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Master of Public Health Research Project

Client Perceptions and Working Alliance: Predictors of Outcome?

by

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Theresa Do

Abstract

BACKGROUND

In recent years, there has been a push to measure and monitor the quality of health care and the delivery of effective services. Substance use disorders are debilitating and in order to better understand this facet of substance abuse, it is important for organizations and providers to assess the quality of services, client satisfaction, and the relationships that exist between clients and treatment providers.

PURPOSE

The purpose of the study was to (1) assess the extent of the relationship between measures of client perceptions of satisfaction and treatment outcomes and (2) to assess the relationship between measures of therapeutic alliance and treatment outcomes.

METHODS

Data was obtained from a larger study assessing organizational factors affecting the implementation of evidence-based practices in the treatment of substance use disorders. This study was focused on the client satisfaction survey data obtained during the months of August and December of 2008, consisting of several five-day periods, during which clients were asked to complete the survey. The study population consisted of 371 clients aged 18 to 64 years.

Logistic regression was used to evaluate demographic and other substance use-disorder factors for each of the scales pertaining to client satisfaction (general satisfaction, access, and quality/appropriateness) and therapeutic alliance (bond, goal, and task) in order to obtain odds ratios and 95% confidence intervals. Pearson correlation coefficients were used to assess the strength of the relationship of each of the measures of client satisfaction and therapeutic alliance with client perceived outcomes. Due to the nature of the survey questions being adapted from validated measures, Cronbach's coefficient alphas were used to determine internal consistency and reliability within each of the scales. To further assess client measures of satisfaction, multivariate linear regression was used to examine whether a specific client satisfaction measure or therapeutic alliance measure was a significant predictor of better client perceived outcomes.

RESULTS

Client perceptions of satisfaction - general satisfaction, access, and quality/appropriateness (worse vs. better) were significantly associated with better client perceived outcomes. Therapeutic alliance measures were also significantly associated with better client perceived outcomes. The strongest predictors from logistic regression analysis were quality/appropriateness (OR = 14.45, 95% CI 1.16-19.01) and general satisfaction (OR = 11.96, 95% CI 7.04-20.33) followed by WAI Goal (OR = 5.56, 95% CI 3.29-9.39), access (OR = 5.81, 95% CI 3.55-9.50), WAI Task (OR = 4.42, 95% CI 3.29-9.39), and WAI Bond (OR = 3.61, 95% CI 2.06-5.22). Cronbach's coefficient alphas were all above the .70 threshold indicating strong internal consistency among the measures of client satisfaction, therapeutic alliance and client perceived outcomes. Pearson correlation coefficients indicated moderate relationships between access, general satisfaction, WAI Bond, Goal and Task with client perceived outcomes. The strongest correlation was that of quality/appropriateness of treatment services and client-perceived outcomes ($r = 0.61, p < 0.0007$)

CONCLUSIONS

Client perceptions of satisfaction and therapeutic alliance were found to be significantly associated with better client perceived outcomes. Age, time in treatment, and number of times a client moved in the past 6 months was implicated in the association of general satisfaction and better client perceived outcomes. Age and race were implicated in the association of access and better client perceived outcomes. Further research is needed to measure the effectiveness of treatment services to ensure that clients are receiving appropriate evidence-based services that result in better outcomes.

Introduction

In recent years, there has been a push to measure and monitor the quality of health care and the delivery of effective services. In the substance abuse field, measures such as length of stay, readmission rates, and abstinence during drug treatment have been used to measure performance (Dausey, Pincus & Herrell, 2009). The goal of treatment for alcohol and drug use disorders is to reduce both the frequency and intensity of substance use for periods following treatment (McKay & Weiss, 2001) as well as improve overall outcomes in daily life. This durability of improvement is dependent on several variables including therapeutic alliance. Various studies have shown that treatment effects have tended to diminish over time, but little is known as to why this occurs. To better understand this facet of substance abuse, it is important to examine the facets of better outcomes through the assessment of predictors, such as demographics, working alliance, and client satisfaction, in order to provide services that best serve the needs of the client.

Client Satisfaction

The quality of client satisfaction is an integral part of measurement in behavioral health services. Client satisfaction can be measured in a number of ways including clinical charts, administrative records, direct observation, outcome questionnaires and client surveys. More and more data is being derived directly from clients and provides a method of primary data collection (Druss, Rosenheck & Stolar, 1999). Client perspectives are important in to consider in treatment. As with any service, a measure of client satisfaction will provide data that will improve delivery of services.

Measurements of quality in the behavioral health services are often measured using scales of client satisfaction. These measurements can provide insight on process measures and can

often provide measures of outcome. Not only are these measurements important to service providers, but they are also useful to purchasers and clients alike (Campbell, 1998) as they provide information about both the process and outcomes of treatment (Carlson & Gabriel, 2001; Druss, Rosenheck, & Stolar, 1999). Mental health studies have found a positive association of client satisfaction and outcome measures, such as quality of life, symptoms, and level of functioning (Carlson & Gabriel, 2001). Similarly, Druss, Rosenheck and Stoler (1999) found that clients who were more satisfied were more likely to have better outcomes after discharge; thereby, reducing the likelihood that they would be re-hospitalized.

Client satisfaction is also important as they provide information that is also beneficial to organizations. Providers of substance use disorders can use the information obtained to assess market conditions, what their local demographics look like, and what their service population needs. The appeal of an organization to their consumer or client-base is extremely important in any health care industry, substance use disorders included (Rohrer & Hilsenrath, 1999). This allows organizations to both be competitive as well as serve the needs of their clients.

Primary and secondary methods of collecting client satisfaction measures are prone to certain shortcomings. In the case of client satisfaction surveys, the surveys may be subject to a non-response bias in which those who respond to the health survey may differ from those who do not. These surveys are also subject to recall bias in which clients may not accurately recall the information about their care. Secondary methods, including administrative measures, are less prone to the latter mentioned biases but are often much less sensitive in measuring client satisfaction (Druss, Rosenheck & Stolar, 1999).

Risk Factors/Treatment Outcomes

There are various predictors and/or factors that can influence outcomes. These predictors include: index treatment, co-occurring problem severity, social support, participation in self-help programs, and subsequent treatment episodes (Finney, 1995; Lehman & Simpson, 1990; McKay & Weiss, 2001; Miller et al. 1996). Differences between clients may also occur in the type of client, treatment type, severity of disorder, and environmental factors, which ultimately may influence the time in treatment. Psychotherapy and counseling are generally recognized as effective treatments for patients with substance use disorders. Various studies have cited completing treatment as one of the most important predictors of long-term positive treatment outcomes.

Mediators of substance abuse disorders are also important to consider. McKay and Weiss (2001) conducted a meta-analysis looking at both long term and short term studies of temporal effects and outcome predictors in substance abuse treatment. They found that demographic variables were significantly related to substance use outcome in 42% of the 42 studies reviewed. When they examined the demographic variables separate from one another, they found that demographic variables were not related to outcome. Similarly, they found that age, education, and gender were strong predictors of outcome in 33% of 27 reports, 39% of 13 reports, and 40% of 25 reports, respectively. Treatment conditions were also found to be strong predictors of outcome in 69% of the 39 studies that they looked at. Other predictors that were found to be of significance were social/family, psychiatric severity, legal severity, and employment. However, of the studies that were reviewed, psychiatric severity was most significantly associated with substance use outcomes in 70% of the 20 studies examined.

Not only are predictors of outcome important, but it is also important to consider “during treatment” and “after treatment” predictors. During treatment predictors include substance use, self-help attendance, mood, employment, legal/crime, and recreational activities although McKay and Weiss (2001) found that the latter three yielded mixed results in the studies that they examined. Post-treatment predictors include those factors that are predictive of outcomes related to long-term goals. Psychiatric severity, social/family factors, additional treatment episodes, and employment status are among the most frequently studied predictors according to McKay and Weiss (2001).

Therapeutic Alliance

Alliance measures have long been used in the field of psychotherapy in a variety of treatment modalities. Alliance is often measured in terms of the therapeutic alliance and is viewed as an essential ingredient of both psychotherapy and counseling alike (Gaston, 1990; Meier, Barrowclough, & Donmall, 2005). Alliance can be measured using several different components. Quality of the therapeutic alliance is a significant predictor of both counseling and psychotherapy outcomes in clients (Meier, Barrowclough, & Donmall, 2005). Some have argued that subscales do not reflect different theoretical dimensions whereas others have argued that therapeutic alliance should be measured using multiple dimensions (Horvath & Luborsky, 1993; Savio, Beutler, Wood & Engle, 1992). It has been shown that the appraisal of the therapeutic alliance is strongest when assessed by the client taking into consideration the outcome measures that are assessed by patients, therapists and observers (Hatcher & Barends, 1996; Horvath & Symonds, 1991). Horvath and Greenberg (1986) have argued that this strong assessment of alliance by patients is due to the naïveté of the client in making judgments that are not biased by theoretical conceptualizations that one may find with therapists and observers.

The therapeutic process is a process by which a collaborative and affective bond is created between therapist and client known as a therapeutic alliance. Early therapeutic alliance in treatment has been found by a number of studies to predict longer treatment retention and/or completion (Meier, Barrowclough & Donmall, 2005). Similarly, psychology researchers have found a modest correlation of $r = 0.25$ between the strength of the client-therapist working alliance and client outcomes (Horvath & Bedi, 2002; Martin, Garske & Davis, 2000). Positive correlations also exist between the strength of the working alliance and client symptoms (Calsyn, Morse, Klinkenberg & Lemming, 2004). A strong alliance has been associated with an improved outcome in areas, such as depression, personality disorders, alcohol dependence and cocaine dependence (Fenton, Cecero, Nich, Frankforter & Carroll, 2001). Therapeutic alliance is becoming more important than the type of treatment in predicting positive therapeutic outcomes (Martin, Garske & Davis, 2000). A review of the literature regarding therapeutic alliance in drug treatment was conducted by Meier, Barrowclough and Donmall (2005). Findings from this literature review indicated that early therapeutic alliance is a consistent predictor of engagement and retention in drug treatment. This alliance would thus lead to better outcomes among clients.

There are three models that have been suggested in assessing the relationship between working alliance and client outcomes. The first model suggests that the working alliance must be formed prior to having successful client outcomes. The second model suggests that the client symptoms must be handled prior to the working alliance being formed. The third and final model suggests that the working alliance and client outcomes occur concurrently (Belding, Iguchi, Morral & McLellan, 1997; Cunningham et al., 2007). Most studies have reported that the “working alliance predicts change in client symptoms without investigating other causal patterns might be operating” (Cunningham et al., 2007).

The Working Alliance (WAI) was developed as a method to measure this therapeutic alliance and is said to account for as much as 15% of variance in treatment outcomes (Horvath, 1979). The WAI is one of the most commonly and widely researched in psychotherapy (Tryon, Blackwell & Hammel, 2008). Among those with substance use disorders, it impacts retention, completion and outcomes (Bethea, Acosta & Haller, 2008). The WAI developed by Horvath and Greenburg (1986) consists of three subscales - Bond, Goal, and Task; made up of 12 items that are counterbalanced by six negative and six positive items (Hatcher & Barends, 1996; Bethea, Acosta & Haller, 2008). This alliance is usually measured by using the perspectives of the client, therapist and sometimes includes an observer measurement (Tryon, Blackwell & Hammel, 2008). These factors are important to consider in substance abuse treatment as they not only apply to alliance development but also in the evaluation of efficacy of various drug treatments. A higher working alliance predicts higher retention, completion, and outcomes among substance abuse clients (Bethea, Acosta & Haller, 2008).

The characteristics of clients and therapists often influence therapeutic alliance development. The amount of time in treatment is strongly correlated to an increase of patient and therapist alliance over time and patient alliance is usually higher than therapist alliance at outset. In addition, patient alliance was found to increase independently of addiction severity (Bethea, Acosta & Haller, 2008; Tryon, Blackwell & Hammel, 2008). It is important to understand why various studies have reported high alliance ratings. Like many other surveys that have assessed the therapeutic alliance, clients often report very high ratings scores. Highly skewed working alliance ratings that favor working alliance could mean that case managers are effective at their jobs (Cunningham et al., 2007). These scores, however, may be overinflated or underinflated depending on how respondents answered the survey items or if they rated one item

high within a scale and skipped the other question within the scale. According to Tyron and Kane (1995), these higher ratings may reflect the alliances accurately as those who would have dropped.

Mental Health Statistics Improvement Program (MHSIP)

A majority of studies have focused mainly on the WAI and have excluded other measures of alliance. This survey was administered as a part of a larger National Institute on Drug Abuse (NIDA)-funded study in which client, counselor, and director perceptions were assessed. The instrument of interest - the client survey - measured client perceptions of service including possible predictors, such as satisfaction, access, quality in addition to the WAI measures. The items contained within the client survey were adopted using questions from the WAI, Virginia Department of Mental Health, Mental Retardation, and Substance Abuse Services (DMHMRSAS), now the Department of Behavioral Health and Developmental Services (DBHDS). The DBHDS uses MHSIP items in their questionnaire. The MHSIP is a nationally recognized instrument that has been found to be statistically reliable and valid. It was developed for use in the public mental hygiene system and is now widely used by state and local governments in both chemical dependency and mental health programs. The MHSIP survey assesses four areas of consumer perceptions: overall satisfaction; access to services; quality and appropriateness of services; and consumer reported outcomes.

DBHDS conducts surveys at community service boards (CSBs) throughout the State of Virginia on an annual basis to assess client perceptions of services as a performance measure. This survey has been administered over the last 13 years using a 33-item version of a client survey that was developed from the MHSIP Client-Oriented Mental Health Report Card. This data is normally collected on both adult mental health and substance use disorder clients who

present for non-emergency outpatient services at these CSBs. Client perceptions of services at CSBs are assessed using six indicators including: (1) client perception of access; (2) client perception of appropriateness/quality; (3) client perception of outcome; (4) client satisfaction with services; (5) client perception of functioning; and (6) client perception of social connectedness. Client perception of access is defined as “clients who reported good access to services.” Client perception of appropriateness or quality is defined as “clients who reported that they received services appropriate to their needs. Client perception of outcome is defined as “clients who reported positive change as a result of the services they received through the CSBs.” General satisfaction with services is measured using the client satisfaction with services measures. Improved functioning was measured with items pertaining to the client perception of functioning scale. Finally, client perception of social connectedness was defined as “clients who reported improved social connections as a result of the services they received through the CSB” (Virginia Department of Behavioral Health and Developmental Services, 2007).

Impact of the Problem

Substance use disorders are debilitating and affect not only the individuals, but communities as a whole. The misuse of drugs impacts both psychological and physical wellbeing and often is linked with crime and social deprivation (Meier et al., 2004). Despite the vast amount of research on consumer perspectives in performance assessment, few studies have looked at the relationships among satisfaction, therapeutic alliance, and client perceived outcomes. This is an area of great importance as the number of persons with drug use disorders in treatment has been steadily rising; therefore, it is important to study the effectiveness of drug use disorder treatments.

Objectives

The objective of this study was to: (1) to determine the extent to which the relationship between client perceptions of services and working alliance predicts the outcome of treatment and (2) to assess the extent of correlations between constructs of the various scales used to measure the working alliance and client perceptions of services.

Methods

Data Collection

The data was obtained from a larger study assessing organizational factors that affect the implementation of evidence-based practices in the treatment of substance use disorders. Seven-hundred and thirty-nine (739) surveys were collected in two waves consisting of five-day periods during the months of August and December 2008. Clients were recruited by treatment providers at the facilities. Treatment providers also obtained the clients' informed consent. Clients were assured that the surveys were completely anonymous and that their responses were completely confidential. The survey was administered to eligible clients who chose to participate throughout each day. A box was designated for clients to leave their completed surveys to ensure anonymity. Data collection was handled by administrative staff to minimize interference with the client's treatment. The sampling method used was that of convenience sampling in various treatment facilities in and around Central Virginia.

Of the 739 clients, 371 clients were eligible to be included in the study. The inclusion criteria were as follows: (1) client at area treatment facilities that were included in the study and (2) clients had to respond to all questions within the survey. Compared with the rest of the sample, these clients were equally representative of the original 739 clients in terms of race,

gender, employment, time in treatment, psychiatric status, and arrest status. No significant differences were observed between those in the original sample and the final sample.

Measures

MHSIP Client Satisfaction and Outcome Scales

For this study, a 28-item scale was adapted from MHSIP to measure potential client satisfaction of services. The 28 items represented a wide range of customer satisfaction measures. The MHSIP Client Satisfaction scales were composed of four (4) subscales consisting of:

- General Satisfaction (3 items)
- Access (6 items)
- Quality/Appropriateness (11 items)
- Outcomes (8 items)

MHSIP Client Survey items used a five-point Likert-type scale ranging from 1, “strongly agree” to 5, “strongly disagree”. These questions were re-ranked with '5' being in high agreement and '1' being in low agreement so as to coincide with the WAI scale. In cases where clients indicated 'does not apply', the value assigned was coded as '0' so that those respondents would be included in the analysis and not coded as missing.

The 28-items were recoded as described previously and were analyzed. Analysis was done using a PROC CORR procedure to analyze the likelihood of fit of the questions contained within each of the scales. This analysis generated Cronbach's alpha coefficients to assess internal validity of the questions within each scale. Questions were then grouped into four scales in line with those proposed by MHSIP (Satisfaction, Access, Quality/Appropriateness, and Outcomes) and each of the questions within each scale was summed to create a new scale. Since

most clients responded very highly on the survey, the median score was used to dichotomize each of the scales in order to normally distribute the population for comparison.

Working Alliance Inventory Scales

The therapeutic alliance was assessed using the WAI short version: a 12-item instrument used to measure three dimensions of the therapeutic alliance: Bond, Goal, and Task. Clients indicated their degree of agreement with each item on a seven-point Likert type scale (1 = Never, 7 = Always). A PROC CORR procedure was used to assess the likelihood of fit of the questions in which a Cronbach's alpha coefficient was generated. These coefficients were used to assess the internal validity of each of the questions within each of the three scales. These questions were then grouped into three scales in line with those proposed by Horvath and Greenberg (1989). In order to capture all aspects of the scale, the score was a summation of ratings within each of the WAI scales. The median was used to dichotomize each of the Working Alliance scales into two groups: better or worse. The median was used as most clients responded very highly on the WAI items. This differed from previous studies in which the average of the scales was used (Tracey & Kokotovic, 1989).

Demographics

Descriptive statistics were used to characterize the client respondent population. Clients were asked to indicate their gender, age, ethnicity, if they were of Hispanic/Latino origin, amount of time during the current treatment that services had been received, employment, if they had received psychiatric services in the last 12 months, if they had been arrested in the last 12 months, if they had ever been arrested, the number of times moved, and how many days they had been homeless in the last six months. Levels of independent variables were as follows: gender (male vs. female); age; race/ethnicity (Black/African American, White, Other); Hispanic/Latino

status (yes/no); employment status (working at a paid job in the last 12 months vs. not working at a paid job in the last 12 months); time in current treatment (less than 1 month, 1-2 months, 3-5 months, 6-11 months, 12-24 months, >24 months-60 months, >60 months); psychiatric status (admitted to a psychiatric hospital in the last 12 months vs. not admitted to a psychiatric hospital in the last 12 months); arrest status in the last 12 months (arrested in the last 12 months vs. not arrested in the last 12 months); ever arrested (was arrested before vs. was never arrested before); move status (never moved in the last 6 months, moved once in the last 6 months, moved twice in the last 6 months, moved more than twice in the last six months); and homeless status (was homeless in the last 6 months vs. was not homeless in the last 6 months).

Statistical Analysis

Analysis was done using SAS version 9.2. All variables were recoded and cleaned. The WAI items were based on a seven-point scale. Questions where clients responded that they did not apply were recoded with a value of zero so as to not affect the scale. The scales were created using a SAS sum function in which the various survey items were summed to create a scale. Continuous scales were analyzed using PROC CORR on each scale to assess the goodness-of-fit of each item into each of the scales based on Cronbach's alpha. These inter-correlations were further measured using Pearson correlation coefficients. Multiple regression analysis was also used in order to determine the relationship of the predictor and outcome variables to one another. This was done using the PROC REG procedure using the continuous predictor variables. This was done under the assumption that there was random sampling, the absence of multicollinearity, a normal distribution of the criterion variable, homogeneity of variance, independent observations, linearity, an absence of measurement error and absence of specification errors.

Scales were further recoded into dichotomous variables so that a logistic regression could be run on each of the scales against the DMHMRSAS outcome scale. Individual WAI subscales (Task, Bond, Goal) and DMHMRSAS Client Satisfaction subscales (Satisfaction, Access, Quality/Appropriateness) were used in logistic regression. In order to calculate the magnitude of the alliance ratings, a common metric was used. In order to examine the effects of clients' demographic characteristics on each of the satisfaction and working alliance dimensions, a step-wise logistic regression (PROC LOGISTIC) was performed on each of the scales. Each of the models was adjusted for heterogeneity by entering each of the demographic variables into the model. All but two models did not require adjusting (quality, WAI Bond, WAI Goal, WAI Task).

Results

Client Characteristics

An adapted version of the survey using both the MHSIP/DMHMRSAS and the WAI scales was used to assess client satisfaction at area treatment facilities. Table 1 shows the descriptive statistics for the variables under study as well as bivariate correlations between client satisfaction with services, working alliance dimensions, and perceived outcomes among the final sample consisting of 371 clients.

A total of 739 individuals were surveyed. However, only 371 were included in the analysis after applying the inclusion criteria. The 371 respondents were composed of 188 males (50.7%) and 183 females (49.3%). The clients' ages ranged from 18 to 63 years ($M = 37.6$, $SD = 10.5$). The sample was White (56.9%), African American (35.85%), or Other (7.28%). There were only seven clients (1.9%) who indicated that they were of Hispanic or Latino origin while the remaining 364 clients (98.1%) indicated they were not. In terms of the clients' employment

status, 262 clients (70.6%) indicated that they had been working at a paid job in the last 12 months. A majority of the clients (n= 322, 86.8%) had been in treatment for a period of more than 30 days whereas 49 clients (13.2%) had been in treatment for less than 30 days. In addition, clients reported that they had not been admitted to a psychiatric hospital in the last 12 months (n= 333 clients, 89.8%), had not been arrested in the last 12 months (n= 294, 79.3%), and roughly half (55.26%) had ever been arrested. In the survey sample, 235 clients (63.3%) had not moved in the last 6 months (19.4% had moved once in the last six months and 17.25% had moved at least 2 times in the last six months) and 330 clients (89.0%) had not been homeless in the last six months. Thus, indicating that a majority of the population had stable living conditions within the six months prior to the survey being administered.

Table 2 shows the crude and adjusted odds ratios as well as 95% confidence intervals for predicting client perceived better outcomes. All scales showed a positive correlation between client satisfaction, working alliance, and outcome measures. The crude analysis revealed that those clients who rated satisfaction high were 13 times more likely to have better outcomes. The satisfaction model was adjusted for age, time in treatment, and number of times the client moved in the past six months. After adjusting the satisfaction model using the 10% change-in-estimate approach, the analysis revealed that clients were almost 12 times as likely to have better outcomes compared to those who rated general satisfaction low. The access model revealed that those clients who rated their satisfaction with access higher were more likely to report better outcomes (Crude OR = 5.81). After adjusting the access model for age and race using the 10% change-in-estimate approach, those clients who rated satisfaction high were still five times as likely to report better outcomes compared to those who rated satisfaction low. The latter four models - quality, WAI Bond, WAI Goal, and WAI Task were not adjusted as the 10% change in

estimate model indicated no significant difference when adjusting for the potential confounders. Those clients who perceived the treatment services were appropriate to their needs were also more likely to report better outcomes (OR= 14.45, 7.16-19.0). Similarly those with higher WAI Bond, Goal, and Task were also more likely to report better outcomes (OR= 3.61, 5.56, 4.42, respectively).

Table 3 provides an overview of the survey construct questions used for this analysis. For MHSIP client perceived satisfaction and outcomes, there were three surveys items about general satisfaction, six items about access, 11 items about /appropriateness, and eight items about outcomes. For WAI, there were four items included in each of the three scales.

Scale characteristics are shown in Table 4. The mean for general satisfaction, access, quality/appropriateness, and outcome were similar to the median and were 22.1, 12.4, 40.1, and 31.7, respectively. The median scores were 22, 12, 40, and 32 respectively. The mean differed from the median for WAI Bond, WAI Goal, and WAI Task and were 14.8, 14.5 and 14.6, respectively. The median for the WAI measures was 16.

Correlation Analyses

Results were analyzed using both bivariate correlations and multiple regressions. Means, standard deviations, Pearson correlations and Cronbach's alpha estimates appear in Tables 5, 6, and 7.

Table 5 lists the Pearson correlation coefficients for outcome, access, general satisfaction, quality/appropriateness, WAI Bond, WAI Goal, and WAI Task. The R^2 values obtained from the Pearson correlation coefficients indicated that one predictor variable had a strong significant relationship to outcome: quality/appropriateness ($r= 0.61$). This correlation was significant at p

> 0.0001. The correlation between other client perceived measures of satisfaction, working alliance, and client outcomes were not as quite strongly predictive of outcome: access ($r= 0.49$), general satisfaction ($r= 0.46$), WAI Bond ($r= 0.39$), WAI Goal ($r= 0.43$), and WAI Task ($r= 0.42$).

Using multiple regressions, client perceived outcome measures were regressed on the linear combination of access, general satisfaction, quality/appropriateness, WAI Bond, WAI Goal, and WAI Task. The equation containing these six variables accounted for approximately 39% of the observed variance in outcomes, $F(6, 569) = 59.09$, $p < 0.01$ and an adjusted $R^2 = 0.3803$. The beta weights, or standardized multiple regression coefficients, and uniqueness indices were reviewed to assess the relative importance of the six variables of interest in the prediction of client perceived outcome. Beta weights and uniqueness indices are presented in Table 6. All client satisfaction measures had significant beta weights. WAI Bond had the least significant beta weight (0.72). Findings regarding the uniqueness indices corresponded somewhat with the beta weights. Quality/appropriateness had the most significant beta weight as well as having the strongest Pearson correlation coefficient. Quality/appropriateness also accounted for 7% of the unique variance in outcome.

The reliability of the six scales was evaluated for internal consistency. Table 7 consists of Cronbach's co-efficient alphas. This was done to assess internal reliability of the different scales. All alpha measures were higher than the accepted 0.70. The bivariate correlations between client satisfaction variables, working alliance inventory variables and outcome variables are presented in Table 5. Estimates of internal consistency as measured by Cronbach's alpha all exceeded 0.70 and are reported on the diagonal of Table 5. Reliability estimates were 0.89, 0.78, 0.92, 0.93, 0.96, 0.98, and 0.96 for responses to MHSIP Satisfaction, MHSIP Access, MHSIP Quality,

MHSIP Outcome, WAI Bond, WAI Goal, and WAI Task, respectively. These results indicated that the scales were internally reliable.

Figure 1 depicts the percentage of clients who responded to each of the scales with either a high or low rating or better and worse, respectively. The distribution was fairly even between those that rated client satisfaction high as well as those that rated therapeutic alliance high in relation to outcome.

Findings from this study suggest that those clients who were younger, had not been arrested in the last 12 months, and had not moved in the last 6 months, were more likely to report better outcomes. Similarly those that were younger, had not been arrested and had not moved in the last 6 months were more likely to report better general satisfaction (OR= 11.96). Age and race were predictive of client satisfaction with access (OR= 11.69).

Discussion

The results of this study deepen the understanding of clients' views of alliance and satisfaction on overall client perceived outcomes. The results of this study suggest that clients who are more likely to be satisfied with treatment services have stronger therapeutic alliance and this leads to having better outcomes. The relationship between client satisfaction measures – general satisfaction, access, quality/appropriateness, and working alliance bond, goal, and task with client perceived outcomes was positive. This is important as the positive relationship may be reflective of overall alliance and satisfaction with treatment services. This positive relationship would indicate that clients would not only perceive better outcomes but that this relationship of satisfaction with treatment services and therapeutic alliance would thus lead to more clients seeking out services and thus, remaining abstinent from alcohol and other drugs.

Substantive Findings

In this cross-sectional study, all client satisfaction (general satisfaction, access, quality/appropriateness) and WAI (Bond, Goal, and Task) measures of client perceptions of treatment services was observed to be associated with the high client perceived outcomes. As with other epidemiological studies, it is possible that the observed associations between client perceptions of services (satisfaction, access, quality) and working alliance, and client outcomes was due to confounding or other effects that resulted from outside exposures not contained within the survey that correlated with both the exposure (client perceptions of services and working alliance) and outcomes. Similarly, this study showed similar findings to previous research in that there was a high correlation between strength of working alliance and outcomes. Although there were strong associations of client perceived satisfaction with services, the confidence intervals were somewhat large due to the small sample size and clients tending to respond to items far to the right of the scales. Other possible reasons may be due to clients receiving more treatment and therefore, are more likely to be satisfied. It may also be that clients who are satisfied may be more likely to participate in treatment resulting in these higher ratings of client satisfaction and working alliance in all dimensions.

Choice was not considered in the Client Satisfaction Survey, but it should be considered in future studies. The choice of whether or not clients were referred to treatment or if they had been arrested or had not had repeated treatment episodes could affect overall outcomes as well as the therapeutic alliance and satisfaction measures. The findings from this study revealed that out of the clients that responded to the survey, a majority of the clients had not been arrested in the last 12 months although a majority had been arrested previously. Substance abuse services are rarely sought out for pleasure (Rohrer & Hilsenrath, 1999). This may account for the high satisfaction levels among clients as treatment may have been a condition of their release. Data

was not available to determine whether clients who had responded to the survey were in treatment voluntarily or if it was mandatory. This perception of choice is important to consider as it can be affected by the threat of going to jail and other legal pressures (Rohrer & Hilsenrath, 1999).

Results from regression analysis provided evidence that client measures of satisfaction are good predictors of client outcomes. Logistic regression analysis indicated strong odds of clients who rated client satisfaction measures having better client perceived outcomes. It is possible that these high odds of reporting higher satisfaction and therapeutic alliance are reflective of increased availability of services which ultimately lead to increase utilization of treatment for those clients that need it (Rohrer & Hilsenrath, 1999).

The lower Pearson correlation coefficients for the majority of the predictor variables were somewhat weaker than the correlation between client perceived outcomes and quality/appropriateness than other client satisfaction and therapeutic alliance measures. The correlations between client perceived outcomes and access, general satisfaction, WAI Goal, and WAI Task were fairly substantial. The exception was the WAI bond in which the Pearson correlation coefficient was 0.39. This seemed to have a lot to do with the strong correlations of access and general satisfaction with quality/appropriateness. Similar findings occurred with WAI Bond, Goal and task in which they shared a great deal of variance. This variance in client perceived outcome is likely to have been accounted for by access, general satisfaction, WAI Bond, WAI Goal, and WAI Task was likely to have been accounted for by quality/appropriateness.

Conclusion

This study examined the relationship between client perceptions of satisfaction and working alliance measures and client perceived outcomes. All of the client satisfaction measures – general satisfaction, satisfaction with access, quality/appropriateness, and working alliance measures were strongly associated with client perceived outcomes. Stronger measures of satisfaction and working alliance predicted stronger client perceived outcomes. This coincides with findings by Druss, Rosenheck and Stolar (1999) where they found that clients who were more satisfied with therapeutic alliance had higher rates of prompt follow-up care. Similarly, they also found that consumers who were more satisfied were less likely to be readmitted and had shorter stays if they were readmitted (Druss, Rosenheck & Stolar, 1999). Much research has indicated that high satisfaction measures are correlated with outcomes that are clinically meaningful (Carlson & Gabriel, 2001).

Several limitations prevent conclusive interpretation of the results. Due to the small sample size, the study may have been insufficiently powered to detect main effects of client satisfaction measured by the DMHMRSAS scales as well as WAI scales as well as limited in detecting subtle relationships. Measures of client satisfaction and working alliance are limited to client perceptions of these measures and therefore may be subject to self-report biases. Another limitation of this study is that there is a lack of follow-up to those that completed the survey since the sample was obtained through convenience sampling. The study was also cross-sectional in nature and therefore, was limited in that temporal sequence between the exposure and the outcome could not be established. Similarly, the association was examined at a single point in time and therefore, the exposure and disease prevalence could only be measured at that single point in time. A methodological shortcoming was the type of use of measures of client satisfaction as clients were only allowed to rate their satisfaction in terms of a five point scales

whereas some other studies have suggested that client satisfaction surveys use scales that consist of 11 points to better capture subtle difference in satisfaction (Carlson & Gabriel, 2001; Eisen et al., 1999; Ware & Davies, 1983). The scales were also dichotomized which may have allowed for a more straightforward interpretation but it did not allow for the subtle differences that may have been captured in the five point scales and as a result may have missed indicators of treatment outcomes. In addition, the study sample was restricted to those clients in facilities in and around Central Virginia and may not be generalizable to populations in other parts of the state. Similarly, the population received services from different types of providers. Therefore, the study may not be generalizable to a specific subset of treatment providers. Ratings across all scales were also skewed positively which impacted the confidence intervals. Also, the results of the findings could have been skewed due to the possible staff turnover rates at each of the treatment facilities which would reflect in client ratings of services and therapeutic alliance. Although there was a high response rate, many clients who responded to the survey did not answer all the survey questions and were therefore ineligible to be included for the purposes of this study.

Despite these shortcomings, this study also had quite a number of strengths. First and foremost, the study contributes to a better understanding of client perceptions about publicly funded services in Central Virginia. In addition, due to nature of the cross-sectional study design, the study was low-cost and was able to be conducted in a short period of time. The survey was anonymous and therefore, may have contributed to the high response rate as clients were more likely to respond to the survey if they were assured of the confidentiality of the survey.

This study sampled measures of alliance and client satisfaction at a single point in time. Therefore, it is difficult to ascertain a causal relationship between client perceived satisfaction, therapeutic alliance, and client outcomes. Several studies have indicated that those individuals who are more satisfied receive more treatment, but this could go both ways. Likewise, those clients who are satisfied are more likely to keep their appointments, and may even be more likely to continue to participate in treatment. Quality was a strong predictor of client perceived outcomes and therefore, it may be a result that clients were matched correctly with needed services. It would be of great interest to gather these measures over a course of treatment in order to assess changes in clients' views of alliance and client satisfaction. The sample was predominantly White or Black/African American and therefore, it may not be generalizable to other cultural groups. In future studies, it would be useful to consider sampling other cultural groups and examine if there are any difference of ratings across different cultural groups. As with other cross-sectional study designs, this study was limited to a distinct point in time and by including measures over time, the information would be more clinically meaningful. Also, this would help to delineate consumer satisfaction, therapeutic alliance, and outcomes.

Satisfaction with access and quality were two of the most significant predictor variables and stood out from the rest of the predictor variables. Although most clients who responded to the client satisfaction survey were in publicly funded treatment services, convenience and ease of getting to services is pertinent to their overall outcomes. The quality of programs is also important to consider in access. If a treatment services are not readily accessible to a client, they may face several barriers to treatment. Similarly, if a client feels a program is not appropriate for them, this may cause them to become disengaged in treatment thereby resulting in worse outcomes. If clients are posed with both access and quality/appropriateness issues, this would

likely prevent them from having better outcomes as they are dealing with issues pertaining to the treatment.

This study has several implications of both performance measures and resulting treatment outcomes. Alliance is a process and by assessing it, treatment providers are better able to cater to the needs of the client. Satisfaction plays an important role in quality improvement and therefore more research is needed to examine the impact of the relationships between satisfaction and specific services as well as the use of services. The impact of individual characteristics of clients must also be examined to determine their needs, expectations, motivation as well as other intervening variables. Moreover, client or consumer satisfaction is an important indicator of reflecting on how organizations can better cater their business to the needs of the client. Clients that may need more assistance in their treatment can be identified so that treatments can be catered to their needs and so that negative outcomes can be averted.

TABLES & FIGURES

TABLE 1: OUTCOME CHARACTERISTICS

Variables	Worse Outcomes N = 193		Better Outcomes N = 178		TOTAL	
	No	%	No	%		
EXPOSURE VARIABLES						
MHSIP Satisfaction						
	Worse	142	38.3	42	11.3	49.6
	Better	51	13.8	136	36.7	50.4
MHSIP Access						
	Worse	125	33.7	50	13.5	47.2
	Better	68	18.3	128	34.5	52.8
MHSIP Quality/Appropriateness						
	Worse	143	38.5	35	9.4	48.0
	Better	50	13.5	143	38.5	52.0
WAI Goal						
	Worse	99	29.0	32	9.4	38.3
	Better	76	22.2	135	39.5	61.7
WAI Task						
	Worse	174	21.9	128	37.9	59.8
	Better	98	29.0	38	11.2	40.2
WAI Bond						
	Worse	86	25.9	41	12.35	38.2
	Better	80	24.1	125	37.65	61.8
POTENTIAL COUNFOUNDING VARIABLES						
Gender						
	Female	83	22.4	100	27.0	49.3
	Male	110	29.7	78	21.0	50.7
Age						
	18-24	19	5.1	22	5.9	11.1
	25-30	34	9.2	29	7.8	17.00
	31-35	34	9.2	29	7.8	17.00
	36-40	33	8.9	40	10.8	19.7
	41-45	21	5.7	21	5.7	11.3
	46-50	29	7.8	14	3.8	11.6
	51-55	12	3.2	13	3.5	6.7
	56-60	8	2.2	7	1.9	4.0
	61-64	3	< 1	3	< 1	1.6
Race						
	White	108	29.11	103	27.76	56.87
	Black	68	18.33	65	17.52	35.85
	Other	17	4.580	10	2.700	7.28

Hispanic or Latino						
	Yes	5	1.350	2	0.540	1.89
	No	188	50.67	176	47.44	98.11
Employment						
	Working at a paid Job in the last 12 months	131	35.31	131	35.31	70.62
	Not working at a paid job in the last 12 months	62	16.71	47	12.67	29.38
Time in Current Treatment						
	Less than 1 month	32	8.630	17	4.580	13.21
	1-2 months	18	4.850	24	6.470	11.32
	3-5 months	42	11.32	38	10.24	21.56
	6-11 months	33	8.890	32	8.630	17.52
	12 months - 24 months	29	7.820	31	8.360	16.17
	>24 months - 60 months	28	4.550	25	6.740	14.29
	>60 months	11	2.96	11	2.96	5.930
Admitted to a Psychiatric Hospital in the last 12 months						
	Yes	24	6.47	14	3.77	10.24
	No	169	45.55	164	44.20	89.76
Arrested in the last 12 months						
	Yes	42	11.32	35	9.43	20.75
	No	151	40.70	143	38.54	79.25
Ever arrested						
	Yes	114	30.73	91	24.53	55.26
	No	79	21.29	87	23.45	44.74
Times moved in the last 6 months						
	Did not move in the last 6 months	127	34.23	108	29.11	63.34
	Moved once in the last 6 months	34	9.16	38	10.24	19.41
	Moved twice in the last 6 months	13	3.50	15	4.04	7.55
	Moved more than once in the last 6 months	19	5.12	17	4.58	9.70
Homelessness						
	Was not homeless in the last 6 months	170	45.82	160	43.13	88.95
	Was homeless at least once in the last 6 months	23	6.20	18	4.85	11.05

TABLE 2. CRUDE AND ADJUSTED ANALYSES

	Crude OR	95% CI	Adjusted OR	95% CI
Satisfaction (Median = 12, Scale range 3-15)				
Better	13.12	(7.236 - 21.346)	11.96	(7.041 - 20.328)
Worse	1.00		1.00	

* adjusted for age, time in treatment, and number of times the client moved in the past 6 months.

Access (Median 22, Scale range 6-30)

Better	5.81	(3.547-9.502)	5.32	(3.349-8.458)
Worse	1.00		1.00	

**adjusted for age and race.

Quality (Median 40, Scale range 12-50)

Better	14.45	(7.157-19.077)		
Worse	1.00			

***not adjusted.

WAI Bond

Better	3.61	(2.056-5.222)		
Worse	1.00			

****not adjusted

WAI Goal

Better	5.56	(3.291-9.39)		
Worse	1.00			

*****not adjusted

WAI Task

Better	4.42	(2.680-7.285)		
Worse	1.00			

*****not adjusted

TABLE 3. SURVEY CONSTRUCTS

General Satisfaction	I like the services that I receive here
	If I had other choices, I would still get services from this agency.
	I would recommend this agency to a friend or family member.
Access	The location of services is convenient (parking, public transportation, distance, etc.).
	Staff are willing to see me as often as I feel it is necessary.
	Staff return my calls in 24 hours.
	Services are available at times that are good for me.
	I am able to get all the services I think I need.
	I am able to see a psychiatrist when I want to.
Quality/Appropriateness	Staff here believe that I can grow, change, recover.
	I feel comfortable asking questions about my treatment.
	I feel free to complain.
	I have given information about my rights.
	Staff encourage me to take responsibility for how I live my life.
	Staff tell me what side effects to watch out for.
	Staff respect my wishes about who is and who is not to be given information about my treatment.
	I, not staff, decide my treatment goals.
	Staff are sensitive to my cultural background (race, religion, language, etc.)
	Staff help me obtain the information I need so that I can take charge of managing my illness.
	I am encouraged to use client-run programs (support groups, drop-in centers, crisis phone line, etc.)
Outcomes	I deal more effectively with daily problems.
	I am better able to control my life.
	I am better able to deal with crisis.
	I am getting along better with my family.
	I do better in social situations.
	I do better in school and/or work.
	My housing situation has improved.
My symptoms are not bothering me as much.	
WAI GOAL	The counselors here understand what I am trying to accomplish in therapy.
	The counselors here and I are working on mutually agreed upon goals.
	The counselors here and I agree about what my problems are.
	The counselors here and I have established a good understanding of what kinds of changes would be good for me.
WAI TASK	The counselors here and I agree about what we should be working on.
	The counselors here and I agree about the steps to be taken to improve my situation.
	What I am doing in therapy gives me new ways of looking at my problems.
	I believe the way the counselors and I are working with my problem is correct.
WAI BOND	I am confident that the counselors here can help me.
	I trust the counselors here and they trust me.
	The counselors here appreciate me.

The counselors here like me.

TABLE 4. SCALE CHARACTERISTICS

	N	Mean	Std. Dev.	Median	Min	Max	Range
Access	624	22.1	5.29	22.0	6	30	6-30
Satisfaction	712	12.4	2.58	12.0	3	15	3-15
Quality/Appropriateness	603	40.1	8.00	40.0	12	50	11-55
Outcome	622	31.7	6.14	32.0	8	40	8-40
WAI Bond	735	14.8	5.27	16.0	4	24	4-28
WAI Goal	734	14.5	5.00	16.0	4	24	4-28
WAI Task	737	14.6	5.00	16.0	4	24	4-28

TABLE 5. PEARSON CORRELATION COEFFICIENT MATRIX

	Outcome	Access	Satisfaction	Quality/ Appropriateness	WAI Bond	WAI Goal	WAI Task
Outcome	1.00	0.49	0.46	0.61	0.39	0.43	0.42
Access	0.49	1.00	0.59	0.58	0.39	0.40	0.39
Satisfaction	0.46	0.59	1.00	0.55	0.37	0.35	0.32
Quality/ Appropriateness	0.61	0.58	0.55	1.00	0.43	0.42	0.44
WAI Bond	0.39	0.39	0.37	0.43	1.00	0.73	0.72
WAI Goal	0.43	0.40	0.35	0.42	0.73	1.00	0.87
WAI Task	0.42	0.39	0.32	0.44	0.72	0.87	1.00

* p < .0001

Table 6. Beta Weights and Uniqueness Indices Obtained in Multiple Regression Analyses Predicting Outcome

Predictor	B	SE B	β	t	Uniqueness Index
Access	0.10	0.05	0.09	1.95	0.00***
Satisfaction	0.29	0.10	0.12	2.81	0.01**
Quality/ Appropriateness	0.33	0.33	0.38	7.91	0.07*
WAI Bond	-0.02	0.06	-0.02	-0.36	0.00
WAI Goal	0.09	0.08	0.07	1.09	0.00
WAI Task	0.15	0.08	0.12	1.80	0.00

* p < .0001 ** p < .005 *** p < .05

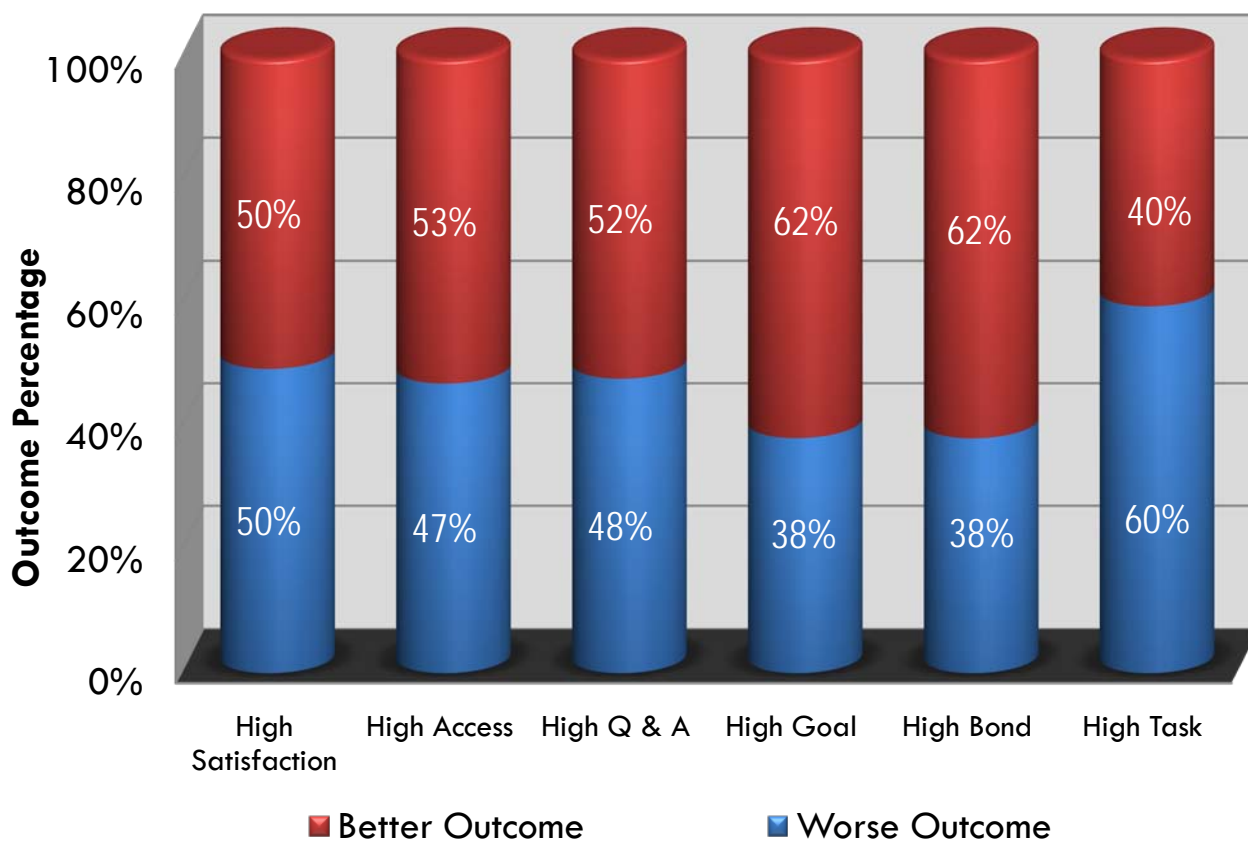
Note. $R^2 = 0.3868$ ($F [6, 569] = 59.09$, $p < 0.01$ for predictor variables.

TABLE 7. CRONBACH'S COEFFICIENT ALPHA

SCALE	N	Items	Cronbach's Coefficient Alpha
Satisfaction	712	1,2,3	0.89
Access	624	4,5,6,7,8,9	0.78
Quality Appropriateness	603	10,11,12,13,14,15,16,17,18,19,20	0.92
Outcome	622	21,22,23,24,25,26,27,28	0.93
WAI Bond	735	WAI 9,10,11,12	0.96
WAI Goal	734	WAI 1,2,3,5	0.98
WAI Task	737	WAI 4,6,7,8	0.96

* Raw Cronbach's Coefficient Alpha values

Figure 1. Outcome Percentages Among Exposure Variables



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APPENDICES

Client Survey

We would like you to help us better understand your experiences at this treatment facility. This survey is for individuals 18 years of age or older, who are currently involved in treatment at this facility. During the survey period, all clients who attend this location will be asked to complete this survey.

The survey is ANONYMOUS, so DO NOT PUT YOUR NAME ON IT. It does not contain any information that could identify you.

The survey is also VOLUNTARY. IF YOU DO NOT FILL IT OUT, IT WILL NOT AFFECT YOUR CARE AT THIS TREATMENT FACILITY IN ANY WAY. Also, the counselors and staff at this location will not receive information about your individual answers.

You will not receive any direct benefit from completing this survey, and it will not cost you anything except the time it takes for you to fill it out. It should take only about 10 minutes to answer the questions. Please put your completed survey in the attached envelope, seal it, and place in the "Client Survey" box at your facility. Staff members can direct you to where the box is located.

If you have questions about this survey, you may contact Dr. Alison Breland at (804) 819-4194.

By completing this survey, you are giving your permission for the researchers to use this information in their research.

Please indicate your agreement/disagreement with each of the following statements by checking the choice that best represents your opinion. Choose ONE response. If the question is about something you have not experienced, check "Does Not Apply"—for example, if you do not receive any medications you would check "Does Not Apply" for the question about side effects.

	<u>Strongly</u> <u>Agree</u>	<u>Agree</u>	<u>I am</u> <u>Neutral</u>	<u>Disagree</u>	<u>Strongly</u> <u>Disagree</u>	<u>Does</u> <u>Not</u> <u>Apply</u>
	1	2	3	4	5	9
1. I like the services I receive here.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. If I had other choices, I would still get services from this agency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I would recommend this agency to a friend or family member.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. The location of services is convenient (parking, public transportation, distance, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Staff are willing to see me as often as I feel it is necessary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Staff return my calls in 24 hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Services are available at times that are good for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I am able to get all the services I think I need.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I am able to see a psychiatrist when I want to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Staff here believe that I can grow, change and recover.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I feel comfortable asking questions about my treatment (including any medications I might be taking).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I feel free to complain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I have been given information about my rights.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<u>Strongly Agree</u>	<u>Agree</u>	<u>I am Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>	<u>Does Not Apply</u>
	1	2	3	4	5	9
14. Staff encourage me to take responsibility for how I live my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Staff tell me what side effects to watch out for.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Staff respect my wishes about who is and who is not to be given information about my treatment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I, not staff, decide my treatment goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Staff are sensitive to my cultural background (race, religion, language, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Staff help me obtain the information I need so that I can take charge of managing my illness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I am encouraged to use client-run programs (support groups, drop-in centers, crisis phone line, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	<u>Strongly Agree</u>	<u>Agree</u>	<u>I am Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>	<u>Does Not Apply</u>
As a direct result of services I receive:	1	2	3	4	5	9
21. I deal more effectively with daily problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I am better able to control my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I am better able to deal with crisis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. I am getting along better with my family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. I do better in social situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. I do better in school and/or work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. My housing situation has improved.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. My symptoms are not bothering me as much.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please choose ONE response for each of the following questions:

1. **Gender:** Male Female

2. **Age:** _____

3. **Ethnicity (check one):** American Indian or Alaska Native Black or African-American

Native Hawaiian or Other Pacific Islander Asian

White Other

4. **Are you Hispanic or Latino?** Yes No

5. **During your current treatment experience, how long have you received services from this organization?**

Less than 1 month 1-2 months 3-5 months 6-11 months

12 months to 2 years More than 2 years to 5 years More than 5 years

The following questions ask about the **last 12 months:**

6. Were you working at a paid job in the last 12 months? Yes No
7. Were you in a psychiatric hospital in the last 12 months? Yes No
8. Were you arrested during the past 12 months? Yes No
9. Prior to this last year, were you ever arrested? Yes No

The following questions ask about the **last 6 months:**

10. How many times have you moved in the last 6 months? _____ times
11. How many days have you been homeless in the last 6 months? _____ days
-

Please rate, as objectively as possible, your view of how you and the counselors here work together, using the below scale and checking the appropriate box. Choose ONE response. If you do not feel you can answer a question, check "Do not know".

	<u>Never</u>	<u>Rarely</u>	<u>Occasionally</u>	<u>Sometimes</u>	<u>Often</u>	<u>Very often</u>	<u>Always</u>	<u>Do not know</u>
	1	2	3	4	5	6	7	9
1. The counselors here understand what I am trying to accomplish in therapy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The counselors here and I are working on mutually-agreed upon goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The counselors here and I agree on what my problems are.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The counselors here and I agree about what we should be working on.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The counselors here and I have established a good understanding of what kinds of changes would be good for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The counselors here and I agree about the steps to be taken to improve my situation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. What I am doing in therapy gives me new ways of looking at my problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I believe the way the counselors and I are working with my problem is correct.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I am confident that the counselors here can help me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I trust the counselors here and they trust me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. The counselors here appreciate me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The counselors here like me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX B: MHSIP Classifications of Client Satisfaction

List of Items on the MHSIP 28 Item Consumer Survey (Version 1.1, Feb., 2000) that Correspond to the Four Domains

Domain	Consumer Survey Question
General Satisfaction	1. I like the services that I received here.
General Satisfaction	2. If I had other choices, I would still get services from this agency.
General Satisfaction	3. I would recommend this agency to a friend or family member.
Access	4. The location of services was convenient (parking, public transportation, distance, etc.).
Access	5. Staff were willing to see me as often as I felt it was necessary.
Access	6. Staff returned my call in 24 hours.
Access	7. Services were available at times that were good for me.
Access	8. I was able to get all the services I thought I needed.
Access	9. I was able to see a psychiatrist when I wanted to.
Quality/Appropriateness	10. Staff here believe that I can grow, change and recover.
Quality/Appropriateness	11. I felt comfortable asking questions about my treatment and medication.
Quality/Appropriateness	12. I felt free to complain.
Quality/Appropriateness	13. I was given information about my rights.
Quality/Appropriateness	14. Staff encouraged me to take responsibility for how I live my life.
Quality/Appropriateness	15. Staff told me what side effects to watch out for.
Quality/Appropriateness	16. Staff respected my wishes about who is and who is not to be given information about my treatment.
Quality/Appropriateness	17. I, not staff, decided my treatment goals.
Quality/Appropriateness	18. Staff were sensitive to my cultural background (race, religion, language, etc.)
Quality/Appropriateness	19. Staff helped me obtain the information I needed so that I could take charge of managing my illness.
Quality/Appropriateness	20. I was encouraged to use consumer-run programs (support groups, drop-in centers, crisis phone line, etc.).
Outcomes	21. I deal more effectively with daily problems.
Outcomes	22. I am better able to control my life.
Outcomes	23. I am better able to deal with crisis.
Outcomes	24. I am getting along better with my family.
Outcomes	25. I do better in social situations.
Outcomes	26. I do better in school and/or work.
Outcomes	27. My housing situation has improved.
Outcomes	28. My symptoms are not bothering me as much.

<http://www.mhsip.org/AdultSurveyDomains.pdf>

SAS CODE

```

/*Theresa Do
Master in Public Health Program
Department of Epidemiology and Community Health
Virginia Commonwealth University, Richmond, VA*/

/*Creating a RESEARCH library*/
TITLE1 'NIDA Client Survey Data Analysis';

LIBNAME research 'C:\Users\Theresa Do\Documents\MPH Brief\MPH Program\MPH
Research Project\SAS Code';
/*LIBNAME research ' F:\MPH Program\MPH Research Project\SAS Code';*/

/*Converting the SPSS Database into a SAS Database*/
PROC IMPORT OUT= research.Client_Survey_SAS
    DATAFILE= "C:\Users\Theresa Do\Documents\MPH Brief\MPH
Program\MPH Research Project\Client Survey Database.sav"
    /*DATAFILE = 'F:\MPH Program\MPH Research Project\Client
Survey Database.sav'*/
    DBMS=SAV REPLACE;

RUN;
/*WRITING FORMATS FOR GENDER, AGE, ETNN, HISP, SERV, WORK, PSYCH, ARREST1,
ARREST2, MOVE, HOMELESS, etc.*/

PROC FORMAT;

VALUE          GENDERf
    1 = '1 - MALE'
    2 = '2 - FEMALE'
;

VALUE          AGEf
    1 = '1 - 18-24 Years'
    2 = '2 - 25-30 Years'
    3 = '3 - 31-35 Years'
    4 = ' 4 - 36-40 Years'
    5 = '5 - 41-45 Years'
    6 = '6 - 46-50 Years'
    7 = '7 - 51-55 Years'
    8 = '8 - 56-60 Years'
    9 = '9 - 61-64 Years'
   10 = '10 -      65 Years and older'
;

VALUE          RACEf
    1 = '1 - Black/African-American'
    2 = '2 - White'
    3 = '3 - Other'
;

VALUE ETHNF
    1 = '1 - Black/African-American'
    2 = '2 - White'
    3 = '3 - Other'
;

VALUE HISPf

```

```

        1 = '1 - Yes, Hispanic or Latino'
        2 = '2 - NO, Not Hispanic or Latino'
;

VALUE SERVf
        1 = '1 - Less than 1 month of receiving services during the
current treatment'
        2 = '2 - 1-2 months of receiving services during the current
treatment'
        3 = '3 - 3-5 months of receiving services during the current
treatment'
        4 = '4 - 6-11 months of receiving services during the current
treatment'
        5 = '5 - 12-24 months of receiving services during the current
treatment'
        6 = '6 - Greater than 24 months but less than 60 months of
receiving services during the current treatment'
        7 = '7 - More than 60 months of receiving services during the
current treatment'
;

VALUE WORKf
        1 = '1 - Yes, working at a paid job in the last 12 months'
        2 = '2 - No, not working at a paid job in the last 12 months'
;

VALUE PSYCHf
        1 = '1 - Yes, was in a psychiatric hospital in the last 12
months'
        2 = '2 - No, was not in a psychiatric hospital in the last 12
months'
;

VALUE ARREST1f
        1 = '1 - Yes, was arrested in the last 12 months'
        2 = '2 - No, was not arrested in the last 12 months'
;

VALUE ARREST2f
        1 = '1 - Yes, was arrested prior to this last year'
        2 = '2 - No, was not arrested prior to this last year'
;

VALUE MOVEf
        1 = '1 - Did not move in the last 6 months'
        2 = '2 - Moved once in the last 6 months'
        3 = '3 - Moved twice in the last 6 months'
        4 = '4 - Moved more than twice in the last 6 months'
;

VALUE HOMELESSf
        1 = '1 - Was not homeless in the last 6 months'
        2 = '2 - Was homeless at least once in the last 6 months'
;

VALUE SATISFACTION1f
        0 = '0 - Does not Apply'

```


1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE SATISFACTION2f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE SATISFACTION3f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE ACCESS1f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE ACCESS2f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE ACCESS3f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE ACCESS4f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'

```
4 = '4 - Agree'
5 = '5 - Strongly Agree'
;

VALUE ACCESS5f
0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'
;

VALUE ACCESS6f
0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'
;

VALUE QUALITY1f
0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'
;

VALUE QUALITY2f
0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'
;

VALUE QUALITY3f
0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'
;

VALUE QUALITY4f
0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'
;
```

VALUE QUALITY5f

- 0 = '0 - Does not Apply'
- 1 = '1 - Strongly Disagree'
- 2 = '2 - Disagree'
- 3 = '3 - Neutral'
- 4 = '4 - Agree'
- 5 = '5 - Strongly Agree'

;

VALUE QUALITY6f

- 0 = '0 - Does not Apply'
- 1 = '1 - Strongly Disagree'
- 2 = '2 - Disagree'
- 3 = '3 - Neutral'
- 4 = '4 - Agree'
- 5 = '5 - Strongly Agree'

;

VALUE QUALITY7f

- 0 = '0 - Does not Apply'
- 1 = '1 - Strongly Disagree'
- 2 = '2 - Disagree'
- 3 = '3 - Neutral'
- 4 = '4 - Agree'
- 5 = '5 - Strongly Agree'

;

VALUE QUALITY8f

- 0 = '0 - Does not Apply'
- 1 = '1 - Strongly Disagree'
- 2 = '2 - Disagree'
- 3 = '3 - Neutral'
- 4 = '4 - Agree'
- 5 = '5 - Strongly Agree'

;

VALUE QUALITY9f

- 0 = '0 - Does not Apply'
- 1 = '1 - Strongly Disagree'
- 2 = '2 - Disagree'
- 3 = '3 - Neutral'
- 4 = '4 - Agree'
- 5 = '5 - Strongly Agree'

;

VALUE QUALITY10f

- 0 = '0 - Does not Apply'
- 1 = '1 - Strongly Disagree'
- 2 = '2 - Disagree'
- 3 = '3 - Neutral'
- 4 = '4 - Agree'
- 5 = '5 - Strongly Agree'

;

VALUE QUALITY11f

- 0 = '0 - Does not Apply'

1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE OUTCOME1f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE OUTCOME2f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE OUTCOME3f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE OUTCOME4f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE OUTCOME5f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'

;

VALUE OUTCOME6f

0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'

```
4 = '4 - Agree'
5 = '5 - Strongly Agree'
;

VALUE OUTCOME7f
0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'
;

VALUE OUTCOME8f
0 = '0 - Does not Apply'
1 = '1 - Strongly Disagree'
2 = '2 - Disagree'
3 = '3 - Neutral'
4 = '4 - Agree'
5 = '5 - Strongly Agree'
;

VALUE WAITASK6f
0 = '0 - Does not Apply'
1 = '1 - Never'
2 = '2 - Rarely'
3 = '3 - Occasionally'
4 = '4 - Sometimes'
5 = '5 - Often'
6 = '6 - Very Often'
7 = '7 - Always'
;

VALUE WAITASK8f
0 = '0 - Does not Apply'
1 = '1 - Never'
2 = '2 - Rarely'
3 = '3 - Occasionally'
4 = '4 - Sometimes'
5 = '5 - Often'
6 = '6 - Very Often'
7 = '7 - Always'
;

VALUE WAITASK4f
0 = '0 - Does not Apply'
1 = '1 - Never'
2 = '2 - Rarely'
3 = '3 - Occasionally'
4 = '4 - Sometimes'
5 = '5 - Often'
6 = '6 - Very Often'
7 = '7 - Always'
;

VALUE WAITASK7f
0 = '0 - Does not Apply'
```

1 = '1 - Never'
2 = '2 - Rarely'
3 = '3 - Occaisionally'
4 = '4 - Sometimes'
5 = '5 - Often'
6 = '6 - Very Often'
7 = '7 - Always'

;

VALUE WAIBOND9f

0 = '0 - Does not Apply'
1 = '1 - Never'
2 = '2 - Rarely'
3 = '3 - Occaisionally'
4 = '4 - Sometimes'
5 = '5 - Often'
6 = '6 - Very Often'
7 = '7 - Always'

;

VALUE WAIBOND10f

0 = '0 - Does not Apply'
1 = '1 - Never'
2 = '2 - Rarely'
3 = '3 - Occaisionally'
4 = '4 - Sometimes'
5 = '5 - Often'
6 = '6 - Very Often'
7 = '7 - Always'

;

VALUE WAIBOND11f

0 = '0 - Does not Apply'
1 = '1 - Never'
2 = '2 - Rarely'
3 = '3 - Occaisionally'
4 = '4 - Sometimes'
5 = '5 - Often'
6 = '6 - Very Often'
7 = '7 - Always'

;

VALUE WAIBOND12f

0 = '0 - Does not Apply'
1 = '1 - Never'
2 = '2 - Rarely'
3 = '3 - Occaisionally'
4 = '4 - Sometimes'
5 = '5 - Often'
6 = '6 - Very Often'
7 = '7 - Always'

;

VALUE WAIGOAL1f

0 = '0 - Does not Apply'
1 = '1 - Never'

```

        2 = '2 - Rarely'
        3 = '3 - Occaisionally'
        4 = '4 - Sometimes'
        5 = '5 - Often'
        6 = '6 - Very Often'
        7 = '7 - Always'
;

VALUE WAIGOAL2f
    0 = '0 - Does not Apply'
    1 = '1 - Never'
    2 = '2 - Rarely'
    3 = '3 - Occaisionally'
    4 = '4 - Sometimes'
    5 = '5 - Often'
    6 = '6 - Very Often'
    7 = '7 - Always'
;

VALUE WAIGOAL3f
    0 = '0 - Does not Apply'
    1 = '1 - Never'
    2 = '2 - Rarely'
    3 = '3 - Occaisionally'
    4 = '4 - Sometimes'
    5 = '5 - Often'
    6 = '6 - Very Often'
    7 = '7 - Always'
;

VALUE WAIGOAL5f
    0 = '0 - Does not Apply'
    1 = '1 - Never'
    2 = '2 - Rarely'
    3 = '3 - Occaisionally'
    4 = '4 - Sometimes'
    5 = '5 - Often'
    6 = '6 - Very Often'
    7 = '7 - Always'
;

VALUE OUTCOMESCALEDICOTf
    1 = '1 - NO'
    2 = '2 - YES'
;

VALUE WAI_TOTALf
    1 = '1 - NO'
    2 = '2 - YES'
;

VALUE WAI_BOND_SCALEf
    1 = '1 - NO'
    2 = '2 - YES'
;

VALUE WAI_GOAL_SCALEf

```

```

        1 = '1 - NO'
        2 = ' 2 - YES'
;

VALUE WAI_TASK_SCALEf
        1 = '1 - NO'
        2 = ' 2 - YES'
;

VALUE SATISFACTION_SCALEf
        1 = '1 - NO'
        2 = ' 2 - YES'
;

VALUE Access_SCALEf
        1 = '1 - NO'
        2 = ' 2 - YES'
;

VALUE QUALITY_SCALEf
        1 = '1 - NO'
        2 = ' 2 - YES'
;

VALUE OUTCOMESSCALEDDICOTMEDf
        1 = '1 - Lower Outcome'
        2 = ' 2 - Higher Outcome'
;

VALUE WAITASK_DICOTMEDf
        1 = '1 - Lower WAI Task'
        2 = ' 2 - Higher WAI Task'
;

VALUE WAIBOND_DICOTMEDf
        1 = '1 - Lower WAI Bond'
        2 = ' 2 - Higher WAI Bond'
;

VALUE WAIGOAL_DICOTMEDf
        1 = '1 - Lower WAI Goal'
        2 = ' 2 - Higher WAI Goal'
;

VALUE SATISFACTION_DICOTMEDf
        1 = '1 - Lower Satisfaction'
        2 = ' 2 - Higher Satisfaction'
;

VALUE ACCESS_DICOTMEDf
        1 = '1 - Lower Access'
        2 = ' 2 - Higher Access'
;

VALUE QUALITY_DICOTMEDf
        1 = '1 - Lower Quality'

```



```

                2 = ' 2 - Higher Quality'
;

run;
/*****CREATING A NEW DATASET*****/
/*****RECODING OF VARIABLES*****/

DATA research.clientsurveyrecodes;
SET research.Client_Survey_SAS;

/*****RECODING THE GENDER VARIABLE*/
IF GENDER = 1 THEN GENDERnew = 1;
ELSE IF GENDER = 2 THEN GENDERnew = 2;
ELSE IF GENDER = 8888 THEN GENDERnew = .;
ELSE IF GENDER = . THEN GENDERnew = .;
/*Applying Labels and Formats to recoded variable*/
LABEL GENDERnew = 'Recoded Gender';
FORMAT GENDERnew GENDERf.;

/*****RECODING THE AGE VARIABLE*/
IF AGE GE 18 and AGE LE 24 THEN AGEGRP = 1;
ELSE IF AGE GE 25 and AGE LE 30 THEN AGEGRP = 2;
ELSE IF AGE GE 31 and AGE LE 35 THEN AGEGRP = 3;
ELSE IF AGE GE 36 and AGE LE 40 THEN AGEGRP = 4;
ELSE IF AGE GE 41 and AGE LE 45 THEN AGEGRP = 5;
ELSE IF AGE GE 46 and AGE LE 50 THEN AGEGRP = 6;
ELSE IF AGE GE 51 and AGE LE 55 THEN AGEGRP = 7;
ELSE IF AGE GE 56 and AGE LE 60 THEN AGEGRP = 8;
ELSE IF AGE GE 61 and AGE LE 64 THEN AGEGRP = 9;
ELSE IF AGE GT 64 THEN AGEGRP = 10;
ELSE IF AGE = 8888 THEN AGEGRP = .;
ELSE IF AGE = . THEN AGEGRP = .;
/*Applying Labels and Formats to recoded variable*/
LABEL AGEGRP = 'Recoded Age Groupings';
FORMAT AGEGRP AGEf.;

/*****RECODING THE ETHNICITY/RACE VARIABLE*/
IF ETHN = 1 THEN ETHNnew = 3;
ELSE IF ETHN = 2 THEN ETHNnew = 1;
ELSE IF ETHN = 3 THEN ETHNnew = 3;
ELSE IF ETHN = 4 THEN ETHNnew = 3;
ELSE IF ETHN = 5 THEN ETHNnew = 2;
ELSE IF ETHN = 6 THEN ETHNnew = 3;
ELSE IF ETHN = 8888 THEN ETHNnew = .;
ELSE IF ETHN = . THEN ETHNnew = .;
/*Applying Labels and Formats to recoded variable*/
LABEL ETHNnew = 'Recoded Race/Ethnicity';
FORMAT ETHNnew ETHNf.;

/*****RECODING THE HISPANIC/LATINO VARIABLE*/
IF HISP = 1 THEN HISPnew = 1;
ELSE IF HISP = 2 THEN HISPnew = 2;

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ELSE IF HISP      = 3                THEN HISPnew = .;
ELSE IF HISP      = 8888             THEN HISPnew = .;
ELSE IF HISP      = .                THEN HISPnew = .;
/*Applying Labels and Formats to recoded variable*/
LABEL            HISPnew = 'Hispanic or Latino Status';
FORMAT           HISPnew HISPf.;

/*RECODING THE SERV (Time in current treatment from organization) VARIABLE*/
IF              SERV      = 1                THEN SERVnew = 1;
ELSE IF SERV     = 2                THEN SERVnew = 2;
ELSE IF SERV     = 3                THEN SERVnew = 3;
ELSE IF SERV     = 4                THEN SERVnew = 4;
ELSE IF SERV     = 5                THEN SERVnew = 5;
ELSE IF SERV     = 6                THEN SERVnew = 6;
ELSE IF SERV     = 7                THEN SERVnew = 7;
ELSE IF SERV     = 8888             THEN SERVnew = .;
ELSE IF SERV     = .                THEN SERVnew = .;
/*Applying Labels and Formats to recoded variable*/
LABEL            SERVnew = 'Recoded Time in Current Treatment Services from
Organization';
FORMAT           SERVnew SERVf.;

/*RECODING THE WORK VARIABLE*/
IF              WORK      = 1                THEN WORKnew = 1;
ELSE IF WORK     = 2                THEN WORKnew = 2;
ELSE IF WORK     = 8888             THEN WORKnew = .;
ELSE IF WORK     = .                THEN WORKnew = .;
/*Applying Labels and Formats to recoded variable*/
LABEL            WORKnew = 'Recoded Working at a paid job in the last 12 months';
FORMAT           WORKnew WORKf.;

/*RECODING THE PSYCH VARIABLE*/
IF              PSYCH     = 1                THEN PSYCHnew = 1;
ELSE IF PSYCH    = 2                THEN PSYCHnew = 2;
ELSE IF PSYCH    = 8888             THEN PSYCHnew = .;
ELSE IF PSYCH    = .                THEN PSYCHnew = .;
/*Applying Labels and Formats to recoded variable*/
LABEL            PSYCHnew = 'Recoded Psychiatric Hospital Status';
FORMAT           PSYCHnew PSYCHf.;

/*RECODING THE ARREST1 VARIABLE*/
IF              ARREST1   = 1                THEN ARREST1new = 1;
ELSE IF ARREST1  = 2                THEN ARREST1new = 2;
ELSE IF ARREST1  = 8888             THEN ARREST1new = .;
ELSE IF ARREST1  = .                THEN ARREST1new = .;
/*Applying Labels and Formats to recoded variable*/
LABEL            ARREST1new = 'Recoded Arrested in the Last 12 mos Status';
FORMAT           ARREST1new ARREST1f.;

/*RECODING THE ARREST2 VARIABLE*/
IF              ARREST2   = 1                THEN ARREST2new = 1;
ELSE IF ARREST2  = 2                THEN ARREST2new = 2;
ELSE IF ARREST2  = 8888             THEN ARREST2new = .;
ELSE IF ARREST2  = .                THEN ARREST2new = .;
/*Applying Labels and Formats to recoded variable*/
LABEL            ARREST2new = 'Recoded Prior to the Last 12 months were you ever
arrested Status';

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FORMAT          ARREST2new ARREST2f.;

/*RECODING THE MOVE VARIABLE*/
IF              MOVE          = 0          THEN MOVENEW = 1;
ELSE IF MOVE    = 1          THEN MOVENEW = 2;
ELSE IF MOVE    = 2          THEN MOVENEW = 3;
ELSE IF MOVE    GT 2          THEN MOVENEW = 4;
ELSE IF MOVE    = 8888       THEN MOVENEW = .;
ELSE IF MOVE    = .          THEN MOVENEW = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          MOVENEW = 'Recoded Times Moved in the Last 6 months';
FORMAT        MOVENEW MOVEf.;

/*RECODING THE HOMELESS VARIABLE from a continuous variable into a
dichotomous variable*/
IF              HOMELESS     = 0          THEN HOMELESSNEW = 1;
ELSE IF HOMELESS GE 1        THEN HOMELESSNEW = 2;
ELSE IF HOMELESS = 8888     THEN HOMELESSNEW = .;
ELSE IF HOMELESS = .        THEN HOMELESSNEW = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          HOMELESSNEW = 'Recoded Homelessness in the Last 6 months';
FORMAT        HOMELESSNEW HOMELESSf.;

/*****
/*RECODING SATISFACTION VARIABLES - CON1-3*/
/*****
/*SWITCHING THE SCALE so that STRONGLY AGREE = 5*/

IF              CON1 = 1      THEN SATISFACTION1 = 5;
ELSE IF CON1 = 2      THEN SATISFACTION1 = 4;
ELSE IF CON1 = 3      THEN SATISFACTION1 = 3;
ELSE IF CON1 = 4      THEN SATISFACTION1 = 2;
ELSE IF CON1 = 5      THEN SATISFACTION1 = 1;
ELSE IF CON1 = 9      THEN SATISFACTION1 = 0;
ELSE IF CON1 = 8888   THEN SATISFACTION1 = .;
ELSE IF CON1 = .      THEN SATISFACTION1 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          SATISFACTION1 = 'I like the services I receive here';
FORMAT        SATISFACTION1 SATISFACTION1f.;

IF              CON2 = 1      THEN SATISFACTION2 = 5;
ELSE IF CON2 = 2      THEN SATISFACTION2 = 4;
ELSE IF CON2 = 3      THEN SATISFACTION2 = 3;
ELSE IF CON2 = 4      THEN SATISFACTION2 = 2;
ELSE IF CON2 = 5      THEN SATISFACTION2 = 1;
ELSE IF CON2 = 9      THEN SATISFACTION2 = 0;
ELSE IF CON2 = 8888   THEN SATISFACTION2 = .;
ELSE IF CON2 = .      THEN SATISFACTION2 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          SATISFACTION2 = 'If I had other choices, I would still get
services from this agency';
FORMAT        SATISFACTION2 SATISFACTION2f.;

IF              CON3 = 1      THEN SATISFACTION3 = 5;
ELSE IF CON3 = 2      THEN SATISFACTION3 = 4;
ELSE IF CON3 = 3      THEN SATISFACTION3 = 3;
ELSE IF CON3 = 4      THEN SATISFACTION3 = 2;

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ELSE IF CON3 = 5 THEN SATISFACTION3 = 1;
ELSE IF CON3 = 9 THEN SATISFACTION3 = 0;
ELSE IF CON3 = 8888 THEN SATISFACTION3 = .;
ELSE IF CON3 = . THEN SATISFACTION3 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          SATISFACTION3 = 'I would recommend this agency to a friend or
family member';
FORMAT          SATISFACTION3 SATISFACTION3f.;

/*****/
/*RECODING ACCESS VARIABLES - CON 4-9*****/
/*****/
/*SWITCHING THE SCALE so that STRONGLY AGREE = 5*/

IF              CON4 = 1    THEN ACCESS1 = 5;
ELSE IF CON4 = 2 THEN ACCESS1 = 4;
ELSE IF CON4 = 3 THEN ACCESS1 = 3;
ELSE IF CON4 = 4 THEN ACCESS1 = 2;
ELSE IF CON4 = 5 THEN ACCESS1 = 1;
ELSE IF CON4 = 9 THEN ACCESS1 = 0;
ELSE IF CON4 = 8888 THEN ACCESS1 = .;
ELSE IF CON4 = . THEN ACCESS1 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          ACCESS1 = 'The location of services is convenient (parking,
public transportation, distance, etc.)';
FORMAT          ACCESS1 ACCESS1f.;

IF              CON5 = 1    THEN ACCESS2 = 5;
ELSE IF CON5 = 2 THEN ACCESS2 = 4;
ELSE IF CON5 = 3 THEN ACCESS2 = 3;
ELSE IF CON5 = 4 THEN ACCESS2 = 2;
ELSE IF CON5 = 5 THEN ACCESS2 = 1;
ELSE IF CON5 = 9 THEN ACCESS2 = 0;
ELSE IF CON5 = 8888 THEN ACCESS2 = .;
ELSE IF CON5 = . THEN ACCESS2 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          ACCESS2 = 'Staff are willing to see me as often as I feel it is
necessary';
FORMAT          ACCESS2 ACCESS2f.;

IF              CON6 = 1    THEN ACCESS3 = 5;
ELSE IF CON6 = 2 THEN ACCESS3 = 4;
ELSE IF CON6 = 3 THEN ACCESS3 = 3;
ELSE IF CON6 = 4 THEN ACCESS3 = 2;
ELSE IF CON6 = 5 THEN ACCESS3 = 1;
ELSE IF CON6 = 9 THEN ACCESS3 = 0;
ELSE IF CON6 = 8888 THEN ACCESS3 = .;
ELSE IF CON6 = . THEN ACCESS3 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          ACCESS3 = 'Staff return my calls within 24 hours';
FORMAT          ACCESS3 ACCESS3f.;

IF              CON7 = 1    THEN ACCESS4 = 5;
ELSE IF CON7 = 2 THEN ACCESS4 = 4;
ELSE IF CON7 = 3 THEN ACCESS4 = 3;
ELSE IF CON7 = 4 THEN ACCESS4 = 2;
ELSE IF CON7 = 5 THEN ACCESS4 = 1;

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ELSE IF CON7 = 9 THEN ACCESS4 = 0;
ELSE IF CON7 = 8888 THEN ACCESS4 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL ACCESS4 = 'Services are available at times that were good for
me';
FORMAT ACCESS4 ACCESS4f.;

IF CON8 = 1 THEN ACCESS5 = 5;
ELSE IF CON8 = 2 THEN ACCESS5 = 4;
ELSE IF CON8 = 3 THEN ACCESS5 = 3;
ELSE IF CON8 = 4 THEN ACCESS5 = 2;
ELSE IF CON8 = 5 THEN ACCESS5 = 1;
ELSE IF CON8 = 9 THEN ACCESS5 = 0;
ELSE IF CON8 = 8888 THEN ACCESS5 = .;
ELSE IF CON8 = . THEN ACCESS5 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL ACCESS5 = 'I am able to get all the services I think I need';
FORMAT ACCESS5 ACCESS5f.;

IF CON9 = 1 THEN ACCESS6 = 5;
ELSE IF CON9 = 2 THEN ACCESS6 = 4;
ELSE IF CON9 = 3 THEN ACCESS6 = 3;
ELSE IF CON9 = 4 THEN ACCESS6 = 2;
ELSE IF CON9 = 5 THEN ACCESS6 = 1;
ELSE IF CON9 = 9 THEN ACCESS6 = 0;
ELSE IF CON9 = 8888 THEN ACCESS6 = .;
ELSE IF CON9 = . THEN ACCESS6 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL ACCESS6 = 'I am able to see a psychiatrist when I want to';
FORMAT ACCESS6 ACCESS6f.;

/*****
/*RECODING QUALITY VARIABLES - CON 10-20****
/*****
/*SWITCHING THE SCALE so that STRONGLY AGREE = 5*/

IF CON10 = 1 THEN QUALITY1 = 5;
ELSE IF CON10 = 2 THEN QUALITY1 = 4;
ELSE IF CON10 = 3 THEN QUALITY1 = 3;
ELSE IF CON10 = 4 THEN QUALITY1 = 2;
ELSE IF CON10 = 5 THEN QUALITY1 = 1;
ELSE IF CON10 = 9 THEN QUALITY1 = 0;
ELSE IF CON10 = 8888 THEN QUALITY1 = .;
ELSE IF CON10 = . THEN QUALITY1 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL QUALITY1 = 'Staff here believe that I can grow, change,
recover.';
FORMAT QUALITY1 QUALITY1f.;

IF CON11 = 1 THEN QUALITY2 = 5;
ELSE IF CON11 = 2 THEN QUALITY2 = 4;
ELSE IF CON11 = 3 THEN QUALITY2 = 3;
ELSE IF CON11 = 4 THEN QUALITY2 = 2;
ELSE IF CON11 = 5 THEN QUALITY2 = 1;
ELSE IF CON11 = 9 THEN QUALITY2 = 0;
ELSE IF CON11 = 8888 THEN QUALITY2 = .;
ELSE IF CON11 = . THEN QUALITY2 = .;

```

```

/*Applying Labels and Formats to recoded variable*/
LABEL      QUALITY2 = 'I feel comfortable asking questions about my
treatment and medication';
FORMAT     QUALITY2 QUALITY2f.;

IF          CON12 = 1          THEN QUALITY3 = 5;
ELSE IF    CON12 = 2          THEN QUALITY3 = 4;
ELSE IF    CON12 = 3          THEN QUALITY3 = 3;
ELSE IF    CON12 = 4          THEN QUALITY3 = 2;
ELSE IF    CON12 = 5          THEN QUALITY3 = 1;
ELSE IF    CON12 = 9          THEN QUALITY3 = 0;
ELSE IF    CON12 = 8888      THEN QUALITY3 = .;
ELSE IF    CON12 = .          THEN QUALITY3 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      QUALITY3 = 'I feel free to complain';
FORMAT     QUALITY3 QUALITY3f.;

IF          CON13 = 1          THEN QUALITY4 = 5;
ELSE IF    CON13 = 2          THEN QUALITY4 = 4;
ELSE IF    CON13 = 3          THEN QUALITY4 = 3;
ELSE IF    CON13 = 4          THEN QUALITY4 = 2;
ELSE IF    CON13 = 5          THEN QUALITY4 = 1;
ELSE IF    CON13 = 9          THEN QUALITY4 = 0;
ELSE IF    CON13 = 8888      THEN QUALITY4 = .;
ELSE IF    CON13 = .          THEN QUALITY4 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      QUALITY4 = 'I have been given information about my rights';
FORMAT     QUALITY4 QUALITY4f.;

IF          CON14 = 1          THEN QUALITY5 = 5;
ELSE IF    CON14 = 2          THEN QUALITY5 = 4;
ELSE IF    CON14 = 3          THEN QUALITY5 = 3;
ELSE IF    CON14 = 4          THEN QUALITY5 = 2;
ELSE IF    CON14 = 5          THEN QUALITY5 = 1;
ELSE IF    CON14 = 9          THEN QUALITY5 = 0;
ELSE IF    CON14 = 8888      THEN QUALITY5 = .;
ELSE IF    CON14 = .          THEN QUALITY5 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      QUALITY5 = 'Staff encourage me to take responsibility for how I
live my life';
FORMAT     QUALITY5 QUALITY5f.;

IF          CON15 = 1          THEN QUALITY6 = 5;
ELSE IF    CON15 = 2          THEN QUALITY6 = 4;
ELSE IF    CON15 = 3          THEN QUALITY6 = 3;
ELSE IF    CON15 = 4          THEN QUALITY6 = 2;
ELSE IF    CON15 = 5          THEN QUALITY6 = 1;
ELSE IF    CON15 = 9          THEN QUALITY6 = 0;
ELSE IF    CON15 = 8888      THEN QUALITY6 = .;
ELSE IF    CON15 = .          THEN QUALITY6 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      QUALITY6 = 'Staff tell me what side effects to watch out for';
FORMAT     QUALITY6 QUALITY6f.;

IF          CON16 = 1          THEN QUALITY7 = 5;
ELSE IF    CON16 = 2          THEN QUALITY7 = 4;
ELSE IF    CON16 = 3          THEN QUALITY7 = 3;

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ELSE IF CON16 = 4           THEN QUALITY7 = 2;
ELSE IF CON16 = 5           THEN QUALITY7 = 1;
ELSE IF CON16 = 9           THEN QUALITY7 = 0;
ELSE IF CON16 = 8888       THEN QUALITY7 = .;
ELSE IF CON16 = .           THEN QUALITY7 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      QUALITY7 = 'Staff respect by wishes about
who is and who is not to be given information about my treatment';
FORMAT     QUALITY7 QUALITY7f.;

IF          CON17 = 1        THEN QUALITY8 = 5;
ELSE IF    CON17 = 2        THEN QUALITY8 = 4;
ELSE IF    CON17 = 3        THEN QUALITY8 = 3;
ELSE IF    CON17 = 4        THEN QUALITY8 = 2;
ELSE IF    CON17 = 5        THEN QUALITY8 = 1;
ELSE IF    CON17 = 9        THEN QUALITY8 = 0;
ELSE IF    CON17 = 8888     THEN QUALITY8 = .;
ELSE IF    CON17 = .        THEN QUALITY8 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      QUALITY8 = 'I, not staff decide my treatment goals';
FORMAT     QUALITY8 QUALITY8f.;

IF          CON18 = 1        THEN QUALITY9 = 5;
ELSE IF    CON18 = 2        THEN QUALITY9 = 4;
ELSE IF    CON18 = 3        THEN QUALITY9 = 3;
ELSE IF    CON18 = 4        THEN QUALITY9 = 2;
ELSE IF    CON18 = 5        THEN QUALITY9 = 1;
ELSE IF    CON18 = 9        THEN QUALITY9 = 0;
ELSE IF    CON18 = 8888     THEN QUALITY9 = .;
ELSE IF    CON18 = .        THEN QUALITY9 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      QUALITY9 = 'Staff are sensitive to my cultural background
(race,religion,language, etc.)';
FORMAT     QUALITY9 QUALITY9f.;

IF          CON19 = 1        THEN QUALITY10 = 5;
ELSE IF    CON19 = 2        THEN QUALITY10 = 4;
ELSE IF    CON19 = 3        THEN QUALITY10 = 3;
ELSE IF    CON19 = 4        THEN QUALITY10 = 2;
ELSE IF    CON19 = 5        THEN QUALITY10 = 1;
ELSE IF    CON19 = 9        THEN QUALITY10 = 0;
ELSE IF    CON19 = 8888     THEN QUALITY10 = .;
ELSE IF    CON19 = .        THEN QUALITY10 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      QUALITY10 = 'Staff help me obtain teh information I ned so
that I can take charge of managing my illness';
FORMAT     QUALITY10 QUALITY10f.;

IF          CON20 = 1        THEN QUALITY11 = 5;
ELSE IF    CON20 = 2        THEN QUALITY11 = 4;
ELSE IF    CON20 = 3        THEN QUALITY11 = 3;
ELSE IF    CON20 = 4        THEN QUALITY11 = 2;
ELSE IF    CON20 = 5        THEN QUALITY11 = 1;
ELSE IF    CON20 = 9        THEN QUALITY11 = 0;
ELSE IF    CON20 = 8888     THEN QUALITY11 = .;
ELSE IF    CON20 = .        THEN QUALITY11 = .;
/*Applying Labels and Formats to recoded variable*/

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LABEL          QUALITY11 = 'I am encouraged to use client-run programs
(support groups, drop-in centers, crisis phone line, etc.>';
FORMAT          QUALITY11 QUALITY11f.;

/*****
/*RECODING OUTCOMES VARIABLES - CON 21-28****
*****/
/*SWITCHING THE SCALE so that STRONGLY AGREE = 5*/

IF              CON21 = 1          THEN OUTCOME1 = 5;
ELSE IF CON21 = 2          THEN OUTCOME1 = 4;
ELSE IF CON21 = 3          THEN OUTCOME1 = 3;
ELSE IF CON21 = 4          THEN OUTCOME1 = 2;
ELSE IF CON21 = 5          THEN OUTCOME1 = 1;
ELSE IF CON21 = 9          THEN OUTCOME1 = 0;
ELSE IF CON21 = 8888      THEN OUTCOME1 = .;
ELSE IF CON21 = .          THEN OUTCOME1 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          OUTCOME1 = 'I deal more effectively with deal more effectively
with daily problems';
FORMAT          OUTCOME1 OUTCOME1f.;

IF              CON22 = 1          THEN OUTCOME2 = 5;
ELSE IF CON22 = 2          THEN OUTCOME2 = 4;
ELSE IF CON22 = 3          THEN OUTCOME2 = 3;
ELSE IF CON22 = 4          THEN OUTCOME2 = 2;
ELSE IF CON22 = 5          THEN OUTCOME2 = 1;
ELSE IF CON22 = 9          THEN OUTCOME2 = 0;
ELSE IF CON22 = 8888      THEN OUTCOME2 = .;
ELSE IF CON22 = .          THEN OUTCOME2 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          OUTCOME2 = 'I am better able to control my life';
FORMAT          OUTCOME2 OUTCOME2f.;

IF              CON23 = 1          THEN OUTCOME3 = 5;
ELSE IF CON23 = 2          THEN OUTCOME3 = 4;
ELSE IF CON23 = 3          THEN OUTCOME3 = 3;
ELSE IF CON23 = 4          THEN OUTCOME3 = 2;
ELSE IF CON23 = 5          THEN OUTCOME3 = 1;
ELSE IF CON23 = 9          THEN OUTCOME3 = 0;
ELSE IF CON23 = 8888      THEN OUTCOME3 = .;
ELSE IF CON23 = .          THEN OUTCOME3 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          OUTCOME3 = 'I am beter able to deal with crisis';
FORMAT          OUTCOME3 OUTCOME3f.;

IF              CON24 = 1          THEN OUTCOME4 = 5;
ELSE IF CON24 = 2          THEN OUTCOME4 = 4;
ELSE IF CON24 = 3          THEN OUTCOME4 = 3;
ELSE IF CON24 = 4          THEN OUTCOME4 = 2;
ELSE IF CON24 = 5          THEN OUTCOME4 = 1;
ELSE IF CON24 = 9          THEN OUTCOME4 = 0;
ELSE IF CON24 = 8888      THEN OUTCOME4 = .;
ELSE IF CON24 = .          THEN OUTCOME4 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL          OUTCOME4 = 'I am getting along better with my family ';
FORMAT          OUTCOME4 OUTCOME4f.;

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IF          CON25 = 1          THEN OUTCOME5 = 5;
ELSE IF    CON25 = 2          THEN OUTCOME5 = 4;
ELSE IF    CON25 = 3          THEN OUTCOME5 = 3;
ELSE IF    CON25 = 4          THEN OUTCOME5 = 2;
ELSE IF    CON25 = 5          THEN OUTCOME5 = 1;
ELSE IF    CON25 = 9          THEN OUTCOME5 = 0;
ELSE IF    CON25 = 8888      THEN OUTCOME5 = .;
ELSE IF    CON25 = .          THEN OUTCOME5 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      OUTCOME5 = 'I do better in social situations';
FORMAT    OUTCOME5 OUTCOME5f.;

IF          CON26 = 1          THEN OUTCOME6 = 5;
ELSE IF    CON26 = 2          THEN OUTCOME6 = 4;
ELSE IF    CON26 = 3          THEN OUTCOME6 = 3;
ELSE IF    CON26 = 4          THEN OUTCOME6 = 2;
ELSE IF    CON26 = 5          THEN OUTCOME6 = 1;
ELSE IF    CON26 = 9          THEN OUTCOME6 = 0;
ELSE IF    CON26 = 8888      THEN OUTCOME6 = .;
ELSE IF    CON26 = .          THEN OUTCOME6 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      OUTCOME6 = 'I do better in school and/or work';
FORMAT    OUTCOME6 OUTCOME6f.;

IF          CON27 = 1          THEN OUTCOME7 = 5;
ELSE IF    CON27 = 2          THEN OUTCOME7 = 4;
ELSE IF    CON27 = 3          THEN OUTCOME7 = 3;
ELSE IF    CON27 = 4          THEN OUTCOME7 = 2;
ELSE IF    CON27 = 5          THEN OUTCOME7 = 1;
ELSE IF    CON27 = 9          THEN OUTCOME7 = 0;
ELSE IF    CON27 = 8888      THEN OUTCOME7 = .;
ELSE IF    CON27 = .          THEN OUTCOME7 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      OUTCOME7 = 'My housing situation has improved';
FORMAT    OUTCOME7 OUTCOME7f.;

IF          CON28 = 1          THEN OUTCOME8 = 5;
ELSE IF    CON28 = 2          THEN OUTCOME8 = 4;
ELSE IF    CON28 = 3          THEN OUTCOME8 = 3;
ELSE IF    CON28 = 4          THEN OUTCOME8 = 2;
ELSE IF    CON28 = 5          THEN OUTCOME8 = 1;
ELSE IF    CON28 = 9          THEN OUTCOME8 = 0;
ELSE IF    CON28 = 8888      THEN OUTCOME8 = .;
ELSE IF    CON28 = .          THEN OUTCOME8 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      OUTCOME8 = 'My symptoms are not bothering me as much';
FORMAT    OUTCOME8 OUTCOME8f.;

/*****
/*RECODING WAI TASK VARIABLES - WAI4,WAI6-WAI8*****/
/*****
/*SCALE IS CORRECT but RECODING 9 into 0*/

IF          WAI4 = 1          THEN WAITASK4 = 1;
ELSE IF    WAI4 = 2          THEN WAITASK4 = 2;
ELSE IF    WAI4 = 3          THEN WAITASK4 = 3;

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ELSE IF WAI4 = 4           THEN WAITASK4 = 4;
ELSE IF WAI4 = 5           THEN WAITASK4 = 5;
ELSE IF WAI4 = 6           THEN WAITASK4 = 6;
ELSE IF WAI4 = 7           THEN WAITASK4 = 7;
ELSE IF WAI4 = 9           THEN WAITASK4 = 0;
ELSE IF WAI4 = 8888        THEN WAITASK4 = .;
ELSE IF WAI4 = .           THEN WAITASK4 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      WAITASK4 = 'The counselors here and I agree about what we should
be working on';
FORMAT    WAITASK4 WAITASK4f.;

IF          WAI6 = 1           THEN WAITASK6 = 1;
ELSE IF WAI6 = 2           THEN WAITASK6 = 2;
ELSE IF WAI6 = 3           THEN WAITASK6 = 3;
ELSE IF WAI6 = 4           THEN WAITASK6 = 4;
ELSE IF WAI6 = 5           THEN WAITASK6 = 5;
ELSE IF WAI6 = 6           THEN WAITASK6 = 6;
ELSE IF WAI6 = 7           THEN WAITASK6 = 7;
ELSE IF WAI6 = 9           THEN WAITASK6 = 0;
ELSE IF WAI6 = 8888        THEN WAITASK6 = .;
ELSE IF WAI6 = .           THEN WAITASK6 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      WAITASK6 = 'The counselors here and I agree about the steps to be
taken to improve situation';
FORMAT    WAITASK6 WAITASK6f.;

IF          WAI7 = 1           THEN WAITASK7 = 1;
ELSE IF WAI7 = 2           THEN WAITASK7 = 2;
ELSE IF WAI7 = 3           THEN WAITASK7 = 3;
ELSE IF WAI7 = 4           THEN WAITASK7 = 4;
ELSE IF WAI7 = 5           THEN WAITASK7 = 5;
ELSE IF WAI7 = 6           THEN WAITASK7 = 6;
ELSE IF WAI7 = 7           THEN WAITASK7 = 7;
ELSE IF WAI7 = 9           THEN WAITASK7 = 0;
ELSE IF WAI7 = 8888        THEN WAITASK7 = .;
ELSE IF WAI7 = .           THEN WAITASK7 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      WAITASK7 = 'What I am doing in therapy gives me new ways of
looking at my problems';
FORMAT    WAITASK7 WAITASK7f.;

IF          WAI8 = 1           THEN WAITASK8 = 1;
ELSE IF WAI8 = 2           THEN WAITASK8 = 2;
ELSE IF WAI8 = 3           THEN WAITASK8 = 3;
ELSE IF WAI8 = 4           THEN WAITASK8 = 4;
ELSE IF WAI8 = 5           THEN WAITASK8 = 5;
ELSE IF WAI8 = 6           THEN WAITASK8 = 6;
ELSE IF WAI8 = 7           THEN WAITASK8 = 7;
ELSE IF WAI8 = 9           THEN WAITASK8 = 0;
ELSE IF WAI8 = 8888        THEN WAITASK8 = .;
ELSE IF WAI8 = .           THEN WAITASK8 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      WAITASK8 = 'I believe the way the counselors and I are working
with my problem is correct';
FORMAT    WAITASK8 WAITASK8f.;

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/*****/
/*RECODING WAI BOND VARIABLES - WAI9-WAI12****/
/*****/
/*SCALE IS CORRECT but RECODING 9 into 0*/

IF          WAI9 = 1          THEN WAIBOND9 = 1;
ELSE IF WAI9 = 2          THEN WAIBOND9 = 2;
ELSE IF WAI9 = 3          THEN WAIBOND9 = 3;
ELSE IF WAI9 = 4          THEN WAIBOND9 = 4;
ELSE IF WAI9 = 5          THEN WAIBOND9 = 5;
ELSE IF WAI9 = 6          THEN WAIBOND9 = 6;
ELSE IF WAI9 = 7          THEN WAIBOND9 = 7;
ELSE IF WAI9 = 9          THEN WAIBOND9 = 0;
ELSE IF WAI9 = 8888      THEN WAIBOND9 = .;
ELSE IF WAI9 = .          THEN WAIBOND9 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      WAIBOND9 = 'I am confident taht the counselors here can help me';
FORMAT    WAIBOND9 WAIBOND9f.;

IF          WAI10 = 1        THEN WAIBOND10 = 1;
ELSE IF WAI10 = 2        THEN WAIBOND10 = 2;
ELSE IF WAI10 = 3        THEN WAIBOND10 = 3;
ELSE IF WAI10 = 4        THEN WAIBOND10 = 4;
ELSE IF WAI10 = 5        THEN WAIBOND10 = 5;
ELSE IF WAI10 = 6        THEN WAIBOND10 = 6;
ELSE IF WAI10 = 7        THEN WAIBOND10 = 7;
ELSE IF WAI10 = 9        THEN WAIBOND10 = 0;
ELSE IF WAI10 = 8888    THEN WAIBOND10 = .;
ELSE IF WAI10 = .        THEN WAIBOND10 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      WAIBOND10 = 'I trust the counselors here and they trust me';
FORMAT    WAIBOND10 WAIBOND10f.;

IF          WAI11 = 1        THEN WAIBOND11 = 1;
ELSE IF WAI11 = 2        THEN WAIBOND11 = 2;
ELSE IF WAI11 = 3        THEN WAIBOND11 = 3;
ELSE IF WAI11 = 4        THEN WAIBOND11 = 4;
ELSE IF WAI11 = 5        THEN WAIBOND11 = 5;
ELSE IF WAI11 = 6        THEN WAIBOND11 = 6;
ELSE IF WAI11 = 7        THEN WAIBOND11 = 7;
ELSE IF WAI11 = 9        THEN WAIBOND11 = 0;
ELSE IF WAI11 = 8888    THEN WAIBOND11 = .;
ELSE IF WAI11 = .        THEN WAIBOND11 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      WAIBOND11 = 'The counselors here appreciate me';
FORMAT    WAIBOND11 WAITASK8f.;

IF          WAI12 = 1        THEN WAIBOND12 = 1;
ELSE IF WAI12 = 2        THEN WAIBOND12 = 2;
ELSE IF WAI12 = 3        THEN WAIBOND12 = 3;
ELSE IF WAI12 = 4        THEN WAIBOND12 = 4;
ELSE IF WAI12 = 5        THEN WAIBOND12 = 5;
ELSE IF WAI12 = 6        THEN WAIBOND12 = 6;
ELSE IF WAI12 = 7        THEN WAIBOND12 = 7;
ELSE IF WAI12 = 9        THEN WAIBOND12 = 0;
ELSE IF WAI12 = 8888    THEN WAIBOND12 = .;
ELSE IF WAI12 = .        THEN WAIBOND12 = .;

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/*Applying Labels and Formats to recoded variable*/
LABEL      WAIBOND12 = 'The counselors here like me';
FORMAT     WAIBOND12 WAIBOND12f.;

/*****/
/*RECODING WAI GOAL VARIABLES - WAI1-WAI3, WAI5***/
/*****/
/*SCALE IS CORRECT but RECODING 9 into 0*/

IF          WAI1 = 1          THEN WAIGOAL1 = 1;
ELSE IF WAI1 = 2          THEN WAIGOAL1 = 2;
ELSE IF WAI1 = 3          THEN WAIGOAL1 = 3;
ELSE IF WAI1 = 4          THEN WAIGOAL1 = 4;
ELSE IF WAI1 = 5          THEN WAIGOAL1 = 5;
ELSE IF WAI1 = 6          THEN WAIGOAL1 = 6;
ELSE IF WAI1 = 7          THEN WAIGOAL1 = 7;
ELSE IF WAI1 = 9          THEN WAIGOAL1 = 0;
ELSE IF WAI1 = 8888      THEN WAIGOAL1 = .;
ELSE IF WAI1 = .          THEN WAIGOAL1 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      WAIGOAL1 = 'The counselors here understand what
I am trying to accomplish in therapy';
FORMAT     WAIGOAL1 WAIGOAL1f.;

IF          WAI2 = 1          THEN WAIGOAL2 = 1;
ELSE IF WAI2 = 2          THEN WAIGOAL2 = 2;
ELSE IF WAI2 = 3          THEN WAIGOAL2 = 3;
ELSE IF WAI2 = 4          THEN WAIGOAL2 = 4;
ELSE IF WAI2 = 5          THEN WAIGOAL2 = 5;
ELSE IF WAI2 = 6          THEN WAIGOAL2 = 6;
ELSE IF WAI2 = 7          THEN WAIGOAL2 = 7;
ELSE IF WAI2 = 9          THEN WAIGOAL2 = 0;
ELSE IF WAI2 = 8888      THEN WAIGOAL2 = .;
ELSE IF WAI2 = .          THEN WAIGOAL2 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      WAIGOAL2 = 'The counselors here and I are working on
mutually agreed upon goals';
FORMAT     WAIGOAL2 WAIGOAL2f.;

IF          WAI3 = 1          THEN WAIGOAL3 = 1;
ELSE IF WAI3 = 2          THEN WAIGOAL3 = 2;
ELSE IF WAI3 = 3          THEN WAIGOAL3 = 3;
ELSE IF WAI3 = 4          THEN WAIGOAL3 = 4;
ELSE IF WAI3 = 5          THEN WAIGOAL3 = 5;
ELSE IF WAI3 = 6          THEN WAIGOAL3 = 6;
ELSE IF WAI3 = 7          THEN WAIGOAL3 = 7;
ELSE IF WAI3 = 9          THEN WAIGOAL3 = 0;
ELSE IF WAI3 = 8888      THEN WAIGOAL3 = .;
ELSE IF WAI3 = .          THEN WAIGOAL3 = .;
/*Applying Labels and Formats to recoded variable*/
LABEL      WAIGOAL3 = 'The counselors here and I agree on what my problems
are';
FORMAT     WAIGOAL3 WAIGOAL3f.;

IF          WAI5 = 1          THEN WAIGOAL5 = 1;
ELSE IF WAI5 = 2          THEN WAIGOAL5 = 2;
ELSE IF WAI5 = 3          THEN WAIGOAL5 = 3;

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ELSE IF WAI5 = 4      THEN WAIGOAL5 = 4;
ELSE IF WAI5 = 5      THEN WAIGOAL5 = 5;
ELSE IF WAI5 = 6      THEN WAIGOAL5 = 6;
ELSE IF WAI5 = 7      THEN WAIGOAL5 = 7;
ELSE IF WAI5 = 9      THEN WAIGOAL5 = 0;
ELSE IF WAI5 = 8888   THEN WAIGOAL5 = .;
ELSE IF WAI5 = .      THEN WAIGOAL5 = .;

/*Applying Labels and Formats to recoded variable*/
LABEL      WAIGOAL5 = 'The counselors here and I have established a good
understanding of what kinds of changes would be good for me';
FORMAT      WAIGOAL5 WAIGOAL5f.;

/*****
/*****Writing an ELIG Statement*****/
/*****/

elig = 0;
IF      GenderNew^=. and AgeGrp^=. and ETHNnew^=. and HISPnew^=.
and SERVnew^=. and WORKnew^=. and PSYCHnew^=. and ARREST1new^=.
and ARREST2new^=. and MOVEnew^=. and HOMELESSnew^=.
and Outcom1^=. and Outcome2^=. and Outcome3 ^=. and Outcome4^=.
and Outcome5^=. and Outcome6^=. and outcome7^=. and Outcome8^=.
THEN elig = 1;

/*Outcom1^=. and Outcome2^=. and Outcome3 ^=. and Outcome4^=.
and Outcome5^=. and Outcome6^=. and outcome7^=. and Outcome8^=.
*/

/*****
/*****Checking Recodes*****/
/*****/
PROC FREQ DATA = research.clientsurveyrecodes;
tables      gender*gendernew age*agegrp ethn*ethnnew hisp*hispnew
serv*servnew
work*worknew arrest1*arrest1new arrest2*arrest2new move*movenew
homeless*homelessnew
WAI6*WAITASK6 WAI8*WAITASK8 WAI4*WAITASK4 WAI7*WAITASK7
WAI9*WAIBOND9 WAI10*WAIBOND10 WAI11*WAIBOND11 WAI12*WAIBOND12
WAI1*WAIGOAL1 WAI2*WAIGOAL2 WAI3*WAIGOAL3 WAI5*WAIGOAL5
CON1*SATISFACTION1 CON2*SATISFACTION2 CON3*SATISFACTION3
CON4*Access1 CON5*Access2 CON6*Access3 CON7*Access4 CON8*Access5
CON9*Access6
CON10*QUALITY1 CON11*QUALITY2 CON12*QUALITY3 CON13*QUALITY4
CON14*QUALITY5
CON15*QUALITY6 CON16*QUALITY7 CON17*QUALITY8 CON18*QUALITY9
CON19*QUALITY10
CON21*Outcome1 CON22*Outcome2 CON23*Outcome3 CON24*Outcome4
CON25*Outcome5 CON26*Outcome6 CON27*Outcome7 CON28*Outcome8;
TITLE2 "Checking Frequencies of independent, outcome, and subscales of
scales";
RUN;

PROC FREQ DATA = research.clientsurveyrecodes;
tables      gender*gendernew age*agegrp ethn*ethnnew hisp*hispnew
serv*servnew
work*worknew arrest1*arrest1new arrest2*arrest2new move*movenew
homeless*homelessnew

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WAI6*WAITASK6 WAI8*WAITASK8 WAI4*WAITASK4 WAI7*WAITASK7
WAI9*WAIBOND9 WAI10*WAIBOND10 WAI11*WAIBOND11 WAI12*WAIBOND12
WAI1*WAIGOAL1 WAI2*WAIGOAL2 WAI3*WAIGOAL3 WAI5*WAIGOAL5
CON1*SATISFACTION1 CON2*SATISFACTION2 CON3*SATISFACTION3
CON4*Access1 CON5*Access2 CON6*Access3 CON7*Access4 CON8*Access5
CON9*Access6
CON10*QUALITY1 CON11*QUALITY2 CON12*QUALITY3 CON13*QUALITY4
CON14*QUALITY5
CON15*QUALITY6 CON16*QUALITY7 CON17*QUALITY8 CON18*QUALITY9
CON19*QUALITY10
CON21*Outcome1 CON22*Outcome2 CON23*Outcome3 CON24*Outcome4
CON25*Outcome5 CON26*Outcome6 CON27*Outcome7 CON28*Outcome8
elig/missing;
TITLE2 "Checking Frequencies of independent, outcome, and subscales of scales
variables by eligibility";
RUN;

/*****
/*****Creating a Rich-Text File (RTF)*****/
/*****/

ODS RTF FILE = 'Research Project Final Output - ALL 11-5-09.rtf' contents
toc_data;

/*****
/*****Calculating a Mean Age of Respondents*/
/*****/
PROC MEANS DATA = research.clientsurveyrecodes;
var age;
run;

/*****
/*****Calculating a Mean Age of Those Eligible*/
/*****/
PROC MEANS DATA = research.clientsurveyrecodes;
var age;
where elig = 1;
run;

/*****
/*****Creating a New Dataset with Scales*****/
/*****/

DATA research.clientsurveyscales;
SET research.clientsurveyrecodes;

/*****
/*****Creating Scales*****/
/*****/
/*I am creating a dichotomous scale split at 50% in the first set and at the
median in the second set*/
/*WAI TASK SCALE*/
WAI_TASK_SCALE = SUM(WAITASK6 , WAITASK8 , WAITASK4 , WAITASK7);
if WAI_TASK_SCALE LT 4 then WAI_TASK_SCALE = .;
ELSE IF WAI_TASK_SCALE = . THEN WAITASK_DICOT = .;
ELSE IF WAI_TASK_SCALE LE 14 THEN WAITASK_DICOT = 1;
ELSE IF WAI_TASK_SCALE GE 15 THEN WAITASK_DICOT = 2;

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LABEL WAITASK_DICOT = 'WAI TASK STATUS';
FORMAT WAITASK_DICOT WAI_TASK_SCALEf.;

/*WAI TASK SCALE*/
WAI_TASK_SCALE = SUM(WAITASK6 , WAITASK8 , WAITASK4 , WAITASK7);
if WAI_TASK_SCALE LT 4 then WAI_TASK_SCALE = .;
ELSE IF WAI_TASK_SCALE = . THEN WAITASK_DICOTMED = .;
ELSE IF WAI_TASK_SCALE LE 14 THEN WAITASK_DICOTMED = 1;
ELSE IF WAI_TASK_SCALE GE 15 THEN WAITASK_DICOTMED = 2;
LABEL WAITASK_DICOTMED = 'MEDIAN SPLIT WAI TASK STATUS';
FORMAT WAITASK_DICOTMED WAITASK_DICOTMEDf.;

/*WAI BOND SCALE*/
WAI_BOND_SCALE = SUM(WAIBOND9 , WAIBOND10 , WAIBOND11 , WAIBOND12);
if WAI_BOND_SCALE LT 4 then WAI_BOND_SCALE = .;
ELSE IF WAI_BOND_SCALE = . THEN WAIBOND_DICOT = .;
ELSE IF WAI_BOND_SCALE LE 14 THEN WAIBOND_DICOT = 1;
ELSE IF WAI_BOND_SCALE GE 15 THEN WAIBOND_DICOT = 2;
LABEL WAIBOND_DICOT = 'WAI BOND STATUS';
FORMAT WAIBOND_DICOT WAI_BOND_SCALEf.;

/*WAI BOND SCALE*/
WAI_BOND_SCALE = SUM(WAIBOND9 , WAIBOND10 , WAIBOND11 , WAIBOND12);
if WAI_BOND_SCALE LT 4 then WAI_BOND_SCALE = .;
ELSE IF WAI_BOND_SCALE = . THEN WAIBOND_DICOTMED = .;
ELSE IF WAI_BOND_SCALE LE 14 THEN WAIBOND_DICOTMED = 1;
ELSE IF WAI_BOND_SCALE GE 15 THEN WAIBOND_DICOTMED = 2;
LABEL WAIBOND_DICOTMED = 'MEDIAN SPLIT WAI BOND STATUS';
FORMAT WAIBOND_DICOTMED WAIBOND_DICOTMEDf.;

/*WAI GOAL SCALE*/
WAI_GOAL_SCALE = SUM(WAIGOAL1 , WAIGOAL2 , WAIGOAL3 , WAIGOAL5);
if WAI_GOAL_SCALE LT 4 then WAI_GOAL_SCALE = .;
ELSE IF WAI_GOAL_SCALE = . THEN WAIGOAL_DICOT = .;
ELSE IF WAI_GOAL_SCALE LE 14 THEN WAIGOAL_DICOT = 1;
ELSE IF WAI_GOAL_SCALE GE 15 THEN WAIGOAL_DICOT = 2;
LABEL WAIGOAL_DICOT = 'WAI GOAL STATUS';
FORMAT WAIGOAL_DICOT WAI_GOAL_SCALEf.;

/*WAI GOAL SCALE-Median Split*/
WAI_GOAL_SCALE = SUM(WAIGOAL1 , WAIGOAL2 , WAIGOAL3 , WAIGOAL5);
if WAI_GOAL_SCALE LT 4 then WAI_GOAL_SCALE = .;
ELSE IF WAI_GOAL_SCALE = . THEN WAIGOAL_DICOTMED = .;
ELSE IF WAI_GOAL_SCALE LE 14 THEN WAIGOAL_DICOTMED = 1;
ELSE IF WAI_GOAL_SCALE GE 15 THEN WAIGOAL_DICOTMED = 2;
LABEL WAIGOAL_DICOTMED = WAIGOAL_DICOTMED = 'WAI GOAL STATUS';
FORMAT WAIGOAL_DICOTMED WAIGOAL_DICOTMEDf.;

/*DMHMRSAS SATISFACTION Scale*/
SATISFACTION_SCALE = SUM(SATISFACTION1 , SATISFACTION2 , SATISFACTION3);
if SATISFACTION_SCALE LT 3 then SATISFACTION_SCALE = .;
ELSE IF SATISFACTION_SCALE = . THEN SATISFACTION_DICOT = .;
ELSE IF SATISFACTION_SCALE LE 7 THEN SATISFACTION_DICOT = 1;
ELSE IF SATISFACTION_SCALE GE 8 THEN SATISFACTION_DICOT = 2;
LABEL SATISFACTION_DICOT = 'DMHMRSAS SATISFACTION STATUS';
FORMAT SATISFACTION_DICOT SATISFACTION_SCALEf.;

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/*DMHMRSAS SATISFACTION Scale - Median Split*/
SATISFACTION_SCALE = SUM(SATISFACTION1 , SATISFACTION2 , SATISFACTION3);
if SATISFACTION_SCALE LT 3 then SATISFACTION_SCALE =.;
ELSE IF SATISFACTION_SCALE =. THEN SATISFACTION_DICOTMED = .;
ELSE IF SATISFACTION_SCALE LE 12 THEN SATISFACTION_DICOTMED = 1;
ELSE IF SATISFACTION_SCALE GE 13 THEN SATISFACTION_DICOTMED = 2;
LABEL SATISFACTION_DICOTMED = 'Median-Split DMHMRSAS SATISFACTION
STATUS';
FORMAT SATISFACTION_DICOTMED SATISFACTION_DICOTMEDf.;

/*DMHMRSAS ACCESS Scale*/
Access_SCALE = SUM(Access1 , Access2 , Access3 , Access4 , Access5 ,
Access6);
if Access_SCALE LT 6 then Access_SCALE =.;
ELSE IF Access_SCALE =. THEN ACCESS_DICOT = .;
ELSE IF Access_SCALE LE 15 THEN ACCESS_DICOT = 1;
ELSE IF Access_SCALE GE 16 THEN ACCESS_DICOT = 2;
LABEL ACCESS_DICOT = 'DMHMRSAS ACCESS STATUS';
FORMAT ACCESS_DICOT Access_SCALEf.;

/*DMHMRSAS ACCESS Scale - Median Split*/
Access_SCALE = SUM(Access1 , Access2 , Access3 , Access4 , Access5 ,
Access6);
if Access_SCALE LT 6 then Access_SCALE =.;
ELSE IF Access_SCALE =. THEN ACCESS_DICOTMED = .;
ELSE IF Access_SCALE LE 22 THEN ACCESS_DICOTMED = 1;
ELSE IF Access_SCALE GE 23 THEN ACCESS_DICOTMED = 2;
LABEL ACCESS_DICOTMED = 'Median-Split DMHMRSAS ACCESS STATUS';
FORMAT ACCESS_DICOTMED ACCESS_DICOTMEDf.;

/*DMHMRSAS QUALITY Scale*/
QUALITY_SCALE = SUM(QUALITY1 , QUALITY2, QUALITY3 , QUALITY4 , QUALITY5 ,
QUALITY6 , QUALITY7 , QUALITY8 , QUALITY9 , QUALITY10);
if QUALITY_SCALE LT 10 then QUALITY_SCALE =.;
ELSE IF QUALITY_SCALE =. THEN QUALITY_DICOT = .;
ELSE IF QUALITY_SCALE LE 27 THEN QUALITY_DICOT = 1;
ELSE IF QUALITY_SCALE GE 28 THEN QUALITY_DICOT = 2;
LABEL QUALITY_SCALE = 'DMHMRSAS QUALITY STATUS';
FORMAT QUALITY_DICOT QUALITY_SCALEf.;

/*DMHMRSAS QUALITY Scale*/
QUALITY_SCALE = SUM(QUALITY1 , QUALITY2, QUALITY3 , QUALITY4 , QUALITY5 ,
QUALITY6 , QUALITY7 , QUALITY8 , QUALITY9 , QUALITY10);
if QUALITY_SCALE LT 10 then QUALITY_SCALE =.;
ELSE IF QUALITY_SCALE =. THEN QUALITY_DICOTMED = .;
ELSE IF QUALITY_SCALE LE 40 THEN QUALITY_DICOTMED = 1;
ELSE IF QUALITY_SCALE GE 41 THEN QUALITY_DICOTMED = 2;
LABEL QUALITY_DICOTMED = 'Median-Split DMHMRSAS QUALITY STATUS';
FORMAT QUALITY_DICOTMED QUALITY_DICOTMEDf.;

/*DMHMRSAS OUTCOME Scale*/
Outcome_SCALE = SUM(Outcome1 , Outcome2 , Outcome3 , Outcome4 , Outcome5 ,
Outcome6 , Outcome7 , Outcome8);
if Outcome_SCALE LT 8 then Outcome_SCALE =.;
ELSE IF Outcome_SCALE =. THEN OUTCOMESCALEDICOT = .;
ELSE IF Outcome_SCALE LE 20 THEN OUTCOMESCALEDICOT = 1;
ELSE IF Outcome_SCALE GE 21 THEN OUTCOMESCALEDICOT = 2;

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LABEL      OUTCOMESCALEDICOT = 'Outcome Status';
FORMAT    OUTCOMESCALEDICOT OUTCOMESCALEDICOTf.;

/*DMHMRSAS OUTCOME - Median Scale*/
Outcome_SCALE = SUM(Outcome1 , Outcome2 , Outcome3 , Outcome4 , Outcome5 ,
Outcome6 , Outcome7 , Outcome8);
if Outcome_SCALE LT 8      then Outcome_SCALE =.;
ELSE IF      OUTCOME_SCALE =.  THEN OUTCOMESCALEDICOTMED = .;
ELSE IF OUTCOME_SCALE LE 32 THEN OUTCOMESCALEDICOTMED = 1;
ELSE IF OUTCOME_SCALE GE 33 THEN OUTCOMESCALEDICOTMED = 2;
LABEL OUTCOMESCALEDICTOMED = 'Median Split Outcome Status';
FORMAT OUTCOMESCALEDICTOMED OUTCOMESCALEDICTOMEDf.;

/*Checking Recodes and Eligibility*/
/*WAITASK_DICOT WAIBOND_DICOT WAIGOAL_DICOT WAISCALE_DICOT SATISFACTION_DICOT
ACCESS_DICOT QUALITY_DICOT OUTCOMESCALEDICOT*/

PROC FREQ;
TABLES WAI_TASK_SCALE WAI_BOND_SCALE WAI_GOAL_SCALE SATISFACTION_SCALE
Access_SCALE QUALITY_SCALE Outcome_SCALE;
Title2 'Checking Recodes of Continuous Scales';
run;

/*Checking Dichotomous Variables*/
PROC FREQ;
TABLES WAITASK_DICOT*WAI_TASK_SCALE WAIBOND_DICOT*WAI_BOND_SCALE
        WAIGOAL_DICOT*WAI_GOAL_SCALE
SATISFACTION_DICOT*SATISFACTION_SCALE
        ACCESS_DICOT*Access_SCALE QUALITY_DICOT*QUALITY_SCALE
        OUTCOMESCALEDICOT*Outcome_SCALE;
Title2 'Checking recodes of Dichotomous Scales Split at 50% point';
run;

/*Checking Scale Variables*/
PROC FREQ;
TABLES WAITASK_DICOTMED*WAI_TASK_SCALE WAIBOND_DICOTMED*WAI_BOND_SCALE
        WAIGOAL_DICOTMED*WAI_GOAL_SCALE
SATISFACTION_DICOTMED*SATISFACTION_SCALE
        ACCESS_DICOTMED*Access_SCALE QUALITY_DICOTMED*QUALITY_SCALE
OUTCOMESCALEDICOTMED*Outcome_SCALE;
Title2 'Checking recodes of Dichotomous Median Split Scales';
RUN;

/*Checking to see how many are eligible*/
PROC FREQ;
TABLES elig;
TITLE2 " How many are eligible?";
RUN;

/*Running Frequencies of Eligibility*/
PROC FREQ;
TABLES elig*OUTCOMESCALEDICOTMED;
TITLE2 " Eligibility by OUTCOMESCALEDICOTMED";
RUN;

PROC FREQ;
TABLES elig*WAITASK_DICOTMED;

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TITLE2 " Eligibility by WAITASK_DICOTMED";
RUN;

PROC FREQ;
TABLES elig*WAIBOND_DICOTMED;
TITLE2 " Eligibility by WAIBOND_DICOTMED";
RUN;

PROC FREQ;
TABLES elig*WAIGOAL_DICOTMED;
TITLE2 " Eligibility by WAIGOAL_DICOTMED";
RUN;

PROC FREQ;
TABLES elig*SATISFACTION_DICOTMED;
TITLE2 " Eligibility by SATISFACTION_DICOTMED";
RUN;

PROC FREQ;
TABLES elig*QUALITY_SCALE;
TITLE2 " Eligibility by QUALITY_DICOTMED";
RUN;

/*TABLE 1 OUTPUT*/
/*Table 1 by eligibility*/
PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables (GenderNew AgeGrp ETHNnew HISPnew SERVnew WORKnew
        PSYCHnew ARREST1new ARREST2new MOVEnew HOMELESSnew
        WAITASK_DICOTMED WAIBOND_DICOTMED WAIGOAL_DICOTMED
        SATISFACTION_DICOTMED ACCESS_DICOTMED QUALITY_DICOTMED)
        *OUTCOMESCALEDICOTMED;
where elig = 1;
TITLE2 'Table 1 - Potential Confounders and Exposure Variables -
Eligibility';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables (GenderNew AgeGrp ETHNnew HISPnew SERVnew WORKnew
        PSYCHnew ARREST1new ARREST2new MOVEnew HOMELESSnew
        WAITASK_DICOTMED WAIBOND_DICOTMED WAIGOAL_DICOTMED
        SATISFACTION_DICOTMED ACCESS_DICOTMED QUALITY_DICOTMED)
        *OUTCOMESCALEDICOTMED/norow nopercnt nofreq;
where elig = 1;
TITLE2 'Table 1 - Potential Confounders and Exposure Variables Only -
Eligibility Ns Only';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables (GenderNew AgeGrp ETHNnew HISPnew SERVnew WORKnew
        PSYCHnew ARREST1new ARREST2new MOVEnew HOMELESSnew
        WAITASK_DICOTMED WAIBOND_DICOTMED WAIGOAL_DICOTMED
        SATISFACTION_DICOTMED ACCESS_DICOTMED QUALITY_DICOTMED)
        *OUTCOMESCALEDICOTMED/norow nofreq;
where elig = 1;
TITLE2 'Potential Confounders - Percents Only';
run;

```

```

/*Data for 2x2 table w/o elig - WAI_TASK_SCALE WAI_BOND_SCALE WAI_GOAL_SCALE
WAI_TOTAL SATISFACTION_SCALE Access_SCALE QUALITY_SCALE*/
/*WAITASK_DICOT WAIBOND_DICOT WAIGOAL_DICOT WAISCALE_DICOT SATISFACTION_DICOT
ACCESS_DICOT QUALITY_DICOT OUTCOMESCALEDICOT*/
PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables      WAITASK_DICOTMED*OUTCOMESCALEDICOTMED;
TITLE2 'Exposure Variable 2x2 - Ns only WAI TASK no elig';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables      WAIBOND_DICOTMED*OUTCOMESCALEDICOTMED;
TITLE2 'Exposure Variable 2x2 - Ns only WAI BOND no elig';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables      WAIGOAL_DICOTMED*OUTCOMESCALEDICOTMED;
TITLE2 'Exposure Variable 2x2 - Ns only WAI GOAL no elig';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables      SATISFACTION_DICOTMED*OUTCOMESCALEDICOTMED;
TITLE2 'Exposure Variable 2x2- Ns only Satisfaction no elig';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables      ACCESS_DICOTMED*OUTCOMESCALEDICOTMED;
TITLE2 'Exposure Variable 2x2 - Ns only Access no elig';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables      QUALITY_DICOTMED*OUTCOMESCALEDICOTMED;
TITLE2 'Exposure Variable 2x2 - Ns only Quality no elig';
run;

/*Data for 2x2 table - WAI_TASK_SCALE WAI_BOND_SCALE WAI_GOAL_SCALE WAI_TOTAL
SATISFACTION_SCALE Access_SCALE QUALITY_SCALE*/
/*WAITASK_DICOTMED WAIBOND_DICOTMED WAIGOAL_DICOTMED SATISFACTION_DICOTMED
ACCESS_DICOTMED QUALITY_DICOTMED OUTCOMESCALEDICOTMED*/
PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables      WAITASK_DICOTMED*OUTCOMESCALEDICOTMED;
where elig = 1;
TITLE2 'WAITASK_DICOTMED 2x2 Table - Ns only elig';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables      WAIBOND_DICOTMED*OUTCOMESCALEDICOTMED;
where elig = 1;
TITLE2 'WAIBOND_DICOTMED 2x2 Table - Ns only elig';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables      WAIGOAL_DICOTMED*OUTCOMESCALEDICOTMED;
where elig = 1;
TITLE2 'WAIGOAL_DICOTMED 2x2 Table - Ns only elig';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;

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```

tables          SATISFACTION_DICOTMED*OUTCOMESCALEDICOTMED;
where elig = 1;
TITLE2 'SATISFACTION_DICOTMED 2x2 Table - Ns only elig';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables          ACCESS_DICOTMED*OUTCOMESCALEDICOTMED;
where elig = 1;
TITLE2 'ACCESS_DICOTMED 2x2 Table - Ns only elig';
run;

PROC FREQ DATA=research.clientsurveyscales ORDER = formatted;
tables          QUALITY_DICOTMED*OUTCOMESCALEDICOTMED;
TITLE2 'QUALITY_DICOTMED 2x2 Table - Ns only elig';
run;

/*Estimating a model-based crude OR for the E-D Relationship*/
/*IV - gendernew agegrp ethnnew hispnew servnew worknew arrest1new arrest2new
movenew homelessnew*/
/*WAI_TASK_SCALE WAI_BOND_SCALE WAI_GOAL_SCALE WAI_TOTAL SATISFACTION_SCALE
Access_SCALE QUALITY_SCALE*/
/*SEE SEPARATE CODE FOR EACH DICOT*WAITASK_DICOTMED WAIBOND_DICOTMED
WAIGOAL_DICOTMED WAISCALE_DICOTMED
SATISFACTION_DICOTMED ACCESS_DICOTMED QUALITY_DICOTMED OUTCOMESCALEDICOTMED*/

/*Running PROC CORR For Coefficient Alphas*/
TITLE2 "Computing the coefficient alpha for DMHMRSAS SATISFACTION SCALE";
PROC CORR DATA=research.clientsurveyscales ALPHA NOMISS;
VAR CON1-CON3;
run;

TITLE2 "Computing the coefficient alpha for DMHMRSAS ACCESS SCALE";
PROC CORR DATA=research.clientsurveyscales ALPHA NOMISS;
VAR CON4-CON7;
run;

TITLE2 "Computing the coefficient alpha for DMHMRSAS Quality and
Appropriateness SCALE";
PROC CORR DATA=research.clientsurveyscales ALPHA NOMISS;
VAR CON10-CON20;
run;

TITLE2 "Computing the coefficient alpha for DMHMRSAS OUTCOME SCALE";
PROC CORR DATA=research.clientsurveyscales ALPHA NOMISS;
VAR CON21-CON28;
run;

TITLE2 "Computing the coefficient alpha for WAI TASK SCALE";
PROC CORR DATA=research.clientsurveyscales ALPHA NOMISS;
VAR WAI6 WAI8 WAI4 WAI7;
run;

TITLE2 "Computing the coefficient alpha for WAI BOND SCALE";
PROC CORR DATA=research.clientsurveyscales ALPHA NOMISS;
VAR WAI9-WAI12;
run;

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TITLE2 "Computing the coefficient alpha for WAI GOAL SCALE";
PROC CORR DATA=research.clientsurveyscales ALPHA NOMISS;
VAR WAI1 WAI2 WAI3 WAI5;
run;

TITLE2 "Computing the coefficient alpha for WAI TOTAL SCALE";
PROC CORR DATA=research.clientsurveyscales ALPHA NOMISS;
VAR WAI1-WAI12;
run;

/*Regression Analysis based on outcome_scale*/
PROC REG DATA=research.clientsurveyscales;
MODEL OUTCOME_SCALE = WAI_TASK_SCALE WAI_BOND_SCALE WAI_GOAL_SCALE
SATISFACTION_SCALE Access_SCALE QUALITY_SCALE/stb;
TITLE2 'Regression Analysis of Scales Based on Outcome Scale';
run;

PROC CORR DATA=research.clientsurveyscales;
VAR OUTCOME_SCALE WAI_TASK_SCALE WAI_BOND_SCALE WAI_GOAL_SCALE
SATISFACTION_SCALE Access_SCALE QUALITY_SCALE;
TITLE2 'Correlations among all scales';
run;

/*Calculating means for each of the scales to determine medians to run
frequencies of each new median split scales*/
PROC MEANS DATA=research.clientsurveyscales n nmiss mean median maxdec=2;
var OUTCOME_SCALE WAI_TASK_SCALE WAI_BOND_SCALE WAI_GOAL_SCALE
SATISFACTION_SCALE Access_SCALE QUALITY_SCALE;
Title2 'Descriptives of Scales';
run;

/*WAITASK_DICOT WAIBOND_DICOT WAIGOAL_DICOT WAISCALE_DICOT SATISFACTION_DICOT
ACCESS_DICOT QUALITY_DICOT OUTCOMESCALEDICOT*/
/*RUNNING A FREQUENCY to check recodes for New Dicotomous Scales - Median
Split*/
PROC FREQ DATA=research.clientsurveyscales;
tables OUTCOMESCALEDICOTMED*OUTCOME_SCALE;
Title2 'Outcome Recode Check';
where elig = 1;
run;

PROC FREQ DATA=research.clientsurveyscales;
tables WAITASK_DICOTMED*WAI_TASK_SCALE;
Title2 ' WAI Task Recode Check';
where elig = 1;
run;

PROC FREQ DATA=research.clientsurveyscales;
tables WAIBOND_DICOTMED*WAI_BOND_SCALE;
Title2 ' WAI Bond Recode Check';
where elig = 1;
run;

PROC FREQ DATA=research.clientsurveyscales;
tables WAIGOAL_DICOTMED*WAI_GOAL_SCALE;
Title2 ' WAI Goal Recode Check';
where elig = 1;

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run;

PROC FREQ DATA=research.clientsurveyscales;
tables SATISFACTION_DICOTMED*SATISFACTION_DICOT;
TITLE2 'Satisfaction Recode check';
where elig = 1;
run;

PROC FREQ DATA=research.clientsurveyscales;
tables ACCESS_DICOTMED*ACCESS_DICOT;
TITLE2 'ACCESS Recode check';
where elig = 1;
run;

PROC FREQ DATA=research.clientsurveyscales;
tables QUALITY_DICOTMED*QUALITY_DICOT;
TITLE2 'Quality Recode check';
where elig = 1;
run;

/*Running a Logistic for the Access Scale*/
/*Theresa L. Do
Master of Public Health Candidate
Virginia Commonwealth University
Department of Epidemiology and Community Health
Final Research Project (updated 10.28.09)*/

/*Running a PROC Logistic - Logistic Regression on the Access Dichotomous
Scale adjusted for the median*/
/*Run after Main Code*/

TITLE 'Logistic Regression';

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED;
where elig = 1;
TITLE2 "CRUDE OR FOR E-D RELATIONSHIP ACCESS_DICOTMED";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED gendernew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED gendernew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - gender";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED ethnnew;

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MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED ethnnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - ethnnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED hispnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED hispnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - hispnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED servnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED servnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - servnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED worknew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED worknew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - worknew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED psychnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED psychnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - psychnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED arrest1new;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED arrest1new;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - arrest1new";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED worknew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED arrest2new ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - arrest2new";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED movenew ;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED movenew ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - movenew";

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED homelessnew ;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED homelessnew ;
where elig = 1;

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TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED- homelessnew";
RUN;

/*gendernew agegrp ethnnew hispnew servnew worknew psychnew arrest1new
arrest2new movenew homelessnew*/

/*****/
/*Adjusting for Age 10% rule*/
/*****/

/*Adjusting for Age and Gender*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp gendernew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp gendernew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp
gendernew";
RUN;

/*Adjusting for Age and Race*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp ethnnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp ethnnew";
RUN;

/*Adjusting for Age and Hispanic/Latino Status*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp hispnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp hispnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp hispnew";
RUN;

/*Adjusting for Age and Time in Treatment*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp servnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp servnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp servnew";
RUN;

/*Adjusting for Age and Employment*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp worknew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp worknew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp worknew";
RUN;

/*Adjusting for Age and Psych Status*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp psychnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp psychnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp psychnew";

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RUN;

/*Adjusting for Age and Arrested within the last 12 mos*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp arrest1new;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp arrest1new;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp
arrest1new";
RUN;

/*Adjusting for Age and Ever Arrested*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp arrest2new;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp arrest2new;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp
arrest2new";
RUN;

/*Adjusting for Age and No of times moved*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp movenew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp movenew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp movenew";
RUN;

/*Adjusting for Age and Homeless Status*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp homelessnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp homelessnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp
homelessnew";
RUN;

/*Adjusting for Age, Race and Gender*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp ethnnew gendernew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew gendernew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp ethnnew
gendernew";
RUN;

/*Adjusting for Age, Race and Hispanic or Latino*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp ethnnew hispnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew hispnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp ethnnew
hispnew";
RUN;

/*Adjusting for Age, Race and Time in Tx*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;

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```

CLASS ACCESS_DICOTMED agegrp ethnnew servnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew servnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp ethnnew
servnew";
RUN;

/*Adjusting for Age, Race and Employment*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp ethnnew worknew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew worknew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp ethnnew
worknew";
RUN;

/*Adjusting for Age, Race and Psych Status*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp ethnnew psychnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew psychnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp ethnnew
psychnew";
RUN;

/*Adjusting for Age, Race and Arrested in the Last 12 mos*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp ethnnew arrestlnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew arrestlnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp ethnnew
arrestlnew";
RUN;

/*Adjusting for Age, Race and Ever Arrested*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp ethnnew arrest2new;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew arrest2new;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp ethnnew
arrest2new";
RUN;

/*Adjusting for Age, Race and Move*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp ethnnew movenew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew movenew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp ethnnew
movenew";
RUN;

/*Adjusting for Age, Race and Homeless*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp ethnnew homelessnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew homelessnew;
where elig = 1;

```

```

TITLE2 "Adjusted OR FOR E-D RELATIONSHIP ACCESS_DICOTMED - agegrp ethnnew
homelessnew";
RUN;

/*Parsimonious Model - Adjusting for age and race*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp ethnnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew;
where elig = 1;
TITLE2 "PARSIMONIOUS MODEL - adjusting for age and race";
RUN;

/*Full Model*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS ACCESS_DICOTMED agegrp ethnnew hispnew servnew worknew psychnew
arrest1new arrest2new movenew homelessnew;
MODEL OUTCOMESCALEDICOTMED = ACCESS_DICOTMED agegrp ethnnew hispnew servnew
worknew psychnew arrest1new arrest2new movenew homelessnew ;
where elig = 1;
TITLE2 "FULL MODEL";
RUN;

/*Running a Logistic Regression for the Quality Scale*/

/*WAITASK_DICOTMED WAIBOND_DICOTMED WAIGOAL_DICOTMED WAISCALE_DICOTMED
SATISFACTION_DICOTMED QUALITY_DICOTMED QUALITY_DICOTMED
OUTCOMESCALEDICOTMED*/
/*Theresa L. Do
Master of Public Health Candidate
Virginia Commonwealth University
Department of Epidemiology and Community Health
Final Research Project (updated 10.28.09)*/

/*Running a PROC Logistic - Logistic Regression on the Quality Dichotomous
Scale adjusted for the median*/
/*Run after Main Code*/

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS QUALITY_DICOTMED;
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED;
where elig = 1;
TITLE2 "CRUDE OR FOR E-D RELATIONSHIP QUALITY_DICOTMED";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS QUALITY_DICOTMED gendernew;
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED gendernew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP QUALITY_DICOTMED - gender";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS QUALITY_DICOTMED agegrp;
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED agegrp;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP QUALITY_DICOTMED - agegrp";

```

RUN;

```
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;  
CLASS QUALITY_DICOTMED ethnnew;  
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED ethnnew;  
where elig = 1;  
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP QUALITY_DICOTMED - ethnnew";  
RUN;
```

```
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;  
CLASS QUALITY_DICOTMED hispnew;  
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED hispnew;  
where elig = 1;  
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP QUALITY_DICOTMED - hispnew";  
RUN;
```

```
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;  
CLASS QUALITY_DICOTMED servnew;  
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED servnew;  
where elig = 1;  
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP QUALITY_DICOTMED - servnew";  
RUN;
```

```
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;  
CLASS QUALITY_DICOTMED worknew;  
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED worknew;  
where elig = 1;  
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP QUALITY_DICOTMED - worknew";  
RUN;
```

```
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;  
CLASS QUALITY_DICOTMED psychnew;  
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED psychnew;  
where elig = 1;  
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP QUALITY_DICOTMED - psychnew";  
RUN;
```

```
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;  
CLASS QUALITY_DICOTMED arrest1new;  
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED arrest1new;  
where elig = 1;  
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP QUALITY_DICOTMED - arrest1new";  
RUN;
```

```
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;  
CLASS QUALITY_DICOTMED worknew;  
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED arrest2new ;  
where elig = 1;  
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP QUALITY_DICOTMED - arrest2new";  
RUN;
```

```
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;  
CLASS QUALITY_DICOTMED movenew ;  
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED movenew ;  
where elig = 1;  
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP QUALITY_DICOTMED - movenew";  
run;
```

```

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS QUALITY_DICOTMED homelessnew ;
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED homelessnew ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP QUALITY_DICOTMED- homelessnew";
RUN;

/*Parsimonious Model - No adjustment*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS QUALITY_DICOTMED;
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED;
where elig = 1;
TITLE2 "PARSIMONIOUS MODEL - adjusting for age and race";
RUN;

/*Full Model*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS QUALITY_DICOTMED agegrp ethnnew hispnew servnew worknew psychnew
arrest1new arrest2new movenew homelessnew;
MODEL OUTCOMESCALEDICOTMED = QUALITY_DICOTMED agegrp ethnnew hispnew servnew
worknew psychnew arrest1new arrest2new movenew homelessnew ;
where elig = 1;
TITLE2 "FULL MODEL";
RUN;

/*Running a logistic regression for the Satisfaction Scale*/

/*WAITASK_DICOTMED WAIBOND_DICOTMED WAIGOAL_DICOTMED WAISCALE_DICOTMED
SATISFACTION_DICOTMED SATISFACTION_DICOTMED QUALITY_DICOTMED
OUTCOMESCALEDICOTMED*/
/*Theresa L. Do
Master of Public Health Candidate
Virginia Commonwealth University
Department of Epidemiology and Community Health
Final Research Project (updated 10.28.09) FINAL CODE*/

/*Running a PROC Logistic - Logistic Regression on the Satisfaction
Dichotomous Scale adjusted for the median*/
/*Run after Main Code*/

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED;
where elig = 1;
TITLE2 "CRUDE OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED gendernew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED gendernew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - gender";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp;

```

```

MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED ethnnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED ethnnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - ethnnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED hispnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED hispnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - hispnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED servnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED servnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - servnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED worknew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED worknew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - worknew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED psychnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED psychnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - psychnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED arrestlnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED arrestlnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED -
arrestlnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED worknew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED arrest2new ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED -
arrest2new";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;

```

```

CLASS SATISFACTION_DICOTMED movenew ;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED movenew ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - movenew";
RUN;

```

```

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED homelessnew ;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED homelessnew ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED-
homelessnew";
RUN;

```

```

/*gendernew agegrp ethnnew hispnew servnew worknew psychnew arrest1new
arrest2new movenew homelessnew*/

```

```

/*****/
/*Adjusting for Age 10% rule*/
/*****/

```

```

/*Adjusting for Age and Gender*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp gendernew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp gendernew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
gendernew";
RUN;

```

```

/*Adjusting for Age and Race*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp ethnnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp ethnnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
ethnnew";
RUN;

```

```

/*Adjusting for Age and Hispanic/Latino Status*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp hispnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp hispnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
hispnew";
RUN;

```

```

/*Adjusting for Age and Time in Treatment*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew";
RUN;

```

```

/*Adjusting for Age and Employment*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp worknew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp worknew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
worknew";
RUN;

```

```

/*Adjusting for Age and Psych Status*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp psychnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp psychnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
psychnew";
RUN;

```

```

/*Adjusting for Age and Arrested within the last 12 mos*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp arrestlnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp arrestlnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
arrestlnew";
RUN;

```

```

/*Adjusting for Age and Ever Arrested*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp arrest2new;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp arrest2new;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
arrest2new";
RUN;

```

```

/*Adjusting for Age and No of times moved*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp movenew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp movenew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
movenew";
RUN;

```

```

/*Adjusting for Age and Homeless Status*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp homelessnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp homelessnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
homelessnew";
RUN;

```

```

/*Adjusting for Age, Time in Tx and Gender*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew gendernew;

```



```

MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew gendernew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew gendernew";
RUN;

/*Adjusting for Age, Time in Tx and Race*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew ethnnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew ethnnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew ethnnew";
RUN;

/*Adjusting for Age, Time in Tx and Hispanic/Latino*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew hispnnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew hispnnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew hispnnew";
RUN;

/*Adjusting for Age, Time in Tx and Employment*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew worknew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew worknew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew worknew";
RUN;

/*Adjusting for Age, Time in Tx and Psych Status*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew psychnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew psychnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew psychnew";
RUN;

/*Adjusting for Age, Time in Tx and Arrested in the last 12 mos*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew arrestlnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew arrestlnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew arrestlnew";
RUN;

/*Adjusting for Age, Time in Tx and Ever arrested*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew arrest2new;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew arrest2new;
where elig = 1;

```

```

TITLE2 "Adjusted OR FOR E-D RELATIONSHIP  SATISFACTION_DICOTMED - agegrp
servnew arrest2new";
RUN;

/*Adjusting for Age, Time in Tx and Move*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew movenew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew movenew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP  SATISFACTION_DICOTMED - agegrp
servnew movenew";
RUN;

/*Adjusting for Age, Time in Tx and Homelessness*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew homelessnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew
homelessnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP  SATISFACTION_DICOTMED - agegrp
servnew homelessnew";
RUN;

/*Adjusting for Age, Time in Tx, Move and Gender*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew movenew gendernew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew movenew
gendernew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP  SATISFACTION_DICOTMED - agegrp
servnew movenew gendernew";
RUN;

/*Adjusting for Age, Time in Tx, Move and Race*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew movenew ethnnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew movenew
ethnnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP  SATISFACTION_DICOTMED - agegrp
servnew movenew ethnnew";
RUN;

/*Adjusting for Age, Time in Tx, Move and Hispanic/Latino*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew movenew hispnnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew movenew
hispnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP  SATISFACTION_DICOTMED - agegrp
servnew movenew hispnnew";
RUN;

/*Adjusting for Age, Time in Tx, Move and Employment*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew movenew worknew;

```

```

MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew movenew
worknew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew movenew worknew";
RUN;

/*Adjusting for Age, Time in Tx, Move and Psych*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew movenew psychnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew movenew
psychnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew movenew psychnew";
RUN;

/*Adjusting for Age, Time in Tx, Move and Arrested in the last 12 mos*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew movenew arrestlnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew movenew
arrestlnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew movenew arrestlnew";
RUN;

/*Adjusting for Age, Time in Tx, Move and Ever arrested*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew movenew arrest2new;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew movenew
arrest2new;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew movenew arrest2new";
RUN;

/*Adjusting for Age, Time in Tx, Move and homeless*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew movenew homelessnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew movenew
homelessnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP SATISFACTION_DICOTMED - agegrp
servnew movenew homelessnew";
RUN;

/*Parsimonious Model - Adjusting for age, time in treatment, and times
moved*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp servnew movenew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp servnew movenew;
where elig = 1;
TITLE2 "PARSIMONIOUS MODEL - adjusting for age, time in treatment and move";
RUN;

/*Full Model*/

```

```

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS SATISFACTION_DICOTMED agegrp ethnnew hispnew servnew worknew psychnew
arrestlnew arrest2new movenew homelessnew;
MODEL OUTCOMESCALEDICOTMED = SATISFACTION_DICOTMED agegrp ethnnew hispnew
servnew worknew psychnew arrestlnew arrest2new movenew homelessnew ;
where elig = 1;
TITLE2 "FULL MODEL";
RUN;

```

```

/*Running a logistic regression for the WAI Bond Scale*/

```

```

/*WAITASK_DICOTMED WAIBOND_DICOTMED WAIGOAL_DICOTMED WAISCALE_DICOTMED
SATISFACTION_DICOTMED WAIBOND_DICOTMED WAIBOND_DICOTMED
OUTCOMESCALEDICOTMED*/

```

```

/*Theresa L. Do
Master of Public Health Candidate
Virginia Commonwealth University
Department of Epidemiology and Community Health
Final Research Project (updated 10.28.09)*/

```

```

/*Running a PROC Logistic - Logistic Regression on the WAIBOND Dichotomous
Scale adjusted for the median*/
/*Run after Main Code*/

```

```

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED;
where elig = 1;
TITLE2 "CRUDE OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED";
RUN;

```

```

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED gendernew;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED gendernew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED - gender";
RUN;

```

```

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED agegrp;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED agegrp;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED - agegrp";
RUN;

```

```

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED ethnnew;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED ethnnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED - ethnnew";
RUN;

```

```

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED hispnew;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED hispnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED - hispnew";

```

```

RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED servnew;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED servnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED - servnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED worknew;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED worknew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED - worknew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED psychnew;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED psychnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED - psychnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED arrest1new;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED arrest1new;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED - arrest1new";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED worknew;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED arrest2new ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED - arrest2new";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED movenew ;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED movenew ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED - movenew";
run;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED homelessnew ;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED homelessnew ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIBOND_DICOTMED- homelessnew";
RUN;

/*Parsimonious Model - No adjustment*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED;
where elig = 1;
TITLE2 "PARSIMONIOUS MODEL - adjusting for age and race";

```

```

RUN;

/*Full Model*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIBOND_DICOTMED agegrp ethnnew hispnew servnew worknew psychnew
arrest1new arrest2new movenew homelessnew;
MODEL OUTCOMESCALEDICOTMED = WAIBOND_DICOTMED agegrp ethnnew hispnew servnew
worknew psychnew arrest1new arrest2new movenew homelessnew ;
where elig = 1;
TITLE2 "FULL MODEL";
RUN;

/*Running a Logistic Regression for the WAI Goal Scale*/
/*WAIGOAL_DICOTMED WAIGOAL_DICOTMED WAIGOAL_DICOTMED WAISCALE_DICOTMED
SATISFACTION_DICOTMED WAIGOAL_DICOTMED WAIGOAL_DICOTMED
OUTCOMESCALEDICOTMED*/
/*Theresa L. Do
Master of Public Health Candidate
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Department of Epidemiology and Community Health
Final Research Project (updated 10.28.09)*/

/*Running a PROC Logistic - Logistic Regression on the WAIGOAL Dichotomous
Scale adjusted for the median*/
/*Run after Main Code*/

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED;
where elig = 1;
TITLE2 "CRUDE OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED gendernew;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED gendernew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED - gender";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED agegrp;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED agegrp;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED - agegrp";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED ethnnew;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED ethnnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED - ethnnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;

```

```

CLASS WAIGOAL_DICOTMED hispnew;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED hispnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED - hispnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED servnew;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED servnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED - servnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED worknew;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED worknew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED - worknew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED psychnew;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED psychnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED - psychnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED arrest1new;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED arrest1new;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED - arrest1new";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED worknew;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED arrest2new ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED - arrest2new";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED movenew ;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED movenew ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED - movenew";
run;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED homelessnew ;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED homelessnew ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAIGOAL_DICOTMED- homelessnew";
RUN;

/*Parsimonious Model - No adjustment*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;

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CLASS WAIGOAL_DICOTMED;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED;
where elig = 1;
TITLE2 "PARSIMONIOUS MODEL - no adjustment";
RUN;

/*Full Model*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAIGOAL_DICOTMED agegrp ethnnew hispnew servnew worknew psychnew
arrest1new arrest2new movenew homelessnew;
MODEL OUTCOMESCALEDICOTMED = WAIGOAL_DICOTMED agegrp ethnnew hispnew servnew
worknew psychnew arrest1new arrest2new movenew homelessnew ;
where elig = 1;
TITLE2 "FULL MODEL";
RUN;

/*Running a Logistic Regression for the WAI Task Scale*/
/*WAITASK_DICOTMED WAITASK_DICOTMED WAIGOAL_DICOTMED WAISCALE_DICOTMED
SATISFACTION_DICOTMED WAITASK_DICOTMED WAITASK_DICOTMED
OUTCOMESCALEDICOTMED*/
/*Theresa L. Do
Master of Public Health Candidate
Virginia Commonwealth University
Department of Epidemiology and Community Health
Final Research Project (updated 10.28.09)*/

/*Running a PROC Logistic - Logistic Regression on the WAITASK Dichotomous
Scale adjusted for the median*/
/*Run after Main Code*/

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED;
where elig = 1;
TITLE2 "CRUDE OR FOR E-D RELATIONSHIP WAITASK_DICOTMED";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED gendernew;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED gendernew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAITASK_DICOTMED - gender";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED agegrp;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED agegrp;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAITASK_DICOTMED - agegrp";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED ethnnew;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED ethnnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAITASK_DICOTMED - ethnnew";
RUN;

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PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED hispnew;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED hispnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAITASK_DICOTMED - hispnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED servnew;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED servnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAITASK_DICOTMED - servnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED worknew;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED worknew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAITASK_DICOTMED - worknew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED psychnew;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED psychnew;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAITASK_DICOTMED - psychnew";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED arrest1new;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED arrest1new;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAITASK_DICOTMED - arrest1new";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED worknew;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED arrest2new ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAITASK_DICOTMED - arrest2new";
RUN;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED movenew ;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED movenew ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAITASK_DICOTMED - movenew";
run;

PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED homelessnew ;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED homelessnew ;
where elig = 1;
TITLE2 "Adjusted OR FOR E-D RELATIONSHIP WAITASK_DICOTMED- homelessnew";
RUN;

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```
/*Parsimonious Model - No adjustment*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED;
where elig = 1;
TITLE2 "PARSIMONIOUS MODEL - no adjustment";
RUN;

/*Full Model*/
PROC LOGISTIC DATA=research.clientsurveyscales ORDER = formatted;
CLASS WAITASK_DICOTMED agegrp ethnnew hispnew servnew worknew psychnew
arrest1new arrest2new movenew homelessnew;
MODEL OUTCOMESCALEDICOTMED = WAITASK_DICOTMED agegrp ethnnew hispnew servnew
worknew psychnew arrest1new arrest2new movenew homelessnew ;
where elig = 1;
TITLE2 "FULL MODEL";
RUN;

ODS RTF CLOSE;
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