Análise de dados - Celine\_DO

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# Pacotes e banco de dados

As análises foram realizadas com auxílio do pacote psych do R.

citation("psych")

##   
## To cite the psych package in publications use:  
##   
## Revelle, W. (2022) psych: Procedures for Personality and  
## Psychological Research, Northwestern University, Evanston, Illinois,  
## USA, https://CRAN.R-project.org/package=psych Version = 2.2.5.  
##   
## A BibTeX entry for LaTeX users is  
##   
## @Manual{,  
## title = {psych: Procedures for Psychological, Psychometric, and Personality Research},  
## author = {William Revelle},  
## organization = { Northwestern University},  
## address = { Evanston, Illinois},  
## year = {2022},  
## note = {R package version 2.2.5},  
## url = {https://CRAN.R-project.org/package=psych},  
## }

# Análise das propriedades psicométricas dos instrumentos

Em primeiro lugar, foram calculados os índices de fidedignidade (alfa de Cronbach e ômega de McDonald) e estatísticas descritivas dos instrumentos empregados no estudo.

## TRE - Transformações das pontuações likert para dicotômicas

# Transformações da escala likert para pontuações dicotômicas  
  
df1$tre\_cod\_01 <- ifelse(df1$TRE01 == 4 | df1$TRE01 == 5, 1, 0)  
df1$tre\_cod\_02 <- ifelse(df1$TRE02 == 1 | df1$TRE02 == 2, 1, 0)  
df1$tre\_cod\_03 <- ifelse(df1$TRE03 == 4 | df1$TRE03 == 5, 1, 0)  
df1$tre\_cod\_04 <- ifelse(df1$TRE04 == 1 | df1$TRE04 == 2, 1, 0)  
df1$tre\_cod\_05 <- ifelse(df1$TRE05 == 1 | df1$TRE05 == 2, 1, 0)  
df1$tre\_cod\_06 <- ifelse(df1$TRE06 == 4 | df1$TRE06 == 5, 1, 0)  
df1$tre\_cod\_07 <- ifelse(df1$TRE07 == 3, 1, 0)  
df1$tre\_cod\_08 <- ifelse(df1$TRE08 == 3, 1, 0)  
# df1$tre\_cod\_09 <- ifelse(df1$TRE09 == 4 | df1$TRE09 == 5, 1, 0)  
df1$tre\_cod\_10 <- ifelse(df1$TRE10 == 1 | df1$TRE10 == 2, 1, 0)  
df1$tre\_cod\_11 <- ifelse(df1$TRE11 == 4 | df1$TRE11 == 5, 1, 0)  
df1$tre\_cod\_12 <- ifelse(df1$TRE12 == 4 | df1$TRE12 == 5, 1, 0)  
df1$tre\_cod\_13 <- ifelse(df1$TRE13 == 4 | df1$TRE13 == 5, 1, 0)  
df1$tre\_cod\_14 <- ifelse(df1$TRE14 == 1 | df1$TRE14 == 2, 1, 0)  
df1$tre\_cod\_15 <- ifelse(df1$TRE15 == 1 | df1$TRE15 == 2, 1, 0)  
df1$tre\_cod\_16 <- ifelse(df1$TRE16 == 4 | df1$TRE16 == 5, 1, 0)  
df1$tre\_cod\_17 <- ifelse(df1$TRE17 == 3 | df1$TRE17 == 4 | df1$TRE17 == 5, 1, 0)  
df1$tre\_cod\_18 <- ifelse(df1$TRE18 == 3 | df1$TRE18 == 4 | df1$TRE18 == 5, 1, 0)  
df1$tre\_cod\_19 <- ifelse(df1$TRE19 == 1 | df1$TRE19 == 2, 1, 0)  
df1$tre\_cod\_20 <- ifelse(df1$TRE20 == 1 | df1$TRE20 == 2, 1, 0)  
df1$tre\_cod\_21 <- ifelse(df1$TRE21 == 4 | df1$TRE21 == 5, 1, 0)  
df1$tre\_cod\_22 <- ifelse(df1$TRE22 == 4 | df1$TRE22 == 5, 1, 0)  
df1$tre\_cod\_23 <- ifelse(df1$TRE23 == 4 | df1$TRE23 == 5, 1, 0)  
df1$tre\_cod\_24 <- ifelse(df1$TRE24 == 1 | df1$TRE24 == 2, 1, 0)  
df1$tre\_cod\_25 <- ifelse(df1$TRE25 == 1 | df1$TRE25 == 2, 1, 0)  
df1$tre\_cod\_26 <- ifelse(df1$TRE26 == 4 | df1$TRE26 == 5, 1, 0)  
df1$tre\_cod\_27 <- ifelse(df1$TRE27 == 4 | df1$TRE27 == 5, 1, 0)  
df1$tre\_cod\_28 <- ifelse(df1$TRE28 == 1 | df1$TRE28 == 2 | df1$TRE28 == 3, 1, 0)  
df1$tre\_cod\_29 <- ifelse(df1$TRE29 == 1 | df1$TRE29 == 2, 1, 0)  
df1$tre\_cod\_30 <- ifelse(df1$TRE30 == 1 | df1$TRE30 == 2, 1, 0)  
df1$tre\_cod\_31 <- ifelse(df1$TRE31 == 4 | df1$TRE31 == 5, 1, 0)  
df1$tre\_cod\_32 <- ifelse(df1$TRE32 == 1 | df1$TRE32 == 2, 1, 0)  
df1$tre\_cod\_33 <- ifelse(df1$TRE33 == 1 | df1$TRE33 == 2 | df1$TRE33 == 3, 1, 0)  
df1$tre\_cod\_34 <- ifelse(df1$TRE34 == 1 | df1$TRE34 == 2, 1, 0)  
df1$tre\_cod\_35 <- ifelse(df1$TRE35 == 1 | df1$TRE35 == 2, 1, 0)  
df1$tre\_cod\_36 <- ifelse(df1$TRE36 == 4 | df1$TRE36 == 5, 1, 0)  
df1$tre\_cod\_37 <- ifelse(df1$TRE37 == 4 | df1$TRE37 == 5, 1, 0)  
df1$tre\_cod\_38 <- ifelse(df1$TRE38 == 4 | df1$TRE38 == 5, 1, 0)  
df1$tre\_cod\_39 <- ifelse(df1$TRE39 == 1 | df1$TRE39 == 2, 1, 0)  
df1$tre\_cod\_40 <- ifelse(df1$TRE40 == 1 | df1$TRE40 == 2, 1, 0)

# Índices de Fidedignidade

| Escalas | Alfa | Ômega | Assim | Curto | Média | DesvP |
| --- | --- | --- | --- | --- | --- | --- |
| adesao | 0.86 | 0.95 | -1.50 | 2.39 | 4.16 | 0.82 |
| TRE\_ine | 0.69 | 0.83 | -0.35 | -0.03 | 0.69 | 0.13 |
| TRE\_efi | 0.87 | 0.95 | -1.32 | 2.45 | 0.88 | 0.12 |
| ebq\_ctrl | 0.85 | 0.91 | 1.16 | 1.40 | 2.34 | 1.25 |
| ebq\_utin | 0.78 | 0.79 | -0.80 | -0.09 | 5.45 | 1.47 |
| ebq\_utip | 0.72 | 0.80 | 2.33 | 4.60 | 1.50 | 1.05 |
| DASS\_dep | 0.85 | 0.92 | 1.64 | 3.11 | 0.42 | 0.50 |
| DASS\_ans | 0.87 | 0.91 | 2.65 | 8.61 | 0.35 | 0.45 |
| DASS\_est | 0.91 | 0.95 | 1.65 | 2.64 | 0.53 | 0.62 |
| SMM\_total | 0.87 | 0.91 | 0.91 | 6.76 | 2.09 | 0.40 |

OBSERVAÇÂO IMPORTANTE: Os índices de precisão e os escores da EBQ foram calculados com base na estrutura fatorial americana. Precisamos refazer esses cálculos, caso a estrutura fatorial no Brasil seja diferente. O fator ebq\_utip deu um probleminha devido à falta de variância do item 12 (col 70)… verificar novamente após a EFA dos dados brasileiros.

Observa-se que os valores de assimetria e curtose estão majoritariamente fora do intervalo entre -1 e 1, indicando que **os dados não apresentam distribuição normal** (Maroco, 2003). Por isso, foram realizadas análises de correlação e de redes entre as variáveis.

Maroco, J. (2003). Análise Estatística com Utilização do SPSS (2nd ed.). Lisboa: Edições Sílabo, Lda.

# Correlações

# correlações entre KDQOL e medidas psicológicas  
correlations1 <- corr.test(df1[,109:130],df1[,188:197])  
  
# correlações entre indicadores de adesão e medidas psicológicas  
correlations2 <- corr.test(df1[,198:203],df1[,188:197])  
  
  
correlations1$stars %>% kable()

|  | tre\_cod\_40 | TRE\_ine | TRE\_efi | ebq\_ctrl | ebq\_utin | ebq\_utip | DASS\_dep | DASS\_ans | DASS\_est | SMM\_total |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sintomas\_Problemnas\_físicos | 0.28\* | 0.01 | 0.08 | -0.12 | 0 | 0.02 | -0.36\*\*\* | -0.4\*\*\* | -0.31\*\* | 0.07 |
| Efeitos\_da\_doença\_renal | 0.17 | -0.09 | -0.19 | -0.18 | -0.05 | 0.01 | -0.31\*\* | -0.43\*\*\* | -0.34\*\* | -0.07 |
| Sobrecarga\_imposta\_pela\_doença\_renal | 0.1 | -0.05 | -0.09 | -0.34\*\* | -0.08 | -0.1 | -0.36\*\*\* | -0.37\*\*\* | -0.35\*\* | -0.08 |
| Situação\_de\_trabalho | 0.15 | 0.01 | 0.08 | -0.13 | -0.24\* | -0.05 | -0.22\* | -0.23\* | -0.17 | 0.1 |
| Função\_cognitiva | 0.23\* | 0.01 | -0.09 | -0.39\*\*\* | 0 | -0.15 | -0.47\*\*\* | -0.51\*\*\* | -0.55\*\*\* | -0.12 |
| Qualidade\_das\_interações\_sociais | 0.08 | -0.04 | 0.06 | -0.22\* | 0 | -0.09 | -0.32\*\* | -0.31\*\* | -0.37\*\*\* | -0.1 |
| Função\_sexual | 0.24 | 0.11 | 0.19 | 0.12 | 0.14 | 0.03 | -0.08 | -0.03 | -0.07 | 0.09 |
| Sono | 0 | 0.01 | 0.05 | -0.03 | -0.08 | 0.04 | -0.29\*\* | -0.13 | -0.18 | -0.05 |
| Suporte\_social | -0.13 | -0.19 | 0.16 | -0.11 | 0.17 | -0.21 | -0.27\* | -0.2 | -0.24\* | -0.13 |
| Apoio\_da\_equipe\_profissional\_de\_diálise | 0.05 | -0.03 | 0.04 | 0.21 | 0.22\* | 0 | 0.06 | 0.11 | 0.03 | -0.18 |
| Saúde\_geral | 0 | -0.09 | 0.06 | -0.08 | 0.03 | -0.25\* | -0.25\* | -0.19 | -0.26\* | -0.07 |
| Satisfação\_do\_paciente | 0.08 | -0.23\* | -0.09 | -0.05 | 0.15 | -0.03 | -0.19 | -0.11 | -0.25\* | -0.14 |
| Capacidade\_funcional | 0.07 | 0.01 | 0.15 | 0.05 | -0.18 | 0.04 | -0.16 | -0.21 | -0.21 | 0.25\* |
| Limitações\_causadas\_por\_problemas\_de\_saúde\_física | 0.16 | 0.06 | -0.03 | -0.1 | -0.09 | -0.01 | -0.17 | -0.25\* | -0.2 | 0.27\* |
| Dor | 0 | 0.09 | 0.17 | 0.08 | 0 | -0.01 | -0.27\* | -0.24\* | -0.14 | 0.06 |
| Percepção\_saúde\_geral | 0.14 | 0 | 0.03 | -0.22\* | 0.01 | -0.21 | -0.35\*\* | -0.33\*\* | -0.32\*\* | 0.01 |
| Bem-estar\_emocional | 0.25\* | 0.15 | 0.06 | -0.35\*\* | -0.1 | -0.09 | -0.41\*\*\* | -0.44\*\*\* | -0.45\*\*\* | 0.01 |
| Limitações\_causadas\_por\_problemas\_de\_saúde\_mental\_emocional | 0.15 | -0.04 | -0.03 | -0.21 | -0.02 | -0.17 | -0.26\* | -0.29\*\* | -0.28\*\* | 0.19 |
| Função\_social | 0.04 | -0.1 | -0.01 | -0.21 | 0.01 | -0.1 | -0.22 | -0.32\*\* | -0.21 | 0.04 |
| Vitalidade | 0.31\*\* | 0.19 | 0.09 | -0.16 | -0.09 | -0.13 | -0.4\*\*\* | -0.39\*\*\* | -0.39\*\*\* | 0 |
| Componente\_físico | 0.11 | 0.09 | 0.09 | 0.02 | -0.04 | -0.02 | -0.21 | -0.22\* | -0.15 | 0.18 |
| Componente\_mental | 0.24\* | 0.05 | 0.02 | -0.37\*\*\* | -0.04 | -0.17 | -0.37\*\*\* | -0.4\*\*\* | -0.37\*\*\* | 0.03 |

correlations2$stars %>% kable()

|  | tre\_cod\_40 | TRE\_ine | TRE\_efi | ebq\_ctrl | ebq\_utin | ebq\_utip | DASS\_dep | DASS\_ans | DASS\_est | SMM\_total |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ktv\_total | 0.11 | -0.04 | 0.04 | 0.16 | -0.04 | 0.27\* | -0.01 | 0.08 | -0.01 | 0.1 |
| pot\_total | -0.08 | -0.18 | 0.11 | -0.23\* | -0.12 | -0.13 | -0.08 | -0.04 | -0.02 | -0.06 |
| fos\_total | 0.07 | 0.21 | -0.14 | -0.05 | -0.12 | 0.01 | -0.02 | -0.09 | -0.03 | 0.17 |
| gpi\_total | 0.06 | 0 | -0.07 | 0.08 | -0.04 | 0.02 | 0.07 | -0.06 | -0.01 | 0.17 |
| fal\_total | 0.22 | 0.19 | -0.24 | -0.17 | 0.1 | -0.14 | -0.1 | -0.23 | -0.12 | -0.25 |
| hos\_total | NA? | -0.42 | 0.42 | -0.42 | -0.85 | NA? | 0.8 | 0.74 | 0.73 | 0.42 |

# regressões para predição de qualidade de vida (física e mental)  
  
lm\_mod1 <- lm(Componente\_físico ~ DASS\_ans, data = df1, na.action = na.omit)  
  
lm\_mod2 <- lm(Componente\_mental ~ TRE\_ine+ebq\_ctrl+DASS\_dep+DASS\_ans+DASS\_est, data = df1, na.action = na.omit)  
  
summary(lm\_mod2)

##   
## Call:  
## lm(formula = Componente\_mental ~ TRE\_ine + ebq\_ctrl + DASS\_dep +   
## DASS\_ans + DASS\_est, data = df1, na.action = na.omit)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -27.4800 -5.0971 -0.5287 7.9077 18.3392   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 52.3359 6.4434 8.122 5.91e-12 \*\*\*  
## TRE\_ine 5.5277 8.8913 0.622 0.536   
## ebq\_ctrl -2.4111 0.9591 -2.514 0.014 \*   
## DASS\_dep -2.7490 3.5352 -0.778 0.439   
## DASS\_ans -3.6208 4.1820 -0.866 0.389   
## DASS\_est -1.8623 2.9667 -0.628 0.532   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 10.18 on 77 degrees of freedom  
## Multiple R-squared: 0.2427, Adjusted R-squared: 0.1935   
## F-statistic: 4.936 on 5 and 77 DF, p-value: 0.0005684

# regressoes para predição de adesão ao tratamento  
  
lm\_mod3 <- lm(ktv\_total ~ ebq\_utip , data = df1, na.action = na.omit)  
lm\_mod4 <- lm(pot\_total ~ ebq\_ctrl , data = df1, na.action = na.omit)  
lm\_mod5 <- lm(gpi\_total ~ adesao , data = df1, na.action = na.omit)  
lm\_mod6 <- lm(hos\_total ~ DASS\_dep + DASS\_ans , data = df1, na.action = na.omit)  
  
# =====  
  
lm\_mod7 <- lm(Componente\_mental ~ adesao+  
 TRE\_ine+  
 TRE\_efi+  
 ebq\_ctrl+  
 ebq\_utin+  
 ebq\_utip+  
 DASS\_dep+  
 DASS\_ans+  
 DASS\_est+  
 SMM\_total,   
 data = df1, na.action = na.omit)  
  
summary(lm\_mod7)

##   
## Call:  
## lm(formula = Componente\_mental ~ adesao + TRE\_ine + TRE\_efi +   
## ebq\_ctrl + ebq\_utin + ebq\_utip + DASS\_dep + DASS\_ans + DASS\_est +   
## SMM\_total, data = df1, na.action = na.omit)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -25.9053 -6.0579 0.2603 7.0357 17.7425   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 41.9088 14.7927 2.833 0.00598 \*\*  
## adesao 0.5971 1.5575 0.383 0.70259   
## TRE\_ine 6.3767 9.3429 0.683 0.49710   
## TRE\_efi 0.2337 10.2215 0.023 0.98182   
## ebq\_ctrl -2.4045 1.0916 -2.203 0.03081 \*   
## ebq\_utin 0.3073 0.8768 0.350 0.72702   
## ebq\_utip -0.7609 1.2817 -0.594 0.55461   
## DASS\_dep -3.0733 3.8119 -0.806 0.42276   
## DASS\_ans -3.8039 4.5040 -0.845 0.40115   
## DASS\_est -1.3214 3.1556 -0.419 0.67664   
## SMM\_total 3.1171 3.2087 0.971 0.33458   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 10.43 on 72 degrees of freedom  
## Multiple R-squared: 0.2562, Adjusted R-squared: 0.1529   
## F-statistic: 2.48 on 10 and 72 DF, p-value: 0.01296

# =====  
  
summary(lm\_mod3)

##   
## Call:  
## lm(formula = ktv\_total ~ ebq\_utip, data = df1, na.action = na.omit)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -0.79220 -0.28819 -0.03736 0.25719 1.10598   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 1.54948 0.07428 20.86 <2e-16 \*\*\*  
## ebq\_utip 0.10454 0.04068 2.57 0.012 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 0.387 on 81 degrees of freedom  
## Multiple R-squared: 0.0754, Adjusted R-squared: 0.06398   
## F-statistic: 6.605 on 1 and 81 DF, p-value: 0.012

summary(lm\_mod4)

##   
## Call:  
## lm(formula = pot\_total ~ ebq\_ctrl, data = df1, na.action = na.omit)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -1.19083 -0.34999 -0.07681 0.35326 2.24251   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 5.33624 0.14068 37.931 <2e-16 \*\*\*  
## ebq\_ctrl -0.11208 0.05308 -2.111 0.0378 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 0.6027 on 81 degrees of freedom  
## Multiple R-squared: 0.05217, Adjusted R-squared: 0.04046   
## F-statistic: 4.458 on 1 and 81 DF, p-value: 0.03782

summary(lm\_mod5)

##   
## Call:  
## lm(formula = gpi\_total ~ adesao, data = df1, na.action = na.omit)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -2.17778 -0.77901 0.01179 0.70945 2.33400   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 5.0599 0.6101 8.294 1.98e-12 \*\*\*  
## adesao -0.3922 0.1439 -2.726 0.00787 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 1.063 on 81 degrees of freedom  
## Multiple R-squared: 0.084, Adjusted R-squared: 0.0727   
## F-statistic: 7.428 on 1 and 81 DF, p-value: 0.007866

summary(lm\_mod6)

##   
## Call:  
## lm(formula = hos\_total ~ DASS\_dep + DASS\_ans, data = df1, na.action = na.omit)  
##   
## Residuals:  
## ALL 3 residuals are 0: no residual degrees of freedom!  
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)  
## (Intercept) 1.923 NaN NaN NaN  
## DASS\_dep 16.423 NaN NaN NaN  
## DASS\_ans -14.462 NaN NaN NaN  
##   
## Residual standard error: NaN on 0 degrees of freedom  
## (80 observations deleted due to missingness)  
## Multiple R-squared: 1, Adjusted R-squared: NaN   
## F-statistic: NaN on 2 and 0 DF, p-value: NA

write\_csv(df1,"df1.csv")