

Demographic Characteristics for Meta Study

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Setup

Chunk Defaults

Packages for lab workflow

```
library(here)
```

Packages for script

```
library(tidyverse)
library(janitor)
library(lubridate)
library(ggplot2)
library(kableExtra)
library(vip)
library(tictoc)
```

```
theme_set(theme_classic())
```

Set additional paths

```
path_models <- "meta/ana_scripts/model_output"
path_results <- "P:/studydata/risk/chte/meta/jobs/training/model_selection/output/results"
path_features <- "P:/studydata/risk/chte/meta/jobs/training/model_selection/input"
path_figures <- "meta/ana_scripts/figures"
path_meta <- "P:/studydata/risk/data_processed/meta"
path_shared <- "P:/studydata/risk/data_processed/shared"
```

Source function scripts from lab support

```
source(here("../lab_support/print_kbl.R"))
```

Read in data

```
study_dates <- vroom::vroom(here(path_meta, "study_dates.csv"), col_types = vroom::cols()) %>%
  mutate(across(study_start:ema_end, ~with_tz(., tzone = "America/Chicago"))) %>%
  glimpse()
```

```
## Rows: 151
## Columns: 6
## $ subid      <dbl> 1, 2, 3, 5, 6, 7, 9, 10, 11, 15, 16, 18, 19, 20, 21, 23, 2~
## $ study_start <dtm> 2017-03-02, 2017-03-24, 2017-03-22, 2017-06-20, 2017-06-1~
## $ comm_start  <dtm> 2017-04-21 17:01:40, 2016-07-03 15:58:19, 2017-03-21 15:0~
## $ data_start  <dtm> 2017-03-02 00:00:00, 2016-07-03 15:58:19, 2017-03-21 15:0~
## $ study_end   <dtm> 2017-05-31, 2017-06-16, 2017-06-20, 2017-09-18, 2017-09-1~
```

```
## $ ema_end      <dtm> 2017-05-30 11:10:53, 2017-06-16 09:18:40, 2017-06-19 21:0~
data_id <- vroom::vroom(here(path_meta, "static_features.csv"), col_types = vroom::cols()) %>%
  mutate(id_quit_date = with_tz(id_quit_date, tzone = "America/Chicago")) %>%
  filter(subid %in% study_dates$subid) %>%
  glimpse()
```

```
## Rows: 151
## Columns: 129
## $ subid          <dbl> 1, 2, 3, 5, 6, 7, 10, ~
## $ id_age         <dbl> 57, 35, 22, 39, 22, 3~
## $ id_gender      <chr> "Male", "Female", "Fe~
## $ id_race        <chr> "White/Caucasian", "W~
## $ id_hispanic    <chr> "no", "no", "no", "no~
## $ id_education   <chr> "College degree", "2~
## $ id_employment  <chr> "Unemployed", "Full-t~
## $ id_income      <dbl> 12000, 36920, 20064, ~
## $ id_marrital_status <chr> "Never Married", "Nev~
## $ id_age_first_drunk <dbl> 12, 14, 14, 16, 15, 1~
## $ id_age_drunk_regularly <dbl> 56, 16, 18, 18, 18, 2~
## $ id_age_believed_drinking_was_problem <dbl> 47, 19, 21, 35, 20, 3~
## $ id_age_first_quit_drinking <dbl> 47, 21, 21, 39, 21, 3~
## $ id_number_quit_attempts <dbl> 4, 10, 2, 0, 4, 6, 2, ~
## $ id_tx_long_term_residential <chr> "no", "no", "no", "no~
## $ id_tx_short_term_residential <chr> "yes", "no", "no", "n~
## $ id_tx_outpatient <chr> "no", "yes", "no", "n~
## $ id_tx_indiv_counseling <chr> "no", "yes", "no", "y~
## $ id_tx_group_counseling <chr> "no", "no", "yes", "y~
## $ id_tx_aa_or_na <chr> "no", "yes", "no", "y~
## $ id_tx_other    <chr> "no", "no", "no", "ye~
## $ id_aud_medication <chr> "Yes", "Yes", "No", "~
## $ id_quit_date    <dtm> 2017-01-18, 2017-01--
## $ id_days_per_week_drunk_6_mos_before_quit <dbl> 5, 7, 3, 2, 6, 5, 4, ~
## $ id_days_per_week_drunk_heavily_6_mos_before_quit <dbl> 5, 5, 3, 1, 6, 5, 1, ~
## $ id_avg_drinks_per_day_6_mos_before_quit <dbl> 16, 6, 7, 4, 10, 8, 2~
## $ id_days_per_week_drunk_6_mos_heaviest <dbl> 6, 7, 5, 4, 7, 6, 5, ~
## $ id_days_per_week_drunk_heavily_6_mos_heaviest <dbl> 6, 5, 5, 1, 7, 6, 2, ~
## $ id_avg_drinks_per_day_6_mos_heaviest <dbl> 24, 6, 10, 4, 12, 10, ~
## $ id_lifetime_use_tobacco <dbl> 1, 1, 1, 0, 1, 1, 1, ~
## $ id_lifetime_use_cannabis <dbl> 1, 1, 1, 1, 1, 1, 0, ~
## $ id_lifetime_use_cocaine <dbl> 1, 1, 1, 0, 1, 0, 0, ~
## $ id_lifetime_use_amphetamine <dbl> 0, 1, 1, 0, 1, 0, 0, ~
## $ id_lifetime_use_inhalant <dbl> 0, 0, 0, 0, 1, 0, 0, ~
## $ id_lifetime_use_sedative <dbl> 1, 1, 1, 0, 1, 0, 0, ~
## $ id_lifetime_use_hallucinogen <dbl> 1, 1, 1, 0, 1, 1, 0, ~
## $ id_lifetime_use_opioid <dbl> 1, 1, 1, 0, 1, 0, 0, ~
## $ id_lifetime_n_drugs_endorsed <dbl> 6, 7, 7, 1, 8, 3, 1, ~
## $ id_past_3_mo_freq_tobacco <chr> "Weekly", "Never", "D~
## $ id_past_3_mo_freq_cannabis <chr> "Never", "Never", "Da~
## $ id_past_3_mo_freq_cocaine <chr> "Never", "Never", "Ne~
## $ id_past_3_mo_freq_amphetamine <chr> "Never", "Never", "Ne~
## $ id_past_3_mo_freq_inhalant <chr> "Never", "Never", "Ne~
## $ id_past_3_mo_freq_sedative <chr> "Never", "Never", "Ne~
## $ id_past_3_mo_freq_hallucinogen <chr> "Never", "Never", "Ne~
## $ id_past_3_mo_freq_opioid <chr> "Weekly", "Never", "N~
```

## \$ id_past_3_mo_urge_tobacco	<chr> "Weekly", "Never", "D~
## \$ id_past_3_mo_urge_cannabis	<chr> "Never", "Never", "Da~
## \$ id_past_3_mo_urge_cocaine	<chr> "Never", "Never", "On~
## \$ id_past_3_mo_urge_amphetamine	<chr> "Never", "Never", "On~
## \$ id_past_3_mo_urge_inhalant	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_urge_sedative	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_urge_hallucinogen	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_urge_opioid	<chr> "Weekly", "Never", "O~
## \$ id_past_3_mo_problem_tobacco	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_problem_cannabis	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_problem_cocaine	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_problem_amphetamine	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_problem_inhalant	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_problem_sedative	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_problem_hallucinogen	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_problem_opioid	<chr> "Once or Twice", "Nev~
## \$ id_past_3_mo_fail_expect_tobacco	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_fail_expect_cannabis	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_fail_expect_cocaine	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_fail_expect_amphetamine	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_fail_expect_inhalant	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_fail_expect_sedative	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_fail_expect_hallucinogen	<chr> "Never", "Never", "Ne~
## \$ id_past_3_mo_fail_expect_opioid	<chr> "Never", "Never", "Ne~
## \$ id_lifetime_concern_tobacco	<chr> "Never", "Never", "Ne~
## \$ id_lifetime_concern_cannabis	<chr> "Never", "Never", "Ne~
## \$ id_lifetime_concern_cocaine	<chr> "Never", "Never", "On~
## \$ id_lifetime_concern_amphetamine	<chr> "Never", "Never", "On~
## \$ id_lifetime_concern_inhalant	<chr> "Never", "Never", "Ne~
## \$ id_lifetime_concern_sedative	<chr> "Never", "Never", "We~
## \$ id_lifetime_concern_hallucinogen	<chr> "Never", "Never", "Ne~
## \$ id_lifetime_concern_opioid	<chr> "Monthly", "Never", "~
## \$ id_lifetime_cutback_tobacco	<chr> "Monthly", "Never", "~
## \$ id_lifetime_cutback_cannabis	<chr> "Never", "Never", "Da~
## \$ id_lifetime_cutback_cocaine	<chr> "Never", "Never", "Ne~
## \$ id_lifetime_cutback_amphetamine	<chr> "Never", "Never", "Ne~
## \$ id_lifetime_cutback_inhalant	<chr> "Never", "Never", "Ne~
## \$ id_lifetime_cutback_sedative	<chr> "Never", "Never", "On~
## \$ id_lifetime_cutback_hallucinogen	<chr> "Never", "Never", "Ne~
## \$ id_lifetime_cutback_opioid	<chr> "Once or Twice", "Nev~
## \$ id_lifetime_drug_injection	<chr> "Yes, but not in the ~
## \$ id_dsm5_total	<dbl> 10, 6, 9, 7, 11, 6, 7~
## \$ id_yap_lifetime	<dbl> 19, 23, 21, 15, 25, 1~
## \$ id_yap_past_year	<dbl> 18, 12, 18, 12, 25, 1~
## \$ id_scl90_total	<dbl> 0.04, 0.09, -0.81, 0.~
## \$ id_scl90_somatization	<dbl> 0.00, 0.08, -0.75, 0.~
## \$ id_scl90_obsess_compuls	<dbl> 0.2, 0.7, -0.8, 1.0, ~
## \$ id_scl90_interpers_sensibility	<dbl> 0.00, -0.44, -0.56, 0~
## \$ id_scl90_depression	<dbl> 0.50, 0.58, -0.75, 0.~
## \$ id_scl90_anxiety	<dbl> 0.00, 0.33, -0.89, 0.~
## \$ id_scl90_anger_hostility	<dbl> -0.33, -0.17, -0.83, ~
## \$ id_scl90_phobic_anxiety	<dbl> -0.71, -0.57, -1.00, ~
## \$ id_scl90_paranoid	<dbl> 0.00, -0.17, -0.83, 0~
## \$ id_scl90_psychoticism	<dbl> -0.2, -0.2, -1.0, 0.1~

```
## $ id_ius_total <dbl> 91, 92, 32, 82, 92, 6~
## $ id_asi3_total <dbl> 13, 9, -18, 24, 11, 2~
## $ id_asi3_phys_concerns <dbl> 5, -1, -6, 4, -5, 10, ~
## $ id_asi3_cog_concerns <dbl> 4, 3, -6, 13, 10, 4, ~
## $ id_asi3_soc_concerns <dbl> 4, 7, -6, 7, 6, 9, 15~
## $ id_dts_total <dbl> 2.93, 2.13, 1.47, 3.0~
## $ id_dts_tolerance <dbl> 2.33, 2.33, 1.00, 3.0~
## $ id_dts_absorption <dbl> 3.00, 2.33, 1.67, 2.6~
## $ id_dts_appraisal <dbl> 3.17, 2.00, 1.00, 2.8~
## $ id_dts_regulation <dbl> 3.00, 2.00, 2.67, 4.0~
## $ id_fad_prob_solving <dbl> 14, 13, 19, 19, 10, 1~
## $ id_fad_communication <dbl> 24, 23, 29, 22, 16, 2~
## $ id_fad_roles <dbl> 31, 22, 38, 27, 22, 3~
## $ id_fad_affective_resp <dbl> 16, 14, 24, 17, 10, 2~
## $ id_fad_affective_involv <dbl> 16, 16, 28, 20, 17, 2~
## $ id_fad_behavior_control <dbl> 26, 21, 33, 28, 18, 2~
## $ id_fad_gen_functioning <dbl> 30, 27, 48, 40, 20, 4~
## $ id_mps_wellbeing <dbl> 6, 1, 11, 10, 0, 12, ~
## $ id_mps_social_potency <dbl> 4, 7, 4, 10, 11, 9, 1~
## $ id_mps_achievement <dbl> 9, 8, 6, 11, 8, 9, 5, ~
## $ id_mps_social_closeness <dbl> 6, 3, 11, 9, 6, 11, 4~
## $ id_mps_stress_reaction <dbl> 12, 8, 0, 6, 11, 6, 1~
## $ id_mps_alienation <dbl> 0, 4, 2, 6, 3, 0, 7, ~
## $ id_mps_aggression <dbl> 1, 6, 2, 4, 5, 1, 2, ~
## $ id_mps_control <dbl> 4, 12, 9, 7, 3, 5, 8, ~
## $ id_mps_harm_avoidance <dbl> 9, 12, 9, 5, 0, 8, 9, ~
## $ id_mps_traditionalism <dbl> 6, 9, 3, 7, 6, 1, 2, ~
## $ id_mps_absorption <dbl> 11, 5, 6, 9, 3, 7, 11~
## $ id_mps_unlikely_virtues <dbl> 0, 0, 6, 1, 1, 2, 0, ~
```

```
data_context <- vroom::vroom(here(path_shared, "contacts.csv"), col_types = vroom::cols()) %>%
  filter(subid %in% study_dates$subid) %>%
  glimpse()
```

```
## Rows: 6,997
## Columns: 15
## $ subid <dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2~
## $ utc <dbl> 1487871000, 1487871000, 1487871000, 1487871000, 1~
## $ contact_type <chr> "Self", "Parent", "Other", "Friend", "Co-Worker/B~
## $ phone_type <chr> "cell_phone", "home_phone", "cell_phone", "cell_p~
## $ phone_number <dbl> 6083588174, 6082227282, 6085149557, 6084385017, 6~
## $ contact_drank_past <chr> NA, "Never/Almost Never", "Never/Almost Never", "~
## $ drink_status <chr> NA, "Drinker", "NonDrinker", "NonDrinker", "Dont ~
## $ contact_drink_future <chr> NA, "Yes", "No", "No", "No", "Yes", "Yes", "No", ~
## $ recovery <chr> NA, "No", "Yes", "Dont Know", "Yes", "No", "No", ~
## $ support_status <chr> NA, "Supportive", "Neutral", "Supportive", "Suppo~
## $ contact_experience <chr> NA, "Mixed", "Mixed", "Pleasant", "Pleasant", "Pl~
## $ monthly_visit <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ street_address <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ city <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ state <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
```

Summarize demographics and study characteristics

```
dem <- data_id %>%
  summarise(mean = as.character(round(mean(id_age, na.rm = TRUE), 1)),
            SD = as.character(round(sd(id_age, na.rm = TRUE), 1))) %>%
  mutate(var = "Age",
         n = as.numeric(""),
         perc = as.numeric("")) %>%
  select(var, n, perc, everything()) %>%
  full_join(data_id %>%
    select(var = id_gender) %>%
    group_by(var) %>%
    summarise(n = n()) %>%
    mutate(perc = (n / sum(n)) * 100), by = c("var", "n", "perc")) %>%
  full_join(data_id %>%
    select(var = id_race) %>%
    mutate(var = fct_relevel(factor(var,
                                   c("American Indian/Alaska Native", "Asian", "Black/African American",
                                      "White/Caucasian", "Other/Multiracial")))) %>%
    group_by(var) %>%
    summarise(n = n()) %>%
    mutate(perc = (n / sum(n)) * 100), by = c("var", "n", "perc")) %>%
  full_join(data_id %>%
    select(var = id_hispanic) %>%
    mutate(var = case_when(var == "no" ~ "No",
                          TRUE ~ "Yes"),
          var = fct_relevel(factor(var, c("Yes", "No")))) %>%
    group_by(var) %>%
    summarise(n = n()) %>%
    mutate(perc = (n / sum(n)) * 100), by = c("var", "n", "perc")) %>%
  full_join(data_id %>%
    select(var = id_education) %>%
    mutate(var = fct_relevel(factor(var,
                                   c("Less than high school or GED degree", "High school or GED",
                                      "Some college", "2-Year degree", "College degree", "Advanced degree")))) %>%
    group_by(var) %>%
    summarise(n = n()) %>%
    mutate(perc = (n / sum(n)) * 100), by = c("var", "n", "perc")) %>%
  full_join(data_id %>%
    select(var = id_employment) %>%
    mutate(var = fct_relevel(factor(var,
                                   c("Full-time", "Part-time", "Full-time student",
                                      "Homemaker", "Disabled", "Retired", "Unemployed",
                                      "Temporarily laid off, sick leave, or maternity leave",
                                      "Other, not otherwise specified")))) %>%
    group_by(var) %>%
    summarise(n = n()) %>%
    mutate(perc = (n / sum(n)) * 100), by = c("var", "n", "perc")) %>%
  full_join(data_id %>%
    summarise(mean = as.character(round(mean(id_income, na.rm = TRUE), 0)),
            SD = as.character(round(sd(id_income, na.rm = TRUE), 0))) %>%
    mutate(var = "Income",
         n = as.numeric(""),
         perc = as.numeric("")) %>%
```

```

select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(var = id_marrital_status) %>%
mutate(var = fct_relevel(factor(var,
c("Never Married", "Married", "Divorced", "Separated",
"Widowed")))) %>%

group_by(var) %>%
summarise(n = n()) %>%
mutate(perc = (n / sum(n)) * 100), by = c("var", "n", "perc"))

dem %>%
kbl(booktabs = TRUE,
caption = "Demographics",
col.names = c("", "n", "%", "M", "SD"),
align = c("l", "c", "c", "c", "c"),
digits = 1,
longtable = TRUE) %>%
kable_styling() %>%
row_spec(row = 0, align = "c", italic = TRUE) %>%
pack_rows("Sex", 2, 3, bold = FALSE) %>%
pack_rows("Race", 4, 8, bold = FALSE) %>%
pack_rows("Hispanic, Latino, or Spanish Origin", 9, 10, bold = FALSE) %>%
pack_rows("Education", 11, 16, bold = FALSE) %>%
pack_rows("Employment", 17, 25, bold = FALSE) %>%
pack_rows("Marital Status", 27, 31, bold = FALSE) %>%
footnote("N = 151")

```

Table 1: Demographics

	<i>n</i>	<i>%</i>	<i>M</i>	<i>SD</i>
Age			41	11.9
Sex				
Female	74	49.0		
Male	77	51.0		
Race				
American Indian/Alaska Native	3	2.0		
Asian	2	1.3		
Black/African American	8	5.3		
White/Caucasian	131	86.8		
Other/Multiracial	7	4.6		
Hispanic, Latino, or Spanish Origin				
Yes	4	2.6		
No	147	97.4		
Education				
Less than high school or GED degree	1	0.7		
High school or GED	14	9.3		
Some college	41	27.2		
2-Year degree	14	9.3		
College degree	58	38.4		
Advanced degree	23	15.2		
Employment				
Full-time	72	47.7		

Part-time	26	17.2		
Full-time student	7	4.6		
Homemaker	1	0.7		
Disabled	7	4.6		
Retired	8	5.3		
Unemployed	18	11.9		
Temporarily laid off, sick leave, or maternity leave	3	2.0		
Other, not otherwise specified	9	6.0		
Income			34298	31807
Marital Status				
Never Married	67	44.4		
Married	32	21.2		
Divorced	45	29.8		
Separated	5	3.3		
Widowed	2	1.3		

Note:

N = 151

AUD

```
aud <- data_id %>%
  summarise(mean = mean(id_age_first_drank, na.rm = TRUE),
            SD = sd(id_age_first_drank, na.rm = TRUE)) %>%
  mutate(var = "Age of first drink",
         n = as.numeric(""),
         perc = as.numeric("")) %>%
  select(var, n, perc, everything()) %>%
  full_join(data_id %>%
    summarise(mean = mean(id_age_drank_regularly, na.rm = TRUE),
              SD = sd(id_age_drank_regularly, na.rm = TRUE)) %>%
    mutate(var = "Age of regular drinking",
           n = as.numeric(""),
           perc = as.numeric("")) %>%
    select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
  full_join(data_id %>%
    summarise(mean = mean(id_age_believed_drinking_was_problem, na.rm = TRUE),
              SD = sd(id_age_believed_drinking_was_problem, na.rm = TRUE)) %>%
    mutate(var = "Age at which drinking became problematic",
           n = as.numeric(""),
           perc = as.numeric("")) %>%
    select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
  full_join(data_id %>%
    summarise(mean = mean(id_age_first_quit_drinking, na.rm = TRUE),
              SD = sd(id_age_first_quit_drinking, na.rm = TRUE)) %>%
    mutate(var = "Age of first quit attempt",
           n = as.numeric(""),
           perc = as.numeric("")) %>%
    select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
  full_join(data_id %>%
    summarise(mean = mean(id_number_quit_attempts, na.rm = TRUE),
              SD = sd(id_number_quit_attempts, na.rm = TRUE)) %>%
    mutate(var = "Number of Quit Attempts",
           n = as.numeric(""),
```

```

    perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
summarise(mean = mean(id_days_per_week_drunk_6_mos_before_quit, na.rm = TRUE),
          SD = sd(id_days_per_week_drunk_6_mos_before_quit, na.rm = TRUE)) %>%
mutate(var = "Days (per week) Drinking 6 Mos Before Quit Date",
      n = as.numeric(""),
      perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(var = id_tx_long_term_residential) %>%
mutate(var = case_when(var == "yes" ~ "Long-term residential (6+ mos.)",
                      TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_tx_short_term_residential) %>%
mutate(var = case_when(var == "yes" ~ "Short-term residential (< 6 mos.)",
                      TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_tx_outpatient) %>%
mutate(var = case_when(var == "yes" ~ "Outpatient",
                      TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_tx_indiv_counseling) %>%
mutate(var = case_when(var == "yes" ~ "Individual counseling",
                      TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_tx_group_counseling) %>%
mutate(var = case_when(var == "yes" ~ "Group counseling",
                      TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_tx_aa_or_na) %>%
mutate(var = case_when(var == "yes" ~ "Alcoholics Anonymous/Narcotics Anonymous",
                      TRUE ~ as.character(NA))) %>%

```



```

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_tx_other) %>%
mutate(var = case_when(var == "yes" ~ "Other",
TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_aud_medication) %>%
mutate(var = fct_relevel(factor(var, c("Yes", "No")))) %>%
group_by(var) %>%
summarise(n = n()) %>%
mutate(perc = (n / sum(n)) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(id_dsm5_total) %>%
summarise(mean = mean(id_dsm5_total),
SD = sd(id_dsm5_total)) %>%
mutate(var = "AUD DSM-5 Symptom Count",
n = as.numeric(""),
perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(var = id_lifetime_use_tobacco) %>%
mutate(var = case_when(var == 1 ~ "Tobacco products (cigarettes, chewing tobacco, cigars, etc.)",
TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_lifetime_use_cannabis) %>%
mutate(var = case_when(var == 1 ~ "Cannabis (marijuana, pot, grass, hash, etc.)",
TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_lifetime_use_cocaine) %>%
mutate(var = case_when(var == 1 ~ "Cocaine (coke, crack, etc.)",
TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_lifetime_use_amphetamine) %>%
mutate(var = case_when(var == 1 ~ "Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)",

```

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TRUE ~ as.character(NA))) %>%
group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_lifetime_use_inhalant) %>%
mutate(var = case_when(var == 1 ~ "Inhalants (nitrous, glue, petrol, paint thinner, etc.)",
TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_lifetime_use_sedative) %>%
mutate(var = case_when(var == 1 ~ "Sedatives or sleeping pills (Valium, Serepax, Rohypnol, etc.)",
TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_lifetime_use_hallucinogen) %>%
mutate(var = case_when(var == 1 ~ "Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)",
TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(var = id_lifetime_use_opioid) %>%
mutate(var = case_when(var == 1 ~ "Opioids (heroin, morphine, methadone, codeine, etc.)",
TRUE ~ as.character(NA))) %>%

group_by(var) %>%
drop_na() %>%
summarise(n = n()) %>%
mutate(perc = (n / 151) * 100), by = c("var", "n", "perc")) %>%
full_join(data_id %>%
select(id_lifetime_n_drugs_endorsed) %>%
summarise(mean = mean(id_lifetime_n_drugs_endorsed),
SD = sd(id_lifetime_n_drugs_endorsed)) %>%
mutate(var = "Lifetime Drugs Endorsed",
n = as.numeric(""),
perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(var = id_lifetime_drug_injection) %>%
mutate(var = if_else(var == "No, never", "No", "Yes")) %>%
mutate(var = fct_relevel(factor(var, c("Yes", "No")))) %>%
group_by(var) %>%
summarise(n = n()) %>%
mutate(perc = (n / sum(n)) * 100), by = c("var", "n", "perc"))

```

```

aud %>%
  kbl(booktabs = TRUE,
       caption = "History of Lifetime Drug and Alcohol Use",
       col.names = c("", "n", "%", "M", "SD"),
       align = c("l", "c", "c", "c", "c"),
       digits = 1,
       longtable = TRUE) %>%
  kable_styling() %>%
  row_spec(row = 0, align = "c", italic = TRUE) %>%
  pack_rows("AUD Milestones", 1, 4, bold = FALSE) %>%
  pack_rows("Types of Treatment (Can choose more than 1)", 7, 13, bold = FALSE) %>%
  pack_rows("Received Medication for AUD", 14, 15, bold = FALSE) %>%
  pack_rows("Lifetime Drug Use", 17, 24, bold = FALSE) %>%
  pack_rows("Lifetime Drug Injection", 26, 27, bold = FALSE) %>%
  footnote("N = 151")

```

Table 2: History of Lifetime Drug and Alcohol Use

	<i>n</i>	<i>%</i>	<i>M</i>	<i>SD</i>
AUD Milestones				
Age of first drink			14.6	2.9
Age of regular drinking			19.5	6.6
Age at which drinking became problematic			27.8	9.6
Age of first quit attempt			31.5	10.4
Number of Quit Attempts			8.5	30.7
Days (per week) Drinking 6 Mos Before Quit Date			5.2	1.8
Types of Treatment (Can choose more than 1)				
Long-term residential (6+ mos.)	8	5.3		
Short-term residential (< 6 mos.)	49	32.5		
Outpatient	74	49.0		
Individual counseling	97	64.2		
Group counseling	62	41.1		
Alcoholics Anonymous/Narcotics Anonymous	93	61.6		
Other	40	26.5		
Received Medication for AUD				
Yes	59	39.1		
No	92	60.9		
AUD DSM-5 Symptom Count			8.9	1.9
Lifetime Drug Use				
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	120	79.5		
Cannabis (marijuana, pot, grass, hash, etc.)	129	85.4		
Cocaine (coke, crack, etc.)	84	55.6		
Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	79	52.3		
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	35	23.2		
Sedatives or sleeping pills (Valium, Serenax, Rohypnol, etc.)	70	46.4		
Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	86	57.0		
Opioids (heroin, morphine, methadone, codeine, etc.)	64	42.4		
Lifetime Drugs Endorsed			4.4	2.5
Lifetime Drug Injection				
Yes	12	7.9		
No	139	92.1		

Note:

N = 151

Mental Health Characteristics

```
data_id %>%
  select(id_scl90_total) %>%
  summarise(mean = mean(id_scl90_total),
            SD = sd(id_scl90_total)) %>%
  mutate(var = "Total Score",
         n = as.numeric(""),
         perc = as.numeric("")) %>%
  select(var, n, perc, everything()) %>%
  full_join(data_id %>%
    select(id_scl90_somatization) %>%
    summarise(mean = mean(id_scl90_somatization),
              SD = sd(id_scl90_somatization)) %>%
    mutate(var = "Somatization Subscale",
           n = as.numeric(""),
           perc = as.numeric("")) %>%
    select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
  full_join(data_id %>%
    select(id_scl90_obsess_compuls) %>%
    summarise(mean = mean(id_scl90_obsess_compuls),
              SD = sd(id_scl90_obsess_compuls)) %>%
    mutate(var = "Obsessive-compulsive Subscale",
           n = as.numeric(""),
           perc = as.numeric("")) %>%
    select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
  full_join(data_id %>%
    select(id_scl90_interpers_sensibility) %>%
    summarise(mean = mean(id_scl90_interpers_sensibility),
              SD = sd(id_scl90_interpers_sensibility)) %>%
    mutate(var = "Interpersonal Sensibility Subscale",
           n = as.numeric(""),
           perc = as.numeric("")) %>%
    select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
  full_join(data_id %>%
    select(id_scl90_depression) %>%
    summarise(mean = mean(id_scl90_depression),
              SD = sd(id_scl90_depression)) %>%
    mutate(var = "Depression Subscale",
           n = as.numeric(""),
           perc = as.numeric("")) %>%
    select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
  full_join(data_id %>%
    select(id_scl90_anxiety) %>%
    summarise(mean = mean(id_scl90_anxiety),
              SD = sd(id_scl90_anxiety)) %>%
    mutate(var = "Anxiety Subscale",
           n = as.numeric(""),
           perc = as.numeric("")) %>%
    select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
  full_join(data_id %>%
    select(id_scl90_anger_hostility) %>%
```

```

summarise(mean = mean(id_scl90_anger_hostility),
          SD = sd(id_scl90_anger_hostility)) %>%
mutate(var = "Anger-hostility Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_scl90_phobic_anxiety) %>%
summarise(mean = mean(id_scl90_phobic_anxiety),
          SD = sd(id_scl90_phobic_anxiety)) %>%
mutate(var = "Phobic-anxiety Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_scl90_somatization) %>%
summarise(mean = mean(id_scl90_somatization),
          SD = sd(id_scl90_somatization)) %>%
mutate(var = "Somatization Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_scl90_paranoid) %>%
summarise(mean = mean(id_scl90_paranoid),
          SD = sd(id_scl90_paranoid)) %>%
mutate(var = "Paranoid Ideation Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_scl90_psychoticism) %>%
summarise(mean = mean(id_scl90_psychoticism),
          SD = sd(id_scl90_psychoticism)) %>%
mutate(var = "Psychoticism Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_ius_total) %>%
summarise(mean = mean(id_ius_total),
          SD = sd(id_ius_total)) %>%
mutate(var = "Intolerance of Uncertainty",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_asi3_total) %>%
summarise(mean = mean(id_asi3_total),
          SD = sd(id_asi3_total)) %>%
mutate(var = "Total Score",
       n = as.numeric(""),
       perc = as.numeric("")) %>%

```

```

select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_as13_phys_concerns) %>%
summarise(mean = mean(id_as13_phys_concerns),
          SD = sd(id_as13_phys_concerns)) %>%
mutate(var = "Physical Concerns Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_as13_cog_concerns) %>%
summarise(mean = mean(id_as13_cog_concerns),
          SD = sd(id_as13_cog_concerns)) %>%
mutate(var = "Cognitive Concerns Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_as13_soc_concerns) %>%
summarise(mean = mean(id_as13_soc_concerns),
          SD = sd(id_as13_soc_concerns)) %>%
mutate(var = "Social Concerns Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_dts_total) %>%
summarise(mean = mean(id_dts_total),
          SD = sd(id_dts_total)) %>%
mutate(var = "Distress Tolerance Scale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_fad_prob_solving ) %>%
summarise(mean = mean(id_fad_prob_solving ),
          SD = sd(id_fad_prob_solving )) %>%
mutate(var = "Problem Solving Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_fad_communication) %>%
summarise(mean = mean(id_fad_communication),
          SD = sd(id_fad_communication)) %>%
mutate(var = "Communications Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_fad_roles) %>%
summarise(mean = mean(id_fad_roles),
          SD = sd(id_fad_roles)) %>%

```

```

mutate(var = "Roles Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_fad_affective_resp) %>%
summarise(mean = mean(id_fad_affective_resp),
          SD = sd(id_fad_affective_resp)) %>%
mutate(var = "Affective Responsiveness Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_fad_affective_involv) %>%
summarise(mean = mean(id_fad_affective_involv),
          SD = sd(id_fad_affective_involv)) %>%
mutate(var = "Affective Involvement Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_fad_behavior_control) %>%
summarise(mean = mean(id_fad_behavior_control),
          SD = sd(id_fad_behavior_control)) %>%
mutate(var = "Behavior Control Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_fad_gen_functioning) %>%
summarise(mean = mean(id_fad_gen_functioning),
          SD = sd(id_fad_gen_functioning)) %>%
mutate(var = "General Functioning Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_mps_wellbeing) %>%
summarise(mean = mean(id_mps_wellbeing),
          SD = sd(id_mps_wellbeing)) %>%
mutate(var = "Wellbeing Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_mps_social_potency) %>%
summarise(mean = mean(id_mps_social_potency),
          SD = sd(id_mps_social_potency)) %>%
mutate(var = "Social Potency Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%

```

```

select(id_mps_achievement) %>%
summarise(mean = mean(id_mps_achievement),
          SD = sd(id_mps_achievement)) %>%
mutate(var = "Achievement Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_mps_social_closeness) %>%
summarise(mean = mean(id_mps_social_closeness),
          SD = sd(id_mps_social_closeness)) %>%
mutate(var = "Social Closeness Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_mps_stress_reaction) %>%
summarise(mean = mean(id_mps_stress_reaction),
          SD = sd(id_mps_stress_reaction)) %>%
mutate(var = "Stress Reaction Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_mps_alienation) %>%
summarise(mean = mean(id_mps_alienation),
          SD = sd(id_mps_alienation)) %>%
mutate(var = "Alienation Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_mps_aggression) %>%
summarise(mean = mean(id_mps_aggression),
          SD = sd(id_mps_aggression)) %>%
mutate(var = "Aggression Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_mps_control) %>%
summarise(mean = mean(id_mps_control),
          SD = sd(id_mps_control)) %>%
mutate(var = "Control Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_mps_harm_avoidance) %>%
summarise(mean = mean(id_mps_harm_avoidance),
          SD = sd(id_mps_harm_avoidance)) %>%
mutate(var = "Harm Avoidance Subscale",
       n = as.numeric("")),

```



```

    perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_mps_traditionalism) %>%
summarise(mean = mean(id_mps_traditionalism),
          SD = sd(id_mps_traditionalism)) %>%
mutate(var = "Traditionalism Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_mps_absorption ) %>%
summarise(mean = mean(id_mps_absorption ),
          SD = sd(id_mps_absorption )) %>%
mutate(var = "Absorption Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
full_join(data_id %>%
select(id_mps_unlikely_virtues) %>%
summarise(mean = mean(id_mps_unlikely_virtues),
          SD = sd(id_mps_unlikely_virtues)) %>%
mutate(var = "Unlikely Virtues Subscale",
       n = as.numeric(""),
       perc = as.numeric("")) %>%
select(var, n, perc, everything()), by = c("var", "n", "perc", "mean", "SD")) %>%
kbl(booktabs = TRUE,
    caption = "Mental Health Characterization",
    col.names = c("", "n", "%", "M", "SD"),
    align = c("l", "c", "c", "c", "c"),
    digits = 1,
    longtable = TRUE) %>%
kable_styling() %>%
row_spec(row = 0, align = "c", italic = TRUE) %>%
pack_rows("Symptom Checklist 90", 1, 10, bold = FALSE) %>%
pack_rows("Anxiety Sensitivity Index", 12, 15, bold = FALSE) %>%
pack_rows("McMaster Family Assessment Device", 17, 23, bold = FALSE) %>%
pack_rows("Multidimensional Personality Questionnaire Short Form", 24, 35, bold = FALSE) %>%
footnote("N = 151")

```

Table 3: Mental Health Characterization

	<i>n</i>	<i>%</i>	<i>M</i>	<i>SD</i>
Symptom Checklist 90				
Total Score			0.0	0.7
Somatization Subscale			-0.1	0.7
Obsessive-compulsive Subscale			0.2	0.8
Interpersonal Sensibility Subscale			0.0	0.8
Depression Subscale			0.5	0.9
Anxiety Subscale			-0.1	0.8
Anger-hostility Subscale			-0.3	0.6
Phobic-anxiety Subscale			-0.5	0.8
Paranoid Ideation Subscale			-0.2	0.7

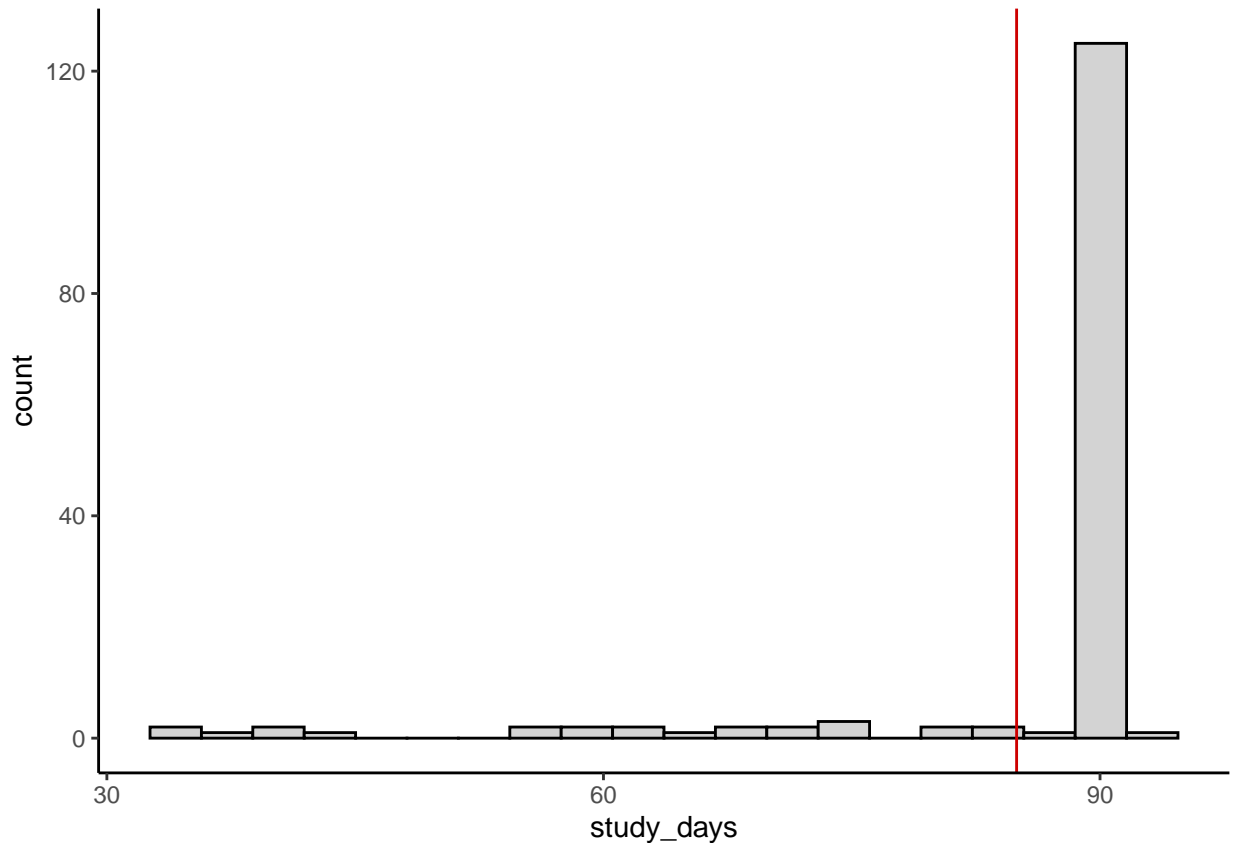
Psychoticism Subscale	-0.4	0.6
Intolerance of Uncertainty	70.2	22.0
Anxiety Sensitivity Index		
Total Score	7.7	16.2
Physical Concerns Subscale	1.3	6.3
Cognitive Concerns Subscale	1.3	6.8
Social Concerns Subscale	5.0	5.9
Distress Tolerance Scale	2.7	1.0
McMaster Family Assessment Device		
Problem Solving Subscale	16.5	3.2
Communications Subscale	24.3	4.7
Roles Subscale	30.8	5.0
Affective Responsiveness Subscale	16.3	3.5
Affective Involvement Subscale	19.3	4.0
Behavior Control Subscale	27.2	4.2
General Functioning Subscale	34.5	7.3
Multidimensional Personality Questionnaire Short Form		
Wellbeing Subscale	7.6	3.6
Social Potency Subscale	6.2	3.4
Achievement Subscale	7.1	3.1
Social Closeness Subscale	6.7	3.4
Stress Reaction Subscale	7.6	3.5
Alienation Subscale	3.5	3.4
Aggression Subscale	2.0	2.4
Control Subscale	7.2	2.9
Harm Avoidance Subscale	7.8	2.9
Traditionalism Subscale	5.3	2.9
Absorption Subscale	7.1	2.9
Unlikely Virtues Subscale	2.6	2.2

Note:

N = 151

Average days on study

```
study_dates %>%
  mutate(study_days = round(as.numeric(difftime(study_end, study_start, "days")))) %>%
  ggplot(aes(x = study_days)) +
  geom_histogram(bins = 20, color = "black", fill = "light grey") +
  geom_vline(aes(xintercept = mean(study_days)), study_dates %>%
  mutate(study_days = round(as.numeric(difftime(study_end, study_start, "days")))),
  color = "red3") +
  scale_x_continuous(breaks = c(0, 30, 60, 90), n.breaks = 4)
```



```
study_dates %>%
  mutate(study_days = round(as.numeric(difftime(study_end, study_start, "days")))) %>%
  summarise(mean = mean(study_days))
```

```
## # A tibble: 1 x 1
##   mean
##   <dbl>
## 1  85.0
```

Summarize context data

Number of contacts

```
data_context <- data_context %>%
  # filter out spam contacts and self
  filter(contact_type != "Irrelevant/Spam" & contact_type != "Self") %>%
  glimpse()
```

```
## Rows: 4,750
## Columns: 15
## $ subid      <dbl> 1, 1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2~
## $ utc        <dbl> 1487871000, 1487871000, 1487871000, 1487871000, 1~
## $ contact_type <chr> "Parent", "Other", "Friend", "Co-Worker/Business ~
## $ phone_type  <chr> "home_phone", "cell_phone", "cell_phone", "cell_p~
## $ phone_number <dbl> 6082227282, 6085149557, 6084385017, 6082131910, 6~
## $ contact_drank_past <chr> "Never/Almost Never", "Never/Almost Never", "Neve~
## $ drink_status <chr> "Drinker", "NonDrinker", "NonDrinker", "Dont Know~
```

```
## $ contact_drink_future <chr> "Yes", "No", "No", "No", "Yes", "Yes", "No", "Yes~
## $ recovery <chr> "No", "Yes", "Dont Know", "Yes", "No", "No", "Don~
## $ support_status <chr> "Supportive", "Neutral", "Supportive", "Supportiv~
## $ contact_experience <chr> "Mixed", "Mixed", "Pleasant", "Pleasant", "Pleasa~
## $ monthly_visit <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ street_address <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ city <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ state <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
```

```
data_context %>%
  group_by(subid) %>%
  summarise(n = n()) %>%
  ungroup() %>%
  summarise(mean = mean(n),
            sd = sd(n),
            min = min(n),
            max = max(n))
```

```
## # A tibble: 1 x 4
##   mean    sd   min   max
##   <dbl> <dbl> <int> <int>
## 1  31.5  22.0     3   161
```

Perc participants who talk to someone they used to drink with

```
data_context %>%
  select(subid, contact_drank_past) %>%
  group_by(subid) %>%
  count(contact_drank_past) %>%
  filter(contact_drank_past == "Almost Always/Always") %>%
  ungroup() %>%
  summarise (n_subids = n(),
            mean = mean(n),
            sd = sd(n),
            min = min(n),
            max = max(n))
```

```
## # A tibble: 1 x 5
##   n_subids mean    sd   min   max
##   <int> <dbl> <dbl> <int> <int>
## 1    109  5.91  7.24     1    61
```

```
data_context %>%
  select(subid, drink_status) %>%
  group_by(subid) %>%
  count(drink_status) %>%
  filter(drink_status == "Drinker") %>%
  ungroup() %>%
  bind_rows(., c(subid = 9999,
                n = 0)) %>%
  summarise (n_subids = n(),
            mean = mean(n),
            sd = sd(n),
            min = min(n),
            max = max(n))
```

```
## # A tibble: 1 x 5
```

```
##   n_subids mean    sd   min   max
##   <int> <dbl> <dbl> <dbl> <dbl>
## 1     151  17.7  15.0     0    97
```

```
data_context %>%
  select(subid, contact_drink_future ) %>%
  group_by(subid) %>%
  count(contact_drink_future ) %>%
  filter(contact_drink_future == "Yes") %>%
  ungroup() %>%
  summarise (n_subids = n(),
             mean = mean(n),
             sd = sd(n),
             min = min(n),
             max = max(n))
```

```
## # A tibble: 1 x 5
##   n_subids mean    sd   min   max
##   <int> <dbl> <dbl> <int> <int>
## 1     143   14  14.4     1    98
```

```
data_context %>%
  select(subid, recovery ) %>%
  group_by(subid) %>%
  count(recovery ) %>%
  filter(recovery == "Yes") %>%
  ungroup() %>%
  summarise (n_subids = n(),
             mean = mean(n),
             sd = sd(n),
             min = min(n),
             max = max(n))
```

```
## # A tibble: 1 x 5
##   n_subids mean    sd   min   max
##   <int> <dbl> <dbl> <int> <int>
## 1     120  4.37  4.35     1    26
```

```
data_context %>%
  select(subid, support_status ) %>%
  group_by(subid) %>%
  count(support_status ) %>%
  filter(support_status == "Supportive") %>%
  ungroup() %>%
  summarise (n_subids = n(),
             mean = mean(n),
             sd = sd(n),
             min = min(n),
             max = max(n))
```

```
## # A tibble: 1 x 5
##   n_subids mean    sd   min   max
##   <int> <dbl> <dbl> <int> <int>
## 1     149  15.5  12.1     1    66
```

```
data_context %>%
  select(subid, contact_experience ) %>%
```

```

group_by(subid) %>%
count(contact_experience ) %>%
pivot_wider(id_cols = subid, names_from = contact_experience, values_from = n) %>%
select(-`NA`) %>%
rowwise() %>%
mutate(prop_pleasant = Pleasant/sum(Mixed, Unpleasant, Neutral, Pleasant, na.rm = TRUE)) %>%
ungroup() %>%
summarise (mean = mean(prop_pleasant),
           sd = sd(prop_pleasant),
           min = min(prop_pleasant),
           max = max(prop_pleasant))

## # A tibble: 1 x 4
##   mean    sd   min   max
##   <dbl> <dbl> <dbl> <dbl>
## 1 0.750 0.168 0.222     1

data_context %>%
  select(subid, contact_experience ) %>%
  group_by(subid) %>%
  count(contact_experience ) %>%
  pivot_wider(id_cols = subid, names_from = contact_experience, values_from = n) %>%
  select(-`NA`) %>%
  rowwise() %>%
  mutate(prop_unpleasant = Unpleasant/sum(Mixed, Unpleasant, Neutral, Pleasant, na.rm = TRUE)) %>%
  ungroup() %>%
  summarise (mean = mean(prop_unpleasant, na.rm = TRUE),
            sd = sd(prop_unpleasant, na.rm = TRUE),
            min = min(prop_unpleasant, na.rm = TRUE),
            max = max(prop_unpleasant, na.rm = TRUE))

## # A tibble: 1 x 4
##   mean    sd   min   max
##   <dbl> <dbl> <dbl> <dbl>
## 1 0.0689 0.0533 0.0137 0.273

data_context %>%
  select(subid, contact_experience ) %>%
  group_by(subid) %>%
  count(contact_experience ) %>%
  pivot_wider(id_cols = subid, names_from = contact_experience, values_from = n) %>%
  select(-`NA`) %>%
  rowwise() %>%
  mutate(prop_mixed = Mixed/sum(Mixed, Unpleasant, Neutral, Pleasant, na.rm = TRUE)) %>%
  ungroup() %>%
  summarise (mean = mean(prop_mixed, na.rm = TRUE),
            sd = sd(prop_mixed, na.rm = TRUE),
            min = min(prop_mixed, na.rm = TRUE),
            max = max(prop_mixed, na.rm = TRUE))

## # A tibble: 1 x 4
##   mean    sd   min   max
##   <dbl> <dbl> <dbl> <dbl>
## 1 0.203 0.133 0.0189 0.778

```

Histograms for context variables

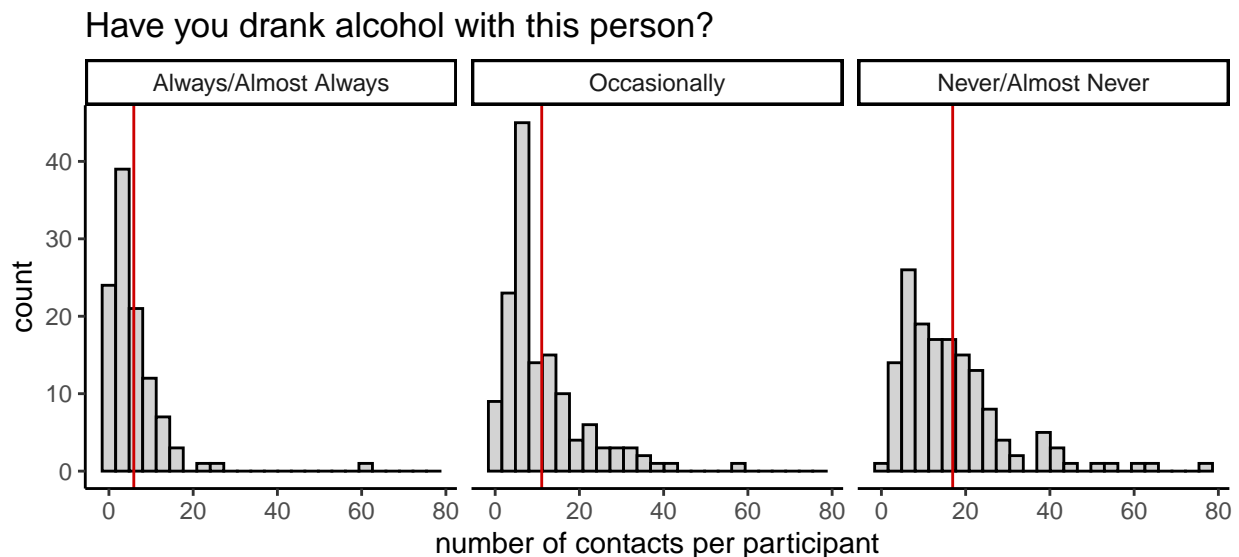
```

# figure 1
data_context %>%
  select(subid, contact_drunk_past) %>%
  group_by(subid) %>%
  count(contact_drunk_past) %>%
  mutate(contact_drunk_past = if_else(contact_drunk_past == "Almost Always/Always",
                                     "Always/Almost Always", contact_drunk_past)) %>%
  mutate(contact_drunk_past = factor(contact_drunk_past,
                                     levels = c("Always/Almost Always", "Occasionally",
                                                "Never/Almost Never"))) %>%

  drop_na(contact_drunk_past) %>%
  ggplot(aes(x = n, group = contact_drunk_past)) +
  facet_wrap(~ contact_drunk_past) +
  geom_histogram(bins = 25, color = "black", fill = "light grey") +
  geom_vline(aes(xintercept = mean_count), data_context %>%
    select(subid, contact_drunk_past) %>%
    group_by(subid) %>%
    count(contact_drunk_past) %>%
    mutate(contact_drunk_past = if_else(contact_drunk_past == "Almost Always/Always",
                                       "Always/Almost Always", contact_drunk_past)) %>%
    mutate(contact_drunk_past = factor(contact_drunk_past,
                                       levels = c("Always/Almost Always", "Occasionally",
                                                  "Never/Almost Never")))) %>%

  ungroup() %>%
  group_by(contact_drunk_past) %>%
  drop_na(contact_drunk_past) %>%
  summarise(mean_count = mean(n, na.rm = TRUE)), color = "red3") +
  labs(title = "Have you drank alcohol with this person?" +
    xlab("number of contacts per participant")

```



```

# figure 2
data_context %>%
  select(subid, drink_status) %>%
  group_by(subid) %>%
  count(drink_status) %>%

```

```

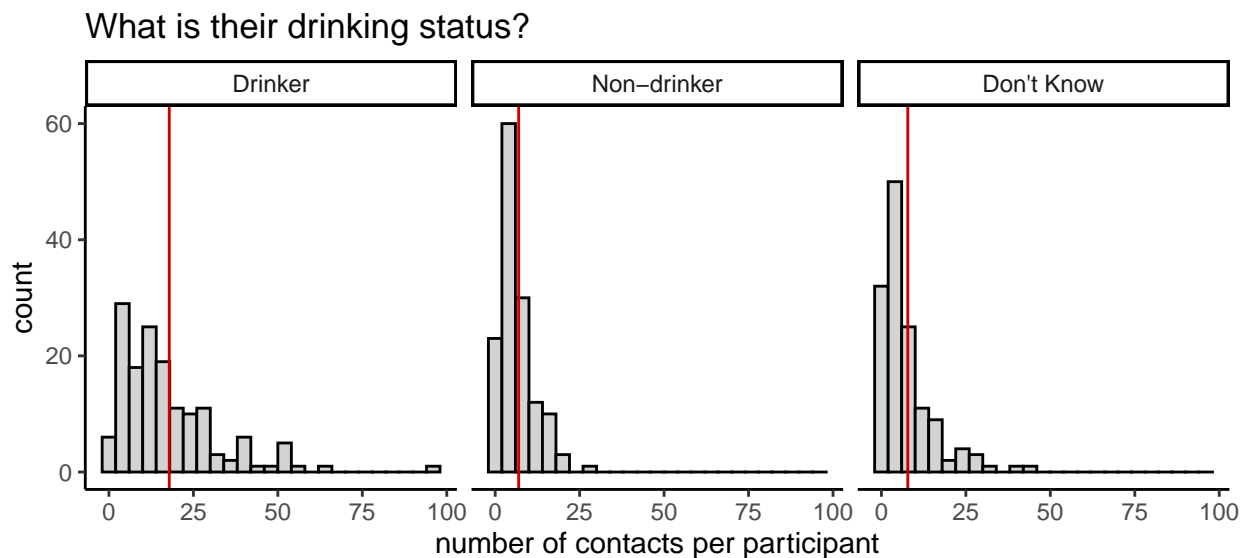
mutate(drink_status = case_when(drink_status == "Dont Know" ~ "Don't Know",
                                drink_status == "NonDrinker" ~ "Non-drinker",
                                TRUE ~ drink_status)) %>%

mutate(drink_status = factor(drink_status,
                              levels = c("Drinker", "Non-drinker",
                                           "Don't Know"))) %>%

drop_na(drink_status) %>%
ggplot(aes(x = n, group = drink_status)) +
facet_wrap(~ drink_status) +
geom_histogram(bins = 25, color = "black", fill = "light grey") +
geom_vline(aes(xintercept = mean_count), data_context %>%
select(subid, drink_status) %>%
group_by(subid) %>%
count(drink_status) %>%
mutate(drink_status = case_when(drink_status == "Dont Know" ~ "Don't Know",
                                drink_status == "NonDrinker" ~ "Non-drinker",
                                TRUE ~ drink_status)) %>%
mutate(drink_status = factor(drink_status,
                              levels = c("Drinker", "Non-drinker",
                                           "Don't Know")))) %>%

ungroup() %>%
group_by(drink_status) %>%
drop_na(drink_status) %>%
summarise(mean_count = mean(n, na.rm = TRUE)), color = "red3") +
labs(title = "What is their drinking status?" ) +
xlab("number of contacts per participant")

```



```

# figure 3
data_context %>%
select(subid, contact_drink_future) %>%
group_by(subid) %>%
count(contact_drink_future) %>%
mutate(contact_drink_future = factor(contact_drink_future,
                                      levels = c("Yes", "No", "Uncertain")))) %>%
drop_na(contact_drink_future) %>%

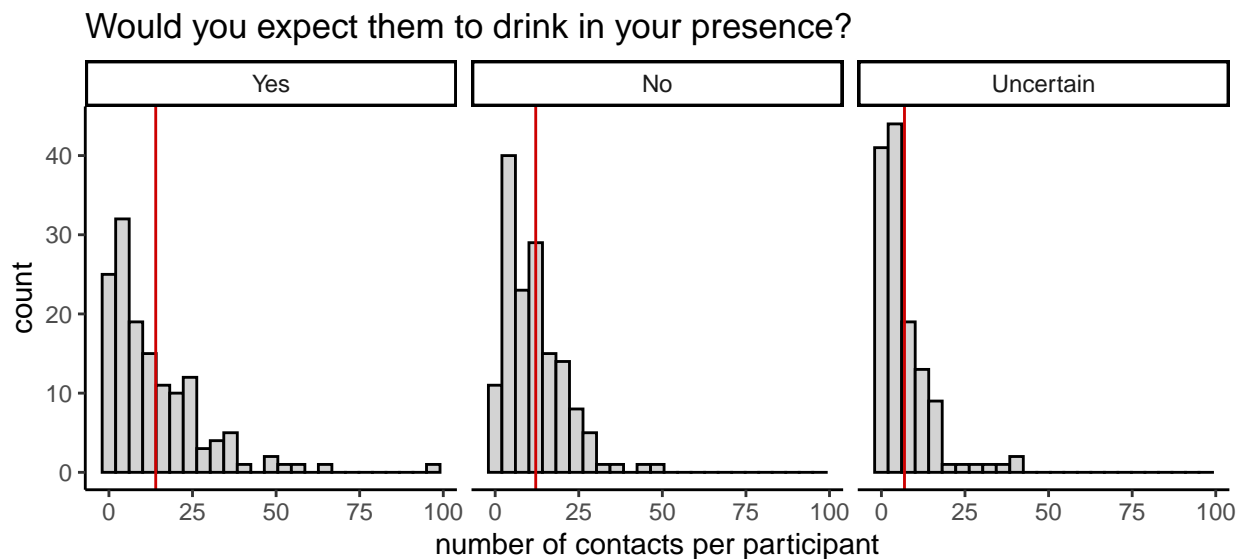
```



```

ggplot(aes(x = n, group = contact_drink_future)) +
  facet_wrap(~ contact_drink_future) +
  geom_histogram(bins = 25, color = "black", fill = "light grey") +
  geom_vline(aes(xintercept = mean_count), data_context %>%
    select(subid, contact_drink_future) %>%
    group_by(subid) %>%
    count(contact_drink_future) %>%
    mutate(contact_drink_future = factor(contact_drink_future,
                                          levels = c("Yes", "No", "Uncertain")))) %>%
  ungroup() %>%
  group_by(contact_drink_future) %>%
  drop_na(contact_drink_future) %>%
  summarise(mean_count = mean(n, na.rm = TRUE)), color = "red3") +
  labs(title = "Would you expect them to drink in your presence?" +
    xlab("number of contacts per participant")

```



```

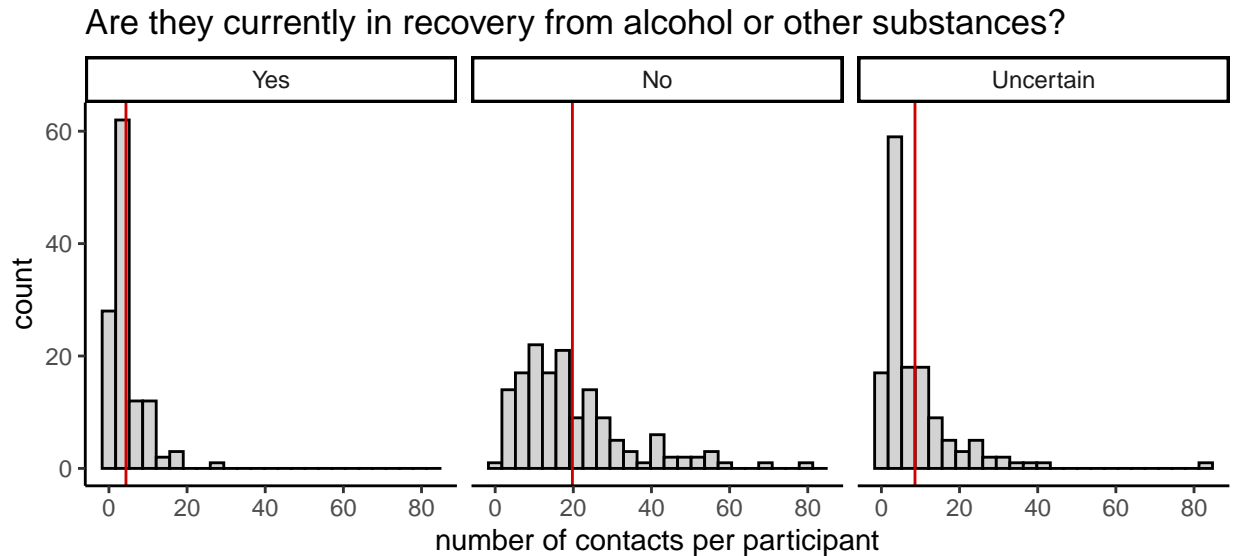
# figure 4
data_context %>%
  select(subid, recovery) %>%
  group_by(subid) %>%
  count(recovery) %>%
  mutate(recovery = if_else(recovery == "Dont Know", "Uncertain", recovery)) %>%
  mutate(recovery = factor(recovery,
                          levels = c("Yes", "No", "Uncertain"))) %>%
  drop_na(recovery) %>%
  ggplot(aes(x = n, group = recovery)) +
  facet_wrap(~ recovery) +
  geom_histogram(bins = 25, color = "black", fill = "light grey") +
  geom_vline(aes(xintercept = mean_count), data_context %>%
    select(subid, recovery) %>%
    group_by(subid) %>%
    count(recovery) %>%
    mutate(recovery = if_else(recovery == "Dont Know", "Uncertain", recovery)) %>%
    mutate(recovery = factor(recovery,
                          levels = c("Yes", "No", "Uncertain")))) %>%

```

```

ungroup() %>%
group_by(recovery) %>%
drop_na(recovery) %>%
summarise(mean_count = mean(n, na.rm = TRUE)), color = "red3") +
labs(title = "Are they currently in recovery from alcohol or other substances?") +
xlab("number of contacts per participant")

```



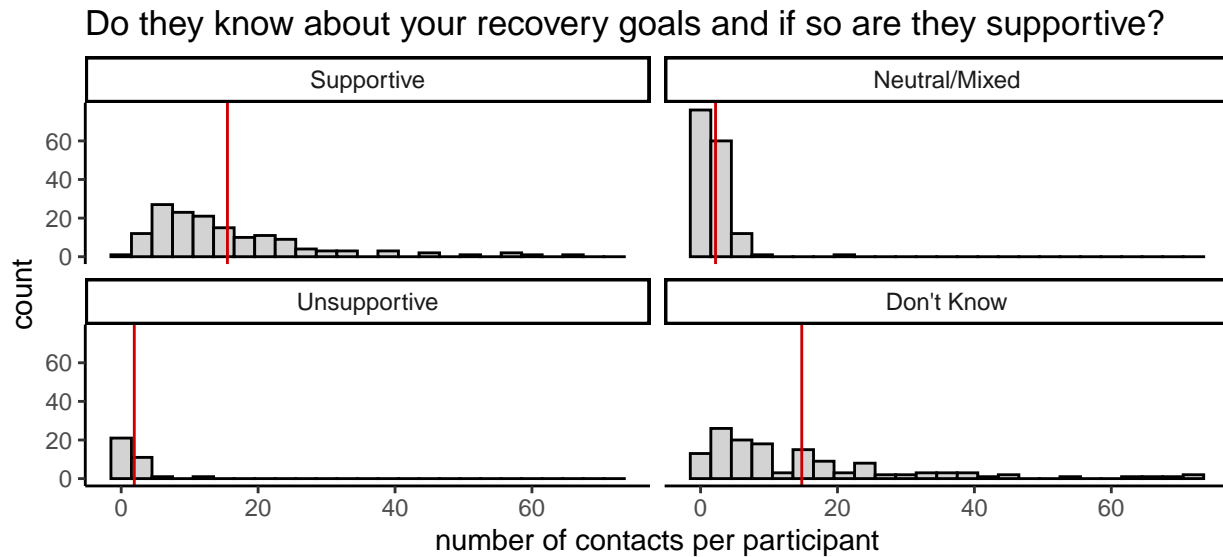
```

# figure 5
data_context %>%
  select(subid, support_status) %>%
  group_by(subid) %>%
  count(support_status) %>%
  mutate(support_status = case_when(support_status == "Mixed" ~ "Neutral/Mixed",
                                    support_status == "Neutral" ~ "Neutral/Mixed",
                                    support_status == "Dont Know" ~ "Don't Know",
                                    TRUE ~ support_status)) %>%
  mutate(support_status = factor(support_status,
                                levels = c("Supportive", "Neutral/Mixed", "Unsupportive",
                                             "Don't Know"))) %>%

  drop_na(support_status) %>%
  ggplot(aes(x = n, group = support_status)) +
  facet_wrap(~ support_status) +
  geom_histogram(bins = 25, color = "black", fill = "light grey") +
  geom_vline(aes(xintercept = mean_count), data_context %>%
    select(subid, support_status) %>%
    group_by(subid) %>%
    count(support_status) %>%
    mutate(support_status = case_when(support_status == "Mixed" ~ "Neutral/Mixed",
                                      support_status == "Neutral" ~ "Neutral/Mixed",
                                      support_status == "Dont Know" ~ "Don't Know",
                                      TRUE ~ support_status)) %>%
    mutate(support_status = factor(support_status,
                                  levels = c("Supportive", "Neutral/Mixed", "Unsupportive",
                                               "Don't Know")))) %>%
  ungroup() %>%

```

```
group_by(support_status) %>%
drop_na(support_status) %>%
summarise(mean_count = mean(n, na.rm = TRUE)), color = "red3") +
labs(title = "Do they know about your recovery goals and if so are they supportive?",
xlab("number of contacts per participant"))
```



```
# figure 6
data_context %>%
  select(subid, contact_experience) %>%
  group_by(subid) %>%
  count(contact_experience) %>%
  mutate(contact_experience = case_when(contact_experience == "Mixed" ~ "Neutral/Mixed",
                                       contact_experience == "Neutral" ~ "Neutral/Mixed",
                                       TRUE ~ contact_experience)) %>%
  mutate(contact_experience = factor(contact_experience,
                                    levels = c("Pleasant", "Neutral/Mixed", "Unpleasant"))) %>%
  drop_na(contact_experience) %>%
  ggplot(aes(x = n, group = contact_experience)) +
  facet_wrap(~ contact_experience) +
  geom_histogram(bins = 25, color = "black", fill = "light grey") +
  geom_vline(aes(xintercept = mean_count), data_context %>%
  select(subid, contact_experience) %>%
  group_by(subid) %>%
  count(contact_experience) %>%
  mutate(contact_experience = case_when(contact_experience == "Mixed" ~ "Neutral/Mixed",
                                       contact_experience == "Neutral" ~ "Neutral/Mixed",
                                       TRUE ~ contact_experience)) %>%
  mutate(contact_experience = factor(contact_experience,
                                    levels = c("Pleasant", "Neutral/Mixed", "Unpleasant"))) %>%
  ungroup() %>%
  group_by(contact_experience) %>%
  drop_na(contact_experience) %>%
  summarise(mean_count = mean(n, na.rm = TRUE)), color = "red3") +
  labs(title = "How would you describe your typical experience with this person?",
xlab("number of contacts per participant"))
```

How would you describe your typical experience with this person?

