marital.status                             0.039716   0.016304   2.436 0.014941
## education.Bachelor.or.higher.2_Diploma1.   0.039220   0.016760   2.340 0.019373
## Average.working.hours.shift               -0.012725   0.003602  -3.533 0.000421
## Wuhan.as.origin..ys1.                      0.120404   0.014465   8.324  < 2e-16
## Original.position..head.1.                -0.097057   0.024103  -4.027 5.86e-05
## Prior.experience                          -0.059435   0.013721  -4.332 1.55e-05
##
## (Intercept)                               ***
## Age                                       *
## Sex                                       ***
## marital.status                            *
## education.Bachelor.or.higher.2_Diploma1.  *
## Average.working.hours.shift               ***
## Wuhan.as.origin..ys1.                     ***
## Original.position..head.1.                ***
## Prior.experience                          ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2947 on 2005 degrees of freedom
## Multiple R-squared:  0.1068, Adjusted R-squared:  0.1032
## F-statistic: 29.96 on 8 and 2005 DF,  p-value: < 2.2e-16
```

```
round(exp(cbind(coef(log_fear_aic), confint(log_fear_aic)) - 1) * 100, 2)
```

```
##                                                    2.5 %   97.5 %
## (Intercept)                               1037.70 932.94 1154.21
## Age                                         36.68  36.58   36.77
## Sex                                         41.52  39.92   43.18
## marital.status                              38.28  37.07   39.52
## education.Bachelor.or.higher.2_Diploma1.    38.26  37.02   39.54
## Average.working.hours.shift                 36.32  36.07   36.58
## Wuhan.as.origin..ys1.                       41.50  40.33   42.69
## Original.position..head.1.                  33.39  31.84   35.00
## Prior.experience                            34.67  33.74   35.61
```

ORDINAL LOGISTIC REGRESSION

Since the anxiety is a group of ordered variables ranging from no fear, mild fear, moderate fear to severe fear, so we choose to use ordinal logistic regression.

```
fear.polr=polr(factor(fear_group)~Age+Sex+marital.status+child.rearing+education.Bachelor.or.hig
her.2_Diploma1.+Prodessional.title..Junior1.intermediate.and.senior0.+ Monthly.household.income.
USD.month..1440  + Clinical.experience.m.+ Frontline.working.duration.d.+Average.working.hours.s
hift+Wuhan.as.origin..ys1.+Original.position..head.1. + Position.in.Wuhan...head.1. + Working.wa
rds.changed.yes1 + Prior.traning + Prior.experience+ Willingness.to.participate.in.frontline,dat
a = naomit)
summary(fear.polr)
```

```
##
## Re-fitting to get Hessian
```

```
## Call:
## polr(formula = factor(fear_group) ~ Age + Sex + marital.status +
##     child.rearing + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##     Prior.traning + Prior.experience + Willingness.to.participate.in.frontline,
##     data = naomit)
##
## Coefficients:
##                                                          Value Std. Error
## Age                                                  -0.0421054   0.021287
## Sex                                                   0.5803298   0.139162
## marital.status                                        0.3153139   0.171617
## child.rearing                                         0.0007739   0.176333
## education.Bachelor.or.higher.2_Diploma1.              0.2843275   0.119209
## Prodessional.title..Junior1.intermediate.and.senior0. 0.1119091   0.145081
## Monthly.household.income.USD.month..1440             -0.0301317   0.104346
## Clinical.experience.m.                                0.0023214   0.001688
## Frontline.working.duration.d.                         0.0049999   0.004181
## Average.working.hours.shift                          -0.1009489   0.025532
## Wuhan.as.origin..ys1.                                 0.8443343   0.105627
## Original.position..head.1.                           -0.4533966   0.226014
## Position.in.Wuhan...head.1.                          -0.1087619   0.271700
## Working.wards.changed.yes1                            0.0368288   0.103412
## Prior.traning                                        -0.0930734   0.134129
## Prior.experience                                     -0.2700870   0.103831
## Willingness.to.participate.in.frontline              -0.4940174   0.315313
##                                                        t value
## Age                                                  -1.978019
## Sex                                                   4.170183
## marital.status                                        1.837317
## child.rearing                                         0.004389
## education.Bachelor.or.higher.2_Diploma1.              2.385125
## Prodessional.title..Junior1.intermediate.and.senior0. 0.771357
## Monthly.household.income.USD.month..1440             -0.288769
## Clinical.experience.m.                                1.375466
## Frontline.working.duration.d.                         1.195746
## Average.working.hours.shift                          -3.953806
## Wuhan.as.origin..ys1.                                 7.993513
## Original.position..head.1.                           -2.006058
## Position.in.Wuhan...head.1.                          -0.400302
## Working.wards.changed.yes1                            0.356135
## Prior.traning                                        -0.693912
## Prior.experience                                     -2.601210
## Willingness.to.participate.in.frontline              -1.566752
##
## Intercepts:
##                            Value   Std. Error t value
## mild fear|moderate fear    -2.9994  0.6916     -4.3367
## moderate fear|severe fear  -1.0619  0.6878     -1.5439
```

```
##
## Residual Deviance: 3264.632
## AIC: 3302.632
```

p-value for model 1

```
(ptable1 <- coef(summary(fear.polr)))
```

```
##
## Re-fitting to get Hessian
```

```
##                                                     Value    Std. Error
## Age                                            -0.0421054147  0.021286663
## Sex                                             0.5803297623  0.139161706
## marital.status                                  0.3153138658  0.171616513
## child.rearing                                   0.0007738764  0.176332976
## education.Bachelor.or.higher.2_Diploma1.        0.2843275117  0.119208662
## Prodessional.title..Junior1.intermediate.and.senior0.  0.1119090543  0.145080696
## Monthly.household.income.USD.month..1440       -0.0301317465  0.104345546
## Clinical.experience.m.                          0.0023213796  0.001687704
## Frontline.working.duration.d.                   0.0049998966  0.004181402
## Average.working.hours.shift                    -0.1009488542  0.025532073
## Wuhan.as.origin..ys1.                           0.8443343210  0.105627439
## Original.position..head.1.                     -0.4533966295  0.226013768
## Position.in.Wuhan...head.1.                    -0.1087618994  0.271699616
## Working.wards.changed.yes1                      0.0368288142  0.103412474
## Prior.traning                                  -0.0930734410  0.134128640
## Prior.experience                               -0.2700870246  0.103831318
## Willingness.to.participate.in.frontline        -0.4940173822  0.315312983
## mild fear|moderate fear                        -2.9993573670  0.691617782
## moderate fear|severe fear                      -1.0619326390  0.687846413
##                                                     t value
## Age                                            -1.978018542
## Sex                                             4.170182860
## marital.status                                  1.837316591
## child.rearing                                   0.004388722
## education.Bachelor.or.higher.2_Diploma1.        2.385124605
## Prodessional.title..Junior1.intermediate.and.senior0.  0.771357300
## Monthly.household.income.USD.month..1440       -0.288768882
## Clinical.experience.m.                          1.375465914
## Frontline.working.duration.d.                   1.195746482
## Average.working.hours.shift                    -3.953805716
## Wuhan.as.origin..ys1.                           7.993513131
## Original.position..head.1.                     -2.006057567
## Position.in.Wuhan...head.1.                    -0.400301998
## Working.wards.changed.yes1                      0.356135123
## Prior.traning                                  -0.693911762
## Prior.experience                               -2.601209633
## Willingness.to.participate.in.frontline        -1.566752431
## mild fear|moderate fear                        -4.336726796
## moderate fear|severe fear                      -1.543851387
```

```
p1 <- pnorm(abs(ptable1[, "t value"]), lower.tail = FALSE) * 2
(ptable1 <- cbind(ptable1, "p value" = p1))
```

```
##                                                              Value    Std. Error
## Age                                                    -0.0421054147  0.021286663
## Sex                                                     0.5803297623  0.139161706
## marital.status                                          0.3153138658  0.171616513
## child.rearing                                           0.0007738764  0.176332976
## education.Bachelor.or.higher.2_Diploma1.                0.2843275117  0.119208662
## Prodessional.title..Junior1.intermediate.and.senior0.   0.1119090543  0.145080696
## Monthly.household.income.USD.month..1440               -0.0301317465  0.104345546
## Clinical.experience.m.                                  0.0023213796  0.001687704
## Frontline.working.duration.d.                           0.0049998966  0.004181402
## Average.working.hours.shift                            -0.1009488542  0.025532073
## Wuhan.as.origin..ys1.                                   0.8443343210  0.105627439
## Original.position..head.1.                             -0.4533966295  0.226013768
## Position.in.Wuhan...head.1.                            -0.1087618994  0.271699616
## Working.wards.changed.yes1                              0.0368288142  0.103412474
## Prior.traning                                          -0.0930734410  0.134128640
## Prior.experience                                       -0.2700870246  0.103831318
## Willingness.to.participate.in.frontline                -0.4940173822  0.315312983
## mild fear|moderate fear                                -2.9993573670  0.691617782
## moderate fear|severe fear                              -1.0619326390  0.687846413
##                                                             t value       p value
## Age                                                    -1.978018542  4.792661e-02
## Sex                                                     4.170182860  3.043553e-05
## marital.status                                          1.837316591  6.616317e-02
## child.rearing                                           0.004388722  9.964983e-01
## education.Bachelor.or.higher.2_Diploma1.                2.385124605  1.707334e-02
## Prodessional.title..Junior1.intermediate.and.senior0.   0.771357300  4.404952e-01
## Monthly.household.income.USD.month..1440               -0.288768882  7.727582e-01
## Clinical.experience.m.                                  1.375465914  1.689870e-01
## Frontline.working.duration.d.                           1.195746482  2.317955e-01
## Average.working.hours.shift                            -3.953805716  7.691787e-05
## Wuhan.as.origin..ys1.                                   7.993513131  1.311469e-15
## Original.position..head.1.                             -2.006057567  4.485011e-02
## Position.in.Wuhan...head.1.                            -0.400301998  6.889341e-01
## Working.wards.changed.yes1                              0.356135123  7.217394e-01
## Prior.traning                                          -0.693911762  4.877375e-01
## Prior.experience                                       -2.601209633  9.289567e-03
## Willingness.to.participate.in.frontline                -1.566752431  1.171726e-01
## mild fear|moderate fear                                -4.336726796  1.446202e-05
## moderate fear|severe fear                              -1.543851387  1.226243e-01
```

CI

```
fear.ci <- confint(fear.polr)
```

```
## Waiting for profiling to be done...
```

```
##
## Re-fitting to get Hessian
```

OR & CI

```
round(exp(cbind(OR = coef(fear.polr), fear.ci)),4)
```

```
##                                                               OR   2.5 % 97.5 %
## Age                                                        0.9588 0.9198 0.9999
## Sex                                                        1.7866 1.3586 2.3449
## marital.status                                             1.3707 0.9814 1.9244
## child.rearing                                              1.0008 0.7059 1.4101
## education.Bachelor.or.higher.2_Diploma1.                   1.3289 1.0510 1.6774
## Prodessional.title..Junior1.intermediate.and.senior0.      1.1184 0.8409 1.4853
## Monthly.household.income.USD.month..1440                   0.9703 0.7908 1.1906
## Clinical.experience.m.                                     1.0023 0.9990 1.0056
## Frontline.working.duration.d.                              1.0050 0.9971 1.0135
## Average.working.hours.shift                                0.9040 0.8598 0.9503
## Wuhan.as.origin..ys1.                                      2.3264 1.8917 2.8624
## Original.position..head.1.                                 0.6355 0.4081 0.9911
## Position.in.Wuhan...head.1.                                0.8969 0.5265 1.5296
## Working.wards.changed.yes1                                 1.0375 0.8476 1.2715
## Prior.traning                                              0.9111 0.6989 1.1827
## Prior.experience                                           0.7633 0.6228 0.9357
## Willingness.to.participate.in.frontline                    0.6102 0.3173 1.1018
```

BIC for ordinal

```
or_fear_bic <- step(fear.polr,k=sqrt(nrow(naomit)))
```

```
## Start:    AIC=4117.31
## factor(fear_group) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                                              Df   AIC
## - child.rearing                                              1 4072.4
## - Monthly.household.income.USD.month..1440                   1 4072.5
## - Working.wards.changed.yes1                                 1 4072.6
## - Position.in.Wuhan...head.1.                                1 4072.6
## - Prior.traning                                              1 4072.9
## - Prodessional.title..Junior1.intermediate.and.senior0.      1 4073.0
## - Frontline.working.duration.d.                              1 4073.9
## - Clinical.experience.m.                                     1 4074.3
## - Willingness.to.participate.in.frontline                    1 4075.1
## - marital.status                                             1 4075.8
## - Age                                                        1 4076.3
## - Original.position..head.1.                                 1 4076.4
## - education.Bachelor.or.higher.2_Diploma1.                   1 4078.1
## - Prior.experience                                           1 4079.2
## - Average.working.hours.shift                                1 4088.1
## - Sex                                                        1 4089.5
## <none>                                                         4117.3
## - Wuhan.as.origin..ys1.                                      1 4136.3
##
## Step:    AIC=4072.43
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                              Df   AIC
## - Monthly.household.income.USD.month..1440                   1 4027.6
## - Working.wards.changed.yes1                                 1 4027.7
## - Position.in.Wuhan...head.1.                                1 4027.7
## - Prior.traning                                              1 4028.0
## - Prodessional.title..Junior1.intermediate.and.senior0.      1 4028.1
## - Frontline.working.duration.d.                              1 4029.1
## - Clinical.experience.m.                                     1 4029.4
## - Willingness.to.participate.in.frontline                    1 4030.2
## - Age                                                        1 4031.5
## - Original.position..head.1.                                 1 4031.5
## - education.Bachelor.or.higher.2_Diploma1.                   1 4033.2
## - Prior.experience                                           1 4034.3
## - marital.status                                             1 4034.6
```

```
## - Average.working.hours.shift                           1 4043.2
## - Sex                                                   1 4044.6
## <none>                                                    4072.4
## - Wuhan.as.origin..ys1.                                 1 4091.5
##
## Step:   AIC=4027.63
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                                          Df    AIC
## - Working.wards.changed.yes1                             1 3982.9
## - Position.in.Wuhan...head.1.                            1 3982.9
## - Prior.traning                                          1 3983.3
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 3983.4
## - Frontline.working.duration.d.                          1 3984.4
## - Clinical.experience.m.                                 1 3984.6
## - Willingness.to.participate.in.frontline                1 3985.4
## - Age                                                    1 3986.7
## - Original.position..head.1.                             1 3986.8
## - education.Bachelor.or.higher.2_Diploma1.               1 3988.3
## - Prior.experience                                       1 3989.5
## - marital.status                                         1 3989.8
## - Average.working.hours.shift                            1 3998.4
## - Sex                                                    1 3999.8
## <none>                                                     4027.6
## - Wuhan.as.origin..ys1.                                  1 4047.2
##
## Step:   AIC=3982.9
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                          Df    AIC
## - Position.in.Wuhan...head.1.                            1 3938.2
## - Prior.traning                                          1 3938.5
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 3938.6
## - Frontline.working.duration.d.                          1 3939.7
## - Clinical.experience.m.                                 1 3939.9
## - Willingness.to.participate.in.frontline                1 3940.6
## - Age                                                    1 3941.9
## - Original.position..head.1.                             1 3942.2
## - education.Bachelor.or.higher.2_Diploma1.               1 3943.5
## - Prior.experience                                       1 3944.6
## - marital.status                                         1 3945.0
## - Average.working.hours.shift                            1 3953.8
## - Sex                                                    1 3955.0
## <none>                                                     3982.9
## - Wuhan.as.origin..ys1.                                  1 4002.3
```

```
##
## Step:  AIC=3938.16
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.traning +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                                          Df    AIC
## - Prior.traning                                           1 3893.8
## - Prodessional.title..Junior1.intermediate.and.senior0.   1 3893.9
## - Frontline.working.duration.d.                           1 3895.0
## - Clinical.experience.m.                                  1 3895.2
## - Willingness.to.participate.in.frontline                 1 3895.9
## - Age                                                     1 3897.2
## - education.Bachelor.or.higher.2_Diploma1.                1 3898.9
## - Prior.experience                                        1 3899.9
## - marital.status                                          1 3900.3
## - Original.position..head.1.                              1 3903.0
## - Average.working.hours.shift                             1 3909.4
## - Sex                                                     1 3910.6
## <none>                                                      3938.2
## - Wuhan.as.origin..ys1.                                   1 3959.9
##
## Step:  AIC=3893.8
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                          Df    AIC
## - Prodessional.title..Junior1.intermediate.and.senior0.   1 3849.5
## - Frontline.working.duration.d.                           1 3850.7
## - Clinical.experience.m.                                  1 3850.9
## - Willingness.to.participate.in.frontline                 1 3851.6
## - Age                                                     1 3852.9
## - education.Bachelor.or.higher.2_Diploma1.                1 3854.4
## - marital.status                                          1 3855.8
## - Prior.experience                                        1 3857.7
## - Original.position..head.1.                              1 3858.7
## - Average.working.hours.shift                             1 3865.0
## - Sex                                                     1 3866.2
## <none>                                                      3893.8
## - Wuhan.as.origin..ys1.                                   1 3916.0
##
## Step:  AIC=3849.54
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                      Df    AIC
## - Clinical.experience.m.              1 3806.2
```

```
## - Frontline.working.duration.d.             1 3806.4
## - Willingness.to.participate.in.frontline   1 3807.3
## - Age                                       1 3808.8
## - education.Bachelor.or.higher.2_Diploma1.  1 3809.7
## - marital.status                            1 3811.4
## - Prior.experience                          1 3813.5
## - Original.position..head.1.                1 3815.6
## - Average.working.hours.shift               1 3820.8
## - Sex                                       1 3822.3
## <none>                                        3849.5
## - Wuhan.as.origin..ys1.                     1 3876.7
##
## Step:   AIC=3806.25
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                             Df    AIC
## - Frontline.working.duration.d.             1 3763.3
## - Willingness.to.participate.in.frontline   1 3764.0
## - Age                                       1 3765.5
## - education.Bachelor.or.higher.2_Diploma1.  1 3766.6
## - marital.status                            1 3768.2
## - Prior.experience                          1 3770.4
## - Original.position..head.1.                1 3771.5
## - Average.working.hours.shift               1 3777.9
## - Sex                                       1 3781.9
## <none>                                        3806.2
## - Wuhan.as.origin..ys1.                     1 3833.4
##
## Step:   AIC=3763.32
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                             Df    AIC
## - Willingness.to.participate.in.frontline   1 3721.0
## - Age                                       1 3722.5
## - education.Bachelor.or.higher.2_Diploma1.  1 3723.5
## - marital.status                            1 3725.2
## - Prior.experience                          1 3726.8
## - Original.position..head.1.                1 3728.2
## - Average.working.hours.shift               1 3733.8
## - Sex                                       1 3738.6
## <none>                                        3763.3
## - Wuhan.as.origin..ys1.                     1 3791.9
##
## Step:   AIC=3721.01
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience
##
##                                             Df    AIC
```

```
## - Age                                         1 3680.3
## - education.Bachelor.or.higher.2_Diploma1.    1 3681.1
## - marital.status                              1 3683.2
## - Prior.experience                            1 3684.9
## - Original.position..head.1.                  1 3686.1
## - Average.working.hours.shift                 1 3691.3
## - Sex                                         1 3695.9
## <none>                                          3721.0
## - Wuhan.as.origin..ys1.                       1 3752.0
##
## Step:  AIC=3680.31
## factor(fear_group) ~ Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience
##
##                                              Df    AIC
## - marital.status                              1 3638.9
## - education.Bachelor.or.higher.2_Diploma1.    1 3639.4
## - Prior.experience                            1 3644.4
## - Average.working.hours.shift                 1 3650.2
## - Original.position..head.1.                  1 3651.1
## - Sex                                         1 3653.9
## <none>                                          3680.3
## - Wuhan.as.origin..ys1.                       1 3712.4
##
## Step:  AIC=3638.93
## factor(fear_group) ~ Sex + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience
##
##                                              Df    AIC
## - education.Bachelor.or.higher.2_Diploma1.    1 3599.7
## - Prior.experience                            1 3602.3
## - Original.position..head.1.                  1 3607.6
## - Average.working.hours.shift                 1 3608.7
## - Sex                                         1 3613.7
## <none>                                          3638.9
## - Wuhan.as.origin..ys1.                       1 3671.4
##
## Step:  AIC=3599.66
## factor(fear_group) ~ Sex + Average.working.hours.shift + Wuhan.as.origin..ys1. +
##     Original.position..head.1. + Prior.experience
##
##                                  Df    AIC
## - Prior.experience                1 3563.4
## - Original.position..head.1.      1 3566.6
## - Average.working.hours.shift     1 3572.4
## - Sex                             1 3575.5
## <none>                              3599.7
## - Wuhan.as.origin..ys1.           1 3644.0
##
## Step:  AIC=3563.37
## factor(fear_group) ~ Sex + Average.working.hours.shift + Wuhan.as.origin..ys1. +
##     Original.position..head.1.
```

```
##
##                                Df    AIC
## - Original.position..head.1.   1  3531.7
## - Average.working.hours.shift  1  3539.0
## - Sex                          1  3541.9
## <none>                            3563.4
## - Wuhan.as.origin..ys1.        1  3609.0
##
## Step:  AIC=3531.67
## factor(fear_group) ~ Sex + Average.working.hours.shift + Wuhan.as.origin..ys1.
##
##                                Df    AIC
## - Sex                          1  3510.4
## - Average.working.hours.shift  1  3512.1
## <none>                            3531.7
## - Wuhan.as.origin..ys1.        1  3588.0
##
## Step:  AIC=3510.42
## factor(fear_group) ~ Average.working.hours.shift + Wuhan.as.origin..ys1.
##
##                                Df    AIC
## - Average.working.hours.shift  1  3496.2
## <none>                            3510.4
## - Wuhan.as.origin..ys1.        1  3578.4
##
## Step:  AIC=3496.19
## factor(fear_group) ~ Wuhan.as.origin..ys1.
##
##                          Df    AIC
## <none>                      3496.2
## - Wuhan.as.origin..ys1.  1  3554.3
```

```
# Step:  AIC=4252.83
# factor(anx_group) ~ 1
```

```
summary(or_fear_bic)
```

```
##
## Re-fitting to get Hessian
```

```
## Call:
## polr(formula = factor(fear_group) ~ Wuhan.as.origin..ys1., data = naomit)
##
## Coefficients:
##                        Value Std. Error t value
## Wuhan.as.origin..ys1. 0.9572    0.09452   10.13
##
## Intercepts:
##                            Value    Std. Error t value
## mild fear|moderate fear   -1.8018   0.0927    -19.4265
## moderate fear|severe fear  0.0627   0.0741      0.8468
##
## Residual Deviance: 3361.556
## AIC: 3367.556
```

```
(ptable1 <- coef(summary(or_fear_bic)))
```

```
##
## Re-fitting to get Hessian
```

```
##                              Value Std. Error      t value
## Wuhan.as.origin..ys1.     0.95716079 0.09451548  10.1270264
## mild fear|moderate fear   -1.80175488 0.09274718 -19.4265187
## moderate fear|severe fear  0.06273905 0.07408844   0.8468129
```

```
p1 <- pnorm(abs(ptable1[, "t value"]), lower.tail = FALSE) * 2
(ptable1 <- cbind(ptable1, "p value" = p1))
```

```
##                              Value Std. Error      t value       p value
## Wuhan.as.origin..ys1.     0.95716079 0.09451548  10.1270264 4.192039e-24
## mild fear|moderate fear   -1.80175488 0.09274718 -19.4265187 4.605590e-84
## moderate fear|severe fear  0.06273905 0.07408844   0.8468129 3.970994e-01
```

AIC for ordinal

```
or_fear_aic <- step(fear.polr,k =2)
```

```
## Start:  AIC=3302.63
## factor(fear_group) ~ Age + Sex + marital.status + child.rearing +
##      education.Bachelor.or.higher.2_Diploma1. + Prodessional.title..Junior1.intermediate.and.s
enior0. +
##      Monthly.household.income.USD.month..1440 + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                                             Df   AIC
## - child.rearing                                             1 3300.6
## - Monthly.household.income.USD.month..1440                  1 3300.7
## - Working.wards.changed.yes1                                1 3300.8
## - Position.in.Wuhan...head.1.                               1 3300.8
## - Prior.traning                                             1 3301.1
## - Prodessional.title..Junior1.intermediate.and.senior0.     1 3301.2
## - Frontline.working.duration.d.                             1 3302.1
## - Clinical.experience.m.                                    1 3302.5
## <none>                                                        3302.6
## - Willingness.to.participate.in.frontline                   1 3303.3
## - marital.status                                            1 3304.1
## - Age                                                       1 3304.5
## - Original.position..head.1.                                1 3304.6
## - education.Bachelor.or.higher.2_Diploma1.                  1 3306.3
## - Prior.experience                                          1 3307.4
## - Average.working.hours.shift                               1 3316.3
## - Sex                                                       1 3317.7
## - Wuhan.as.origin..ys1.                                     1 3364.5
##
## Step:  AIC=3300.63
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Monthly.household.income.USD.mont
h..1440 +
##      Clinical.experience.m. + Frontline.working.duration.d. +
##      Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##      Position.in.Wuhan...head.1. + Working.wards.changed.yes1 +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                             Df   AIC
## - Monthly.household.income.USD.month..1440                  1 3298.7
## - Working.wards.changed.yes1                                1 3298.8
## - Position.in.Wuhan...head.1.                               1 3298.8
## - Prior.traning                                             1 3299.1
## - Prodessional.title..Junior1.intermediate.and.senior0.     1 3299.2
## - Frontline.working.duration.d.                             1 3300.1
## - Clinical.experience.m.                                    1 3300.5
## <none>                                                        3300.6
## - Willingness.to.participate.in.frontline                   1 3301.3
## - Age                                                       1 3302.6
## - Original.position..head.1.                                1 3302.6
## - education.Bachelor.or.higher.2_Diploma1.                  1 3304.3
## - Prior.experience                                          1 3305.4
```

```
## - marital.status                                        1 3305.7
## - Average.working.hours.shift                           1 3314.3
## - Sex                                                   1 3315.7
## - Wuhan.as.origin..ys1.                                 1 3362.6
##
## Step:   AIC=3298.71
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Working.wards.changed.yes1 + Prior.traning + Prior.experience +
##      Willingness.to.participate.in.frontline
##
##                                                         Df    AIC
## - Working.wards.changed.yes1                             1 3296.9
## - Position.in.Wuhan...head.1.                            1 3296.9
## - Prior.traning                                          1 3297.2
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 3297.3
## - Frontline.working.duration.d.                          1 3298.3
## - Clinical.experience.m.                                 1 3298.6
## <none>                                                     3298.7
## - Willingness.to.participate.in.frontline                1 3299.3
## - Age                                                    1 3300.7
## - Original.position..head.1.                             1 3300.7
## - education.Bachelor.or.higher.2_Diploma1.               1 3302.3
## - Prior.experience                                       1 3303.5
## - marital.status                                         1 3303.7
## - Average.working.hours.shift                            1 3312.4
## - Sex                                                    1 3313.8
## - Wuhan.as.origin..ys1.                                  1 3361.1
##
## Step:   AIC=3296.86
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##      Prodessional.title..Junior1.intermediate.and.senior0. + Clinical.experience.m. +
##      Frontline.working.duration.d. + Average.working.hours.shift +
##      Wuhan.as.origin..ys1. + Original.position..head.1. + Position.in.Wuhan...head.1. +
##      Prior.traning + Prior.experience + Willingness.to.participate.in.frontline
##
##                                                         Df    AIC
## - Position.in.Wuhan...head.1.                            1 3295.0
## - Prior.traning                                          1 3295.3
## - Prodessional.title..Junior1.intermediate.and.senior0.  1 3295.5
## - Frontline.working.duration.d.                          1 3296.6
## - Clinical.experience.m.                                 1 3296.7
## <none>                                                     3296.9
## - Willingness.to.participate.in.frontline                1 3297.5
## - Age                                                    1 3298.8
## - Original.position..head.1.                             1 3299.0
## - education.Bachelor.or.higher.2_Diploma1.               1 3300.4
## - Prior.experience                                       1 3301.5
## - marital.status                                         1 3301.8
## - Average.working.hours.shift                            1 3310.6
## - Sex                                                    1 3311.8
## - Wuhan.as.origin..ys1.                                  1 3359.1
```

```
##
## Step:  AIC=3295
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.traning +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                                        Df    AIC
## - Prior.traning                                         1 3293.5
## - Prodessional.title..Junior1.intermediate.and.senior0. 1 3293.6
## - Frontline.working.duration.d.                         1 3294.7
## - Clinical.experience.m.                                1 3294.9
## <none>                                                    3295.0
## - Willingness.to.participate.in.frontline               1 3295.6
## - Age                                                   1 3296.9
## - education.Bachelor.or.higher.2_Diploma1.              1 3298.6
## - Prior.experience                                      1 3299.6
## - marital.status                                        1 3300.0
## - Original.position..head.1.                            1 3302.7
## - Average.working.hours.shift                           1 3309.1
## - Sex                                                   1 3310.3
## - Wuhan.as.origin..ys1.                                 1 3359.6
##
## Step:  AIC=3293.51
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Prodessional.title..Junior1.intermediate.and.senior0. + Clinical.experience.m. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                                        Df    AIC
## - Prodessional.title..Junior1.intermediate.and.senior0. 1 3292.1
## - Frontline.working.duration.d.                         1 3293.3
## - Clinical.experience.m.                                1 3293.5
## <none>                                                    3293.5
## - Willingness.to.participate.in.frontline               1 3294.2
## - Age                                                   1 3295.5
## - education.Bachelor.or.higher.2_Diploma1.              1 3297.0
## - marital.status                                        1 3298.4
## - Prior.experience                                      1 3300.3
## - Original.position..head.1.                            1 3301.3
## - Average.working.hours.shift                           1 3307.6
## - Sex                                                   1 3308.8
## - Wuhan.as.origin..ys1.                                 1 3358.6
##
## Step:  AIC=3292.13
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Clinical.experience.m. + Frontline.working.duration.d. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                                Df    AIC
## - Clinical.experience.m.                        1 3291.7
```

```
## - Frontline.working.duration.d.            1 3291.9
## <none>                                       3292.1
## - Willingness.to.participate.in.frontline   1 3292.8
## - Age                                       1 3294.3
## - education.Bachelor.or.higher.2_Diploma1.  1 3295.2
## - marital.status                            1 3296.9
## - Prior.experience                          1 3299.0
## - Original.position..head.1.                1 3301.1
## - Average.working.hours.shift               1 3306.2
## - Sex                                       1 3307.8
## - Wuhan.as.origin..ys1.                     1 3362.1
##
## Step:   AIC=3291.71
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Frontline.working.duration.d. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.experience +
##     Willingness.to.participate.in.frontline
##
##                                             Df    AIC
## - Frontline.working.duration.d.            1 3291.7
## <none>                                       3291.7
## - Willingness.to.participate.in.frontline   1 3292.4
## - Age                                       1 3293.9
## - education.Bachelor.or.higher.2_Diploma1.  1 3294.9
## - marital.status                            1 3296.6
## - Prior.experience                          1 3298.8
## - Original.position..head.1.                1 3299.9
## - Average.working.hours.shift               1 3306.2
## - Sex                                       1 3310.3
## - Wuhan.as.origin..ys1.                     1 3361.7
##
## Step:   AIC=3291.66
## factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. +
##     Average.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. +
##     Prior.experience + Willingness.to.participate.in.frontline
##
##                                             Df    AIC
## <none>                                       3291.7
## - Willingness.to.participate.in.frontline   1 3292.2
## - Age                                       1 3293.8
## - education.Bachelor.or.higher.2_Diploma1.  1 3294.7
## - marital.status                            1 3296.5
## - Prior.experience                          1 3298.1
## - Original.position..head.1.                1 3299.4
## - Average.working.hours.shift               1 3305.1
## - Sex                                       1 3309.9
## - Wuhan.as.origin..ys1.                     1 3363.2
```

```
# Step:   AIC=3291.66
# factor(fear_group) ~ Age + Sex + marital.status + education.Bachelor.or.higher.2_Diploma1. + A
verage.working.hours.shift + Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.experien
ce + Willingness.to.participate.in.frontline
```

```
summary(or_fear_aic)
```

```
##
## Re-fitting to get Hessian
```

```
## Call:
## polr(formula = factor(fear_group) ~ Age + Sex + marital.status +
##     education.Bachelor.or.higher.2_Diploma1. + Average.working.hours.shift +
##     Wuhan.as.origin..ys1. + Original.position..head.1. + Prior.experience +
##     Willingness.to.participate.in.frontline, data = naomit)
##
## Coefficients:
##                                             Value Std. Error t value
## Age                                      -0.01948    0.009581  -2.033
## Sex                                       0.61145    0.134458   4.547
## marital.status                            0.30492    0.116909   2.608
## education.Bachelor.or.higher.2_Diploma1.  0.26051    0.115216   2.261
## Average.working.hours.shift              -0.09653    0.024581  -3.927
## Wuhan.as.origin..ys1.                     0.85437    0.099673   8.572
## Original.position..head.1.               -0.50795    0.161483  -3.146
## Prior.experience                         -0.28119    0.096780  -2.905
## Willingness.to.participate.in.frontline  -0.48672    0.314942  -1.545
##
## Intercepts:
##                          Value   Std. Error t value
## mild fear|moderate fear   -2.6364  0.4844     -5.4423
## moderate fear|severe fear -0.7030  0.4802     -1.4642
##
## Residual Deviance: 3269.663
## AIC: 3291.663
```

```
(ptable1 <- coef(summary(or_fear_aic)))
```

```
##
## Re-fitting to get Hessian
```

```
##                                               Value Std. Error    t value
## Age                                      -0.01947928 0.00958070 -2.033180
## Sex                                       0.61144587 0.13445814  4.547481
## marital.status                            0.30491567 0.11690879  2.608150
## education.Bachelor.or.higher.2_Diploma1.  0.26050563 0.11521559  2.261028
## Average.working.hours.shift              -0.09653038 0.02458075 -3.927071
## Wuhan.as.origin..ys1.                     0.85437407 0.09967297  8.571773
## Original.position..head.1.               -0.50795305 0.16148274 -3.145556
## Prior.experience                         -0.28118966 0.09678048 -2.905438
## Willingness.to.participate.in.frontline  -0.48672375 0.31494159 -1.545441
## mild fear|moderate fear                  -2.63640060 0.48442760 -5.442301
## moderate fear|severe fear                -0.70303591 0.48016301 -1.464161
```

```
p1 <- pnorm(abs(ptable1[, "t value"]), lower.tail = FALSE) * 2
(ptable1 <- cbind(ptable1, "p value" = p1))
```

```
##                                             Value Std. Error    t value
## Age                                   -0.01947928 0.00958070 -2.033180
## Sex                                    0.61144587 0.13445814   4.547481
## marital.status                         0.30491567 0.11690879   2.608150
## education.Bachelor.or.higher.2_Diploma1.  0.26050563 0.11521559   2.261028
## Average.working.hours.shift           -0.09653038 0.02458075 -3.927071
## Wuhan.as.origin..ys1.                  0.85437407 0.09967297   8.571773
## Original.position..head.1.            -0.50795305 0.16148274 -3.145556
## Prior.experience                      -0.28118966 0.09678048 -2.905438
## Willingness.to.participate.in.frontline -0.48672375 0.31494159 -1.545441
## mild fear|moderate fear               -2.63640060 0.48442760 -5.442301
## moderate fear|severe fear             -0.70303591 0.48016301 -1.464161
##                                           p value
## Age                                   4.203439e-02
## Sex                                   5.429178e-06
## marital.status                        9.103303e-03
## education.Bachelor.or.higher.2_Diploma1. 2.375754e-02
## Average.working.hours.shift           8.598650e-05
## Wuhan.as.origin..ys1.                 1.019038e-17
## Original.position..head.1.            1.657713e-03
## Prior.experience                      3.667398e-03
## Willingness.to.participate.in.frontline 1.222395e-01
## mild fear|moderate fear               5.259682e-08
## moderate fear|severe fear             1.431500e-01
```

```
vif(fear.polr)
```

```
##
## Re-fitting to get Hessian
```

```
##                                         Age
##                                    8.248087
##                                         Sex
##                                    1.103059
##                              marital.status
##                                    3.227555
##                                child.rearing
##                                    3.519938
##       education.Bachelor.or.higher.2_Diploma1.
##                                    1.186136
## Prodessional.title..Junior1.intermediate.and.senior0.
##                                    1.926862
##          Monthly.household.income.USD.month..1440
##                                    1.217176
##                       Clinical.experience.m.
##                                    8.276776
##             Frontline.working.duration.d.
##                                    1.076548
##              Average.working.hours.shift
##                                    1.150959
##                 Wuhan.as.origin..ys1.
##                                    1.209837
##              Original.position..head.1.
##                                    2.351282
##              Position.in.Wuhan...head.1.
##                                    2.135731
##              Working.wards.changed.yes1
##                                    1.152008
##                         Prior.traning
##                                    1.132868
##                       Prior.experience
##                                    1.188166
##          Willingness.to.participate.in.frontline
##                                    1.011325
```

```
label1 <- c(
  `(Intercept)` = "Intercept",
  Age = "Age (year)",
  Sex = "Sex",
  marital.status = "Marital Status",
  child.rearing = "Child Rearing",
  education.Bachelor.or.higher.2_Diploma1. = "Education",
  Prodessional.title..Junior1.intermediate.and.senior0. = "Prodessional Title",
  Monthly.household.income.USD.month..1440 = "Monthly Household Income",
  Clinical.experience.m.= "Clinical Experience",
  Frontline.working.duration.d. = "Frontline Working Duration",
  Average.working.hours.shift = "Average Working Hours Shift",
  Wuhan.as.origin..ys1. = "Wuhan as Origin",
  Original.position..head.1. = "Original Position",
  Position.in.Wuhan...head.1. = "Position in Wuhan",
  Working.wards.changed.yes1 = "Working Wards Changed",
  Prior.traning = "Prior Traning",
  Prior.experience = "Prior Experience",
  Willingness.to.participate.in.frontline = "Willingness to Participate in Frontline"
)
```

linear table

```
library(sjPlot)
```

```
## #refugeeswelcome
```

```
tab_model(lianx,lidep,lifear,title = "Table 2: Linear Regression Model",pred.labels = label1,
  dv.labels = c("anxiety", "depression","fear"),
  string.ci = "CI (95%)", string.p = "P-Value")
```

Table 2: Linear Regression Model

Predictors	anxiety			depression			fear		
	Estimates	CI (95%)	P-Value	Estimates	CI (95%)	P-Value	Estimates	CI (95%)	P-Value
Intercept	51.93	45.14 – 58.73	**<0.001**	51.77	44.92 – 58.61	**<0.001**	32.82	28.30 – 37.33	**<0.001**
Age (year)	0.11	-0.10 – 0.32	0.294	0.22	0.00 – 0.43	**0.046**	-0.16	-0.30 – -0.01	**0.030**
Sex	1.62	0.15 – 3.09	**0.031**	2.06	0.57 – 3.54	**0.007**	2.64	1.66 – 3.62	**<0.001**
Marital Status	-1.36	-3.06 – 0.33	0.114	-1.43	-3.14 – 0.27	0.099	1.09	-0.03 – 2.21	0.057

Child Rearing	2.39	0.67 – 4.12	**0.007**	2.44	0.70 – 4.18	**0.006**	-0.13	-1.27 – 1.02	0.828
Education	0.48	-0.76 – 1.71	0.450	0.08	-1.16 – 1.33	0.894	0.88	0.06 – 1.70	**0.034**
Prodessional Title	0.45	-1.01 – 1.92	0.545	1.08	-0.40 – 2.56	0.151	0.02	-0.95 – 1.00	0.962
Monthly Household Income	-1.72	-2.75 – -0.69	**0.001**	-2.41	-3.45 – -1.37	**<0.001**	0.20	-0.49 – 0.88	0.573
Clinical Experience	-0.01	-0.03 – 0.01	0.195	-0.01	-0.03 – 0.01	0.179	0.01	-0.00 – 0.02	0.180
Frontline Working Duration	0.04	0.00 – 0.08	**0.035**	0.04	-0.00 – 0.07	0.064	0.02	-0.01 – 0.04	0.235
Average Working Hours Shift	-0.00	-0.27 – 0.26	0.982	-0.07	-0.34 – 0.20	0.593	-0.34	-0.51 – -0.16	**<0.001**
Wuhan as Origin	3.44	2.34 – 4.53	**<0.001**	3.44	2.34 – 4.54	**<0.001**	3.34	2.61 – 4.07	**<0.001**
Original Position	-2.02	-4.50 – 0.46	0.110	-1.68	-4.18 – 0.82	0.187	-2.32	-3.96 – -0.67	**0.006**
Position in Wuhan	3.09	0.12 – 6.06	**0.041**	3.16	0.17 – 6.16	**0.038**	-0.50	-2.47 – 1.48	0.621
Working Wards Changed	1.25	0.21 – 2.29	**0.018**	1.55	0.51 – 2.60	**0.004**	-0.06	-0.75 – 0.62	0.856
Prior Traning	-2.23	-3.53 – -0.92	**0.001**	-2.43	-3.74 – -1.11	**<0.001**	-0.64	-1.50 – 0.23	0.150
Prior Experience	0.10	-0.95 – 1.15	0.848	0.18	-0.88 – 1.24	0.740	-1.21	-1.91 – -0.52	**0.001**
Willingness to Participate in Frontline	-10.83	-13.53 – -8.13	**<0.001**	-10.41	-13.14 – -7.69	**<0.001**	-2.07	-3.86 – -0.28	**0.024**
Observations	2014			2014			2014		
R^2 / R^2 adjusted	0.085 / 0.077			0.090 / 0.082			0.124 / 0.117		

linear bic table

```
tab_model(anx_bic,dep_bic,fear_bic,title = "Appendix Table 1: Linear Regression BIC Model",pred.
labels = label1,
  dv.labels = c("anxiety", "depression","fear"),
  string.ci = "CI (95%)", string.p = "P-Value")
```

Appendix Table 1: Linear Regression BIC Model

	anxiety			depression			fear		
Predictors	*Estimates*	*CI (95%)*	*P-Value*	*Estimates*	*CI (95%)*	*P-Value*	*Estimates*	*CI (95%)*	*P-Value*
Intercept	55.77	52.97 – 58.58	**<0.001**	58.08	55.24 – 60.92	**<0.001**	25.06	24.10 – 26.02	**<0.001**
Wuhan as Origin	3.83	2.83 – 4.83	**<0.001**	3.69	2.67 – 4.71	**<0.001**	3.72	3.05 – 4.39	**<0.001**
Willingness to Participate in Frontline	-10.84	-13.55 – -8.12	**<0.001**	-10.34	-13.09 – -7.59	**<0.001**			
Sex							3.33	2.38 – 4.29	**<0.001**
Observations	2014			2014			2014		
R^2 / R^2 adjusted	0.060 / 0.059			0.054 / 0.053			0.082 / 0.081		

linear aic table

```
tab_model(anx_aic,dep_aic,fear_aic,title = "Appendix Table 2: Linear Regression AIC Model", pre
d.labels = label1,
  dv.labels = c("anxiety", "depression","fear"),
  string.ci = "CI (95%)", string.p = "P-Value")
```

Appendix Table 2: Linear Regression AIC Model

	anxiety			depression			fear		
Predictors	*Estimates*	*CI (95%)*	*P-Value*	*Estimates*	*CI (95%)*	*P-Value*	*Estimates*	*CI (95%)*	*P-Value*
Intercept	55.68	52.36 – 58.99	**<0.001**	54.08	49.04 – 59.11	**<0.001**	33.26	29.03 – 37.50	**<0.001**
Sex	1.43	-0.01 – 2.86	0.052	1.88	0.43 – 3.33	**0.011**	2.64	1.67 – 3.61	**<0.001**
Marital Status	-1.36	-3.04 – 0.31	0.111	-1.42	-3.12 – 0.29	0.103	1.03	0.25 – 1.80	**0.010**
Child Rearing	2.20	0.56 – 3.84	**0.008**	2.42	0.68 – 4.15	**0.006**			

Monthly Household Income	-1.75	-2.76 – -0.74	**0.001**	-2.43	-3.45 – -1.40	**<0.001**			
Frontline Working Duration	0.04	0.00 – 0.08	**0.043**	0.03	-0.00 – 0.07	0.077			
Wuhan as Origin	3.58	2.53 – 4.63	**<0.001**	3.40	2.33 – 4.47	**<0.001**	3.34	2.65 – 4.03	**<0.001**
Original Position	-2.34	-4.73 – 0.05	0.055	-1.81	-4.29 – 0.68	0.154	-2.59	-3.74 – -1.44	**<0.001**
Position in Wuhan	3.14	0.19 – 6.09	**0.037**	3.19	0.21 – 6.16	**0.036**			
Working Wards Changed	1.24	0.24 – 2.24	**0.015**	1.53	0.52 – 2.53	**0.003**			
Prior Traning	-2.12	-3.36 – -0.88	**0.001**	-2.32	-3.57 – -1.07	**<0.001**	-0.67	-1.53 – 0.19	0.128
Willingness to Participate in Frontline	-10.87	-13.57 – -8.18	**<0.001**	-10.43	-13.15 – -7.72	**<0.001**	-2.07	-3.86 – -0.28	**0.023**
Age (year)				0.10	-0.02 – 0.21	0.106	-0.16	-0.30 – -0.02	**0.022**
Prodessional Title				1.27	-0.16 – 2.70	0.081			
Education							0.92	0.12 – 1.72	**0.023**
Clinical Experience							0.01	-0.00 – 0.02	0.139
Average Working Hours Shift							-0.34	-0.51 – -0.16	**<0.001**
Prior Experience							-1.20	-1.89 – -0.51	**0.001**
Observations	2014			2014			2014		
R^2 / R^2 adjusted	0.084 / 0.079			0.089 / 0.083			0.123 / 0.119		

log table

```
tab_model(log_anxiety1,log_dep1,log_fear1, title = "Table 3: Log Transformation Model", pred.lab
els = label1,
  dv.labels = c("anxiety", "depression","fear"),
  string.ci = "CI (95%)", string.p = "P-Value")
```

Table 3: Log Transformation Model

Predictors	anxiety			depression			fear		
	Estimates	CI (95%)	P-Value	Estimates	CI (95%)	P-Value	Estimates	CI (95%)	P-Value
Intercept	3.92	3.78 – 4.06	**<0.001**	3.92	3.78 – 4.06	**<0.001**	3.47	3.28 – 3.65	**<0.001**
Age (year)	0.00	-0.00 – 0.01	0.259	0.00	-0.00 – 0.01	0.051	-0.01	-0.01 – -0.00	**0.044**
Sex	0.04	0.01 – 0.07	**0.018**	0.05	0.02 – 0.08	**0.002**	0.12	0.08 – 0.16	**<0.001**
Marital Status	-0.03	-0.06 – 0.01	0.103	-0.03	-0.06 – 0.01	0.109	0.05	0.00 – 0.09	**0.049**
Child Rearing	0.05	0.02 – 0.09	**0.004**	0.05	0.01 – 0.09	**0.008**	-0.01	-0.06 – 0.04	0.648
Education	0.01	-0.02 – 0.03	0.514	0.01	-0.02 – 0.03	0.693	0.04	0.00 – 0.07	**0.026**
Prodessional Title	0.01	-0.02 – 0.04	0.486	0.02	-0.01 – 0.05	0.172	-0.01	-0.05 – 0.03	0.700
Monthly Household Income	-0.03	-0.05 – -0.01	**0.002**	-0.05	-0.07 – -0.03	**<0.001**	0.01	-0.02 – 0.03	0.725
Clinical Experience	-0.00	-0.00 – 0.00	0.152	-0.00	-0.00 – 0.00	0.186	0.00	-0.00 – 0.00	0.317
Frontline Working Duration	0.00	0.00 – 0.00	**0.044**	0.00	-0.00 – 0.00	0.127	0.00	-0.00 – 0.00	0.285
Average Working Hours Shift	-0.00	-0.01 – 0.00	0.857	-0.00	-0.01 – 0.00	0.529	-0.01	-0.02 – -0.01	**0.001**
Wuhan as Origin	0.07	0.05 – 0.09	**<0.001**	0.07	0.05 – 0.09	**<0.001**	0.12	0.09 – 0.15	**<0.001**
Original Position	-0.04	-0.09 – 0.01	0.096	-0.04	-0.09 – 0.01	0.119	-0.09	-0.15 – -0.02	**0.012**
Position in Wuhan	0.06	-0.00 – 0.12	0.070	0.06	0.00 – 0.13	**0.043**	-0.02	-0.10 – 0.06	0.571

Predictors	Estimates	CI (95%)	P-Value	Estimates	CI (95%)	P-Value	Estimates	CI (95%)	P-Value
Working Wards Changed	0.03	0.01 – 0.05	**0.012**	0.03	0.01 – 0.05	**0.004**	0.00	-0.03 – 0.03	0.924
Prior Traning	-0.04	-0.07 – -0.02	**0.002**	-0.05	-0.08 – -0.02	**<0.001**	-0.02	-0.05 – 0.02	0.329
Prior Experience	0.00	-0.02 – 0.03	0.740	0.00	-0.02 – 0.03	0.719	-0.05	-0.08 – -0.03	**<0.001**
Willingness to Participate in Frontline	-0.20	-0.26 – -0.15	**<0.001**	-0.20	-0.25 – -0.14	**<0.001**	-0.05	-0.13 – 0.02	0.162
Observations	2014			2014			2014		
R² / R² adjusted	0.081 / 0.073			0.083 / 0.075			0.110 / 0.102		

log bic table

```
tab_model(log_anx_bic,log_dep_bic,log_fear_bic,title = "Appendix Table 3: Log Transformation BIC
Model",pred.labels = label1,
  dv.labels = c("anxiety", "depression","fear"),
  string.ci = "CI (95%)", string.p = "P-Value")
```

Appendix Table 3: Log Transformation BIC Model

	anxiety			depression			fear		
Predictors	*Estimates*	*CI (95%)*	*P-Value*	*Estimates*	*CI (95%)*	*P-Value*	*Estimates*	*CI (95%)*	*P-Value*
Intercept	4.00	3.95 – 4.06	**<0.001**	3.86	3.84 – 3.88	**<0.001**	3.19	3.15 – 3.23	**<0.001**
Wuhan as Origin	0.08	0.06 – 0.10	**<0.001**	0.08	0.06 – 0.10	**<0.001**	0.13	0.11 – 0.16	**<0.001**
Willingness to Participate in Frontline	-0.20	-0.26 – -0.15	**<0.001**						
Sex							0.14	0.10 – 0.18	**<0.001**
Observations	2014			2014			2014		
R² / R² adjusted	0.055 / 0.055			0.028 / 0.027			0.071 / 0.070		

log aic table

```
tab_model(log_anx_aic,log_dep_aic,log_fear_aic,title = "Appendix Table 4: Log Transformation AIC
Model",pred.labels = label1,
  dv.labels = c("anxiety", "depression","fear"),
  string.ci = "CI (95%)", string.p = "P-Value")
```

Appendix Table 4: Log Transformation AIC Model

Predictors	anxiety			depression			fear		
	Estimates	CI (95%)	P-Value	Estimates	CI (95%)	P-Value	Estimates	CI (95%)	P-Value
Intercept	4.00	3.93 – 4.07	**<0.001**	3.94	3.82 – 4.07	**<0.001**	3.34	3.23 – 3.45	**<0.001**
Sex	0.03	0.00 – 0.06	**0.035**	0.05	0.02 – 0.08	**0.002**	0.12	0.08 – 0.16	**<0.001**
Marital Status	-0.03	-0.06 – 0.01	0.098	-0.03	-0.06 – 0.01	0.119	0.04	0.01 – 0.07	**0.015**
Child Rearing	0.05	0.01 – 0.08	**0.006**	0.05	0.01 – 0.08	**0.010**			
Monthly Household Income	-0.03	-0.06 – -0.01	**0.001**	-0.05	-0.07 – -0.03	**<0.001**			
Frontline Working Duration	0.00	-0.00 – 0.00	0.055	0.00	-0.00 – 0.00	0.138			
Wuhan as Origin	0.07	0.05 – 0.10	**<0.001**	0.07	0.05 – 0.09	**<0.001**	0.12	0.09 – 0.15	**<0.001**
Original Position	-0.05	-0.10 – -0.00	**0.041**	-0.05	-0.10 – 0.01	0.085	-0.10	-0.14 – -0.05	**<0.001**
Position in Wuhan	0.06	-0.00 – 0.12	0.063	0.06	-0.00 – 0.12	0.052			
Working Wards Changed	0.03	0.01 – 0.05	**0.010**	0.03	0.01 – 0.05	**0.004**			
Prior Traning	-0.04	-0.07 – -0.01	**0.002**	-0.05	-0.07 – -0.02	**<0.001**			
Willingness to Participate in Frontline	-0.20	-0.26 – -0.15	**<0.001**	-0.19	-0.25 – -0.14	**<0.001**			
Age (year)				0.00	-0.00 – 0.01	0.059	-0.00	-0.01 – -0.00	**0.024**
Clinical Experience				-0.00	-0.00 – 0.00	0.102			
Education							0.04	0.01 – 0.07	**0.019**

				-0.01	-0.02 – -0.01	**<0.001**
Average Working Hours Shift						
Prior Experience				-0.06	-0.09 – -0.03	**<0.001**

Observations	2014		2014		2014	
R^2 / R^2 adjusted	0.079 / 0.074		0.082 / 0.076		0.107 / 0.103	

ordinal table

```
tab_model(anx.polr,dep.polr,fear.polr, title = "Table 4: Ordinal Logistic Regression Model",pre
d.labels = label1,
  dv.labels = c("anxiety", "depression","fear"),
  string.ci = "CI (95%)", string.p = "P-Value")
```

```
##
## Re-fitting to get Hessian
##
##
## Re-fitting to get Hessian
##
##
## Re-fitting to get Hessian
```

Table 4: Ordinal Logistic Regression Model

	anxiety			depression			fear		
Predictors	*Odds Ratios*	*CI (95%)*	*P-Value*	*Odds Ratios*	*CI (95%)*	*P-Value*	*Odds Ratios*	*CI (95%)*	*P-Value*
mild anxiety|moderate anxiety	0.52	0.50 – 0.54	0.317						
moderate anxiety|no anxiety	0.87	0.67 – 1.14	0.834						
no anxiety|severe anxiety	43.01	31.64 – 58.47	**<0.001**						
Age (year)	1.00	0.96 – 1.04	0.961	1.00	0.97 – 1.04	0.825	0.96	0.92 – 1.00	**0.048**
Sex	0.94	0.72 – 1.23	0.666	1.06	0.81 – 1.39	0.659	1.79	1.36 – 2.34	**<0.001**
Marital Status	1.01	0.74 – 1.37	0.951	1.09	0.80 – 1.50	0.574	1.37	0.98 – 1.92	0.066

	OR	CI	p	OR	CI	p	OR	CI	p
Child Rearing	0.94	0.69 – 1.29	0.720	0.64	0.46 – 0.88	**0.006**	1.00	0.71 – 1.41	0.996
Education	1.16	0.92 – 1.45	0.200	0.97	0.77 – 1.22	0.806	1.33	1.05 – 1.68	**0.017**
Prodessional Title	1.25	0.95 – 1.63	0.105	1.03	0.78 – 1.34	0.846	1.12	0.84 – 1.49	0.441
Monthly Household Income	1.12	0.93 – 1.36	0.234	1.30	1.08 – 1.58	**0.007**	0.97	0.79 – 1.19	0.773
Clinical Experience	1.00	1.00 – 1.00	0.832	1.00	1.00 – 1.00	0.810	1.00	1.00 – 1.01	0.169
Frontline Working Duration	1.00	0.99 – 1.00	0.509	1.01	1.00 – 1.01	0.100	1.01	1.00 – 1.01	0.232
Average Working Hours Shift	1.02	0.97 – 1.07	0.381	0.98	0.93 – 1.03	0.445	0.90	0.86 – 0.95	**<0.001**
Wuhan as Origin	0.65	0.53 – 0.80	**<0.001**	0.60	0.48 – 0.73	**<0.001**	2.33	1.89 – 2.86	**<0.001**
Original Position	1.13	0.71 – 1.81	0.620	1.23	0.76 – 2.01	0.404	0.64	0.41 – 0.99	**0.045**
Position in Wuhan	1.08	0.62 – 1.89	0.792	0.64	0.36 – 1.12	0.121	0.90	0.53 – 1.53	0.689
Working Wards Changed	0.81	0.67 – 0.97	**0.026**	0.77	0.64 – 0.93	**0.008**	1.04	0.85 – 1.27	0.722
Prior Traning	1.04	0.82 – 1.32	0.760	1.31	1.03 – 1.66	**0.028**	0.91	0.70 – 1.18	0.488
Prior Experience	0.93	0.77 – 1.13	0.457	0.95	0.78 – 1.15	0.593	0.76	0.62 – 0.94	**0.009**
Willingness to Participate in Frontline	1.15	0.69 – 1.89	0.581	1.71	1.08 – 2.71	**0.023**	0.61	0.32 – 1.10	0.117
mild depression|moderate depression				0.71	0.68 – 0.74	0.584			
moderate depression|no depression				1.09	0.83 – 1.43	0.889			
no depression|severe depression				140.18	102.34 – 192.00	**<0.001**			

mild fear|moderate fear						0.05	0.05 – 0.05	**<0.001**
moderate fear|severe fear						0.35	0.26 – 0.45	0.123

Observations	2014	2014	2014
R^2 Nagelkerke	0.017	0.043	0.115

bic ordinal table

```
tab_model(or_anx_bic,or_dep_bic,or_fear_bic,title = "Appendix Table 5: Ordinal Logistic BIC Mode
l",pred.labels = label1,
  dv.labels = c("anxiety", "depression","fear"),
  string.ci = "CI (95%)", string.p = "P-Value")
```

```
##
## Re-fitting to get Hessian
##
##
## Re-fitting to get Hessian
##
##
## Re-fitting to get Hessian
```

Appendix Table 5: Ordinal Logistic BIC Model

	anxiety			depression			fear		
Predictors	Odds Ratios	CI (95%)	P-Value	Odds Ratios	CI (95%)	P-Value	Odds Ratios	CI (95%)	P-Value
mild anxiety|moderate anxiety	0.37	0.34 – 0.41	**<0.001**						
moderate anxiety|no anxiety	0.61	0.56 – 0.67	**<0.001**						
no anxiety|severe anxiety	29.06	22.78 – 37.08	**<0.001**						
mild depression|moderate depression				0.49	0.45 – 0.54	**<0.001**			
moderate depression|no depression				0.74	0.68 – 0.81	**<0.001**			
no depression|severe depression				86.57	57.38 – 130.61	**<0.001**			

	Odds Ratios	CI (95%)	P-Value
mild fear|moderate fear		0.17	0.14 – 0.20	**<0.001**
moderate fear|severe fear		1.06	0.89 – 1.28	0.397
Wuhan as Origin		2.60	2.25 – 3.01	**<0.001**

Observations	2014	2014	2014
R² Nagelkerke	0.000	0.000	0.061

aic ordinal table

```
tab_model(or_anx_aic,or_dep_aic,or_fear_aic,title = "Appendix Table 6: Ordinal Logistic AIC Mode
l", pred.labels = label1,
  dv.labels = c("anxiety", "depression","fear"),
  string.ci = "CI (95%)", string.p = "P-Value")
```

```
##
## Re-fitting to get Hessian
##
##
## Re-fitting to get Hessian
##
##
## Re-fitting to get Hessian
```

Appendix Table 6: Ordinal Logistic AIC Model

	anxiety			depression			fear		
Predictors	Odds Ratios	CI (95%)	P-Value	Odds Ratios	CI (95%)	P-Value	Odds Ratios	CI (95%)	P-Value
mild anxiety|moderate anxiety	0.26	0.22 – 0.32	**<0.001**						
moderate anxiety|no anxiety	0.44	0.37 – 0.53	**<0.001**						
no anxiety|severe anxiety	21.47	17.99 – 25.62	**<0.001**						
Wuhan as Origin	0.69	0.58 – 0.83	**<0.001**	0.58	0.48 – 0.70	**<0.001**	2.35	1.93 – 2.86	**<0.001**
Working Wards Changed	0.80	0.67 – 0.95	**0.012**	0.75	0.62 – 0.89	**0.002**			

mild depression|moderate depression	0.66	0.55 – 0.79	0.126			
moderate depression|no depression	1.01	0.84 – 1.21	0.982			
no depression|severe depression	128.76	127.80 – 129.73	**<0.001**			
Child Rearing	0.73	0.61 – 0.87	**0.001**			
Monthly Household Income	1.33	1.10 – 1.60	**0.003**			
Frontline Working Duration	1.01	1.00 – 1.01	0.123			
Position in Wuhan	0.76	0.53 – 1.09	0.135			
Prior Traning	1.27	1.01 – 1.60	**0.037**			
Willingness to Participate in Frontline	1.74	1.10 – 2.76	**0.018**	0.61	0.32 – 1.11	0.122
mild fear|moderate fear				0.07	0.07 – 0.07	**<0.001**
moderate fear|severe fear				0.50	0.38 – 0.64	0.143
Age (year)				0.98	0.96 – 1.00	**0.042**
Sex				1.84	1.41 – 2.40	**<0.001**
Marital Status				1.36	1.08 – 1.71	**0.009**
Education				1.30	1.03 – 1.62	**0.024**
Average Working Hours Shift				0.91	0.87 – 0.95	**<0.001**
Original Position				0.60	0.44 – 0.83	**0.002**

Prior Experience			0.75	0.62 – 0.91	**0.004**
Observations	2014	2014	2014		
R^2 Nagelkerke	0.012	0.041	0.112		