

RELATIONSHIP BETWEEN ALCOHOL USE DISORDER, COGNITIVE  
REAPPRAISAL AND EXPRESSION SUPPRESSION AMONG YOUTH  
SEEKING HELP IN REHABILITATION CENTERS IN KIAMBU  
COUNTY, KENYA

BY

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A THESIS SUBMITTED TO THE FACULTY OF ARTS IN PARTIAL  
FULFILLMENT FOR THE AWARD OF THE DEGREE OF MASTER OF  
PSYCHOLOGY (COMMUNITY PSYCHOLOGY) IN THE UNIVERSITY  
OF NAIROBI

December, 2017

## DECLARATION

This thesis is my original work and has not been presented for a degree in any other University

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## **DEDICATION**

To my son, Steve Archer. You always remind me how bright the future is

## **ACKNOWLEDGEMENTS**

I did this work not just to have a Masters degree, but to acquire knowledge. There wouldn't have been a greater team to guide me towards this objective than the dedicated academic and non-academic staff at the department of psychology, at the University of Nairobi.

My two very able supervisors; Dr. Odiemo and Dr. Wango. To you I am grateful.

My family understood the times I would be away doing this work. I appreciate their understanding and support. They are the best cheering squad.

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## **ABBREVIATIONS**

ADHD	Attention Deficit Hyperactivity Disorder
APA	American Psychological Association
AUD	Alcohol Use Disorder
AUDIT	Alcohol Use Disorder Identification Test
CDC	Centers for Disease Control and Prevention
DSM	Diagnostic and Statistical Manual of Mental Disorders
ERQ	Emotion Regulation Questionnaire
NACADA	National Campaign Against Drug Abuse Authority
WCFAICR	World Cancer Research Fund/American Institute of Cancer Research
WHO	World Health Organization

## ABSTRACT

Several explanations have been put across to elucidate the reasons behind alcohol use and abuse. Emotion Regulation strategies have been shown to mediate between negative emotions and the urge to take alcohol. The current study aspired to find out whether the strategies that individuals utilize to control their affective states when faced by emotionally charged and challenging situations could be related to the development and maintenance of Alcohol Use Disorder (AUD). Two strategies, *cognitive reappraisal* and *expression suppression*, have been identified as more applicable in emotion regulation due to their adaptability advantage over others in decreasing or increasing affective states. The Emotion Regulation Questionnaire (ERQ; *reliability coefficient* = 0.79, 0.73) and the Alcohol Use Disorder Identification Test (AUDIT; *reliability coefficient* = 0.83) were utilized to collect data from 33 youths aged 15-35 seeking help in three rehabilitation centers for alcohol abuse. These participants were contrasted against 33 youths of similar characteristics who had completely abstained from alcohol, and 12 others who had stayed alcohol free for at least a year after rehabilitation or quitting alcohol. The study adopted correlation research design, with the hypothesis that there was a relationship between the use of cognitive reappraisal and/or expression suppression and AUD. Pearson's bivariate correlation indicated a negative and significant relationship between cognitive reappraisal and AUD, a positive and significant relationship between expression suppression and AUD, and found no significant interaction between reappraisal and suppression. Khantzian's self-medication theory posits that alcohol is taken with the hope that it reduces inner emotional distress. Alcohol abuse is therefore an attempt to heal inner emotional distress. This calls for the need to understand and adapt emotion regulation strategies that are efficient enough to handle emotionally charged and challenging situations. According to appraisal theory, an individual's ability to cognitively evaluate what is happening, what it means, and how significant the happening is to them (appraisal), has been found to directly determine emotional state and hence wellbeing. Intervention measures for alcohol abuse should therefore address how individuals regulate their emotions when confronted by stressful life events.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Despite its ability to produce dependency among its users, alcohol is a common drink in many cultures and is currently the most abused drink all over the world (CDC, 2016; WHO, 2014). In a comparative study on drinking among European and American participants, Friese and Grube (2011), found that alcohol consumption in Europe begins in cultural contexts as young people are encouraged to drink within the family setting to encourage moderate drinking. In America, the legal drinking age is 21. This forces the young ones to drink outside the family setup. This way, they binge more, and experience more alcohol related problems (Friese and Grube, 2011). These findings are congruent with publications by the Center for Disease Control (CDC) survey (2001), which showed that one out of every three American participants drank at least 5 drinks on one occasion at least once in the year 2000. Europe has the highest consumption of alcohol per person, and harmful consumption of alcohol in Africa has been reported to be increasing at alarming rate, and required appropriate measures to avert an alcohol crisis (WHO, 2014). In Kenya, alcohol use is rooted in early cultural practices such as initiation ceremonies, gathering of village elders, dowry payments and traditional weddings (Basangwa, Ndeti, Kuria, Ongecha-Owuor, Abdullahi, Mburu, & Gakinya, 2006). There were however clear guidelines on who consumed alcohol, with women, the youth and children not being allowed to drink (Birech, Kariuki, Misaro, & Kabiru, 2013). These guidelines for moderate drinking in the Kenyan culture seem to have been shredded by modernity, as more and more youth, and cases of underage drinking become common place (Psirmoi, 2015).

For the years that humans have drunk fermented beverages, a debate about their merits and demerits has simmered. For example, light and moderate alcohol consumption has been linked to lower deaths due to cardiovascular complications, and reduced clot-related (ischemic) stroke, a common type of stroke. (Goldberg, Mosca, Piano, Fisher, 2001; Kloner & Rezkalla, 2007). However, excessive consumption of alcohol accounts for many diseases and deaths across the globe (Boyle, Albert, Boffetta, Lowenfels, Brawley, Zatonski, & Rehn, 2013) The question that fuels the merits verses demerits debate on alcohol consumption is one of how much alcohol is light-to-moderate drinking. Researchers on alcoholism have not agreed on how much alcohol is too much, and how much is moderate (Kloner & Rezkalla, 2007). This though differs from region to region. In the United States, one drink containing 12-14g of pure alcohol in a day is considered moderate (Dietary guidelines for Americans, 2005).

Unrestrained use of alcohol causes a large disease, social and economic burden in societies. In 2012 alone, millions of deaths, diseases and injuries were attributable to harmful use and abuse of alcohol (WHO, 2014). Studies show that in men and women, alcohol abuse is linked to various forms of cancer (WCFAICR, 2007). The risk of cancer among alcoholics increases if the individuals are smoking too. Alcoholic Hepatitis (inflamed liver), cirrhosis (Scarred liver), and increased blood pressure due to damaged circulatory muscles have all been linked to increased drinking (WCFAICR, 2007).

The Diagnostic and Statistical Manual of Mental Disorders (DSM), Fifth Edition (APA, 2013), integrated alcohol use and dependence into Alcohol Use Disorder (AUD) with three sub-classifications; mild, moderate, and severe. AUD involves problematic patterns of alcohol use which causes significant clinical impairments or distress. Individuals with

AUD are identified by the length of time put in efforts to obtain and use alcohol, which they take in larger amounts than intended. Such efforts are followed by unsuccessful attempts to reduce or quit alcohol use. People with AUD, despite the social or interpersonal problems that come with it, continue to satisfy their deep craving for alcohol. Tolerance increases with time, and more alcohol is required to produce the effects that were previously produced by lesser amounts, with efforts to quit being hampered by the reinforcing need to take alcohol to relieve the pain of withdrawal symptoms (APA, 2013).

Several studies have elucidated the reasons people end up in alcohol abuse. They include Genetic predisposition (Begleiter & Porjesz, 1999), heavy maternal drinking during pregnancy, or being raised by alcoholic parents (Baer, 2003), influence from immediate drinking peers (Arata et al., 2003), increases in stress levels from the demands of academics for those in school (Lorente, Peretti-watel, Griffet, & Grelot, 2003) Men and women with conduct disorders and/or ADHD, those suffering from depression, anxiety, and those who suffered social avoidance as children has also been found to precipitate a drinking problem (Frone, Russell & Cooper, 1993). From family history to emotionally potent circumstances, these factors seem to have a thread joining them, one which is not highly researched in regard to alcohol abuse, and that is an individual's inability to effectively deal with the emotions that may accompany the above mentioned, or even their day-to-day emotion eliciting situations.

Negative life events trigger emotions which guide behavior responses, with the type of behavior response usually informed by the emotion regulation strategy employed (Mohajerin, Dolatshahi, Shahbaz, & Farhoudian, 2013). Experimental and correlation studies seem to point in the direction that some strategies lead to the development of



maladaptive behavioural responses such as AUD (Mairean, 2015). Studies by Mairean and others (2014), have further shown that victims of life events such as death of a spouse, divorce, loss of job, lead to feelings of fear, low self-esteem, loss of trust, reduced levels of intimacy, shame, insecurity, and such affective states as would require a mechanism to respond to such highly distressful demands.

Individuals with high ability to regulate their emotions exhibit positive emotional outlook and a high sense of self-worth. These attributes help regulate emotions and counteract everyday stressful life events (Brackett, Mayer, & Warner, 2004). Recent studies have focused on the resilience of some people who unlike others in the face of Stressful Life Events, have been known to experience no long term negative effects despite the predisposition by the situations they find themselves (Bonanno, 2004; Ong, Bergeman, Bisconti, & Wallace, 2006). Emotion regulation, a more recent entrant to the possible explanations of maladaptive behaviour, has been found to play a critical role in the psychological outcomes of a given emotionally stimulating situation either in adaptive or maladaptive ways (John & Gross 2003). The current study therefore seeks to establish whether inner states rather than outer status may explain AUD.

Emotion regulation refers to the ways through which people influence the kind of emotions they allow themselves to have, choose when to have them, and decide the way in which they experience and express them (Gross, 1998). According to Thompson (1994), Emotion Regulation refers to 'the inner and outer processes which monitor, evaluate, and modify emotional reactions, with a focus on the emotion's intensive and temporal features, for the purpose of accomplishing one's goal(s). Difficulties in regulating the experience and expression of affective states has been associated with eating disorders, smoking, self-harm

and addictions (Macklem, 2008). When utilized, Emotion regulation strategies lead to a shift in how an emotion eliciting stimuli is appraised or cognitively judged, and modifies the meaning a situation had when first encountered. This shift in appraisal changes one's way of thinking about the situation, about themselves, and their capacity to deal with the situation (Lewis, Havilland-Jones, & Barret, 2008). The quality of emotion, (which emotion is experienced), and the quantity of it, (intensity of the emotion), and hence how it affects the individual experiencing it, has been shown to depend on the strategies applied in responding to emotion evoking situations (Gross, 2002; John & Gross, 2003). Yet, there is a dearth of studies exploring possible relationships between emotion control processes and AUD

Alcohol abuse models have found that people with emotion regulation deficits indulge in it as a means of masking their emotions (Kenneth & Emily, 2007). It seems therefore that lack of the ability to effectively regulate emotions might mark the onset and maintenance of alcohol abuse, as inadequate abilities to reign over impulses lead to drinking alcohol, which is expected to reign over the impulses.

Individuals seeking help with alcoholism have been found to exhibit maladaptive regulation of negative emotions, while adaptive emotion regulation strategies have been found to moderate between negative emotions and craving for alcohol (Berking et al., 2011). The implication here is that individuals unable to deal with their impulses find alcohol an effective way to reduce negative impulses, albeit temporarily. More alcohol may be taken to deal with emotions later when they arise. The end result (with time) might be alcohol abuse.

With a wide range of emotion regulation strategies, it is of paramount importance to identify which strategy is more effective in emotion regulation and make it the one of choice in a wide range of emotion-eliciting scenarios. The success of an emotion regulation strategy depends on the time it is utilised. That is, when the strategy has its primary impact on the emotion-generating process (Urry, 2009). It follows therefore that whereas there are several strategies that an individual can apply to moderate situations that may elicit negative affects, two strategies, cognitive reappraisal and emotion suppression, have been found to be more recommendable in successful emotion regulation due to their adaptability advantage over the others in decreasing or increasing affective states. (Gross, 2002; Mohajerin et al., 2013).

With a common goal to down-regulate emotion, reappraisal reduces the inner experience and outward expression of an emotional episode, whereas suppression inhibits the outward behavioural expression of inner emotional state, but doesn't decrease the experience of the emotion itself (Gross, 2002). Studies by Gross and John (2003) found that participants deploying strategy reappraisal were highly adaptive, scored high on wellbeing and had less depression symptoms as compared to individuals who used other strategies. Psychological interventions such as cognitive behavioral therapy (CBT), utilizes reappraisal as key ingredient (Troy, Wilhelm, Shallcross, & Iris, 2012). When subjects in experiments are overtly asked to employ the reappraisal technique, they have been found to experience less negative affect as compared to control groups using other strategies (Ochsner, Ray, Cooper, Robertson, Chopra, Gabrieli, & Gross, 2004; Sheppes & Meiran, 2007). Reappraisal is referred to an antecedent focused affect regulation strategy because it precedes full stimulation of the emotion responses during the emotion eliciting situation, and tends to

modify the entire course of an emotion response (Gross, 2002). It should therefore be an effective strategy in down-regulating emotions in a situation where others would use alcohol.

Expression suppression is a response-focused strategy. It engages inhibition to decrease emotion-expressive behavior during an emotion-generating situation (Mohajerin et al., 2013). Suppression comes later in the emotion episode to inhibit the outward physical expressions of inner experiences; i.e., it is a strategy that denies the expression of outward signs of inner emotions (Gross, 2002). This strategy, unlike reappraisal which reduces the inner experience and outward expression, decreases the behavioural expression of behaviours due to inner emotional states, but doesn't decrease the experiencing of the emotion itself (Gross, 2002). This strategy is implemented when emotion responses are fully underway and with expressive behaviour fully operationalized, weighing heavily on individual's inner resources to suppress. Since behavioural expression of an affective state is a crucial means of discharging the pressure of an emotive episode, the implication here is that expression suppression does not effectively serve the all-important process of down regulating emotions in the face of emotionally taxing situations. Individuals who employ this strategy are likely to be left in need of something to help discharge the emotion suppressed. This could lead to maladaptive attempts such as harmful use of alcohol to reign over impulses. The self-medication hypothesis posits that the use of alcohol and drugs of abuse in attempts to self-medicate their inner distress, and seek to attain emotional stability (Khantzian, 1997)

## **1.2 Statement of the Problem**

Alcohol abuse has been known to cause disease, premature death, gender based violence, risk-taking behaviours and other social upheavals (Bodewes & Salisbury, 2010; Boyle et al., 2013). Several attempts such as laws to regulate drinking age, and the time and the place one can buy and imbibe alcohol, have been made to deal with the alcohol abuse menace. These well intended efforts however seem to be focused on punitive laws where people get arrested for violating such regulations, and are mostly taken to court, instead of being offered help to deal with the problem. Even when others are placed in rehabilitation centers, as Sereta et al. (2016) found out, the main focus in such rehabilitation programs focus majorly on behaviour modification, without explicitly dealing with the underlying causes of such behaviour. Such approaches fail to view alcohol abuse as a possible compensatory mechanism that abusers utilize to modulate underlying painful psychological affective states, and attempts to ‘cure’ inner emotional distress (Khantzian, 1997). This problem of harmful use of alcohol may escalate even further. There is therefore a need to adopt an approach that helps individuals cope with stressful events in a manner that effectively down-regulates any negative feelings resulting from emotionally high valency situations. This study sought to go below the surface, and investigate the inner mechanisms that support the harmful use and abuse of alcohol in the dimensions of emotion regulation deficits.

### **1.3 Research Questions**

- i) Do individuals seeking help for alcohol use disorder differ from non-alcoholics in their use of cognitive reappraisal strategy during stressful life events?
- ii) In which way do individuals seeking help for alcohol use disorder differ from non-alcoholics in their use of expression suppression strategy during stressful life events?
- iii) Is there any interaction between cognitive reappraisal and expression suppression among individuals with alcohol use disorder?

### **1.4 Objectives of the Study**

- i) Investigate the relationship between alcohol use disorder and the ability to use cognitive reappraisal when confronted by negative life events.
- ii) To explore whether there is a relationship between alcohol use disorder and an individual's deployment of expression suppression in the face of negative life events and.
- iii) Establish the extent to which Cognitive reappraisal and expression suppression interact in responding to stressful events among alcohol abusers.

### **1.5 Purpose of the Study**

To explore the relationship between and alcohol use disorder, cognitive reappraisal and expression suppression among youth seeking help in rehabilitation centers in Kiambu county.

## **1.6 Justification of the Study**

The age between 15 to 35 years is a period of transition in emotional, educational, and career development (Hassan, 2013). These transitions may present a challenge for some young people as they break free from parental and institutional controls, and seek to establish themselves as independent adults (Hassan, 2013). If not well handled, these transitions may result in psychological distress. According to Lazarus and Folkman (1984), the way in which individuals react to such emotionally distressing situations or unfamiliar circumstances might be adaptive or maladaptive. This depends on how the individuals evaluate the situation in relation to their capacity to handle it, and their wellbeing. According to the appraisal theory (Lazarus & Folkman, 1984), thought is a key adaptation process intervening between environmental challenges and actions. When an emotion generating situation is evaluated and modulated in maladaptive ways, it may manifest as a problematic behaviours such as AUD. This study seeks to establish whether the way in which individuals deal with emotionally taxing situations such as the above-mentioned transitions, is a risk factor in the commencement and continued of alcohol use, and consequent development of AUD. Emotions are malleable (Gross, 2003) and therefore findings of any relationships between deficiencies in emotion regulation strategies and individual's tendency to abuse alcohol will go a long way in equipping young people with requisite adaptive emotion regulation skills to choose when to have which emotions where, thus learn how to experience and express those emotions. This would positively develop their ability to deal with daily stressful hassles without resulting to alcohol in attempts to self-medicate any painful emotional experiences.

### **1.7 Significance of the Study**

This study findings will be useful in the successful rehabilitation of individuals diagnosed with Alcohol Use Disorder (AUD). In addition to the existing literature on the consequences of choosing cognitive reappraisal or expression suppression, institutions such as NACADA will benefit from these findings on emotion regulation to help in using effective ways of alcohol abuse prevention, having in mind malleability of emotions. Further, the findings of this study will be useful in health care settings as care givers will have an understanding of how emotion regulation strategies, a rarely considered factor in the development of AUD, might be useful in taking care of individuals with AUD.

### **1.8 Scope**

While on a fact-finding mission in 2009, NACADA found that there existed alcohol problem in central Kenya. The highest cases were reported in Kiambu district, part of the now Kiambu County, (See appendix III) compared to other places. Informed by these findings, a few rehabilitation centers were opened, among them Teen Challenge, Caretec and Talbot where this study was carried out. The study included young people (15-35 years) seeking help at the rehabilitation centres for alcoholism, with no history of abusing any other drug, contrasted against youth from the same area who had quit and stayed alcohol-free for at least a year, and youth who had never used alcohol or any other drug. All the participants were required to be Kiambu county residents, and were included only after to signing consent form.



### **1.9. Limitations and Delimitations of the Study**

This study was carried out within a few selected rehabilitation centres in Kiambu county, and only among youth (15-35 years). The findings may therefore not be generalisable beyond the study area due to cultural differences, and to older populations since aging may affect how individuals regulate their emotions. Data collection was done using self-reporting questionnaires, and it is therefore highly likely that there was some degree of subjectivity since it depended on respondents' honesty. Answers may therefore not have been absolutely objective, and this may limit generalization of results. Secondly, snowballing is not a random sampling technique, and may therefore introduce selection bias. The study also did not consider the influence of personal characteristics such as personality, psychopathology, or other ways in which emotion dysregulation may manifest besides AUD.

The study focused on two emotion regulation strategies which reviewed literature showed as key in how individuals down regulated emotional situations. The instruments used were also shown to have a high reliability, and the contents were thoroughly explained to participants before they filled them.

### **1.10 Assumptions**

This study was based on the assumptions that;

- i) Individuals differ in the strategies they employ to regulate their emotions
- ii) These differences in emotion regulation are informed by demographic differences
- iii) Alcohol abuse is a result of alterations in the processes leading to the choice of one emotion regulation strategy over another

### **1.11 Organization of the Thesis**

The study was divided into five chapters. The first chapter introduces the study, its objectives, and how it goes about answering the research question. The second chapter gives a review of related literature on alcohol abuse and emotion regulation strategies across the different confounding variables. Here, the theoretical and conceptual framework is also discussed. Chapter three discusses the methods employed in data collection and analysis, and the ethical considerations during data collection. Chapter four presents the results of the study. Chapter five captures how the results obtained relate to previous work in emotion regulation. All references are listed after the last chapter, followed by appendices.

## DEFINITION OF TERMS

- Alcohol Use Disorder:** A patterned way of using alcohol which leads to one's inability to be in charge of their drinking. Alcohol then turns to a preoccupation, leading to use even when it causes the user problems, with attempts to quit followed by withdrawal symptoms.
- Emotion Regulation:** The ways through which people influence the kind of emotions they allow themselves to have, choose when to have them, and decide the way in which they experience and express them
- cognitive reappraisal:** Mental process that influence how stressors are reacted to; adaptively or maladaptively. Rephrasing, reinterpreting, or cognitively evaluating the meaning of an emotional cue to reduce its inward experience and outward expression
- Expression suppression:** A response-focused emotion regulation strategy which engages inhibition to decrease emotion-expressive behavior during an emotion-generating situation.
- Catholic:** Also known as Roman Catholics. Refers to Christians who acknowledge the same belief systems. They also are under the authority of Christ; the invisible head and bishop of the Rome also known as the pope together with the bishops in communion with him.
- Protestant:** The Christians who belong to other Christian bodies that separated from the Church of Rome (Roman Catholics) at the time of the reformation.

## **CHAPTER TWO**

### **LITERATUREREVIEW**

#### **2.1 Introduction**

This chapter reviews studies on how cognitive reappraisal and/or expressive suppression as utilized by individuals in the face of negative affective states relate to AUD. Further, studies on age, gender, culture, religion, family background, socioeconomic status and education level differences in AUD, in relation to the deployment of reappraisal and suppression are presented.

#### **2.2 The Relationship between the Tendency to Abuse Alcohol and the Ability to use Cognitive Reappraisal when Confronted by Negative Life Events**

Cognitive Reappraisal is an Antecedent-focused Emotion Regulation strategy (Gross, 2002). It is an attempt made by an individual to down-regulate emotion before the response tendencies are fully operationalised and have altered the individual's behavioral, experiential and physiological reactions. As an adaptive strategy, it reduces both the inner experience and outward expression of an emotional episode, and represents an individual's capability to enhance positive emotions and/or reduce negative ones (Gross, 2002). Studies by Gross and John (2003) found that participants who reappraised in the face of negative life events were highly adaptive, scored high on well-being and had less depression symptoms as compared to individuals who used other strategies. This may explain the relative success of psychological interventions such as cognitive behavioral therapy (CBT), which utilizes reappraisal as key ingredient (Troy et al., 2012). When overtly asked to employ the reappraisal technique when exposed to affective arousing films for example, subjects who utilized reappraisal were found to experience less negative affect as compared

to control groups using other strategies (Ochsner et al., 2004; Sheppes & Meiran, 2007). Generally, cognitive reappraisal has been positively correlated with positive effects such as optimism, life satisfaction, high self-esteem, and general psychological wellbeing but negatively associated with maladjustment challenges such as depression and anxiety. Reappraisal therefore it, seems, is an effective emotion regulation strategy.

Negative life events trigger emotions which guide behavior responses, with the type of behavior response usually informed by the emotion regulation strategy employed (Mohajerin et al., 2013). Experimental and correlation studies seem to point in the direction that cognitive reappraisal mitigates the development of maladaptive behavioural responses such as alcohol use when one is confronted by emotionally arousing situations (Mairean, 2015). Studies by Mairean and others (2014), have further shown that victims of life events such as death of a spouse, divorce, loss of job, lead to feelings of fear, low self-esteem, loss of trust, reduced levels of intimacy, shame, insecurity, and such affective states as would require a mechanism to respond to highly distressful demands.

Studies have also shown that reactions to such events vary from one individual to another (Mairean, 2015). This means that two individuals confronted by the same stressful situation may react differently, with some showing resilience while others lacking in it. The implication here is that, when studying the use emotion regulation strategy; cognitive reappraisal, several confounding variables need to be considered. In this study, Age, gender, culture, religion, family background, socioeconomic status, and education level are considered as they may inform which strategy is employed predominantly.

The kind of emotion regulation strategy employed in dealing with a stressful event has been found to be an important factor in determining whether one craves for a substance of abuse or not (Berking et al., 2011). There is a dearth of studies exploring how learned control of emotion relates to AUD. A study by Fucito, Juliano, and Toll (2010) investigated the use of cognitive reappraisal among cigarette smokers. With a participant population of sixty men and sixty-one women, and using the ERQ (2003) among individuals who on average smoked at least 15 cigarettes, the researchers confirmed Gross and John's earlier findings that the ERQ (2003) subscales of reappraisal and suppression were related to mood and distress ratings. Further, compared to nonsmokers, smokers scored low on the reappraisal scale. Individuals who reappraised more were less bored, and had little need for smoking with expectations that it would help them manage negative feelings. In the light of these findings, it would be of interest to this study to find out if the same applies to individuals with AUD, those rehabilitated from it and stayed for 1 year alcohol free, and non-drinkers who do not use any other drug of abuse

Alcohol use and emotion reappraisal use in the face of negative life events can be best understood across several confounding variables that seem to be risk factors in alcohol use and abuse, and which also may influence an individual's strategy of choice.

### **2.2.1 Age**

In a study on drinking frequency, Makela and others (2006) contrasted drinking frequency and age across 14 European countries among 20–64 year olds. Data was collected from independently conducted surveys, but centrally analysed. The central measures included abstinence, frequency of drinking, and quantities drunk across different age groups. Although the results differed from region to region, results indicated that drinking

frequency generally increased with age, but the volumes drunk reduced with age. This study though did not use a standard questionnaire, and that may have introduced a myriad of errors and biases.

A similar study was carried out between the year 1997-2007, across 35 different countries, among them Uganda. In this study, 900 participants in the age groups of 18–34, 35–49, 50–65 were studied, using a standardised questionnaire. Results showed that quantity of alcohol consumed, and episodic bingeing declined as age increased. Although this study did not explain these trends, it confirmed that the trends are the same outside Europe (Makela et al., 2006; Wilsnack, Kristianson, Vogeltanz-Holm, & Gmel, 2008).

Boyle and others (2013), found that alcohol abuse, a measure not considered in the above studies, was highest among 15 to 29-year olds, and lowest among those in the age of 65. This might be a result of the high quantities and heavy episodic drinking youth were found to engage in as shown in the two preceding studies. A Kenyan study on alcohol abuse showed that participants aged 16-30 years abused alcohol the most (Chesang, 2013).

Several explanations have been given in this regard. According to Chesang (2013), youth between the ages of 16-30 years have a sense of freedom that they initially didn't have, and a strong craving for new experiences. This may lead to the beginning of alcohol use and end up as AUD. Among such individuals who have been known to abuse alcohol due to new found freedom away from the watchful eye of the parent and the punishing hand of the teacher are university students (Hassan, 2013). Since alcohol is associated with celebrations and special occasions, drinking among young people has also been associated with the fact that they are more likely to participate in such occasions than would the older folk (Makela et al., 2006).

Youth in their 18 to 25 years present a unique emotional, educational, career, economic and relational transition period as they take on adult responsibilities, and are no longer under parental control. This new environment and new challenges have been related to the beginning of the use and abuse of intoxicating substances (Prendergast, 1994). Alcohol use among young people has also been said to boost self-confidence, reduce performance anxiety, and reduce stress levels from school and academia (Rintaugu, Ngetich & Kamande, 2012). This might be explained by Khantzian's hypothesis (1997), that individuals engage in drug abuse to heal inner emotional pain. The young people confronted by a myriad of emotional transitions might therefore be left vulnerable to use and misuse alcohol in attempts to deal with negative emotional states. Drinking has been shown to be compensation for lack of adaptive emotion regulation strategies, and so it helps the drinker down-regulate their emotions (Sayette, 1999), albeit momentarily. This may partly explain why alcohol abuse is highest among young people due to the emotional transitions they are going through.

A California study by Nolen-Hoeksema and Aldao (2011) differences in self-reported cognitive reappraisal strategy at different age groups, and how its use related to depressive symptoms. Participants (617M/695F) selected through random phone calls California filled the short form Beck depression scale (Beck & Beck, 1972), the 22-question Ruminative Responses Scale (Nolen-Hoeksema & Morrow, 1991), and the COPE Inventory – Short form. Results showed that use of reappraisal is significantly related to age, being utilized more by young adults (25-35 years) as compared to other ages after 35. Although the findings pointed in the direction that adaptive means of regulating emotions such as reappraisal were not necessarily related to depressive symptoms, depressive symptoms



were found highest among the young adults. However, this study did not relate the depressive symptoms to any maladaptive behavior as alcohol abuse, and studied only those aged 25 and above, leaving out a developmentally critical age group (adolescence and early adulthood) that could be crucial in understanding cognitive reappraisal in younger people.

In a functional magnetic resonance imaging (fMRI) study on how emotion regulation develops with age, Mcrae, Gross, Weber, Robertson, Sokol-Hessner, Ray, Ochsner (2012) studied 38 (21F/17M) participants in their childhood (10-13yrs), adolescence (14-17 years), and young adulthood (18-22 years). Participants were shown pictures depicting emotional situations and given instructions to either decrease negative affects (reappraisal), experience negative emotions, or remain neutral in the face of emotional cues presented to them. The participants would then self-report on the strength of negative affective states they were experiencing, with 1 being 'weak' and 4 being 'strong.' After at least 72 trials, the responses were collected for analysis against the fMRI neural responses showing which areas of the brain the pictures activated. Results showed a positive correlation between cognitive reappraisal and age straight from 10 years. This study though did not relate the use of reappraisal to psychological well-being or lack of it.

In a more recent study, Bucks (2013) examined how emotion regulation strategies differ at ages between 18 and 91. A sample of 577 participants (467F/110M) filled the ERQ (2003) which measures only reappraisal and expression suppression, reducing the ambiguity of too many variables. Contrary to previous studies, results showed that older adults (above 65 years) middle aged adults (30-64) and younger adults (18-29 years) were similar in their deployment of reappraisal. Bucks (2013) also confirmed that use of this strategy resulted in less anxiety and stress.

Despite the findings that young people employ reappraisal, Nolen-Hoeksema, and Aldao (2011) found young people to score high on depressive symptoms. Mcrae and others (2012) again showed that there was a linear increase in cognitive reappraisal ability, making young people better appraisers than children. According to the self-medication theory (Khantzian, 1997), psychological distress and anxiety, can lead to substance abuse as the distressed individuals seek to self-medicate this inner pain, and hope to reduce the tension caused by the distress. This might help explain development of AUD among young people. The studies discussed here did not relate reappraisal ability to AUD. It is of importance to this study to find out how reappraisal is utilised by young people between 15-35 years in a different context (Kiambu, Kenya), and whether the manner it is used is in anyway related to AUD or abstinence.

### **2.2.2 Gender**

According to a report by the Centre for Disease Control and Prevention (CDC, 2016), Men have been found to be twice more likely to engage in binge drinking than do their female counterparts. Men are frequently intoxicated when involved in road accidents, and shown to have been drunk prior to suicide, which they are also more likely to commit compared to their female counterparts. Research has shown that women engage in less drinking in terms of quantities of alcohol drunk, but the gender ratios varied across the different countries (Makela et al., 2006). In a study by Wilsnack and others (2006), more women compared to men quit drinking, and scored high on lifetime abstention, while more men compared to women were current drinkers amongst the respondents. Though gender ratios varied across regions, research on how men and women differed in drinking alcohol remained consistent that men are more likely to consume alcohol as compared to women.

A study across 14 countries in Europe found a high frequency of drinking estimated at 40–250% among men compared to women (Makela et al., 2006). Studies seem to agree on a fundamental, persistent, worldwide view that compared to their male counterparts, females are more likely to abstain from alcohol all together, with the few who drink, having a higher likelihood to quit drinking (Boyle et al., 2013; Kimunya, 2012;).

Several reasons have been given for these differences. According to Schulte, Ramo and Brown (2009), men are internally vulnerable and externally exposed to risk factors. Physiologically, men require higher quantities of alcohol than women for the same effect. Further, it seems that society accepts, and hence has fewer sanctions towards male drinkers, and more prohibitive towards female drinkers. Women have also been shown to expose themselves to more danger (e.g. rape, assault), than do their male counterparts under the same circumstances (Schulte et al., 2009). The society it seems socializes men to drink more than women. These arguments to leave out an important risk factor in alcohol abuse, emotion regulation. That this socialization might imbue upon men or women some gender specific prescriptions of dealing with their day to day emotional situations, that might make them vulnerable to alcohol abuse

One of the ‘master stereotypes’ that goes around is that women react emotionally more than do men (Shields, 2003). In a study on gendered variations in affect regulation, 491 participants (254F/237M) between the ages of 25-35 years were studied. This study found that there existed significant differences in emotion regulation strategies among men and women. Women utilized both adaptive and maladaptive strategies (Nolen-Hoeksema & Aldao, 2011). However, utilizing a healthy strategy did not necessarily take away the

effects of the unhealthy strategies women would engage in, and therefore, women were found to be more distressed than men on the measure of Beck Depression Inventory (BDI). These results may not be necessarily conclusive as other findings indicate that, at a neural level, men do not engage in reappraisal as much as women do. For example, an fMRI study of cognitive reappraisal amongst men and women demonstrated that women deployed positive emotions to counter (reappraise) negative situations more than men do (Mcrae et. al., 2012). These differences may account for differences in affective disorders among men and women. It is of interest to the current study to find out if these differences account for the differences in Alcohol Use Disorder (AUD) among men and women.

Another study by Mcrae, Ochsner, Mauss, Gabrieli and Gross (2008), among 25 participants (13F/12M), it was found that though men are able to use cognitive regulation with less effort, women utilized it more to down-regulate negative emotional states. This study concluded that men may reduce the quantity of negative emotions through cognitive reappraisal, yet women, because they face more emotionally taxing situations, are better than men at re-interpreting the many negative emotional cues they face in positive terms. The studies referenced here did not pursue possible relationships between these differences and the need by men to reduce tension in their day to day lives by abusing alcohol due to their inability to fully utilize the positive benefits of cognitive reappraisal to down-regulate their emotions. This therefore forms a pertinent part of the current study. Further, the above studies failed to appreciate the importance of culture in prescribing which emotion regulation strategy to use among men and women.

### **2.2.3 Culture**

Culture has been defined extensively. Culture is a way of believing and behaving and which molds a society's worldview. This in turn shapes the worldview of the individuals that belong to the society, informs their actions, cognitions, perceptions and provides the 'grammar for behaviour.' The harmful and illicit use of psychoactive substances such as alcohol is culturally determined, since culture influences how one accesses and uses a drug of abuse, with meanings, belief systems, values and norms that either encourage or discourage its use. Viewed through a given cultural eye, what would be seen as unacceptable in a given cultural context is hailed as acceptable in another therefore, dealt with differently. According to Matsumoto (2006), cultural background has a strong correlation to the prevalence, and patterns of alcohol abuse. The wider context of cultural practices should be considered as part of a spectrum that leads to the illicit use of drugs of abuse such as alcohol.

Cultural mediators feature prominently in discussions on alcohol abuse (APS, 2008). Cultural practices may perpetrate or prevent alcohol abuse. In India, culture has been found to be a major determinant of behaviour, and cultural factors have been found to be deeply involved in the increasing use and abuse of alcohol (Merchant & Pandya, 2015). In a cross-sectional study involving 100 male participants diagnosed with alcohol dependency, Merchant and Pandya (2015) used a pre-validated questionnaire to check cultural determinants of alcohol dependency. This study, after making considerations for family history and social class, found that the average age of onset of alcohol was 17 years, and participant's belief system, informed by culture, contributed to about 76.5% of reasons for the onset of and dependency on alcohol. This study concluded that, though the abusers

know the destructive effects of alcohol abuse, early ceremonial and customary use of alcohol contributed to the supporting belief system. Most Indians therefore view drinking as a social mechanism that facilitates interaction with family and friends, and enhances bonds amongst them (Merchant & Pandya, 2015).

In Africa, most cultures embraced the brew during traditional events, such as weddings, circumcision and harvest season celebrations (Birech et al., 2013). In Kenya, alcohol use is rooted in early cultural practices where it was the main drink on special events such as dowry negotiations, during circumcision, and elder's gatherings. Guidelines spelt out who consumed alcohol. Women, youth and children were not allowed to drink (Birech et al., 2013).

Culture, being a prominent feature in drinking patterns, and with literature relating drinking patterns to the way individuals regulate their emotions, it seems that emotion regulation should be a consideration in cultural differences in drinking patterns. This is because as individuals get socialized to optimally function within a given set of societal norms and belief systems, and this way, their habitual employment of a given emotion regulation strategy gets molded too. This aspect has not been extensively explored. Gross and John (2003) hinted the possibility of culture-related emotion regulation differences. A study by Soto, Perez, Kim, Lee, & Minnick (2011), looked into the manner in which Hong Kong Chinese and European-American participants used cognitive reappraisal. The results showed that employment of cognitive reappraisal was positively correlated with life satisfaction and general psychological wellbeing, and that this was not different across the diverse cultural orientations.

In his quest on how and why Westerners and East Asians differ in their use of emotion regulation processes, Eng (2012), studied 173 European Americans, 195 East Asian Americans, 164 East Asians born and brought up in Japan, with 74 of the East Asian American participants having been born in East Asia and had lived in the USA for at least eleven years. Using the Emotion Regulation Questionnaire (ERQ), and through a univariate analysis of variance (ANOVA), it was found that the mode of emotion regulation varied as a function of exposure to western versus East Asian culture, with no differences at all in reappraisal as earlier studies seemed to conclude.

In a more controlled study by Matsumoto (2006), 217 American University students (169F/48M, Mean age, - 24 years), and 151 Japanese University students (78M/73F; Mean age, - 21 years), all born and brought up in their respective countries filled the ERQ. After checking for emotion regulation across the two culturally different participants, Americans were found to reappraise more than the Japanese. This can be attributable to socio-cultural contexts of individualistic cultures and collectivistic cultures, with cognitive reappraisal being correlated more with individualistic cultures such as America.

With cognitive reappraisal being associated with better psychological adjustment and well-being, it would therefore be expected that the American context would be less predisposed to alcohol since reappraisal is utilized more. Few studies have related the cultural differences in emotion regulation strategies to alcohol abuse, with a dearth of studies in the African context.

#### **2.2.4 Religion**

There is massive literature on the factors known to encourage the use and abuse of liquor and other illicit substances; yet, there is a dearth of literature linking religion to the use, abuse and recovery from drugs (Al-Omari, Hamed,&Tariah, 2014). It is only recently, after some published research work had shown that religion is a factor in substance abuse that health care providers have begun to consider the influence of religious beliefs on the consumption and abuse of alcohol and other illicit drugs. Most religions condemn drug abuse, formally or informally, and studies on participants who belong to such religious groups have been found to experience greater psychological health, and wellbeing, with few cases of drug dependence among them (Al-Omari et al. 2014). The spiritual practices of meditation, prayer, fellowship and devotion and reading religious literature has been shown to be the reason why religion goes beyond protecting one against drug dependence, to playing a crucial role in the recovery process in case of dependency (Al-Omari et al. 2014).

In a study by Engs and Mullen (1999), 3117 female and 949 male students from tertiary institutions in Scotland were tested for their use of illicit recreational drugs against their religious backgrounds and religiosity. After filling the Queensland Alcohol and Drugs Study Questionnaire, results indicated that the female students who had no religious affiliations drunk over fourteen drinks per week, which was 55.5% higher than those who were religious. Among the different religions represented, the Roman Catholics consumed the highest amounts of alcohol compared to Protestants. Among the male students, those who had no religious background consumed 21 % drinks in a week, which was 61.3% higher than the religious students. This study concluded that lack of religious commitment,



belonging to the Roman Catholic, and being non-religious were risk factors for drug use and abuse. This study seems to confirm results by an earlier study that placed Catholics at a higher tendency to abuse alcohol compared to Protestants.

In a stratified random sample of 985 respondents in Scotland, findings by Mullen and others (1996) indicated that being affiliated to a religion was highly associated with the consumption of alcohol. Whereas only 49% of protestants males consumed alcohol, 64% of Catholics and 60% of non-religious male participants reported either being moderate or heavy drinkers. Amongst the women, 32% of those who drank moderately were Protestants while 37% were Catholics, with 49% being non-religious heavy drinkers.

A study in Kenya on alcohol consumption from 144 respondents aged between 25 to above 46 years drawn from 132 households of the Nandi community of Kenya confirms the Scotland findings. Catholics had the highest frequency of alcohol users (45.5%) compared to Pentecostals (4.8%), Anglicans (18.5%), and AIC (17.7%)(Birech et al., 2013). Generally speaking, both young people and adults who score high on religiousness, be they Muslims or Christians, are less likely to drink (McCullough & Willoughby, 2009).

The above studies show that religion plays a critical role in either abstinence or development of AUD, but they do not fully explain the intrinsic mechanisms that result in the differences in engaging in alcohol use and abuse. Religion involves some form of prayer, meditation, and reading of religious books. These studies seem to have overlooked how these religious practices may encourage the use of particular emotion regulation strategies such as reappraisal, and discourage the deployment of others when individuals are confronted by negative emotions such as a job loss.

Religion is a unique kind of a cultural system with a belief system, a value system, and a worldview of its own which informs the thoughts, the feelings and the actions more than any other cultural system, complete with a set of which emotions are desirable, and which ones are not (Vishkin, Bigman, & Tamir, 2014). This dictates the choice of one affect regulation strategy is to be employed (Vishkin, 2016). The implication here is that by prescribing which emotions are desirable and which ones are not, religion has the ability to keep emotional reactivity in check. This is further compounded by its ability to suggest appraisal by its insistence on faith and relaying difficulty circumstances to an all-powerful deity (Vishkin, 2016). These attributes of religion may guide emotions and behavior in adaptive ways. According to James (1902), the added dimension of emotion in religious experiences makes it uniquely different from other experiences. Empirical research on emotion regulation has contrasted religious and non-religious individuals and found that religious participants scored high in self-regulation and self-control compared to a control group of non-religious participants (McCullough & Willoughby, 2009), thus positively correlating religion to adaptive self-regulation skills, especially cognitive reappraisal.

According to Gross and John (2003), reappraisal involves reinterpreting the meanings of situations and the world around us in ways that change a situations emotional impact. Religion seems to do that pretty well as people are assisted through prayers, mediation, and spiritual literature to change the meaning of the world around them (Vishkin, 2016). The Christian Bible for example, has verses that have a suggestion of what thoughts to harbor, what feeling to allow, and what actions to engage in and which ones not to. [(e.g. ‘As a man thinketh so is he,’ Proverbs 23:7; Be ye transformed by the renewal of your mind, ‘Romans 12:2; ‘Thou shall not covet...’ Exodus 20:17; ‘Love thy neighbor as thyself,

'Mark 12:31; 'You shall not steal,' Exodus 20:15; All things work together for good...' Romans 8:28)]. According Vishkin and others (2014), 'meaning-making' is religions basic concern. Whereas it may not promote all strategies in emotion regulation, its ability to make such highly stressful scenarios such as death of a loved one less distressing through a promise meeting the diseased again in eternal life may encourage a shift in negative emotional state. It is seen as effective in promoting an adaptive affect down-regulation strategiey; reappraisal (Vishkin, 2016). Studies relating religion to alcohol abuse should therefore consider how religion informs the use of cognitive reappraisal, and how that may prevent or perpetrate the development of AUD.

A recent study on religiosity and reappraisal (Vishkin et al., 2014) compared Muslims, Christians and Judaists, on their ability to employ cognitive reappraisal. This study was based on the hypothesis that the more people are religious, the more they may be better at using reappraisal; one of the most effective emotion regulation strategies. Investigating participants between 20-35years, from Turkey, USA, and Israel who were Muslims (N=270; 77%F), Christians (N=277; 48%F), and Jews (N=288; 51%F) respectively. Using a single item likert between 1 (not very religious) to 9 (very religious) reports on religiosity, and the ERQ to measure reappraisal frequency, results showed that the more religious an individual was, regardless of the religion, they more they reported frequently using reappraisal. Religious participants preferred changing the meaning of a given event in dealing with stressful situations. There is paucity of studies that try to relate the manner in which religious individuals regulate their emotions during stressful life events, and their tendency to abuse of alcohol.

It is likely that religion helps reduce engagement in drinking because of the role it plays in emotion regulation processes, (and hence tension reduction), and highly likely enhances adaptive functioning and well-being.

### **2.2.5 Family Background**

In a recent study on high risk families, Saitoh, Steinglass and Schuckit (1992), 6000 participants who had recently been laid off work were surveyed. Observing 30 families, 15 with heavy drinking fathers and 15 with less heavily drinking fathers and after controlling for ethnic affiliations and gender, results pointed in the direction that heavy drinkers came from a drinking family background. Coming from a background of alcohol abuse might be a predisposing factor to alcohol abuse, as members adapt themselves to the family culture that either prevents or precipitates heavy drinking (Saitoh et al., 1992). According to the family systems model (Bowen, 1974) alcohol abuse in a family member cannot be explained in isolation. Individuals are only understood as part of a larger system, the family system.

A family exists in a given cultural setup, yet each has its own family culture within the larger societal culture which influences alcohol use or abuse. Alcohol troubled families need to be understood from this aspect (Saitoh, et al., 1992). According to Bowen (1974), the family is an emotional unit. It equips its members with the means of dealing with emotional situations, putting them at the risk of maladaptive ways or the advantage of adaptive means of handling emotionally arousing situations. The development of one emotion regulation strategy or another is influenced by parent's emotion-related belief systems and behaviours patterns (John & Gross, 2002). Emotion regulation is therefore first taught in the family, from preschool to elementary years. According to the tripartite

model (Morris et al., 2007), children learn emotion regulation from the family in three ways. Observational learning/Role modelling, emotion related parenting styles, and the family's emotional climate. This way, the parents (or family's) emotion regulation strategies get rubbed over to the offspring's emotional vocabulary.

In a one of few studies that have empirically studied emotion regulation vis-à-vis the family background, through participant's retrospective ratings of the parental care they received, it was shown that individuals coming from a caring family background appraised more often compared to children or adults from a less caring family environment (Gunzenhauser, Anika, Wolfgang, & Antje, 2014)

In a longitudinal study, Gunzenhauser and others (2014) explored the connection between parent's belief systems and behavior patterns and how they relate to children's use of cognitive reappraisal. They studied 177 mothers, 102 fathers, and 188 Children (96F/92M). Among these participants were 101 couples. All participants were drawn from South-West of Germany. The ERQ, was administered to parents to measure their use of cognitive reappraisal. The parents also reported the Coping with Children's Negative Emotions Scale (CCNES). The children also filled the ERQ. Results showed that parents modeling of reappraisal correlated positively with children's frequent use of reappraisal. This points in the direction that cognitive reappraisal is shaped in the family. From the earlier studies, there seems to be a relationship between reappraisal and alcohol abuse in that this emotion regulation strategy does not put one at the risk of abusing alcohol to down-regulate their emotions since it is an adaptive emotion regulation technique. This study brought out important aspects but failed to consider how each of two parents, or a single parent influences reappraisal among children.

A study by Chang, Schwartz, Dodge and McBride-Chang (2009) in a Chinese kindergarten collected information from the parents of participating children, about their interactions with their children at home. Six months later, one teacher and two assistants used a behaviour checklist on the children whose parents had filled the questionnaires. Each of the three teachers independently rated the 325 children (146F/179M). The children were between the ages of 3-6, while the parents were on average 34.6 years. The instruments were designed in a way to measure parenting style, affect control, and aggressive behaviour among the children. Child aggression and harsh parenting were positively correlated with harsh parenting from either or both of the parents. Boys parented by harsh parents showed higher aggression and more emotion dysregulation compared to the girls. Further, when either or both of the parents were harsh to the children, the children score in lack of the ability to be calm during negative life events, and were reported to be more aggressive in school. The results further showed that when considered on their own, harsh mothers had more effect on emotion regulation, and more so on daughters, as compared to fathers whose harsh parenting styles were positively correlated more with aggression, and more so on the sons.

According to a study by Barros, Goes, and Pereira (2016), parents are a major factor in their children's development, adaptation and wellbeing. Parenting styles and parent behaviours greatly affect children behaviour, with poor parenting styles such as low parental involvement, strict discipline, and lack of adequate monitoring being associated with the development and persistence of both emotional and behavioural problems in children, and maintained through adolescence (Barros et al., 2016). Parental ways of thinking, feeling and doing seem to be passed over to their children. Maladaptive strategies

of emotion regulation which may lead to inner tension may be passed from parents to children, and predispose them to the development of AUD in attempts to self-medicate as postulated by the Khantzian theory of self-medication (Khantzian, 1997).

### **2.2.6 Socioeconomic Status**

Familial socioeconomic status (SES) has been a factor of consideration in alcohol use and abuse, but results seem conflicting on the relationship between the two (Patrick, Wightman, Schoeni, & Schulenberg, 2012). Studies have shown that young people from higher SES families use alcohol more often and in more quantities compared to those of low SES.

In a Rotterdam study of 3537 participants aged 16-69 and drawn from the municipal, the frequency and quantity of alcohol taken was measured together with measures of SES such as income, level of education and career (Oers, 1999). After controlling for age and gender, results showed that SES was indeed a factor that influenced drinking patterns. The results though were contradictory. Whereas alcohol abuse featured prominently among individuals of high SES, increasing SES reduced the gap between men and women in alcohol abuse such that at high SES, difference between men and women in relation to alcohol abuse was insignificant, while at very low SES, only men engaged in harmful use of alcohol.

In a more recent survey by Schulenberg and others (2012), 5000 households across the United States of America were studied. Their incomes were checked from 1968-2011 to capture how children from high and low SES used alcohol, and their drinking patterns after they formed their own families. The average income and wealth per household was also checked in terms of annual income, assets owned, businesses, and then that was divided

among the family members. The 18000 participants from these households filled a questionnaire that investigated the frequency of their current and episodic use of alcohol. Results indicated that young people from high SES households used alcohol more prevalently than those from households' deficient of resources. High SES it seems is a risk factor in alcohol abuse. This study attributed the prevalence of alcohol use among young people from affluent families to permissive styles of parenting, with lack of clear rules and firm enforcement mechanisms within the household. This study though failed to check other factors that have been strongly correlated to alcohol abuse.

Alcohol use among young people from well off families has been related to anxiety and depressive symptoms amongst the children (Luthar & Latendresse, 2005). Children from affluent families experience more pressure to achieve, and are more likely to grow up with little interaction with, and high emotional isolation from their parents who often have involving and demanding careers (Schulenberg & Patrick, 2012). The above study seems to draw the conclusion that higher rank in the work place might place women at a higher risk of developing of AUD, compared to their peers at lower SES. It seems possible that a given SES may bestow upon an individual a means of dealing with negative feelings; adaptive or maladaptive.

From the above literature, it is clear that SES is a significant contributor in of AUD. Alcohol Use Disorder has also been negatively related to cognitive reappraisal (Berking et al., 2011), yet there is little research that has correlated cognitive reappraisal, SES and AUD. According McRae and others (2008), socioeconomic status influences how individuals react to emotional events. Individuals who score low on reappraisal have been



found to use alcohol more (Berking et al., 2011). Lack of reappraisal abilities may push individuals to use substances of abuse to down-regulate their emotions in what Khantzian (1997) called self-medication.

### **2.2.7 Education Level**

Studies have shown that education level can be a risk factor in alcohol use and abuse (Crum, Helzer, & Anthony, 1993). Low level of education is a risk factor in the development of AUD (Crum et al., 1993). A study between 1980-1984, with a probability sample of 3000 adult participants and using a diagnostic interview schedule to obtain data during that period showed that participants with lower than secondary school education were 6.34 times at a higher risk of abusing alcohol than were individuals who had a university degree. Participants who indicated that they had started college but dropped out before they could graduate were found to be at 3.01 relative risk of developing AUD (Crum et al., 1993). These studies were confirmed later by another study by Schnohr, Hojbjerre, Riegels, Ledet, Larsen, Schultz-Larsen, and Gronbaek (2004) in Copenhagen. The participants were 14,399 women and 16,236 men between 20-93 years of age. The population sample was further divided into three groups of low, middle and high education levels, and then checked for heavy drinking across the education levels. Results indicated that participants with the lowest education level were also the most frequent and heaviest drinkers. The two studies though didn't seem to explain what in education helps mitigate against the risk of developing AUD.

A study of 3537 participants aged 16-69 and drawn from the Rotterdam municipal, measured the frequency and quantity of alcohol taken against level of education (Oers, 1999). Results showed that at high levels of education, the frequency and quantity of

alcohol taken was higher than among individuals of lower education level. At higher education levels, gender differences in alcohol use and abuse become insignificant. The study also indicated a contradiction that at low levels of education, men engaged in harmful alcohol use.

In a study of a convenient sample of 194 adults (111M/83F) aged between 20-65, researchers used the Ways of Coping (Folkman & Lazarus, 1988) Questionnaire to study the strategies that individuals used to cope during distressful times. After controlling for gender and age, the researchers found that less educated individuals coped in a more confrontational manner.

These findings on the level of education and emotion regulation do not seem to agree with the idea that individuals who reappraise are at a lower risk of alcohol and substance abuse (Berking et al., 2011). If more educated individuals reappraise better than the less educated, then it would follow that they score low on prevalence of alcohol use and abuse. This would be so since education helps the educated to learn skills that the uneducated don't have. According to learning theories, behavior can be learned or unlearned (Pavlov, 1927). Educated individuals may therefore have a cognitive advantage over the less educated individuals and hence likely to deal with internal and external emotional pressures better. They may also appraise themselves as able, compared to the less educated folk.

Few studies have correlated level of education and emotion regulation strategies among individuals with AUD, in comparison to complete non-drinkers of comparable education level.

### **2.3 The Relationship between one's Engagement in Expression Suppression in the Face of Negative Life Events, and AUD**

Expression suppression, *a response-focused strategy*, employs inhibition to decrease emotion-expressive behavior during an emotion-generating situation (Mohajerin et al., 2013). Expression Suppression comes later in the emotion generation process (when emotion responses are fully underway) to inhibit the outward physical expression of inner experiences (Gross, 2002). This weighs heavily on individual's inner resources in attempts to suppress emotion expression. At a physiological level, expression suppression leads to lowered heart rate, increased blood pressure, and higher sympathetic activation which stimulates the fight-or-flight response mechanisms (Dan-Glauser & Gross, 2011). Whereas reappraisal reduces the inner experience of an emotion and its outward expression, expression suppression decreases the outward behavioural expression of emotions but does not decrease the inner negative feelings (Gross, 2002; Niedenthal, Ric, & Krauth-Gruber, 2006). Expression suppression therefore both fails to decrease the experience of negative affective states, and reduces the experience of positive emotions (Niedenthal et al., 2006). Studies have shown that expression of negative feelings is a crucial means of discharging the pressure of an emotionally arousing situation (Mohajerin et al., 2013). Expression suppression may therefore not be an effective emotion regulation strategy, as individuals who employ this method have affective states that are not externally displayed yet internally disturbing. Individuals who utilize this strategy may require a different channel to down-regulated the suppressed emotion. This could lead to maladaptive attempts such as harmful use of alcohol to reign over impulses.

Expression suppression, as can be deduced from preceding literature, is negatively correlated with well-being. According to Gross & John (2003), scoring high on the suppression scale of the ERQ represents vulnerabilities to maladaptive behavior. Further, individuals who record high scores on suppression score low on positive emotions, are deficient in self-love, low on general psychological well-being, enjoy little social support, and have poor interpersonal skills. Studied against measures of psychopathology, expression suppression has been shown to predispose individuals to the development of psychopathologies such as anxiety, and depression (Moore, Zoeller, & Mollenholt, 2008) which have been linked to alcohol use and abuse (Begleiter & Kissin, 1996). In some rather interesting studies among animal studies, conflict-induced stress in cats and suppression of behaviour as learned through punishment was found to be reduced by giving them alcohol (Masserman & Yum, 1946). It therefore seems that this affect regulation strategy may be a risk factor in the onset and maintenance of AUD.

Preceding review of literature indicates that Alcohol Use Disorder is confounded by variables such as age, gender, culture, family background, socioeconomic status, religion, and education level. The researcher sought to find out how, besides these confounding variables, expression suppression related to AUD

### **2.3.1 Age**

Studies show that high quantity and heavy episodic drinking declines with increasing age (Wilnsack et al., 2008; Makela et al., 2006). Boyle and others (2013) found alcohol abuse to be highest among young adults aged 15 to 29 and lowest among adults aged above of 65 years. In the Kenyan setting, similar findings have shown that at the ages of 16-30, alcohol abuse was most prevalent (Chesang, 2013). This phenomenon has been attributed to several factors.

NACADA (2010) carried out a comprehensive survey in Kenya's central region, on the magnitude and causes of the escalated cases alcohol abuse in the region. The risk factors listed were majorly idleness, peer influence, work related stress, marital problems, poverty and influence from the media. The main causes of alcohol abuse were for fun (85%), relaxation (78%), to cope with stress (78%), to facilitate interpersonal interactions (75%), and to boost feelings of self-importance (44%) among others. This study though failed to look deeper into possible, underlying intrinsic mannerisms in which individuals dealt with the affective aspects of the risk factors such as pressure from work, marital issues, and poverty, as it may point to the onset of alcohol abuse as individuals seek to stabilize their inner emotional states. One such intrinsic mechanism of dealing with the emotional states aroused by the above-mentioned factors is expression suppression, whose application may differ across age groups, just as does alcohol abuse.

Nolen-Hoeksema and Aldao (2011) studied how different age groups differed in their use of expression suppression. A sample of 491 participants (254F/237M), between the ages of 25-35 was selected through randomly dialing telephone numbers in California's San Francisco Bay. They all filled the short version of COPE Inventory (Carver, 1997) which measures the strategies which people employ to deal with emotional situations, and whose internal consistency is .53 to .79. Results indicated that suppression as a coping strategy was significantly influenced by age, and confounded by gender. Women showed increased use of suppression with age, with no significant group differences in suppression among men, who employed suppression more than women. This study by the use of COPE inventory brought in other coping strategies that may have confused the respondents. To begin with, this study had to add the scale for suppression which is not included in the

original COPE inventory. Although after adding internal consistency was confirmed to be good (.76), studies by Gross & John (2003) indicated that strategies for dealing with emotions can be reduced to two distinct strategies, reappraisal and suppression. This reduces the ambiguity that measuring too many closely related concepts may cause. This study limited itself to participants above 25 years, leaving out a critical developmental stage below it. The current study will take care of this ambiguity by measuring the above two distinct strategies, and look at expression suppression from 15 to 35 years.

A study by Bucks (2013), examined how emotion regulation strategies differ at ages between 18 and 91. A sample of 577 participants (81%F) filled the ERQ which measures only reappraisal and expression suppression, reducing the ambiguity of too many variables. Results showed that older adults (above 65 years) suppressed the expression of emotions more than did middle aged adults (30-64 years), who in turn suppressed more than younger adults (18-29 years). However, when these results were contrasted against psychological distress, suppression at old age was not associated with any psychological distress, yet in middle aged adults, use of suppression led to heightened anxiety levels, stress and distress, as did young adults. Bucks (2013) study did not show how individuals who employed this strategy dealt with the resultant psychological distress. Khantzian (1997) posited that psychological distress can lead to substance abuse as the distressed individuals seek to self-medicate this inner pain. The current study's hypothesis posits that individuals with AUD might be frequent users of suppression, and abuses alcohol to heal their inner distress resulting from the use of this strategy.

In another study, Traylor (2005) investigated whether there existed any relationship between age, reappraisal and suppression in predicting the amount of alcohol and an individual can consume. With a sample of 22M/80F above 18 years, and using the ERQ and AUDIT, a positive correlation was found between expression suppression and AUD among individuals aged 18-25. Age was found to hold a pivotal place in the kind of emotion regulation strategy employed, with 18-25-year olds employing suppression. This might help explain why younger adults abuse alcohol more than do older adults whose use of suppression does not necessarily lead to inner emotional tension.

### **2.3.2 Gender**

There are differences in the manner in which the different gender deal with daily stressful events. Men suppress of their emotions more than do women (Nolen-Hoeksema, 2011). This might be attributed to early conditioning where as children, boys are told things like ‘men don’t cry.’ Emotion expression may therefore be perceived by the masculine gender as a feminine attribute. Empirical findings indicate that women dwell relatively more on their emotions, and are good at experiencing and expressing them (Nolen-Hoeksema, 2011). Findings that women are better than men at emotion expression have been confirmed by Mcrae and others (2008). Emotion suppression has been linked to psychopathology (Nolen-Hoeksema & Aldao, 2011), depression (Moore et al., 2008), anxiety (John & Gross, 2003). Most studies though seem to go only as far as the psychopathology, anxiety, and depression goes, but fail to find out the ways in which individuals deal with such states. For example, men have been found to use substances of abuse to escape the experience and expression of negative affective states (Nolen-Hoeksema, 2011). Since studies have over time shown that men abuse alcohol more than

women (Makela et al., 2006), it is of importance to study the emotion regulation strategies utilized by men and women during emotionally arousing situations and relate them to the tendency to abuse alcohol. This may offer an emotion regulation explanation to the gendered variations in alcohol abuse.

In a study that sought to answer the question as to whether there exists gender differences in the regulation of emotions, Mackey and others (2010) studied 328 participants (118 M/210W) between the ages of 17 – 24. They were all undergraduate students. Using the self-reporting ERQ, findings indicated that men utilized suppression more than women, a strategy that was positively correlated to male depressive mood, a state that has been found to be a risk factor in substance abuse (Cogner, 1956), due to substances ability to relieve the inner emotional tension.

Nolen-Hoeksema and Aldao (2011) studied gender differences in the utilization of adaptive and maladaptive emotion regulation strategies. A sample of 491 participants (254F/237M) was selected by randomly dialing telephone numbers in California's San Francisco Bay. They filled the Beck Depression Inventory – Short Form, the 22-item Ruminative Responses Scale, and the COPE Inventory – Short Version. Gender was found to be a predictor the kind of affect regulation strategy one would employ. Women were found to use both adaptive and maladaptive strategies. They also sought social support, and utilized more strategies than men since they are faced with more emotionally arousing situations (Nolen-Hoeksema & Aldao, 2011). The results of this study showed that women employed adaptive methods more than men. Specifically, whereas elderly women employed suppression more than men in the same age group, there were no significant differences in the use of suppression between men and women within the same age groups. This study



examined six emotion regulation strategies, and used three instruments to measure the relationship between gender differences in emotion regulation strategies and how that relates to depression. Measuring the six strategies; decision making, rumination, expression suppression, social support, reappraisal and acceptance might have posed several challenges since they are closely related, yet, as Gross & John (2003) found, the strategies can be reduced to two definite measures; expression suppression and reappraisal. Again, this study only restricted its findings to ages above 25 years, leaving out the critical developmental teen and early adulthood. The current study will use these two measures to increase accuracy of finding the emotion regulation men and women engage in their youth (15-35 years). The study by Nolen-Hoeksema & Aldo (2011) only measured how the use of a strategy relates to depression. Depression has been linked to alcohol abuse as individuals seek to self-medicate the inner tension that comes with depressed mood state, as explained by the self-medication hypothesis (Khantzian, 1997). At the age under study, individuals are the risk of abusing alcohol. Young men score higher than young women on expression suppression, an emotion regulation strategy which has been correlated with the onset of substance abuse in men (Nolen-Hoeksema, 2011), as individuals seek to reduce emotional tension.

There is a dearth of studies showing how individuals who abuse alcohol regulate their emotions. In a study of 140 men who abused opioids and stimulants, and using the ERQ, Mohajerin and others (2013) found that indeed people abusing different drugs employ different strategies to regulate their emotions. Opioid abusers for example scored high on suppression, compared those who were not abusing opioids. These individuals were found to score high on depression scales too. There seems to exist a relationship between mood

states and drugs of abuse, and as hypothesized by khantzian (1997), that the substances of abuse and alcohol are used by individuals to blunt negative affective states, since those who utilized suppression of negative moods also suppressed positive emotions.

### **2.3.3 Culture**

As earlier discussed, the harmful and illicit use of psychoactive substances such as alcohol has been found to be culturally determined. This has been attributed to the fact that culture influences access to, and the use of drugs. The process of acquiring drugs, and the drugs so acquired are all imbued with meanings, belief systems, values and norms that either encourage or discourage its use (Heath, 2001). Cultural background has a strong correlation to the occurrence and ways in which of alcohol is used (Matsumoto, 2006). The wider context of cultural practices should be considered as part of a spectrum that leads to the illicit use of drugs of abuse such as alcohol. One promising area that has not been fully explored to offer an explanation on the cultural variations in the use and abuse of alcohol is the field of emotion regulation.

When Gross and John (2003) introduced the ERQ, it began to emerge that there were culturally influenced variations in the way individuals regulated their emotions. They found that emotion suppression characterized Asian-, Latino-, and African Americans. Their study though did not elaborate on how engagement in this strategy affected the members of a given cultural group, since it is a strategy associated with maladjustment (John & Gross, 2003).

In his quest on how and why Westerners and East Asians differ in their use of emotion regulation processes, Eng (2012), used the ERQ to study 173 European Americans, 195 East Asian Americans, 164 East Asians born and brought up in Japan, with 74 of the East Asian American participants having been born in East Asia and had lived in the USA for at least eleven years. It was found that indeed, the mode of emotion regulation varied as a function of exposure to western versus East Asian culture, with no differences at all in reappraisal. To prove the hypothesis that differing models of self, and increased exposure to western culture would lead to less frequent deployment of expression suppression, a univariate ANOVA with the European American vs. East Asian American vs. East Asian in Japan, and expression suppression as the dependent variable. Suppression was found to be frequent among East Asian Americans compared to European Americans, and least frequent among East Asians in Japan. This shows that there are indeed culture-specific strategies of emotion regulation. This study though failed to relate the deployment of these strategies to psychological well-being or maladjustment, since a given strategy that leads to psychological distress in one culture may not necessarily lead to the same in another.

A study by Soto and others (2011) found Latino, Asian, and African-American participants oriented more towards emotion suppression compared to European Americans. This study went further to investigate if frequent use of suppression or less deployment of it lead to adjustment difficulties as manifested in life satisfaction and depression scales. European-American participants who utilized suppression less often, scored high on adjustment difficulties, but scored low on depression scales. However, there were no such associations among the Hong Kong Chinese who recorded frequent use of emotion suppression but had no adjustment difficulties as a result of employing expression suppression. Bicultural

Asian-Americans experienced less negative outcomes on emotion suppression compared to European Americans. This has been explained in terms of collectivistic and individualistic cultures; Compared to individualistic cultures, collectivistic cultures employ emotion suppression more (Balkir, Arens, Wolff, & Barnow, 2012). Interestingly, whereas there is a pool of literature to the effect that expression suppression leads to adjustment difficulties, in collectivistic cultures, no negative outcomes were recorded in terms of psychological adjustments and wellbeing even when engaging in emotion suppression.

Culture it seems, programs individuals in a way that the manner in which they manage their emotions is in tandem with its rules and regulations, so that groups remain gelled together and in harmony (Matsumoto, 2006). Literature shows that the strategies that individuals employ to regulate their emotions are correlate with maladjustments and cases of substances of abuse (Nolen-Hoeksema, 2011). The current study seeks to find whether any differences in emotion suppression exist in Kenya's collectivistic culture, and if such differences could account for her drinking patterns in Kiambu County.

#### **2.3.4 Religion**

Studies on alcohol abuse vis-a-vis religion have shown that regardless of age, individuals who score high on religiousness (be they Muslims or Christians) are less likely to drink (McCullough & Willoughby, 2009). Within the different religions, Catholics have been found to have the highest likelihood of engaging in alcohol abuse (Birech et al., 2013). Such findings demonstrate that religion is a vital force in the prevention of alcohol abuse, but does not quite explain the intrinsic mechanisms that bring about the differences in engaging in alcohol use and abuse. One such possible reason behind these differences

might be religiously informed intrinsic process of emotion regulation. 'Feeling' is a central concept in every religion so much that religion has been referred to as a type of 'emotional state' (Watts, 1997). According to Vishkin and others (2014), religion influences several factors both in determining which emotion is elicited and how it is regulated.

With a strong emphasis on a divine deity, religion forms a unique kind of a culture which cultivates a way of thinking and feeling with regards to emotions. It highly fortifies cognitive reappraisal through distractive powerful belief systems and rituals which help one change their view of reality. Individuals who look at emotive situations through the lens of religion may therefore react differently compared those who are non-religious. This is so because the religious individual ascribes to certain ways of controlling their emotional reactivity, so as to affirm and conform to their religious values (Vishkin, 2014). Paloutzian & Park (2005) compared emotion suppression in religious setting to forbearance, a Christian virtue. They further argued that Christianity as it is exhibits a collectivist kind of a culture, which is highly associated with expression suppression.

There is little research on how religion and expression suppression are correlated. Regardless of which religion it is, the more people are religious, the more they may be are likely to employ reappraisal (Vishkin et al., 2016). This implies that religion might have little association with expression suppression. In the face of negative life events religious individuals are likely to reappraise and deal with the emotional impact of the circumstances in a manner that relieves them of any emotional instability that have been known to push individuals who suppress to alcohol in attempts to gain inner emotional stability.

### **2.3.5 Family Background**

Empirical studies show that majority of individuals who abuse alcohol come from a 'drinking family' (Saitoh et al., 1992). A family history of AUD it seems may predispose family members to AUD. Bowen (1994) refers to the family as an emotional unit, implying that alcohol abuse may only be an external manifestation of intrinsic mechanisms that need to be understood, if the underlying mechanisms of alcohol abuse within the family are to be effectively dealt with. The family, a primary socialization agent plays a crucial role in determining the strategies its members adapt to help them to manage emotionally charged life events (John & Gross, 2004). Besides a drinking background, of importance is the fact that parents model the manner in which children handle their own issues, including emotions, and thus influencing how children behave (Gunzenhauser et al., 2014).

In their longitudinal study, Gunzenhauser and others (2014) sought to find out how parents belief systems and behavior patterns related to children's use of response suppression. A sample of 177 mothers, 102 fathers, and 188 Children (96F/92M) were studied. Among these participants were 101 couples. All participants were drawn from South-West of Germany. The ERQ was used on parents to measure their use of expression suppression. The parents also reported the Coping with Children's Negative Emotions Scale (CCNES), as the kids filled the ERQ. Results showed that parents influenced expression suppression in their children through modeling the strategy. Further, parents who modeled suppression lowered the possibility of children learning to use cognitive reappraisal. It was also shown that mothers influenced adolescence use of suppression, more than they did the younger children. These studies may not be exhaustive, but they point in the direction that intrinsic emotion regulation mechanisms place young people from drinking families at a greater risk

of alcohol abuse. This is so because the parents may model the very emotion regulation deficiencies that may have driven them to alcohol abuse in the first place. They confer to the children affective states that need to be down-regulated to heal inner tension, then alcohol might come in as an easily available option rather than learning how to effectively regulate their emotions.

### **2.3.6 Socioeconomic Status**

Studies in the USA have shown that children from high income families abuse alcohol more and continue to use even after starting their own families, as compared children from families that are deficient of resources (Schulenberg et al., 2012). These findings seem to contradict a Kenyan survey that ranked poverty (low SES) among the highest risk factors in the use and abuse of alcohol in Kenya's central region (NACADA, 2010). Several reasons have been attributed to this. They include parental modeling (Gunzenhauser, 2014) and permissive nature of parents in high SES (Moris et al., 2007). Children from high SES have high standards set for them, and this may sometimes prove a difficulty task, leading to anxiety and depression (Schulenberg, 2012), that are painful inner states that require some form of down-regulation. According to the self-medication hypothesis, such states may make those experiencing them vulnerable to alcohol abuse to stabilize their feelings. Luthar & Latendresse (2005) established that anxiety and depressive symptoms could explain substance abuse among high SES. Adaptive emotion regulation strategies may therefore come in handy to mitigate this vulnerability. A rather contradicting survey in Kenya showed that poverty is major risk factor in AUD in central Kenya (NACADA, 2010). Interestingly, the reasons given are similar. A recent study by Miu and others (2015) found a relationship between low SES and anxiety, depression and hostile symptoms.

In a study that sought to establish possible relationships between childhood SES and adulthood emotion regulation. Sample of 54 men and 370 women filled the Emotion Regulation Difficulties questionnaire, childhood socioeconomic questionnaire, the McArthur scale of subjective social status. Results indicated that children from low SES experienced emotion regulation difficulties in adulthood, showing higher levels of on anxiety and depression symptoms.

### **2.3.7 Education Level**

Whereas some studies have linked low education level to higher risks of developing AUD (Crum et al., 1993), other studies have found that at higher education levels, individuals tend to increase the frequency and volumes of alcohol taken and hence higher risks developing AUD also (Oers, 1999) Again, women with high level of education and up in the corporate ladder have shown no differences with men at AUD, while at low levels of education, men used alcohol hazardously (Oers, 1999). The reasons for such variations are likely to be risk factors associated with each level. At lower education level (primary or vocational), individuals may lack opportunities that help them, meet their financial needs, and since men have higher societal expectations, they are likely to be exposed to more negative feelings affected by anxiety and depression. This may also apply to individuals up the academic and corporate ladder who may experience affective states aroused by the demands of their high ranks. This might explain why men use alcohol hazardously at low education levels, with no gender differences in the use and abuse of alcohol at the highest level. A link needs to be found between level of education, emotion regulation strategy and individual's tendency to abuse alcohol.



## **2.4 The extent to which Cognitive Reappraisal and Expression Suppression Interact in Responding to Stressful Events among Alcohol Abusers**

Choosing one emotion regulation over another could have positive or negative outcomes. And whether such choices are reflexive or reflective, automatic or deliberate, Richards and Gross (2007) found that each choice has great impact on psychological adjustment or maladjustment.

Studies by Gunzenhauser and others (2014) showed that parents who modeled suppression in their children lowered the possibility of children learning to use cognitive reappraisal. This study however did not show how reappraisal interacted with suppression to influence consequences in dealing with affective situations.

How reappraisal and suppression interact as discussed and developed by Gross and John (2003) has been a subject of scientific enquiry (Yeh, Bedford, Wu, Wang, & Yen, 2017). According to Gross and John (2003), the two scales are “independent in each sample (mean  $r = -0.01$ ). Implying that participants who frequently employed cognitive reappraisal were no more or less likely to employ suppression than the participants who utilized reappraisal with less frequency. And whereas Gross and John, (2004) grouped individuals into two categories of ‘reappraisers’ and ‘suppressors,’ they conceded that there was “considerable room for change, especially over long periods of time” (p. 1321). Recent research findings however differ from these sentiments on how reappraisal and suppression interact.

Contrary to the view that individuals adopted a single strategy to manage emotive situations, a study by Hu and others (2014) found that the use of one strategy did not mean that an individual couldn’t employ the other. It is possible therefore to respond to an

emotionally arousing situation by either a combining reappraisal and suppression, or utilizing one or the other depending on the context. The study by Hu and others however did not specify a pattern of interaction between the two strategies, and the implications of one pattern of interaction over another.

In a study on how emotion regulation strategies are patterned and possible associated psychopathology, Eftekhari and others (2009) came up with four variations and patterns on how individuals utilised reappraisal and suppression. The interaction patterns identified were high and high, low and low, low and high, high and low scores on reappraisal and suppression in that order. This study yielded an indication that the combination with 'highs' on reappraisal constituted health psychological adjustment. These findings point to a new possibility that, of importance is not a particular strategy, but a particular combination of the two strategies that would constitute best positive outcome. As a follow-up to Gross and John (2003) proposition of the two strategies as existing in an orthogonal plane, there is need to evaluate possible overlaps between reappraisal and suppression. For example, women scored high on both reappraisal and suppression, deploying the two strategies with similar frequency (Eftekhari et. al., 2009). Such differences have been related to physiological differences between men and women (Yeh et. al., 2017). That whereas men utilize more the cognitive processing areas of the brain, women have been found to use the emotion processing regions of the brain, meaning that the two genders may not react to affective states in the same manner due to the differences in their associated physiologies.

When studied across different cultures, the interaction of the two strategies differed among individualistic and collectivist cultures. A study by Matsumoto and others (2008) found that when suppression and reappraisal are correlated across different cultures, a positive

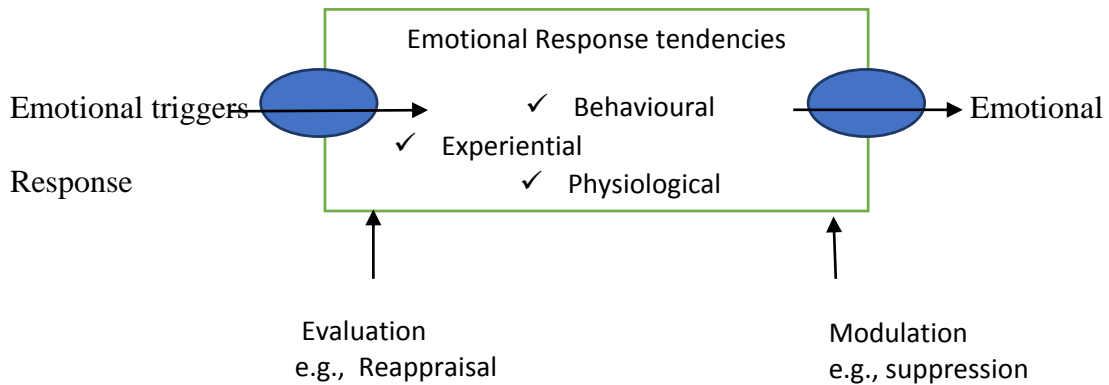
relationship existed for socially ordered hierarchical cultures, while individualistic societies exhibited a negative relationship, and individuals from high social order countries scored high on suppression. From the earlier findings of no relationships to the recent findings of both positive and negative correlations between reappraisal and suppression, there is need to find out how any relationships between the two, or lack of it, relates to the development of AUD.

## **2.5 Theoretical Framework**

### **i) Cognitive Appraisal Theory**

Cognitive Appraisal is a mental process that influences how stressors are reacted to; adaptively or maladaptively (Lazarus & Folkman, 1984). They posit that emotions are only a manifestation of a prior evaluation of person-environment relationships involving a given harm or benefit. Emotional reactions therefore are seen as depended on what a given affect eliciting situation means to personal well-being. This theory posits that thought is a key adaptation process intervening between environmental challenges and actions. These cognitive activities that evoke emotional responses are, in this theory, referred to as *appraisals*; i.e., the processes by which events or situations in an individual's environment are judged as good or bad (Lazarus & Folkman, 1984). Just as James-Lange (1980) could not conceive an emotion without a body, Lazarus and Folkman (1984) couldn't conceive an emotion without its corresponding appraisal. Appraisal happens in three levels. At the primary appraisal stage, the significance of an event is established and given meaning. The emotion evoking situation is then categorized as positively significant, stressful, relevant or irrelevant to well-being. Secondary appraisal follows primary appraisal, as one's assessment of their capacity to handle the consequences of the event. Available resources

to cope with the situation are accounted at this stage, the reappraisal follows the emotive event, and available coping resources are monitored, and if necessary modified to adaptively deal with the situation



**Figure 2.1.** The Process of Emotion Generation (Gross, 1998)

An individual's mental evaluation of what is happening, what it means, and how significant the happening is to them (appraisal), has been found to directly determine emotional state and hence wellbeing (Lazarus & Folkman, 1984).

Mechanisms behind these processes are debatable. They can happen simultaneously, and sometimes the secondary appraisal happens first. The quality and intensity of an emotion is therefore cognitively determined. It is these appraisals that mediate between the individual, the emotion eliciting event, and their ability to cope, hence their reactions. Further, Appraisals can be automatic (unconscious, without individual's awareness of volitional control) or conscious (deliberate and volitional) (Lazarus, 1991). Appraisals may involve very rapid associative processes that mostly occur below the level of conscious awareness, (Smith & Kirby, 2001), but as can be seen from the above three level analogy, the most probable stage at which an individual can consciously be involved is at the

reappraisal stage, where besides monitoring the situation and available coping resources, it's possible to modify appraisals to extract favourable mood states, motivate adaptive behaviour, socially acceptable action, and avoid possible harm.

Appraisal theories therefore seem to be founded on the idea that emotions result from evaluation of stimuli, and that too forms the basis of how emotion reactions may be modified and hence regulated. These theories point to the fact that if an appraisal can be changed, then the mood state can be changed too, and so can the accompanying emotion reaction behaviours. Lazarus and his students found that how emotions are reacted to in the face of threatening situations can be 'short-circuited' by altering the way in which such situations are cognitively appraised (Lazarus & Folkman, 1984). Positive psychotherapeutic outcomes are therefore possible through appraisal, as it significantly alters affective responses.

When reappraisal is not well appropriated, the next most common response modulation strategy has been found to be expressive suppression (Gross, 2002). Emotion suppression initiates a process to suppress the expression of emotional behaviour in an attempt to down-regulate emotion. It has been found to be maladaptive and as widely published by Gross (2002), substances of abuse such as cocaine, alcohol, and cigarettes are sometimes used to down-regulate emotional experience. This is because much as the physiological and behavioural aspects of the emotion are suppressed, the individual continues to experience the emotion and may need something to calm, them down. Clinically, drugs which target physiological changes have been used. They include anti-anxiolytics to reduce muscle tension or sympathetic hyperactivity (Gross, 1998).

## **ii) Self-Mediation Hypothesis**

According to Khantzian (1997), drug use is a way of responding to depressing situations, a means of dealing with disturbed emotional states. Drugs therefore serve as escape route from highly affective situations, and a means to down-regulate emotions due to their ability to relieve the user of emotional tension. Khantzian's findings led to the conclusion that painful emotional states predispose individuals to alcohol and drug dependency, in attempts to escape from disturbing affective states. Addicts therefore choose drugs due to their psychopharmacological activity. The drugs interact with their inner painful feelings, and acts as anesthesia to their inner distress. According to this hypothesis, affect-regulation deficiencies, problems with self-image, self-care, and relationships result in individuals who are weighed down by emotions, and leads to the occurrence of drug use and abuse. Addiction, according to this theory, is a means of soothing inner distressful psychological states; a means of handling painful emotional states, with the aim of compensating for emotional instability, and efforts to achieve stability. As early as 1921, Sigmund Freud had pointed out the etiology of addictive disorders to inner prevailing psychopathologies. His psychoanalytic approach to substance abuse had its main focus on emotion regulation and relational disturbances (Khantzian, 2003). Unable to handle their emotions and inner disturbances on their own, individuals turn to alcohol and drugs of abuse to regulate their distress; to down-regulate their emotions. Inner emotional suffering is therefore a critical psychological factor in the use, misuse, abuse and relapse into substances of abuse (Khantzian, 1997). Alcohol in particular has been found to deal with anxiety and tension by reducing them, due to its depressing and tranquilizing effect on the nervous system, such effects then reinforces drinking (Conger, 1956). Drug users are therefore left with the

reinforcing ‘theory’ that a given substance of abuse has the ability to ‘heal’ inner turmoil. Alcohol then becomes the unhealthy, maladaptive coping mechanism, instead of adaptive emotion regulation strategies

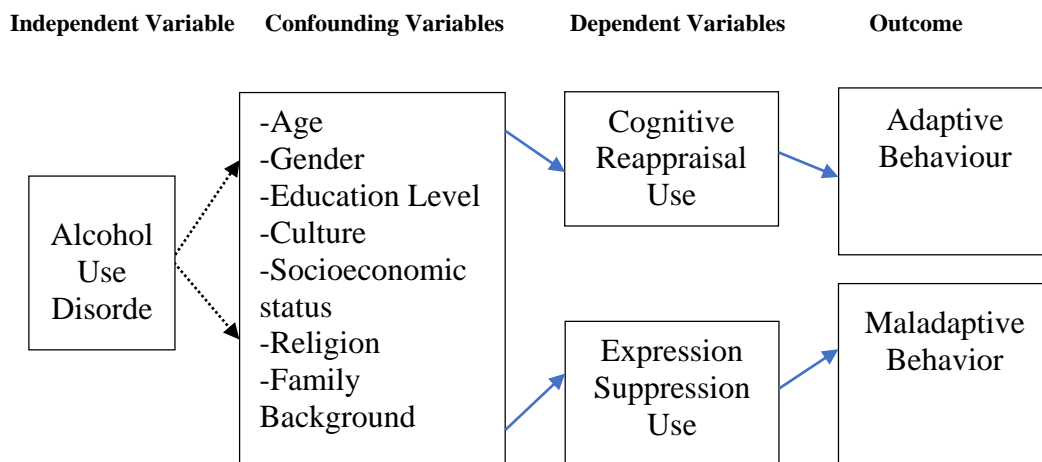
Based on the reviewed literature, the researcher hypothesised that;

**H1:** There is a relationship between the use of cognitive reappraisal and alcohol abuse

**H1:** There is a relationship between the use of expression suppression and alcohol abuse

**H1:** There is an interaction between the use of cognitive reappraisal, expression suppression and alcohol abuse

### Conceptual Framework



**Figure 2.2. Conceptual Framework**





### 3.3 Study Area

The study area was Kiambu County. The choice of this area was informed by studies that have continued to confirm the alcohol problem in central Kenya. NACADA (2009) reported the then Kiambu district, (See appendix III) as the area with the highest cases of alcohol abuse. Informed by these findings, three rehabilitation centers (Teen Challenge, Caretec and Talbot Recovery) were established. It is here that most families in this area and beyond seek help for family members with AUD.



*Figure 3.1* Map of Kiambu County; the study area

### 3.4 Target Population

This research targeted individuals between 15 to 35 years who had; (a) sought help in a rehabilitation center with no history of abusing any other drug except alcohol, (b) stayed alcohol free for at least a year after rehabilitation, (c) no history of using alcohol, or any

other substances of abuse. According to the *African Youth Charter*, youth is “any individual between 15-35 years of age.” (AU, 2006). This definition, different from other definitions of youth as persons between 15-24 years sought to define youth based on Africa’s development context. This age group was chosen because it is a period of biological, emotional, cognitive, career and social transitions that presents challenges for some young people as they break free from parental and institutional controls, and seek to establish themselves as independent adults (Hassan, 2013). Again, Arnet, (1999) associated these shifts to negative affect, and the possibility of adolescents internalizing symptoms. This age would therefore need to utilize adaptive emotion regulation strategies to cope with the affective states that characterize transitions. Findings indicate that deficiencies in affect control drive people to alcohol abuse in attempts to self-medicate their inner emotional instabilities (Khantzian, 1997).

The rehabilitation centers served as reference points for individuals with AUD, those who had recovered, and a few of those who had never used alcohol. The researcher also found it convenient because in the rehabilitation centre environment, it was less stigmatizing for the participants to begin the conversation on AUD. This context offered a referencing point for participants with the desired characteristics. Again, since the participants were restricted within the rehabilitation centre, they were sober enough to fill the questionnaires.

### **3.5 Sampling Method**

Snowballing technique was used. Though it is a non-probability sampling method, its choice was informed by the fact that participants in this study constituted a hidden population that is hard to reach due to the stigma associated with AUD. The participants of this study were therefore identified from rehabilitation centres, where, together with the

centre administrators and workers, they assisted the researcher find other individuals who abused alcohol only and had sought help in a rehabilitation centre. Finding these strata in rehabilitation centres that received all kind of drug users required a method that relied on references.

### **3.6 Sample Size**

There were no records in Kiambu Sub-county to show the number of individuals who abused alcohol. The rehabilitation centres were not clear about the numbers either. This was attributed to the finding that some of those brought in for rehabilitation were brought by their parents or guardians against their will, and mostly never stayed in for the requisite 3 months. The researcher therefore targeted a minimum number of 30 individuals with AUD, 30 individuals who had never abused alcohol or any other drug, and 30 individuals who had stayed alcohol free for at least one year after successful rehabilitation. The sample size was informed by the fact the target strata was not easily available. The researcher managed to get 33 (23M/10F) participants who abused alcohol, 33 (20F/13M) who had never taken alcohol or any other drug, and only 12 (8F/6M) individuals who had successfully gone through rehabilitation and had stayed alcohol free for at least a year

### **3.7 Research Instruments**

The researcher used a questionnaire with four sections (See Appendix II). The first part collected background information to indicate participant's characteristics. The demographics collected here included age, gender, marital status, education level, languages spoken, income (family or self), family history, religion, years of alcohol use, type of alcohol mostly used, and amount of daily consumption of alcohol (current or previous).

The second part sought to identify the extent to which individuals abused alcohol. Here, AUDIT was used. Part three was the Emotion Regulation Questionnaire (ERQ) which measured emotion regulation strategies employed by participants.

The following is a detailed look at the above questionnaires

**i) The Alcohol Use Disorder Identification Test (AUDIT)**

This instrument, developed by WHO and tested on participants drawn from six countries, among them, Kenya, has been found to be a good, transcultural screening tool for screening for alcohol use and dependency among participants in health care settings (Saunders, Aasland, Babor, Fuente, & Grant, 1993). Further studies have psychometrically proven that AUDIT is a sound instrument for detecting alcohol abuse among adolescents, college students, young adults, women, and individuals drawn from minority groups not only in health care contexts but also in community settings (de Meneses-Gaya, Zuardi, Loureiro, & Crippa, 2009).

The AUDIT consists of 10 items, with a zero to four (0-4) scoring scale. Frequency of alcohol use behaviours are tested by six out of the ten questions. The questions are such as “How often during the last year have you found that you were not able to stop drinking once you had started?” “How often during the last year have you been unable to remember what happened the night before because you had been drinking?” and “How often during the last year have you failed to do what was normally expected from you because of drinking?” These questions, which fit in very well with DSM-V description of how AUD is diagnosed were responded to as “Never” (0), “Less than monthly” (1), “Monthly” (2), “Weekly” (3), and “Daily or almost Daily” (4). Questions 1 to 3 measured the frequency

of drinking. Questions 4 to 6 detected alcohol dependency while questions 7 to 10 were a measure of alcohol related problems, all with a score of 0-4 points. After responding to the questionnaire, all the points were added to get a score for each participant. Eight (8) or more points in men, and seven (7) or more points in women was an indicator of risky or harmful alcohol use, while a score of twenty (20) and above was indicative of alcohol dependency.

Psychometric studies by Maneses-Gaya and others (2009) found a high validity of the AUDIT in detection of AUD among university students. It was also found to be high in sensitivity (0.67), specificity (0.96), and positively predictive (0.75). Other studies have further shown a reliability coefficient ranging 0.75 to 0.97, with a median of 0.83 (Reinert and Allen, 2007). This instrument was therefore ideal for the current study.

The questionnaire was obtained from WHO website where it was marked as free to use when not being used for commercial purposes

## **ii) The Emotion Regulation Questionnaire, ERQ**

The ERQ consists of 10 items and two subscales (see appendix III). The scale that assesses expression suppression consists of 4 items (2,4,6,9), while cognitive reappraisal strategy consists of 6 items (1,3,5,7,8,10). In a scale of 1 to 7, where 1 is ‘Strongly disagree’ and 7 is ‘Strongly Agree’, participants were required to rate how they regulate their emotions. (e.g., when I’m faced with a stressful situation, I make myself think about it in a way that helps me stay calm; I keep my emotions to myself). The mean scores of the subscales are calculated and used to rate the extent to which an individual utilizes one strategy over the other. A high score reflects the extent to which the strategy is utilized in regulating inner

emotion states. Gross and John (2003), reported an acceptable Cronbach's alpha coefficient reliability value of .79 for the reappraisal subscale, .73 for the suppression subscale, and a test–retest reliability across three months of 0.69 for both constructs. Checked for intercorrelations, the two subscales were found to be mildly and insignificantly ( $r_s < 0.7$ ) intercorrelated.

### **3.8 Data Collection**

#### **3.8.1 Ethical Considerations**

During the data collection, the following ethical considerations were adhered to.

- a) Got permission from NACOSTI to carry out the study research (Appendix IV)
- b) Thoroughly explained the aim of the study to the participants.
- c) Each participant was required give their signed consent (Appendix I)
- d) Assured participants of confidentiality and anonymity of their responses

#### **3.8.2 Collecting Data**

The researcher visited rehabilitation centers in Kiambu County for a familiarization meeting with the directors, counselors and social workers. The benefits of the research to the centers were explained to the authorities. It was confirmed in this meeting that the centers had individuals who were abusing alcohol and not any other drug, and that they were still in touch with individuals who had stayed for at least a year after rehabilitation from alcohol abuse. A date was then set for the researcher to meet the referenced participants who were either abusing alcohol (and not any other drug), or had successfully been rehabilitated from alcohol abuse and stayed for at least a year without relapsing. The researcher also requested the participation of the workers between the ages of 18-35 who had never used alcohol and other drugs (abstainers). This category of abstainers didn't have

as many people in the rehabilitation centers, and therefore those who participated were to ask people they know as abstainers to take part in the study also.

On the set day for data collection, the researcher met the participants at times convenient for the different rehabilitation centers. The instruments were then administered after brief instructions on how to fill the questionnaires. The participants took about 20 minutes to respond to the questionnaire.

### **3.9 Data Analysis**

Data obtained using these instruments was first coded and entered into excel spreadsheets for cleaning before analyzing with the Statistical Package for Social Sciences (SPSS). Summary of data and participant characteristics were presented using descriptive statistics. Relevant inferential statistical methods were then applied to test each hypothesis. The hypotheses are as below

**H0:** There is no significant relationship between the use of cognitive reappraisal and AUD

**H1:** There is a significant relationship between the use of cognitive reappraisal and AUD

**H0:** There is no significant relationship between the use of expression suppression and AUD

**H1:** There is a significant relationship between the use of expression suppression and AUD

**H0:** There no significant interaction between the use of cognitive reappraisal, expression suppression and AUD

**H0:** There is a significant interaction between the use of cognitive reappraisal, expression suppression and AUD

## **CHAPTER FOUR**

### **RESULTS**

#### **4.1 Introduction**

In this chapter the demographic information of the study will be presented. Further, results across the variables, and as per the study objectives and hypothesis will be presented and analysed.

#### **4.2 Participants Demographic Information**

This section evaluated the general information of the individuals taking part in this study. The age, gender, culture, education level, marital status, family history, socioeconomic status and religious orientations of the participants were recorded.

##### **4.2.1 Number of Participants**

This study involved 78 participants (50M/28F). With no available data on the number of individuals abusing only alcohol in this region, the researcher targeted 30 participants from each of the three categories under study. This was informed by the need to get a number that would allow the researcher to carry out Pearson's correlation to establish strength of relationships between variables. The study surveyed 33 respondents under rehabilitation for alcohol abuse, 12 respondents who had undergone rehabilitation and stayed free of alcohol for at least a year, and 33 individuals who had never taken alcohol or any other drug of abuse. All the questionnaires were filled and returned by the participants identified through snowballing.



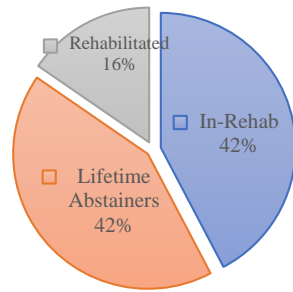


Figure 4.1. Participants' distribution across the three categories under study

#### 4.2.2 Participants' Demographic Data

Background information was collected and tabulated as shown in Table 4.1 below. Majority of respondents were male (64%). The most frequent age was between 20 to 25 years (44%). Those with at least a university degree were 35%. Some 63% were single, while 70% had both parents. In terms of religious orientations, 45% of the participants recorded as being Protestants while 55% were Catholics.

**Table 4.1**  
*Participants' Characteristics*

Variable	Category	Percentage (%)
<b>GENDER</b>	Male	64
	Female	36
<b>AGE (yrs)</b>	15-19	1
	20-25	44
	26-30	30
	31-35	25
	Secondary	16
<b>EDUCATION</b>	College	27
	University	35
	<b>MARITAL STATUS</b>	
	Single	63
	Married	19
	Separated	12
	Divorced	06

<b>FAMILY HISTORY</b>	Single mother	18
	Single father	09
	Both parents	70
	Orphaned	03
<b>INCOME (KSH) (SELF/FAMILY)</b>	<19,000	33
	20,000-79,999	48
	80,000-139,999	07
	140,00-199,999	09
	>200,000	03
<b>RELIGION</b>	Catholic	45
	Protestant	55

### **4.3 Results of the Study**

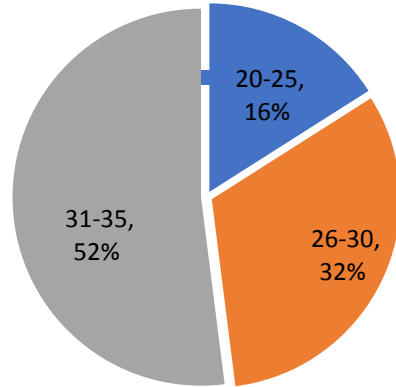
The results of this study were computed in accordance with the study objectives. In order to test the study hypothesis, inferential statistics were computed. The discussion of these results was presented thereafter.

#### **4.3.1. The Relationship between the Tendency to Abuse Alcohol and the Ability to use Cognitive Reappraisal when Confronted by Negative Life Events.**

Participants' scores in the AUDIT questionnaire and the cognitive reappraisal scale of the ERQ were recorded. The results were then computed across the confounding variables as discussed below

##### **a) Age**

Most participants with AUD (52%) were in the age between 31-35. (see figure 4.2) Results from 33 participants drawn from rehabilitation centers showed that AUD prevalence increased with age. Aged 31-35 recorded the highest prevalence of AUD.



**Fig 4.2. AUD Prevalence Across Age Groups.**

Scores for the cognitive reappraisal scale of the ERQ showed that there were variations in the way individuals reappraised at different age groups. Although there was no clear pattern on how individuals utilised reappraisal across the different age groups, it can be seen in table 4.2 that individuals in the 31-35 age bracket reappraised the least, and had the highest AUD prevalence.

**Table 4.2**

*Abstainers Average Reappraisal Scores Across Age Groups*

Age	15-19	20-25	26-30	31-35
Reappraisal	5.8	4.7	5.4	4.0

All the participants scored above average in cognitive reappraisal ability whose maximum score is 7, an indication that the age between 15 to 35 utilised reappraisal well.

**Table 4.3**

*Composite Average Scores for reappraisal and AUD prevalence at different age Groups among participants with AUD*

Age (years)	15-19	20-25	26-30	31-35
Reappraisal	5.8	4.9	5.0	4.4
AUD Prevalence (%)	0	16	32	52

Individuals who had gone through rehabilitation and stayed alcohol free for at least a year did not differ from lifetime abstainers in their deployment of cognitive reappraisal. It therefore seems that indeed, reappraisal is an important mediator in alcohol abuse in that it may prevent the use of alcohol in dealing with negative affective states.

**Table 4.4**

*Pearson's Bivariate Correlation Results for Reappraisal Across Age Groups*

Age Group (years)	Correlation	Reappraisal	AUDIT
<b>15-19</b>	Pearson Correlation	.101	.101
	Sig. (2-tailed)	.384	.384
<b>20-25</b>	Pearson Correlation	.054	-.378**
	Sig. (2-tailed)	.644	.001
<b>26-30</b>	Pearson Correlation	.116	.025
	Sig. (2-tailed)	.315	.826
<b>30-35</b>	Pearson Correlation	-.211	.434**
	Sig. (2-tailed)	.065	.000

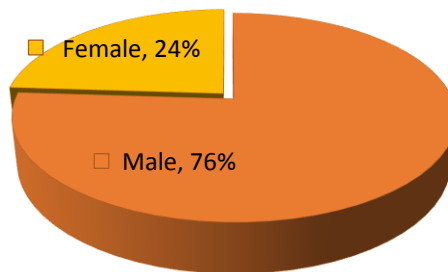
N= 77 \*\*Correlation is significant at the 0.01 level (2-tailed)

The researcher computed a Pearson’s Bivariate Correlation to assess the relationship between age, cognitive reappraisal, and AUD. Results indicated that all age groups except age 30-35 were positively correlated to reappraisal. Individuals between the ages of 30-35 were negatively correlated to reappraisal ( $r=-0.211$ ,  $n=77$ ,  $p=0.65$ ), and had a positive and significant correlation to AUD ( $r=0.434$ ,  $n=77$ ,  $p=0.000$ ).

**b) Gender**

Among participants who had never used alcohol, the average scores on the reappraisal scale of the ERQ were 5.2 and 5.3 for men and women respectively.

Males were found to have a high rate of AUD compared to women (see figure 4.4)



**Figure 4.3. AUD Prevalence and Gender**

Just as was the case with lifetime abstainers, ERQ scores on reappraisal among respondents with AUD showed that there was no difference between men and women in the use of reappraisal. However, it is worth noting that individuals with AUD scored lower in the reappraisal scale compared to those who were not abusing alcohol (Table 4.5)

**Table 4.5**

***Composite Average Scores for Reappraisal among Men and Women***

<b>Reappraisal</b>	<b>MALE</b>	<b>FEMALE</b>
Abstainers	5.1	5.2
With AUD	4.8	4.8

A Pearson's correlation coefficient test revealed correlation between gender and reappraisal (Table 4.6). Being male was negatively correlated to reappraisal ( $r=-0.041$ ,  $n=77$ ,  $p=0.723$ ). On the other hand, being female was positively correlated to reappraisal ( $r=0.041$ ,  $n=77$ ,  $p=0.723$ ). It was also found that men were positively but weakly correlated to AUD ( $r=0.154$ ,  $n=77$ ,  $p=0.178$ ), while women were negatively and weakly correlated to AUD ( $r=-0.154$ ,  $n=77$ ,  $p=0.178$ ).

**Table 4.6**

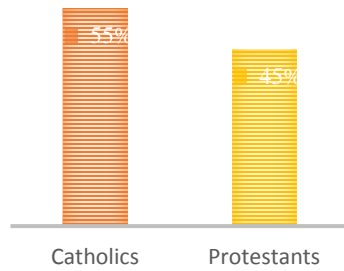
*Results of Pearson's Bivariate Correlation across Gender and Reappraisal*

		<b>Reappraisal</b>	<b>AUDIT</b>
<b>Male</b>	Pearson Correlation	-.041	.154
	Sig. (2-tailed)	.723	.178
<b>Female</b>	Pearson Correlation	.041	-.154
	Sig. (2-tailed)	.723	.178

Note: N=77,

**c) Religion**

Participants in this study were drawn from Catholic (45%) and Protestant (55%) religious orientations. Among the participants with a zero (0) score on the AUDIT, 37% were Catholics, and 63% were Protestants. Protestants were therefore highly likely to abstain from alcohol than would Catholics. Results of the participants drawn from rehabilitation centers showed that Catholics had a higher AUD prevalence compared to Protestants (see figure 4.4)



**Figure 4.4** AUD and Religious Orientations

Results for cognitive reappraisal scores in this study found that Catholic participants recorded lower scores compared to the Protestants (see table 4.7).

**Table 4.7**

*Composite Average Scores for Reappraisal, and AUD Prevalence among Catholics and Protestants*

	<b>Catholic</b>	<b>Protestant</b>
<b>Reappraisal</b>	<b>4.7</b>	<b>4.9</b>
<b>AUD Prevalence (%)</b>	<b>55</b>	<b>45</b>

A Pearson’s correlation results showed that being a Catholic and reappraisal  $r(77)=-0.116$  have a weak negative relationship while being a protestant and cognitive reappraisal  $r(77)=0.116$  have a weak but positive relationship (Table 4.8). Further, Catholics were weakly but positively correlated to AUD ( $n = 77, r = 0.167$ ) while protestants were negatively but weakly correlated to AUD ( $r = -0.167$ )

**Table 4.8*****Results of Pearson's Bivariate Correlation for Reappraisal Across Religion***

		<b>Reappraisal</b>	<b>AUDIT</b>
<b>Catholic</b>	Pearson Correlation	-.116	.167
	Sig. (2-tailed)	.313	.145
<b>Protestant</b>	Pearson Correlation	.116	-.167
	Sig. (2-tailed)	.313	.145

N=77

**d) Family History**

This study found that 78% of the participants who had never used alcohol, or any other drug were from families with both parents, and scored the highest in the reappraisal scale (5.3 out of the possible 7). The rest were spread among participants brought up by single mothers (15%), single fathers (4%) and orphaned (2%). Participants who reported that they had been brought up by single mothers scored the highest in reappraisal (5.7). Those who had been brought up by single fathers reported a reappraisal score of 4.0.

Of those who had AUD, 19% were brought up by single mothers, 28% were brought up by single fathers, 21% had both parents and 32% had been orphaned. However, checked on account of emotion regulation strategies used, it was found that participants who had been orphaned recorded the highest prevalence of AUD (32%) and had the highest score in the reappraisal scale of the ERQ (5.2), while those who had been brought up by single fathers recorded the lowest scores in reappraisal (3.9), and a AUD prevalence of 28%.



**Table 4.9***Composite Average Scores for Cognitive Reappraisal among Across Family History*

<b>Family History</b>				
	<b>Single Mother</b>	<b>Single Father</b>	<b>Both Parents</b>	<b>Orphane d</b>
<b>Cognitive Reappraisal</b>	<b>4.7</b>	<b>3.9</b>	<b>5.0</b>	<b>5.2</b>
<b>AUD Prevalence (%)</b>	<b>19</b>	<b>28</b>	<b>21</b>	<b>32</b>

Though there were no clear patterns of how reappraisal related to the prevalence of AUD vis-a-vis family background. A Pearson's correlation seemed to point in the direction that the family environment fostered a given emotional state. Individuals who had been brought up by both parents for example were positively, though weakly correlated to reappraisal. The relationship between being brought up by a single father and reappraisal  $r(77) = -0.268$  was weakly and negatively correlated to reappraisal. The other correlations were as in Table 4.10 below

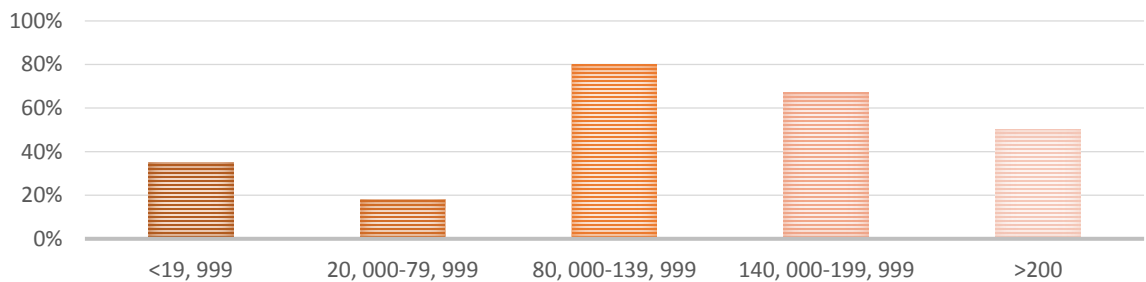
**Table 4.10***Results of Pearson's Bivariate Correlation for Reappraisal across Family History*

		<b>Single Mother</b>	<b>Single Father</b>	<b>Both Parents</b>	<b>Orphaned</b>
<b>Reappraisal</b>	Pearson Correlation	-.053	-.268*	.195	.049
	Sig. (2-tailed)	.647	.018	.089	.670
<b>Suppression</b>	Pearson Correlation	-.144	.050	.107	-.042
	Sig. (2-tailed)	.211	.668	.356	.720

N=77\* Correlation is significant at the 0.05 level (2-tailed)

**e) Socioeconomic status**

Majority of non-drinkers (64%) were drawn from the lower middle class while the least were drawn from middle class (3%). The low class was represented by 24%, while 9% of respondents were from high class. This was replicated in the opposite direction in that 80% of individuals with AUD were drawn from the middle class while 18% were drawn from the lower middle class. The middle and upper classes in this study therefore seemed to abuse alcohol more than the upper classes (see Figure 4.5). There was no clear pattern of alcohol use and abuse across different social classes.



**Figure 4.5. Prevalence of AUD across different Socioeconomic Groups**

The use of cognitive reappraisal across the different socioeconomic groups was studied. Results indicated that individuals in the upper socioeconomic class reappraised the most (5.7) compared to those in the low class (4.8). (see Table 4.11). Whereas there doesn't seem to be a patterned use of reappraisal to account for the drinking pattern, this might be due to the fact that the incomes reported in the questionnaire were either of self or family since majority of the participants were in college going age of 20-25.

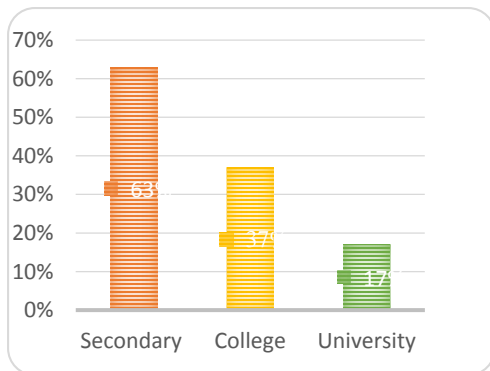
**Table 4.11**

*Composite Average Scores for cognitive Reappraisal at Different Socioeconomic Classes*

<b>Income Ksh (x1000)</b>	<b>&lt;19.999</b>	<b>20-79.999</b>	<b>80-139.999</b>	<b>140-199.999</b>	<b>&gt;200</b>
Cognitive Reappraisal	4.8	5.1	4.7	4.5	5.7
AUD Prevalence (%)	35	18	80	67	50

**f) Education level**

Participants who had only studied to secondary school level were found to abuse alcohol more than those who had proceeded tertiary institutions of learning. Among individuals with AUD, 63% had not proceeded to college, while only 17% individuals with AUD had a university degree (Fig 4.6).



**Figure 4.6. AUD and Education Level**

In an attempt to trace the differences in the development of AUD among individuals at different education levels, the use of reappraisal as an emotion regulation strategy was studied. It was found that individuals who had only up to secondary school level utilized this strategy the least at 4.5, followed by individuals who had college or university education who scored 4.9 as shown in Table 4.12. There seems to be a pattern in the prevalence of AUD among the different education levels as individuals with the least level of education recorded the lowest scores (4.5) in the use this adaptive strategy, and also, had the highest prevalence of AUD (63%) (See Table 4.12)

**Table 4.12***Composite Average Scores for Cognitive Reappraisal at Different Education Levels*

Variable	Secondary	College	University
<b>Reappraisal</b>	4.5	4.9	4.9
<b>AUD prevalence (%)</b>	63	37	17

As illustrated in Table 4.13, individuals in rehabilitation centers whose AUDIT scores indicated they had alcohol dependency scored the lowest in cognitive reappraisal strategy (4.3). compared to lifetime abstainers scores (5.0) and individuals who had been out of rehabilitation and stayed alcohol free for at least a year, who scored high on cognitive reappraisal (5.1)

**Table 4.13***Composite averages for Cognitive Reappraisal among Individuals with AUD, those Rehabilitated and Lifetime Abstainers*

Variable	With AUD	Rehabilitated	Abstainers
<b>Cognitive Reappraisal</b>	4.3	5.1	5.0

**b) Hypothesis testing**

To study the relationship between AUD and the ability to use cognitive reappraisal when confronted by negative life events, this study hypothesised that;

**H0:** There is no relationship between the use of cognitive reappraisal and alcohol abuse

**H1:** There is a relationship between the use of cognitive reappraisal and alcohol abuse

To adapt any of the above hypotheses, the results were subjected to Pearson’s correlation coefficient. Results (see table 4.14) indicated that there was indeed a significant, but negative relationship between the use of cognitive reappraisal and AUD.

**Table 4.14**

***Results of Pearson’s Bivariate Correlation for Reappraisal and AUD***

Variable		AUD
<b>Cognitive Reappraisal</b>	Pearson Correlation	-.380**
	Sig. (2-tailed)	.001

N=78 \*\*Correlation is significant at the 0.01 level (2 tailed)

According to these findings, increased use of cognitive reappraisal leads to a decrease in AUD. To further confirm the hypothesis, the researcher employed multiple regression analysis. From the results, (see table 4.15) and using the model;

$$AUD = 0.818 - 0.152Reappraisal + 0.084Suppression$$

Holding Reappraisal and suppression constant, AUD would be 0.818 units. This means that holding suppression constant, a unit increase in reappraisal decreases AUD by 0.152 units. Reappraisal is therefore a significant determinant of AUD at 1% level of significance because the p-value of 0.001 is less than that at 1% (0.01).

**Table 4.15*****Multiple Regression Results***

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	T	P-Value
		B	Std. Error	Beta		
1	(Constant)	0.818	0.297		2.753	0.007***
	Reappraisal	-0.152	0.046	-0.349	-3.333	0.001***
	Suppression	0.084	0.040	0.219	2.090	0.040**

**The alternative hypothesis(H1)**, ‘there is a negative and significant relationship between the use of cognitive reappraisal and alcohol abuse,’ therefore holds.

#### **4.3.2 The relationship between the tendency to abuse alcohol and the ability to use expression suppression when confronted by negative life events.**

Participants’ scores in the AUDIT questionnaire and the emotion suppression scale of the ERQ were recorded and the results computed across the confounding variables as discussed below

##### **a) Age**

Among abstainers, scores of the suppression scale of the ERQ decreased with increasing age after 20 years (Table 4.16)

**Table 4.16*****Suppression and Age for Life Time Abstainers***

<b>Age</b>	<b>15-19</b>	<b>20-25</b>	<b>26-30</b>	<b>31-35</b>
<b>Suppression</b>	<b>2.3</b>	<b>3.7</b>	<b>3.6</b>	<b>3.3</b>

Among participants with AUD, scores on the suppression scale of the ERQ showed that the three age groups suppressed to a similar extent. Those between 20-25 years scored 4.3, those between 26-30 years scored 4.6, while those between 31-35 years scored 4.5. The average score was 4.5 out of the possible 7. No clear patterns on suppression and age were found. However, compared to lifetime abstainers whose average suppression score was 3.2. It can be seen that participants with AUD deployed suppression more (4.5) when dealing with emotionally arousing situations than did lifetime abstainers (3.2).

Participants who had been through rehabilitation scored 4.3 on the suppression scale. There is dearth literature on emotion regulation strategies of individuals after rehabilitation. It is however worth noting that their suppression scores were very close to, and slightly lower than those of individuals with AUD.

A Pearson's correlation coefficient across the different age groups showed that suppression and AUD were not clearly positively or negatively correlated (Table 4.17).

**Table 4.17*****Results of Pearson's Bivariate Correlation for Suppression across Age Groups***

<b>Age Group (years)</b>	<b>Correlation</b>	<b>Suppression</b>	<b>Total AUDIT</b>
15-19	Pearson Correlation	-.161	-.097
	Sig. (2-tailed)	.161	.403
20-25	Pearson Correlation	.028	-.378**
	Sig. (2-tailed)	.809	.001
26-30	Pearson Correlation	-.061	.025
	Sig. (2-tailed)	.597	.826
30-35	Pearson Correlation	.075	.434**
	Sig. (2-tailed)	.516	.000

N=78 \*\*Correlation is significant at the 0.01 level (2 tailed)

**b) Gender**

Among participants who had never used alcohol, the average scores on the suppression scale of the ERQ were 3.7 and 3.3 for men and women respectively.

As earlier reported, males were found to have a high rate of AUD compared to women. Only 16% of those rehabilitated were female.

Just as was the case with lifetime abstainers, ERQ scores on suppression among respondents with AUD showed that, when faced by emotionally negative situations, men employed suppression more than women (see table 4.18).



**Table 4.18*****Composite Average Scores for Suppression among Men and Women with AUD***

	<b>MALE</b>	<b>FEMALE</b>
Suppression	4.7	4.0
AUD Prevalence (%)	76	24

Among the 12 respondents who had reported having stayed alcohol free for at least a year since rehabilitation, men reported high suppression scores (5.8) compared to women's suppression score of 3.5

A Pearson's correlation coefficient (see Table 4.19) showed that there was a correlation between gender and suppression. Being male was positively and significantly correlated to suppression, which was again correlated AUD.

**Table 4.19*****Results of Pearson's Bivariate Correlation for Suppression across Gender***

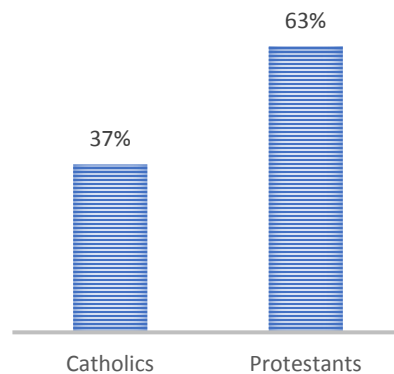
		<b>Suppression</b>	<b>AUDIT</b>
<b>Male</b>	Pearson Correlation	.362**	.154
	Sig. (2-tailed)	.723	.178
<b>Female</b>	Pearson Correlation	-.362**	-.154
	Sig. (2-tailed)	.723	.178

N=77 \*\*Correlation is significant at the 0.01 level (2 tailed)

This correlation showed that being male was positively and significantly correlated to suppression  $r(77) = 0.362$ , while being female was negatively and significantly correlated to suppression  $r(77) = -0.362$ . As can be seen from table 4.19 above, a positive correlation with suppression among men seems to be also a positive correlation with AUD. Pointing in the direction that emotion regulation, and especially suppression could be a risk factor in the development of AUD.

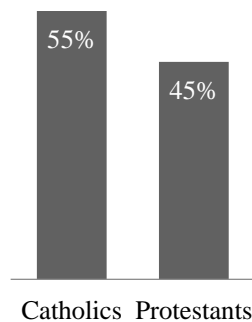
### c) Religion

Participants in this study were drawn from Catholic (45%) and Protestant (55%) religious orientations. Among the participants with a zero (0) score on the AUDIT, 37% were Catholics, and 63% were Protestants (Figure 4.5). Protestants were therefore highly likely to abstain from alcohol than would



**Figure 4.7. Rate of Abstinence from alcohol among Catholics and Protestants**

Results of the participants drawn from rehabilitation centers showed that Catholics reported AUD with higher frequency compared to Protestants (Figure 4.8).



**Figure 4.8 AUD and Religious Orientations**

When their emotion regulation strategies were checked, Catholics scored higher than Protestants in suppression (Table 4.3).

**Table 4.20**

*Composite Average Scores for Suppression, and AUD Prevalence among Catholics and Protestant*

	<b>Catholics</b>	<b>Protestants</b>
Suppression	4.7	4.2
AUD Prevalence (%)	55	45

A Pearson's correlation coefficient showed that being a Catholic was positively but weakly correlated to AUD, and negatively but weakly correlated to suppression, while being a Protestant was positively but weakly correlated to suppression (Table 4.21).

**Table 4.21**

*Results of Pearson's Bivariate Correlation Test for relationships between Religion and Suppression*

		<b>Suppression</b>	<b>AUDIT</b>
<b>Catholic</b>	Pearson Correlation	-0.001	0.167
	Sig. (2-tailed)	0.992	0.145
<b>Protestant</b>	Pearson Correlation	0.001	-0.167
	Sig. (2-tailed)	0.992	0.145

N=77,

#### **d) Family History**

This study found that 78% of the participants who had never used alcohol or any other drug were from families with both parents. Those participants scored 4.1 of the total ERQ expression Suppression score of 7. The other participants were either brought up by single mothers (15%), single fathers (4%) or orphaned (2%). Participants who reported that they had been brought up by single mothers scored 3.7 in suppression. Those who had been brought up by single fathers reported the highest suppression score at 4.2.

Of those who had AUD, 19% were brought up by single mothers, 28% were brought up by single fathers, 21% had both parents and 32% had been orphaned. However, checked on account of emotion regulation strategies used, it was found that participants brought up by a single father recorded that highest scores in suppression scale of the ERQ (4.3). Those brought up by both parents (4.2). Those who had been brought up by single mothers suppressed the least (3.7).

**Table 4.22**

*Suppression Scores for Participants with Different Family History*

<b>Family History</b>	<b>Single Mother</b>	<b>Single Father</b>	<b>Both Parents</b>	<b>Orphaned</b>
Suppression	3.7	4.3	4.2	3.8
AUD Prevalence (%)	19	28	21	32

There were no clear patterns of how the family composition one was brought up in related to suppression and the prevalence of AUD. Only participants who reported having been brought up by single mothers were negatively, though insignificantly, correlated to suppression, and recorded the lowest prevalence of AUD.

**Table 4.23**

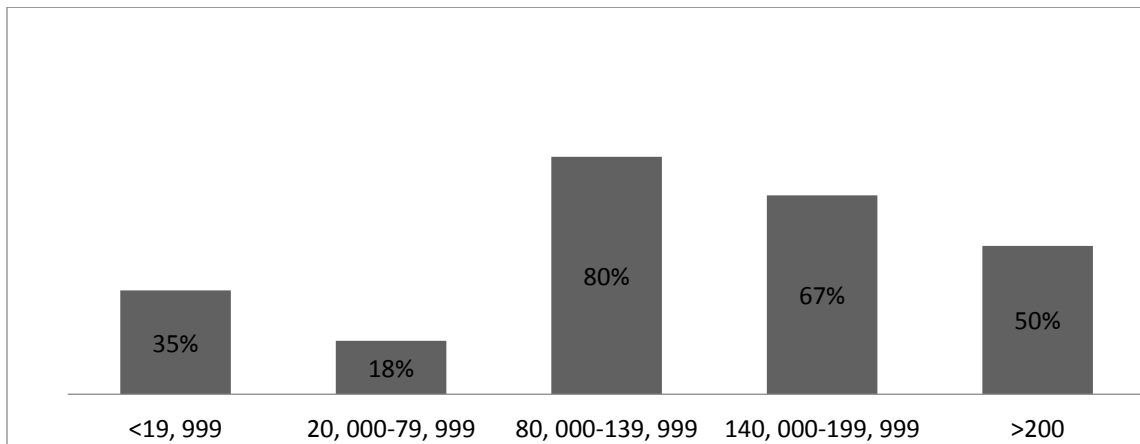
*Results of Pearson's Bivariate Correlation Test for relationships between Family History and Suppression*

		<b>Single Mother</b>	<b>Single Father</b>	<b>Both Parents</b>	<b>Orphaned</b>
<b>Suppression</b>	Pearson Correlation	-.144	.050	.107	-.042
	Sig. (2-tailed)	.211	.668	.356	.720
<b>AUD</b>	Pearson Correlation	-.016	.008	-.001	.028
	Sig. (2-tailed)	.893	.943	.990	.809

N=77,

**e) Socioeconomic status**

Majority of lifetime abstainers (64%) were drawn from the lower middle class while the least were drawn from middle class (3%). The low class was represented by 24%, while 9% of respondents were from high class. This was replicated in the opposite direction in that 80% of individuals with AUD were drawn from the middle class while 18% were drawn from the lower middle class. In the current study, the low in socioeconomic status had higher AUD prevalence (35%) compared to the lower middle class at 18%. The middle and lower classes in this study therefore seemed to abuse alcohol more than the upper classes (see Figure 4.24)



**Figure 4.9. The Prevalence of AUD across Different Socioeconomic Groups**

There was no patterned use of suppression to account for the drinking pattern along SES. This might be due to the fact that the incomes reported in the questionnaire were not necessarily of self but of family, since 62% of the participants were either in college or university.

**Table 4.24**

*Composite Average Scores for Expressive Suppression at different Socioeconomic Classes*

<b>Income Ksh (x1000)</b>	<b>&lt;19.999</b>	<b>20-79.999</b>	<b>80-139.999</b>	<b>140-199.999</b>	<b>&gt;200</b>
Suppression	3.9	4.1	3.7	5.5	5.4
AUD Prevalence (%)	35	18	80	67	50

A Pearson's correlation coefficient too did not yield any patterned relationships across different SESs

**Table 4.25**

*Results of Pearson's Bivariate Correlation Test for Relationships between Income Level and Suppression*

		<b>&lt;19.999</b>	<b>20-79.999</b>	<b>80-139.999</b>	<b>140-199.999</b>	<b>&gt;200</b>
<b>Suppression</b>	Pearson Correlation	-.234*	.084	-.081	.323**	.170
	Sig. (2-tailed)	.048	.484	.500	.006	.153
<b>AUD</b>	Pearson Correlation	.085	-.194	.127	.078	.218
	Sig. (2-tailed)	.480	.102	.288	.516	.066

N=77, \*Correlation is significant at the 0.05 level (2 tailed)

#### **f) Education level**

Participants who recorded lifetime abstinence from alcohol were educated up to university level (60%) Only 10% of abstainers were educated up to secondary school level.

Suppression scores showed that individuals who were educated upto secondary school suppressed the most (4.3) compared to those who had college education (3.3), while those with university degree reported a 4.1 score on suppression.

**Table 4.26***Composite Average Scores for Expressive Suppression at Different Education Levels*

<b>Variable</b>	<b>Secondary</b>	<b>College</b>	<b>University</b>
<b>Suppression</b>	4.3	3.3	4.1
<b>AUD prevalence (%)</b>	63	37	17

In an attempt to trace the reasons for the differences in the development of AUD among individuals at different education levels, the use of suppression as an emotion regulation strategy was studied. It was found that individuals who had only up to secondary school education level utilized suppression the most (4.3), and had the highest AUD prevalence (63%), followed by college educated individuals in average scoring 3.3 in suppression. Individuals who had university education with a score of 4.1, a strategy associated with maladaptive behaviors such as alcohol abuse however had the lowest prevalence of AUD (17%)

Individuals in rehabilitation centers whose AUDIT scores indicated they had alcohol dependency, scored the highest in expression suppression (4.5) compared to lifetime abstainers and individuals who had been out of rehabilitation and stayed alcohol free for at least a year (see Table 4.28)

**Table 4.27***Composite averages for Expression Suppression among Individuals with AUD, those Rehabilitated and Lifetime Abstainers*

<b>Variable</b>	<b>With AUD</b>	<b>Rehabilitated</b>	<b>Abstainers</b>
<b>Expression Suppression</b>	4.5	3.6	3.9

#### 4.4. Hypothesis Testing

To study the relationship between AUD and the ability to use expression Suppression when dealing with negative life events, this study hypothesised that;

**H0:** There is no relationship between the use of expression suppression and alcohol use disorder

**H1:** There is a relationship between the use of expression suppression and alcohol use disorder

To adapt any of the above hypotheses, the results were subjected to Pearson's correlation coefficient. Results (see Table 4.28) indicated that there was a positive and significant relationship between the use of cognitive reappraisal and AUD.

**Table 4.28**

*Results of Pearson's Bivariate Correlation Test across Suppression and AUD*

Variable		AUD
Exp. Suppression	Pearson Correlation	0.268*
	Sig. (2-tailed)	0.018

N=78 \*Correlation is significant at the 0.018 level (2 tailed)

According to these findings, increased use of cognitive reappraisal leads to a decrease in AUD. Individuals who employ this emotion regulation strategy when faced by emotionally distressing situations such as death of a spouse, loss of a job or being diagnosed with a terminal disease are more likely to engage in alcohol abuse in attempts to down-regulate their emotions.



According to these findings, increased use of expression suppression leads to an increased likelihood for AUD. To further confirm the hypothesis, the researcher employed multiple regression analysis. From the results, (see Fig 4.29) and using the model;

$$AUD = 0.818 - 0.152Reappraisal + 0.084Suppression$$

Holding Reappraisal and suppression constant, AUD would be 0.818 units. This means that holding reappraisal constant, a unit increase in suppression increases AUD by 0.084 units. Suppression is therefore a significant determinant of AUD at 5% level of significance because the p-value of 0.040 is less than that at 5% (0.05).

**Table 4.29**

**Multiple Regression Results for Reappraisal and Suppression**

Coefficients <sup>a</sup>		Unstandardized Coefficients		Standardized Coefficients	T	P-Value
		B	Std. Error			
1	(Constant)	0.818	0.297		2.753	0.007***
	Reappraisal	-0.152	0.046	-0.349	-3.333	0.001***
	Suppression	0.084	0.040	0.219	2.090	0.040**

**The alternative hypothesis (H1), ‘there is a relationship between the use of expression suppression and alcohol use disorder,’ therefore holds.**

### 4.3.3. Interaction between Reappraisal and Suppression

When reappraisal and suppression are considered individually, they showed significant negative and positive correlations respectively (see figure 4.10; 4.11). When the two variables are considered together, as they correlation to AUD, the effect is very weak. As seen in Model 4, when they are used together, they are insignificant (see Table 4.30 and Figure 4.12).

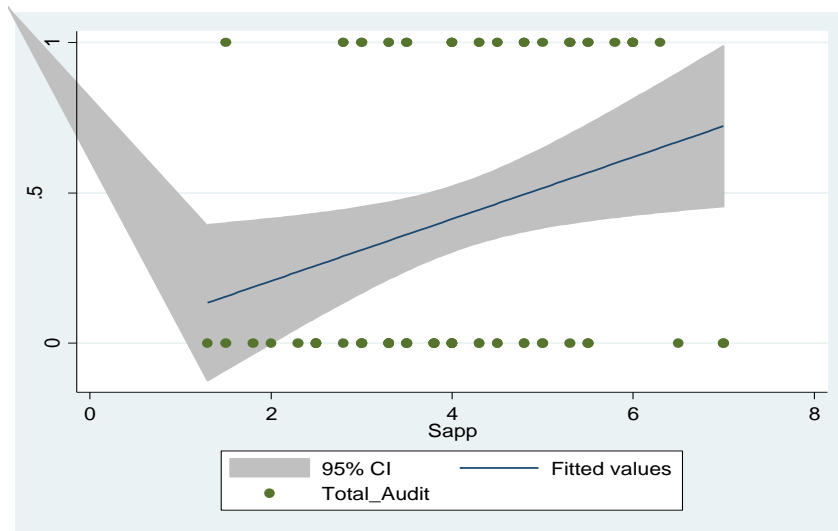
**Table 4.30**

#### **Regressions Models for Reappraisal, Suppression and Reappraisal and Suppression**

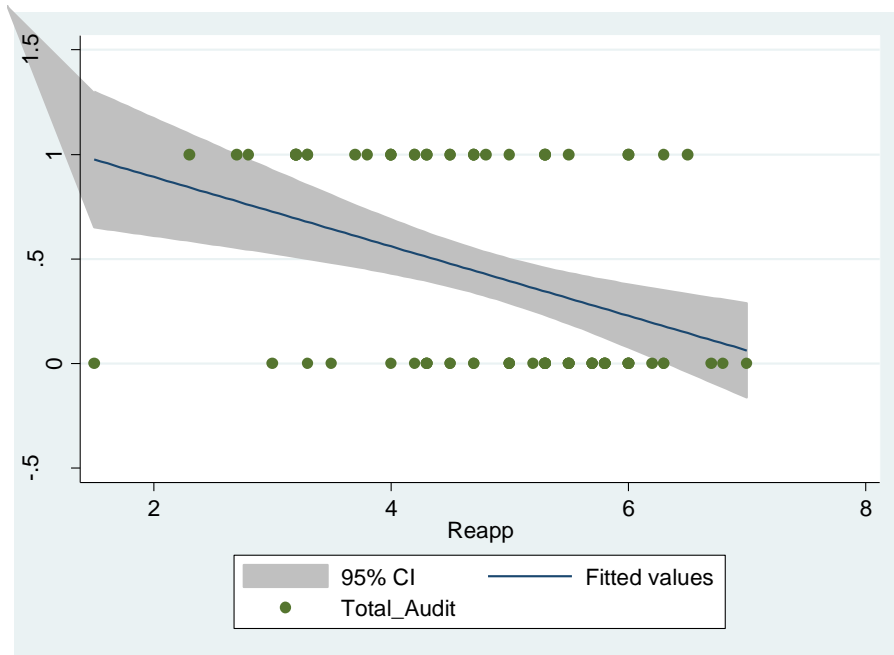
Dependent variable: Total Audit					
Variables	Model1	Model2	Model3	Model4	Model5
Reappraisal	-0.17*** (0.046)			-0.15** (0.046)	-0.07 (0.167)
Suppression		0.10* (0.042)		0.08* (0.040)	0.18 (0.197)
Reap/Supp					-0.02 (0.039)
Constant	1.22*** (0.230)	0.00 (0.182)	19.59*** (0.842)	0.81** (0.299)	0.41 (0.850)
Observations	78	78	78	78	78
R-squared	0.14	0.07	0.00	0.19	0.19
F	12.79	5.95	0.00	8.87	5.94

Standard errors in parentheses

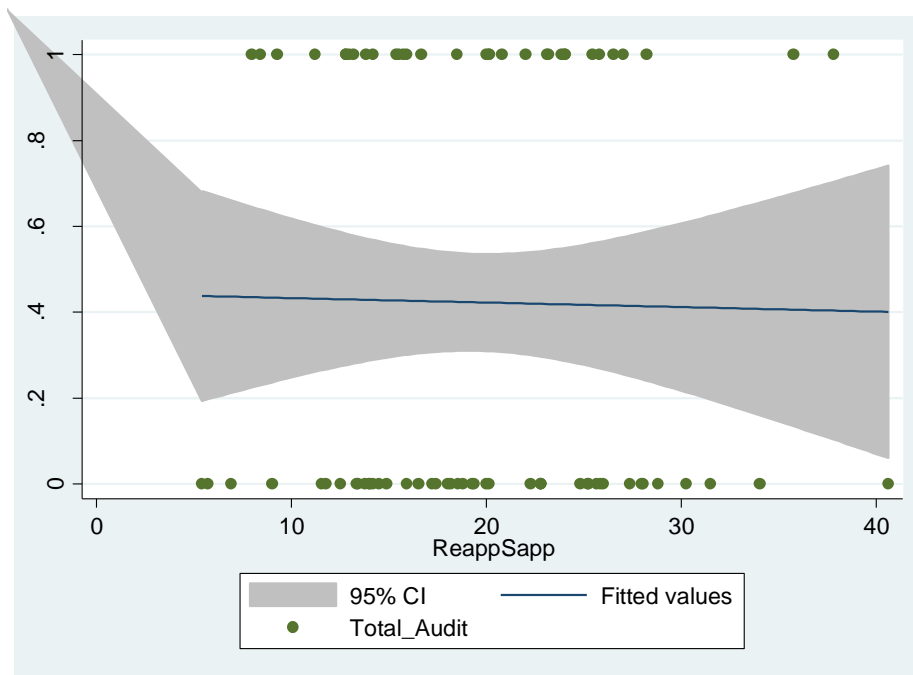
\*\*\* p<0.001, \*\* p<0.01, \* p<0.05



**Figure 4.10 Regression between total AUDIT and Suppression**



**Figure 4.11 Regression between total AUDIT and Reappraisal**



**Figure 4.12: Regression between total AUDIT and Reappraisal/Suppression**

## **CHAPTER FIVE**

### **DISCUSSION**

#### **5.1. Introduction**

The purpose of this study was to explore how Alcohol Use Disorder related to the deployment of two emotion regulation strategies; cognitive reappraisal and expression suppression.

The study was carried out within Kiambu County. Only Kiambu county residents qualified to participate. This lowered interferences due to participant's cultural 'grammar' for behaviour, which molds a society's way of thinking and acting (Heath, 2001) and culture-related emotion regulation differences (John & Gross, 2003). The researcher focused on youth between the ages of 15-35. At this age, youth shift through academic and professional milestones of early adulthood, have new found freedom, some sense of invulnerability, and a strong desire for exploration (Chesang, 2013; Hassan, 2013). This combination of factors makes them vulnerable to alcohol and drug abuse, and predisposes them to the risk of the development of alcohol use and abuse (Chesang, 2013)

The instruments for data collection were carefully explained to the participants, and confidentiality was assured.

#### **5.2. Summary of Findings**

In relation to the study objectives, the study findings are as discussed below.

##### **5.2.1. The Relationship between AUD and the ability to use Cognitive Reappraisal**

The prevalence of alcohol use increased with increasing age peaking at ages 30 to 35. This confirmed earlier findings that drinking frequency increased with age, with youth between

the ages of 16 to 30 abusing alcohol the most (Makela et al., 2006; Chesang, 2013). This could be explained by other findings that at this age, youth have new found freedom, a sense of invulnerability and a strong desire for exploration (Chesang, 2013; Hassan, 2013). This combination makes them vulnerable to alcohol and drug abuse, predisposing them to the risk of the development of alcohol use and abuse (Chesang 2013). The high deployment rate of reappraisal at age 26, and a lower use of this strategy as individuals approach 35 years agrees with other studies that have shown that the use of reappraisal is significantly, and positively correlated to age (Mcrae et al., 2012, Nolen-Hoeksema & Aldao, 2011). In this study, participants in the 31-35 age bracket reappraised the least ( $M=4.4$ ,  $SD=1.03$ ), and had the highest AUD prevalence. Low cognitive reappraisal ability results in less psychological wellbeing, high anxiety and stress. It is positively correlated to maladaptive strategies in dealing with emotionally challenging situations, including alcohol and drug abuse (Bucks, 2013; Troy et al., 2012). This may explain the findings in this study on the relationship between AUD and reappraisal

Men comprised 76% of those with AUD. A Pearson's correlation weakly but positively correlated being male to AUD ( $r=0.154$ ,  $n=77$ ,  $p=0.178$ ), while women were negatively and weakly correlated to AUD ( $r=-0.154$ ,  $n=77$ ,  $p=0.178$ ) (see Table 4.6). This confirms earlier empirical findings that Men abuse alcohol more than women, and as a result, they are at a greater risk of developing AUD (Makela et al., 2006; Schulte et al., 2009). ERQ scores indicated that women utilised reappraisal more than men. A Pearson's correlation coefficient test revealed correlation between gender and reappraisal (see table 4.5). Being male was negatively correlated to reappraisal ( $r=-0.041$ ,  $n=77$ ,  $p=0.723$ ). Being female was positively correlated to reappraisal ( $r=0.41$ ,  $n=77$ ,  $p=0.723$ ). This agrees with earlier

studies showing that women use reappraisal to re-interpret negative situations in positive ways more than do their male counterparts (McRae et al., 2012; McRae, 2008; Nolen-Hoeksema & Aldao, 2011). Men's low score in reappraisal might therefore be a contributing factor in male high rate of AUD as a maladaptive strategy to numb inner emotions (Khantzian, 1997)

Religion has been positively correlated to adaptive self-regulation skills especially cognitive reappraisal (McCullough and Willoughby, 2009). However, when Catholics were contrasted against Protestants, Participants with AUD were found to be mostly Catholics (55%) (see table 4.7). Previous studies confirm the findings that Catholics drunk more compared to individuals from other religious orientations (Mullen, Williams, & Hunt, 1996). This could be explained by Catholic's accommodativeness of alcohol use, and therefore have increased risks of AUD (Engs & Mullen, 1999). However, the current study sought to find interreligious differences emotion regulation strategies. Reappraisal has been shown to lessen the likelihood of an individual's engagement in alcohol abuse when dealing with negative emotional states (John & Gross, 2003; Moore et al., 2008). Catholics scored an average 4.7 in cognitive reappraisal scores (see table 4.7). A Pearson's correlation coefficient results showed that being a Catholic and the use of reappraisal  $r(77) = -0.116$  have a weak negative relationship. Further, being a protestant and the use of cognitive reappraisal  $r(77) = 0.116$  have a weak but positive relationship (see Table 4.8). Again, Catholics were weakly but positively correlated to AUD ( $n = 77, r = 0.167$ ) while protestants were negatively but weakly correlated to AUD ( $r = -0.167$ ). Such differences are likely explanations for possible causes of slightly higher AUD prevalence among Catholics.

Majority of participants who had never used alcohol or any other drug were from families with both parents, and scored the highest in the reappraisal scale ( $M=5.3$ ;  $SD=0.80$ ). A study by Gunzenhauser and others (2014) demonstrated that parental care of both parents models an emotional environment and fosters adaptive emotional reaction. Children brought up in a caring family environment utilized cognitive reappraisal more often even as adults, compared to children or adults brought up in a less caring family environment (Gunzenhauser et al., 2014; John & Gross, 2002; Morris et al., 2007;). Compared to participants brought up as orphans with a 32% AUD prevalence, those from a family with both parents had a low 21% prevalence of AUD. This further confirms that the family environment modelled emotion regulation strategy employed by the children (John & Gross, 2002). However, the findings that orphaned individuals recorded 5.2, the highest mean reappraisal score yet had the highest prevalence of AUD across family history need to be investigated further.

A study by Schulenberg (2012) and others that young people from higher SES families use alcohol more often and in more quantities compared to those of low SES. These previous findings are in contrary to the current study findings. Majority of non-drinkers (64%) were drawn from the lower middle class, while majority (84%) of those with AUD were drawn from the middle class (see figure 4.5). Such contradictions have been shown in SES and alcohol use and abuse relationship (Patrick, Wightman, Schoeni, & Schulenberg, 2012). Although individuals in the upper socioeconomic class reappraised the most (5.7) compared to those in the low class (4.8), there was no patterned use of reappraisal to account for the drinking pattern. This might be attributable to the fact that the incomes reported in the questionnaire were either of self or family since majority of the participants were college going. It might also be explained by other confounding variables such as family background, culture and religious beliefs.

Participants who had only gone up to secondary school level were found to abuse alcohol more than those who had proceeded to tertiary institutions of learning. This is in tandem with findings that low education was positively correlated to regular and heavy drinking (Crum et al., 1993; Schnohr et al., 2004). As shown on table 4.12, scores on the two on emotion regulation strategies studied showed that individuals who had only up to secondary school level utilized reappraisal the least ( $M=4.5$ ;  $SD=1.09$ ) followed by individuals who had college or university education ( $M=4.9$ ;  $SD=0.98$ ). Whereas there is a dearth of studies on what it is in education that determines the level of risk developing AUD. There is a likelihood that educated people have a cognitive advantage over the less educated individuals and are likely to process internal and external emotional pressures better. They may also appraise themselves as able, compared to the less educated folk. This may explain the differences in the use of reappraisal, a strategy that deals with affective situations in a manner that doesn't predispose individuals to maladaptive mannerisms such as alcohol abuse to deal with emotional states unresolved (Khantzian hypothesis, 1997)

Pearson's correlation confirmed reappraisal is negatively correlated to AUD  $r(78) = -.380^*$  (\*significant at the 0.01). These findings confirm earlier experimental and correlation study by Mairean (2015) that cognitive reappraisal mitigates the development of maladaptive behavioural responses such as alcohol use when one is confronted by emotionally arousing situations. Another study found that, compared to nonsmokers, smokers scored low on the reappraisal scale, and smoked with expectations that it would help them manage negative feelings (Fucito et al., 2010).



Emotions result from evaluation of stimuli and formation of the basis of how emotion reactions may be modified and hence regulated (Lazarus & Folkman, 1984). According to appraisal theories, if an appraisal can be changed, then the mood state can be changed, and so can the accompanying emotion reaction behaviours. Lazarus and his students found that the manner in which emotions are reacted to in the face of threatening situations can be 'short-circuited' by altering the way in which such situations are cognitively appraised (Lazarus & Folkman, 1984). Positive psychotherapeutic outcomes are therefore possible through appraisal, as it significantly alters affective responses. This may explain why reappraisal in this study is negatively associated with AUD.

### **5.2.2. The Relationship between AUD and Expression Suppression**

Among abstainers, suppression was found to decrease with increasing age after 20 years. This confirmed previous findings by Traylor (2005) that age is an important consideration in the kind of emotion regulation approach employed. Contrary to these findings, Bucks (2013) showed that older adults (above 65 years) suppressed the expression of emotions more than did middle aged adults (30-64 years). Middle aged in turn suppressed more than younger adults (18-29 years). This could be explained by the fact that emotion regulation has been found to be influenced by other factors such as culture, gender, and family background (Efterkhari et al., 2009; Matsumoto et al., 2008; Yeh et al., 2017). There were no clear patterns on how suppression related to age among individuals with AUD. Comparing the average score of suppression among life time abstainers and participants with AUD yielded the findings that when faced by emotionally arousing situations, participants with AUD suppressed more ( $M=4.5$ ;  $SD=1.2$ ) than did lifetime abstainers ( $M=3.2$ ;  $SD=1.36$ ). Studies have shown that high suppression rate results in boredom and

inner psychological distress. This serves as a predisposing factor to alcohol and drugs abuse as individuals attempt to self-medicate such inner distress resulting from suppression, a maladaptive emotion regulation strategy (John & Gross, 2003; Khantzian, 1997; Toll et al., 2010)

Abstainers scored very low on the suppression scale of the ERQ (3.7 and 3.3 for men and women respectively) Among individuals with AUD, men scored 4.7 (SD=1.17) while women scored 4.0 (SD=1.28) in the suppression scale of the ERQ (see table 4.19). These results are supported by findings that men employed suppression more than women (Mackey et al., 2010; Nolen-Hoeksema & Aldo, 2011). Studies have shown that men and women differ in the physiology of the areas responsible for emotion regulation. For women, the brain regions responsible for affective situations are concerned with emotional processing unlike in men where emotive situations trigger cognitive processing regions of the brain (Yeh et. al., 2017). This may explain the above trends in suppression. Being male was positively and significantly correlated to suppression  $r(77) = 0.362$ , while being female was negatively and significantly correlated to suppression  $r(77) = -0.362$  (see table 4.19). Men reported higher AUD prevalence than women. The use of expression suppression has been shown to suppress positive emotions too. This has been positively correlated to male depressive mood, a risk factor in substance abuse and alcohol abuse (Cogner, 1956).

Christianity has been shown to exhibit a collectivist kind of a culture, which is highly associated with expression suppression (Paloutzian and & Park, 2005). Within two religious formations studied, expression suppression scores showed that Catholics utilized suppression (M=4.7) more than did Protestants (4.2) (see table 4.20). Vishkin and others (2016) argued contrary to these findings that more religious individuals used suppression less. Suppression has been shown as an emotion regulation strategy which could trigger

and maintain alcohol abuse due to its inability to effectively down-regulate emotions (Kenneth & Emily, 2007). This may explain the positive correlation between Catholics and high scores on AUDIT and suppression (see table 4.21)

The findings that individuals raised by single mothers suppressed the least is supported by other findings indicating that mothers have a great influence on the development of emotion regulation (Gunzenhauser et al., 2014) Compared to fathers, mothers have been shown to suppress the least (Mackey et al., 2010). Low suppression scores may therefore explain the low prevalence of AUD among participants from a single mother family background since expressive suppression has been shown to be a maladaptive emotion strategy that may precipitate a drug abuse problem (Kenneth & Emily, 2007). However, when suppression scores are checked across the different family backgrounds, no patterned relationship between the use of suppression and AUD was found. According to the family systems model (Bowen, 1974), alcohol abuse in a family member cannot be explained in isolation. Within the family, other dynamics influence drinking besides emotion regulations strategies such as drinking parents (Saitoh et al., 1992). The quality of care fostered by the family environment and parent's belief systems (Gunzenhauser et al., 2014) and the parenting style (Barros et al., 2016; Chang et al., 2009)

Besides wealth and poverty which have been cited as possible predisposing factors in the development of AUD (NACADA, 2010; Oers, 1999; Schulenberg et al., 2012), expressive suppression has been positively correlated to alcohol abuse (Berking et al., 2011). There is a dearth of research linking SES and the use of suppression. The current study found no patterns in the way individuals in different SESs utilised suppression. This might be because the incomes reported in the questionnaire were not necessarily of self but of family since 62% of the participants were either in college or university.

Results of this study on how individuals in the lower levels of education dealt with emotionally arousing situations indicated that they mostly employed suppression more than the other levels of education. At lower education level (primary or vocational), individuals may lack opportunities to help them meet their financial needs (Crum, 1993). This exposes them to more negative feelings, could be affected by anxiety and depression, which may lead to alcohol intake in attempts to counter negative inner states (Khantzian 1997). Although there is a dearth of literature linking level of education to emotion regulation. The finding that at lower level of education individuals utilized suppression is a pointer to a possible explanation for the high AUDIT scores since suppression is a risk factor in the development of AUD (Berking et al., 2011)

Even with the above confounding variables cited as possible risk factors for the development of AUD, a Pearson's correlation showed a positive and significant relationship between AUD and suppression ( $r(78)=0.268$ ). A relationship significant at the 0.018 level. (see table 4.29). Suppression therefore ought to be an important factor to consider as a risk factor for the development and maintenance of AUD.

Suppression of emotion may lead to inner emotional suffering, which, according to the Khantzian hypothesis (1997), is a critical psychological factor in the use, misuse, abuse and relapse into substances of abuse. This theory traces the etiology of addictive disorders to inner prevailing psychopathologies. Unable to handle their emotions and inner disturbances on their own, individuals turn to alcohol and drugs of abuse to regulate their distress; to down-regulate their emotions. Alcohol in particular has been found to deal with anxiety and tension by reducing them, due to its depressing and tranquilizing effect on the nervous system, such effects then reinforces drinking (Conger, 1956). Drug users are

therefore left with the reinforcing ‘theory’ that alcohol has the ability to ‘heal’ inner turmoil. This is a possible explanation to the findings of this study that suppression is positively correlated to AUD.

### **5.2.3 Interaction between the Tendency to Abuse Alcohol and the Ability to use both Expression Suppression and Cognitive Reappraisal**

When reappraisal and suppression were considered together, regression results showed that there was a negative, weak and insignificant relationship between the two together, and AUD. This confirmed earlier findings that reappraisal and suppression were independent in each sample, and when checked for intercorrelations, the reappraisal subscale was found to be mildly and insignificantly ( $r_s < 0.7$ ) intercorrelated with the suppression scale (Gross and John, 2003). A negative, though weak correlation of the two to AUD are in the correlation direction of reappraisal. The implication here is that reappraisal was utilised to, though very slightly, a greater degree than suppression, and the variation was a high-low on reappraisal-suppression. Such variations confirmed studies by Eftekhari and others (2009) that individuals could employ both reappraisal and suppression but at varying degrees of one dominating the other. The use of reappraisal over suppression or vice versa is therefore more contextual than constant (Hu et al., 2014).

### **5.3 Conclusions**

Alcohol Use Disorder was found to be highly and significantly correlated to emotion regulation strategies; reappraisal (negatively) and suppression (positively). Cognitive reappraisal has been positively correlated with positive effects such as optimism, life satisfaction, high self-esteem, and general psychological wellbeing but negatively

associated with maladjustment challenges such as depression and anxiety. Further, reappraisal has been shown to lessen the likelihood of an individual's engagement in alcohol abuse when dealing with negative emotional states.

With emotions being malleable, caretakers and rehabilitation centers could embrace these findings and include emotion regulation competence training in their programs. This would help individuals deploy the more adaptive emotion regulation strategies in the face of stressful life events.

## **5.4 Recommendations**

### **5.4.1. Recommendations for Practice**

- (i) Rehabilitation centers could focus on behaviour modification strategies targeting the manner in which individuals deal with the little daily pressures of life. Further, rehabilitation centers should emphasize on a history of the patient that could lead to inner emotional tumults that have not yet been dealt with. That way, the problem of alcohol abuse can be attacked from the possible root.

### **5.4.2. Recommendations for Further Research**

- (i) The current study did not establish any causal relationships between AUD and either reappraisal or suppression. It would be important to carry out a longitudinal study beginning with teenage, then follow up participants to see how those who developed AUD reappraised or suppressed without AUD. This will solve the directional 'chicken-egg' dilemma in the current study.
- (ii) Explore other ways in which suppressed emotions may manifest as maladaptive responses AUD, and the role personality plays in informing the manner in which individuals regulate their day to day affective situations.

### **5.4.3. Recommendations for Policy**

- (i) Emotion regulation could be included in school curriculum as a life skill taught among youth as they go through the various developmental milestones in life. This way, young people will have the ability to handle their issues without feeling that they can dissolve them in a bottle of alcohol.

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## APPENDICES

### Appendix I

#### CONSENT TO PARTICIPATE IN THE STUDY

This is a research study designed to investigate how the way in which people deal with emotionally arousing situations may inform their tendency to abuse alcohol. The findings will help to provide better guidelines for helping those with Alcohol Use Disorder to fully recover and choose adaptive ways to deal with their day to day stressful events. Your participation is purely voluntary and you may withdraw and discontinue with it at any time without penalty.

I would like to request you to complete this research questionnaire and help in this noble task.

All the information you give will be treated with ultimate confidentiality.

Kindly sign in the space provided if you agree to participate in the study.

\_\_\_\_\_ I agree to participate in this study.

\_\_\_\_\_ Date

Thank you very much for agreeing to participate in the study.

Yours Respectfully,

Stephen Muthusi Katembu,  
Masters of Psychology Student, University of Nairobi

## Appendix II

### Questionnaire

#### PART I

#### BACKGROUND INFORMATION

Kindly read the following questions carefully, put a tick (✓) in the boxes (☐) and/or fill in the blank spaces appropriately.

Gender:                   ☐ M                   ☐ F

AGE: (years):       ☐ 15-19       ☐ 20-25       ☐ 26-30       ☐ 31-35

Languages Spoken Fluently: \_\_\_\_\_

Level of Education:   ☐ Primary   ☐ Secondary   ☐ College   ☐ University

Marital Status:       ☐ Single       ☐ Married       ☐ Divorced   ☐ Separated   ☐

Widowed

Family History

(Child of): ☐ Single Mother   ☐ Single father   ☐ Both Parents   ☐ Adopted   ☐ Orphaned

Income:

Self/Family: ☐ below 19,000   ☐ 20,000-79,999   ☐ 80,000-139,999   ☐ 140,000-199,999   ☐

Above 200,000

Religion:   ☐ Catholic       ☐ Protestant       ☐ Muslim       ☐ Other \_\_\_\_\_

## **PART II**

### **Alcohol Use Disorders Identification Test (AUDIT)**

Developed in 1982 by the World Health Organization as a way to screen and identify people at risk of alcohol problems.

#### **1. How often do you have a drink containing alcohol?**

- (0) Never (Skip to Questions 9-10)
- (1) Monthly or less
- (2) 2 to 4 times a month
- (3) 2 to 3 times a week
- (4) 4 or more times a week

#### **2. How many drinks containing alcohol do you have on a typical day when you are drinking?**

- (0) 1 or 2
- (1) 3 or 4
- (2) 5 or 6
- (3) 7, 8, or 9
- (4) 10 or more

#### **3. How often do you have six or more drinks on one occasion?**

- (0) Never
- (1) Less than monthly
- (2) Monthly
- (3) Weekly
- (4) Daily or almost daily

**4. How often during the last year have you found that you were not able to stop drinking once you had started?**

- (0) Never
- (1) Less than monthly
- (2) Monthly
- (3) Weekly
- (4) Daily or almost daily

**5. How often during the last year have you failed to do what was normally expected from you because of drinking?**

- (0) Never
- (1) Less than monthly
- (2) Monthly
- (3) Weekly
- (4) Daily or almost daily

**6. How often during the last year have you been unable to remember what happened the night before because you had been drinking?**

- (0) Never
- (1) Less than monthly
- (2) Monthly
- (3) Weekly
- (4) Daily or almost daily

**7. How often during the last year have you needed an alcoholic drink first thing in the morning to get yourself going after a night of heavy drinking?**

- (0) Never
- (1) Less than monthly
- (2) Monthly
- (3) Weekly
- (4) Daily or almost daily

**8. How often during the last year have you had a feeling of guilt or remorse after drinking?**

- (0) Never
- (1) Less than monthly
- (2) Monthly
- (3) Weekly
- (4) Daily or almost daily

**9. Have you or someone else been injured as a result of your drinking?**

- (0) No
- (2) Yes, but not in the last year
- (4) Yes, during the last year

**10. Has a relative, friend, doctor, or another health professional expressed concern about your drinking or suggested you cut down?**

- (0) No
- (2) Yes, but not in the last year
- (4) Yes, during the last year






## Appendix III



### Research Permit

**THIS IS TO CERTIFY THAT:** **Permit No : NACOSTI/P/17/95957/15950**  
**MR. STEPHEN MUTHUSI KATEMBU** **Date Of Issue : 27th March, 2017**  
**of UNIVERSITY OF NAIROBI, 9978-200** **Fee Received :Ksh 1000**  
**Nairobi, has been permitted to conduct**  
**research in Kiambu County**

**on the topic: THE RELATIONSHIP**  
**BETWEEN ALCOHOL USE DISORDER**  
**(AUD) AND COGNITIVE REAPPRAISAL**  
**AND EXPRESSION SUPPRESSION AMONG**  
**YOUTH SEEKING HELP IN**  
**REHABILITATION CENTERS IN KIAMBU**  
**COUNTY**


**for the period ending:**  
**27th March, 2018**


  
**Applicant's Signature**

  
  
**Director General**  
**National Commission for Science,**  
**Technology & Innovation**

**CONDITIONS**

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officer will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

  
**REPUBLIC OF KENYA**

  
**National Commission for Science,**  
**Technology and Innovation**

**RESEACH CLEARANCE**  
**PERMIT**

**Serial No.A 13380**  
**CONDITIONS: see back page**

## Appendix IV

# LETTER OF INTRODUCTION FROM NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION



## NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,  
2241349,3310571,2219420  
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when replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref: No. **NACOSTI/P/17/95957/15950**

Date: **27<sup>th</sup> March, 2017**

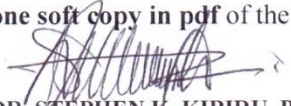
Stephen Muthusi Katembu  
University of Nairobi  
P.O. Box 30197-00100  
**NAIROBI.**

### RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“The relationship between alcohol use disorder (AUD) and cognitive reappraisal and expression suppression among youth seeking help in rehabilitation centers in Kiambu County,”* I am pleased to inform you that you have been authorized to undertake research in **Kiambu County** for the period ending **27<sup>th</sup> March, 2018**.

You are advised to report to **the County Commissioner and the County Director of Education, Kiambu County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

  
**DR. STEPHEN K. KIBIRU, PhD.**  
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner  
Kiambu County.

The County Director of Education  
Kiambu County.