The Relationship Between Impulsivity Traits and Choice On Alcohol Use During a Quit Attempt

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Abstract

Impulsive personality traits and impulsive choice are indicators of alcohol use disorder (AUD). Research on the relationship between impulsivity and relapse risk among individuals with an AUD is relatively scarce and unclear. The current study is a secondary analysis examining the predictive effect of impulsivity on alcohol use and craving during a 6-day quit attempt. Treatment seeking individuals with an AUD (N=49) were randomized to either oral naltrexone (50 mg QD), varenicline (1 mg BID), or matched placebo. Randomized participants completed a weeklong medication titration period, followed by a 6-day quit attempt. During the initial screening visit, participants completed the UPPS-P impulsivity scale and the Monetary Choice Questionnaire to assess discounting rates, k. The Timeline Followback assessed quantity and frequency of alcohol use in the past 30-days. During the quit attempt, participants completed daily assessments on previous day alcohol consumption and craving. Multiple linear models examined baseline impulsivity as a predictor of alcohol outcomes. Baseline impulsivity traits did not significantly predict drinking outcomes or craving during the quit attempt ($p>.025$). Lack of premeditation predicted average alcohol craving, albeit trend-level ($B=-0.338$, $p<.05$). Lack of premeditation and overall k did not predict alcohol use or craving during the quit attempt. Impulsive traits and choice did not predict alcohol relapse in individuals with AUD. This study was among the first to test trait and behavioral impulsivity during a 6-day abstinence period. A longer follow-up may reveal associations between impulsivity and drinking outcomes, aiding development of interventions targeting AUD.

Keywords: alcohol-use, impulsive personality traits, impulsive choice, relapse, AUD

Introduction

Alcohol-related mortality remains high in the United States, as rates of alcohol-related deaths continue to rise (APA, 2023). This is a significant public health concern as 90% of individuals with Alcohol Use Disorder (AUD) relapse at least once in their lifetime (NIAAA, 2023). By understanding several predictors of alcohol use relapse such as impulsivity, we can further address this current public health crisis. Impulsivity is a pertinent factor for understanding alcohol relapse due to the lack of inhibition, yet it is understudied (Reyes-Huerta et al., 2018). Preclinical models have found that enhanced impulsivity in mice correlates with an increase in motivation to consume alcohol and increased risk of relapse highlighting the importance of the evaluation of impulsivity in clinical applications (Loos et al., 2013). To better understand the impact of impulsivity in clinical applications, it is essential to first understand what is meant by impulsivity. Impulsivity can be defined as acting in response to a stimulus without taking into account the consequences (Meda et al., 2009). Recent research has indicated impulsivity to be a broad umbrella category
with a lack of unified constructs (Ray et al., 2021; Sliedrecht et al., 2021). Impulsivity can generally be categorized into two categories: behavioral and self-report impulsivity (Sliedrecht et al., 2021). To further differentiate between these two categories, it has been proposed that there are three different aspects of impulsivity in humans: self-reported impulsivity, impulsive choice (behavioral), and impulsive action (behavioral;Broos et al., 2012). One type of self-reported impulsivity, trait impulsivity, is measured by The Urgency-Premeditation-Perseverance-Sensation Seeking-Positive Urgency (UPPS-P), designed to assess the 5 traits of impulsivity: negative urgency or the tendency to act rashly in response to negative affect, positive urgency or the tendency to act rashly in response to positive affect, lack of premeditation or acting before thinking, perseverance or the ability to finish a task, and sensation seeking or seeking out new/exciting experiences (Sliedrecht et al., 2021; Hershberger et al., 2017; McCarty et al., 2017). Existing literature suggests that urgency (positive and negative) is related to problematic alcohol use, whereas the lack of premeditation is related to alcohol dependence (Hershberger et al., 2017).

Furthermore, negative urgency, positive urgency, and lack of premeditation are risk factors for alcohol consumption and maintenance of AUD (McNamara et al., 2023). Previous literature examining the predictability of these impulsivity traits to drinking outcomes revealed that a lack of premeditation is a significant predictor to drinking quantity (Tran et al., 2018). Additionally, drinking problems were highly correlated with negative and positive urgency (Coskunpinar et al., 2013). Thus, we focused on the following traits: negative urgency, positive urgency, lack of premeditation. Existing literature on the predictability of impulsivity traits and alcohol relapse suggests an association between impulsivity and alcohol use, however, the nature of this association remains inconclusive (Sliedrecht et al., 2021). For instance, various studies using the Barratt Impulsivity Scale have found no statistical significance in predicting relapse to drinking (Sliedrecht et al., 2021). Whereas, another study utilizing the UPPS-P impulsivity found a statistically significant association with alcohol relapse (Quoilin et al., 2018). Further research is required to investigate the efficacy of the UPPS-P impulsivity scale in predicting alcohol relapse in individuals with AUD.

Having described the gaps in self-reported impulsivity, it is important to consider behavioral impulsivity, specifically impulsive choice. Impulsive choice is often measured using a delayed discounting task (Herman et al., 2018). Delayed discounting (DD) can be defined as the decline of the present value of a reward if the reward is delayed upon being received (Odum, 2011). This is further characterized using the following hyperbolic equation, $V = A / (1 + kD)$,where V is the present value of the reward, A is the amount of the reward, D is the time of delay with a minimum value of 1, and k is a free parameter found by fitting the data to the hyperbolic equation (Odum, 2011). The hyperbolic effect is displayed as the present value of rewards declines steeply for short delays, but more marginally for longer delays (Odum, 2011). There is substantial evidence showing that individuals with AUD tend to have steeper rates of DD, reflecting a greater preference for immediate rewards (Bobova et al., 2009). Researchers have argued that preferences for immediate rewards may be associated with a lack of self-control (Rupp et al., 2016). Furthermore, it is believed that steeper rates are what lead to the dependence of alcohol use (Bickel et al., 2012). In other words, individuals with AUD tend to have higher levels of DD or a lack of self-control which makes relapse a more prevalent issue (Bobova et al., 2009). Generally, there is limited research regarding the relationship between DD and alcohol relapse. Three prior studies have examined the relationship between DD and alcohol relapse. The first study found that DD was associated with relapse, second found no statistically significant association, and the third found no extractable data for the relationship (Bernhardt et al., 2017; De Wilde et al., 2013; Tucker et al., 2016).

Understanding alcohol relapse is key to treating AUD. However, there is limited research on the predictability of impulsivity traits and DD on alcohol relapse (Sliedrecht et al., 2019). This is important because these cognitive mechanisms exemplify inhibitory processes (Jauregi et al., 2018; Jones et al., 2013). Typically, relapse is due to disinhibition, thus, these mechanisms are critical in understanding relapse. The present study aims to elucidate the relationship between impulsivity traits, delayed discounting, and alcohol use among individuals with an AUD during a 6-day quit attempt. The 6-day quit attempt allows for the assessment of early abstinence, which can provide additional insight into the potential for relapse risk during a critical period of abstinence. Delayed discounting and impulsivity traits were assessed at the initial randomization visit, while alcohol craving and alcohol use were assessed daily using electronic reporting.

As such, the first specific aim of the study was to test whether impulsivity traits (positive urgency, negative urgency, and lack of premeditation) predict drinks per drinking day (DPDD; the number of drinks they consumed during the days they drank), percent days abstinent, and average alcohol craving during a 6-day quit attempt. The second aim of the study was to examine if delayed discounting predicts drinks per drinking day (DPDD), percent days abstinent, and average alcohol craving.

Methods

Trial Design:

The current study is a secondary analysis of data collected during a two-week early efficacy paradigm trial to screen medication for AUD (Ray et al., 2020). The medications used in the parent trial were Naltrexone and Varenicline. Naltrexone is an FDA approved drug used for AUD, and Varenicline is an FDA approved drug used for nicotine use disorder with empirical support for off-label use for AUD. 53 treatment seeking individuals with AUD were double-blind randomized to either oral Naltrexone (50 mg QD), Varenicline (1 mg BID), or matched placebo. On study day 1, participants completed a battery of individual difference measures and began a weeklong medication titration period for Days 1-7. On Day 8 participants attended an in-person visit, and was officially the first day of abstaining, starting their 6-day quit attempt. During the quit attempt period (Days 8-14), participants completed electronic daily diary assessments (DDA) on the previous day alcohol consumption and craving.

Participants:

A sample of treatment seeking individuals with current DSM-5 AUD from [] were recruited through online, newspaper, and mass transit advertisement. Study inclusion criteria were: (1) between age of 21 and 65; (2) met diagnostic criteria (four or more symptoms in past 12 months) for moderate or severe AUD using DSM-5 (DSM-5, 2013); (3) have intrinsic motivation to quit or reduce drinking within the next six months; (4) report heavy drinking levels, ≥ 14 standard drinks per week for men and ≥ 8 standard drinks per week for females, in the 28 days prior to initial screening visit; and (5) have reliable internet access. Exclusion criteria were: (1) meet current (past 12 month) DSM-5 diagnostic criteria for a psychoactive substance use disorder other than alcohol and nicotine; (2) lifetime DSM-5 diagnosis of schizophrenia, bipolar disorder, or any psychotic disorder; (3) test positive on the urine-drug screen for anything besides cannabis; (4) have clinically significant alcohol withdrawal symptoms as indicated by a ≥ 10 on Clinical Withdrawal Assessment for Alcohol Revised (CIWA-R; Sullivan et al., 1989); (5) have an intense fear of needles or have had any adverse reaction to needle puncture; (6) if female; be pregnant, nursing or planning to be pregnant or use of an unreliable method of birth control; (7) have a medical condition that could interfere with safe study participation; (8) currently taking an psychotropic medication that would compromise participant safety; (9) currently using Naltrexone or Varenicline; and (10) have any other circumstances that would compromise safe study participation.

A total of 120 participants consented to participate in the initial screening visit. Of those participants, 74 were deemed clinically eligible and completed a medical screening visit with the study physician. A total of 49 individuals were randomized to Naltrexone (n=15), Varenicline (n=17), or placebo (n=17). Included in the present analysis are the 49 individuals who completed at least one daily diary report during the quit attempt period.

Screening and Trial Procedures:

The practice quit paradigm was conducted at an outpatient research clinic at the []. Recruited individuals were called and read a brief description of the study. Interested individuals completed an initial phone screening interview and eligible participants were invited to the laboratory for an in-person behavioral visit. At the start of all in-person visits, participants were required to have a BrAC 0.00 g/dl and a urine toxicology screen negative for all drugs except cannabis. Eligible participants, after the initial visit, completed an in-person medical screening visit entailing laboratory tests and a physical exam conducted by the study physician. Participants meeting all study eligibility were randomized to one of three treatment conditions: 1 mg BID Varenicline, 50 mg QD Naltrexone, and placebo. Randomization was stratified by sex, smoking status as indexed by question 1 of the Fagerstrom Test for Nicotine Dependence ("How often do you smoke";FTND; Heatherton et al., 1991); and drinking status as defined as heavy drinkers (≥14 or more drinks per week for males and ≥7 drinks per week for females) or very heavy drinkers (≥35 drinks per week for males and ≥28 for females). Research staff, providers, and participants remained blind to the medication conditions during the trial. Participants underwent a week-long medication titration period followed by a 6-day quit attempt (days 8–14).

Baseline Assessment:

During the initial in-person screening visit, participants completed a set of assessments for individual differences and eligibility screening, which included demographic information, substance use history, and diagnoses using the Structured Clinical Interview for DSM-5 (SCID-5; American Psychiatric Association, 2013), and FTND to assess smoking status. During the in-person visit on Day 1 (randomization), participants completed additional individual difference measures which included

the Monetary Choice Questionnaire (MCQ; Kirby & Maraković, 1996) to assess delayed discounting of rewards, Urgency-Premeditation-Perseverance-Sensation Seeking-Positive Urgency Scale (UPPS-P; Lynam et al., 2006) to assess impulsivity behavior, and Timeline Follow Back (TLFB; Sobell & Sobell, 1992) to assess quantity and frequency of alcohol, cigarette, and marijuana use in the last 28-days.

Electronic Daily Diary Assessment:

Each morning during the 6-day quit attempt, participants were asked to retrospectively report on their previous day experiences by completing an electronic DDA survey. Daily reminder texts or emails containing links to the DDA survey were sent to participants each morning during their 6-day quit period. At the start of each daily survey, participants were asked if they drank alcohol the day prior. If they endorsed the previous day's drinking, they reported on drinking type, drinking quantity, and reported on craving prior to drinking and during alcohol consumption. If participants endorsed no previous day drinking, they reported on past day craving.

Electronic Daily Diary Assessment:

All descriptive and statistical analyses were completed in SPSS Statistical Software on the sample of participants who completed at least one DDA during the quit period (N=49). The UPPS-P negative urgency, positive urgency, and lack of premeditation subscales were calculated by summing the 4 items that corresponded to each subscale (Dugré et al., 2019). For the MCQ, individual participant responses were reported as 0s for preference for small reward and 1 for preference for large reward relative to the question. These scores were inputted into an automatic delayed discounting scoring sheet (Kaplan et al., 2016). The scoring sheet calculates the rate of discounting, k, using a discounting hyperbolic equation (Mazur, 1987). This is done for three sets of reward categories in the MCQ: small, medium, and large rewards. Baseline drinks per drinking day and percent days abstinent were calculated using the TLFB assessing participants' drinking patterns over the 30-days prior to the first in-person visit. A single item urge rating on a scale of 0 to 10 ("How strong was your urge to use alcohol yesterday?") was averaged over the 6-day quit attempt which was used to index alcohol craving over the quit period. Similarly, daily reports of drinking during the quit attempt were used to calculate drinks per drinking day and percent abstinence days which were then averaged over the course of the 6-day quit attempt.

To examine baseline impulsivity (i.e., indexed by the UPPS-P and MCQ) as a predictor of alcohol use and craving during the 6-day quit attempt, multiple multilinear regression analysis were used. Medication condition, gender, and baseline drinking variables were covariates in each model. Additionally, socioeconomic status was controlled for in the MCQ model. The subscales created for the UPPS-P were treated as a family given the interrelation and a similar approach was used for the subscales calculated for the MCQ; therefore, the two models were considered the multiple comparisons. Thus, the Bonferroni method was utilized to correct for the multiple comparisons; $\alpha = .025$ level of significance was used for rejecting each null hypothesis.

Results

Participants:

Participants were on average 41.29 (SD = 11.48) years of age, out of which, 51.0% identified as male (n = 25) and 49% identified as female (n = 24). Participants consumed on average 5.60 (SD = 2.97) drinks per drinking day and had an average of 24.86 (SD = 22.12) percent days abstinent in the past month. Refer to Table 1 for a full description.

Impulsivity Traits Predict Alcohol Use:

A multilinear regression was utilized to examine the association between impulsivity traits (i.e., negative urgency, positive urgency, and lack of premeditation) and drinks per drinking day during the 6-day quit attempt. Medication condition, gender, and baseline drinks per drinking were covariates in the models. The covariates were not correlated with the outcome variables. Baseline negative urgency, as indexed by the UPPS-P, did not significantly predict DPDD during the 6-day quit attempt ($p=.62$). Baseline DPDD significantly predicted DPDD during the quit attempt ($R2=.19$, $B= .38$, $p=.015$). Baseline positive urgency, and lack of premeditation also did not predict DPDD during the 6-day quit attempt ($p>.025$). Baseline DPDD significantly predicted DPDD during the quit attempt for positive urgency and lack of premeditation models ($p<.025$). Multicollinearity was assessed for positive and negative urgency with DPDD, and no issues regarding multicollinearity were detected for DPDD. For further results, reference Table 2.

Following, we examined the association between impulsivity traits and percent days abstinent. Medication condition, gender, and baseline percent days abstinent were covariates in these models. The covariates were not correlated with the outcome variables. All impulsivity trait predictors did not significantly predict percent days abstinent during the quit attempt ($p>.025$), further results found in Table 3. Furthermore, multicollinearity was assessed for positive and negative urgency with percent days abstinence, and no issues regarding multicollinearity were detected for percent days abstinence. We also examined the

association between impulsivity traits and alcohol craving during the 6-day quit attempt. Medication condition, gender, and baseline percent days abstinent were covariates in these models. The covariates were not correlated with the outcome variables. Negative urgency and positive urgency did not significantly predict average alcohol craving; however, lack of premeditation significantly predicted average alcohol craving during the 6-day quit attempt ($p>.025$), further results found in Table 4. Finally, multicollinearity was assessed for positive and negative urgency with average alcohol craving, and no issues regarding multicollinearity were detected for average alcohol craving.

Delayed Discounting Predicts Alcohol Use:

A multilinear regression was used to examine the association between overall rate of discounting (k) and drinks per drinking day during the 6-day quit attempt. Medication condition, gender, socioeconomic status, and baseline drinks per drinking day were covariates in the model. Overall k, as indexed by the MCQ, did not significantly predict DPDD during the 6-day quit attempt ($p=.48$) and neither did baseline DPDD ($p>.025$), further results found in Table 2. We then assessed the association between overall rate of discounting (k) and percent days abstinent during the 6-day quit attempt. Medication condition, gender, socioeconomic status, and baseline percent days abstinent were covariates in this model. Regarding percent days abstinent, overall k did not significantly predict percent days abstinent during the quit attempt ($p=.52$), further results found in Table 3. Lastly, we examined if overall k predicted average alcohol craving during the quit attempt. Medication condition, gender, and socioeconomic status were covariates in this model. Overall k did not significantly predict average alcohol craving during the quit attempt ($p>.025$), further results found in Table 4.

Discussion

Given the inconclusive empirical support for the predictive relationship between impulsivity and alcohol relapse, this study examined whether impulsivity traits and choice could predict alcohol relapse during a 6-day quit attempt. The following impulsivity traits were assessed using the UPPS-P impulsivity behavioral scale: negative urgency, positive urgency, and lack of premeditation. Aside from lack of premeditation predicting alcohol craving, the three assessed personality traits did not significantly predict alcohol relapse during the 6-day practice quit attempt. These findings are in agreement with Sliedrecht et al. (2021), as the results revealed no relationship between impulsive personality traits and alcohol relapse. However, these findings differ from findings of Quoilin et al. (2018), in that the results revealed no statistically significant relationship between impulsive personality traits and relapse as indexed by UPPS-P. These results suggest that impulsive traits, as measured by UPPS-P, may not be a primary predictive factor for alcohol relapse in the current study sample.

Furthermore, impulsive choice was assessed via a delayed discounting using the MCQ to which overall k was calculated using an empirically supported scoring sheet. Overall k did not significantly predict alcohol use or alcohol craving during the 6-day quit attempt. These findings are in line with De Wilde et al. (2013) and differ from Bernhardt et al. (2017), as there was no statistically significant relationship between delayed discounting and relapse. The results suggest that impulsive choice may not be a strong predictor of alcohol relapse, and that examining impulsive action, the third facet of impulsivity, may be a worthwhile direction for future research.

The study highlights important strengths that contribute meaningfully to the existing literature on the relationship between impulsivity and alcohol relapse. This study is one of the first to test trait and behavioral indexes of impulsivity during a period of early abstinence. Additionally, our study offers further insight into the relevance and application of the UPPS-P and MCQ indices of impulsivity in a sample of individuals higher on the spectrum of AUD severity (i.e., moderate to severe).

Despite the study's strengths, several limitations exist, including the conditions of participants prior to the quit attempt, as participants were abstinent the week prior to the quit attempt. This may suggest some expectancy bias as participants knew they needed to be abstinent; thus, they may have been underreporting their alcohol consumption due to memory limitations. Future studies may want to utilize ecological momentary assessment (EMA) which asks participants to report multiple times per day which might reduce recall bias, although this places added participant burden. Additionally, our study's null results may be due to the lack of a unified conceptualization of impulsivity and measurements of impulsivity tending to provide some variability. The variation in conceptualization can be unified within a single, multi-faceted framework, much like how the UPPS-P model organizes distinct traits, but for the three components of impulsivity. An additional limitation of the study was the small sample size, which lowers the statistical power of the study. Finally, the study design included a 6-day quit attempt. This may have been a short period of time to evaluate early abstinence and its relationship to impulsivity. A two-week period of abstinence may better highlight the relationship between impulsivity and relapse risk, as findings in the parent paper suggest a change in cognitive factors such as higher motivation to change behavior was observed in the thirteen days leading to the quit attempt (Ray et al., 2024).

While the obtained findings add to the limited research on the comparative efficacy of the utilized impulsivity indices, we encourage future research to evaluate the relationship between a combination of impulsivity factors and AUD relapse, rather than

examining each factor in isolation. Understanding this relationship can provide more directed treatment towards helping improve impulsive control and reducing the risk of relapse in AUD. This can guide the development of targeted interventions aiming to slow the progression of AUD and improve rehabilitation outcomes, which could help attenuate the public health crisis.

Conclusion

In this study, we conducted analysis utilizing data obtained from a two-week early efficacy paradigm trial on AUD medication. The specific aims of the study were to test whether impulsivity traits predicted DPDD, percent days abstinent, and average alcohol craving during a 6-day quit attempt and examined if delayed discounting predicted DPDD, percent days abstinent, and average alcohol craving. Study analysis revealed null results as neither impulsive personality traits nor impulsive choice showed an association with alcohol relapse. In general, evidence suggests impulsivity to be an important predictor of AUD (Szczypiński et al., 2021). However, there is a wide array of mixed findings on the role impulsivity plays in early abstinence and the potential risk for relapse in alcohol consumption. Thus, it is crucial for future studies to further examine impulsivity as a predictive measure of alcohol relapse to aid the development of interventions for AUD treatment.

Table 1. Sample demographic and clinical characteristics (N = 49)

Variable	Means (SD) or N (%)
Age	41.29(11.48)
Sex (M/F)	51.0/49.0
Race (%)	
Black	12 (24.5%)
White	22 (44.9%)
Asian	3 (6.1%)
American Indian	1 (2.0%)
Pacific Islander	1 (2.0%)
Mixed	8 (16.3%)
Other/Unknown	2 (4.1%)
Hispanic/Latino	13 (26.5%)
Income (%)	
< $15,000	14 (28.6%)
$15,000 ≥ and < $30,000	6 (12.2%)
$30,000 ≥ and < $45,000	6 (12.2%)
$45,000 ≥ and < $60,000	10 (20.4%)
$60,000 ≥ and < $75,000	6 (12.2%)
$75,000 ≥ and < $90,000	3 (6.1%)
$90,000 ≥ and < $105,000	3 (6.1%)
$105,000 ≥ and < $120,000	1 (2.0%)
>$120,000	1 (2%)
Past Month Drinks per Drinking Day	5.60 (2.97)
Past Month Percent Day Abstinent	24.86 (22.12)

Note: Data are presented as mean ± standard deviation or as number of participants (percent of sample). SCID, Structured Clinical Interview for DSM Disorders

Table 2. Impulsivity Traits Predict Drinks per Drinking Day

Negative Urgency	**R^2**	***B***
Gender	.061	-.089
Medication	.064	.056
Baseline Drinks Per Drinking Day	.192	.383
Negative Urgency	.197	.06
Positive Urgency	**R^2**	***B***
Gender	.061	-.067
Medication	.064	.062
Baseline Drinks Per Drinking Day	.192	.407
Positive Urgency	.203	-.102
Lack of Premeditation	**R^2**	***B***
Gender	.061	-.075
Medication	.064	.040
Baseline Drinks Per Drinking Day	.192	.397
Lack of Premeditation	.207	-.121
Overall K	**R^2**	***B***
Gender	.061	-.092
Medication	.064	.067
SES	.151	-.230
Baseline Drinks Per Drinking Day	.233	.359
Overall K	.242	-.104

Table 3. Impulsivity Traits Predict Percent Days Abstinence

Negative Urgency	**R^2**	***B***
Gender	.000	-.004
Medication	.003	-.059
Baseline Percent Days Abstinence	.054	.186
Negative Urgency	.070	-.134
Positive Urgency	**R^2**	***B***
Gender	.000	-.014
Medication	.003	-.059
Baseline Percent Days Abstinence	.054	.225
Positive Urgency	.054	-.007
Lack of Premeditation	**R^2**	***B***
Gender	.000	-.014
Medication	.003	-.062
Baseline Percent Days Abstinence	.054	.223
Lack of Premeditation	.055	-.024
Overall K	**R^2**	***B***
Gender	.000	-.018
Medication	.003	-.036
SES	.005	.050
Baseline Percent Days Abstinence	.060	.231
Overall K	.069	-.655

Table 4. Impulsivity Traits Predict Alcohol Craving

Negative Urgency	**R^2**	***B***
Gender	.007	-.087
Medication	.008	.035
Negative Urgency	.028	.141
Positive Urgency	**R^2**	***B***
Gender	.007	-.068
Medication	.008	.043
Positive Urgency	.027	-.140
Lack of Premeditation	**R^2**	***B***
Gender	.007	-.070
Medication	.008	-.002
Lack of Premeditation	.090	-2.018
Overall K	**R^2**	***B***
Gender	.007	-.086
Medication	.008	.055
SES	.069	.236
Overall K	.071	-.044

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