

Psychotherapy Study

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Example with Czech Republic data

Download the data

This command tells us which the current directory is:

```
getwd()
```

```
## [1] "/home/r0bis/src/efptPWG/data/Czech_Republic"
```

Here we tell R where we want it to work from:

```
library(knitr)
# opts_knit$set(root.dir=normalizePath('../'))
# opts_chunk$set(fig.path = "../figures/", dev='pdf')
#setwd("~/src/efptPWG/data/Czech_Republic")
#opts_knit$set(root.dir="~/src/efptPWG/data/Czech_Republic/")
```

Import the data and change the variables names

R will execute all commands in the syntax file

```
#getwd()
source("Czech_Republic_R_syntax_file.R")
```

Display them

```
str(data)
```

```
## 'data.frame': 58 obs. of 64 variables:
## $ id : num 69 70 71 72 73 74 75 76 77 78 ...
## $ submitdate : chr "01-01-1980 00:00:00" "01-01-1980 00:00:00" NA "01-01-1980 00:00:00" ...
## $ startlanguage: chr "en" "en" "en" "en" ...
## $ q_0001 : Factor w/ 2 levels "Female","Male": 2 1 1 1 2 2 1 2 1 2 ...
## $ q_0002 : num 30 31 29 32 29 32 32 26 29 33 ...
## $ q_0003 : Factor w/ 10 levels "Year 1","Year 2",...: 5 4 4 7 4 10 10 2 4 5 ...
## $ q_0004 : Factor w/ 2 levels "Yes","No": 1 2 2 2 2 2 2 1 1 ...
## $ q_0005_S05A1 : Factor w/ 2 levels "Yes","Not selected": 2 2 2 2 2 2 2 2 2 2 ...
## $ q_0005_S05A2 : Factor w/ 2 levels "Yes","Not selected": 1 1 2 1 1 2 2 1 1 1 ...
## $ q_0005_S05A3 : Factor w/ 2 levels "Yes","Not selected": 2 2 1 2 2 1 1 2 2 2 ...
## $ q_0005_S05A4 : Factor w/ 2 levels "Yes","Not selected": 2 2 2 2 2 2 2 2 2 2 ...
```

```

## $ q_0005_other : chr NA NA NA NA ...
## $ q_0006       : chr "psychodynamic group therapy" "psychosomatic family therapy" NA "Group psycho
## $ q_0007       : Factor w/ 2 levels "Yes","No": 1 1 1 1 1 2 2 1 1 1 ...
## $ q_0008       : Factor w/ 2 levels "Yes","No": 1 1 1 1 1 2 2 1 1 1 ...
## $ q_0009_SQ1   : Factor w/ 2 levels "Yes","Not selected": 1 2 2 1 2 2 2 1 1 2 ...
## $ q_0009_SQ2   : Factor w/ 2 levels "Yes","Not selected": 1 2 1 1 1 2 2 1 2 1 ...
## $ q_0009_SQ3   : Factor w/ 2 levels "Yes","Not selected": 2 1 2 2 2 2 1 2 2 1 ...
## $ q_0009_SQ4   : Factor w/ 2 levels "Yes","Not selected": 1 2 2 2 2 2 2 1 2 2 ...
## $ q_0009_Ax    : Factor w/ 2 levels "Yes","Not selected": 2 2 2 2 2 1 2 2 2 2 ...
## $ q_0009_other : chr NA NA NA NA ...
## $ q_0010       : chr NA NA NA NA ...
## $ q_0011_SQ001 : Factor w/ 3 levels "Yes","No","Uncertain": 1 1 NA 1 2 1 1 1 1 1 ...
## $ q_0011_SQ002 : Factor w/ 3 levels "Yes","No","Uncertain": 2 2 NA 3 2 2 2 3 2 3 ...
## $ q_0011_SQ003 : Factor w/ 3 levels "Yes","No","Uncertain": 2 2 NA 3 2 2 2 1 2 1 ...
## $ q_0011_SQ004 : Factor w/ 3 levels "Yes","No","Uncertain": 2 2 NA 2 2 2 2 1 2 1 ...
## $ q_0012       : Factor w/ 3 levels "Yes","No","Unsure": 2 3 NA 2 2 2 2 1 2 1 ...
## $ q_0013       : chr "CBT" "Cognitive Behavioural Therapy, Family Therapy" NA "Psychodynamic Psycho
## $ q_0014_SQ001 : num 1 0 NA 0 0 0 0 0 0 2 ...
## $ q_0014_SQ002 : num 0 1 NA 0 2 0 0 0 0 1 ...
## $ q_0014_SQ003 : num 2 0 NA 3 7 0 0 0 1 0 ...
## $ q_0014_SQ004 : num 0 0 NA 0 0 0 0 0 0 0 ...
## $ q_0014_SQ005 : num 0 0 NA 0 0 0 0 0 0 0 ...
## $ q_0015       : chr NA NA NA NA ...
## $ q_0016_SQ001 : Factor w/ 4 levels "I pay","State / 3rd party pays",...: 1 2 NA 1 1 2 1 1 1 2 ...
## $ q_0016_SQ002 : Factor w/ 4 levels "I pay","State / 3rd party pays",...: 1 4 NA 4 4 4 1 1 4 1 ...
## $ q_0016_SQ003 : Factor w/ 4 levels "I pay","State / 3rd party pays",...: 1 2 NA 4 1 4 1 1 1 1 ...
## $ q_0016_SQ004 : Factor w/ 4 levels "I pay","State / 3rd party pays",...: 4 4 NA 4 4 4 1 4 4 4 ...
## $ q_0016_SQ005 : Factor w/ 4 levels "I pay","State / 3rd party pays",...: 3 2 NA 4 4 4 1 4 2 4 ...
## $ q_0016_SQ006 : Factor w/ 4 levels "I pay","State / 3rd party pays",...: 1 2 NA 1 4 4 1 4 1 1 ...
## $ q_0017       : Factor w/ 2 levels "Yes","No": 1 1 NA 1 1 2 2 1 1 1 ...
## $ q_0018       : num 20 0 NA 0 5 10 7 10 30 5 ...
## $ q_0019_SQ001 : Factor w/ 5 levels "Strongly Disagree",...: 1 4 NA 4 1 2 2 4 1 2 ...
## $ q_0019_SQ002 : Factor w/ 5 levels "Strongly Disagree",...: 5 4 NA 4 4 2 3 3 2 2 ...
## $ q_0019_SQ003 : Factor w/ 5 levels "Strongly Disagree",...: 1 3 NA 2 3 2 2 3 1 3 ...
## $ q_0021_SQ001 : Factor w/ 3 levels "Yes","No","Uncertain": NA 2 NA 1 NA NA NA 1 1 1 ...
## $ q_0021_SQ002 : Factor w/ 3 levels "Yes","No","Uncertain": NA 2 NA 3 NA NA NA 3 1 3 ...
## $ q_0021_SQ003 : Factor w/ 3 levels "Yes","No","Uncertain": NA 1 NA 3 NA NA NA 1 1 1 ...
## $ q_0021_SQ004 : Factor w/ 3 levels "Yes","No","Uncertain": NA 3 NA 3 NA NA NA 3 1 3 ...
## $ q_0021_SQ005 : Factor w/ 3 levels "Yes","No","Uncertain": NA 2 NA 3 NA NA NA 1 1 1 ...
## $ q_0021_SQ006 : Factor w/ 3 levels "Yes","No","Uncertain": NA 3 NA 3 NA NA NA 1 1 1 ...
## $ q_0021_SQ007 : Factor w/ 3 levels "Yes","No","Uncertain": NA 1 NA 1 NA NA NA 1 1 1 ...
## $ q_0021_SQ008 : Factor w/ 3 levels "Yes","No","Uncertain": NA 1 NA 1 NA NA NA 1 1 1 ...
## $ q_0021_SQ009 : Factor w/ 3 levels "Yes","No","Uncertain": NA 2 NA 1 NA NA NA 3 1 3 ...
## $ q_0022_SQ001 : Factor w/ 3 levels "Yes","No","Uncertain": NA 1 NA 2 NA NA NA NA 3 1 ...
## $ q_0022_SQ002 : Factor w/ 3 levels "Yes","No","Uncertain": NA 2 NA 3 NA NA NA NA 2 3 ...
## $ q_0022_SQ003 : Factor w/ 3 levels "Yes","No","Uncertain": NA 1 NA 3 NA NA NA NA 2 1 ...
## $ q_0022_SQ004 : Factor w/ 3 levels "Yes","No","Uncertain": NA 3 NA 3 NA NA NA NA 2 3 ...
## $ q_0022_SQ005 : Factor w/ 3 levels "Yes","No","Uncertain": NA 1 NA 3 NA NA NA NA 2 1 ...
## $ q_0022_SQ006 : Factor w/ 3 levels "Yes","No","Uncertain": NA 2 NA 3 NA NA NA NA 2 1 ...
## $ q_0022_SQ007 : Factor w/ 3 levels "Yes","No","Uncertain": NA 1 NA 1 NA NA NA NA 2 1 ...
## $ q_0022_SQ008 : Factor w/ 3 levels "Yes","No","Uncertain": NA 1 NA 3 NA NA NA NA 2 1 ...
## $ q_0022_SQ009 : Factor w/ 3 levels "Yes","No","Uncertain": NA 2 NA 2 NA NA NA NA 2 3 ...
## $ q_0023       : chr NA NA NA NA ...
## - attr(*, "variable.labels")= chr "id" "submitdate" "startlanguage" "Gender" ...

```

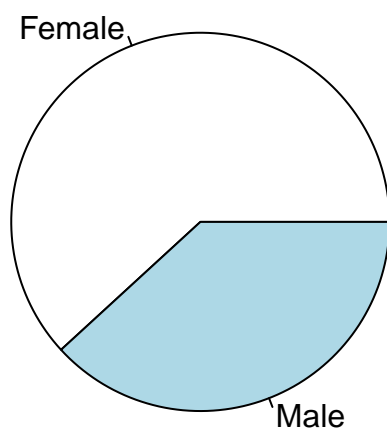
Gender

```
table(data$q_0001)
```

```
##  
## Female    Male  
##      34      21
```

```
pie(table(data$q_0001), main = "Gender of participants")
```

Gender of participants

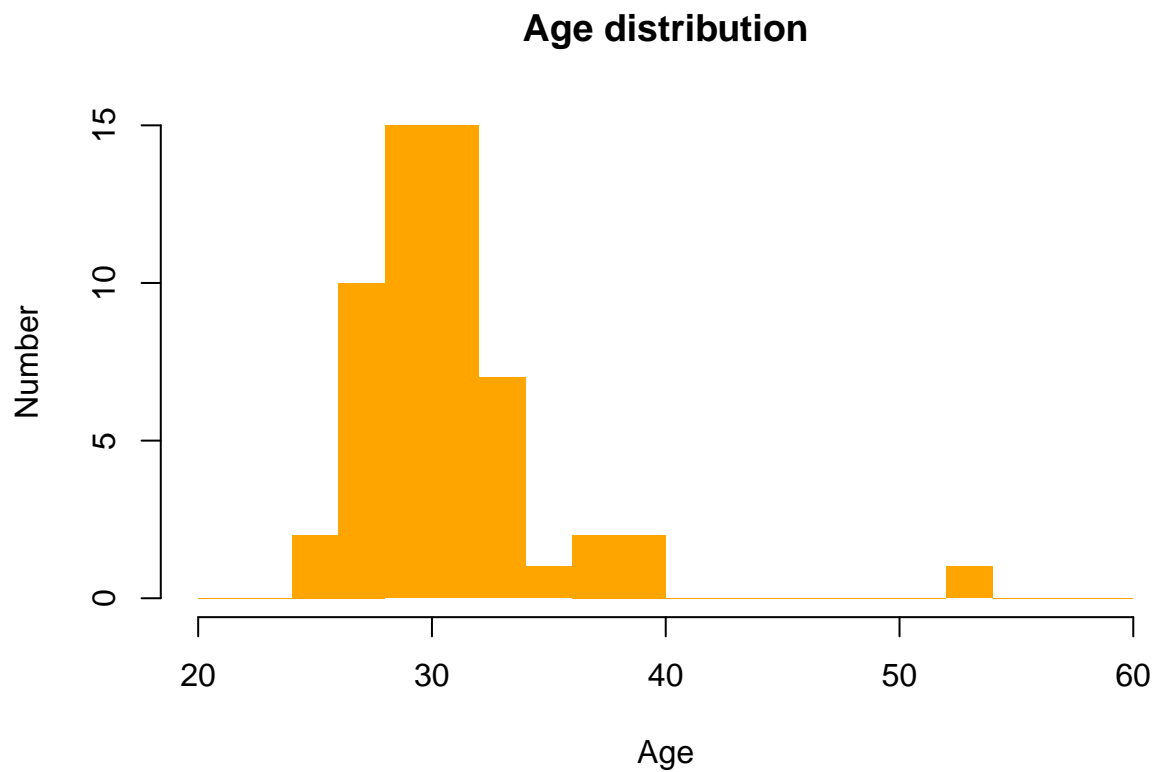


Age

```
summary(data$q_0002)
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.   NA's  
##  26.00   29.00   31.00   31.24   32.00   54.00     3
```

```
hist(data$q_0002, col="orange",  
      xlab="Age",  
      ylab="Number",  
      main="Age distribution",  
      border=NA,  
      breaks=c(seq(20,60,2)))
```

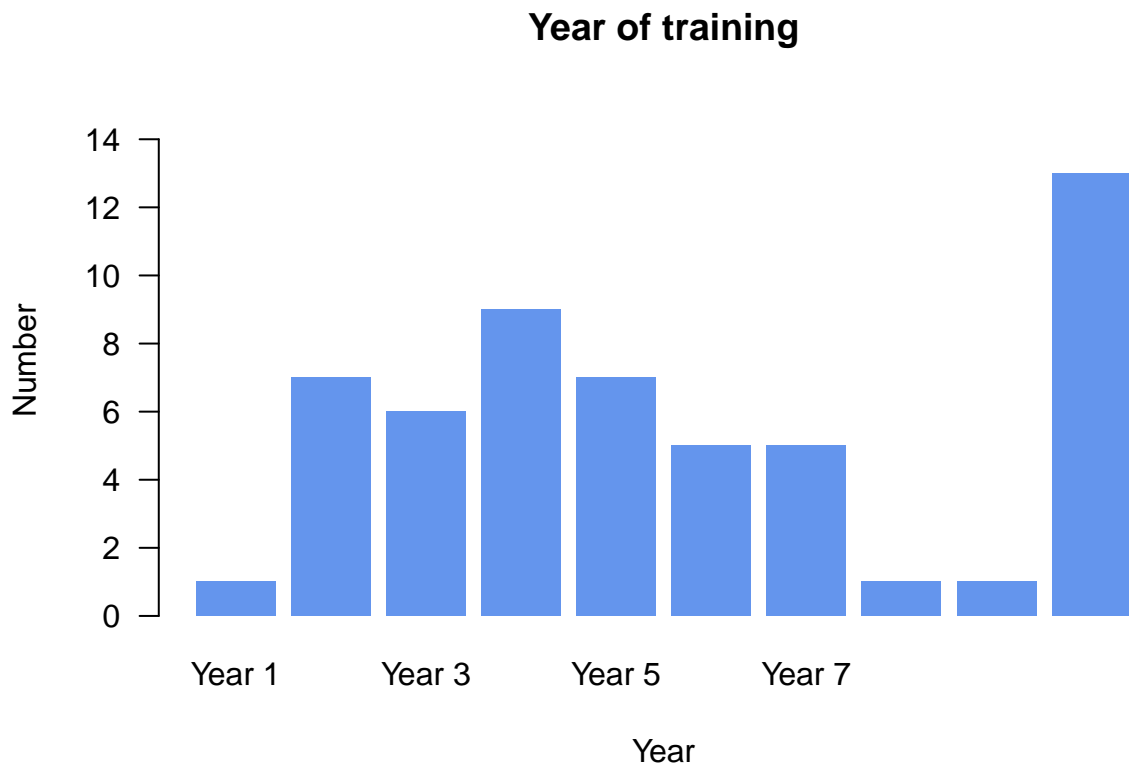


Year in Training (now the shorter labels fit in the plot)

```
table(data$q_0003)
```

```
##
##          Year 1
##          1
##          Year 2
##          7
##          Year 3
##          6
##          Year 4
##          9
##          Year 5
##          7
##          Year 6
##          5
##          Year 7
##          5
##          Year 8
##          1
##          More than 8 years in training
##          1
## I have recently finished training (within last 5 years)
##          13
```

```
barplot(table(data$q_0003), ylim = c(0,15), main="Year of training", xlab="Year", las=1, col="cornflowerblue")
```

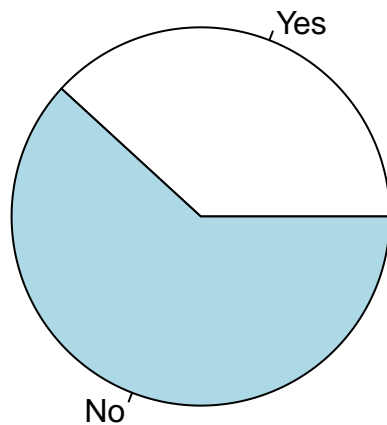


Are you receiving personal psychotherapy or have you received it in the past?

```
data[, 7] <- as.numeric(data[, 7])
attributes(data)$variable.labels[7] <- "Are you receiving personal psychotherapy or have you received it in the past?"
data[, 7] <- factor(data[, 7], levels=c(1,2), labels=c("Yes", "No"))
names(data)[7] <- "q_0004"
table(data$q_0004)
```

```
##
## Yes No
## 21 34
```

```
pie(table(data$q_0004), xlab="Receiving personal psychotherapy (present or past)")
```



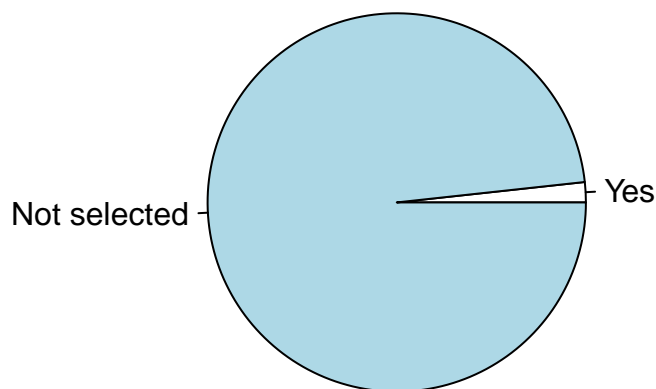
Receiving personal psychotherapy (present or past)

I am undertaking training in Psychotherapy within my training programme in Psychiatry

```
table(data$q_0005_S05A1)
```

```
##
##      Yes Not selected
##      1      57
```

```
pie(table(data$q_0005_S05A1), xlab="In a Psychotherapy training within my training programme")
```



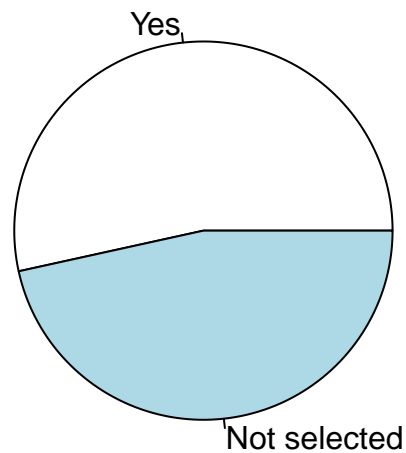
In a Psychotherapy training within my training programme

I am undertaking training in Psychotherapy on my own initiative

```
table(data$q_0005_S05A2)
```

```
##  
##      Yes Not selected  
##      31      27
```

```
pie(table(data$q_0005_S05A2),  
     xlab="Training in Psychotherapy outside my training programme")
```



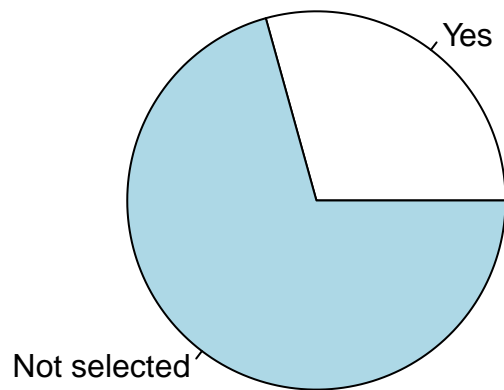
Training in Psychotherapy outside my training programme

I am not undertaking any training in Psychotherapy

```
table(data$q_0005_S05A3)
```

```
##  
##      Yes Not selected  
##      17      41
```

```
pie(table(data$q_0005_S05A3),  
     xlab="I am not undertaking any training in Psychotherapy")
```



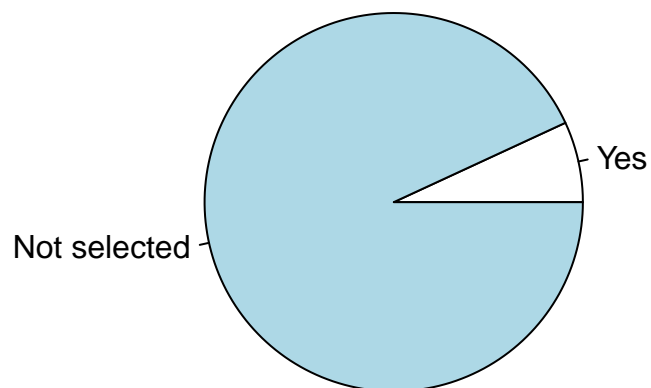
I am not undertaking any training in Psychotherapy

I have completed full training in a Psychotherapy specialty in the past

```
table(data$q_0005_S05A4)
```

```
##
##      Yes Not selected
##      4         54
```

```
pie(table(data$q_0005_S05A4), xlab="Completed a full training in a Psychotherapy (past)")
```



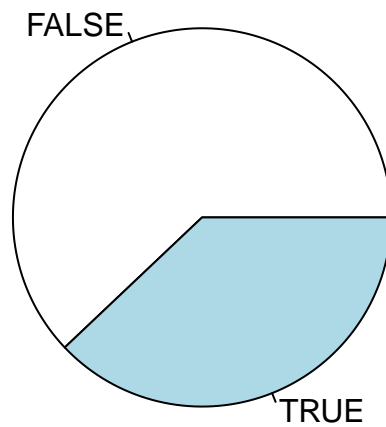
Completed a full training in a Psychotherapy (past)

I am training in some modality

```
table(is.na(data$q_0006))
```

```
##  
## FALSE  TRUE  
##    36    22
```

```
pie(table(is.na(data$q_0006)), xlab="I am training in some modality of psychotherapy")
```



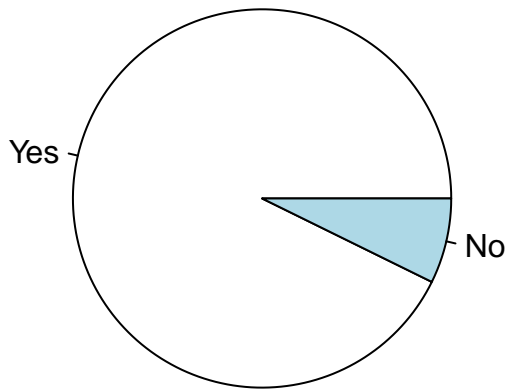
I am training in some modality of psychotherapy

Is psychotherapy important for your identity as a psychiatrist ?

```
table(data$q_0007)
```

```
##  
## Yes  No  
##   51   4
```

```
pie(table(data$q_0007), xlab="Psychotherapy important for the professional identity")
```



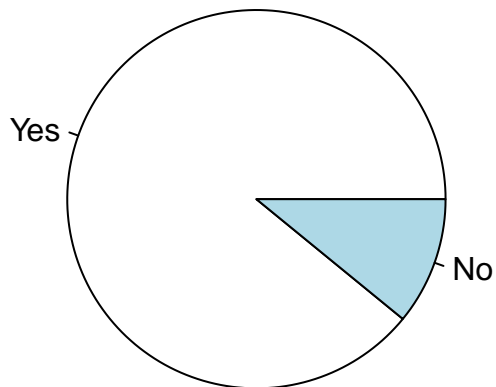
Psychotherapy important for the professional identity

Do you want to practise Psychotherapy ?

```
table(data$q_0008)
```

```
##
## Yes  No
## 49   6
```

```
pie(table(data$q_0008), xlab="Plan to practise Psychotherapy after training")
```



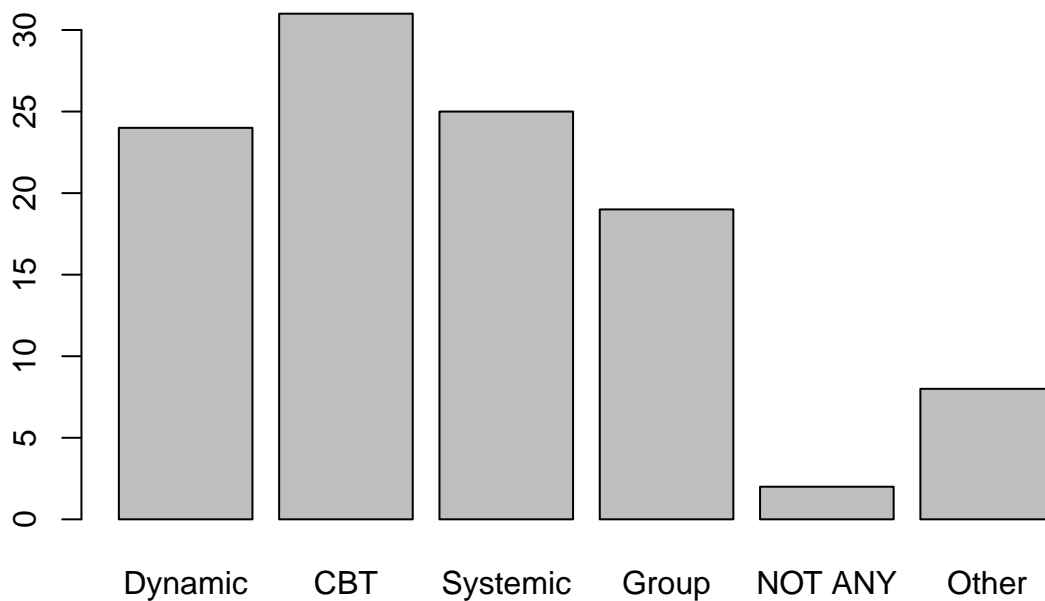
Plan to practise Psychotherapy after training

Types of therapy I am interested in

this might do for now, so canning (sommmenting out) the rest for now for q_0009

```
# Separate out data relating therapy I am interested in
q9df <- data[,16:21]

barplot(c(sum(q9df[,1]=="Yes"), sum(q9df[,2]=="Yes"), sum(q9df[,3]=="Yes"), sum(q9df[,4]=="Yes"),
          sum(q9df[,5]=="Yes"), sum(!is.na(q9df[,6]))),
        names.arg=c("Dynamic", "CBT", "Systemic", "Group", "NOT ANY", "Other"), xlab="Interested in this therapy")
```

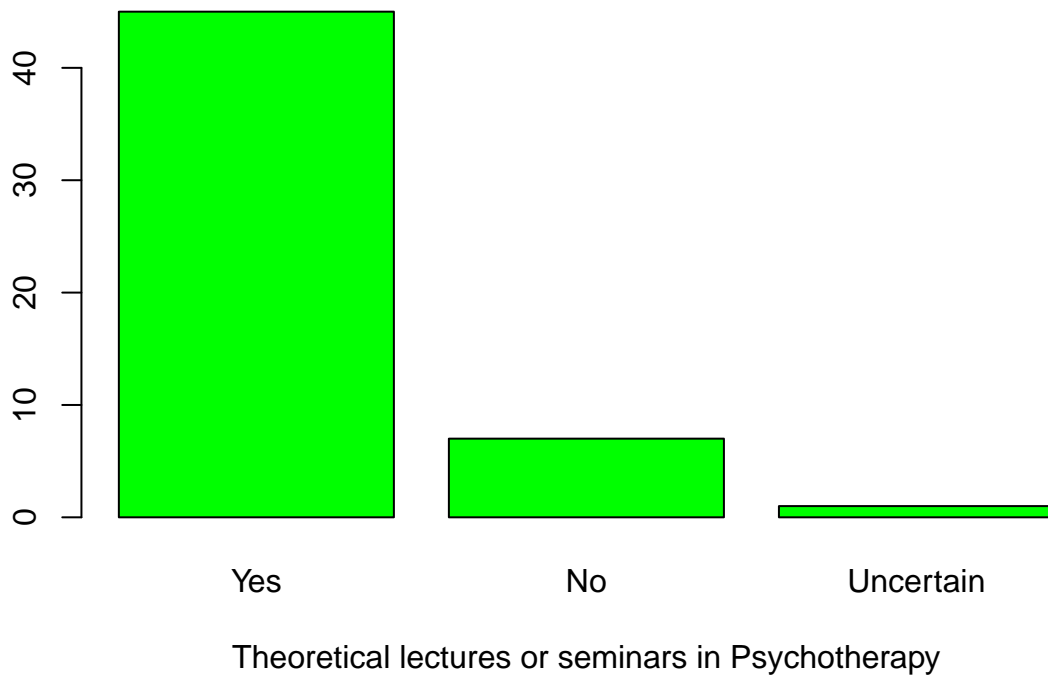


Interested in this therapy #“The following experience in Psychotherapy is a mandatory part of my training in Psychiatry:”

```
table(data$q_0011_SQ001)
```

```
##
##      Yes      No Uncertain
##      45       7          1
```

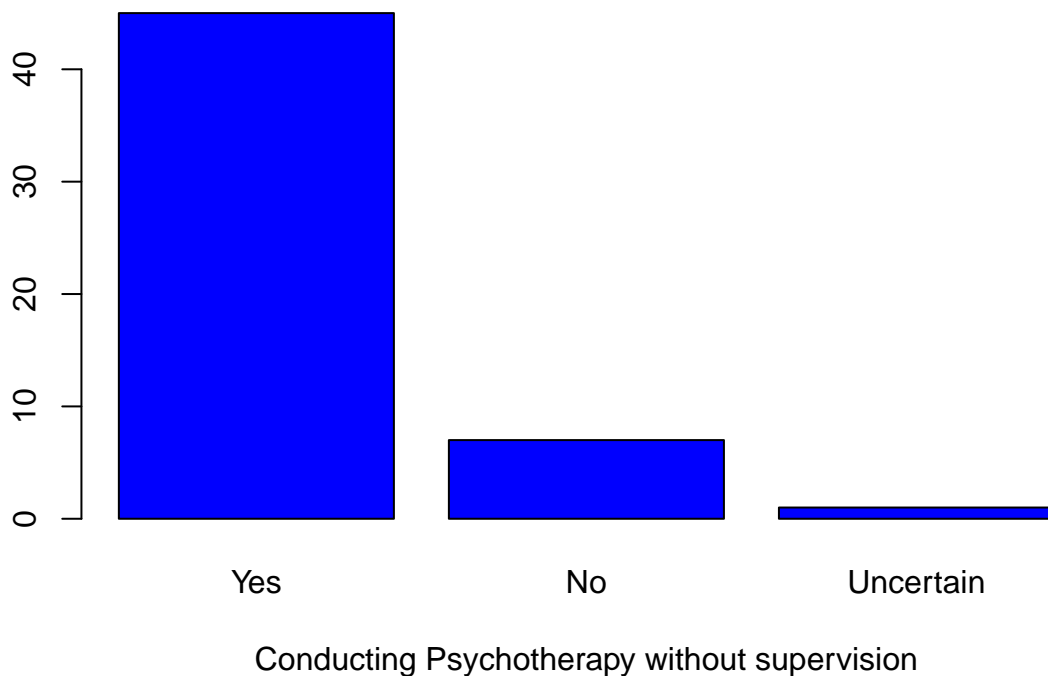
```
barplot(table(data$q_0011_SQ001), col="green", xlab="Theoretical lectures or seminars in Psychotherapy")
```



```
table(data$q_0011_SQ001)
```

```
##  
##      Yes      No Uncertain  
##      45       7         1
```

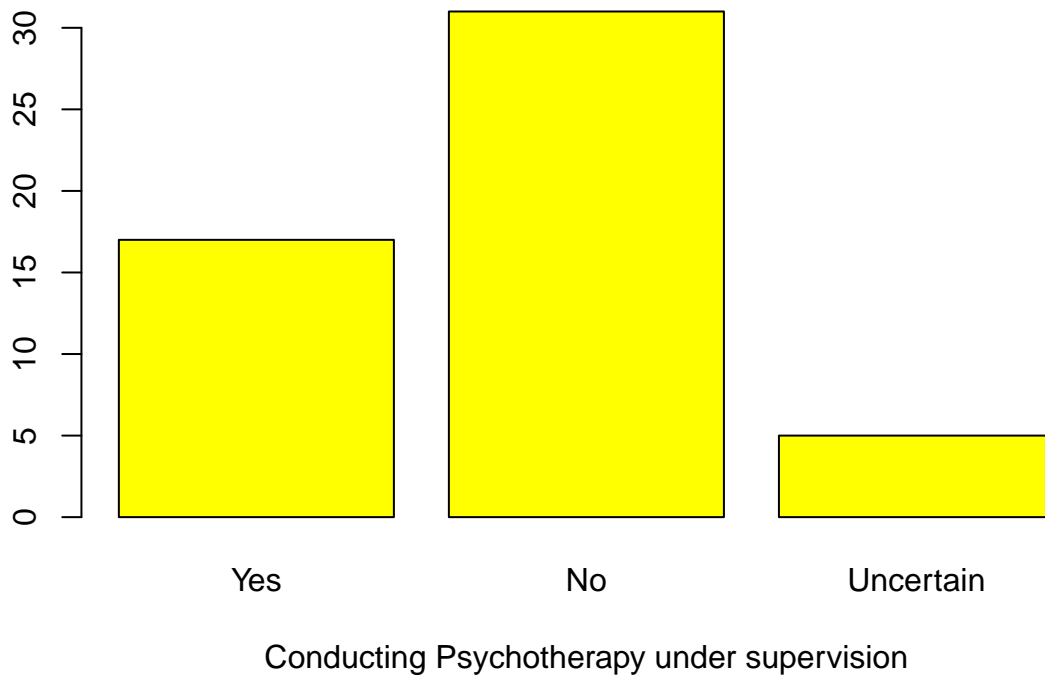
```
barplot(table(data$q_0011_SQ001), col="blue", xlab="Conducting Psychotherapy without supervision")
```



```
table(data$q_0011_SQ003)
```

```
##  
##      Yes      No Uncertain  
##      17      31         5
```

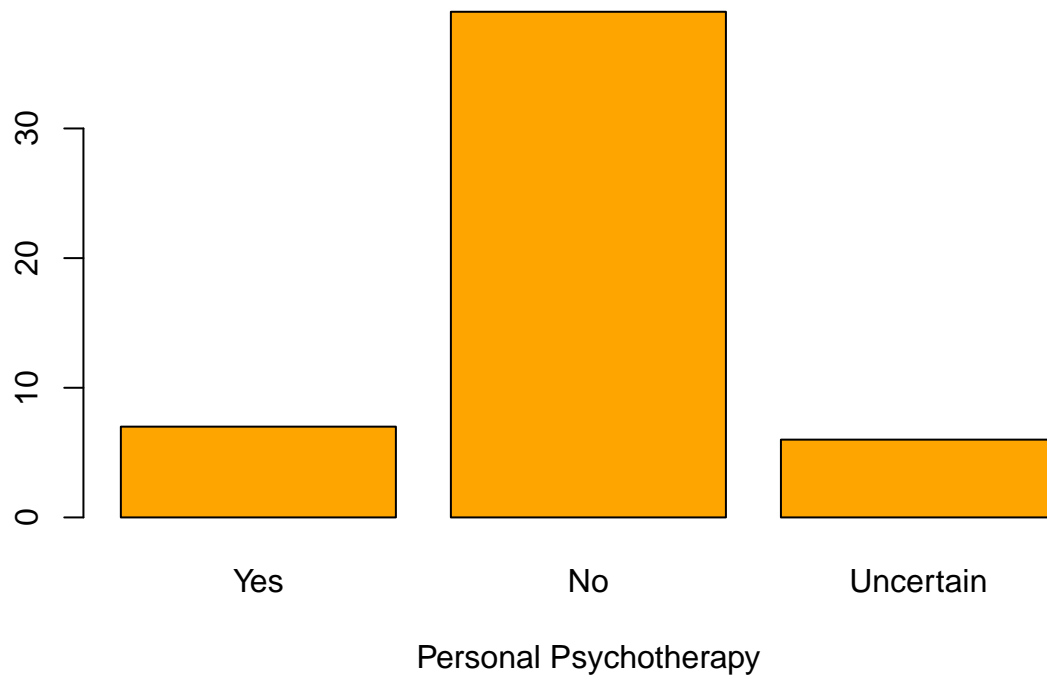
```
barplot(table(data$q_0011_SQ003), col="yellow", xlab="Conducting Psychotherapy under supervision")
```



```
table(data$q_0011_SQ004)
```

```
##  
##      Yes      No Uncertain  
##       7      39         6
```

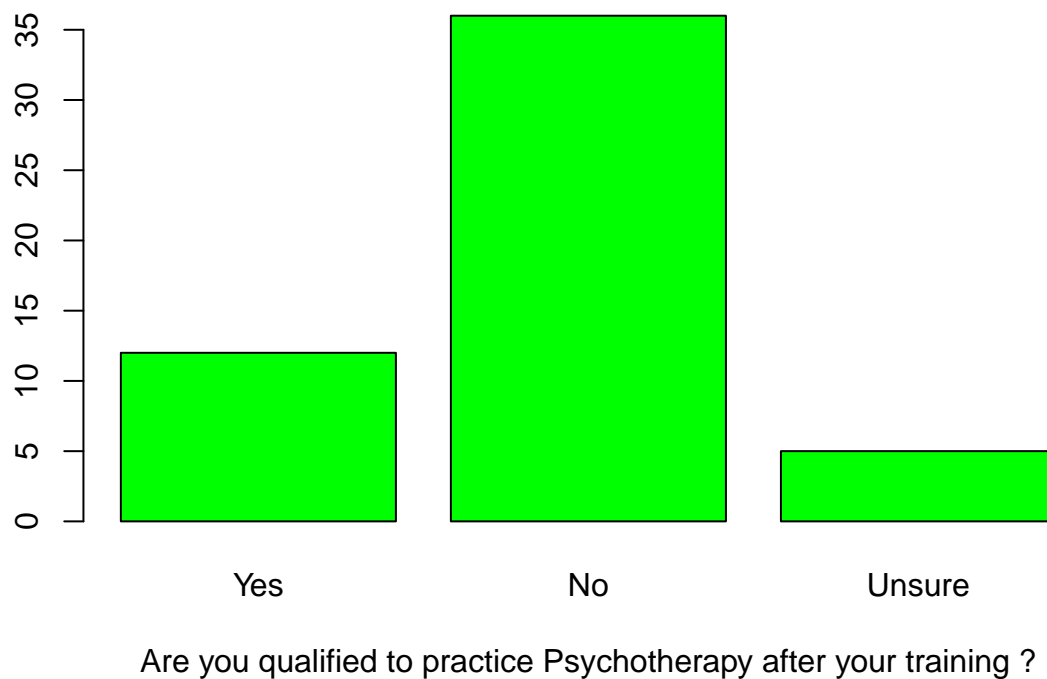
```
barplot(table(data$q_0011_SQ004), col="orange", xlab="Personal Psychotherapy")
```



```
table(data$q_0012)
```

```
##
##      Yes      No  Unsure
##      12      36       5
```

```
barplot(table(data$q_0012), col="green", xlab="Are you qualified to practice Psychotherapy after your t
```

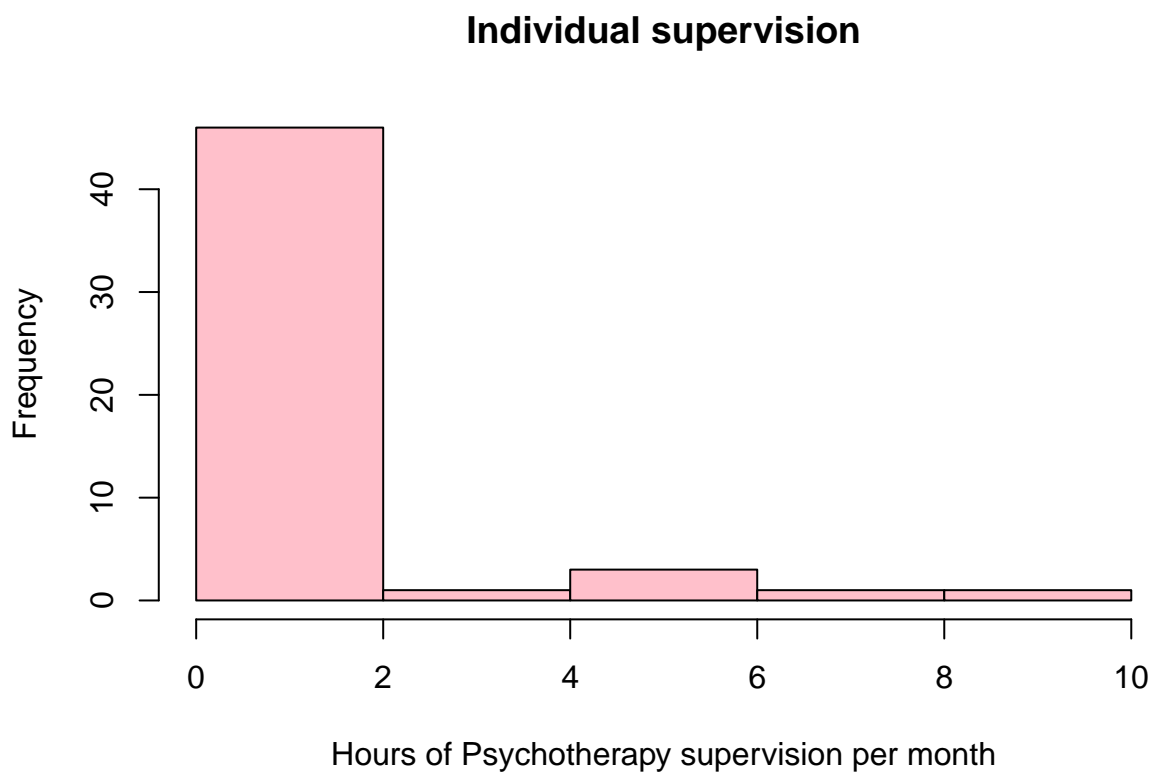


What types of psychotherapy modalities are available for treatment of patients at your institution?

```
table(data$q_0013)
```

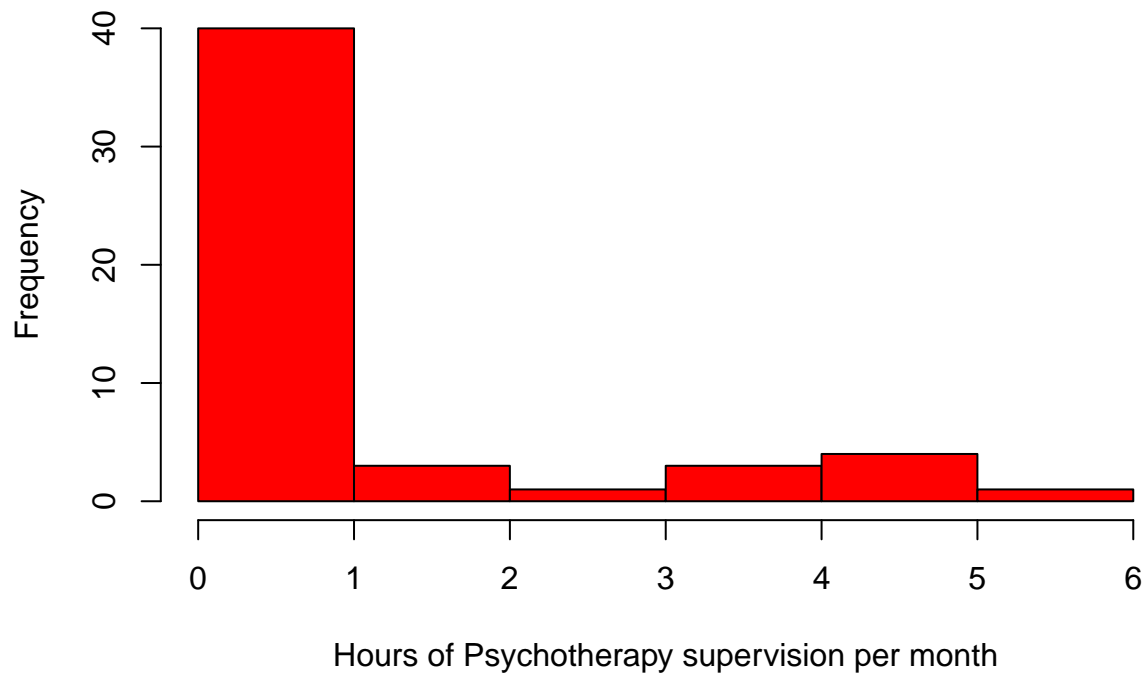
Plot: How many hours of supervisions

```
hist(data$q_0014_SQ001, col="pink",  
      xlab="Hours of Psychotherapy supervision per month",  
      main = "Individual supervision",  
      breaks=6)
```



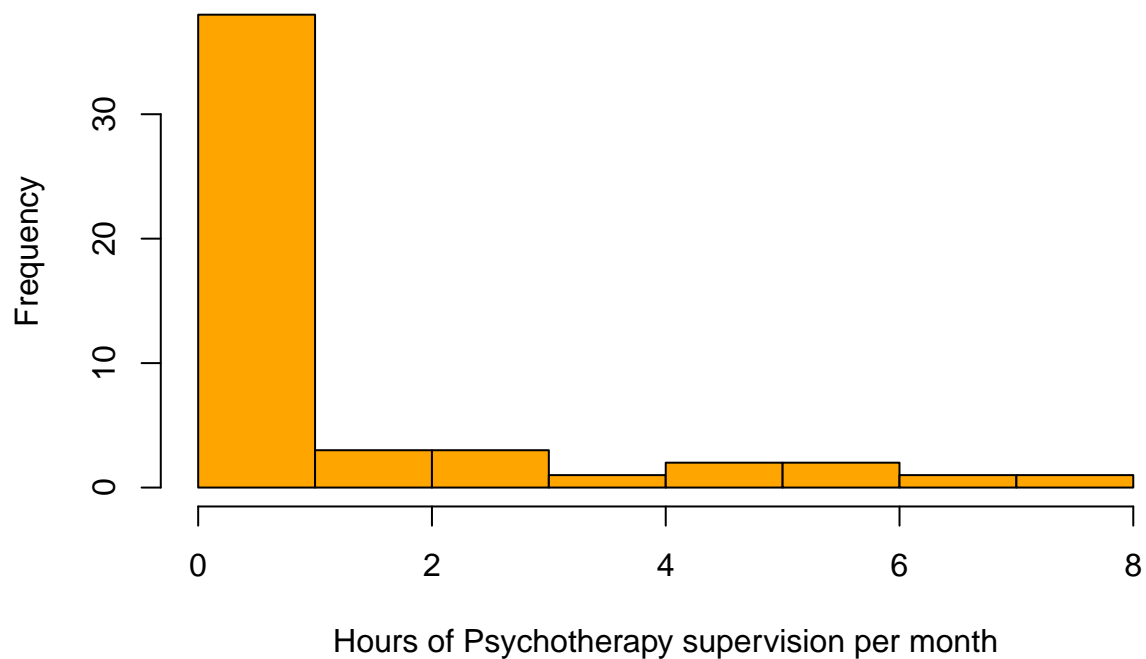
```
hist(data$q_0014_SQ002, col="red",  
      main="Small group supervision (3 - 5 people)",  
      xlab="Hours of Psychotherapy supervision per month")
```

Small group supervision (3 – 5 people)

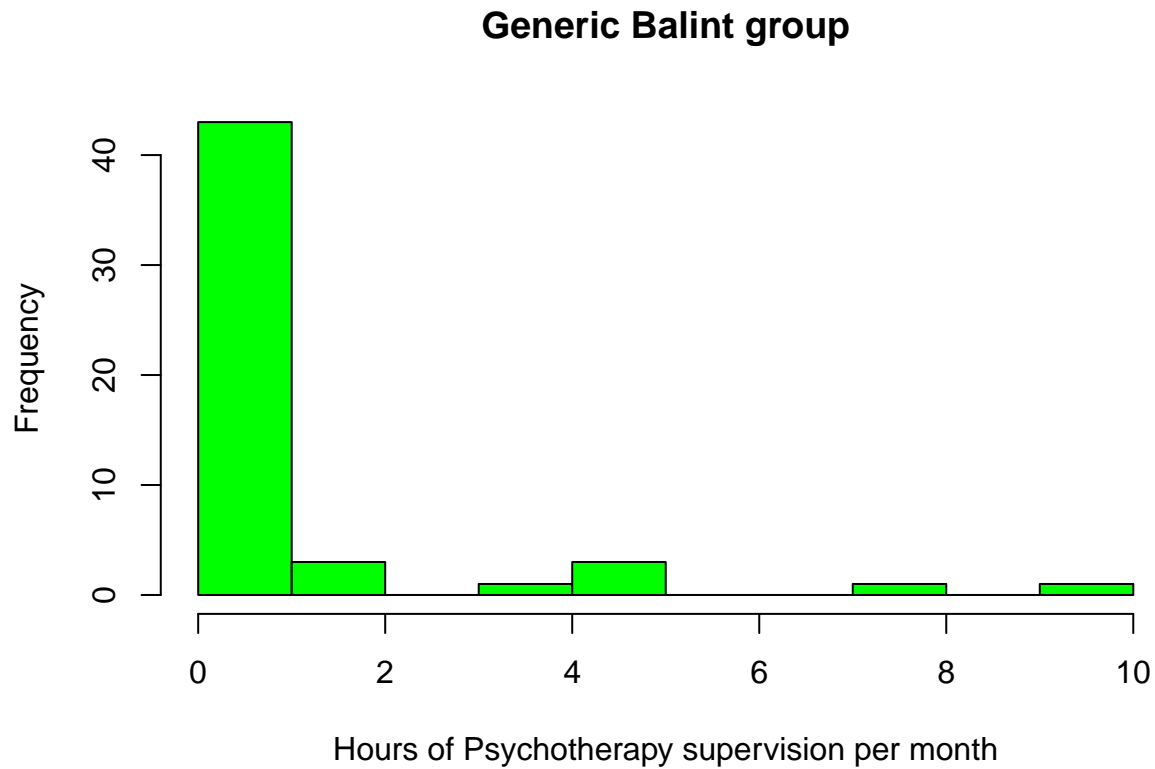


```
hist(data$q_0014_SQ003,  
      main="Large group supervision (more than 5 people)",  
      xlab="Hours of Psychotherapy supervision per month",  
      col= "orange")
```

Large group supervision (more than 5 people)

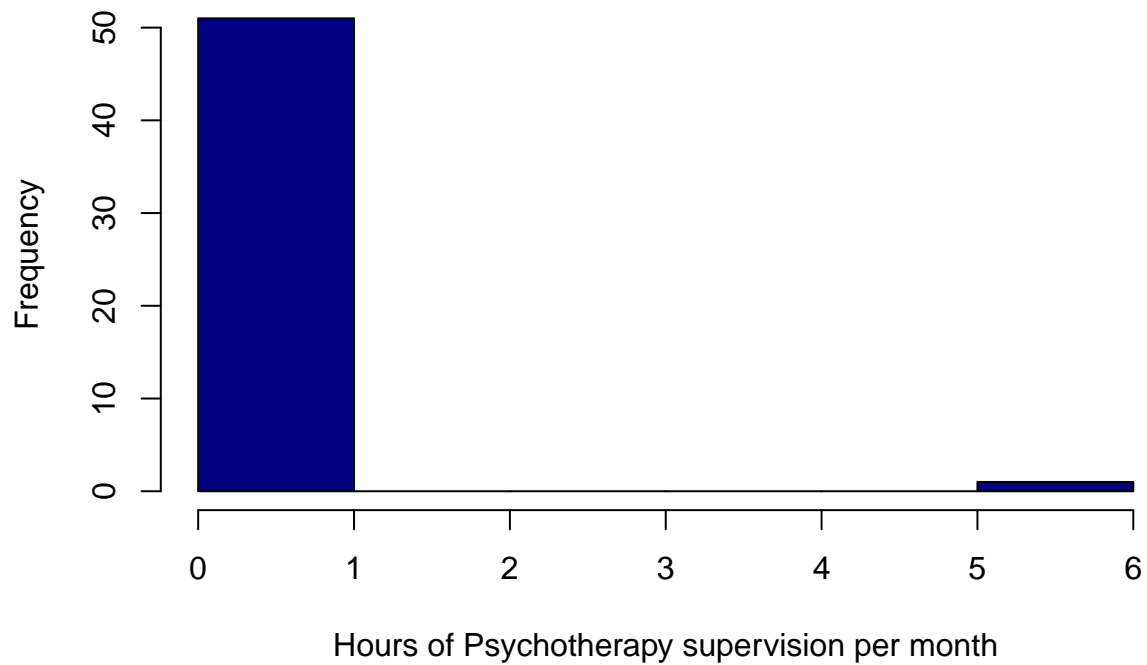



```
hist(data$q_0014_SQ001, col="green",  
      xlab= "Hours of Psychotherapy supervision per month",  
      main = "Generic Balint group",  
      breaks=10)
```



```
hist(data$q_0014_SQ005, col="navy",  
      xlab= "Hours of Psychotherapy supervision per month",  
      main = "Other form of supervision")
```

Other form of supervision



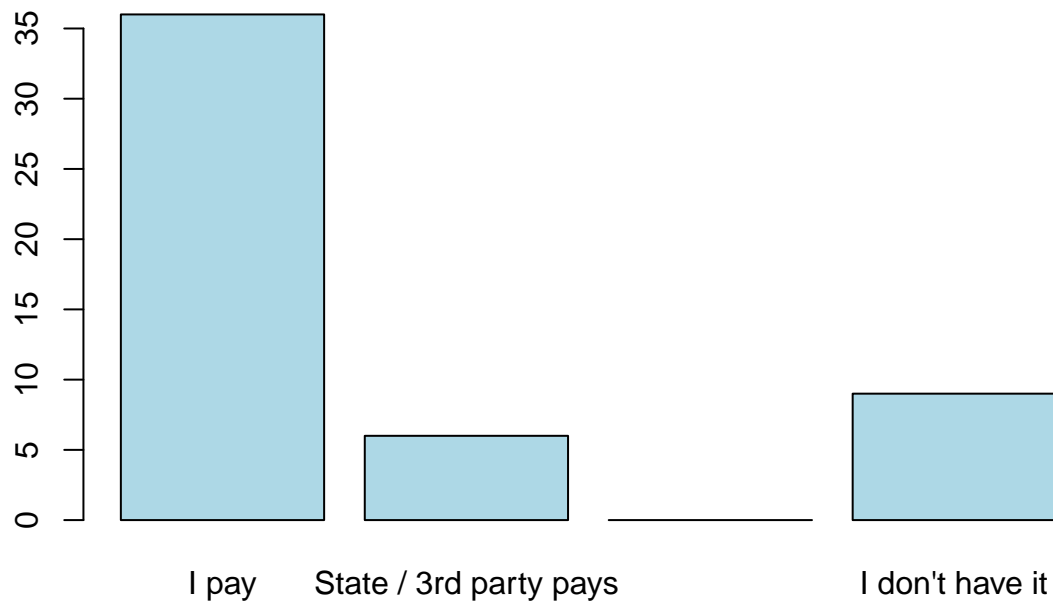
```
table(data$q_0015)
```

Plot: Who pays

This again should be a plot group on one page

```
barplot(table(data$q_0016_SQ001), col="light blue",  
        main="Theoretical lectures / seminars",  
        xlab="Who pays for this component of Psychotherapy experience?")
```

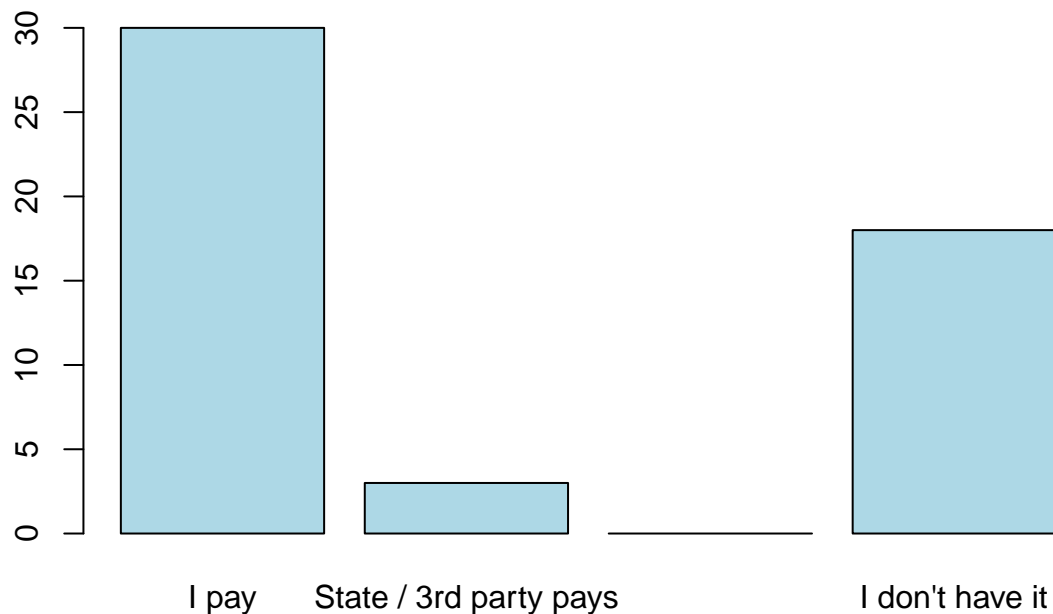
Theoretical lectures / seminars



Who pays for this component of Psychotherapy experience?

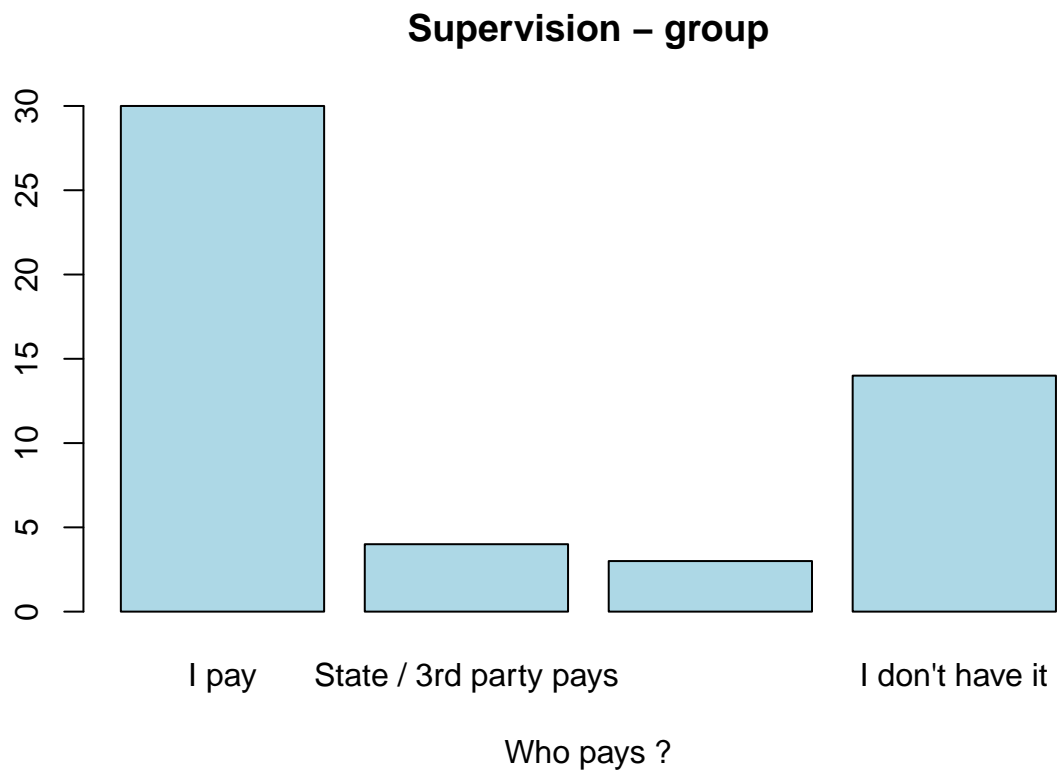
```
barplot(table(data$q_0016_SQ002), col="light blue",  
        xlab="Who pays for this component of Psychotherapy experience?",  
        main="Supervision - individual")
```

Supervision – individual



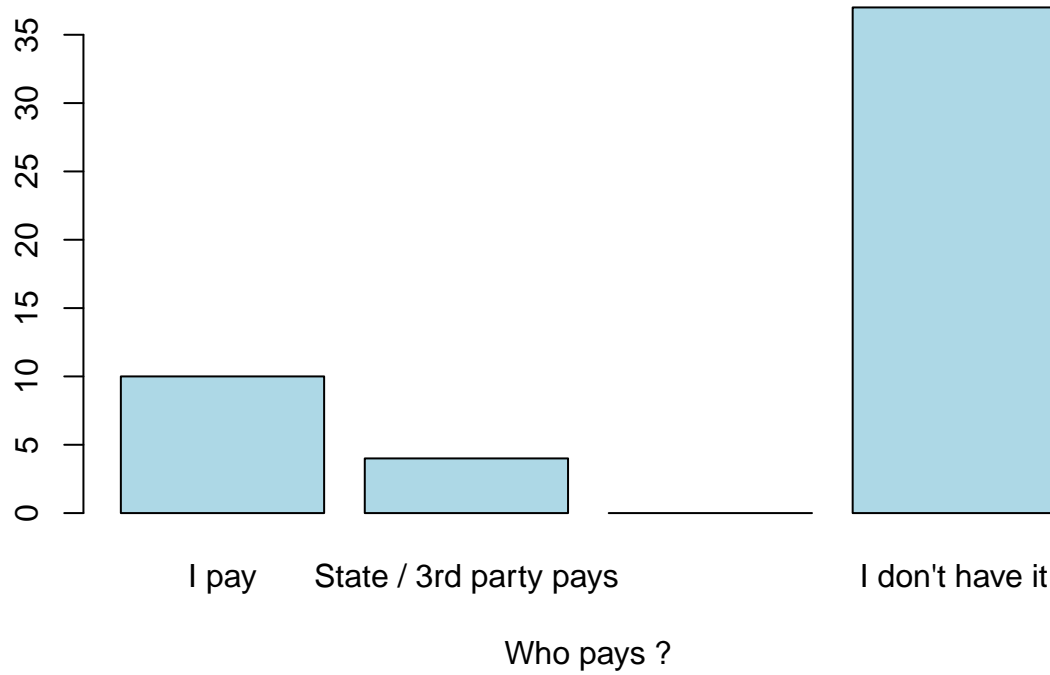
Who pays for this component of Psychotherapy experience?

```
barplot(table(data$q_0016_SQ003), col="light blue",
        main="Supervision - group",
        xlab="Who pays ?")
```



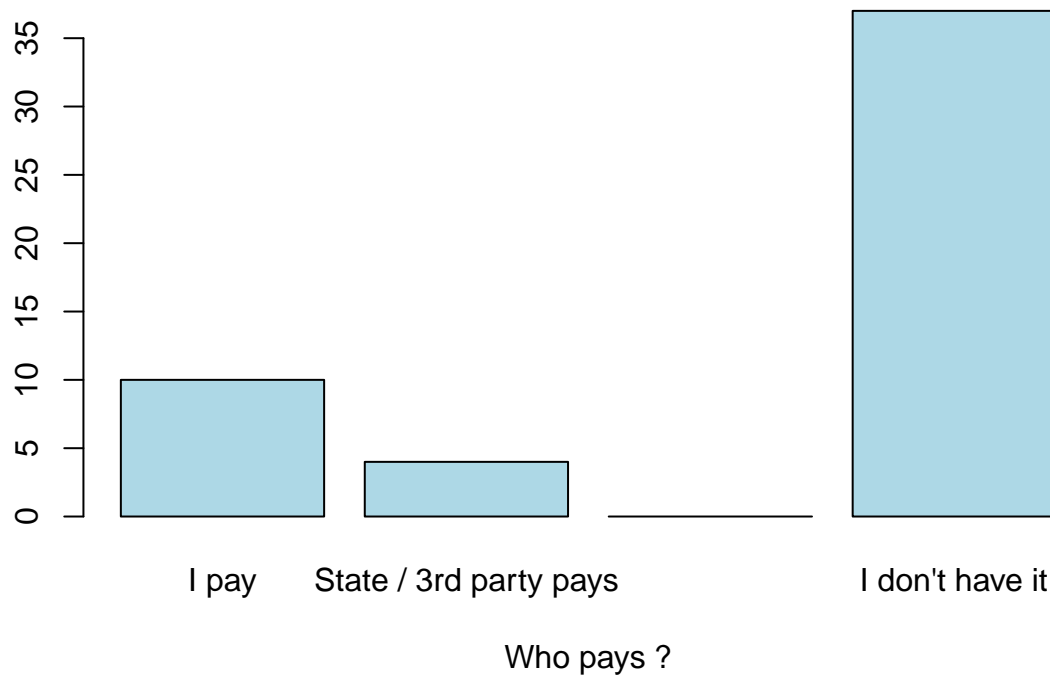
```
barplot(table(data$q_0016_SQ004), col="light blue",
        main="Balint groups ",
        xlab="Who pays ?")
```

Balint groups

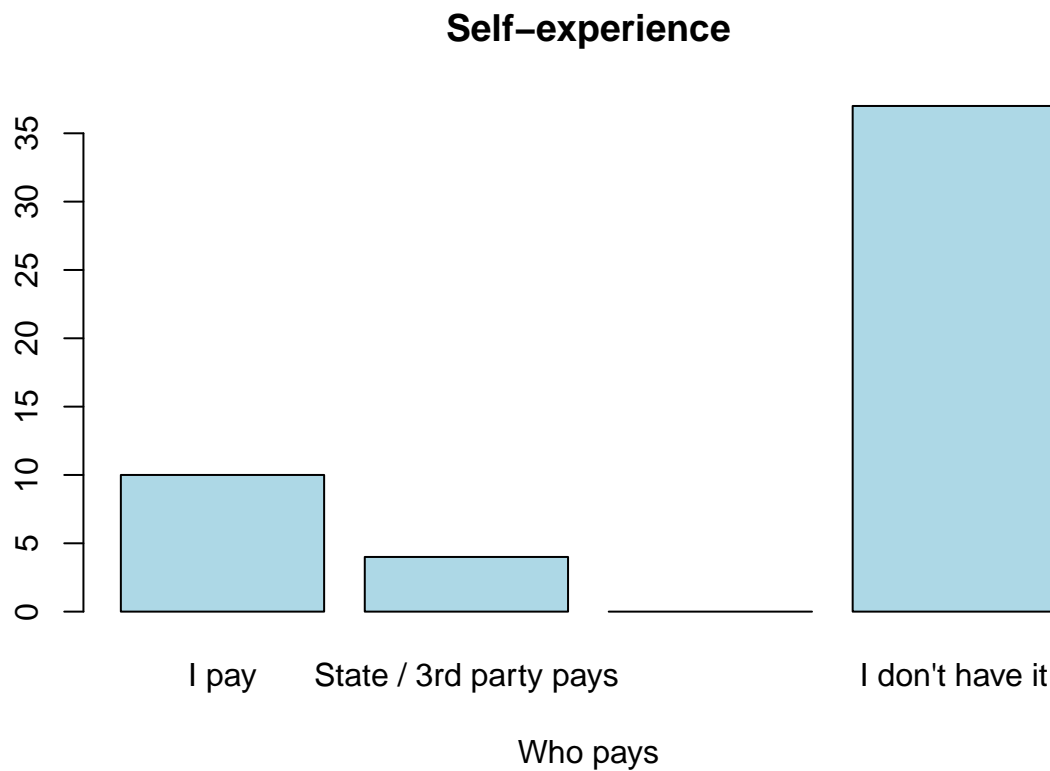


```
barplot(table(data$q_0016_SQ004), col="light blue",  
        main="Sessions with patient(s)",  
        xlab="Who pays ?")
```

Sessions with patient(s)

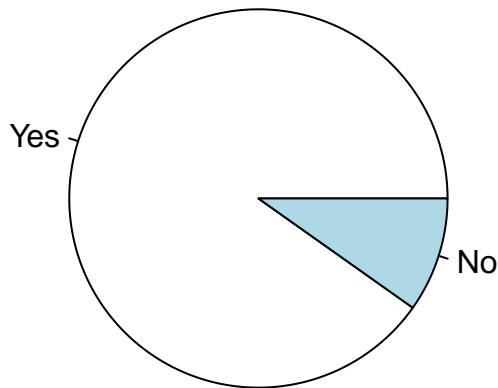


```
barplot(table(data$q_0016_SQ004), col="light blue",
        main="Self-experience",
        xlab="Who pays")
```



Plot: Would you train for Free ?

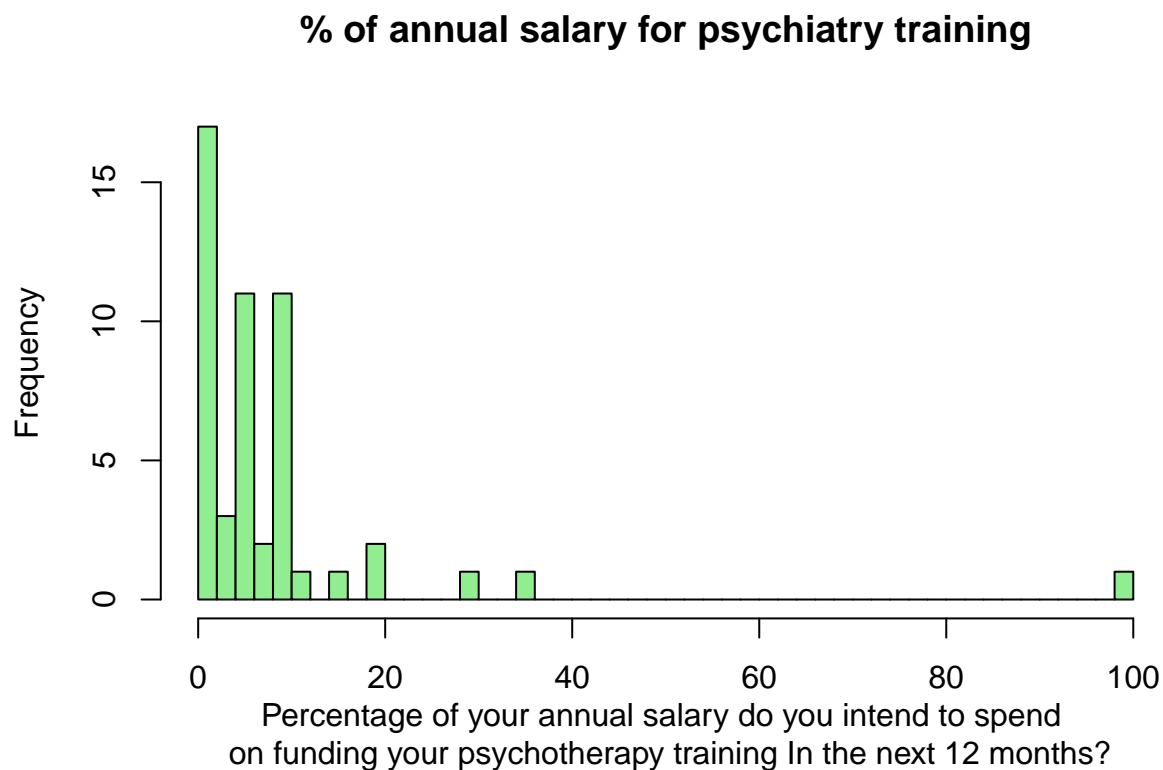
```
pie(table(data$q_0017),
    xlab="Motivated to train in Psychotherapy for free?")
```



Motivated to train in Psychotherapy for free?

Plot: How much would you invest in psychotherapy training ?

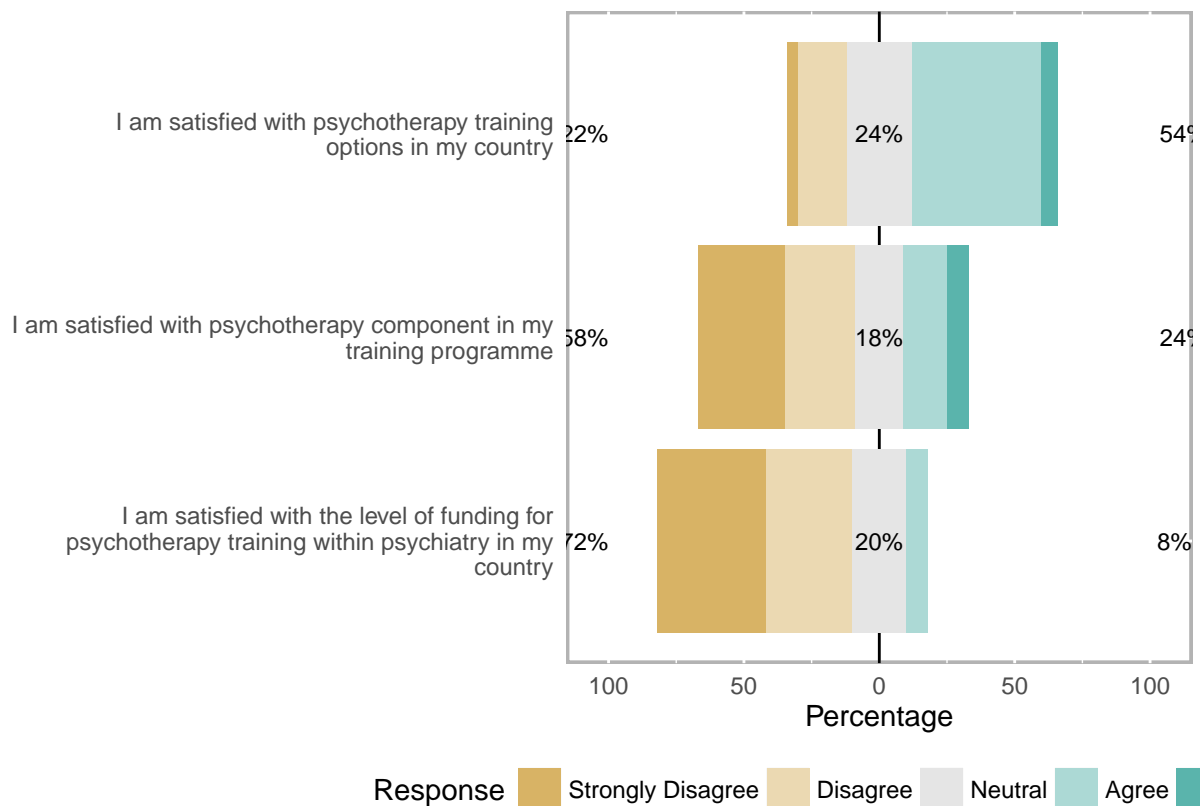
```
hist(data$q_0018, col="light green",
      main="% of annual salary for psychiatry training",
      xlab="Percentage of your annual salary do you intend to spend \n on funding your psychotherapy tra",
      breaks=c(seq(0,100,2)))
```



Plot: Satisfaction group

perhaps we should use likert package to plot likert type items

```
# make auxiliary table to hold our likert data
sat1<-data[,43:45]
# put in correct row names
sat1 <- rename(sat1,c("q_0019_SQ001"="I am satisfied with psychotherapy component in my training program",
  "q_0019_SQ002"="I am satisfied with psychotherapy training options in my country",
  "q_0019_SQ003"="I am satisfied with the level of funding for psychotherapy training within psychiatry"
))
sat12<-likert(sat1)
plot(sat12)
```



```
# comment out barplots for now
# barplot(table(data$q_0019_SQ001), main = "I am satisfied with Psychotherapy component in my training p

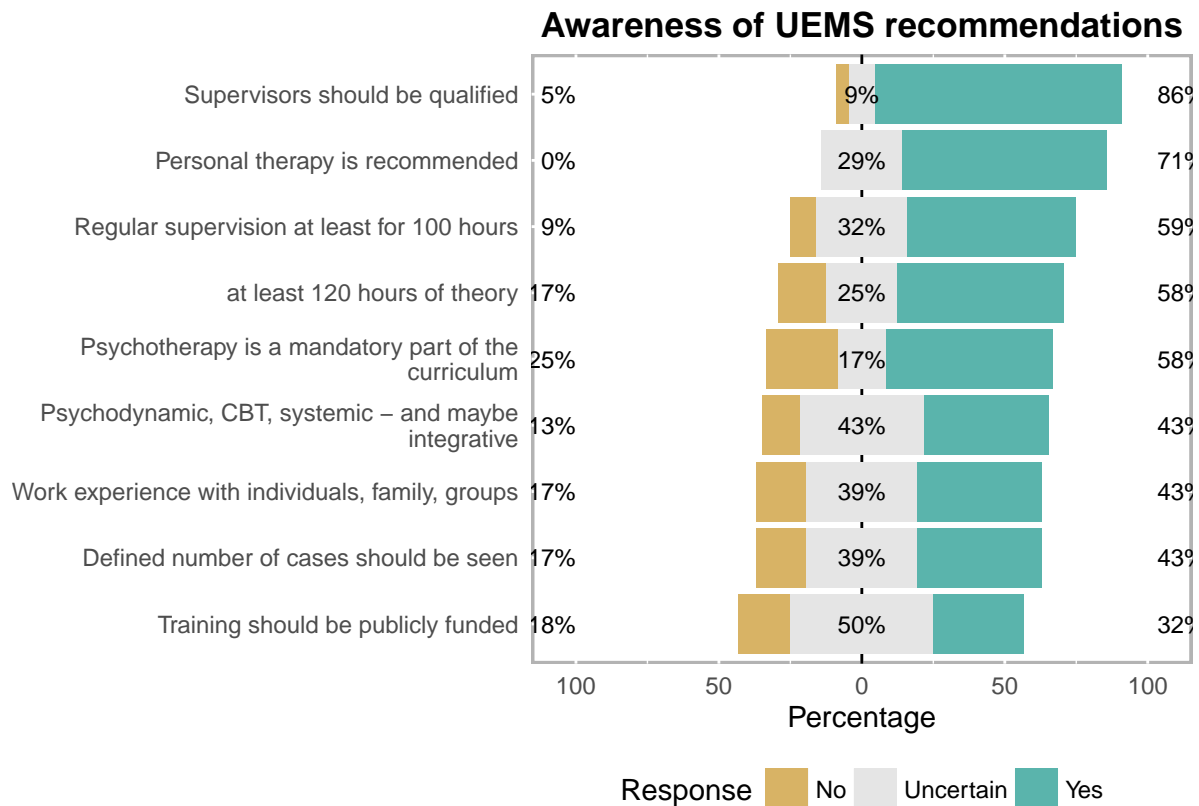
# well, let's deal with UEMS bits as with likert scales
uems1 <- data[,46:54]
uems1[,1] <- factor(uems1[,1],c("No", "Uncertain", "Yes"))
uems1[,2] <- factor(uems1[,2],c("No", "Uncertain", "Yes"))
uems1[,3] <- factor(uems1[,3],c("No", "Uncertain", "Yes"))
uems1[,4] <- factor(uems1[,4],c("No", "Uncertain", "Yes"))
uems1[,5] <- factor(uems1[,5],c("No", "Uncertain", "Yes"))
uems1[,6] <- factor(uems1[,6],c("No", "Uncertain", "Yes"))
uems1[,7] <- factor(uems1[,7],c("No", "Uncertain", "Yes"))
uems1[,8] <- factor(uems1[,8],c("No", "Uncertain", "Yes"))
```



```

uems1[,9] <- factor(uems1[,9],c("No","Uncertain","Yes"))
# Put nice column names for the plot
uems1 <- rename(uems1,c(
  q_0021_SQ001="Psychotherapy is a mandatory part of the curriculum",
  q_0021_SQ002="Defined number of cases should be seen",
  q_0021_SQ003="at least 120 hours of theory",
  q_0021_SQ004="Work experience with individuals, family, groups",
  q_0021_SQ005="Psychodynamic, CBT, systemic - and maybe integrative",
  q_0021_SQ006="Personal therapy is recommended",
  q_0021_SQ007="Supervisors should be qualified",
  q_0021_SQ008="Regular supervision at least for 100 hours",
  q_0021_SQ009="Training should be publicly funded"
))
## Plot: UEMS recs awareness
uems12 <- likert(uems1)
plot(uems12) +
  ggtitle("Awareness of UEMS recommendations") +
  theme(plot.title = element_text(lineheight=.8, face="bold"))

```



Plot: UEMS recs awareness

```

# and same with the
uems2 <- data[,55:63]
uems2[,1] <- factor(uems2[,1],c("No","Uncertain","Yes"))
uems2[,2] <- factor(uems2[,2],c("No","Uncertain","Yes"))

```

```

uems2[,3] <- factor(uems2[,3],c("No","Uncertain","Yes"))
uems2[,4] <- factor(uems2[,4],c("No","Uncertain","Yes"))
uems2[,5] <- factor(uems2[,5],c("No","Uncertain","Yes"))
uems2[,6] <- factor(uems2[,6],c("No","Uncertain","Yes"))
uems2[,7] <- factor(uems2[,7],c("No","Uncertain","Yes"))
uems2[,8] <- factor(uems2[,8],c("No","Uncertain","Yes"))
uems2[,9] <- factor(uems2[,9],c("No","Uncertain","Yes"))

# Put nice column names for the plot
uems2 <- rename(uems2,c(
  q_0022_SQ001="Psychotherapy is a mandatory part of the curriculum",
  q_0022_SQ002="Defined number of cases should be seen",
  q_0022_SQ003="at least 120 hours of theory",
  q_0022_SQ004="Work experience with individuals, family, groups",
  q_0022_SQ005="Psychodynamic, CBT, systemic - and maybe integrative",
  q_0022_SQ006="Personal therapy is recommended",
  q_0022_SQ007="Supervisors should be qualified",
  q_0022_SQ008="Regular supervision at least for 100 hours",
  q_0022_SQ009="Training should be publicly funded"
))
uems22 <- likert(uems2)
plot(uems22) +
  ggtitle("Actual implementation in the country") +
  theme(plot.title = element_text(lineheight=.8, face="bold"))

```

