In [ ]:
```python
## PROJET TUTORE TABLEAU DES VARIABLES ##
```

In [115…
```python
import mitosheet
from mitosheet import *
import pandas as pd
```

In [116…
```python
# Subject Characteristics Dataset(SC)
df_sc_1 = pd.read_csv('C:/Users/Casper/Desktop/Master1-Cours/Projet tutoré/ascii_1/sc.csv')
df_sc_2 = pd.read_csv('C:/Users/Casper/Desktop/Master1-Cours/Projet tutoré/ascii_2/sc.csv')

df_sc = pd.concat([df_sc_1,df_sc_2])

# Pivoted df_sc
unused_columns = df_sc.columns.difference(set(['USUBJID']).union(set(['SCTEST'])).union(set({'SCORRES'})))
tmp_df = df_sc.drop(unused_columns, axis=1)
pivot_table = tmp_df.pivot_table(
    index=['USUBJID'],
    columns=['SCTEST'],
    values=['SCORRES'],
    aggfunc={'SCORRES': ['sum']}
)

# Flatten the column headers
pivot_table.columns = [make_valid_header(col) for col in pivot_table.columns.values]

# Reset the column name and the indexes
df_sc = pivot_table.rename_axis(None, axis=1).reset_index()


# Exposure Dataset(EX)
df_ex_1 = pd.read_csv('C:/Users/Casper/Desktop/Master1-Cours/Projet tutoré/ascii_1/ex.csv')
df_ex_2 = pd.read_csv('C:/Users/Casper/Desktop/Master1-Cours/Projet tutoré/ascii_2/ex.csv')

df_ex = pd.concat([df_ex_1,df_ex_2])

df_ex = df_ex[['USUBJID','EXTRT']] # Selecting Extrt for Clodine and Burp
df_ex.drop_duplicates(subset ="USUBJID",keep = 'first', inplace = True)

# Demographics Dataset(DM)
df_dm_1 = pd.read_csv('C:/Users/Casper/Desktop/Master1-Cours/Projet tutoré/ascii_1/dm.csv')
df_dm_2 = pd.read_csv('C:/Users/Casper/Desktop/Master1-Cours/Projet tutoré/ascii_2/dm.csv')

df_dm = pd.concat([df_dm_1,df_dm_2])

df_dm = df_dm[['USUBJID','AGE','SEX','ARM']]
df_dm.drop_duplicates(subset ="USUBJID",keep = 'first', inplace = True)
df_dm['AGE'] = df_dm['AGE'].str[:2] # age change



# Vital Signs Dataset(VS)

df_vs_1 = pd.read_csv('C:/Users/Casper/Desktop/Master1-Cours/Projet tutoré/ascii_1/vs.csv')
df_vs_2 = pd.read_csv('C:/Users/Casper/Desktop/Master1-Cours/Projet tutoré/ascii_2/vs.csv')

df_vs = pd.concat([df_vs_1,df_vs_2])

# Filtered VISIT in vs_csv
df_vs = df_vs[df_vs['VISIT'].str.contains('BASE', na=False)]
df_vs = df_vs.reset_index(drop=True)

# Pivoted vs_csv into df4
unused_columns = df_vs.columns.difference(set(['USUBJID']).union(set(['VSTEST'])).union(set({'VSORRES'})))
tmp_df = df_vs.drop(unused_columns, axis=1)
pivot_table = tmp_df.pivot_table(
    index=['USUBJID'],
    columns=['VSTEST'],
    values=['VSORRES'],
    aggfunc={'VSORRES': ['sum']}
)

# Flatten the column headers
pivot_table.columns = [make_valid_header(col) for col in pivot_table.columns.values]

# Reset the column name and the indexes
df_vs = pivot_table.rename_axis(None, axis=1).reset_index()

#Laboratory Tests Dataset(LB)

df_lb_1 = pd.read_csv(r'C:\Users\Casper\Desktop\Master1-Cours\Projet tutoré\ascii_1\lb.csv')
df_lb_2 = pd.read_csv(r'C:\Users\Casper\Desktop\Master1-Cours\Projet tutoré\ascii_2\lb.csv')

df_lb = pd.concat([df_lb_1,df_lb_2])

# Filtered VISIT in lb_csv
df_lb = df_lb[df_lb['VISIT'].str.contains('BASELINE', na=False)]
df_lb = df_lb.reset_index(drop=True)

# Pivoted lb_csv into df7
unused_columns = df_lb.columns.difference(set(['USUBJID']).union(set(['LBTEST'])).union(set({'LBORRES'})))
tmp_df = df_lb.drop(unused_columns, axis=1)
pivot_table = tmp_df.pivot_table(
    index=['USUBJID'],
    columns=['LBTEST'],
    values=['LBORRES'],
    aggfunc={'LBORRES': ['sum']}
)

# Flatten the column headers
pivot_table.columns = [make_valid_header(col) for col in pivot_table.columns.values]

# Reset the column name and the indexes
df_lb = pivot_table.rename_axis(None, axis=1).reset_index()
```

In [53]:
```python
df_lb.columns
```

Out[53]:
```
Index(['USUBJID', 'LBORRES_sum_AMPHETAMINES', 'LBORRES_sum_BARBITURATES',
       'LBORRES_sum_BENZODIAZEPINES', 'LBORRES_sum_COCAINE',
       'LBORRES_sum_CREATININE', 'LBORRES_sum_METHADONE',
       'LBORRES_sum_METHAMPHETAMINE', 'LBORRES_sum_MORPHINE',
       'LBORRES_sum_NONE', 'LBORRES_sum_OPIATE', 'LBORRES_sum_PCP',
       'LBORRES_sum_TCA', 'LBORRES_sum_THC'],
      dtype='object')
```

In [54]:
```python
df_lb.drop(['LBORRES_sum_AMPHETAMINES', 'LBORRES_sum_BARBITURATES',
        'LBORRES_sum_BENZODIAZEPINES', 'LBORRES_sum_COCAINE',
        'LBORRES_sum_CREATININE',
        'LBORRES_sum_METHAMPHETAMINE',
        'LBORRES_sum_NONE',  'LBORRES_sum_PCP',
        'LBORRES_sum_TCA', 'LBORRES_sum_THC'], axis = 1,inplace=True)
```

In [55]:
```python
# Merge Data
df = df_sc.merge(df_ex,on= 'USUBJID', how= 'right')
df = df.merge(df_dm,on= 'USUBJID')
df = df.merge(df_vs,on= 'USUBJID',how= 'left')
df = df.merge(df_lb,on= 'USUBJID',how= 'left')
df
```

Out[55]:

	USUBJID	SCORRES_sum_EDUCATION_COMPLETED	SCORRES_sum_MARITAL_STATUS	SCORRES_sum_MET_ALL_INCLUSION__NO_EXCLUSION_CR
0	01_000579	14	DIVORCED	Y
1	01_001362	13	NEVER MARRIED	Y
2	01_001490	14	NEVER MARRIED	Y
3	01_002199	13	NEVER MARRIED	Y
4	01_002844	11	NEVER MARRIED	Y
...	...	...	...	
338	02_098074	12	DIVORCED	Y
339	02_098425	12	DIVORCED	Y
340	02_099053	11	NEVER MARRIED	Y
341	02_099368	11	NEVER MARRIED	Y
342	02_099926	13	NEVER MARRIED	Y

343 rows × 20 columns

In [56]:
```python
df.columns = ['ID', 'EDUCATION_COMPLETED',
        'MARITAL_STATUS',
        'MET_ALL_INCLUSION__NO_EXCLUSION_CRIT_',
        'EMPLOYMENT_PATTERN_PAST_3_YEARS',
        'EMPLOYMENT_PATTERN_PAST_30_DAYS', 'EXTRT', 'AGE',
        'SEX', 'ARM', 'DIASTOLIC_BLOOD_PRESSURE',
        'HEIGHT', 'PULSE', 'RESPIRATIONS',
        'SYSTOLIC_BLOOD_PRESSURE', 'TEMPERATURE',
        'WEIGHT','METHADONE', 'MORPHINE',
        'OPIATE']
```

In [57]:
```python
df
```

Out[57]:

	ID	EDUCATION_COMPLETED	MARITAL_STATUS	MET_ALL_INCLUSION__NO_EXCLUSION_CRIT_	EMPLOYMENT_PATTERN_PAST_3_YEARS
0	01_000579	14	DIVORCED	YES	FULL TIME (35+ HRS/WK)
1	01_001362	13	NEVER MARRIED	YES	UNEMPLOYED
2	01_001490	14	NEVER MARRIED	YES	PART TIME (IRREGULAR DAYWORK)
3	01_002199	13	NEVER MARRIED	YES	PART TIME (REGULAR HOURS)
4	01_002844	11	NEVER MARRIED	YES	STUDENT
...	...	...	...	...	...
338	02_098074	12	DIVORCED	YES	UNEMPLOYED
339	02_098425	12	DIVORCED	YES	FULL TIME (35+ HRS/WK)
340	02_099053	11	NEVER MARRIED	YES	PART TIME (IRREGULAR DAYWORK)
341	02_099368	11	NEVER MARRIED	YES	PART TIME (IRREGULAR DAYWORK)
342	02_099926	13	NEVER MARRIED	YES	FULL TIME (35+ HRS/WK)

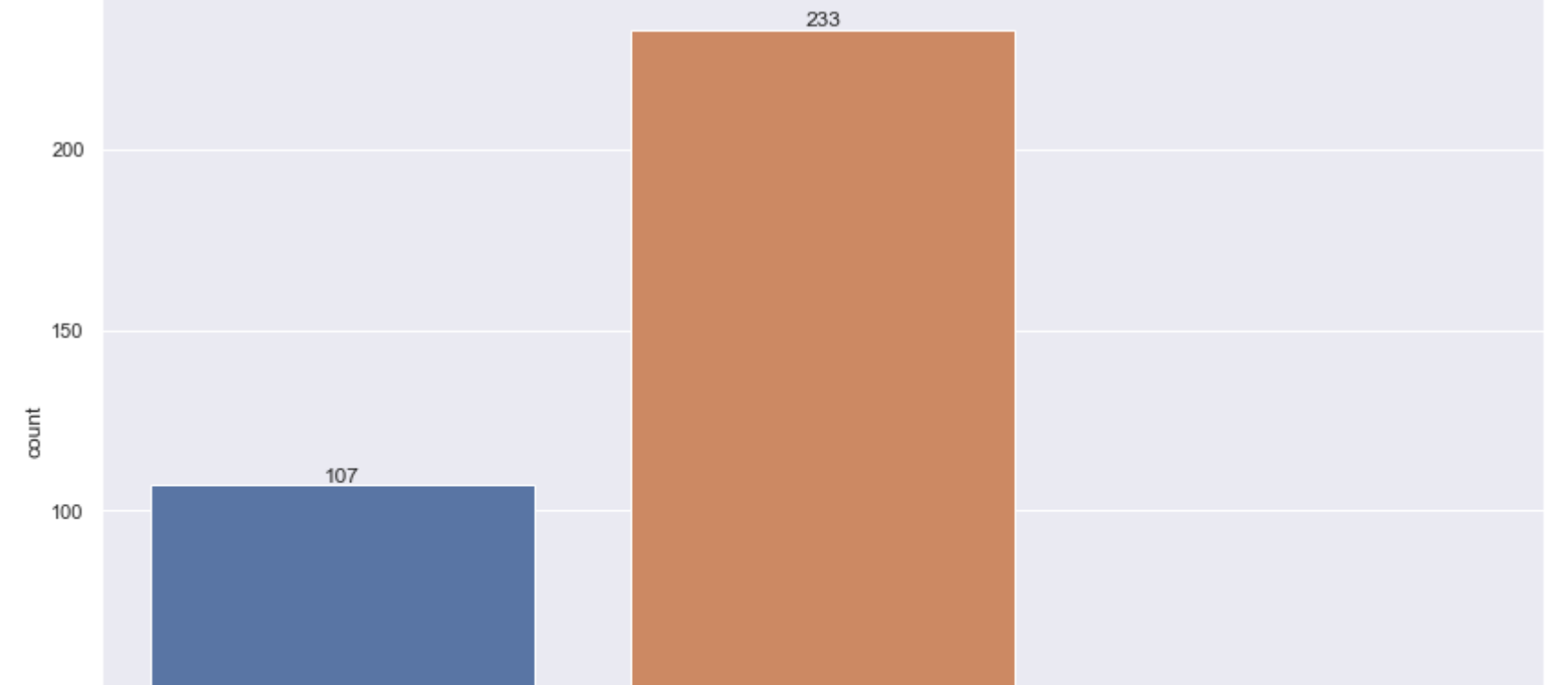
343 rows × 20 columns

In [59]:
```python
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 343 entries, 0 to 342
Data columns (total 20 columns):
 #   Column                                 Non-Null Count  Dtype  
---  ------                                 --------------  -----  
 0   ID                                     343 non-null    object 
 1   EDUCATION_COMPLETED                    343 non-null    object 
 2   MARITAL_STATUS                         343 non-null    object 
 3   MET_ALL_INCLUSION__NO_EXCLUSION_CRIT_  341 non-null    object 
 4   EMPLOYMENT_PATTERN_PAST_3_YEARS        342 non-null    object 
 5   EMPLOYMENT_PATTERN_PAST_30_DAYS        343 non-null    object 
 6   EXTRT                                  343 non-null    object 
 7   AGE                                    343 non-null    object 
 8   SEX                                    343 non-null    object 
 9   ARM                                    343 non-null    object 
 10  DIASTOLIC_BLOOD_PRESSURE               340 non-null    float64
 11  HEIGHT                                 337 non-null    float64
 12  PULSE                                  342 non-null    float64
 13  RESPIRATIONS                           335 non-null    float64
 14  SYSTOLIC_BLOOD_PRESSURE                340 non-null    float64
 15  TEMPERATURE                            335 non-null    float64
 16  WEIGHT                                 338 non-null    float64
 17  METHADONE                              343 non-null    object 
 18  MORPHINE                               342 non-null    object 
 19  OPIATE                                 286 non-null    object 
dtypes: float64(7), object(13)
memory usage: 56.3+ KB
```

In [60]:
```python
import matplotlib.pyplot as plt
import seaborn as sns
ax = sns.countplot(data = df, x = 'ARM')

ax.set_xticklabels(ax.get_xticklabels(), rotation=40, ha="right")
ax.bar_label(ax.containers[0])
sns.set(rc={'figure.figsize':(12,9)})
plt.tight_layout()
plt.show()
```



In [61]:
```python
df.columns
```

Out[61]:
```
Index(['ID', 'EDUCATION_COMPLETED', 'MARITAL_STATUS',
       'MET_ALL_INCLUSION__NO_EXCLUSION_CRIT_',
       'EMPLOYMENT_PATTERN_PAST_3_YEARS', 'EMPLOYMENT_PATTERN_PAST_30_DAYS',
       'EXTRT', 'AGE', 'SEX', 'ARM', 'DIASTOLIC_BLOOD_PRESSURE', 'HEIGHT',
       'PULSE', 'RESPIRATIONS', 'SYSTOLIC_BLOOD_PRESSURE', 'TEMPERATURE',
       'WEIGHT', 'METHADONE', 'MORPHINE', 'OPIATE'],
      dtype='object')
```

In [90]:
```python
df['AGE'].replace(' ','Nan',inplace=True) # adjust age to be float and change ' ' to na
```

In [92]:
```python
df['AGE'] = df['AGE'].astype(float)
```

In [97]:
```python
# Change Weight and Height to BMI
# Formula BMI =  weight (lb) / [height (in)]2 x 703
df2 = df[df['HEIGHT'].notna()]
df2 = df[df['WEIGHT'].notna()]
df2.drop(308,inplace = True)

df['BMI'] = df2['WEIGHT'].astype(int) / (df2['HEIGHT'].astype(int)**2) * 703
```

```
C:\Users\Casper\anaconda3\lib\site-packages\pandas\core\frame.py:4906: SettingWithCopyWarning:


A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#ret
urning-a-view-versus-a-copy
```

In [98]:
```python
df
```

Out[98]:

	ID	EDUCATION_COMPLETED	MARITAL_STATUS	MET_ALL_INCLUSION__NO_EXCLUSION_CRIT_	EMPLOYMENT_PATTERN_PAST_3_YEARS
0	01_000579	14	DIVORCED	YES	FULL TIME (35+ HRS/WK)
1	01_001362	13	NEVER MARRIED	YES	UNEMPLOYED
2	01_001490	14	NEVER MARRIED	YES	PART TIME (IRREGULAR DAYWORK)
3	01_002199	13	NEVER MARRIED	YES	PART TIME (REGULAR HOURS)
4	01_002844	11	NEVER MARRIED	YES	STUDENT
...	...	...	...	...	...
338	02_098074	12	DIVORCED	YES	UNEMPLOYED
339	02_098425	12	DIVORCED	YES	FULL TIME (35+ HRS/WK)
340	02_099053	11	NEVER MARRIED	YES	PART TIME (IRREGULAR DAYWORK)
341	02_099368	11	NEVER MARRIED	YES	PART TIME (IRREGULAR DAYWORK)
342	02_099926	13	NEVER MARRIED	YES	FULL TIME (35+ HRS/WK)

343 rows × 21 columns

In [99]:
```python
df.describe()
```

Out[99]:

	AGE	DIASTOLIC_BLOOD_PRESSURE	HEIGHT	PULSE	RESPIRATIONS	SYSTOLIC_BLOOD_PRESSURE	TEMPERATURE	WEIGH
count	340.000000	340.000000	337.000000	342.000000	335.000000	340.000000	335.000000	338.00000
mean	37.438235	83.720588	70.041543	155.254386	17.131343	126.485294	103.068955	166.66568
std	10.149284	40.081571	35.497963	32.364079	3.619732	32.514346	51.138584	35.71953
min	18.000000	50.000000	53.000000	64.000000	1.000000	94.000000	95.000000	100.00000
25%	29.000000	70.000000	66.000000	136.000000	16.000000	110.000000	98.000000	140.00000
50%	39.000000	79.000000	68.000000	152.000000	16.000000	120.000000	98.400000	162.00000
75%	45.000000	88.000000	71.000000	169.500000	18.000000	132.000000	98.900000	188.00000
max	65.000000	701.000000	715.000000	337.000000	36.000000	430.000000	999.900000	299.00000

In [102…
```python
from tableone import TableOne, load_dataset
```

In [103…
```python
df.columns
```

Out[103…
```
Index(['ID', 'EDUCATION_COMPLETED', 'MARITAL_STATUS',
       'MET_ALL_INCLUSION__NO_EXCLUSION_CRIT_',
       'EMPLOYMENT_PATTERN_PAST_3_YEARS', 'EMPLOYMENT_PATTERN_PAST_30_DAYS',
       'EXTRT', 'AGE', 'SEX', 'ARM', 'DIASTOLIC_BLOOD_PRESSURE', 'HEIGHT',
       'PULSE', 'RESPIRATIONS', 'SYSTOLIC_BLOOD_PRESSURE', 'TEMPERATURE',
       'WEIGHT', 'METHADONE', 'MORPHINE', 'OPIATE', 'BMI'],
      dtype='object')
```

In [114…
```python
columns = ['EDUCATION_COMPLETED', 'MARITAL_STATUS',
       'EMPLOYMENT_PATTERN_PAST_3_YEARS', 'EMPLOYMENT_PATTERN_PAST_30_DAYS','AGE', 'ARM', 'DIASTOLIC_BLOOD_PRES
       'PULSE', 'RESPIRATIONS', 'SYSTOLIC_BLOOD_PRESSURE', 'TEMPERATURE','BMI','METHADONE', 'MORPHINE', 'OPIATE

categorical = ['EDUCATION_COMPLETED', 'MARITAL_STATUS','EMPLOYMENT_PATTERN_PAST_3_YEARS', 'EMPLOYMENT_PATTERN_I

groupby = 'ARM'

mytable = TableOne(df, columns=columns, categorical = categorical,
                   groupby=groupby)
mytable
```

Out[114…

				Grouped by ARM		
		Missing	Overall	BUPRENORPHINE/NALOXONE	CLONIDINE	SCREEN FAILURE
n			343	233	107	3
EDUCATION_COMPLETED, n (%)	**10**	0	21 (6.1)	14 (6.0)	6 (5.6)	1 (33.3)
	11		37 (10.8)	28 (12.0)	9 (8.4)	
	12		132 (38.5)	91 (39.1)	39 (36.4)	2 (66.7)
	13		34 (9.9)	27 (11.6)	7 (6.5)	
	14		50 (14.6)	28 (12.0)	22 (20.6)	
	15		19 (5.5)	16 (6.9)	3 (2.8)	
	16		21 (6.1)	13 (5.6)	8 (7.5)	
	17		3 (0.9)	3 (1.3)		
	18		5 (1.5)	2 (0.9)	3 (2.8)	
	19		1 (0.3)	1 (0.4)		
	20		3 (0.9)	1 (0.4)	2 (1.9)	
	7		2 (0.6)	2 (0.9)		
	8		6 (1.7)	3 (1.3)	3 (2.8)	
	9		9 (2.6)	4 (1.7)	5 (4.7)	
MARITAL_STATUS, n (%)	**DIVORCED**	0	55 (16.0)	38 (16.3)	17 (15.9)	
	LEGALLY MARRIED		61 (17.8)	47 (20.2)	14 (13.1)	
	LIVING WITH PARTNER/COHABITATING		33 (9.6)	20 (8.6)	12 (11.2)	1 (33.3)
	NEVER MARRIED		160 (46.6)	109 (46.8)	49 (45.8)	2 (66.7)
	SEPARATED		26 (7.6)	14 (6.0)	12 (11.2)	
	WIDOWED		8 (2.3)	5 (2.1)	3 (2.8)	
EMPLOYMENT_PATTERN_PAST_3_YEARS, n (%)	**FULL TIME (35+ HRS/WK)**	1	189 (55.3)	127 (54.5)	61 (57.5)	1 (33.3)
	HOMEMAKER		9 (2.6)	5 (2.1)	4 (3.8)	
	IN CONTROLLED ENVIRONMENT		2 (0.6)	2 (0.9)		
	PART TIME (IRREGULAR DAYWORK)		47 (13.7)	33 (14.2)	14 (13.2)	
	PART TIME (REGULAR HOURS)		19 (5.6)	16 (6.9)	3 (2.8)	
	RETIRED/DISABILITY		7 (2.0)	3 (1.3)	4 (3.8)	
	STUDENT		11 (3.2)	9 (3.9)	2 (1.9)	
	UNEMPLOYED		58 (17.0)	38 (16.3)	18 (17.0)	2 (66.7)
EMPLOYMENT_PATTERN_PAST_30_DAYS, n (%)	**FULL TIME (35+ HRS/WK)**	0	118 (34.4)	73 (31.3)	44 (41.1)	1 (33.3)
	HOMEMAKER		12 (3.5)	8 (3.4)	4 (3.7)	
	IN CONTROLLED ENVIRONMENT		1 (0.3)	1 (0.4)		
	PART TIME (IRREGULAR DAYWORK)		36 (10.5)	28 (12.0)	8 (7.5)	
	PART TIME (REGULAR HOURS)		15 (4.4)	11 (4.7)	4 (3.7)	
	RETIRED/DISABILITY		9 (2.6)	3 (1.3)	6 (5.6)	
	STUDENT		6 (1.7)	4 (1.7)	2 (1.9)	
	UNEMPLOYED		146 (42.6)	105 (45.1)	39 (36.4)	2 (66.7)
AGE, mean (SD)		3	37.4 (10.1)	36.9 (10.5)	38.6 (9.3)	nan (nan)
DIASTOLIC_BLOOD_PRESSURE, mean (SD)		3	83.7 (40.1)	82.6 (44.3)	86.2 (29.9)	80.0 (9.5)
PULSE, mean (SD)		1	155.3 (32.4)	153.7 (28.7)	158.7 (39.0)	150.7 (42.4)
RESPIRATIONS, mean (SD)		8	17.1 (3.6)	17.1 (3.1)	17.3 (4.5)	16.0 (0.0)
SYSTOLIC_BLOOD_PRESSURE, mean (SD)		3	126.5 (32.5)	123.1 (24.8)	134.0 (44.3)	118.7 (15.9)
TEMPERATURE, mean (SD)		8	103.1 (51.1)	103.2 (60.5)	103.0 (21.1)	98.5 (1.4)
BMI, mean (SD)		6	25.1 (4.9)	24.8 (5.1)	25.7 (4.6)	26.5 (5.6)
METHADONE, n (%)	**NEGATIVE**	0	56 (16.3)	38 (16.3)	18 (16.8)	
	NEGATIVENEGATIVE		253 (73.8)	172 (73.8)	78 (72.9)	3 (100.0)
	NEGATIVEPOSITIVE		3 (0.9)	2 (0.9)	1 (0.9)	
	POSITIVE		2 (0.6)	2 (0.9)		
	POSITIVENEGATIVE		24 (7.0)	16 (6.9)	8 (7.5)	
	POSITIVEPOSITIVE		5 (1.5)	3 (1.3)	2 (1.9)	
MORPHINE, n (%)	**NEGATIVE**	1	96 (28.1)	67 (28.9)	29 (27.1)	
	POSITIVE		246 (71.9)	165 (71.1)	78 (72.9)	3 (100.0)
OPIATE, n (%)	**NEGATIVE**	57	48 (16.8)	36 (18.7)	12 (13.3)	
	POSITIVE		238 (83.2)	157 (81.3)	78 (86.7)	3 (100.0)
SEX, n (%)	**F**	0	111 (32.4)	72 (30.9)	38 (35.5)	1 (33.3)
	M		231 (67.3)	161 (69.1)	69 (64.5)	1 (33.3)
	U		1 (0.3)			1 (33.3)

In [ ]:
```python
# Murat Simsek et Yuquan Dai
```

In [ ]: