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PREVALENCE OF ADVERSE CHILDHOOD EXPERIENCES (ACES) AMONG INDIVIDUALS RE-ADMITTED IN REHABILITATION CENTERS IN NAIROBI AND KIAMBU COUNTIES, KENYA

[1] Dr. Caroline Kabura Kimani, [2]Prof. Nyagwencha Stella Kemuma, [3]Prof. Arasa Josephine Nyaboke Arasa

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Email: carolk2007@yahoo.com

Abstract

In Kenya, problematic alcohol use contributes to adverse consequences to individual Chronic childhood stress impairs their cognitive functioning, The objective of the study was to identify the prevalence of ACEs among individuals re-admitted in rehabilitation centers in Nairobi and Kiambu counties The study adopted a descriptive correlational research design, and utilized a mixed method approach of data collection, generating both quantitative and qualitative data from a sample of 100 participants drawn from rehabilitation centers in Nairobi and Kiambu Counties. Purposive, and census methods were used. Data was collected using socio demographic questionnaire, Alcohol Use Disorder Inventory Test (AUDIT), and Adverse Childhood Experience (ACE) Questionnaire. Data was analyzed using SPSS V.25. The study findings revealed that the respondents experienced ACE's where the highest number of participants reported community violence (81.9%), emotional abuse (66.7%, p = .82), living in a household where a member was treated violently (63.9%, p = .20), and being bullied (63.9, p = .24). The link between ACEs and the age of drinking onset could increase the risk alcohol dependence, including relapse, in adulthood. The study recommends that programs targeting underage drinking prevention should integrate ACE screening and coping interventions to reduce relapse risk.

Keywords: ***Problematic alcohol use, adverse childhood experiences, relapse***

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Introduction

Problematic alcohol use and subsequent relapse after rehabilitation are areas of great concern globally due to their negative consequences to the individual and society at large. Globally, there are about 2 billion alcohol users (WHO, 2018). Globally, alcohol was identified as the third-leading risk factor for disability and premature death, (Babihuga, N., et al., 2020). About 6% of deaths globally are associated with alcohol consumption (Bardach, A., et al., 2019). Globally, about 76 million of the individuals who consumed alcohol had diagnosable Alcohol Use Disorder (AUD) (Demilew, et. al., 2021). In African countries, 38.5% of the population suffered from alcohol use disorder (Ramsewak, et. al., 2020). In Uganda for example, among the adult population, about 9% had an AUD (Rudenstrand & Bäärnhielm, 2024). The most commonly abused substance in Kenya is alcohol (Okanga, 2025). In Kenya, poor communities had the highest rate of alcohol consumption since home-brewed alcohol is inexpensive and readily available (Kuria, 2013). Adverse childhood experiences (ACEs) are events experienced by a child, which are potentially traumatic, and could cause various negative outcomes even into their adult life (Scott, 2022). ACEs include physical, sexual, verbal, abuse, neglect, witnessing domestic violence, parental separation or divorce, parental incarceration, and parental mental illness (Bryant, et al., 2020). About half of the adult population in both the United Kingdom and the United States of America, had experienced at least one ACE, (Mercer et al., 2018). In Sub – Saharan Africa, there was limited consideration of ACEs and the consequent trauma that adults faced (Byansi et al., 2023). It is interesting that, in many Sub – Saharan countries, it is believed that discipline is instilled through physical punishment, thereby improving behavior and regulating emotion (Ashaba et al., 2022). The same study noted that a survey carried out in Uganda, Kenya, and Ethiopia revealed that 94% of women aged 18–24-years-old had experienced physical abuse during childhood. ACEs made individuals vulnerable to consuming alcohol to cope with the stressors and those who consume alcohol before the age of 15 were seen to be seven times more likely to have AUD compared to those who started alcohol consumption at the age of 21 (Zhen-Duan, et al., 2023).

The risk of problematic alcohol use has been indicated to be greater among adult children whose parents had problematic alcohol use, than among other adults (Anda et al., 2002). Individuals who had experienced at least 2 adverse childhood events faced a greater threat of early onset of alcohol consumption as well as alcohol dependence, (Babihuga, et al., 2020). One of the most common impact of ACE is alcohol use (Sreenivasulu, et. al. 2024) Further, individuals who had a history of ACEs were less likely to recover fully from substance use disorder compared to those who did not have these experiences, (Ashaba et al., 2022). These possibly contributed to challenges in dealing with relapse to problematic alcohol use. Relapse is a multi-factored incident and is most likely to result from a combination of various social, genetic, environmental factors (Kumar & Thadani, 2024). There is little research that has studied ways in which ACEs impact alcohol misuse.

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A number of studies identified the harmful effects of protracted adversity in childhood, where these ACEs are associated with ensuing poorer enduring health outcomes including substance abuse (Kibet, et al., 2023). ACEs are associated with an increased risk of alcohol misuse among adolescents transitioning into adulthood, (Zhen-Duan, et al., 2023). An increase in the number of ACEs was seen to increase the probability of developing Alcohol Use Disorder (AUD), (Türkmen et al., 2022). A face – to face survey in England and Wales involving 12 669 individuals aged 18–69 years and delivered using delivered using self – interviewing and computer-assisted personal interviewing revealed that among both men and women, increased ACEs and higher alcohol consumption independently was responsible for greater involvement in violence as both perpetrators and victims (Bellis, et al, 2018). In Southern and Eastern Africa, there are studies that expressed a strong relationship between ACEs, including sexual and physical abuse, and neglect with psychological outcomes in adulthood (Byansi et al., 2023). Individuals readmitted in rehabilitation centers experienced various adverse childhood experiences. These could have contributed to poor coping mechanisms like use of alcohol and need to be considered when developing treatment modalities for these individuals.

The focus in the present study provides a secondary prevention program, and a key component for rehabilitation centers in their efforts to stem problematic alcohol use as well as relapse among individuals. It could also foster policy interventions to delay the age of drinking onset and further prevent and control alcohol related health and social burden in society. The study employed the AUDIT to establish the problematic alcohol use among the respondents. It also utilized the ACE questionnaire, which served to investigate whether the individuals had experienced any of the adverse exposures, which may further be linked to an earlier age of drinking.

Method

The study used a descriptive correlational research design with a mixed method approach to establish the prevalence of adverse childhood experiences (ACEs) among individuals re-admitted in selected rehabilitation centers in Nairobi and Kiambu counties, Kenya. Alcohol abuse has been identified as one of the substances abused greatly, in these areas. The study protocol was approved by the relevant Institutions involving scientific research, including USIU-Africa, the Institutional Review Board (IRB), Ref. No. USIU – AIRB-323-2021, as well as the National Commission for Science, Technology, and Innovation, (NACOSTI), Ref. No. 332522. Further, permission was sought from the administrators at the rehabilitation centers. The study included seven institutions, four institutions from Kiambu County and three institutions from Nairobi County. They were identified by the NACADA website, and applied different treatment modalities for AUD and their clients had characteristics required in the current study. In regards to obtaining the requisite number of study sites, Mugenda and Mugenda (2012) recommended a 10% -30% sampling range in stratified samples. This study obtained a 17.5% from the two counties thus satisfying the recommendation since there were 40 rehabilitation centers in both

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Kiambu and Nairobi. The sample of individuals across the two counties was done according to the relative number of rehabilitation centers in each county. For instance, Kiambu had the largest number of rehabilitation centers and also had the largest sample of individuals with problematic alcohol use. The study identified the target population, which involved the specific population about which information was desired. Studies among individuals with problematic alcohol use and rehabilitation centers were likely to be affected by fluidity in clients and trends. To recruit participants, purposive, census and snowball sampling methods were used to obtain a sample of 100 respondents drawn from the rehabilitation centers, including 72 individuals with problematic use and 28 key informants.

The study used consenting participants aged 18 years and above who had relapsed from problematic alcohol use as they ensured that the required sample size was achieved and fit for the generalizability of the findings. Those who did not consent, or had no relapse experience, or were suffering from severe medical and psychiatric conditions at the time of intake were excluded. To sample individuals with problematic alcohol use, Slovin's formula was used. $n = N / (1 + N*e2)$ (Tejada & Punzalan, 2012). Where "n" represented the sample size, "N" represented the population while "e" was the margin of error. The researcher explained the objective of the study to the respondents, assured them of the confidentiality of their information and thereafter requested them to sign an informed consent form. The study utilized a researcher designed socio-demographic questionnaire (SDQ) at intake to get essential information. The study also used the ACE questionnaire, to investigate the exposure to adverse childhood experiences. The ACE - IQ was developed to assess childhood trauma among adolescents and adults (Kazeem 2015). In addition, the ACE-IQ measures adverse childhood adversities, drawing associations between ACEs and health risk behaviors as well as health outcomes in later life (Pace, et al., 2022). According to its authors the ACE-IQ, its real value lies in demonstrating the association between early ACE exposure and the ensuing risk behaviors and health outcomes (World Health Organization, 2020). The tool was developed as a research tool providing a background to know how the prevention of ACEs could lessen the burden of numerous public health problems (Anda, et al., 2020).

The questions run from Q0 - Q8, but are coded into six groups C (core questions), M (marriage questions), P (parents/ guardian questions), F (family questions), A (abuse questions), and V (violence questions) to allow cross-referencing in studies. Two scoring versions are provided, the binary version and the frequency version. The binary version provides that where if a participant answer in the affirmative (be it once, a few times, or many times) for selected questions, they score "1" the minimum score is 0 and the maximum score is 13. The frequency version provides for a number of times (many times, ever, a few times, rarely, or never). If a participant answer in the affirmative, they get a score of "1" with a minimum possible score of 0 and a maximum score of 13.

The thirteen categories are (a) physical abuse, (b) emotional abuse, (c) contact sexual abuse, (d) alcohol and/ or drug abuser in the household, (e) incarcerated household

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member, (f) someone being chronically depressed, mentally ill, suicidal or institutionalized, (g) household member treated violently, (h) one or no parents, parental separation or divorce, (i) emotional neglect, (j) physical neglect, (k) bullying, (l) community violence, and (m) collective violence. Relationships can be compared between the binary ACE score or frequency ACE score and behavioral or health outcomes. This tool enabled the investigator to determine the exposure of participants to adverse childhood experiences and their influence on problematic alcohol use. To assess for problematic alcohol use, the Alcohol Use Disorders Identification Test (AUDIT) was administered. The tool, a 10 – item questionnaire, was developed by WHO as a screening instrument for harmful alcohol consumption (Saunders et al., 1993).

This comprehensive self-report screening tool is a simple effective method for identifying unhealthy alcohol use in adults. One alcohol unit is defined as 12 oz. (355ml) of beer, 5 oz. (150ml) of wine or 1.5 oz. (one shot/45ml) liquor. The test taker indicates how much and how often they have consumed alcohol, how often they have tried to stop drinking unsuccessfully, and how much alcohol has interfered with their social or work engagements. According to Habtamu & Madoro (2022), the first three questions (1-3) obtain data on the degree of alcohol intake, the next three questions (4-6) obtain information on dependent symptoms, and the last four questions (7-10) obtain information on repercussions of misuse of alcohol and challenges created by excessive consumption. In addition, the degree is denoted by a digit from 0 (never) to 4 (4 or more times a week). The total score correlates with a risk level of 1-7 (low risk), 8-14 (hazardous alcohol use), and 15 and above is indicative of moderate to severe alcohol use (Habtamu & Madoro, 2022).

Data Analysis

The data collected was sorted and coded. The sorting was done to ascertain whether the questionnaires were duly filled and whether the responses obtained were useful. The sorted information from questionnaires was coded to identify specific data. Data was interpreted at $\alpha = 0.05$ level of significance. During analysis, this information was sorted into key categories manually highlighting significant and recurring issues, to facilitate thematic analysis. Data was analyzed with the aid of SPSS version 25 for Windows. Frequencies and percentage were used to analyze the data. The analyzed data was presented using tables and figures. Qualitative data was also coded into themes, and analyzed.

ACE – IQ Analysis

When assessed as binary scores, which confirms the presence or absence of an adverse childhood experience, the total binary score mean was 6.44, SD = 2.61. The total frequency score was 4.24, SD = 2.69. The frequency score presents the number of times that an adverse childhood experience was reported; whether once, a few times, or many times. The maximum possible score is 13. This means that the presence of ACEs was not similar to their frequency.

Results

The study sought to find out the alcohol related demographics including the severity of AUD using the AUDIT as presented in Table 1 below.

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Table 1: Alcohol Related Demographics

		Frequency	Percent
Classification	Low risk consumption (score 1 - 7)	4	5.6
	Hazardous consumption (score 8 - 14)	3	4.2
	Moderate to severe alcohol use disorder (score > 15)	63	87.5
	99	2	2.8
Wine	No	51	70.8
	Yes	21	29.2
Beer	No	30	41.7
	Yes	42	58.3
Whisky	No	39	54.2
	Yes	33	45.8
Spirits	No	11	15.3
	Yes	61	84.7

According to Table 1, 87.5% of the participants were classified as having moderate to severe alcohol use disorder (score > 15) while 5.6% were classified as low-risk consumers of alcohol (score 1 - 7). Those who engaged in the harmful use of alcohol were 4.2%. Regarding the type of alcohol that the participants consumed, 29.2% reported having consumed wine, 58.3% beer, 45.8% whisky, and spirits were 84.7%. This means that a majority (84.7%) of respondents had consumed spirits, while the rest consumed whisky, beer and wine.

A total of 41 (56.9%) participants saw or heard a household member treated violently a few times or many times; M = .62, SD = .49. This adverse childhood experience was reported by the largest number of participants. Emotional neglect was reported frequently by 37 (51.4%) participants with a mean of .57, SD = .53. Emotional neglect was reported by the second largest number of study participants. Death of a parent or guardian or parental separation or divorce was reported by 33 (45.8%) of the participants with a mean of .49, SD = .50. Just below half of the participants reported absence of one parent, parental separation, or divorce.

A total of 28 (38.9%) of the participants reported experiencing collective violence during their childhood. Community violence was reported to have occurred many times by 27 (37.5%) participants with a mean of .40, SD = .49. A total of 26 (36.1%) reported that they lived with an alcohol and/or drug abuser in the household; M = .39, SD = .49. Just above a third of the participants lived in households where a member abused alcohol and/or drugs.

Contact sexual abuse was reported to have occurred by 17 (23.6%) participants with a mean of .25, SD = .44. Just below a quarter of the participants experienced contact sexual abuse frequently. A total of 15 (20.8%) participants reported that physical abuse

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occurred many times; M = .23 SD = .42. A similar number of 15 (20.8%) reported that emotional abuse occurred many times; M = .23, SD = .42. A fifth of the participants experienced physical abuse or emotional abuse frequently.

A total of 14 (19.4%) participants lived in households where there was a member who was chronically depressed, mentally ill, institutionalized, or suicidal; M = .21, SD = .41. Only 9 (12.5%) reported that they lived with a household member who was ever incarcerated. Similarly, 9 (12.5%) of the participants reported the occurrence of physical neglect and bullying many times; M = .18, SD = .49 and M = .13, SD = .34 respectively. The study findings show that the ACEs that were reported by the fewest participants were living in a household where a member had been incarcerated, physical neglect, and bullying. The highest number of participants reported living in a household where a member was treated violently many times, followed by emotional neglect, and the absence of one parent by death or the separation or divorce of parents in that order.

A simple regression analysis was conducted on the reported presence of Adverse Childhood Experiences to predict their value as risk factors based on the number of participants' relapses based on the thirteen ACEs categories as risk factors or relapse, indicated in Table 2.

Table 2: Regression Coefficients of ACE Binary Scores

Variables	B	t	Sig.
Constant	7.40	1.57	0.12
Physical Abuse	8.37	2.32	0.02
Emotional Abuse	0.88	0.23	0.82
Contact Sexual Abuse	-4.26	-1.19	0.24
Alcohol and/or drug abuser in the household	5.87	1.86	0.07
Incarcerated household member	-3.77	-0.86	0.40
Someone chronically depressed, mentally ill, institutionalized or suicidal	-4.58	-1.26	0.22
Household member treated violently	-2.17	-0.68	0.50
One or no parents, parental separation or divorce	3.76	1.31	0.20
Emotional Neglect	-3.04	-0.95	0.35
Physical Neglect	-0.38	-0.12	0.91
Bullying	-0.13	-0.04	0.97
Community Violence	-5.81	-1.19	0.24
Collective Violence	2.17	0.72	0.48

Note: Regression coefficients for ACE binary scores. Dependent Variable: Number of Relapses

The results were as follows: b = 8.37, p = .02 for physical abuse, b = .88, p = .82 for emotional abuse, b = -4.26, p = .24 for contact sexual abuse, b = 5.87, p = .07 for alcohol

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and/or drug abuser in the household, b = -3.77, p = .40 for incarcerated household member, b = -4.58, p = .22 for someone chronically depressed, mentally ill, institutionalized or suicidal in the household, b = -2.17, p = .50 for household member treated violently, b = 3.76, p = .20 for the absence of one or both parents, parental separation or divorce, b = -3.04, p = .35 for emotional neglect, b = -.38, p = .91 for physical neglect, b = -.13, p = .97 for bullying, b = -5.81, p = .24 for community violence, and b = 2.17, p = .48 for collective violence. Based on the presence of ACEs, physical abuse and having an alcohol and/or drug abuser in the household were found to be significant contributors to relapse. Therefore, physical abuse and living with an alcohol and/or drug abuser in the household were significant risk factors for the respondents in this study.

A simple regression analysis was conducted on the frequency of Adverse Childhood Experiences to predict their value as risk factors based on the number of participants' relapses.

Table 3: Regression Coefficients of ACE Frequency Scores

Variables	B	t	Sig.
(Constant)	7.54	2.20	0.03
Emotional Abuse	3.73	0.78	0.44
Contact Sexual Abuse	-0.37	-0.10	0.92
Alcohol and/or drug abuser in the household	3.24	0.95	0.35
Incarcerated household member	-3.75	-0.72	0.47
Someone chronically depressed, mentally ill, institutionalized or suicidal	-4.62	-1.20	0.24
Household member treated violently	-1.23	-0.38	0.71
One or no parents, parental separation or divorce	2.72	0.79	0.43
Emotional Neglect	0.11	0.04	0.97
Physical Neglect	-1.41	-0.44	0.66
Bullying	-5.65	-1.14	0.26
Community Violence	-2.32	-0.60	0.55
Collective Violence	2.30	0.68	0.50

Note: Regression coefficients for ACE frequency scores. Dependent Variable: Number of Relapses

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The results were as follows: Given b = 3.73, p = .44 for emotional abuse, b = - .37, p = .92 for contact sexual abuse, b = 3.24, p = .35 for alcohol and/or drug abuser in the household, b = -3.75, p = .47 for incarcerated household member, b = -4.62, p = .24 for someone chronically depressed, mentally ill, institutionalized or suicidal in the household, b = -1.23, p = .71 for household member treated violently, b = .11, p = .97 for emotional neglect, b = -1.41, p = .66 for physical neglect, b = -5.65, p = .26 for bullying, b = -2.32, p = .55 for community violence, and b = 2.30, p = .50 for collective violence. Based on their frequency, none of the thirteen adverse childhood experience categories was found to be significant contributors to relapse. Therefore, the frequency of ACEs was not a significant risk factor for relapse for the respondents in this study.

Discussion

There is a high prevalence of adverse childhood experiences among patients with substance use disorders. ACEs often contribute to the development of insecure attachment, a history of substance abuse within the family, and increased vulnerability to relapse. A cross-sectional design involving 134 inpatients in Kenya identified a high prevalence of ACEs among individuals with substance use disorders (Kiburi et al., 2018). As indicated in the study, various ACEs contribute to problematic alcohol use, including community violence, and emotional abuse. A study in Poland that included a sample of 165 respondents with AUD also found a relationship between emotional abuse and AUD (Zaorska, et al., 2020). A cross sectional study using 1,100 women in Nepali also noted that emotional abuse was associated with AUD (Xie, et al., 2024). A study in Cape Town, South Africa, involving 1149 adolescents found an association between emotional abuse and increased alcohol problems (Hogarth, et al., 2019). All these studies point to the positive relationship between emotional abuse and AUD.

The study also identified physical abuse as another ACE experienced by the respondents. A Finnish study that used a population-based sample of 10980 respondents also noted that severe experiences of physical abuse increased the possibility of from alcohol abuse (Rehan, et al., 2017). A cross-sectional study among 1630 adults in rural Uganda, indicated that ACEs including physical abuse were associated with heavy alcohol consumption (Ashaba et al., 2022). A study involving 394 mothers from informal communities in Nairobi noted that one of the ACEs was having experienced a household member treated violently (Kumar et al., 2018). It was also noted that having lived with a household member who was ever incarcerated also contributed toward problematic alcohol use. A total of 62.5% of participants reported experiencing physical abuse. This was almost similar to Emotional neglect, reported by 54.2% of participants. The death of a parent or guardian or parental separation or divorce was a risk for problematic use in the study.

For those who lived with a family member who abused alcohol, it was evident that it contributed toward problematic alcohol use. A study by Šulejová et al. (2022) supports this, as they noted that children who grew up in families where the parent abused alcohol had an increased risk of developing AUD. Another study of 2,391 youth in the USA found that ACEs, such as living with a person who had a drinking or drug problem, increased the risk of alcohol misuse (Zhen-Duan, et al., 2023). In a study involving 304 male patients with AUD from 16 psychiatric hospitals in Korea revealed that found a relationship between a family history of alcoholism and AUD (Han, et al., 2024).

Among the respondents, sexual abuse was reported to have occurred, contributing toward problematic alcohol use. A longitudinal cohort study in a treatment hospital in Norway highlighted that those who faced sexual abuse faced challenges in dealing with symptoms of SUDs. (Erga et al., 2024). In Uganda, a cross-sectional survey which consisted of 457 youth aged 14-24 years, living in the slums found that individuals who had experienced two or more ACEs, including rape and violence among parents, faced a greater risk of early alcohol use (Babihuga et al., 2020). A total of 19.4% participants lived in

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households where there was a member who was chronically depressed, mentally ill, institutionalized or suicidal. Only 12.5% reported that they lived with a household member who was ever incarcerated. A case control study of persons with AUD in India, showed that those who had experienced more ACEs had an increased risk of developing AUD (Sreenivasulu et al., 2024).

Conclusion

This study is among the first in Kenya to link ACE prevalence with relapse risk in rehabilitation populations, offering evidence for integrating trauma-informed care in rehabilitation programming. This study concludes that the ACEs could have contributed to poor coping mechanisms like use of alcohol and need to be kept in mind as treatment modalities are developed to ensure they do not relapse into alcohol use. The link between ACEs and the age of drinking onset could increase the risk alcohol dependence, including relapse, in adulthood. This study recommends that programs targeting prevention of drinking by those who are underage may not be as effective, unless they assist the youth to identify and cope with adverse experiences, including household dysfunction, and stressors of abuse. The government should also incorporate school programs that promote awareness and prevention of substance use among school going children, starting from lower primary. It should also facilitate counseling programs in primary schools, for children to access these services. This could help curb early onset of alcohol use, as they would be able to address various issues presented in therapy.

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