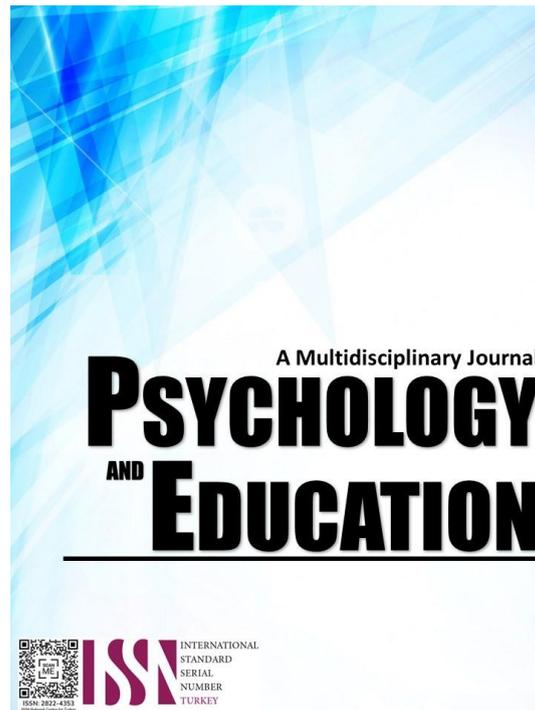


**THE MEDIATING ROLE OF COGNITIVE
REAPPRAISAL BETWEEN CHILDHOOD PHYSICAL
ABUSE AND SUBSTANCE ABUSE AMONG YOUNG
ADULT RESIDENTS IN A SELECTED TREATMENT
AND REHABILITATION CENTER IN BICUTAN**



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The Mediating Role of Cognitive Reappraisal Between Childhood Physical Abuse and Substance Abuse Among Young Adult Residents in a Selected Treatment and Rehabilitation Center in Bicutan

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Abstract

Exposure to early physical abuse is common among individuals with Substance Use Disorder. However, little is known about how cognitive reappraisal affects the relationship between childhood physical abuse and adult substance abuse. The main goal of the study was to identify whether participants reporting experiences of childhood physical abuse were more likely to engage in substance abuse, such as drug abuse and alcohol abuse, and whether cognitive reappraisal played a role in this relationship. Data for the study were from the young adult residents in a treatment and rehabilitation center in Bicutan. Purposive sampling method was used to select the 300 participants. Childhood Trauma Questionnaire, Emotion Regulation Questionnaire, Drug Abuse Screening Test-10 and Alcohol Use Disorder Identification Test were translated into Filipino language. Four steps were followed according to the procedure suggested by the World Health Organization in translating instruments. Results showed that cognitive reappraisal fully mediated the relationship between childhood physical abuse and drug abuse, as well as in the relationship between childhood physical abuse and alcohol abuse.

Keywords: *mediation, cognitive reappraisal, drug abuse, alcohol abuse, childhood physical abuse*

Introduction

Adverse consequences of child abuse on physical and psychological wellbeing among adolescents and adults have been well chronicled (Banducci, Hoffman, Lejuz, & Koenen, 2014; Bonomi, Cannon, Anderson, Rivara, & Thompson, 2008; Herrenkohl, Hong, Klika, Herrenkohl, & Russo, 2013; Karagöz & Däg, 2015; Mandavia, Robinson, Bradley, Ressler, & Powers, 2016; Marshall, Galea, Wood, & Kerr, 2013; Thornberry, Henry, Ireland, & Smith, 2010; Walton et al., 2011). One area of consequence has been substance abuse. Children who have experienced physical abuse are at higher risk for having Substance Use Disorders (Thornberry et al., 2010). A study suggests that individuals use substance as their coping mechanism to repudiate the impact of their adverse experiences even in a short period of time (Afifi et al., 2012). Thus, substance abuse often transpires as a maladaptive strategy to blunt or dampen the emotional discomfort of an earlier trauma (Mandavia et al., 2016). Another important factor for substance abuse is emotion regulation. Emotion regulation refers to the set of processes by which emotions are themselves regulated (Gross, 1999). Approximately, about 75% of the mental disorders included in the Diagnostic and Statistical Manual of Mental Disorders are presented with problems related to emotion and emotion regulation (Werner & Gross, 2010).

Since thought and behavior are functions of emotions, any defect in emotional system can lay the ground for several mental disorders. Thus, emotion regulation, as a framework, might be useful in understanding mental disorders. Also, emotion regulation, as a construct, might be useful in diagnosing and treating mental disorders. In this perspective, emotion regulation strategies have been proposed as possible diagnostic features, as a predictor of mental disorders, as a mediator of change, or even as an outcome of psychotherapy (Rottenberg & Gross, 2007).

One commonly used and highly adaptive emotion regulation strategy is cognitive reappraisal. Cognitive reappraisal is an antecedent-focused strategy wherein an individual changes how he or she thinks about the situation in order to change its emotive impact. It was found to be highly adaptive and individuals who habitually use this emotion regulation strategy show greater well-being (Gross & John, 2003). The development of emotion regulation strategies takes place during infancy to childhood. Thus, experiencing abuse in childhood is a vulnerability factor for emotion regulation difficulties in adulthood (Shields, Ryan, & Cicchetti, 2001). Subsequently, studies showed that emotion regulation difficulties were related to the initiation and continuation of substance use (Aguilar de Arcos et al., 2008; Bonn-Miller, Vujanovic, & Zvolensky, 2008; Dorard, Berthoz, Phan, Corcos, & Bungener, 2008).



Substance abuse is considered as a major biopsychosocial problem worldwide. An estimate of 275,000,000 individuals worldwide, with ages 15 – 64, used illicit drug in the year 2016. Along with, an estimate of 450,000 individuals died in the year 2015 as a consequence of drug use. Whilst, an estimate of 2,300,000,000 individuals worldwide, with ages 15 and above, consumed alcohol in the year 2016. Along with, an estimate of 3,300,000 individuals died every year as a consequence of alcohol use. Substance abuse causes a substantial medical and social burden, not only for those who abuse substances, but also to the society in general (World Health Organization, 2017). Some substance abusers engaged in other types of disruptive behavior. Reports of crimes related to substance abuse are common in the Philippine media. Moreover, some local and international articles state that the Philippines is tagged as the country having the highest rate of methamphetamine use in the whole East Asia (Esplanada, 2012) and second highest rate of alcohol consumption (Drug and Alcohol Rehab Asia, 2019). With this, it does seem that substance abuse is a serious problem in the Filipino community that needs to be addressed.

For the reason that exposure to child physical abuse increases the probability of having difficulties in emotion regulation, and emotion regulation difficulties increases the probability of engaging to substance abuse, it is probable that individuals' ability to regulate their emotions could be a pathway through which childhood physical abuse heightens or lessens the probability of engaging to substance abuse (Banducci et al., 2014).

The emotion regulation skills of an individual seem to have a critical role in psychological functioning, particularly for an individual who experienced childhood physical abuse such that it may change the trajectory of the outcomes. Despite this, little is known about how cognitive reappraisal affects the relationship between childhood physical abuse and substance abuse (Mandavia et al., 2016). This present study examined a clinical sample of participants focusing on the relationships between childhood physical abuse, cognitive reappraisal, drug abuse and alcohol abuse. The principal objective of this study was to identify whether participants who reported of childhood physical abuse were more likely to be involved in drug abuse and alcohol abuse and whether cognitive reappraisal played a role between these relationships. Some noteworthy limitations of the study should be noted. Firstly, the sample was not randomly selected, nor was it representative of all treatment and rehabilitation centers in the Philippines.

The results would only be generalized to the young adult residents of Department of Health Treatment and Rehabilitation Center - Bicutan. Therefore, it cannot be presumed that the results would be generalizable to all drug abusers and alcohol abusers in all treatment and rehabilitation centers. Secondly, the data collection related to the childhood physical abuse was limited to retrospective report using a self-report questionnaire. Thirdly, as the study design was non-experimental, this work centered on examining relationships rather than cause and effect associations.

The result of this study might be of great benefit to individuals who experienced childhood physical abuse and individuals who engaged in drug abuse and alcohol abuse as this study could be a basis for enhancement of the treatment programs. This study could also be beneficial to clinical psychologists in the addressing the treatment need of their clients who experienced childhood physical abuse and/or engaged in drug abuse and alcohol abuse. Integrated interventions that specifically target these related features could provide a more comprehensive progress, though a distinctly more empirical research is required. This study could also be beneficial to the future researchers as this study could contribute to the literature.

Research Questions

The objective of the present study was to test the relationships among childhood physical abuse, cognitive reappraisal, drug abuse and alcohol abuse. It was hypothesized that the positive relationships between childhood physical abuse and drug abuse as well as childhood physical abuse and alcohol abuse would be mediated by cognitive reappraisal. Thus, the following research questions were established to facilitate the study:

1. Are there significant relationships among childhood physical abuse, cognitive reappraisal, drug abuse and alcohol abuse?
2. Is cognitive reappraisal a significant mediator in the relationship between childhood physical abuse and drug abuse?
3. Is cognitive reappraisal a significant mediator in the relationship between childhood physical abuse and alcohol abuse?

Literature Review

The review of the literature is divided into seven parts. The first to third part provides a general overview of

childhood physical abuse, cognitive reappraisal, and substance abuse, respectively. Section four explores the relationship between childhood physical abuse and substance abuse. Section five discusses the relationship between childhood physical abuse and cognitive reappraisal. Section six explores the relationship between cognitive reappraisal and substance abuse. Section seven explains the relationship between childhood physical abuse, cognitive reappraisal and substance abuse.

Childhood Physical Abuse

Child physical abuse rises alarmingly and is regarded as one of the main health issues in the Philippines. The Philippine National Police report on crime against children revealed that around 6,000 cases of children victims of sexual and physical abuse were reported to Philippine National Police all over the Philippines (PNP, 2005). However, it is significant to know that these numbers are only based on reported cases, not on how many children are really abused sexually and physically every year. Unreported cases of child physical abuse are one of the dilemmas in having accurate statistics.

Child physical abuse happens when someone commits an act that results in physical injury to a child. This includes injury from inappropriate punishments (Sneddon, 2003). In the Philippines, child physical abuse is common in the form of parental discipline (Sanapo & Nakamura, 2011; Runyan et al., 2010). According to the national study conducted by the Council for Welfare of Children (CWC) and United Nations Children's Fund (UNICEF), two out of three children experienced physical violence (CWC & UNICEF, 2015). The noticeable, observable, and tangible characteristics of physical abuse make it easier to define compared to the other kinds of abuse. Being physically abused in a developed country in comparison to a developing country might feel the same to the skin but might be easier to overcome in developed countries where helping institutions and organizations are accessible (Lindell, 2004). Numerous studies have showed both the short-term and long-term consequences of child physical abuse that a victim can have (Lansford et al., 2007; LeBaron, 2010; Futa, Nash, Hansen, Garbon, 2003). Individuals who experienced childhood physical abuse may have psychological maladjustments and need to use numerous coping mechanisms to deal with the traumatic memories. (Futa et al., 2003). Individuals who experienced childhood physical abuse has a higher risk for anxiety, depression, and suicide in comparison with unexposed individuals (Klika &

Herrenkohl, 2013; Irish, Kobayashi, & Delahanty, 2010; Fallon et al., 2010).

Cognitive Reappraisal

Emotion regulation refers to the processes by which we influence which emotions we have, when we have them, and how we experience and express them (Jazaieri, Heather, & Gross, 2013). It means that someone may regulate their emotions to decrease, increase, or alter them depending on their goals (Seligowski & Orcutt, 2015). The Gross' process model of emotion regulation differentiated the two types of emotion regulation strategies depending on the point in time in which they are deployed in relation to the onset of the emotion to be regulated. Antecedent-focused strategies (e.g., cognitive reappraisal) are deployed before the emotion has taken full form; conversely, response-focused strategies (e.g., expressive suppression) are deployed after the emotion has taken full form. Taken into account that the antecedent-focused strategies are deployed before emotional activation, they are highly effective in the regulation of emotion compared to the response-focused strategies (Butler et al., 2003; Denson, Grisham, & Moulds, 2011; Dillon, Ritchey, Johnson, & LaBar, 2007; Goldin, McRae, Ramel, & Gross, 2008; Gross, 1998; Richards & Gross, 2000). In particular, the use of cognitive reappraisal has been associated with higher level of well-being, greater experience and expression of positive emotion, better cognitive functioning, and better social functioning. (Gross & John, 2004).

Cognitive reappraisal involves thinking of a situation differently in order to change its emotional impact (Gross, 1998). Researches on this emotion regulation strategy suggest that cognitive reappraisal is highly effective in changing the emotional impact of an emotion-eliciting situation. (Butler et al., 2003; Dillon et al., 2007; Goldin, et al., 2008; Gross, 1998; Richards & Gross, 2000). As an adaptive emotion regulation strategy, it reduces both the inner experience and outward expression of an emotional episode, and represents an individual's capability to upgrade positive emotions and/or downgrade negative emotions (Gross, 2002). Cognitive reappraisal entails using cognitive processes to reframe or reinterpret the meaning of stimulus or situation in order to up-regulate or down-regulate the emotions that can lead to psychological flexibility and emotional well-being (Gross & Thompson, 2007). A study revealed that individuals who used cognitive reappraisal more frequently had greater affective functioning, cognitive functioning, social functioning, and wellbeing (John &

Gross, 2004). Furthermore, experimental studies revealed that cognitive reappraisal gives a positive effect in the affective domain by reducing the unpleasant emotion experience and altering the subjective unpleasant emotion experience without increase any in physiological activation (Brans, Koval, Verduyn, Lim & Kuppens, 2013; Gross, 2002).

Substance Abuse

Substance abuse refers to the harmful or hazardous use of psychoactive substances, including alcohol drinks and illicit drugs (WHO, 2017). Substance abuse is one of the world's most serious concerns threatening individuals of every age, gender, race, and socioeconomic status. The Philippines is no exception. Millions of Filipinos nationwide are abusing substances particularly alcoholic drinks and illicit drugs. There are various reasons why people use substance. This includes to feel better, to do better, and to fit in (National Institute on Drug Abuse, 2014). There were 1,800,000 drug users in the Philippines, accounting for 1.8% of the total population (Dangerous Drug Board, 2016). Furthermore, the International Narcotics Control Strategy Report states that the most abused illicit drug in the Philippines is "shabu" (street name for methamphetamine) and the second most abused illicit drug is "marijuana" (other name for cannabis). Cocaine was infrequent in the Philippines because of the high price and low demand; on the other hand, club drugs such as ecstasy became frequent (Bureau for International Narcotics and Law Enforcement Affairs, 2017). Additionally, alcohol abuse is a growing concern in the Philippines. Based on an article, an estimate of 5,000,000 Filipinos drink on a fairly regular basis and an estimate of 40% of the population drink on an irregular basis (Drug and Alcohol Rehab Asia, 2019).

Substance abuse can also cause social and legal problems. Alcohol drinking is socially and legally unacceptable for minors while drug use is socially and legally unacceptable at any age. Republic Act No. 9165 or the "Comprehensive Dangerous Drugs Act", states that: "Section 15. Use of Dangerous Drugs. - A person apprehended or arrested, who is found to be positive for use of any dangerous drug, after a confirmatory test, shall be imposed a penalty of a minimum of six (6) months rehabilitation in a government center for the first offense, subject to the provisions of Article VIII of this Act. If apprehended using any dangerous drug for the second time, he/she shall suffer the penalty of imprisonment ranging from six (6) years and one (1) day to twelve (12) years and a fine ranging from Fifty thousand pesos (P50,000.00) to

Two hundred thousand pesos (P200,000.00)". Presidential Decree No. 1619 or the "Penalizing the Use or Possession or the Unauthorized Sale to Minors of Volatile Substances for the Purpose of Inducing Intoxication or in any Manner Changing, Distorting or Disturbing the Auditory, Visual or Mental Process", states that: "Section 6. The sale of, and offer to sell, to minors of liquors or beverages containing an alcoholic content of thirty per centum or above (60 proof or above) is hereby prohibited and shall be punishable by imprisonment ranging from six months and one day to four years and a fine ranging from six hundred to four thousand pesos".

Childhood Physical Abuse and Substance Abuse

Child abuse has consistently been linked with incrementally worse consequences, including increased occurrence of psychological symptoms and increased vulnerability to psychological disorders (Ekinici & Kandemir, 2014; Fishbein, Novak, Krebs, Warner, & Hammond, 2011; Mandavia et al., 2016; Banducci et al., 2014; Reinert & Edwards, 2009). Children who experienced abuse have a higher probability for substance use, misuse and dependence in adulthood (Thornberry et al., 2010). Individuals who were exposed to multiple adverse childhood experiences (ACEs) were more likely to have poor overall health, low life satisfaction, frequent anxiety and depressive symptoms, and frequent substance use (Mersky et al., 2013). A study examined the relationships among the different types of childhood abuse (physical abuse, physical neglect, sexual abuse, emotional abuse, and emotional neglect) and different substance use. It revealed that all five types of abuse increased the probability of substance use. The study suggested that individuals used substance as their coping mechanism to refute the impact of their adverse experiences even in a short period of time (Afifi et al., 2012).

Childhood Physical Abuse and Cognitive Reappraisal

Emotional development takes place throughout infancy and childhood. Thus, experience of abuse in childhood is a vulnerability factor for emotion regulation difficulties in adulthood (Shields et al., 2001). Interactions with parents and other significant adults can facilitate the development of emotion regulation strategies among children. When the home environment is unconstructive or uncooperative wherein appropriate emotional expression is chastised or condoned, it could lead to emotion regulation problems (Bariola et al., 2011). One explanation for

this is that children are still in the developing stage, and their cognitive abilities are still developing. Thus, children who experienced physical abuse find it difficult to adapt cognitive strategies in regulating their emotions effectively, such as cognitive reappraisal (DeCicco, Solomon, & Dennis, 2012). Childhood physical abuse could possibly produce negative appraisals. Negative reappraisals may arise as a way to resolve cognitive dissonance that arises when being hurt by a caregiver (Briere, 1992). In addition, a study also revealed that an individual who reported adverse childhood experiences were less likely to utilize cognitive reappraisal in regulating their emotions (McGath, 2019).

Cognitive Reappraisal and Substance Abuse

Emotion plays a significant role in increasing and decreasing the probability for substance use (Kober, 2014). Studies showed that difficulties in emotion regulation is related to the initiation and continuation of substance use (Aguilar de Arcos et al., 2008; Bonn-Miller, Vuyanovic, & Zvolensky, 2008; Dorard, Berthoz, Phan, Corcos, & Bungener, 2008). A study also revealed that there is a significant relationships between emotion regulation difficulties and drug abuse (Nikmanesh, Kazemi, & Khosravi, 2015); and emotion regulation difficulties and alcohol abuse (Dvorak, Pearson, Sargent, Stevenson, & Mfon, 2016). This relationship is supported by the self-medication hypothesis of substance use disorders, which suggests that an individual engage in substance use in response to difficulty regulating emotions. Experiencing negative emotions is inevitable among individuals. However, a lack of ability to employ cognitive reappraisal in regulating such negative emotions could lead them to substance use in order to forget, even in a short period of time, the unwanted feelings of negative emotion experience (Khantzian, 1997). In addition, another study also suggested that individuals with higher levels of emotional distress could engage in substance use in order to manage negative emotions (Aldao et al., 2010).

Childhood Physical Abuse, Cognitive Reappraisal and Substance Abuse

A study suggests that traumatic experiences could stimulate negative emotions that are difficult for individuals to manage and could plausibly lead to substance abuse in effort to self-medicate (Garland, Pettus- Davis, & Howard, 2013). Thus, individuals who have inadequate emotion regulation strategies resort to substance abuse to manage strong negative emotions. Emotion regulation difficulties are frequent

across various psychological disorders including Substance Use Disorders, and is considered as a vulnerability factor for both the initiation and continuation of psychological problems (Saxena, Dubey, & Pandey, 2011). The development of emotion regulation strategies takes place during infancy to childhood. Thus, experiencing abuse in childhood is a vulnerability factor for emotion regulation difficulties in adulthood (Shields, Ryan, & Cicchetti, 2001). Subsequently, studies showed that emotion regulation difficulties were related to the initiation and continuation of substance use (Aguilar de Arcos et al., 2008; Bonn-Miller, Vuyanovic, & Zvolensky, 2008; Dorard, Berthoz, Phan, Corcos, & Bungener, 2008). Another study revealed the relationships between child abuse and emotion dysregulation in samples having Substance Use Disorders (Banducci et al., 2014).

Methodology

The cross-sectional-explanatory design was adopted because the data was collected from a single time period using self-reported questionnaires and the objective of the study was to explain how cognitive reappraisal affects the relationship between childhood physical abuse and drug abuse as well as in the relationship between childhood physical abuse and alcohol abuse (Johnson, 2001).

In this study, mediation analysis was utilized to explain how cognitive reappraisal can affect the relationship between childhood physical abuse and drug abuse as well as the relationship between childhood physical abuse and alcohol abuse (Baron & Kenny, 1986). The mediator is a variable that explains the relationship between a predictor and an outcome (Frazier, Tix, & Baron, 2004). In this study, the mediating variable was cognitive reappraisal, the predictor was childhood physical abuse, and the outcomes were drug abuse and alcohol abuse.

Participants

The data for this study were from the young adult residents of the Department of Health Treatment and Rehabilitation Center – Bicutan. The sample for this study consisted of 300 residents. This sample size is consistent with the result of a power calculation assuming 5% margin of error, an alpha of 0.05, and a population of 500. Purposive sampling techniques were done for the selection of samples. To be eligible for participation, the participants must be (a) male and female residents from 20 to 35 years old because these ages may have established well-formulated thoughts

about their childhood experiences and may have a better recollection in comparison with an older populace (Sarmiento & Rudolf, 2017); (b) residents who were done with detoxification stage, this was to make sure that they were sober enough to give a well-founded response (Bernstein et al., 2003; Saunders et al, 1993); (c) residents who have no significant mental impairments; (d) residents who experienced childhood physical abuse; (e) residents who are able to read, write and understand the Filipino language; and (f) residents who are able to give informed consent. Participants who were not able to finish answering the questionnaires and decided to withdraw from the study were excluded.

Instruments of the Study

For the reason that most of the target participants could hardly understand English language, The Childhood Trauma Questionnaire (CTQ), Emotional Regulation Questionnaire (ERQ), Drug Abuse Screening Test - 10 (DAST-10), and Alcohol Use Disorders Identification Test (AUDIT) were translated to the Filipino language. Permissions to translate the instruments were sought from the authors.

Childhood Trauma Questionnaire – Filipino Translation. The Childhood Trauma Questionnaire (CTQ) is a 28-item self-report measure of childhood abuse (Bernstein et al., 2003). Items are rated on a Likert-like scale ranging from 1 = never true to 5 = always true. This questionnaire was used to assess overall severity of child abuse exposure. Bernstein and Fink (1998) have established cut scores for none or minimal, low, moderate, severe experience of physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect. A score ranging from 0 – 7 is categorize as having none or minimal experience of childhood physical abuse. A score of 8 – 9 is categorize as having low experience of childhood physical abuse. A score of 10 – 12 is categorize as having moderate experience of childhood physical abuse whereas a score of 13 and above is categorize as having severe experience of childhood physical abuse (Bernstein et al., 2003). It has an internal consistency of $\alpha = 0.83$ for childhood physical abuse subscale, $\alpha = 0.95$ for childhood sexual abuse subscale, and $\alpha = 0.86$ for childhood emotional abuse subscale (Mandavia et al., 2016). The scale is not intended for use with children younger than 12 years old (Bernstein et al., 2003). For the present study, only the childhood physical abuse subscale was computed as a measure of childhood physical abuse (Bernstein et al., 2003). The Cronbach's alpha of the CTQ-FT childhood physical abuse subscale in the present study was 0.90.

Emotion Regulation Questionnaire – Filipino Translation. The Emotional Regulation Questionnaire (ERQ) is a 10-item self-report measure of emotion regulation. Items are rated on a Likert-like scale ranging from 1 = strongly disagree to 7 = strongly agree. This questionnaire was used to assess individual's habitual use of two specific emotion regulation strategies which are cognitive reappraisal and expressive suppression. It has an internal consistency of $\alpha = 0.79$ for cognitive reappraisal and $\alpha = 0.73$ for expressive suppression. The cognitive reappraisal scale has six (6) items and the expressive suppression scale has four (4) items. Having a higher score compared to the other emotion regulation strategy indicates greater use of that particular emotion regulation strategy. The test-retest reliability across three months for cognitive reappraisal and expressive suppression were 0.69 for both scales. This suggests that scores on both subscales were relatively stable over time (Gross & John, 2003). Sample item for ERQ-FT includes “Kapag gusto kong makadama ng mas positibong emosyon (tulad ng kagalakan o kasiyahan), binabago ko ang aking iniisip”. For the present study, only the cognitive reappraisal subscale was computed as a measure of cognitive reappraisal (Gross & John, 2003). The Cronbach's alpha of the ERQ-FT cognitive subscale in the present study was 0.87.

Drug Abuse Screening Test – 10 – Filipino Translation. The Drug Abuse Screening Test - 10 (DAST- 10) was developed by Harold A. Skinner in 1982. It was used to assess drug use and consequences, including neuro-adaptive symptoms, with 10 items answerable by yes or no, for a maximum possible score of 10. A score of zero indicates that no evidence of drug related problems was reported and a score of one to two indicates low risk. A score of three to five indicates a risk of health problems related to drug use and a possible mild or moderate Substance Use Disorder whereas a score of six and above indicates a risk of health problems related to drug use and a possible moderate or severe Substance Use Disorder. The questionnaire had an internal consistency of $\alpha = 0.92$ (Skinner, 1982). This questionnaire took around five (5) minutes to accomplish. The DAST10 should not be given to those who are currently under the influence of drugs, or those who are experiencing a drug withdrawal reaction. The reliability and validity of the said questionnaire would be questionable under these circumstances. Thus, one should ensure that the clients are detoxified before administering the DAST-10 (Yudko, Lozhkina, & Fouts, 2007). Sample item for the Filipino translation of DAST-10 includes “Gumagamit ka ba ng mga gamot maliban doon sa

mga kinakailangan sa kadahilanang medikal?” The Cronbach’s alpha of the DAST-10- FT in the present study was 0.78.

Alcohol Use Disorders Identification Test – Filipino Translation. The Alcohol Use Disorders Identification Test (AUDIT) was developed by the World Health Organization (WHO) in 1989. It was used to assess alcohol consumption and consequences with 10 items answerable by choosing from given choices, for a maximum possible score of 40. A score of zero indicates that no evidence of alcohol related problems was reported and a score of one to seven indicates low risk. A score of eight to fifteen are recommended as indicators of hazardous and harmful alcohol use whereas a score of sixteen and above are recommended as indicators of possible alcohol dependence. The questionnaire had internal consistency ranging from 0.75 to 0.94 (Allen, Litten, Fertig, & Babor, 1997). A study shows that the performance of the AUDIT questionnaire was high. With a cut-off of five (5), the AUDIT had a sensitivity of 0.94, a specificity of 0.92, a positive predictive value of 0.89, and a negative predictive value of 0.95 (Adewuya, 2005). This questionnaire took around ten (10) minutes to accomplish. Sample item for the Filipino translation of AUDIT includes “Gaano kadalas ka uminom ng mga inuming nakalalasing?” The Cronbach’s alpha of the AUDIT-FT in the present study was 0.87.

Procedures

Before the data collection, an ethics review approval was obtained from the University of Santo Tomas Graduate School - Ethics Review Committee (USTGS-ERC) in order to protect the well-being of the participants, as well as to ensure that the appropriate ethical standards are being upheld. Once approved by the USTGS-ERC, the researcher sent a request letter for data collection to the director of the chosen treatment and rehabilitation center. The letter stated the purpose of the study and asked for permission to collect data from the residents of the treatment and rehabilitation center. Once permitted by the chosen treatment and rehabilitation center, the researcher sought help from the psychologists to determine the potential participants for the study. The selected participants were asked personally by the researcher to participate in the study. The researcher informed the participants about the purpose of the research. Those who agreed to participate in the study were given an informed consent form, and all were made aware of the procedures, risks, benefits, anonymity, confidentiality and freedom to withdraw without

penalty. Those who agreed to participate in the study were given a battery of tests. The battery of test was administered by group. Each group was consisted of twenty (20) participants to ensure that the researcher can accommodate all of their queries and clarifications during the data collection. The validated Filipino versions of the tests were the ones given to the respondents. This took approximately forty (40) minutes to one (1) hour for the participants to finish the battery of tests.

The questionnaires were presented in the following order: Demographic Information Form, Childhood Trauma Questionnaire – Filipino Translation (CTQFT), Emotion Regulation Questionnaire – Filipino Translation (ERQ-FT), Drug Abuse Screening Test – 10 – Filipino Translation (DAST-10-FT) and Alcohol Use Disorder Identification Test – Filipino Translation (AUDIT-FT). Importantly, the researcher made sure that the participants underwent a debriefing session, given by the resident psychologists after they answered the questionnaires given to them considering that some of the items were sensitive.

Ethical Considerations

Permission to use and translate questionnaires was sought from the original authors of the questionnaires. Before data collection, an ethics review approval was obtained from the University of Santo Tomas Graduate School Ethics Review Committee (USTGS-ERC) in order to protect the well-being of the participants, as well as to ensure that the appropriate ethical standards are being upheld. Once approved by the USTGS-ERC, the researcher sent a request letter for data collection to the director of the chosen treatment and rehabilitation center. The letter stated the purpose of the study and asked for permission to collect data from the residents of the treatment and rehabilitation center. Once approved by the director of the treatment and rehabilitation center, the researcher proceeded with the data collection of the study.

The participants were given a complete description of the research plan and were advised that declining to participate in the research would not have any effect on their treatment and rehabilitation. Informed consent was also given to the participants. To ensure anonymity and confidentiality, all participants were identified by a code name/number. Once the data were collected, it was stored in a locked file cabinet to which only the researcher had access. Participants were also informed that the contents of the data collected would be discussed with the researcher’s adviser at the University of Santo Tomas – Graduate

School. Additionally, the researcher made sure that the participants underwent a debriefing session given by the resident psychologists after they answered the questionnaires given to them considering that some of the items were sensitive. Snacks were given after the data collection as a simple token of appreciation to the participants for their time and involvement.

Results

This section shows the information collected by the researcher from the hundred (300) young adult residents in a treatment and rehabilitation center in Bicutan. The mean age of the participants is 28.14 (SD = 4.23). Majority of the participants were males (n = 205; 68%) compared with females (n = 95; 32%).

Table 1 shows the correlations among all variables used in the mediation analyses. Specifically, it represents the correlations among childhood physical abuse, cognitive reappraisal, drug abuse and alcohol abuse.

Table 1. Variable Correlations, Mean Scores and Standard Deviations

	Drug Abuse	Alcohol Abuse	Cognitive Reappraisal	M	SD
Drug Abuse				3.78	2.48
Alcohol Abuse	0.405			10.10	8.02
Cognitive Reappraisal	-0.464	-0.223		20.54	9.69
Childhood Physical Abuse	0.311	0.204	-0.507	12.22	4.83

Note: n = 300; *p < 0.05; M = Mean Score; SD = Standard Deviation

Table 2 shows the regressions among all variables used in the mediation analyses. Specifically, it represents the regressions among childhood physical abuse, cognitive reappraisal, drug abuse and alcohol abuse.

Table 2. Regressions for Cognitive Reappraisal, Drug Abuse and Alcohol Abuse

	Predictor	Outcome	B	SE	t(298)	
Drug Abuse	Path C	CPA	DA	0.09	0.02	5.65
	Path A	CPA	CR	-0.88*	0.09	-10.16
	Path B	CR	DA	-0.07*	0.01	-9.96
Alcohol Abuse	Path C	CPA	AA	0.17*	0.05	3.61
	Path A	CPA	CR	-0.88*	0.09	-10.16
	Path B	CR	CPA	-0.08*	0.03	-2.45

Note: n = 300; *p < 0.05; B = Regression Coefficient; SE = Standard Deviation; CPA = Childhood Physical Abuse; DA = Drug Abuse; CR = Cognitive Reappraisal; AA = Alcohol Abuse

Figure 1 presents the mediation analysis predicting the relationship between childhood physical abuse and drug abuse through cognitive reappraisal.

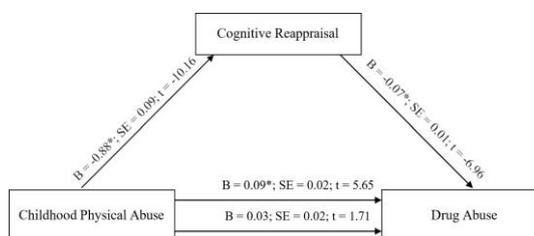


Figure 1. A mediation model of childhood physical abuse and drug abuse through cognitive reappraisal. *p < 0.05.

Figure 2 presents the mediation analysis predicting the relationship between childhood physical abuse and alcohol abuse through cognitive reappraisal.

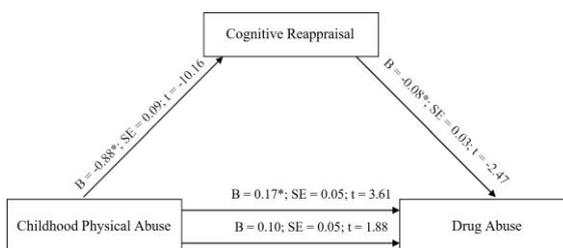


Figure 2. A mediation model of childhood physical abuse and alcohol abuse through cognitive reappraisal. *p < 0.05.

Discussion

Alcohol abuse had a significant positive correlation with drug abuse (r = 0.405). A study revealed that there was a strong association between alcohol abuse and drug abuse. (McCabe, Cranford, Morales, & Young, 2006). The prolonged consumption of alcohol heightens an individual's tolerance, thus needing more of the substance to attain the same effects (Galbicsek, 2019). Results generated from this study also revealed that cognitive reappraisal had significant negative correlations with drug abuse (r = -0.464) and alcohol abuse (r = -0.223). This suggests that as an individual

increases the use of cognitive reappraisal, the likelihood of engaging into drug abuse and alcohol abuse decreases, and vice versa. The findings were consistent with the studies stating that inability to utilize cognitive reappraisal as an emotion regulation strategy was related to drug abuse (Xin et al., 2014) and alcohol abuse (Katembu, 2018). Since cognitive reappraisal changes the emotional impact of a distressing or disturbing events by changing what they think about those events in a more positive way, individuals who lack the ability to employ it might use other coping mechanism, such as drug abuse and alcohol abuse, to experience momentary relief (Zhu, 2017). The findings of this study also revealed that childhood physical abuse had significant positive correlations with drug abuse ($r = 0.311$) and alcohol abuse ($r = 0.204$). This result backed up the findings of a correlational study claiming that childhood physical abuse was associated with the initiation and continuation of drug use and alcohol use (Darke & Torok, 2013).

In addition, it also revealed that childhood abuse had significant negative correlation with cognitive reappraisal ($r = -0.507$). Childhood abuse may trigger a cascade of developmental disruption that may influence the development of adaptive emotion regulation strategies. Hence, childhood physical abuse may hinder the development of adaptive emotion regulation strategies because of the effect of the trauma (McGath, 2019).

Childhood physical abuse is a significant predictor of drug abuse ($B = 0.09$, $SE = 0.02$; $t(298) = 5.65$; $p < 0.05$). This means that individuals who experienced childhood physical abuse were more likely to engage in drug abuse. It also reveals that childhood physical abuse is a significant predictor of cognitive reappraisal ($B = -0.88$, $SE = 0.09$, $t(298) = -10.16$; $p < 0.05$). This suggests that individuals who experienced childhood physical abuse tend to use cognitive reappraisal as their emotion regulation strategy less frequently. It also shows that cognitive reappraisal significantly predicted drug abuse ($B = -0.07$; $SE = 0.01$; $t(298) = -6.96$; $p < 0.05$). This suggests that individuals who use cognitive reappraisal as their emotion regulation strategy less frequently were more likely to engage in drug abuse.

Similar results emerged for alcohol abuse. Childhood physical abuse is a significant predictor of alcohol abuse ($B = 0.17$, $SE = 0.05$; $t(298) = 3.61$; $p < 0.05$). This means that individuals who experienced childhood physical abuse were more likely to engage in alcohol abuse. It also reveals that childhood

physical abuse is a significant predictor of cognitive reappraisal ($B = -0.88$, $SE = 0.09$, $t(298) = -10.16$; $p < 0.05$). This suggests that individuals who experience childhood physical abuse tend to use cognitive reappraisal as their emotion regulation less frequently. It also shows that cognitive reappraisal significantly predicted alcohol abuse ($B = -0.08$; $SE = 0.03$; $t(298) = 0.01$; $p < 0.05$). This suggests that individuals who use cognitive reappraisal as their emotion regulation strategy less frequently were more likely to engage in alcohol abuse.

When drug abuse was regressed on childhood physical abuse and cognitive reappraisal, the relationship between childhood physical abuse and drug abuse is no longer significant ($B = 0.03$; $SE = 0.02$; $t(297) = 1.71$; $p = 0.09$). This suggests that cognitive reappraisal is a significant mediator that fully mediates in the relationship between childhood physical abuse and drug abuse (Frazier, Tix & Barron et al., 2004). This indicates that individuals who experienced childhood physical abuse has a high risk or probability for drug abuse. Similarly, when alcohol abuse was regressed on childhood physical abuse and cognitive reappraisal, the relationship between childhood physical abuse and alcohol abuse is no longer significant ($B = 0.10$; $SD = 0.05$; $t(297) = 1.88$; $p = 0.06$). This suggests that cognitive reappraisal is a significant mediator in the relationship between childhood physical abuse and alcohol abuse (Frazier, Tix & Barron et al., 2004). This indicates that individuals who experienced childhood physical abuse has a high risk or probability for alcohol abuse. This implies that individuals who experienced childhood physical abuse would not engage in drug abuse and alcohol abuse if that individual utilizes cognitive reappraisal as his/her emotion regulation strategy.

The lesser use of cognitive reappraisal for individuals who experienced childhood physical abuse, the greater risk for drug abuse and alcohol abuse. Whereas, the greater use of cognitive reappraisal for individuals who experienced childhood physical abuse, the lesser risk for drug abuse and alcohol abuse. This indicates that cognitive reappraisal acts as a protective factor against drug abuse and alcohol abuse among individuals who experienced childhood abuse. The Appraisal Theory asserts that when an individual faced with an event, either internal or external, his or her emotional responses are facilitated by the cognitive evaluations that he or she makes to that event. Thus, an individuals' appraisal of an event, not the event itself, causes emotional responses (Gross & Barrett, 2011).

Adverse experiences could trigger emotions that guide

behavioral responses, with the type of behavioral response normally guided by the emotion regulation strategy employed (Mohajerin, Dolatshahi, Shahbaz, & Farhoudian, 2013). Childhood physical abuse hinders the development of adaptive emotion regulation strategies. The experience of being abused could trigger a cascade of developmental disruption. It could impair individual's ability to engage in effective cognitive reappraisal (McGath, 2019). Individuals who experienced childhood physical abuse might feel intense negative emotions. Consequently, these unregulated negative emotions could possibly lead to psychological health problems (Troy & Mauss, 2011). Since cognitive reappraisal changes the emotional impact of distressing events by changing what they think about those events in a more positive way, individuals who lack the ability to employ it might use other coping mechanism, such as drug abuse and alcohol abuse, to reduce emotional distress that an individual has (Zhu, 2017). An individual who lacks the ability to employ cognitive reappraisal as emotion regulation strategy frequently engage in maladaptive behavior to get away from negative emotions, developing possibilities for substance-related disorders. Hence, such individual has been linked with substance-related disorders (Yen et al., 2017). With this, those individuals who can effectively regulate their emotions using strategy like cognitive reappraisal decreases the probability for substance abuse (Troy & Mauss, 2011).

Conclusion

Based on the findings of the study, this research was able to find out the role of cognitive reappraisal in the relationship between childhood physical abuse and substance abuse, particularly drug abuse and alcohol abuse, among young adult residents in a treatment and rehabilitation in Bicutan. Results of the study indicated that cognitive reappraisal is a significant mediator that fully mediates the relationship between childhood physical abuse and drug abuse, as well as in the relationship between childhood physical abuse and alcohol abuse.

On the basis of the results of this study, it can be concluded that emotion regulation plays an important role in the relationship between childhood physical abuse and later substance abuse. The results of the study imply that individuals who experienced childhood physical abuse will not engage in drug abuse and alcohol abuse if that individual utilizes cognitive reappraisal as his/her emotion regulation strategy. Thus, it is important to strengthen the ability

of an individual to utilize cognitive reappraisal whenever emotion-eliciting situation arises. This study has addressed an important gap in the literature regarding on the lack of studies focusing on the cognitive reappraisal that lead to drug abuse and alcohol abuse among individuals, specifically young adults, who experienced childhood physical abuse. Of the studies examining the relationship between childhood physical abuse and substance abuse, such as drug abuse and alcohol abuse, none have looked at the mediating role of cognitive reappraisal. In the present study, childhood physical abuse was examined as a predictor of both drug abuse and alcohol abuse independently. Then, the mediating role of cognitive reappraisal was analyzed independently.

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