Impact of adverse childhood experiences on adult mental health

Thesis submitted in partial fulfillment of the requirements for the Degree of M.Phil. in Clinical Psychology awarded by the University of Dhaka

Submitted by

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APPROVAL OF THE THESIS

This is to certify that the study " **Impact of adverse childhood experiences on adult mental health**" submitted by **Md. Aminul Islam** to fulfill the requirements for the degree of M. Phil in Clinical Psychology is an original study. The research was carried out by her under my guidance and supervision. I have read the thesis and believe this to be an important work in the field of clinical psychology.

Date: 28/08/23

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DECLARATION BY THE RESEARCHER

This is to certify that the report entitled **"Impact of adverse childhood experiences on adult mental health"** which is submitted to the Department of Clinical Psychology, University of Dhaka in Partial Fulfillment of the Requirements for the Degree of Masters of Philosophy (M.Phil.), comprises only my original work and due acknowledgement has been made in the text to all other material used. To my best, the study is an authentic one and if there is any error, I am responsible for that.

……..

Md. Aminul Islam

A B S T R A C T

Background:

Adverse Childhood Experiences (ACEs) is a constellation of negative events that have public health concern with well-established sequelae. However, compared to research conducted in other countries, only limited exploration of ACEs and their impact has been carried out in Bangladesh. The limited understanding of long-term mental health impact of ACEs in Bangladesh called for this research.

Objective:

The objectives of this study were to determine: (1) prevalence of ACEs among clinical and general populations, (2) the relationships among ACEs and mental health outcomes in adulthood, and (3) whether resilience, social support, and subjective well-being mediate the relationship between ACEs and psychopathological symptoms, and (4) connection between specific ACEs and overall mental health state.

Method:

Cross-sectional survey data on childhood exposure to ACEs, psychological factors (mental health outcomes measure and indicators), three presumed mediating variables, and socio-demographic factors were collected from 390 adults consisting of both community and clinical sample, aged 18–67 (M = 29.87, SD = 9.36) via face-to-face interview. WHO guidelines for measuring ACEs that encompasses 13 conventional ACEs were used along with 3 extended ACEs resulting in total ACE scores ranged from 0 to 16. Multiple logistic regression models were used to evaluate the relationship between ACEs and adult mental health outcomes, adjusting for socio-demographic covariates.

Results:

High proportion of clinical (97.9%) and non-clinical (85.5%) participants reported at least one type of adversity. Exposure to four or more ACEs were also reported by high number of participants (73.7% for clinical and 38.5% for non-clinical). The most prevalent form of ACE was emotional neglect among clinical (68.4%) and non-clinical (48.5%) sample, followed by domestic violence from household dysfunction domain (59.0% in clinical and 41.0% in non-clinical) and then exposure to collective violence, from the violence outside the home domain (clinical - 51.1% and non-clinical - 29.0%). The relationship between ACE and adult mental health state was examined for clinical and non-clinical separately, which revealed significant correlation between ACEs and six other variables (SRQ, physical health, psychological health, social relationships, environmental health, and well-being), r(388) = .43 to .52. The number of ACEs was positively associated with psychological symptoms, domains of quality of life but negative association was found with the level of well-being. Results also revealed statistically significant differences in mental health for 16 ACE measured using retrospectively collected reports from the participants. A regression model was carried out controlling for gender, age, and socio-economic status for mental health and ACEs: one adversity, two adversities, three adversities, four or more adversities. The risk of well-being, SRQ, self-harm & suicide, and substance abuse was higher among those who had experienced three or more ACEs compared to those with none.

Results of parallel mediation analyses showed social support, resilience, and self-esteem statistically mediated the relationships between ACEs and psychopathological outcomes in adulthood. Furthermore, among all categories of ACEs, emotional neglect, collective violence, and experiencing racism and discrimination increased the likelihood of well-being issues (OR ranges from 0.44 to 0.48). Reports of emotional neglect, parental substance

abuse, exposure to collective violence, racism & discrimination, and witnessing violence towards the mother also accounted for higher probabilities of presenting psychological severity (OR ranges from 0.23 to 2.77). In participants reporting early sexual abuse have a greater risk of engaging in suicide & self-harm (OR=2.25, 95% CI=1.37, 3.69) and health-risk behavior (OR=1.80; 95% CI=1.12, 2.88). Odds for mental health issues due to racism & discrimination were also significant (OR ranges from 0.48 for well-being to 3.77 for self-harm and suicide). Results indicated a graded dose-response relationship between ACEs and adult mental health outcomes.

Conclusion:

Exposure to ACEs in childhood has been found to be a highly prevalent among adult population in Bangladesh. Childhood exposure has been shown to be associated with significant mental health impacts in the later life. The result urges for proactive action to reduce the occurrence of ACEs as well as to minimize its impacts.

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ACKNOWLEDGEMENT

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my School and the teachers at

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(গণভবন সরকারি উচ্চ বিদ্যালয়)

"I spent the most important time of my life there. The teachers believed in me and encouraged me to become who I am today.

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Chapter 1

INTRODUCTION

Introduction

Everyone inevitably experiences stressful events at some point in their lives. While some amount of stress can be beneficial in promoting growth and performance, experiencing significant negative stressors during childhood without access to necessary resources can result in negative consequences in later life. Such experiences, commonly referred to as Adverse Childhood Experience (ACEs), particularly those experienced before the age of 18 years, have been shown to have long-lasting impacts on the individual (Fu & Chen, 2023; Harris, 2018) and has become a global concern. These experiences, including childhood maltreatment and other challenges, are discussed under ACEs and are stressful and detrimental for the persons because they pose threat and harm to health and well-being of an individual. Even though substantial evidence has documented the impacts of ACE across the globe (Almuneef et al., 2014; Cambron et al., 2014; Kerker et al., 2015; Liu et al., 2013; Lynch et al., 2013; Poletti et al., 2014), the impact of ACEs has not yet been investigated in Bangladeshi population.

1.1. Understanding Adverse Childhood Experiences

Our experiences significantly shape our lives by leaving a lasting impression on our brains and creating a blueprint for our future. However, if these experiences are unfavorable, i.e., adverse, they may hinder normal development and negatively impact diverse aspects of our lives. Such negative effects on development can be especially concerning when these adverse experiences occur in childhood, which is a crucial time of growth and development.

Felitti and Anda (1998) first coined the term "Adverse Childhood Experiences." They mainly talked about household adversities, that is, childhood exposure to maltreatment and dysfunctional household behavior under ACEs (Felitti et al., 1998). However, in the past two decades, the literatures on ACEs have expanded tremendously, and a wider variety of outcomes—including mental health, physical health, risky behaviors, and violence—are now linked to it.

To put it simply, any traumatic incidents that occur in a children's life before they turn 18 are referred to as ACEs (CDC, 2019; Kalmakis & Chandler, 2014). Mclaughlin (2016) proposed a working definition of ACE, which is "exposure during childhood or adolescence to environmental circumstances that are likely to require significant psychological, social, or neurobiological adaptation by an average child and that represent a deviation from the expectable environment".

Childhood maltreatment has been a significant concern from ancient history to modern industrialized society. Although concerns over protection of children resulted in the development of resources to protect children from such adversities, they still suffer from abuse and neglect and other forms of ACEs. The ACEs poses themselves as challenges or obstacles that can hinder or threaten an individual's well-being, goals, or aspirations and thus affects development, mental and physical health, and learning of the person (Bloom, 2020; Felitti et al., 1998). Different challenges that adversity presents have their unique source, intensity, and duration. Therefore, an individual's response to adversity in their environment will vary according to his personal dispositions, societal influences, the kind and timing of the adversity, and the availability of counteracting supports (i.e., protective factors) in his distinct settings (Osher et al., 2017).

The effects of ACEs can appear in many different ways and they happen in different settings, pointing to their high occurrence rate. The prevalence of ACEs can be observed worldwide, with variations depending on the socioeconomic status of each country.

1.2. Prevalence of Adverse Childhood Experiences

Globally, it is estimated that more than 60% of people worldwide have encountered at least one form of childhood adversity (Merrick et al., 2018), and 20% of adults have experienced three or more ACEs (Anda et al., 2006; Merrick et al., 2018). However, prevalence estimates of ACEs may vary depending on the measures used or the categories of adverse experiences considered in measuring the ACE across studies. As discussed earlier, ACEs include a range of adverse experiences faced in childhood. Many studies have been conducted with only one or two of these adverse experiences, which are useful to understand the prevalence of ACEs however, does not provide an accurate estimate of ACEs. A comparison of data from 21 countries in the "WHO World Mental Health Survey Initiative (WHMS)" revealed measurement inconsistency in adverse experiences across countries (WMHS; Kessler & Ustun, 2008).

Research has consistently shown that ACEs are prevalent across different countries and cultures, with varying degrees of severity and types. However, due to various social, economic, and cultural circumstances, the prevalence and co-occurrence of ACEs can vary among developed, developing, and low-income countries (Jones, 2018). Research has demonstrated that people from disadvantageous situations experience ACEs at higher rates than the general population (Chen et al., 2022; Giano et al., 2020; Sieben et al., 2020; Turney & Wildeman, 2017).

In high-income countries, such as the United States and Canada, prevalence rates of ACEs range from 50% to 64% (Merrick et al., 2018). In the United States, 60.9% of adults reported experiencing at least one form of ACE, and 15.6% of adults reported four or more ACEs (Felitti et al., 1998). In England, approximately half of the adults (47%) reported having experienced at least one form of ACE (Bellis et al., 2014). For Japan, studies revealed that between 28%–36% of the population have one or more ACEs (Amemiya et al., 2018; Tani et al., 2020; Fujiwara, 2022).

In contrast, the lower income countries show higher prevalence of ACEs, with up to 90% of children experiencing violence, abuse, or neglect (World Health Organization, 2020). Prevalence of ACEs in Vietnam demonstrated that 74%-76% individuals reported experiencing at least one ACE, with 27% reporting experiencing three or more ACEs (Le et al., 2022; Tran et al., 2015). According to UNICEF, countries with low-income, particularly those in sub-Saharan Africa, suffer from the highest rates of ACEs, which are further aggravated by ongoing conflicts, poverty, and other socio-economic challenges (UNICEF, 2018). Studies from Kenya reported that 70% of children had experienced at least one form of violence, abuse, or neglect (Hillis et al., 2016).

Studies on ACEs are limited in Bangladesh and no countrywide prevalence studies has been conducted yet. The prevalence studies of ACEs in neighboring South Asia are highly limited (not covering all aspects of ACEs) and yet reported high prevalence. Estimates of child psychological abuse has been reported to be 48% in Bhutan (Kulkarni, 2016) and 89% in Sri Lanka (de Zoysa, 2013). Estimates of childhood neglect has been reported to be 60% in India (Charak & Koot, 2014) and 46% in Nepal (Neupane et al., 2018). India has no nationwide ACE prevalence study (Fernandes et al., 2021). Lifetime prevalence of 78.5% has been reported in India (Kumar et al., 2017). Similarly, Pakistan also reported

a high prevalence (80%) of childhood maltreatment (Bureau of Statistics Punjab, 2014). A much higher prevalence of ACEs (88.2%) has been reported for conflict-affected Kashmir (Dar et al., 2022).

In South Asian regions, two categories of risk factors for ACEs have been established through research. Firstly, the child-level risk factors involving age, gender, seeing family violence, and child labor, and secondly, the parent- and family-level risk factors that include single parenting, low parental education, extended family, and poverty (Charak & Koot, 2014; Kandel et al., 2017; Lakhdir et al., 2017). Several Bangladeshi studies also reported similar risk factors for ACEs (Atiqul et al., 2019; Hadi, 2000). However, additional research on the risk factors for psychological abuse and neglect of Bangladeshi children is necessary.

In conclusion, ACEs are widespread, and they disproportionately affect children in low-resource contexts. Lack of methodologically sound assessment of ACEs in Bangladesh calls for a thorough exploration and analysis of ACE, which will contribute to evidence-informed policy-making to improve the situation for children living in Bangladesh.

1.3. The Dynamic Development of the Concept

The first appearance of ACE as a concept started with three initial domains of adverse childhood experiences namely abuse, household dysfunction, and neglect (Felitti & Anda, 2009; Felitti et al., 1998). The initial domains encompassed multiple constructs, such as emotional, physical, and sexual abuse in the abuse domain, various household dysfunctions in the household dysfunction domain, and both physical and emotional neglect in the neglect domain, all originating from the family unit (Felitti & Anda, 2009; Felitti et al., 1998).

Over time the ACE concept has evolved over time. The initial research only included a set of ten specific experiences from family context to assess ACEs, however, the domain expanded and a broader range of negative experiences beyond family events were incorporated into ACEs. These additional domains include peer relationships, economic hardship, community stressors, negative school experiences, racism, discrimination, and relocations (Finkelhor et al., 2015; Finkelhor, 2017; Hughes & Tucker, 2018; Kalmakis & Chandler, 2014; McLaughlin, 2017; Swingen, 2020). The ACEs concept is continually developing, with various proposed definitions and hypotheses, including lower-level adversity such as parental conflict (Schermerhorn, 2018) and spanking (Merrick et al., 2017; Afifi et al., 2017), and ongoing efforts to improve international ACEs research through achieving consensus on the definition and range of ACEs (McLaughlin, 2016; Catani & Sossalla, 2015).

Although the concept of ACEs has evolved over time, their full spectrum has yet to be investigated. As a result, efforts have been made to categorize them to better understand their occurrences and document their impacts.

1.4. Categorizing Adverse Childhood Experiences

The World Health Organization has suggested a sum of thirteen categories of ACEs falling into three domains that they mentioned as more comprehensive measures of ACEs than previously studied (WHO, 2016). The thirteen categories are also known as sub-domains that encompass multiple items to tap a construct. These broad categories are childhood maltreatment, family or household dysfunction, and violence outside the home. The details of the broad categories and specific ACEs under them are presented in Table 1.1.

Table 1.1

WHO Proposed ACE Domains and Categories

Domain	ACE Category
Childhood Maltreatment. Any action or inaction by any parent or caregiver that harms or injures a child.	1. Emotional Neglect 2. Physical Neglect 3. Emotional Abuse 4. Physical Abuse 5. Sexual Abuse
Family/ Household Dysfunction. A pattern of disturbed or impaired functioning in a family with potential harm for the child in the family.	1. Living with household or family member with mental illness or who was suicidal 2. Living with household member who uses substance 3. Living with household member who was imprisoned 4. Household Separation 5. Domestic Violence
Violence Outside the Home. Exposure to any act of violence that occurs outside of the home context.	1. Bullying 2. Witnessed Community Violence 3. Exposure to war/ collective violence 4. Physical Fights

Childhood maltreatment. Establishing universal operational definitions for child maltreatment has been a challenging task (Janson, 2018; see Maitra, 1996). Moreover, the phenomenon of child-rearing practices differs across cultures, significantly impacting these definitions (Feng et al., 2005; Korbin, 1991; Meinck et al., 2015). CDC and the Department for Children and Families (DCF) define “child maltreatment as any act or series of acts of commission or omission by a parent or other caregiver that results in harm, the potential

for harm, or threat of harm to a child" (Leeb et al., 2008, p. 11). Child maltreatment refers to the overall mistreatment that a child could suffer, including neglect and abuse. The definition of maltreatment by WHO (2006) includes physical and emotional ill-treatment, sexual abuse, neglect, negligence and commercial or other exploitation. Specific components of ACEs in the maltreatment domain are presented in Table 1.1.

Family/ household dysfunction. Dysfunction in the family or household can result in trauma for the children. Such dysfunction can occur in different forms including physical or verbal abuse, addiction, mental illness, or incarceration in the family, family dissolution and loss (Table 1.1). All of these exposures have negative consequences for children, including increased health risk behaviors, chronic health conditions, mental illness, reduced life opportunities, and even premature death (Gilbert et al., 2015).

Violence outside the home. Exposure to assault and bullying, witnessing violence in the community, such as gang violence or riots, and exposure or witnessing acts of war or collective violence are included in this category (Table 1.1). Numerous studies have shown that children and adolescents who are exposed to violence are more likely to have unfavorable outcomes (Eisenbraun, 2007; Finkelhor et al., 2007; Mrug et al., 2008). Recent studies are considering racism, discrimination and poverty in the list of ACEs (Macedo et al., 2019; Liao et al., 2021; Ridley et al., 2020). These extensions to the conventional ACE categories better represented the different childhood adversities experienced by an individual, referred to as extended categories.

Although ACEs cover specific categories, their applicability may be limited in different parts of the world due to cultural and economic differences. This socio-cultural and contextual variations in the consideration for ACEs is a big area needed further

research. Specifically for Bangladesh, certain practices can only be comprehended based on the traditions prevalent in the country.

1.5. Adverse Childhood Experiences in Bangladesh Context

Although there is a significant amount of research on ACE-related studies, it remains uncertain whether the results can be generalized as they have mainly been conducted in developed countries. Bangladeshi studies examining the prevalence of ACEs is yet to be conducted. However, many studies conducted in Bangladesh assessed the abuse, violence and other components of ACEs.

Bangladesh has a population of over 165 million, with over 47 million between 0-14 years (Bangladesh Bureau of Statistics, 2022). According to the UN report, the country has 53.82 million children below the age of 18 (UN, 2022). These children, who comprise half of the country's population, often lack of fundamental rights and are often subjected to different types of abuse and neglect.

Child abuse and neglect are ubiquitous problems in Bangladesh, with children subjected to various forms of violence, forced labor, and early marriages. These child maltreatments are prevalent in both the cities and the rural areas of Bangladesh (Hadi, 2000). Most of the cases, these abuses occur within the family and in-home context of the child. The Bangladesh Shishu Adhikar Forum (BSAF) has documented an alarming increase in violence against children, including murder, kidnapping, human trafficking, rape, sexual harassment, and violence (The Daily Star, 2015). The perpetrators of such heinous acts are frequently individuals with close ties to the victims, such as intimate family members, neighbors, acquaintances, community leaders, and teachers or home tutors (Breaking The Silence, n.d.).

Child abuse is addressed in Bangladesh through legal frameworks such as the Penal Code of 1860, which identifies various forms of child abuse, including trafficking, abduction, slavery, sexual exploitation, prostitution, unnatural acts, and forced labor. In addition, The Child Act of 2013 and other laws protect against child abuse by prohibiting acts such as the maltreatment of children, their participation in begging, the administration of harmful substances, their use in terrorist activities, and their exploitation. However, incidents continue to be reported, as a study in Bangladesh found that despite being illegal, 21% of children are involved in some form of child labor (Hadi, 2000).

In a survey conducted in rural and urban areas, the experience of physical punishment at home was reported by 55.7% of the children, while 49.29% reported receiving physical punishment at school (Akter et al., 2018). An older survey reported a much higher prevalence which revealed that 91% of children underwent physical punishment in school, whereas 97% experience punishment at their homes (UNICEF, 2008).

Islam & Akhter (2015) explored the data of the Ministry of Home Affairs in Bangladesh including the report they published in 2005 and found a disturbing rise in reported cases of child maltreatment between 2001 and 2010, where the number of reported cases at 1542 in 2010, which was four times higher compared to 380 cases in 2001. If this trend continues, the number of children subjected to maltreatment could be even more alarming in 2023. Additionally, the United Nations Population Fund (UNFPA, 2014) documented various forms of child abuse in Bangladesh in 2014, including 674 cases of unnatural child deaths, including murders, 365 cases of sexual abuse, 94 victims of

violence, 112 incidents of children being kidnapped or missing, 97 accidents, and 45 cases of early child marriage.

Moreover, The Child Well-being Survey 2016 found that 82.4% of Bangladeshi children (1–14 years) have recently been subjected to multiple adverse childhood experiences, including physical or psychological abuse (BBS, 2016). The Multiple Indicator Cluster Survey of 2019 reported that almost 89% of children aged 1–14 years experienced physical and psychological abuse by their caregivers in the past month, which was reported to be a 6.5% increase compared to 2012-13 (BBS, 2019). They revealed that these children experienced some form of violence and maltreatment, including physical abuse and psychological abuse.

The Bangladesh Child Rights Forum (2020) reported that in 2019, more than 1,383 children were severely abused, representing a 72.32% increase from the previous years. The Bangladesh Shishu Adhikar Forum (BSAF, 2020) released its report on child abuse in the country, covering time-frame of January to June of 2020. During this time, at least 1,387 children in Bangladesh experienced various forms of violence and abuse.

In 2021, Bangladesh witnessed a rise in child rape cases, with 818 cases reported, compared to 626 cases in 2020. Additionally, 78 children, including 57 boys, committed suicide during the same period. Another report by the Juvenile Justice Foundation (MJF, 2021) disclosed that Bangladesh encountered 1941 cases of sexual violence and child abuse incidents in 2021. In the following year, 2021, the Kids Rights Index ranked Bangladesh 110th out of 182 countries in terms of respect for children's rights, with a previous ranking suggesting that the issue may be worsening in our country (Now, 2020).

Societal practices and customs also play a significant role in sustaining certain maltreatment practices for children. A survey reported that 69.62% of parents and carers

believe that punishing a child for their mistakes is either justifiable or strongly justifiable (Akter et al., 2018). Studies have also revealed a link between child maltreatment and factors such as poverty, gender (being a boy), and low parental education (Hadi, 2000; Haque et al., 2017). Haque (2017) identifies the subservient position of children in Bangladeshi society and their powerlessness as contributing factors to child maltreatment. The report also investigated the role of the family environment as a factor of child maltreatment and found that there is also a correlation between child maltreatment and exposure to family violence (Haque et al., 2019). Child maltreatment in Bangladesh is a significant problem resulting from factors such as high unemployment rates, financial difficulties, poverty, discrimination, natural disasters, lack of education and awareness, ineffective law enforcement, and a decline in societal values, all of which have profound implications for the well-being and development of children (Islam, 2015; Odhikar, 2015).

Although these scenarios provide some insight into the existence of adverse experiences and maltreatment experienced by children, there is a lack of data to fully understand the exact extent of ACEs in Bangladesh endure. Therefore, given the current situation, it is crucial to accurately assess the prevalence of adverse childhood experiences in Bangladesh and address the root causes, which may contribute to ensuring a safe and healthy environment for all children in Bangladesh.

1.6. Theoretical Framework on Relation between ACEs and their Impact

Different theories [i.e., Stress theory (Hazel et al., 2008; Moos et al., 2005), the Neuroimmune Network Theory (Miller et al., 2011), the Developmental Origins of Health and Disease (DOHaD) theory (Dunkel Schetter, 2011)] have emerged and models [See Biological Embedding Model (Miller et al., 2011); Dimensional Model of Adversity and

Psychopathology (McLaughlin et al., 2014)] have been proposed while explaining the impact of ACEs, biopsychosocial mechanisms can be taken as a promising way to explain the underlying mechanism highlight the interplay of biological, psychological, and social factors in an individual's life, affecting their health and well-being.

According to the biological processes, ACEs are linked to neurophysiological changes in the brain, making individuals more sensitive to stressors (i.e., increased vigilance, arousal and inflammation), which in turn lead to various psychological and physical health problems (Miller et al., 2011).

On the other hand, behaviorally, early adversity impacts children's interactions with the outer world, leading to dysfunctional coping mechanisms, including increased use of maladaptive coping and harmful behaviors. These contribute to negative health behaviors and decreased use of adaptive coping skills, leading to poor health and well-being (Danese & McEwen, 2012; Dube et al., 2003).

Furthermore, the psychological process holds that ACEs can lead to negative self-schemas, affecting stress recovery and exacerbated mental disorders (Gibb & Abela, 2008; Liu et al., 2013). Negative cognitive styles, such as self-criticism and dysfunctional attitudes, are associated with depression and poor emotion regulation, which can lead to mood disorders, PTSD, substance use, and personality disorders (Gross, 1998; Hofmann et al., 2012).

1.7. Impact of Adverse Childhood Experiences

As it is already understood that adversity and trauma are prevalent globally, their range of impacts also expands. The impacts of any adversity are potentially detrimental, and the effects are surrounded by how the event may be experienced. The American

Psychiatric Association (APA) mentioned that "directly experiencing trauma, witnessing a traumatic stressor, learning about traumatic events, or exposure to adverse details can lead to enduring, debilitating conditions" (Brunzell et al., 2015, p. 3).

Childhood experiences have a profound effect on health and opportunities throughout adulthood. The cumulative advantage/disadvantage theory states that the advantages and disadvantages experienced early in life accumulate and compound over life, leading to an increasing stratification in wealth, health, vitality, and well-being across generations over time (Thoits, 2010). So, the impacts are even worse and tend to be more severe and long-lasting if ACEs are recurrent and chronic and accompany multiple other negative issues, for example, poverty. Again, this is to remember that the risk of developing negative health outcomes increases with the number of ACEs being experienced by the individual (Shonkoff et al., 2012; Hughes et al., 2017; Felitti et al., 1998).

Therefore, it is evident that various factors work together, resulting in significant negative impacts of ACEs. These different long-standing impacts of ACEs on an individual have been highlighted in the following section.

1.7.1. Growth and Development

ACEs significantly impact various aspects of an individual's growth and development. ACEs with other early childhood stress influence adolescents' developing bodies and brains and can result in short- and long-term negative consequences, such as learning, behavioral, and physiological issues (Anda et al., 2006; Shonkoff et al., 2012; Felitti et al., 1998).

Studies have demonstrated ACEs' detrimental and toxic effects on children's development, adaptation, cognitive, social-emotional, and behavioral outcomes, including their social and emotional development (Blum et al., 2019; Choi et al., 2019).

ACEs are reported to exacerbate maternal mental health issues and contribute to prolonged stress during pregnancy (Narayan et al., 2017), ultimately affecting the well-being of the developing fetus. Hardcastle et al. (2022) found that despite otherwise healthy women, childhood adversity can have a lasting impact on the prenatal period, increasing the risk of preterm birth. These developmental delays and neurocognitive disorders also place people at an increased risk of social and behavioral difficulties (Spratt et al., 2012).

1.7.2 Brain and Cognitive Functioning

Research on neurodevelopment has linked ACEs to changes in brain development and function (Anda et al., 2006; Perry et al., 1995). Normal brain development is determined by the interaction of the genes with the experiences an idividual gather (Belsky & de Haan, 2011). Exposure to negative and unfavorable experiences can then lead to an abnormal impact on the development of the brain and its functioning event at an early age (Crouch et al., 2019; Garner, 2013; Shonkoff et al., 2009, 2012). Both individual and cumulative ACEs impact later brain development (Hare et al., 2021; Chad-Friedman et al., 2020; Hair et al., 2015; Luby et al., 2013).

Along with affecting the development of the brain, ACEs negatively affect cognitive, linguistic, and academic abilities (Watts-English et al., 2006; Zolotor et al., 1999). For example, research revealed that a family history of alcoholism is associated with impaired cognitive performance in adolescents (Anda et al., 2006; Dube et al., 2006; Tapert & Brown, 2000). The same applies to instances where a child grew up in a home with widespread family violence, parental separation, or divorce (Perry, 2001; Tsavoussis et al., 2014).

Research suggests ACEs can lead to adult cognitive deficits, including memory, processing speed, and executive functions (Gould et al., 2012; Majer et al., 2010; Lowry et

al., 2022). The different parts of the brain, namely the cortex, amygdala, and hippocampus, which are involved in emotion and self-regulation in the elderly population, were found to be affected by ACEs (Koyama et al., 2022; Bick & Nelson, 2016; McLaughlin et al., 2014). Terry et al. (2022) found that exposure to ACEs was connected with cognitive deterioration and social activity limitations. Students with ACEs are more vulnerable to risk for decreased cognitive functioning (Amato & Anthony, 2014). More recent research has also demonstrated that exposure to maltreatment and other ACEs is associated with dementia among elderly persons (Tani et al., 2020).

1.7.3. Communication and Close Relationships

In addition to the association between ACEs and growth and development, a relationship has been established between ACEs and social/interpersonal difficulties (Poole et al., 2018). ACEs can affect a person's relationships with family and caregivers, while long-term exposure can change how they view relationships and also diminishes their sense of being socially connected (Berkman et al., 2014; Rees, 2008). As the prevalence of ACEs heightens children's insecure attachment to their caregivers (Grady et al., 2017; Raby et al., 2017), children who have undergone ACEs might find it hard to build healthy relationships and trust people (Anda et al., 2006; Dube et al., 2001).

Not only do ACEs impact relationship patterns, but they impact their quality as well. Evidence suggests that ACEs may even predict violent romantic relationships during adulthood (Feiring et al., 2009; Wekerle & Wolfe, 1998; Wekerle et al., 2001). Moreover, ACEs increase the likelihood of persistent dysfunction in adult relationships, resulting in low relationship quality (Fitzgerald & Shuler, 2022). Additionally, the vast majority of research shows that different maltreatment and faced childhood challenges can predict communication in married life and may increase the likelihood of couple violence and

aggression (Celsi et al., 2021; Kimber et al., 2018; Li et al., 2020; Madruga et al., 2017; Yan & Karatzias, 2020). These impacts, for example impacts on commuicatio can exted to the other areas where commuication is deemed ecessary (see Metzler et al., 2017).

1.7.4. Occupational Functioning

ACEs harm an individual's academic and professional achievements (Anda et al., 2006; Blodgett & Lanigan, 2018; Flaherty et al., 2006). Children and adolescents who experience ACEs are more likely to struggle with their academics, receive lower achievement scores, have reported higher rates of absenteeism, and are likely to be school dropouts (Finkelhor et al., 2013; Giovanelli et al., 2016; Nurius et al., 2015). These negative outcomes may be due to the part that stated the impact of ACEs on the child's cognitive development, including memory, attention, and executive function (Sheridan et al., 2017; Felitti et al., 1998; Gilbert et al., 2009).

ACEs also impact a person's professional life in various ways. For example, people who have experienced ACEs may have lower job status and struggle with unemployment (Hughes et al., 2016; Nurius et al., 2015; Sansone et al., 2012), and they could avail less skilled jobs as adults (Bethell et al., 2014; Giovanelli et al., 2016). In addition, they are more likely to struggle with interpersonal relationships in the workplace and have difficulty coping with work-related stress (Metzler et al., 2017; Giovanelli et al., 2016; Roos et al., 2016).

1.7.5. Health and Well-being

Since the 1998 US ACE study, researchers in public health, mental health, medicine, nursing, social service, and criminal justice have examined the association between ACEs and health (Lynch et al., 2013). An extensive body of research has provided compelling evidence linking adverse experiences during childhood with a broad range of unfavorable

health outcomes (Almuneef et al., 2016; Cunningham et al., 2014; Dong et al., 2004; Dube et al., 2009; Sachs-Ericsson et al., 2017). Different research has shown that ACEs are associated with various health issues, such as chronic illnesses, mental disorders, and other different mental health outcomes.

ACEs are associated with poorer overall health status (Miller & Chen, 2013). Individuals who have experienced ACEs are more likely to face various physical health issues., which include, from obesity to more severe disease, that is, heart disease, respiratory illness, and other chronic conditions (CDC, 2021). Felitti et al. (1998) and, more recently, McLaughlin et al. (2020) also reported about the potential of ACEs with the increased risk of developing long-term health issues. These include increased risk of different NCDs and other different chronic health conditions, such as asthma, allergies, autoimmune diseases, diabetes, and cancer (Brown et al., 2009; Bhan et al., 2014; Dong et al., 2004; Felitti et al., 1998; Lin et al., 2021; Schlauch et al., 2022). ACEs also raise the chance of developing chronic pain in both children and adults (Salonsalmi et al., 2022; Nelson et al., 2021; Nelson et al., 2017) and also raise the degree of experiencing pain in illnesses such as arthritis, back pain, and headaches (Sheinberg et al., 2019).

Apart from health issues, the impact of ACEs extends to health services utilization. Different studies have examined the connection between ACEs and healthcare utilization, where ACE scores were associated with increased emergency service utilization, hospitalizations, and telephone consultation (Mendizabal et al., 2022; Okeson et al., 2022).

Moreover, the impacts extend to mental health outcomes and the most robust connections between ACEs and adult outcomes are centered around mental health issues (Brown et al., 2009). It is because ACEs contribute to the overall risk of developing various

mental health disorders (Edwards et al., 2003; Kessler et al., 2010; Polusny & Follette, 1995), impacting the mental health and well-being of an individual.

1.8. Mental Health and Adverse Childhood Experiences

The far-reaching effects of ACEs cover a wide range of negative mental health outcomes. ACEs also lead to low quality of life and constrained opportunities in life (Metzler et al., 2017), resulting in poor mental health and well-being. Well-being, a central component of health (Vik & Carlquist, 2018), can be hampered due to the resulting impact of ACEs (Mosley-Johnson et al., 2019; Bellis et al., 2013). These effects of poorer well-being can be expressed in various aspects of everyday life (e.g., employability, housing, and social support) (Giovanelli et al., 2016; Nurius, 2013; Topitzes, 2016). These effects on mental health and well-being also depend on the number of ACEs an individual has experienced (McElroy et al., 2014; Park et al., 2015).

To understand the impacts of ACEs on mental health, research has reported that ACEs increase the risk of developing the disease (Felitti et al., 1998; Sideli et al., 2020), are responsible for the early onset of the disease (Post et al., 2018; See Kessler et al., 1997), worsen the disease progression (Lysaker et al., 2018), and delay the recovery process (Nanni et al., 2012). These revealed the heightened impacts of ACEs on mental health.

The impacts of experiencing ACEs on mental health are expressed in the different stages of development (i.e., childhood and adolescence, and adulthood) (Green et al., 2010; Kessler et al., 1997; McLaughlin et al., 2012). Particularly during childhood, experiencing adversity earlier in life may lead to earlier onset of mental health problems (McLaughlin et al., 2010; Schalinski et al., 2016). Later on, in adulthood, they are

responsible for more severe psychiatric symptoms (Schalinski et al., 2016; Stumbo et al., 2015; Varese et al., 2012).

In children and adolescents, ACEs can result in trauma and weigh down a person's ability to cope (Wilson et al., 2012). Certain types of childhood adversity, such as the sudden loss of a family member, natural disasters, serious car accidents, or school shootings, are more likely to cause traumatic reactions (Bartlett & Sacks, 2019) which are often among the most intense and frequently occurring traumatic experiences (Tran et al., 2015; Sacks et al., 2014). ACEs increase the risk of internalizing in children and adolescents (Edwards et al., 2003; Brown et al., 2018; Chapman et al., 2004; Levey et al., 2017) and externalizing (Duke et al., 2010; Fuller-Thomson & Lewis, 2015; Levey et al., 2017) psychopathology, with consequences that persist into adulthood (Edwards et al., 2003; Kessler et al., 2010). The different findings suggest a complex relationship between different forms of childhood maltreatment and the development of mental disorders (Hovens et al., 2010; Thompson et al., 2012; LeMoult., 2020; Afifi et al., 2011; Agorastos & Olff, 2021; Tinajero et al., 2020; Brockie et al., 2015). Research has also documented an increased prevalence of severe psychiatric symptoms (Schalinski et al., 2016; Stumbo et al., 2015; Whitfield et al., 2005) and psychosis (Hovens et al., 2015; McLaughlin et al., 2020; Varese et al., 2012) as the indication of the impacts of ACEs.

Moreover, certain adverse experiences are responsible for specific mental problems. For example, sexual abuse during childhood is thought to be responsible for developing stress and anxiety-based disorders (Burnam et al., 1988; Saunders et al., 1992). Childhood neglect (Hill et al., 2001; Bifulco et al., 1991; Spatz Widom et al., 2007), physical abuse (Duncan et al., 1996; Mullen et al., 1996), and notably, child sexual abuse (Brown et al., 1991: Kendler, 2000; Boudewyn & Liem, 1995) have been found significantly increasing

the risk of developing depression or mood disorders. Sexual abuse has also been reported to be responsible for personality disorders in adulthood, specifically BPD (De Jong, 2016; Lobbestael et al., 2010; Reis, 2017; Yalch et al., 2023). Although specific ACEs risks certain mental health issue, the dose-response relationship has been established with exposure and ACEs' impacts. That is, ACEs are cumulatively detrimental to mental health (Mersky et al., 2013; Chapman et al., 2004; Gilbert et al., 2015).

Along with that, the impacts of ACEs on mental health can be understood with the resulting mental health outcomes indicators (i.e., self-harm or suicide, engaging in risk behavior, and substance abuse). ACEs have demonstrated an increased risk of self-harm, suicidal ideation, and suicidal behaviors (Turner et al., 2012; Wang et al., 2019; Brockie et al., 2015; Cluver et al., 2015; Thompson et al., 2019; Lang et al., 2011). Research has also reported that ACEs can lead to risky behaviors like smoking, drinking, overeating, and unprotected sex (Afifi et al., 2010; Barra et al., 2018; Campbell et al., 2016; Crouch et al., 2018) and dose-response impacts of engaging in these behaviors are also present (Anda et al., 2002; Dube et al., 2003; Dube et al., 2006). Moreover, various forms of childhood abuse and household dysfunction have also been linked to the development of using illegal drugs and excessive drinking (Ford et al., 2019; Trinidad, 2021; Benedini & Fagan, 2020).

1.9. Rationale of the Current Study

The prevalence of ACEs in Bangladesh is not known. Although the country's prevalence of child abuse and maltreatment is alarmingly high (Hadi, 2000; Mohajan, 2014), there is no available data on the prevalence of ACEs in Bangladesh. However, without data on ACEs, it is difficult to fully address and prevent the impact of such adverse experiences on individuals and society.

Moreover, the extent/nature of ACEs mental health impact in Bangladesh is not known. There is hardly any research that explored the diverse impact of ACEs. Exploring the effects of ACEs on mental health and well-being may serve as a stimulus for future studies because there is an absence of studies on the effects of ACEs. It is also critical to acknowledge that Bangladesh is having challenges with making mental health care accessible. Determining how ACE effects may vary across socioeconomic and geographic contexts is, therefore essential for creating customized treatments in Bangladesh.

1.10. Objectives

The present research is aimed at determining the impact of adverse childhood experiences (ACEs) on mental health among adult population in Bangladesh.

The specific objectives of the study are as follows:

1. To compare in prevalence of ACEs among clinical and general population.
2. To examine relationship between ACEs and adult mental health state.
3. To identify the factors mediating the relationship between exposure to ACEs and later life mental health.
4. To explore connection between specific ACEs and overall mental health state.

Chapter 2

METHOD

Method

The focus of the current study was to investigate how the negative experiences of childhood affect mental health in adulthood. This chapter presents a thorough overview of the methods, procedures, and ethical considerations employed to accomplish the research objectives.

2.1 Research Design

A cross-sectional survey design was employed to collect data for our study. Data collection focused on two groups of adults, namely the Clinical and Non-clinical populations.

2.2 Participants

The study's sample consisted of 390 Bangladeshi adults aged 18 to 67 years (M = 29.87, SD = 9.36), where 48.7% of the participants were female. The sample was drawn from both clinical and non-clinical populations, comprising psychiatric patients (i.e., clinical) and community members (i.e., non-clinical) recruited through purposive sampling technique. Table 2.1 provides a thorough breakdown of the demographic characteristics of the participants.

Clinical and non-clinical participants were chosen based on the sources of participants (i.e., from hospital or from community). However, for both groups' participants with lack of insights due to psychotic disorders (e.g., schizophrenia, delusional disorder), were excluded as it would pose a challenge to the provision of informed-understood consent. Additionally, individuals with self-reported memory dysfunctions,

were also excluded due to concern regarding the reliability of the data about childhood memory (Kryscio et al., 2014; Petersen et al., 1999).

2.2.1 Clinical Sample (n = 190)

The clinical sample of this study was made up of 190 patients who were seeking treatment for a particular condition or illness, in this case, for their mental health needs. These patients were not hospitalized but rather received medical care on an outpatient basis. They were seeking treatment for a wide range of mental health conditions(i.e., anxiety, depression, obsessive-compulsive disorder, borderline personality disorder, drug abuse, etc.). They were diagnosed using the fifth edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-5; American Psychiatric Association, 2013). Moreover, they were treated by mental health professionals, including expert psychiatrists and clinical psychologists. Their mental health diagnosis was recorded with an additional question. Participants were asked to identify their diagnosis of mental illness, which was further matched with their prescription.

2.2.2 Non-clinical Sample (n = 200)

A non-clinical sample is a group of participants without a history of mental health problems who have not sought treatment (Wang et al., 2021). These non-clinical participants were recruited from the local community. To ensure that the recruited participants did not have a current or prior history of mental health problems, a self-reported checklist (see Appendix A) was administered. The checklist included questions about whether they had ever been treated for common mental health conditions (i.e., depression, anxiety, and substance use disorders) or had any self-reported memory dysfunctions. In total, 200 non-clinical participants were included in the study.

Demographic characteristics of both the sample groups are presented in Table 2.1.

Table 2.1

Socio-Demographic and Psychosocial Characteristics of Participants (N=390)

Variables	*Clinical (N=190)* *n (%)*	*Non-Clinical (N=200)* *n (%)*	*Total (N=390)* *n (%)*
Sex			
Male	107 (56.3)	100 (50.0)	207 (51.3)
Female	83 (43.7)	101 (50.0)	184 (48.7)
Housing			
Own	60 (31.6)	102 (51.0)	162 (41.5)
Rent	72 (61.1)	116 (36.0)	188 (48.2)
Shared/Temporary	14 (7.4)	26 (13.0)	40 (10.3)
Childhood Family Type			
Nuclear	135 (71.1)	156 (78.4)	291 (74.8)
Extended	55 (28.9)	43 (21.6)	98 (25.2)
Birth order			
1st	72 (37.9)	88 (44.0)	160 (41.0)
2nd	53 (27.9)	52 (26.0)	105 (26.9)
3rd	25 (13.2)	33 (16.5)	58 (14.9)
4th and above	40 (21.1)	27 (13.5)	67 (17.2)
Family Size			
>4	88(47.1)	99 (49.5)	187 (47.9)
4 and above	102 (53.7)	101 (50.5)	203 (52.1)
Number of siblings			
No siblings	11 (5.8)	17 (8.5)	28 (7.2)
1	23 (12.1)	37 (18.5)	60 (15.4)
2	62 (32.6)	61 (30.5)	123 (31.5)
3 and 3+	94 (49.5)	85 (42.5)	179 (45.9)
Relationship status			
Unmarried	99 (52.1)	100 (50.0)	199 (51.0)
Married	86 (45.3)	95 (47.5)	181 (46.4)
Separated	3 (1.6)	0 (0.0)	3 (0.8)
Divorced	2 (1.1)	2 (1.0)	4 (1.0)
Windrowed	0 (0.0)	3 (1.5)	3 (0.8)
Education			
No formal education	2 (1.1)	11 (5.5)	13 (3.3)
Primary	24 (12.6)	14 (7.0)	38 (9.7)

Secondary	28 (14.7)	7 (3.5)	35 (9.0)
Higher-Secondary	61 (32.1)	62 (31.0)	123 (31.5)
Graduation	45 (23.7)	44 (22.0)	89 (22.8)
Postgraduation	30 (15.8)	62 (31.0)	92 (23.6)
Current Residence			
Town	158 (83.2)	161 (80.5)	319 (81.7)
Village	32 (16.8)	39 (19.5)	71 (18.3)
Brought up place			
Town	98 (51.6)	106 (53.0)	204 (52.3)
Village	92 (48.4)	94 (47.0)	186 (47.7)
Occupation			
Unemployed	78 (41.1)	90 (45.0)	168 (43.1)
Fulltime job	38 (20.0)	57 (28.5)	95 (24.4)
Parttime job	13 (6.8)	12 (6.0)	25 (6.4)
Business	17 (8.9)	19 (9.5)	36 (9.2)
Others	44 (23.2)	22 (11.0)	66 (16.9)
Mothers Education			
No formal education	43 (22.6)	49 (24.5)	92 (23.6)
Primary	68 (35.8)	74 (37.0)	142 (36.4)
Secondary	39 (20.5)	39 (19.5)	78 (20.0)
Higher-Secondary	17 (8.9)	20 (10.0)	37 (9.5)
Graduation	15 (7.9)	12 (6.0)	27 (6.9)
Postgraduation	8 (4.2)	6 (3.0)	14 (3.6)
Fathers Education			
No formal education	38 (20.0)	27 (13.5)	65 (16.7)
Primary	45 (23.7)	42 (21.0)	87 (22.3)
Secondary	26 (13.7)	27 (13.5)	53 (13.6)
Higher-Secondary	31 (16.3)	52 (26.0)	83 (21.3)
Graduation	39 (20.5)	35 (17.5)	74 (19.0)
Postgraduation	11(5.8)	17 (8.5)	28 (7.2)
Socio Economic Status			
Low	23 (12.1)	25 (12.5)	48 (12.3)
Middle	163 (85.8)	173 (86.5)	336 (86.2)
High	4 (2.1)	2 (1.0)	6 (1.5)
Age [M (SD)]	28.38 (7.08)	31.29 (10.94)	
[a]Income [M (SD)]	64.49 (232.18)	62.82 (67.30)	

Notes: [a]Income in thousand.

2.3 Sample Size Determination

There are foundations and basics for sample determination, e.g., significance, effect size, power of the test, and the type of sample being used (Hashim, 2010). However, in most cases, in the absence of known population parameters, researchers suggested using different rules-of-thumb for sample size calculation (see Green, 1991). One widely used rule-of-thumb for calculating the sample in place is N = 50 + 8m, where N is the sample size and m is the number of predictors or independent variables.

In this case, the research question is likely to involve multiple independent variables, including different types of childhood experiences, demographic factors, and potential confounding variables. It was planned to include both clinical and non-clinical samples, with a larger sample size being required. Therefore, the size of each sample was calculated separately using this formula.

The present research used 16 domains in the ACE-IQ questionnaire and a few additional variables are used (i.e., gender, mental health state, wellbeing, quality of life) for further analysis. However, these additional variables will be used individually for analysis. Therefore, for flexibility of analysis, m =18 was considered which resulted in a sample size of 194 for each group [N = 50 + 8(18) = 50 + 144 = 194].

To account for the chance that some participants would withdraw before completing all measures and that some participant data might need to be eliminated due to inadequate measures, we kept the sample size to 200 clinical and 200 non-clinical populations, which is enrolling about 400 individuals. However, due to removal of the participants with incomplete data (>30%), the final sample size available for this research was 390.

2.4 Instruments

Multiple instruments were used in this study, including three already available Bangla-adapted instruments, three freshly Bangla-translated instruments, and a few custom-made instruments. The three Bangla-adapted scales used were the Self-Reporting Questionnaire (SRQ-20), the WHOQOL-BREF (WHO QoL), and the WHO-Five Well-being Index (WHO-5), all of which can be found in Appendix B to D. The two freshly translated Bangla tools were the Adverse Childhood Experiences-International Questionnaire (ACE-IQ) extended form, the Connor-Davidson Resilience Scale (CD-RISC-10), and the Single-Item Self-Esteem Scale (SISES). These three tools were translated into Bangla using a methodical process that is explained in the procedure section. In addition to these six tools, custom-made questionnaires were used to assess physical health conditions, health-related behaviors, and perceived maltreatment. Finally, a custom-made demographic questionnaire was designed and used to gather information on participants' characteristics.

The following section provides a brief overview of each of the scales used in the questionnaire, including their psychometric properties and utility.

2.4.1 Self-Reporting Questionnaire (SRQ-20; World Health Organization, 1994)

The WHO (1994) devised the Self-Reporting Questionnaire (SRQ-20) to assess mental health based on symptom measurement (WHO, 1994). It is a 20-item self-report measure that can be administered as an interview or via a paper/pencil questionnaire (see Appendix B). Participants are asked if they have experienced symptoms (e.g., 'Do you feel unhappy?' or 'Do you feel tired all the time?') in the last 30 days, and item responses are recorded as binary (yes=1, no=0). The SRQ-20 measures depression, anxiety, and psychosomatic complaints, all grouped under the common mental disorder (CMD)

construct (Patel et al., 2008). The scale is scored by summing items, resulting in a maximum total score of 20. A cut-off of 7/8 (i.e., 7 = probable non-case; 8 = probable case) is commonly reported for the scale in studies conducted in developing countries (Araya et al., 1992; Chen et al., 2009; Giang et al., 2006; Harding et al., 1980; Sartorius & Janca, 1996) and is also recommended by the WHO (Harpham et al., 2003; WHO, 1994).

The SRQ-20 has been validated in different low- and middle-income countries (Chen et al., 2009; Iacoponi & Jair de Jesus, 1989; Patel et al., 2008; Giang et al., 2006; Rumble et al., 1996; Ventevogel et al., 2007). A systematic review conducted by Ali et al. (2016) has reported the SRQ-20 as the most effective validated screening tool with strongest psychometric properties among the mental health measures (Ali et al., 2016). For example, strong reliability for both primary care and community samples and validity, including factorial validity (see Aygün & Inandi, 2012; Chen et al., 2009; van der Westhuizen et al., 2016). The psychometric properties of the Bangla validation of the SRQ-20 reported high internal consistency of the scale, with a Cronbach's alpha value of 0.87 and a moderate to high test-retest reliability with an intraclass correlation coefficient (ICC) of 0.60. The scale showed good discriminant validity, with a significant difference in mean SRQ-20 scores between individuals with and without psychiatric disorders (Islam et al., 2000).

2.4.2 The WHOQOL-BREF (WHO QOL; World Health Organization, 1995)

The WHOQOL-BREF (Brief Version of World Health Organization Quality of Life) is a 26-item self-administered questionnaire developed by the World Health Organization in 1995. It is a shorter version of the WHOQOL-100 and measures an individual's perceptions of their health and well-being over the previous two weeks. Responses to the items are arranged on a 1-5 Likert scale where 1 denotes ‘Not at all’ (e.g., ‘How much do you enjoy

life?') or 'Very dissatisfied' (e.g., 'How satisfied are you with your access to health services?') and 5 denotes 'extremely' or 'completely agree.' Some items were also arranged with the response option 'Very poor' to 'Very good', and only one item was formatted to respond with 'Never' to 'Always' (see Appendix C). The item response is scored from 1 to 5, later linearly translated to a scale score of 0 to 100 (Harper et al., 1999; Skevington et al., 1999). The questionnaire covers four domains, including *physical health*, *psychological health*, *social relationships*, and *environmental health*, with the two additional items measuring the overall quality of life and general health.

The psychometric properties of the WHOQOL-BREF have been extensively researched and found to be reliable and valid in measuring the quality of life across different cultures and populations (Skevington et al., 2004; The WHOQOL Group, 1995). For reliability, the WHOQOL-BREF has been found to have good internal consistency, test-retest reliability, and inter-rater reliability. The internal consistency (Cronbach's alpha) of the domains ranges from 0.69 to 0.82; test-retest reliability coefficients range from 0.73 to 0.87; and inter-rater reliability coefficients range from 0.70 to 0.95 (Skevington et al., 2004). Again, for validity, WHOQOL-BREF has reported good convergent validity, discriminant validity, and criterion validity (Skevington et al., 2004). The Bangla version of the scale has also shown good psychometric properties, including test-retest reliability from 0.67-0.84 and good construct validity (Izutsu et al., 2005).

2.4.3 WHO-Five Well-being Index (WHO-5; World Health Organization, 1998)

The WHO-Five Well-Being Index (WHO-5) is a widely used self-reported measure of subjective psychological well-being (Topp et al., 2015). It measures the subjective quality of life based on good mood, vitality, and general interest and evaluates how much these good emotions were felt over the previous two weeks using a 6-point Likert scale with a

range of 0 to 5; 0 = 'not present' to 5= 'present' (see Appendix D). The raw score of the scale ranges from 0 to 25, which is then converted into a score by multiplying it by 4, which ranges from 0 (worst thinkable well-being) to 100 (highest thinkable well-being). A score of 50 on the scale indicates poor emotional health and requires further clinical investigation. The WHO-5 has been approved as a depression screening tool where a score of 28 indicates depression (Topp et al., 2015).

The WHO-5 has shown strong internal consistency reliability, with a Cronbach's alpha of .891 (Kocalevent et al., 2013). The scale has been translated into more than 30 different languages, including Bangla. The Bangla version was validated by Faruk et al. (2020) has reported with acceptable reliability and validity, including internal consistency (r = 0.754), test-retest reliability (r = 0.713), as well as divergent validity (r = -0.443), and concurrent validity (r = 0.542).

2.4.4 Adverse Childhood Experiences—International Questionnaire (ACE-IQ; World Health Organization, 2016)

The ACE-IQ developed by World Health Organization (2016) is a 29-item instrument that assesses exposure to 13 categories of childhood adversities falling into three domains: childhood maltreatment, family/household dysfunction, and violence outside the home. Emotional neglect, physical neglect, emotional abuse, physical abuse, and sexual abuse are grouped in the ***childhood maltreatment*** domain. ***Family/household dysfunction*** domain includes 5 categories: domestic violence; household member with mental illness; household member incarceration; household member who was substance abuser; and lastly, ***violence outside the home*** domain includes 3 categories of childhood adversities: bullying, community violence; and collective violence. Though much of the research does not refer to physical fights as an individual category, It should be highlighted that physical

fights and exposure to violence in the community are often merged (= peer violence), resulting in a total number of 13 ACEs.

Unlike most other self-report instruments, different items in the ACE-IQ are presented with different response options. Most of the items are presented with 4-point Likert scaling (response ranging from ‘never’ to ‘many times’), some of the items are presented with dichotomous response options (i.e., Yes/ No), and only a few other items are presented with 5-point Likert scaling (response ranging from ‘never’ to ‘always’). Details about the response option can be found in Appendix E.

The ACE-IQ has two options for coding: binary and frequency (WHO, 2016). For binary coding, the final score refers to the sum of each event reported, independent of frequency. For the frequency coding, the final scores consist of the events that occurred at a predefined frequency, as specified in the Guidance for Analyzing ACE-IQ (WHO, 2016). This second coding scheme is meant to discriminate between more and less severe forms of adversity (see Appendix F).

Psychometric evaluation of the ACE-IQ revealed good reliability and validity. The Cronbach's alpha coefficient for the ACE-IQ has been reported to range from 0.72 to 0.84 (Mielck et al., 2018; Sousa et al., 2019), and test-retest reliability is high, with a coefficient range from 0.78 to 0.90 (Ho et al., 2019). The ACE-IQ has demonstrated good validity in measuring a range of adverse childhood experiences in different cultural contexts. The scale has been shown to have construct validity, as evidenced by significant correlations with related constructs such as depression and anxiety (Sousa et al., 2019). The ACE-IQ has also been found to have criterion validity, with higher scores on the scale associated with increased risk for a range of negative health outcomes, such as chronic diseases and mental health disorders (Téllez et al., 2023). Among other reported validity include discriminant

validity (F-value = 13.90, p<0.001), convergent validity (r = 0.85, p<0.001 with the CTQ-SF), and predictive validity (R = 0.12, p = 0.001). (Christoforou & Ferreira, 2020). The ACE-IQ also showed satisfactory concurrent validity with the CTQ questionnaire (Kazeem, 2015). The tool has been found adequate in assessing exposure to ACEs among individuals in low- and middle-income countries (Kidman et al., 2019; Kidman & Kohler, 2019; Kaggwa et al., 2022; Muwanguzi et al., 2023).

Three additional categories were extracted to form an extended ACE-IQ assessment for the current study, including serious financial problems (Mersky et al., 2016), racism/discrimination, and migration issues (see Swingen, 2020). See Appendix G for details of the ACEs categories for the study. The question used to assess serious financial problems, "how often did your family experience serious financial problems?" was revised to "During the first 18 years of your life, how was your family's economic/financial situation?", with the response option ‘Very poor’ to ‘Very good’ (Greenley et al.,1997). Family financial satisfaction was also measured by Morgan’s (1992) proposed single statement to measure economic satisfaction (i.e., “how satisfied are you with your financial situation?”) as "During the first 18 years of your life, How satisfied are you with the (financial) situation of your family?”

This instrument was translated into Bangla for using in the present study. The procedure section (2.5.1) discusses the detailed process of translation.

2.4.5 Connor-Davidson Resilience Scale (CD-RISC-10; Conner & Davidson, 2003)

A person's ability to develop, maintain, or restore their mental health while facing adversity is facilitated by resilience, a dynamic process where psychological, social, environmental, and biological components interact (Stewart, 2010; Wekerle et al., 2011). Resilience among the participants was measured with Bangla-translated CD-RISK-10,

initially developed by Connor & Davidson (2003). Both the original and Bangla-translated scales can be found in Appendix H & Appendix I. This 10-item scale was developed based on factor analysis by Campbell-Sills and Stein at the University of California, San Diego (Campbell-Sills & Stein, 2007). Possible responses range from '0 – Not true at all' to '4 – True nearly all the time'. The respondents completed the scale based on the degree to which they admitted each item (e.g., 'I can achieve goals despite obstacles') on the scale applied to them in the preceding month.

A summation of the responses to each scale's items yields a score ranging from a minimum of 0 to a maximum of 40, which signifies the highest level of resilience. Research revealed that the ten-item scale is psychometrically superior to the unidimensional 25-item and five-factor 25-item scales with significant convergent and divergent validity (Gonzalez et al., 2015).

The Cronbach's alpha value of 0.85 indicated good reliability for the 10-item CD-RISC, and an additional analysis also supported the construct validity of the 10-item scale done by Campbell-Sills & Stein (2007). Research conducted on the psychometric properties in both the general population and patient samples indicated sufficient reliability (internal consistency, test-retest) and both construct validity (Scali et al., 2012; Connor & Davidson, 2003). The scale showed excellent test-retest reliability over two weeks (r = 90) and internal consistency reliability for different populations with Cronbach's Alpha = 0.85 to 0.91 (Campbell-Sills & Stein, 2007; Goins et al., 2012; Gupta & Kaur, 2021; Wang et al., 2010) and adequate construct validity measured by convergent validity ranging from r =.30 to r =.60, at p<.001 level (Coates et al., 2013). Written permission to translate and explore the psychometric properties of the scale was obtained from the authors (See Appendix J).

A Bangla version was created for the study with translation process explained in section 2.5.1.

2.4.6 Single-Item Self-Esteem Scale (SISES; Robins et al. 2001)

The Single-Item Self-Esteem Scale (SISES) is a one-item global self-esteem measure developed and validated by Robins et al. (2001). The SISES asks participants to rate how true the statement "I have high self-esteem" is for them using a 7-point Likert-type scale ranging from '1- Not very true of me' to '7- Very true of me' (see Appendix K). The SISES has shown predictive validity comparable to the widely used Rosenberg Self-Esteem Scale (Rosenberg, 1965) and has excellent convergent validity. The scale was translated into Bangla for the current population, and response options were modified to a 10-point scale.

2.4.7 Social Support

The concept of social support is centered around the individual's perception of the level of support they receive from their family and friends, especially during times of crisis (World Health Organization, 1998). Current Social Support with respect to satisfaction with personal relationships and satisfaction with support received from friends were measured with two-item measures with five-point response scales (1 = 'very dissatisfied ', 5 = ' very satisfied'), using two questions: —'How satisfied are you with your personal relationships?' and 'How satisfied are you with the support you get from your friends?'

2.4.8 Treatment & Health-Related Behavior Checklist

Treatment and health-related behavior of the participants were collected using a composite custom-built checklist. This checklist consisted of 26 items, assessed behavior and history related to treatment seeking, psychical and mental activities, regular food habits including fruit and vegetable intake, sleep, smoking, alcohol, and substance use, risk behavior, self-harm and suicide, and accidental injuries. All the items used dichotomized "yes" or "no" responding; for example, the participant's lifetime suicidal attempt was

measured with the item, “Have you ever attempted to commit suicide?”; however, age of initiating smoking was collected using a probe to one of the items. Please find the items in Appendix K.

2.4.9 Socio-Demographic Questionnaire

A customized demographic questionnaire [Appendix A] was administered to each participant, which included 20 questions on demographic information such as age (was categorized later), sex (dichotomized), position in the family’s birth order, religion (3-level categorical scale), occupation (7-level categorical scale), marital status (5-level categorical scale including an open option to write about), height (measured in foot-inch) and weight in kilogram, educational level (6-level categorical scale), socioeconomic status, type of home (3-level categorical scale), and area of living (3-level categorical scale). Regarding family information, family income and expenses were coded numerically. Information about both parents’ educational levels (6-level categorical scale as the respondents) were also collected. Both parental academic status was used as a proxy for childhood socioeconomic status (SES), considered a potential covariate. Furthermore, the number of siblings that each respondent had during childhood was also recorded.

2.5 Procedure

The procedure for this study is presented in three sections, which include tool development and translation, sample recruitment, and data collection. Some particular tools were developed and translated into Bangla, and data was collected from recruited adult participants via face-to-face interviews. The following section provides a detailed description of the tasks performed in each section of the study.

2.5.1 Preparing Tools: Development and Translation

For the purpose of the study, two tools were developed, and two others were translated. The development and translation of the tools were aimed at collecting valid and reliable data for the study. Both the development and translation of tools involved several steps and rigorous processes to ensure a comprehensive dataset for analysis. The processes have been explained in the following sections.

2.5.1.1 Tool Development. As part of our research project, we developed two specific instruments that met the particular objectives of our investigation. The first tool, 'Perceived Maltreatment,' probed the participants' experiences and perceptions of maltreatment. The second tool, titled 'Treatment and Health-Related Behavior,' was designed to assess participants' attitudes and behaviors toward healthcare and treatment seeking (see Appendix L). The process of developing a tool involves constructing items and evaluating them with judges.

Items Construction. Both tools underwent rigorous development processes, including literature reviews and expert consultations, to ensure that they accurately measured the constructs of interest. Some items were also taken from existing instruments. Items from these two sources formed the initial item pool.

For ‘Perceived Maltreatment’, the initial item pool consisted of 13 items. But through the continued tool development process, two items were merged into a single item, and one item was omitted as it measured the existing concept. Finally, 10 items for the ‘Perceived Maltreatment’ tool were created for expert evaluation.

For the Treatment and Heath related Behavior, three categories of items were developed: treatment-seeking, Health-related behavior, and Health Risk Behavior. The

initial item pool consisted of 26 items, 4 for treatment seeking, 8 for Health-related behavior, and 14 for Health Risk Behavior.

Expert Evaluation. Both the checklist was evaluated by seven mental health professionals who have expertise in working on child and adult mental health problems and trauma. All the experts were clinical psychologists. Details of the judges can be found in Appendix M. The seven experts independently reviewed the initial items on relevance/appropriateness and provided comments for revision. They were instructed to assess the items based on their own understanding of the constructs/concepts and check whether the proposed items reflect them. They indicated their judgment with 'Yes', or 'No' in a different column.

For the second scale, the 'Treatment and Health-Related Behavior' scale, one item was removed as it was deemed not representative of treatment-seeking behavior. Another item received negative feedback, prompting a revision based on reviewer comments. The revised item was then evaluated again by seven judges, who all agreed on its inclusion. Ultimately, 25 items were selected for the 'Treatment and Health-Related Behavior Scale.'.

Content validity indices were calculated for relevance and appropriateness by item for the tool. These ranges from 85.17 to 100.

2.5.1.2 Translation of the Instrument. In addition to the two tools developed, two existing tools were translated for use in the study. The Adverse Childhood Experiences—International Questionnaire (ACE-IQ) and Connor-Davidson Resilience Scale (CD-RISC-10) were translated and validated into Bangla. Several existing guidelines were reviewed to complete the translation process correctly (e.g., Hambleton, 2001; Hernández et al., 2020; Van Widenfelt et al., 2005). The process followed several steps, including forward translation, also known as Translating into the target language, backward or back

translations, Expert Review and cultural adaptations, Synthesis and finalization, and pilot testing to ensure the tools were culturally appropriate and accurately captured the intended constructs. Permission to translate and adapt the scales was sought from the principal author of the scales (see Appendix I).

Forward translation. The two scales were translated independently from the original English Scale to Bangla.

ACE-IQ. Two native speakers working as mental health professionals translated the ACE-IQ. These two translations were reviewed, and a single form was created. The review was done by a senior expert mental health professional with comprehensive knowledge of mental health practices and research as well as the development of psychometric tools. During the review, two item translations were modified ('Did you see or hear a parent or household member in your home being hit or cut with an objects, such as a stick (or cane), bottle, club, knife, whip, machete, etc?' and 'Did a parent, guardian, or other household member hit or cut you with an object, such as a stick (or cane), bottle, club, knife, whip, machete etc?'). Physical punishment using a cane, club, whip, or machete is not common in Bangladeshi culture. So, these words are omitted. Similarly, the term militia and paramilitary are omitted from the item 'Was a family member or friend killed or beaten up by soldiers, police, militia, paramilitary, or gangs?'

Connor-Davidson Resilience Scale (CD-RISC-10). The scale also underwent an independent translation process by two mental health professionals who are native Bangla speakers. Afterward, a senior expert in mental health reviewed and combined the translations into a single form. The translation process also involved a deeper understanding of the concepts and context of the language and then translating them in a way that made sense in the context of the original language. The final Bangla version of

the scale kept all of the original content without any modifications to the items. Attempts were made to follow a neutral translation and to avoid any personal language style. In addition, the questionnaire used lay language to avoid using jargon or technical terms to make it better understood by the general people.

Back Translation. In the next step, both ACE-IQ questionnaire and the CD-RISC-10 scale were back-translated blindly by two independent mental health professionals, professors of the department of Clinical Psychology of the University of Dhaka. They both had expertise in both native and English languages and had an in-depth understanding of the concept of interest. Back translating of each scale required that each translating the scale items along with the given instruction to respond to each scale. The items were back-translated into the original language of the instrument is to make sure that the meaning of each item does not change when it is translated into a different language from the original language.

Equivalence Check. The Back Translation scales and the original translated one were then presented to another expert. The two translation was presented parallelly by creating a format with a dichotomous response comment option The expert was a faculty of the Public Health department having equal competency in both English and Bangla Language and having background in mental health research.

2.5.1.3 Cognitive Interviewing. Cognitive interviewing was done to examine how survey respondents handle understanding, recollection, decisions, and judgment of the questionnaire. This procedure detects and fixes questionnaire issues before administration. The cognitive interviews were conducted by the researcher, who actively participated in the process by employing the verbal probing technique. Through this method, the researcher assessed the participants' level of comprehension, emphasized the

reasoning behind their choices, and identified any issues or difficulties encountered while responding to the questionnaire.

2.5.1.4 Pilot Testing. The translated version was pretested on 10 adults who were not involved in the study. Before administering the developed and translated tools to the study participants, a pilot test was conducted to ensure the tools were appropriate, understandable, and easy to use. The pilot test involved 10 adults who were not involved in the study and who shared similar demographics and characteristics with the target population were involved.

During the pilot test, participants were asked to complete the tools and provide feedback on their experience. The feedback was then used to refine the tools and address any issues or concerns raised by the participants. For example, participants may have needed clarification or help to answer, leading to changes in the wording or structure of the questions.

2.5.2 Recruitment of Participants

For the study, participants were recruited using purposive sampling technique. Community (non-clinical) samples were collected from the adult population of the local community. The clinical sample was recruited from the patients seeking treatment from the outpatient settings of the National Institute of Mental Health and Hospital (NIMH) of Bangladesh. The NIMH is the only full flagged mental health institute in Bangladesh that is providing services to people from different parts of the country who are seeking mental health support (WHO, 2015; Rabbani et al., 2016). Individuals from various geographical locations throughout the country avail their mental health services from this institute.

Approval from the institution was taken prior to data collection (see Appendix N for the institutional approval certification). Prospective participants were approached

individually and recruited into the sample based on their informed and understood consent. Before enlisting them in the sample, they were asked about their memory trouble and the presence of psychotic disorder using two questions.

2.5.3 Data Collection

Data collection of the study was conducted by a team of five members consisting of two clinical psychologists, one two assistant clinical psychologist, and one Psychology graduate. All team members underwent training on how to gather data utilizing the questionnaire, following the WHO interview guidelines for ACEs data collection found in Appendix O.

Self-reported measures were administered through face-to-face interviews to gather data for the study. Before collecting data, each participant was provided a detailed explanatory statement describing the objectives and procedure of the study, and they were also briefed about the study verbally. After this, instructions regarding the contents and way of responding to the questionnaire were also shared. Individual participants' data were collected by obtaining their unanimous informed verbal consent. Data were collected in a single administration that took an average of 20 to 25 minutes. Please refer to Appendix P for the detailed explanatory statement.

2.6 Data Analysis

After scoring all the responses, the data from each part was analyzed separately. The Statistical Package for Social Sciences (SPSS) version 28 (IBM Corp, 2021) was used to perform all statistical analyses for the current project. The analysis was conducted through multiple steps with precision. The analysis follows multiple steps.

First, sample's demographic and socioeconomic characteristics were explored and described. Some demographic and socioeconomic characteristics (number of siblings, family size, and birth-order) were categorized according to the conventional approach. Then descriptive statistics were conducted for the prevalence of ACEs and demographic variables. After adjusting for socioeconomic status, we investigated the direct and indirect relationships between ACEs and adult mental health. Descriptive and frequency statistics were generated for continuous and categorical socio-demographic and lifestyle variables.

The categories of ACE were added up to determine the extent of childhood adversities experienced by an individual. This resulted in a comprehensive measure of the ACE score ranging from 0 (no exposure) to 16 (exposure to all the categories). The ACE score was added and categorized as 0, at least 1, at least 2, at least 3, and at least 4. ACE items were categorized according to the domains as physical, verbal, and sexual abuse; physical and verbal neglect; substance abuse; violence towards mother; parental loss; family member mental illness; and family member incarceration. In addition to the original/conventional ACE categories, the score now includes three additional/extended categories: Racism and Discrimination, migration issues, and financial crisis or poverty. Certain ACE Study publications had only identified 13 ACE categories; these new categories will offer improved insight into different cultural ACEs, including Bangladesh.

The analysis of ACEs involved three different approaches. The first approach grouped ACEs into a single binary variable that determined whether ACEs were present or absent. The second approach involved grouping ACEs into a continuous count of up to four situations, categorized as 0, 1, 2, 3, or 4. The third approach created three dichotomous categories based on the ACE situations, which were abuse, household dysfunction, and financial strain.

The assessment of mental health status was done using three measures: the symptom measure (SRQ), WHO Well-being 5, and WHOQOL-BREF. Instead of providing a total score, the WHOQOL-BREF scale gives individual scores for four domains: physical health, psychological health, social relationships, and environment. Based on the theoretical categorization of the instruments, scores on the WHO Well-being 5 are classified as low well-being and High well-being. Other Mental Health conditions were reported dichotomously (Yes, No) to the questions of suicide and self-harm, health-risk behavior, and substance use. During the examination of the impact of ACEs on mental health, all of these factors were evaluated as dependent variables.

Then, Chi-square tests were performed for the association between each category of ACE and sociodemographic data. In the same way, to associate the ACE categories and the scores of the questionnaires, Pearson's correlation (r) was performed. Student's t-test was used to extract the association between each of the 16 ACE categories with each mental health outcome.

Moreover, the mediation analysis was done with resilience, Social support, and Self-esteem as mediating variables. For mediation analysis, three separate simple mediation tests and also a parallal/multiple mediation analyses were conducted. The mediation analysis was conducted using PROCESS model 4 macro software and with the bootstrapping method (Hayes, 2017).

Furthermore, several logistic regression analyses were conducted to assess the links between specific ACE categories and mental health. Separate models were run with each mental health condition acting as the outcome; For the association between each category of ACE (16) and the well-being, SRQ, and other mental health conditions, e.g., Health risk behavior, suicide and self-harm, and substance abuse, by calculating the odds

ratio (OR) and adjusting for sex, age, education, family, and socioeconomic status. Separate models were run with the mental health condition as the outcome.

2.7 Ethical Considerations

The project followed the ethical principles for ACE research mentioned by the ACEs Research protocol by WHO (see Appendix Q). This study was also approved by the Department of Clinical Psychology, University of Dhaka Human Research Ethics Committee (Approval Certificate No. MP211201, see Appendix R) and the National Institute of Mental Health and Hospital (NIMH) Research Ethics Committee (No. NIMH/2023/2529, see Appendix S).

Due to the sensitive nature of the information gathered in this survey, several safeguards were implemented, including following the distress protocol for both the participants and the researcher developed by Wright et al. (2020). (see 'Protocol for managing distress during research,' Appendix T). The following section briefly describes major ethical concerns maintained throughout the study.

2.7.1 Informed and Understood Consent

Attempts were made to ensure fully informed consent from all participants in the study before data collection. Therefore, unanimous informed consent was taken from each participant; any written and traceable data that might be used to identify the participants were taken from them at any phase of the study.

All the participants received detailed information written in a separate sheet on the nature, purpose, and future utility, anticipated benefits, potential risks, and discomforts of the study. The role of the researcher/research assistant was also explained there, along with the purpose of the visit. The research purpose and process were also

presented to them verbally and explained in a detailed written explanatory statement. Necessary clarifications (both verbally and in writing) were also made. Furthermore, information was shared on who will have access to the collected data and how that information will be communicated further (e.g., in a report) with record keeping and access to these records. Participants were also informed that their consent is voluntary, that they may refuse to answer any questions they choose, and that they may terminate participation at any time. Before participating in the study, participants gave their verbal consent to ensure their understanding and willingness to take part.

2.7.2 Confidentiality of the Participants

The researcher took steps to ensure complete confidentiality of all information collected, reported, and documented about the research participants. During data collection, the participants' privacy was carefully protected and maintained. The anonymity of all information was strictly maintained throughout the entire study. The study investigator maintained the utmost secrecy of all records, with absolutely no access granted to anyone else.

2.7.3 Minimizing Harm

Any chances of risk of harm to the participants, either physically or psychologically, were considered with the highest priority, and steps were taken to minimize them as much as possible. Although trauma investigation may result in psychological harm, the researcher made every effort to provide participants with the least unpleasant experience possible. Study data revealed that people exposed to different traumatic experiences like family violence, physical torture, and rape reported no distress while undergoing different assessment procedures; instead, they thought it was helpful (Griffin et al., 2003). Again, Seedat et al. (2004) stated that sharing trauma memory is of therapeutic value. Necessary

clarifications (both verbally and in writing) were also provided to help participants anticipate the possibility of distress arising from the interview.

Designing Questionnaire to Minimize the Risk of Harm. Efforts were made to omit sensitive words as much as possible to minimize the potential risk of distress for the participants. Again, sensitive questions (i.e., items related to contract sexual abuse) to be answered are designed to be set after more neutral or typical questions, as research suggests its utility to help minimize risks.

Ensuring Safety During Data Collection. Different measures were taken to ensure the interview and data collection a less distressing experience for participants. Experts and trained research assistants carried out the data collection procedure. Researcher assistants were trained and instructed to monitor and evaluate a participant's well-being and emotional stability during the interview, and referral procedures were in place. They all had the necessary skills and expertise to engage with the participants sensitively.

During the study data collection, if any participant appeared distressed and showed signs of needing treatment, the researchers would direct them to available sources of care and support. The researchers were also equipped with materials and techniques to immediately assist triggered or distressed participants, such as grounding, self-soothing, and management techniques. Additionally, the interviewers were all clinical psychology graduates, which helped ensure that safety standards were maintained.

Ensuring Continuous Support. A referral list for easily accessible and affordable online and offline mental health organizations was attached for the personal use of the participants. This resource includes contact information for support centers such as hospitals, counseling centers, and other mental health resources that are available both online and offline with specific details about the mental health resources available, such

as the types of services they offer and their hours of operation, to make it easier for people to find the right kind of help they need. Additionally, it also includes emergency helpline numbers that focus on preventing incidents involving women and children, as well as providing support to victims in need of emergency assistance (see Appendix U).

Chapter 3

RESULTS

Results

Analysis of the data were carried out using descriptive and inferential statistics based on the objectives of the study. The following sections present the findings from the study in line with the objectives.

3.1 Prevalence of ACEs among Clinical and General Population

The first research objective sought to explore the prevalence of ACEs among the clinical and non-clinical sample of Bangladeshi population. At the first part, each of the 16 categories under four expanded ACEs categories was considered, where their prevenances were assessed in clinical and non-clinical population (Table 3.1). The second part of the analysis addressed the distribution of the number of ACEs across clinical and non-clinical sample (Table 3.2). The third part of the analysis presents the number of individuals from clinical and non-clinical populations exposed with a specific number of ACEs in an incremental manner (see Table 3.3). It also presents the incremental ACEs across different demographic characteristics of the participants

The presence and absence of 16 ACEs under four domains, including three conventional domain and exteded ACEs domai for both the Clinical and Non-clinical groups are presented in Table 3.1.

Chi-Square test was conducted to see if the presence or absence of each of the maltreatment experiences is connected with presence or absence of mental health conditions.

Table 3.1

Prevalence of ACEs among Clinical and Non-Clinical Populations (N=390)

ACE Categories	Clinical *(N=190)*		Non-Clinical *(N=200)*		Chi-Square χ^2
	Not Reported *n (%)*	Reported *n (%)*	Not Reported *n (%)*	Reported *n (%)*	
Maltreatment					
Emotional Neglect	60 (31.6)	130 (68.4)	103 (51.5)	97 (48.5)	15.89**
Physical Neglect	172 (90.5)	18 (9.5)	189 (94.5)	11 (5.5)	2.23
Emotional Abuse	113 (59.5)	77 (40.5)	172 (86.0)	28 (14.0)	34.85**
Physical Abuse	138 (72.6)	52 (27.4)	179 (89.5)	21 (10.5)	18.22**
Sexual Abuse	110 (57.9)	80 (42.1)	135 (67.5)	65 (32.5)	3.85*
Household Dysfunction					
Family Substance Abuse	173 (91.1)	17 (8.9)	180 (90.0)	20 (10.0)	0.13
Family Mental Illness	133 (70.0)	57 (30.0)	170 (85.0)	30 (15.0)	12.65**
Family Member Imprisoned	169 (88.9)	21 (11.1)	181 (90.5)	19 (9.5)	0.25
Parental Separation	123 (64.7)	67 (35.3)	140 (70.0)	60 (30.0)	1.23
Domestic Violence	72 (37.9)	118 (59.0)	118 (59.0)	82 (41.0)	17.37**
Violence Outside the Home					
Bullying	146 (76.8)	44 (23.2)	187 (93.5)	13 (6.5)	21.67**
Witnessed Community Violence	114 (60.0)	76 (40.0)	159 (79.5)	41 (20.5)	17.64**
Exposure to Collective Violence	93 (48.9)	97 (51.1)	142 (71.0)	58 (29.0)	19.79**
Extended ACE					
Racism and Discrimination	143 (75.3)	47 (24.7)	177 (88.5)	23 (11.5)	11.59**
Migration issues	83 (43.7)	107 (56.3)	137 (68.5)	63 (31.5)	24.40**
Family Financial Crisis	151 (79.5)	39 (20.5)	170 (85.0)	30 (15.0)	2.04

Notes. ACE = Adverse Childhood Experience.

*$p < .05$,**$p < .01$.

Table 3.1 shows that for most of the ACEs, there is a significant difference in the ACE exposure between non-clinical and clinical populations. Experience of emotional neglect was most commonly reported by both clinical (68.4%) and non-clinical population,

(48.5%). However, it was significantly more prevalent among the clinical group ($\chi^2 = 15.89$, $p < .01$). Of the 16 categories of ACEs across four domains, ten demonstrate significant differences between clinical and non-clinical groups.

The frequency of exposure of ACEs was then explored. We explored this frequency for the 16 categories. However, the Table only represents the data for zero or no ACE to presence of 8 ACEs (See Table 3.2).

Table 3.2

Distribution of the number exposure to ACEs across clinical and non-clinical samples

ACE Score	Clinical *n (%)*	Non-Clinical *n (%)*
0	4 (2.1%)	29 (14.5%)
1	10 (5.3%	37 (18.5%)
2	9 (4.7%)	36 (18.0%)
3	27 (14.2%)	21 (10.5%)
4	24 (12.6%)	21 (10.5%)
5	23 (12.1%)	15 (7.5%)
6	26 (13.7%)	9 (4.5%)
7	20 (10.5%)	8 (4.0%)
8	13 (6.8%)	9 (4.5%)

Table 5 details the frequency and percentage of ACE scores for both clinical (N=190) and non-clinical (N=200) samples. An ACE score of zero was mostly reported by the non-clinical participants (2.1% and 14.5%, for clinical and non-clinical, respectively), followed by ACE scores of one (5.3% and 18.5%, respectively) and two (4.7% and 18.0%, respectively). Exposure to three or less ACEs was reported by 24.2% and 47.0% of clinical and non-clinical participants, respectively. About 73.7% clinical sample reported exposure to four or more ACEs, which is almost double of the non-clinical participants who reported exposure to ACEs (38.5%).

ACEs were further grouped under cumulative categories and the rate of exposure varies according to the participant characteristics, including their gender, age, and birth-order, sibling size and other sociodemographic characteristics are presented in Table 3.3. Age of the participants was further grouped into three groups, sibling size was divided into four groups and birth order of the participants was grouped into four groups. The table also presents data regarding low ACE exposure (0-2 ACEs) and high ACE exposure (at least 4 ACEs).

Table 3.3

Participant Demographics and Prevalence of ACEs

Participant Characteristics	*0 ACE* *n (%)[a]*	*At least 1 ACE* *n (%)[a]*	*At least 2 ACEs* *n (%)[a]*	*At least 3 ACEs* *n (%)[a]*	*At least 4 ACEs* *n (%)[a]*
Group					
Clinical	4 (2.1)	186 (97.9)	176 (92.6)	167 (87.9)	140 (73.7)
Non-Clinical	29 (14.5)	171 (85.5)	134 (67.0)	98 (49.0)	77 (38.5)
Gender					
Male	17 (8.2)	190 (91.8)	163 (78.7)	149 (72.0)	122 (58.9)
Female	16 (8.7)	167 (91.3)	147 (80.3)	116 (63.4)	95 (51.9)
Age					
18-33	25 (8.6)	267 (91.4)	234 (80.1)	196 (67.1)	157 (53.8)
34-49	5 (6.6)	71 (93.4)	60 (78.9)	55 (72.4)	46 (60.5)
50 and above	3 (13.6)	19 (86.4)	16 (72.7)	14 (63.6)	14 (63.6)
Sibling					
No sibling	6 (21.4)	22 (78.6)	18 (64.3)	14 (50.0)	14 (50.0)
One sibling	2 (3.3)	58 (96.7)	52 (86.7)	40 (66.7)	32 (53.3)
Two siblings	13 (10.6)	110 (89.4)	97 (78.9)	84 (68.3)	71 (57.7)
Three or more	12 (6.7)	167 (93.3)	143 (79.9)	127 (70.9)	100 (55.9)
Birth order					
First	17 (10.6)	143 (89.4)	128 (80.0)	104 (65.0)	91 (56.9)
Second	10 (9.5)	95 (90.5)	82 (78.1)	71 (67.6)	53 (50.5)
Third	5 (8.6)	53 (91.4)	44 (75.9)	41 (70.7)	31 (53.4)
Fourth and above	1 (1.5)	66 (98.5)	56 (83.6)	49 (73.1)	42 (62.7)

Participant Characteristics	*0 ACE* *n (%)*[a]	*At least 1 ACE* *n (%)*[a]	*At least 2 ACEs* *n (%)*[a]	*At least 3 ACEs* *n (%)*[a]	*At least 4 ACEs* *n (%)*[a]
Childhood spent					
Town	26 (12.7)	178 (87.3)	150 (73.5)	123 (60.3)	97 (47.5)
Village	7 (3.8)	179 (96.2)	160 (86.0)	142 (76.3)	120 (64.5)
Income source					
Unemployed	18 (10.7)	150 (89.3)	136 (81.0)	109 (64.9)	92 (54.8)
Full-time Job	8 (8.4)	87 (91.6)	66 (69.5)	55 (57.9)	41 (43.2)
Part-time Job	0 (0.0)	25 (100.0)	23 (92.0)	21 (84.0)	18 (72.0)
Business	2 (5.6)	34 (94.4)	29 (80.6)	28 (77.8)	23 (63.9)
Socio Economic Status					
Lower Class	1 (2.1)	47 (97.9)	46 (95.8)	42 (87.5)	36 (75.0)
Middle Class	32 (9.5)	304 (90.5)	259 (77.1)	219 (65.2)	177 (52.7)
Higher Class	0 (0.0)	6 (100.0)	5 (83.3)	4 (66.7)	4 (66.7)
Educational status					
No Formal Education	0 (0.0)	13 (100.0)	12 (92.3)	12 (92.3)	10 (76.9)
Primary	1 (2.6)	37 (97.4)	36 (94.7)	35 (92.1)	29 (76.3)
Secondary	3 (8.6)	32 (91.4)	32 (91.4)	28 (80.0)	24 (68.6)
Higher-Secondary	11 (8.9)	112 (91.1)	102 (82.9)	84 (68.3)	74 (60.2)
Graduation	5 (5.6)	84 (94.4)	71 (79.8)	60 (67.4)	48 (53.9)
Postgraduation	13 (14.1)	79 (85.9)	57 (62.0)	46 (50.0)	32 (34.8)

Note. ACE = Adverse Childhood Experience.

[a] represents the percentage within the category.

Table 3.3 shows the ACE scores (ACE accumulation) of both groups, suggesting markedly significant differences. The sample with an ACE score of zero accounted for 2.1% in the clinical group; however, it accounted for 14.5% in the non-clinical group, showing a marked difference. There was also a notable difference in the number of participants with an ACE score of at least 4 or higher, indicating serious cases, with 38.5% in the non-clinical group compared to 73.7% in the clinical group.

3.2 Relationship between ACEs and Adult Mental Health State

The relationship between ACEs and adult mental health were explored through multiple analysis. At first section, Pearson's correlation (r) was performed to examine the statistical relationship between ACEs and mental health variables (Table 3.4), as measured by the Self-Reporting Questionnaire (SRQ), well-being measure (WHO Wellbeing 5) and 4 domain of quality of life measure (QoL_Physical Health, QoL_Psychological Health, QoL_Social Relationship, and QoL_Environmental Health). In the second section, multiple t-test were performed (See Table 3.5 to 3.10) in order to present the effects of each of the different ACE categories on mental health outcomes. Finally, in the third section, multiple logistic regression analysis presents the relationship between ACE scores and mental health outcomes (Table 3.11). In the initial Pearson's correlation (r) analysis, the relationship between ACE and mental health measures were presented (see Table 3.4). The Table also highlighted the significance of the relationship.

Table 3.4

Relationship Between ACE Categories and Mental Health Conditions

	Variables	1	2	3	4	5	6	7
1	ACE	–						
2	SRQ	.52**	–					
3	Well-being	-.45**	-.68**	–				
4	QoL_Physical Health	-.50**	-.68**	.64**	–			
5	QoL_Psychological Health	-.43**	-.72**	.70**	.72**	–		
6	QoL_Social Relationship	-.50**	-.48**	.41**	.50**	.56**	–	
7	QoL_Environmental Health	-.46**	-.47**	.48**	.55**	.60**	.51**	–

Notes. ACE = Adverse Childhood Experiences. SRQ = Self-Reporting Questionnaire. QoL= Quality of Life

***p* <.01.

The results in Table 3.4 show that all 21 correlations were statistically significant. There was a significant negative correlation between ACEs and five other variables (physical health, psychological health, social relationships, environmental health, and well-being), and were greater or equal to $r\ (388) = -.43$, $p < .01$. The only exception was SRQ, which showed a significant positive correlation with ACEs, $r\ (388) = +.52$, $p < .01$. This means that as the number of ACEs increased, the scores on SRQ increased.

Six Table presented below reflects the relationship of 16 ACEs categories with each of the mental health outcome measures for both the clinical and non-clinical groups. Each of the tables, starting from Table 3.5 also presents the nature of relationships considered for each of the six mental health outcome measures.

Table 3.5

Effects of Different ACEs on Mental Health Measured by SRQ

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
1	Emotional Neglect	9.88 (5.84)	6.94 (5.20)	5.232	370.61	.001
2	Physical Neglect	12.31 (4.98)	8.36 (5.72)	3.605	388	.001
3	Emotional Abuse	12.29 (4.95)	7.32 (5.46)	8.166	388	.001
4	Physical Abuse	12.77 (4.61)	7.71 (5.58)	8.102	125.59	.001
5	Sexual Abuse	9.83 (5.72)	7.96 (5.68)	3.143	388	.002
6	Family Substance Use	9.59 (6.32)	8.56 (5.70)	1.042	388	.298
7	Family Mental Illness	11.00 (5.15)	7.98 (5.76)	4.407	388	.001
8	Family Member Imprisoned	10.98 (5.27)	8.39 (5.76)	2.709	388	.007
9	Parental Separation	9.36 (5.80)	8.32 (5.72)	1.686	388	.093
10	Domestic Violence in Family	10.67 (5.27)	6.54 (5.50)	7.559	388	.001
11	Bullying	12.61 (4.66)	7.98 (5.66)	6.706	86.90	.001
12	Violence in the Community	11.30 (5.11)	7.52 (5.66)	6.212	388	.001
13	Collective Violence	11.08 (5.19)	7.06 (5.56)	7.165	388	.001

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
14	Racism and Discrimination	12.89 (4.81)	7.73 (5.54)	7.900	112.87	.001
15	Migration Issues	10.51 (5.33)	7.22 (5.67)	5.824	388	.001
16	Financial Crisis	10.25 (5.49)	8.31 (5.77)	2.545	388	.006

Notes. SRQ = Self-Reporting Questionnaire. ACE = Adverse Childhood Experience

Table 3.5 presents the effects of different ACEs on measures of mental health, as measured by the Self-Reporting Questionnaire (SRQ). The results indicate statistically significant differences in mental health measures between individuals who reported experiencing ACEs compared to those who did not. The significance levels for all ACE categories are 0.05, except for family substance use and parental separation, indicating strong evidence of associations between ACEs and mental health outcomes.

Table 3.6

Effects of Different ACEs on Mental Health Measured by Well-being (N=390)

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
1	Emotional Neglect	9.52 (6.10)	13.50 (5.89)	6.45	388	.001
2	Physical Neglect	5.45 (4.98)	11.64 (6.19)	6.32	35.36	.001
3	Emotional Abuse	7.98 (6.23)	12.36 (5.94)	6.37	388	.001
4	Physical Abuse	8.08 (6.23)	11.89 (6.13)	4.77	388	.001
5	Sexual Abuse	9.83 (5.72)	11.75 (6.40)	2.32	388	.021
6	Family Substance Use	9.11 (5.92)	11.39 (6.33)	2.11	388	.036
7	Family Mental Illness	8.92 (6.24)	11.83 (6.19)	3.85	388	.001
8	Family Member Imprisoned	8.23 (5.29)	11.52 (6.34)	3.65	52.69	.002
9	Parental Separation	9.82 (5.84)	11.84 (6.45)	2.99	388	.003
10	Domestic Violence in Family	9.81 (6.01)	12.63 (6.32)	4.52	388	.001
11	Bullying	7.63 (5.64)	11.79 (6.24)	4.71	388	.001

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
12	Violence in the Community	8.91 (5.78)	12.15 (6.30)	4.76	388	.001
13	Collective Violence	9.05 (5.40)	12.59 (6.49)	5.84	367.66	.001
14	Racism and Discrimination	7.76 (5.499)	11.93 (6.25)	5.17	388	.001
15	Migration Issues	9.28 (5.79)	12.65 (6.33)	5.42	388	.001
16	Financial Crisis	9.25 (6.36)	11.60 (6.24)	2.83	388	.002

Notes. ACE = Adverse Childhood Experience

Table 3.6 presents the effects of different ACEs on measures of mental health, specifically measured by well-being. The results indicate statistically significant differences in well-being measures between individuals who reported experiencing ACEs compared to those who did not. The significance levels for all ACE categories are below the conventional threshold of 0.05, indicating strong evidence of associations between ACEs and well-being outcomes. The table shows that people who experienced ACEs had significantly lower well-being scores than people who did not experience ACEs. The effect sizes were large for most of the ACEs, suggesting that ACEs have a significant impact on well-being.

Table 3.7

Effects of Different ACEs on Mental Health Measured by QoL_Physical Health (N=390)

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
1	Emotional Neglect	54.95 (17.18)	65.26 (14.67)	6.18	385	.001
2	Physical Neglect	44.46 (18.33)	60.46 (16.27)	5.05	385	.001
3	Emotional Abuse	50.24 (18.22)	62.63 (15.15)	6.21	160.48	.001
4	Physical Abuse	50.19 (19.06)	61.37 (15.70)	5.25	385	.001
5	Sexual Abuse	55.34 (18.21)	61.61 (15.70)	3.58	385	.001
6	Family Substance Use	51.16 (18.33)	60.12 (16.58)	3.10	385	.002
7	Family Mental Illness	53.78 (18.34)	60.86 (16.19)	3.48	385	.001

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
8	Family Member Imprisoned	50.92 (19.05)	60.20 (16.45)	3.29	385	.001
9	Parental Separation	54.88 (18.76)	61.38 (15.58)	3.37	210.89	.001
10	Domestic Violence in Family	54.50 (17.14)	64.30 (15.22)	5.94	385	.001
11	Bullying	47.56 (19.91)	61.29 (15.53)	4.95	68.25	.001
12	Violence in the Community	52.66 (17.30)	62.13 (15.98)	5.22	385	.001
13	Collective Violence	53.39 (17.38)	63.15 (15.49)	5.78	385	.001
14	Racism and Discrimination	49.44 (17.39)	61.44 (16.07)	5.57	385	.001
15	Migration Issues	54.27 (17.35)	63.14 (15.58)	5.29	385	.001
16	Financial Crisis	52.79 (17.72)	60.67 (16.46)	3.55	385	.001

Notes. QoL= Quality of Life. ACE = Adverse Childhood Experience

Table 3.7 presents the effects of different ACEs on measures of mental health, specifically measured by QoL_Physical Health. The results indicate statistically significant differences in QoL_Physical Health measures between individuals who reported experiencing ACEs compared to those who did not. The significance levels for all ACE categories are below 0.05. The table shows that people who experienced ACEs had significantly lower QoL_Physical Health scores than people who did not experience ACEs.

Table 3.8

Effects of Different ACEs on Mental Health Measured by QoL_Psychological Health (N=390)

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
1	Emotional Neglect	46.50 (19.62)	59.79 (18.29)	6.78	387	.001
2	Physical Neglect	39.51 (17.27)	53.08 (20.05)	3.54	387	.001
3	Emotional Abuse	42.82 (21.06)	55.49 (18.72)	5.42	168.32	.001
4	Physical Abuse	42.01 (20.37)	54.39 (19.40)	4.87	387	.001
5	Sexual Abuse	48.55 (20.81)	54.13 (19.50)	2.61	284.25	.008

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
6	Family Substance Use	45.95 (19.06)	52.71 (20.18)	1.95	387	.052
7	Family Mental Illness	46.70 (20.82)	53.61 (19.72)	2.85	387	.005
8	Family Member Imprisoned	42.60 (18.06)	53.15 (20.12)	3.17	387	.002
9	Parental Separation	46.78 (20.03)	54.63 (19.74)	3.66	387	.001
10	Domestic Violence in Family	46.50 (19.02)	57.89 (19.69)	5.80	387	.001
11	Bullying	40.20 (20.72)	54.10 (19.36)	4.96	387	.001
12	Violence in the Community	45.76 (20.05)	54.74 (19.62)	4.10	387	.001
13	Collective Violence	47.54 (18.72)	55.04 (20.54)	3.65	387	.001
14	Racism and Discrimination	41.13 (20.23)	54.47 (19.35)	5.18	387	.001
15	Migration Issues	47.16 (19.71)	55.88 (19.70)	4.33	387	.001
16	Financial Crisis	44.26 (21.20)	53.75 (19.55)	3.60	387	.001

Notes. QoL= Quality of Life. ACE = Adverse Childhood Experience

The findings presented in Table 3.8 demonstrate the impact of various ACEs on measures of mental health, assessed through the lens of QoL_Psychological Health. The results reveal significant differences in QoL_Psychological Health between individuals who reported ACEs and those who did not. Across all ACE categories, there is compelling evidence of a negative impact on psychological health-related quality of life.

Table 3.9

Effects of Different ACEs on Mental Health Measured by QoL_ Social Relationships (N=390)

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
1	Emotional Neglect	53.54 (20.04)	67.03 (16.91)	7.16	374.07	.001
2	Physical Neglect	37.93 (23.53)	60.87 (18.61)	6.25	385	.001
3	Emotional Abuse	48.49 (21.24)	63.12 (17.89)	6.28	162.02	.001
4	Physical Abuse	46.00 (22.49)	62.21 (7.99)	5.74	94.53	.001
5	Sexual Abuse	54.92 (21.67)	61.66 (18.40)	3.13	262.99	.001

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
6	Family Substance Use	50.00 (23.81)	60.12 (19.25)	2.50	41.13	.003
7	Family Mental Illness	50.58 (20.80)	61.60 (19.00)	4.64	385	.001
8	Family Member Imprisoned	49.79 (22.29)	60.23 (19.38)	2.84	46.05	.002
9	Parental Separation	57.94 (21.68)	59.74 (19.04)	0.83	385	.405
10	Domestic Violence in Family	51.75 (20.90)	67.07 (15.32)	8.26	364.64	.001
11	Bullying	45.03 (23.03)	61.59 (18.30)	5.16	68.74	.001
12	Violence in the Community	50.99 (21.92)	62.69 (17.92)	5.08	186.18	.001
13	Collective Violence	54.57 (22.07)	62.21 (17.75)	3.60	3280.84	.001
14	Racism and Discrimination	44.40 (24.48)	62.41 (17.18)	5.84	84.61	.001
15	Migration Issues	55.37 (21.79)	62.08 (17.85)	3.24	321.03	.001
16	Financial Crisis	50.60 (21.26)	61.00 (19.16)	4.01	385	.001

Notes. QoL= Quality of Life. ACE = Adverse Childhood Experience

Table 3.9 provides insights into the impact of various ACEs on measures of mental health, specifically focusing on QoL_Social Relationships. The findings reveal significant differences in QoL_Social Relationships between individuals who reported ACEs and those who did not. Across multiple ACE categories, there is strong evidence of a negative impact on social relationship-related quality of life. However, according to the results, the impact of parental separation on mental health does not appear to be statistically significant, $t(385) = .83$, $p = 0.405$.

Table 3.10

Effects of Different ACEs on Measures of Mental Health Measured by QoL_ Environmental Health (N=390)

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
1	Emotional Neglect	52.09 (14.51)	60.44 (13.51)	5.75	387	.001

	ACE Categories	Reported	Not Reported	*t*	*df*	*Sig.*
		M (SD)	*M (SD)*			
2	Physical Neglect	42.78 (16.77)	56.60 (14.02)	5.03	387	.001
3	Emotional Abuse	49.41 (16.54)	57.85 (13.24)	5.20	387	.001
4	Physical Abuse	49.49 (18.44)	56.97 (13.30)	3.28	90.05	.001
5	Sexual Abuse	52.02 (15.27)	57.65 (13.93)	3.72	387	.001
6	Family Substance Use	46.79 (17.55)	56.49 (14.05)	3.25	41.00	.001
7	Family Mental Illness	50.90 (14.06)	56.91 (14.59)	3.41	387	.001
8	Family Member Imprisoned	47.89 (15.46)	56.45 (14.34)	3.54	387	.001
9	Parental Separation	51.62 (15.24)	57.48 (14.03)	3.75	387	.001
10	Domestic Violence in Family	51.73 (14.06)	59.59 (14.25)	5.48	387	.001
11	Bullying	48.03 (16.77)	56.86 (13.91)	4.29	387	.001
12	Violence in the Community	51.07 (15.62)	57.50 (13.84)	4.04	387	.001
13	Collective Violence	51.33 (14.98)	58.37 (13.80)	4.76	387	.001
14	Racism and Discrimination	46.02 (15.37)	57.66 (13.68)	6.30	387	.001
15	Migration Issues	51.58 (15.68)	58.66 (13.07)	4.86	387	.001
16	Financial Crisis	49.77 (15.42)	56.82 (14.23)	3.67	387	.001

Notes. QoL= Quality of Life. ACE = Adverse Childhood Experience

Table 3.10 presents the effects of different ACEs on measures of mental health, specifically measured by QoL_Environmental Health. Based on the provided data, all ACE categories show statistically significant effects on QoL_Environmental Health, as indicated by the low p-values (all less than 0.05). The table reflects that people who experienced ACEs had significantly lower scores on the QoL_Environmental Health scale than people who did not experience ACEs.

Logistic regression presents the assessed relationship between cumulative ACEs on the likelihood that respondents would report poor mental health status. The Table also highlighted the predictive function of the ACE score and mental health conditions of the sample (see Table 3.11). Adjusted odd ratio (AOR) at 95% CI was used. Each of the 6 mental

health outcome measures (Well-being, SRQ, Self-harm & Suicide, Substance Abuse, and Risk Behaviour) were employed in the model.

Table 3.11

Logistic Regression of The Relationship Between the ACE Categories and Mental Health Conditions

Mental Health Condition	*ACE Category (Reference 0 adversities)*			
	1 ACE OR (95% CI)	*2 ACEs OR (95% CI)*	*3 ACEs OR (95% CI)*	*4 or 4+ ACEs OR (95% CI)*
Well-being	0.82 (0.28, 2.36)	0.56 (0.21, 1.53)	**0.24**** (0.09, 0.64)	**0.12**** (0.05, 0.29)
SRQ	1.59 (0.41, 6.11)	**4.40*** (1.32, 14.75)	**12.65**** (3.73, 42.95)	**21.30**** (6.97, 65.15)
Self-harm & Suicide	2.01 (0.56, 7.40)	**3.95*** (1.18, 13.19)	**5.74**** (1.70, 19.36)	**12.54**** (4.13, 38.05)
Substance Abuse	4.97 (0.55, 44.61)	**16.95*** (1.87, 153.65)	**13.02*** (1.48, 114.21)	**19.19**** (2.39, 153.99)
Risk Behaviour	0.96 (0.38, 2.45)	1.75 (0.71, 4.31)	2.04 (0.82, 5.12)	**3.84**** (1.75, 8.43)

Notes. Data in bold represent statistical significance.

$^{*}p < 0.05$, $^{**}p < 0.01$.

OR = Odds Ratio; CI = Confidence interval. ACE = Adverse Childhood Experience. *Model incorporates individual Substance Abuse, Risk Behaviour, Self-harm & Suicidal attempts as binary outcomes adjusting for the Gender, Age, Socio-economic status, and Educational Status of the participants.*

Table 3.11 shows that for the five variables measured (SRQ, well-being, Substance use, Risk behavior, self-harm and suicide), as the number of adversities increased, the odds of reporting poor mental health status also increased. For example, individuals with 3 ACEs are 12.65 times more likely to experience psychological distress as measured by SRQ, the

odds of having poor mental well-being were 24 times higher for individuals who had experienced 3 or more ACEs, the odds of having a suicide attempt were 12.54 times higher for individuals who had experienced 4 or more ACEs, and finally the odds of engaging in risky health behaviour were 3.84 times higher for individuals who had experienced 4 or more ACEs- than for individuals who had not experienced any ACEs. The odds of having poor well-being increased as the number of ACEs increased.

3.3 Factors Mediating the Relationship between Exposure to ACEs and Later Life Mental Health

Mediation analysis was performed to assess the mediating role of resilience, social support, and self-esteem as mediating variables on the linkage between ACEs endorsed and mental health. At the first section, three separate simple mediation tests were performed (see Table 3.12). The mediation path coefficients are shown in Figures 3.1 to 3.3.

At the second section, a parallel mediation analysis was conducted with ACEs as the predictor; resilience, social support, and self-esteem as mediators, and the mental health of the participants as outcome (see Table 3.13). All the mediation analyses were conducted using PROCESS model 4 macro software for IBM SPSS and with the bootstrapping method (Hayes, 2017). To examine the impact of ACEs on mental health problems, bootstrapping procedures were employed to test for indirect effects. A 95% confidence interval was calculated, and if it excluded zero, it was determined that an indirect effect was present.

Table 3.12

Direct and Indirect Effects in the Model of ACEs and Mental Health Mediated by Resilience, Social Support, and Self-Esteem

Relationship	Total Effect	Direct Effect	Indirect Effect	Confidence Interval		*t*- value	Conclusion
				Lower Bound	Upper Bound		
ACEs-> Resilience-> Mental Health	0.968 (.001)	0.704 (.001)	0.264	0.019	0.35	3.07	Partial Mediation
ACEs-> Social-support-> Mental Health	0.968 (.001)	0.740 (.001)	0.226	0.136	0.321	5.33	Partial Mediation
ACEs-> Self-esteem-> Mental Health	0.968 (.001)	0.920 (.001)	0.048	0.01	0.09	2.03	Partial Mediation

Notes. ACE = Adverse Childhood Experience.

$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

First mediation model analyzed the role of resilience. Direct effect and indirect effect for resilience as a mediating variable can be depicted in Figure 3.1.

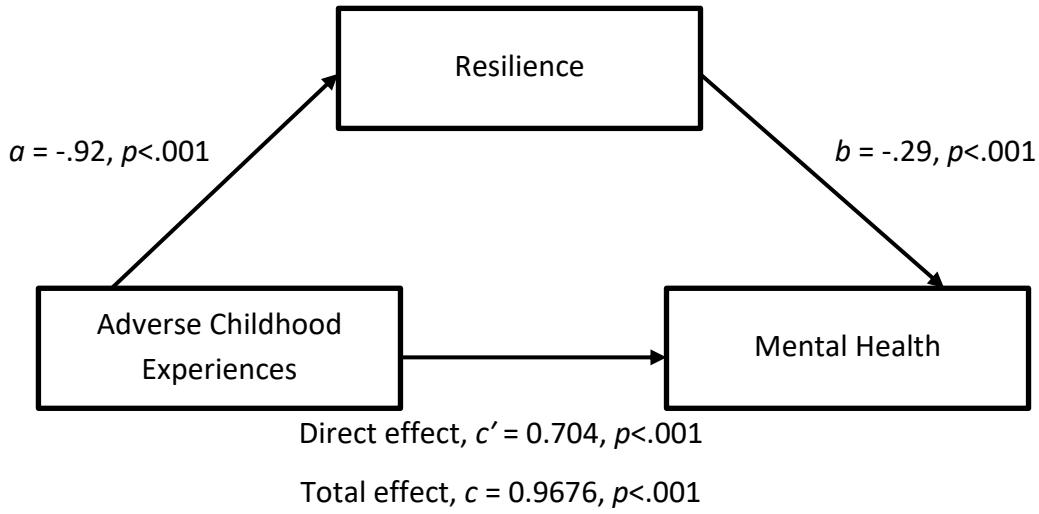

Figure 3.1 *Path diagram of the mediation model of the relationship between Adverse Childhood Experiences and mental health by Resilience*. The path coefficients are statistically significant at the $p < .05$ level.

The results revealed that the total effect of ACEs on mental health was significant (β = 0.968, *t* = 11.9349, *p* < 0.001). With the inclusion of the mediating variable (Resilience), the impact of ACEs on Mental Health (direct effect) is still significant (β = 0.704, *t* = 9.1033, *p* < 0.001). Furthermore, the indirect effect of ACEs on Mental Health through Resilience was also found significant (β = 0.264, *Boot LL*= .019*, Boot UL* = 0.35), which means that 29.6% of the total effect of ACEs on mental health is indirect. This shows that the relationship between ACEs and Mental Health is partially mediated by Resilience.

The second mediation analysis was conducted with social support as a mediating variable between the relationship of ACEs and mental health (see Figure 3.2).

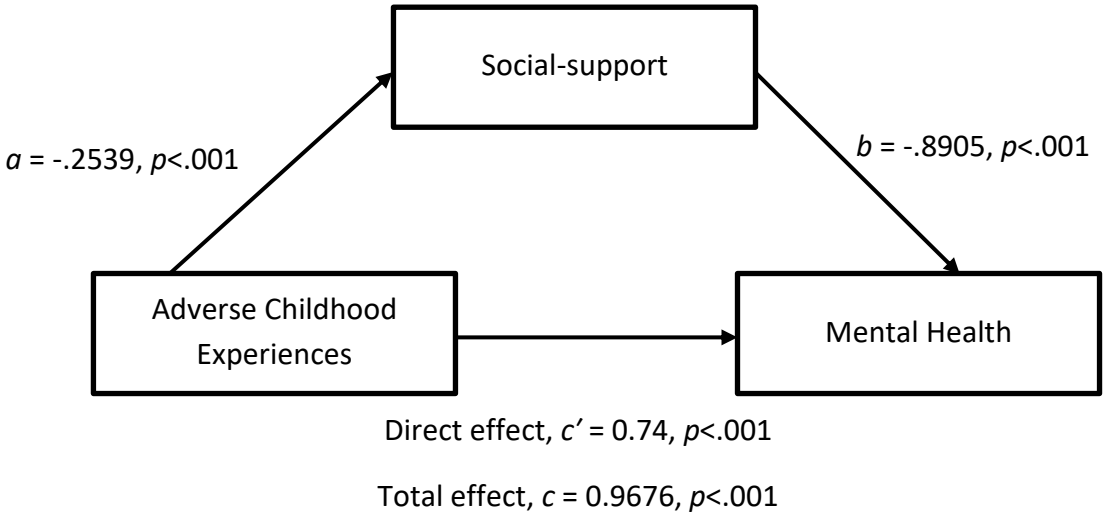

Figure 3.2 *Path diagram of the mediation model of the relationship between Adverse Childhood Experiences and mental health by Social-support*. The path coefficients are statistically significant at the *p* < .05 level.

For social support as a mediator, from the principle of effect analysis in path analysis, the total effect of ACEs on mental health was significant (β = 0.968, *t* = 11.9349, *p* < 0.001), of which the direct effect was 0.740, and the total indirect effect was 0.226, and the proportion of total indirect effect was 23.35%, which means that 23.35% of the

effect of ACEs acting on Mental Health works through mediating variables, which indicates that social-support partially mediates the association between ACEs and mental health.

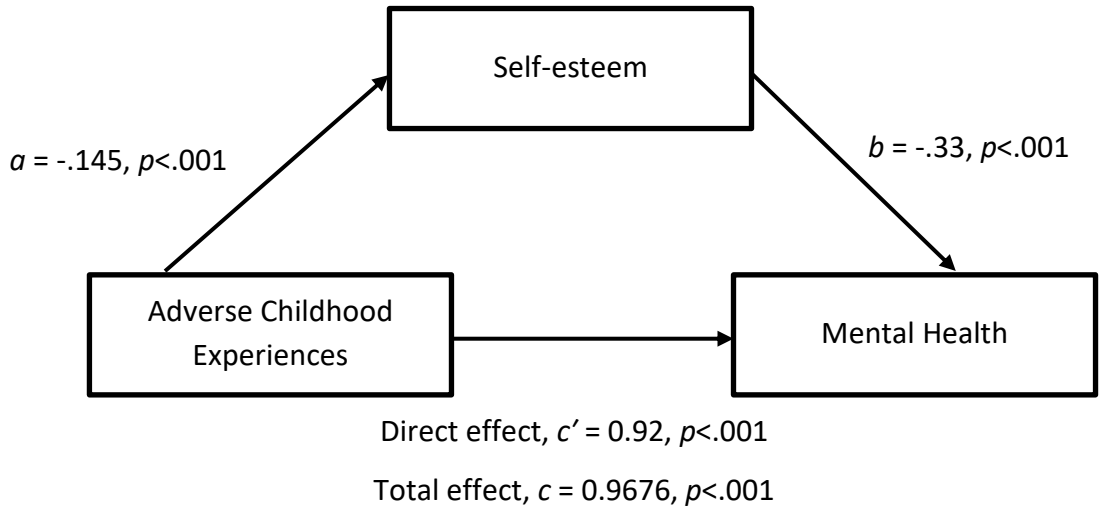

Figure 3.3 *Path diagram of the mediation model of the relationship between Adverse Childhood Experiences and mental health by self-esteem*. The path coefficients are statistically significant at the $p < .05$ level.

Mediation analysis was also performed to assess the mediating role of Self-esteem in the relationship between ACE and Mental health; the total effect of ACE on Mental health was significant (β = 0.968, t = 11.9349, $p < 0.001$), which means that for every one-unit increase in ACEs, mental health issues is expected to increase by 0.968 units. With the exclusion of the mediator variable (Self-esteem), the direct effect of the ACE on Mental health was still significant (β = 0.920, t = 11.2287, $p < 0.001$), which means that 92% of the total effect of ACEs on mental health issues is direct. The results also revealed a significant indirect effect of ACE on Mental health through Self-esteem (β = 0.0476, *Boot LL*= .0124*, Boot UL* = 0.0920). This means that self-esteem partially mediates the relationship between ACEs and mental health.

The mediation model is shown in Table 3.13, considering the mediating role of multiple mediating verbless (e.g., Resilience, Social-support, and Self-esteem) at the same

time on the relationship between ACEs and Mental Health. The table also presents information about the nature of the relationship.

Table 3.13

Role of Resilience, Social Support *and Self-Esteem in the Relationship Between ACEs and Mental Health*

Total Effect	Direct Effect	Relationship	Indirect Effect	Confidence Interval		*t*- value	Conclusion
				Lower Bound	Upper Bound		
0.968 (.001)	0. 624 (.001)	ACEs-> Resilience-> Mental Health	0.244	0.166	0.329	7.267	Partial Mediation
		ACEs-> Social-support-> Mental Health	0.106	0.026	0.189	10.273	Partial Mediation
		ACEs-> Self-esteem-> Mental Health	-0.007	-0.041	0.021	4.036	No Mediation

Notes. ACE = Adverse Childhood Experience.

$^{*}p < 0.05$, $^{**}p < 0.01$.

The results revealed a significant indirect effect of the impact of ACEs on Mental Health through Resilience ($\beta = 0.244$, $t = 7.267$, $p < 0.001$). The study also found a significant indirect effect of ACEs on Mental Health through social support ($\beta = 0.106$, $t = 10.273$, $p < 0.001$),). However, the study failed to find a significant indirect effect of the impact of ACEs on Mental Health through Self-esteem ($\beta = -0.007$, $t = 4.036$). Furthermore, the direct effect of ACEs and Mental Health in the presence of the mediators was found to be significant ($\beta = 0.624$, $p < 0.001$). Hence, both Resilience and social support partially mediated the relationship between ACEs and Mental Health, but Self-esteem did not mediate the relationship.

3.4 Connection between Specific ACEs and Overall Mental Health State

Logistic regression was performed to assess the impact of specific ACEs on the likelihood that respondents would report poor mental health status. This logistic regression were carried out between each ACE category and mental health conditions as the outcomes show how each of the categories contributes to mental health outcomes as the dependent variables. All 16 categories were entered into the model, Table 10 shows the results.

Table 3.14

Logistic Regression for the Relationship Between ACE Components and Mental Health Conditions [OR (CI 95%)]

ACE Categories	Well-being *OR* *(95% CI)*	SRQ *OR* *(95% CI)*	Self-harm & Suicide *OR* *(95% CI)*	Substance Abuse *OR* *(95% CI)*	Risk Behaviour *OR* *(95% CI)*
ACE 1 Emotional Neglect	**0.44**** (0.28, 0.71)	**2.15**** (1.30, 3.58)	1.31 (0.80, 2.15)	1.72 (1.00, 2.97)	1.42 (0.90, 2.25)
ACE 2 Physical Neglect	0.41 (0.10, 1.63)	0.78 (0.23, 2.73)	1.15 (0.38, 3.51)	1.95 (0.72, 5.32)	0.48 (0.18, 1.29)
ACE 3 Emotional Abuse	0.66 (0.33, 1.30)	1.64 (0.80, 3.33)	1.59 (0.83, 3.05)	0.72 (0.36, 1.46)	1.63 (0.84, 3.17)
ACE 4 Physical Abuse	1.42 (0.68, 2.99)	2.05 (0.88, 4.77)	1.89 (0.91, 3.91)	1.27 (0.60, 2.68)	1.09 (0.53, 2.22)
ACE 5 Sexual Abuse	1.05 (0.64, 1.71)	0.91 (0.54, 1.54)	**2.25**** (1.37, 3.69)	0.85 (0.50, 1.45)	**1.80*** (1.12, 2.88)
ACE 6 Family Substance Use	0.97 (0.36, 2.57)	**0.23**** (0.09, 0.61)	0.95 (0.38, 2.37)	1.59 (0.68, 3.68)	2.14 (0.84, 5.41)
ACE 7 Family Mental Illness	0.69 (0.38, 1.23)	1.65 (0.88, 3.08)	**2.57**** (1.44, 4.60)	**0.52*** (0.27, 0.99)	1.21 (0.69, 2.12)
ACE 8 Incarceration	0.78 (0.31, 1.98)	1.32 (0.51, 3.40)	1.38 (0.59, 3.22)	0.84 (0.36, 1.95)	0.89 (0.39, 2.08)
ACE 9 Parental Separation	0.77 (0.46, 1.27)	0.96 (0.56,1.65)	0.90 (0.54,1.51)	1.12 (0.66, 1.90)	1.08 (0.66, 1.77)
ACE 10 Domestic Violence	0.99 (0.60, 1.65)	**1.93*** (1.14, 3.27)	0.69 (0.41, 1.19)	0.77 (0.43, 1.37)	1.16 (0.71, 1.90)
ACE 11 Bullying	0.62 (0.26, 1.45)	1.43 (0.57, 3.55)	0.53 (0.24, 1.19)	0.53 (0.23, 1.23)	1.01 (0.46, 2.20)

ACE Categories	Well-being *OR* *(95% CI)*	SRQ *OR* *(95% CI)*	Self-harm & Suicide *OR* *(95% CI)*	Substance Abuse *OR* *(95% CI)*	Risk Behaviour *OR* *(95% CI)*
ACE 12 Violence Community	0.71 (0.40, 1.27)	1.75 (0.95, 3.23)	1.56 (0.87, 2.76)	**1.88*** (1.04, 3.43)	1.37 (0.79, 2.39)
ACE 13 Collective Violence	**0.47**** (0.28, 0.79)	**2.77**** (1.59, 4.80)	1.61 (0.97, 2.68)	**2.05*** (1.19, 3.54)	1.54 (0.94, 2.52)
ACE 14 Racism & Discrimination.	**0.48*** (0.23, 0.99)	**2.61*** (1.18, 5.77)	**3.73**** (1.83, 7.59)	0.72 (0.34, 1.54)	0.75 (0.39, 1.46)
ACE 15 Migration Issues	0.69 (0.42, 1.14)	1.65 (0.96, 2.82)	**1.80*** (1.09, 2.99)	1.26 (0.73, 2.18)	1.41 (0.86, 2.29)
ACE 16 Financial Crisis	1.00 (0.51, 1.95)	0.70 (0.35, 1.43)	0.90 (0.47, 1.73)	1.62 (0.84, 3.09)	1.10 (0.59, 2.07)

Notes: Data in bold represent statistical significance.

*p < 0.05, **p < 0.01.

OR = Odds Ratio; CI = Confidence interval. ACE = Adverse Childhood Experience. *Model incorporates individual Substance Abuse, Risk Behaviour, Self-harm & Suicidal attempts as binary outcomes.*

Emotional neglect, collective violence, and experiencing racism and discrimination were found to increase the likelihood of well-being issues (*OR* ranges from 0.44 to 0.48). Reports of emotional neglect, parental substance abuse, exposure to collective violence, racism, and discrimination, and witnessing violence towards the mother were also accounted for higher probabilities of presenting psychological severity measured by SRQ (*OR* ranges from 0.23 to 2.77). Participants who reported sexual abuse were more likely to engage in self-harm (*OR*=2.25, *CI*=1.37, 3.69) and health-risk behavior(*OR*=1.80; *CI*=1.12, 2.88). Odds for mental health issues due to racism & discrimination are also significant (*OR* ranges from 0.48 for well-being to 3.77 for self-harm and suicide). Mental illness in the family and substance abuse in the family were also linked to self-harm and suicide in the participants (*OR*=2.57, CI=1.44, 4.60). Furthermore, migration issues were found to increase the risk of self-harm and suicide (*OR*=1.80, *CI*=1.09, 2.99).

Chapter 4

DISCUSSION

Discussion

The study is one of the first to examine how ACEs affect adult Bangladeshi mental health, and it adds to the expanding body of research examining the effects of ACEs on adult mental health. Determining the effect of ACEs on mental health in adulthood was the study's main goal. The present cross-sectional study involved the community sample collected from two different divisions of Bangladesh, namely Dhaka and Chittagong, and the clinical adult sample collected from a mental health hospital of Bangladesh using purposive sampling techniques. A total of 16 categories of adverse childhood experiences were assessed in the study, including 13 categories of conventional ACEs that fall under the three domains of adversities, which are adversities experienced in the household environment, exposure to community violence, and exposure to collective violence. Based on the awareness of contextual issues relevant to Bangladesh, three other categories of adversities were also assessed, namely racism and discrimination, migration issues, and severe financial crisis. Both clinical and community or non-clinical sample were included for the study. The mental health of the participants was measured with multiple mental health outcome indicators, including the SRQ, the WHO Well-being 5, and the WHO QoL Bref. The study also investigated the relationship between ACEs and mental health, as well as the mediating effects of resilience, social support, and self-esteem.

Among the 390 adult participants, the men represented slightly higher proportion (51.3%). The educational levels of the participants varied from no formal education to postgraduation, with the majority having higher-secondary education or above. The majority of participants, inclusive of both clinical and non-clinical, lived in urban areas. 81.7% of the total sample resided in urban areas, while only 18.3% lived in rural areas.

About half of both clinical and non-clinical group participants (52.3%) were raised in urban areas, while the other half had their upbringing in rural settings. Overall, slightly more than half of all participants were brought up in urban areas.

The Prevalence of ACEs among Clinical and General Populations

Regarding the sub-domains of ACEs, it has been found that emotional neglect is the most frequent form of maltreatment among all the subdomains under the three conventional domains of ACEs among clinical (68.4%) and non-clinical (48.5%) sample. Domestic violence from household dysfunction domain was the second most common ACE for both groups (59.0% in clinical and 41.0% in non-clinical). Exposure to collective violence, from the violence outside the home domain, was the third most commonly experienced ACEs (clinical - 51.1% and non-clinical - 29.0%).

Emotional neglect is frequently experienced ACEs in Bangladesh, the reasons may be attributed mainly due to social, cultural, and economic factors. In some cultural contexts, emotional expression and emotional support may be given less importance than other aspects of child-rearing (Rao et al., 2003). Parenting practices prioritizing fulfilling basic needs, paired with poverty and limited access to resources pose challenges to parents in providing emotional attention (Harbin & Goldhagen, 2013). These reasons may also prevalent in Bangladesh resulting in overlooked neglect.

Besides the three conventional domains, a few additional ACEs relevant to Bangladeshi context were added under Extended ACE Domain. Migration was the most commonly reported (56.3% in clinical and 31.5% in non-clinical sample) ACE under the extended ACE domain. Migration of external labor migration and internal migration (for economic or climatic reasons) of parents and family can be regarded as a common

phenomenon in Bangladesh. Limited economic opportunities especially in rural areas can trigger internal (i.e., rural to urban) and international migration (Sikder et al., 2017; see World Bank, 2009; Bangladesh Bureau of Statistics, 2012). These can result in separation of children from their parents and other significant caregivers. Natural disasters also cause internal displacement (Ahsan, 2019; Islam et al., 2021), disrupting children's lives and leading to emotional trauma. International migration is prevalent (see Mahmud, 2023), and children of migrant parents may face social exclusion which impacts their emotional well-being (Graham & Jordan, 2011; Jiang et al., 2023).

Except for drug use in family, clinical sample have higher frequency of exposure to ACE in all categories compared to the non-clinical sample. Among these, ten of the 16 categories of ACEs across four domains, have significantly higher prevalence for clinical sample. This disproportionate exposure to ACEs can be indicative of a link between ACEs exposure and later life mental health condition.

Both clinical (97.9%) and non-clinical (85.5%) samples showed very high exposure to individual ACEs. This prevalence is consistent with the previous studies. (Carlson et al., 2020; Silva & Maia, 2007; Pace et al., 2022), that reported that the participants had experienced at least one adverse childhood experience ranging as high as 88% to up to 97%. For example, a recent study revealed that 96.2% of children had exposed to at least one ACE (Soares et al., 2022). The reasons behind the high prevalence of ACEs are commonly attributed to the lack of resources (Chang et al., 2019); moreover, research also revealed that this prevalence could be high in developed countries also (see Carlson et al., 2020).

Distribution of participants indicated that the non-clinical sample were more concentrated around 0-2 ACEs while clinical sample was more concentrated in the 3-6 ACEs

exposure range. Distribution of the total number of ACEs exposure indicated that compared to the non-clinical sample (38.5%), higher proportion of clinical sample (73.7%) had exposure to 4 or more ACEs (see Table 3.3). Similar research reported the same prevalence; as high as 68% experienced at least four ACEs (Silva & Maia, 2007). For the general population, a study also revealed a similar prevalence as Hughes et al. (2017) reported from the meta-analysis that the rate of exposure to at least four ACEs ranged from 1% to 38%. These findings confirm the high presence of childhood adversity across the globe (Benjet, 2010; McKee-Lopez et al., 2019). In the context of Bangladesh, factors such as poverty, political violence, lack of social security, inconsistent human rights protection, and family environment have been identified as causes of childhood maltreatment, as reported in studies (Haider, 2017; Haque et al., 2020; Reza et al., 2020)

Additionally, these results demonstrate a dose-response link between the amount of ACEs experienced and the propensity to be a member of the clinical population.

Further investigation reveals that individuals with particular traits, such as being the firstborn, having three or more siblings, being jobless, and coming from a lower socioeconomic background, are more likely to develop ACEs. According to the study, firstborns had a higher risk of developing ACEs than children who were born later. Study reported that being a firstborn is a strong predictor for maltreatment (Wang et al., 2022). It may be because many parents lack experience raising their first child, which poses a potential risk. Moreover, this may be because firstborns are often expected to take on more responsibility and model good behavior for their younger siblings. However, research also mentioned being firstborn as a protective factor (See Hardt 2010).

According to the study, children who have a sibling are more prone to facing at least one ACE (96.7%). However, those with three or more siblings are even more likely to

experience ACEs as compared to those with one or two siblings (ranging from 93.3% for at least one ACE to 70.9% for at least three ACEs). Literature consistently reports that growing up in rural areas with multiple siblings (more than 3) increases the likelihood of childhood maltreatment (Adjorlolo et al., 2017). Researchers reported that a child's risk of maltreatment is influenced by such factors as the number of siblings in their household and whether they were brought up in rural or urban areas (Belsky, 1980; Meinck et al., 2015). In households with limited resources, children may not have access to sufficient supplies, resulting in competition among siblings for scarce resources. This could potentially put younger or weaker children at risk of abuse in larger households. For example, unequal food sharing is linked to childhood abuse (Breiding et al., 2011). At the time, this may be because children with more siblings are more likely to be exposed to conflict and violence in the home, resulting in ACEs exposure.

The study found that unemployed adults were more likely to have experienced ACEs than employed adults. These findings can be explained by the negative impacts of ACEs occupational functioning as mentioned earlier (see Hughes et al., 2016; Nurius et al., 2015). Apart from these factors, lower socioeconomic status and middle-class families were found to be more likely to experience ACEs than children from high-income families. Socioeconomic status has had an important relationship with the presence of high numbers of childhood adversity (Benjet, 2010; Benjet et al., 2010; Campbell et al., 2016). A significant number of individuals in Bangladesh are experiencing financial difficulties (Riaz, 2022). At the same time, middle-class families are the more representative group in our society. Being in a middle-class family in Bangladesh is challenging due to the already existing economic pressure, on the other hand, the demand to prove the worth in everyday life, as well as facing limitations in social and cultural articulation. Middle-class families are

also seen to prioritize certain needs (i.e., education) for their children, which might result in maltreatment in the family.

It is crucial to remember that these results are correlational, and it is plausible that other factors, such as personality or genetics, may account for the association between these traits and ACE exposure. The results of this study, however, indicate that these traits could be significant risk factors for ACE exposure.

Relationship Between ACEs and Adult Mental Health

The study explored the relationship between ACEs and adult mental health outcomes. ACEs correlation with six of the mental health outcome measure indicated highly significant correlations between ACEs and mental health measures, ranging from r= -.43 (QoL_Psychological Health) to r=+.52 (SRQ). The findings showed that the higher the ACEs, the higher the scores on the psychosomatic severity scale (see Table 3.4). The results also showed a substantial negative association between ACEs and five additional mental health outcome variables (physical health, psychological health, social relationships, environmental health, and well-being).

Again, to explore the relationship of 16 ACEs for both the clinical and non-clinical population with each of the above-mentioned six mental health outcome measures that revealed significant differences in mental health measures between individuals who reported ACEs compared to those who did not (see Table 3.5 to Table 3.10).

Furthermore, to explore the relationship between the cumulative exposure of ACEs with the mental health outcome, the findings confirm a possible dose-response effect on mental health outcomes that was measured by five of the variables measured (SRQ, well-being, Substance use, Risk behavior, self-harm and suicide); as the number of adversities

increased, the odds of reporting poor mental health status also increased. Specifically, three or more ACEs predicted a higher risk of mental health symptoms measured by SRQ, a higher risk of substance use, risk behavior, self-harm and suicide, and a lower level of well-being. In the earlier study, when Felitti et al. investigated the outcome of ACEs (Felitti., 1998), they discovered the dose-response relationship between the number of ACEs and myriad outcomes. They reported that individuals with four or more ACEs showed increased risk for drug abuse and alcoholism, and suicide attempts. A study that analyzed multiple sources of data found that those who had experienced at least four ACEs were about four times more likely to experience mental distress or disorders (Hughes et al., 2017).

Likewise, people with three or more ACEs had up to four times the risk of exhibiting psychological symptoms than those who reported zero. This is consistent with the previous research that reported that three adversities were associated with four times the risk of mental health concerns (Anda et al., 2006; McKee-Lopez et al., 2019; Subramaniam et al., 2020) and as the number of ACEs increased, the likelihood of experiencing mental health symptoms and disorders also increased. The findings from these studies provide strong empirical evidence for the association between ACEs and adverse mental health outcomes.

Other mental health outcomes also follow the same trend that experiencing three and more ACEs are at higher risk of self-harm & suicide and substance abuse. The only exception is seen for risk behavior. That is four and more ACEs that risk a person engaging in unhealthy lifestyles than those who have no exposure to ACEs.

On the other hand, well-being decreases as the ACEs expand, and it is 0.24 times more for those experiencing 3 ACEs than those who reported no exposure to these negative events during childhood. It has been demonstrated that ACEs have a detrimental effect on general wellbeing. In terms of factors like life satisfaction, happiness, and general

functioning, higher ACE scores are linked to poorer levels of self-reported well-being (Brown et al. 2009).

This study also showed that those who had three or more ACEs had a considerably increased risk of suicide and self-harm; people who had four or more ACEs had a 12.54-times higher chance of self-harm and suicide attempt. These findings are congruent with previous studies that underlined the effects of ACEs on future suicide (Pournaghash-Tehrani et al., 2019; Campos et al., 2013; Castellvi et al., 2017; Enns et al., 2006; Mortier et al., 2017). Pournaghash-Tehrani et al.'s study specifically found that individuals who experienced more than 3 ACEs were at a significantly higher risk of suicidal outcomes.

The study also found that experiencing 2 or more ACEs is significant in rising individuals to substance use and this risk is more than 19 times high with respect to those who have never experienced any of these negative events. Studies have already shown that ACEs can lead to various challenges in adulthood, such as smoking, alcohol and drug misuse (Ford et al., 2011; Dube et al., 2002; see Reingle Gonzalez et al., 2018). For example, individuals who have experienced at least four ACEs are more than twice as likely to engage in these activities than those who have not exposure to ACEs (Hines et al., 2023; Hughes et al., 2017).

In addition, the current study discovered that those who have had four or more ACEs had a greater probability of engaging in risky behaviors than people who have not. This finding supports the very recent research that has also revealed that experiencing three or more ACEs can lead to risky health behaviors in younger individuals and teenagers (Maurya & Maurya, 2023). A dose-response association between ACEs and the rise in risky behaviors and morbidity in adulthood has been suggested in prior research. The findings of these studies (Chang et al., 2019; Gilbert et al., 2015; Soares et al., 2016) are in

line with the preset study findings. As the number of adverse childhood experiences increases, engaging in risk behaviors also becomes more prevalent.

It is difficult to pinpoint the exact causes of this relationships, but they most certainly include a variety of factors, such as how stress and emotion management affect the brain's development and function, which makes issues with mental health more likely. Poverty, unemployment, and homelessness might raise the likelihood of mental health issues due to ACEs. In a developing country like Bangladesh, it could be surmised that people may have become more exposed to these types of negative experiences, partly because of poverty and its social concomitants. However, the development of certain risk behaviors can also be attributed to important sociocultural factors. For example, peer influence plays a significant role in smoking and the use of substances (Ramiro, 1999).

In addition to examining the effects of particular ACEs on mental health outcomes, the study sought to establish a link between particular ACEs and potential adult-stage mental health problems. This study has focused on analyzing the long-term health effects of ACEs during adulthood and has also assessed the distinct impacts of each ace component. Among the 16 sub-domains of ACEs that have been discussed, emotional neglect, sexual abuse, family substance use, family mental illness, domestic violence, witnessing violence community, collective violence, racism & discrimination, and migration issues have revealed their impacts on mental health outcomes in the current analysis. More appropriately, five categories of ACEs, which include emotional neglect, sexual abuse, family mental illness, collective violence, racism & discrimination have been found to have varying effects on mental health outcomes. These results are in line with previous research on these topics (Campbell et al., 2016; Chang et al., 2019; also, Leung et al., 2016).

The results of the subsequent study revealed notable correlations between adverse experiences and their effects on outcomes related to mental health, particularly wellbeing and psychological severity. ACEs have an effect on a person's wellbeing. Specifically, emotional neglect, exposure to collective violence, and encounters with racism and discrimination were identified as factors that significantly heightened the likelihood of well-being issues. The role of childhood emotional neglect is significant. Even a very recent study on the impact of ACEs revealed that childhood emotional neglect, along with other forms of maltreatment was significantly associated with certain mental disorders symptoms (Cheung et al., 2023).

In addition to the exploration of relationships, an attempt was made to explore the role of certain potential mediator variables that were affecting these relationships, which was the third objective that needed to be met. Mediating factors on the relationship between ACEs and mental health outcomes. In determining the course of mental health, these variables are crucial. the mediating role of multiple mediating variables are to be considered (e.g., Resilience, Social-support, and Self-esteem) independently and at the same time. All the models established that the direct effect of ACEs on mental health outcomes is significant; that is ACEs' impacts on mental health in the adult stage of life is significant.

These results imply that resilience, social support, and self-esteem somewhat mediate the link between ACEs and mental health. In other words, ACEs can lead to poorer mental health through the pathway of reduced resilience, poor social support or lowered self-esteem. That is these three factors are important factors in protecting against the negative effects of ACEs on mental health.

Resilience is the capacity of dynamic systems to withstand or recover from challenges to their stability (Masten, 2011). These findings are congruent with the finding that revealed that resilience resources mitigated the impact of ACEs (Bethell et al., 2014; Logan-Greene et al., 2014; Howell et al., 2017). This is also true for social support. For instance, both Tsai et al. (2015) and Panisch et al. (2020) reported that social support mediated the connection between severe mental disorders. The study also reported the role of ACEs on lower self-esteem that self-esteem mediates the adverse impacts of maltreatment (Kim et al., 2022; Chartier et al., 2009; Kim & Cicchetti., 2006).

However, after conducting several mediational analyses at a time, it was found that resilience and social support partially mediated the connection between ACEs and mental health. Yet, self-esteem was not observed to have any mediating effect on the relationship. The study did not discover a significant direct effect of ACEs on self-esteem or a significant indirect effect of ACEs on mental health through self-esteem. There are a few potential explanations for this. One possibility is that self-esteem is not as important a factor in mediating the relationship between ACEs and mental health as resilience or social support. This could be because self-esteem is not so stable as the other two, and is more easily influenced by other factors, such as feedback from others, than resilience or social support. Another possible reason is not controlling for other factors that could influence self-esteem, such as age, gender, or other socioeconomic status or parental education.

Finally, to explain the impacts, the connection between specific aces and overall mental health outcomes were explored. The study findings indicated that among the total 16 sub-domain of ACEs, participants reporting emotional neglect, parental substance abuse, exposure to collective violence, racism and discrimination, and witnessing violence

towards the mother demonstrated elevated probabilities of presenting psychological severity, as assessed through the use of the SRQ.

Among the different forms of childhood maltreatment, childhood emotional neglect is the most frequently reported ACEs observed in different cultures (Sethi et al., 2013; Vanderminden et al., 2019; van Berkel et al., 2020). The study also reported that the severity levels of emotional neglect during childhood have a significant negative impact on one's well-being (Chidambaram et al., 2023; Di Paola & Nocentini, 2023). A correlation exists between emotional neglect and prevalent mental disorders (Saad, 2023; Wang et al., 2023).

Furthermore, participants who disclosed experiencing sexual abuse were more likely to engage in self-harm and health-risk behaviors. This is consistent with the findings sexual abuse during childhood is responsible for self-harm and suicidal attempts (Gladstone et al., 2004; Mossige et al., 2016), and engaging in diverse forms of risk behavior (Olley, 2008; Lawrence et al., 2023).

The presence of mental illness within the family and substance abuse within the family were also linked to heightened instances of self-harm and suicide among the participants. A family history of mental illness during childhood has a significant impact on the likelihood of engaging in nonsuicidal self-injury and making suicidal attempts. (Guvendeger Doksat et al., 2017; Predescu & Sipos, 2023). The study also reveled that both parental substance use was linked to a 2.09 times higher likelihood of their child engaging in any drug use (McGovern et al., 2023). Exposure to childhood domestic violence is linked to poor mental health and suicide risk (Sharratt et al., 2022).

Furthermore, the present study findings revealed significant role of the two forms of violence, namely community and collective violence. Exposure to violence in the

Community has been found to increase the odds of engaging in smoking and substance use, a negative form of coping behavior. Previous studies also mentioned that both exposure to violence in the community and collective violence are associated with an increased risk of different types of substance misuse (Harper et al., 2023; Van Zyl et al., 2023). Additionally, the current study found a connection between collective violence exposure and wellbeing difficulties and mental health issues, with those who experienced collective violence having a 2.77 times higher likelihood of experiencing mental health problems and well-being issues. Collective violence can harm mental health and well-being and is affected by social and political surroundings (Helbich & Jabr, 2022). Differing ideological stands resulting in collective violence in Bangladesh, including political unrest, strike, and other warlike violent incidents frequently (Fink, 2010).

In addition to the impacts of the already presented conventional ACEs, migration issues emerged as a significant risk factor, augmenting the likelihood of self-harm and suicide. It should be noted that among the three forms of extended childhood adversity, 31.5% revealed migration issues, although racism and discrimination and childhood exposure to the family financial crisis were not the most frequently reported, but it is demonstrated that migration issues and racism and discrimination have an important impact, especially on the mental health of the participants. This agrees with the ACE model, which explains the existing intra-connection of adversities and their impacts on individuals (Kalmakis & Chandler, 2014). Previously, numerous studies have also documented the impact of racial discrimination on mental health (Cave et al., 2020; Paradies et al., 2015; Priest et al., 2013). For example, Lee and Ahn (2011) conducted a study that discovered that the effects of discrimination on mental health were statistically significant among the

Asian samples. Racism and leading discrimination are held responsible for suicidal risk (Keum, 2022; Vance et al., 2023).

Future research about how to better understand this link between psychological stressors and health consequences is needed, as well as the understanding of mediating and moderating factors on this effect. The study focused on assessing how each category of ACEs affects an individual's mental health outcomes in adulthood. As far as is known, this is the first study on ACEs and their impact on adult mental health in Bangladesh.

4.1 Limitations of the Study

The current study does have some limitations. The study used a cross-sectional design and employed a purposive sampling technique which limited its ability to establish cause-and-effect relationships, thus restricting the generalizability of the findings beyond the sample.

Additionally, the childhood adversity experiences of the participants were measured using retrospective ACE measures; retrospective data may have been subject to recall bias. A prospective as well as longitudinal study may assist in better understanding the factors contributing to the worsening of mental health outcomes related to ACEs.

Moreover, the study's sample size is a limitation that hinders the ability to generalize the findings to the broader population of Bangladesh. A representative larger sample would help make causal inferences.

Another limitation is for recruiting the clinical sample; the study only included patients from a single hospital located in Dhaka. However, it is the only Mental Health institute in Bangladesh playing a crucial role in the country's mental health program. Moreover, patients from various regions of the country seek treatment at this hospital.

Additionally, we conducted interviews with a substantial number of neurotic patients who attended the hospital during the research period. Although the study's subjects may not entirely represent Bangladesh, they provide some insight into the country's population.

4.2 Strengths of the Study

The current study contributes to understanding the impact of ACEs on mental health in Bangladesh, a middle-income nation. It analyzes ACE-IQ and ACE-related factors, highlighting the cumulative effects of ACEs on adult mental health. This research has various strengths that enhance its overall quality.

First, the utilization of clinical and non-clinical samples expands the relevance of the results. Clinical samples are frequently used in mental health research because they are more likely to have encountered trauma or other ACEs, limiting the generalizability of findings to the general population. Using both Clinical and non-clinical samples assured that the findings have applicability to a wider range of individuals.

Second, using multiple mental health measures helped assure that the study's findings were not attributable to a single measure. We used SRQ 20, the Well-being measure, and Quality of life to assess the participants' mental health outcomes. The various methods utilized in this study provided a more complete overview of an individual's mental health condition.

Furthermore, utilizing comprehensive ACE measures enables the identification of a broader spectrum of experiences that can potentially affect mental health negatively. The ACE-IQ assessment tool, in particular, assesses a wider range of adverse childhood experiences compared to traditional ACE measures. Moreover, using Extended ACE items, i.,e., racism and discrimination, and poverty, allowed to get a complete understanding of

the participants' experiences and thereby contributed to a more accurate evaluation of their mental health status.

Finally, exploring mediation effects helped us understand how ACEs affect mental health through other factors like resilience and social support. This gave insight into the mechanisms behind mental health issues caused by ACEs. Several strengths of the current research have contributed to its overall quality which has Implications for research and clinical practice

4.3 Implications for Research and Clinical Practice

The study's findings can be useful for a wide range. First of all, it has been found that ACEs are pervasive and may have a detrimental effect on mental health and well-being, regardless of their demographic background. These effects serve as practical indications for psychosocial and mental treatments. So, countrywide prevention efforts for ACEs need to be undertaken.

Second, it is necessary to increase education and awareness on ACEs, their effect on mental health and well-being, and measures to prevent them. Education and awareness campaigns will also assist in reducing the stigma attached to ACEs, thus will make it simpler for people to get the appropriate support they need.

Third, early support and intervention can help people in Bangladesh avoid ACEs' long-term effects. This may involve assisting families in creating a healthy family environment, offering mental health care to children in need, and training professionals to extend support to wider populations. For instance, educational institutes and programs may be crucial in spreading knowledge about ACEs, parenting programs can help parents

raise their children in a loving atmosphere, and counseling can help ACE survivors deal with their impacts and learn positive coping mechanisms.

Additionally, studies have reported that although ACEs are avoidable, it is imperative to expand the programs that foster resilience, self-esteem, and other protective factors among an individual, which will significantly assist individuals in dealing with stress and adversity.

4.4 Recommendations from the Present Study

Although it is known that ACEs have potentials to negatively impacts health and well-being, it is crucial to emphasize that ACEs are neither predetermined nor inevitable; they are preventable. There are the recommendations for further research on the impact of ACEs on adult mental health in Bangladesh:

First, promote further research. More ACE research in the context of Bangladesh is needed since the current body of work is too small. Future studies may concentrate on a bigger sample size with more diverse populations, including persons from various socioeconomic origins, racial and cultural groups, and geographical locations.

Second, along with cross-sectional research, the longitudinal study can be done to monitor the impact of ACEs on adult mental health across time. This would be helpful in understanding how ACEs can result in enduring mental health issues in later life.

Third, Finding protective factors that aid in the prevention of potential impacts is necessary, too. Additionally, comparative research can assist in determining the precise impact of ACEs in Bangladesh. For instance, researchers could assess the mental health of those who experienced ACEs in Bangladesh and that of those who did so in other nations, which would make it easier to pinpoint potential contributing elements to the impact of

ACEs in Bangladesh. These suggestions could increase our knowledge of how ACEs affect adult mental health in Bangladesh.

Chapter 5

CONCLUSION

Conclusion

This study findings reflects on how adverse childhood experiences (ACEs) affect adult mental health outcomes in Bangladesh and thus provide evidence to support the need to address this issue. The importance of this phenomenon is highlighted by the large proportions of clinical and non-clinical sample who report experiencing at least one adversity and the prediction that a significant number of them who are facing psychological difficulties might have experienced three or more ACEs. The objectives of the study, from assessing prevalence and relationships among ACEs and mental health outcomes to exploring potential mediators and exploration of specific ACE categories, illustrate the complex interplay between early life adverse experiences and later psychological well-being, revealing the far-reaching impacts of ACEs on mental health.

The study employed a cross-sectional survey design that included both clinical and non-clinical participants recruited from Dhaka, Chottogram, and a tertiary hospital in Dhaka city. Inferential analysis revealed the impacts of ACEs (retrospectively reported) on the mental health outcome of adult individuals.

The findings indicated that emotional neglect, domestic violence, and exposure to collective violence were among the most prevalent ACEs, and clinical participants reported higher ACE exposure than non-clinical counterparts. The findings reveal the profound influence of ACEs on mental health parameters, including psychological symptoms and the four quality-of-life domains. ACEs has also been demonstrated to significantly risk psychological distress, substance abuse, risk behavior, self-harm, and reduced overall well-being. The positive association between ACEs and psychological characteristics and the subtle association with well-being highlight the impact of adverse childhood events.

Identifying mediation pathways through factors like social support, resilience, and self-esteem emphasizes potential areas for intervention and support. The analysis of certain ACE categories offers valuable knowledge on the adversities that most significantly predict negative outcomes, such as emotional neglect, collective violence, and exposure to racism and discrimination. Moreover, explaining the extended ACEs adds to the need for culturally appropriate interventions.

These issues call for the development of policies and interventions aimed, first and foremost at preventing ACEs and further reducing the impact of childhood adversity. Understanding the complex mechanism through which ACEs impact mental health will enable all who are working to promote better mental health to work together to create comprehensive strategies that emphasize developing resilience, strengthen social support networks, and ultimately enhance the well-being of those who have faced such adversity. The processes supporting the mediating variables found in this study may be further explored in future research. Moreover, longitudinal studies could provide valuable insights into the long-term trajectories of individuals who have experienced ACEs and the evolving nature of their mental health outcomes. Further research should also look at the effectiveness of early interventions to lessen the effects of ACEs and the exploration of culturally relevant solutions.

In summary, this research sheds light on the complex relationships between ACEs and adult mental health outcomes in Bangladesh. Proper mental health and well-being support may be ensured by detecting, understanding, and intervening the occurrence of ACEs. Which would be related to ensuring a better future for those individuals and communities affected by early adversity.

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APPEDIX

Interview ID:	L	-	R	A	-	d	d	-	n

Appendix A

Demographic Information Sheet (ব্যক্তিগত তথ্যাবলী)

[1] N/Cln

[2] Cln Dx: .....

A1. বয়সঃ _____ বছর **A2.** লিঙ্গঃ [১] পুরুষ [২] নারী

A3. উচ্চতাঃ _____ ফুট _____ ইঞ্চি **A4.** ওজনঃ _____ কেজি

A5. পরিবারের সদস্য সংখ্যাঃ _____ জন **A6** ভাইবোন সংখ্যাঃ _____ জন

A7. নিজ জন্মক্রমঃ _____ তম **A8.** ধর্মঃ [১] ইসলাম [২] হিন্দু [৩] অন্যান্য

A9. আয়ের উৎসঃ [১] বেকার [২] পূর্ণকালীন চাকুরী [৩] খণ্ডকালীন চাকুরী [৪] ব্যবসা
[৫] কৃষিকাজ [৬] পরিবার [৭] অন্যান্য .....

A10. আর্থ সামাজিক অবস্থাঃ [১] নিম্নবিত্ত [২] মধ্যবিত্ত [৩] উচ্চবিত্ত **A11.** বর্তমান আবাস্থলঃ [১] শহর [২] গ্রাম

A12. বর্তমান বাসস্থানের ধরনঃ [১] নিজের বাসা [২] ভাড়া বাসা [৩] অস্থায়ী বসবাস

A13. বেড়ে ওঠার স্থলঃ [১] শহর [২] গ্রাম **A14.** বেড়ে ওঠা পরিবারের ধরণঃ [১] একক পরিবার [২] যৌথ পরিবার

A15. বৈবাহিক অবস্থাঃ [১] অবিবাহিত [২] বিবাহিত [৩] পৃথক বসবাস
[৪] বিবাহ বিচ্ছেদ [৫] বিধবা-বিপত্নীক [৬] অন্যান্য .....

A16. শিক্ষাগত যোগ্যতাঃ [১] নিরক্ষর [২] প্রাইমারী পর্যন্ত [৩] এস.এস.সি.(SSC)
[৪] এইচ.এস.সি.(HSC) [৫] গ্রাজুয়েশন [৬] পোষ্ট গ্রাজুয়েশন

A17. পরিবারের মাসিক আয়ঃ _____ টাকা **A18.** পরিবারের মাসিক ব্যয়ঃ _____ টাকা

A19. মায়ের শিক্ষাগত যোগ্যতাঃ [১] নিরক্ষর [২] প্রাইমারী পর্যন্ত [৩] এস.এস.সি.(SSC)
[৪] এইচ.এস.সি.(HSC) [৫] গ্রাজুয়েশন [৬] পোষ্ট গ্রাজুয়েশন

A20. বাবার শিক্ষাগত যোগ্যতাঃ [১] নিরক্ষর [২] প্রাইমারী পর্যন্ত [৩] এস.এস.সি.(SSC)
[৪] এইচ.এস.সি.(HSC) [৫] গ্রাজুয়েশন [৬] পোষ্ট গ্রাজুয়েশন

Appendix B

Self-Reporting Questionnaire (SRQ 20)

নিম্নের প্রশ্নাবলীর উত্তর প্রশ্নের পার্শ্বে লিখিত হ্যাঁ ও না জবাবে **টিক (√) চিহ্ন** দ্বারা প্রকাশ করুন ।

কোড	গত একমাসে	
১	আপনার কি প্রায়ই মাথা ব্যথা হয়?	১ হ্যা ২ না
২	আপনি কি পেটে অস্বস্থি অনুভব করেন?	১ হ্যা ২ না
৩	আপনার কি হজম শক্তি কম?	১ হ্যা ২ না
৪	আপনার কি ক্ষুধা কম লাগে?	১ হ্যা ২ না
৫	আপনি কি সহজেই ক্লান্ত হয়ে পড়েন?	১ হ্যা ২ না
৬	আপনি কি সব সময় ক্লান্তি বোধ করেন?	১ হ্যা ২ না
৭	আপনার কি ঘুম ভাল হয় না?	১ হ্যা ২ না
৮	আপনার কি হাত কাঁপে?	১ হ্যা ২ না
৯	আপনি কি সহজেই ভয় পেয়ে যান?	১ হ্যা ২ না
১০	কোন বিষয়ে সিদ্ধান্ত নিতে কি আপনার কাছে কঠিন মনে হয়?	১ হ্যা ২ না
১১	আপনার প্রতিদিনকার কাজে ক্ষতি হচ্ছে কি?	১ হ্যা ২ না
১২	আপনার কি কোন বিষয়ে ঠিকমত চিন্তা করতে সমস্যা হয়?	১ হ্যা ২ না
১৩	দৈনন্দিন কাজকর্মে আপনি কি আনন্দ পান না?	১ হ্যা ২ না
১৪	আপনার কি অল্পতেই কান্না পায়?	১ হ্যা ২ না
১৫	আপনি কি নিজেকে অসুখী মনে করেন?	১ হ্যা ২ না
১৬	আপনার কি নিজেকে ভীতু ও দুশ্চিন্তাগ্রস্থ মনে হয়?	১ হ্যা ২ না
১৭	আপনি কি নিজেকে একজন মূল্যহীন মানুষ মনে করেন?	১ হ্যা ২ না
১৮	আপনি কি জীবনে প্রয়োজনীয় ভূমিকা পালনে অক্ষম?	১ হ্যা ২ না
১৯	আপনার মনে নিজেকে শেষ করে দেয়ার চিন্তা আসে কি?	১ হ্যা ২ না
২০	আপনি কি কাজকর্মে উৎসাহ হারিয়ে ফেলেছেন?	১ হ্যা ২ না

Appendix C

WHO QOL Brief -26

গত দুসপ্তাহের কথা ভেবে নিচের বিষয়গুলোতে উত্তর দিন

		খুব খারাপ	খারাপ	ভালও নয় খারাপও নয়	ভাল	খুব ভাল
১.	আপনার জীবন যাত্রার মান কেমন?	১	২	৩	৪	৫

		খুব অসন্তুষ্ট	অসন্তুষ্ট	সন্তুষ্টও নয় অসন্তুষ্টও নয়	সন্তুষ্ট	খুব সন্তুষ্ট
২.	আপনার স্বাস্থ্য নিয়ে কি আপনি সন্তুষ্ট?	১	২	৩	৪	৫

		একদম না	কম	মোটামুটি	বেশী	খুব বেশী
৩.	শারীরিক ব্যথার জণ্য আপনি কি পরিমান প্রয়োজনীয় কাজ থেকে বিরত ছিলেন?	১	২	৩	৪	৫
৪.	আপনার দৈনন্দিন কার্যক্রম ঠিক রাখতে চিকিৎসা কতটুকু প্রয়োজন?	১	২	৩	৪	৫
৫.	আপনি জীবনকে কতটুকু উপভোগ করেন?	১	২	৩	৪	৫
৬.	জীবনকে আপনার কতটুকু অর্থপূর্ণ মনে হয়?	১	২	৩	৪	৫
৭.	আপনি কাজে কতটুকু মনসংযোগ করতে পারেন?	১	২	৩	৪	৫
৮.	আপনি দৈনন্দিন জীবনে কতটুকু নিরাপত্ত অনুভব করেন?	১	২	৩	৪	৫
৯.	আপনার ভৌত পরিবেশ কতটুকু স্বাস্থ্যকর?	১	২	৩	৪	৫

		একদম না	কম	মোটামুটি	অধিকাংশ	পরিপূর্ণভাবে
১০.	আপনার কি প্রতিদিন কাজ করার মত শক্তি আছে?	১	২	৩	৪	৫
১১.	আপনি কি আপনার শরীরের গড়ন নিয়ে সন্তুষ্ট?	১	২	৩	৪	৫
১২.	আপনার কি প্রয়োজন মেটাতে যথেষ্ট্য টাকা আছে?	১	২	৩	৪	৫
১৩.	আপনি কি দৈনন্দিন জীবন-যাপনের জন্য প্রয়োজনীয় তথ্য পান?	১	২	৩	৪	৫
১৪.	অবসর কাটানোর / বিনোদনের সুযোগ আপনার কতটুকু আছে?	১	২	৩	৪	৫

		খুব খারাপ	খারাপ	ভালও না মন্দও না	ভাল	খুব ভাল
১৫.	আপনি কতটা ভালভাবে চলাফেরা করতে পারেন?	১	২	৩	৪	৫

		খুব অসন্তুষ্ট	অসন্তুষ্ট	সন্তুষ্টও নয় অসন্তুষ্টও নয়	সন্তুষ্ট	খুব সন্তুষ্ট
১৬.	আপনার ঘুম নিয়ে আপনি কতখানি সন্তুষ্ট?	১	২	৩	৪	৫
১৭.	দৈনন্দিন কাজ করার সক্ষমতা (এবিলিটি) নিয়ে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫
		খুব অসন্তুষ্ট	অসন্তুষ্ট	সন্তুষ্টও নয় অসন্তুষ্টও নয়	সন্তুষ্ট	খুব সন্তুষ্ট
১৮.	আপনার কাজ করার ক্ষমতা/দক্ষতা (ক্যাপাসিটি) নিয়ে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫
১৯.	নিজেকে নিয়ে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২০.	অন্যদের সাথে আপনার ব্যক্তিগত সম্পর্কসমূহ নিয়ে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২১.	অপনার যৌন জীবন নিয়ে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২২.	বন্ধুদের কাছ থেকে পাওয়া সাহায্যে আপনি কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২৩.	আপনি অপনার বাসস্থানের অবস্থা নিয়ে কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২৪.	আপনি যে স্বাস্থ্যসেবা পান তাতে কি সন্তুষ্ট?	১	২	৩	৪	৫
২৫.	আপনি যাতায়াত ব্যবস্থা নিয়ে কতটুকু সন্তুষ্ট?	১	২	৩	৪	৫

		কখনো না	কখনো কখনো	মাঝে মাঝে	প্রায়শই	সব সময়
২৬.	আপনার হতাশা, উদ্বেগ, অবসন্নতা এই সব নেতিবাচক অনুভুতি কত ঘন ঘন হয়?	১	২	৩	৪	৫

Appendix D

WHO (Five) Well-Being Index (1988 version)

অনুগ্রহ করে পাঁচটি বিবৃতির প্রতিটির জন্য <u>গত দুই সপ্তাহ ধরে আপনি কেমন অনুভব করছেন</u> তা যতটা সঠিকভাবে সম্ভব নির্দেশ করুন । লক্ষ্য করুন যে, নম্বর যত বেশি হবে তত বেশি ভাল থাকা নির্দেশ করে ।

	গত দুই সপ্তাহে	সবসময়	বেশিরভাগ সময়	অর্ধেকের বেশি সময়	অর্ধেকের কম সময়	মাঝে মাঝে	কখনোই না
১.	আমি উৎফুল্ল এবং উৎসাহিতবোধ করেছি	৫	৪	৩	২	১	০
২.	আমি শান্ত এবং নির্ভার বোধ করেছি	৫	৪	৩	২	১	০
৩.	আমি কর্মক্ষম এবং সজীবতা অনুভব করেছি	৫	৪	৩	২	১	০
৪.	সতেজ এবং আরামের অনুভূতি নিয়ে আমি ঘুম থেকে জেগে উঠেছি	৫	৪	৩	২	১	০
৫.	পছন্দের বিষয়গুলো দিয়ে আমার দৈনন্দিন জীবন পূর্ণ রয়েছে	৫	৪	৩	২	১	০

Appendix E

ACE-IQ Bangla Version

পরবর্তী প্রশ্নগুলো **আপনার জীবনের অতীত অভিজ্ঞতা** সম্পর্কিত । অর্থাৎ আপনি **প্রাপ্তবয়স্ক হওয়ার পূর্বেই (০-১৮ বছর বয়সে) এগুলোর সম্মুখীন হয়েছেন** ।

আপনার জীবনের প্রথম ১৮ বছর বয়সকালীন সময়ে, যখন আপনি বেড়ে উঠছিলেনঃ		সবসময়	অধিকাংশ সময়	মাঝে মাঝে	খুবই কম সময়	কখনোই না
১	আপনার বাবা-মা বা অভিভাবক কি আপনার সমস্যা বা দুশ্চিতা গুলো বুঝতেন?	১	২	৩	৪	৫
২	আপনার স্কুল বা কাজের সময় ছাড়া কি করে আপনার অবসর কাটতো সে বিষয়ে আপনার বাবা-মা বা অভিভাবকদের আসলে কোন ধারণা ছিল কি?	১	২	৩	৪	৫
৩	আপনি কতটা অনুভব করেছেন যে আপনার ধর্ম, জাতিগত পরিচয়, গায়ের রঙ, ভাষার পার্থক্য, আঞ্চলিক উচ্চারণ, বা আপনি অন্য দেশ বা সংস্কৃতি থেকে এসেছেন বলে আপনার সাথে খারাপ বা অন্যায় আচরণ করা হয়েছে?	১	২	৩	৪	৫
৪	আপনার পরিবারে কি অভাবের কারনে মাঝেমাঝে স্বাভাবিকের চাইতে কম পরিমাণে খাদ্য গ্রহণ করতো বা কোন বেলার খাবার বাদ দিতো?	১	২	৩	৪	৫

৫	**আপনি কি এমন পরিবারে বড় হয়েছেন যেখানে কোন সদস্যের অতিরিক্ত মদ্যপান বা নেশা গ্রহণের সমস্যা ছিল?**	১ হ্যা	২ না
৬	আপনি কি এমন পরিবারে বড় হয়েছেন যেখানে কোন সদস্যের বিষণ্ণতা, মানসিক স্বাস্থ্য জনিত সমস্যা ছিলো বা যিনি আত্মহত্যা প্রবণ ছিলেন?	১ হ্যা	২ না
৭	আপনি কি পরিবারের এমন কোন সদস্যের সাথে বাস করেছেন যিনি কখনো জেলে অথবা কারাগারে গিয়েছিলেন?	১ হ্যা	২ না
৮	এমন কি কখনো হয়েছে যে আপনার পরিবারের কোন সদস্যকে বেঁচে থাকার তাগিদে বা কাজ করার জন্য দেশ ছাড়তে হয়েছিল?	১ হ্যা	২ না
৯	এমন কি হয়েছে যে আপনার ভয় হতো যে পরিবারের কোন সদস্যকে হয়তো জোরপূর্বক বাসস্থান বা কাজের জায়গা থেকে উচ্ছেদ করা হতে হবে?	১ হ্যা	২ না
১০	আপনার বাবা-মার মধ্যে কখনো কি ছাড়াছাড়ি বা বিবাহ বিচ্ছেদ হয়েছে?	১ হ্যা	২ না
১১	আপনার মা, বাবা বা কোন অভিভাবক কি মারা গিয়েছিলো?	১ হ্যা	২ না
১২	দেশান্তর বা স্থানান্তরিত হবার কারণে কখনো কি আপনাকে আপনার বাবা-মা বা অভিবাবক এর কাছ থেকে দীর্ঘসময় বিচ্ছিন্ন থাকতে হয়েছে?	১ হ্যা	২ না

আপনার জীবনের প্রথম ১৮ বছর বয়সকালীন সময়ে, যখন আপনি বেড়ে উঠছিলেনঃ		অনেকবার	কয়েকবার	একবার	কখনোই নয়
১৩	এমন হয়েছে কিনা যে সাধ্য বা সুযোগ থাকা সত্ত্বেও আপনার বাবা-মা বা অভিভাবক আপনাকে পর্যাপ্ত খাবার দেননি?	১	২	৩	৪
১৪	আপনার বাবা-মা বা অভিভাবক কি অতিরিক্ত মাতাল বা নেশায় আসক্ত থাকার কারণে আপনাকে দেখাশুনা করতে বা যত্ন নিতে অপারগ ছিলেন?	১	২	৩	৪
১৫	এমন হয়েছে কিনা যে আপনার বাবা-মা বা অভিভাবক আপনাকে স্কুলে বা শিক্ষা অর্জনে পাঠাননি যদিও চাইলেই তা তারা করতে পারতেন?	১	২	৩	৪

(১৬-১৮) পরবর্তী প্রশ্নগুলো এমন কিছু বিষয় বা ঘটনা সম্পর্কে **যা আপনি আপনার বাড়িতে শুনে বা দেখে থাকবেন।** *এ ঘটনা গুলো সরাসরি আপনার সাথে নয়, বরং আপনার পরিবারের অন্য কোন সদস্যের সাথে করা হয়েছে।*

আপনার জীবনের প্রথম ১৮ বছর বয়সকালীন সময়ে, যখন আপনি বেড়ে উঠছিলেনঃ		অনেকবার	কয়েকবার	একবার	কখনোই নয়
১৬	আপনি কি আপনার বাবা-মা বা পরিবারের অন্য কোন সদস্যকে চিৎকার, চেঁচামেচি, গালিগালাজ, বা অপমানের শিকার হতে দেখেছেন বা শুনেছেন?	১	২	৩	৪
১৭	আপনি কি আপনার বাবা-মা বা পরিবারের অন্য কোন সদস্যদেরকে চড়, থাপ্পড়, লাথি, ঘুসি বা মার খেতে দেখেছেন বা শুনেছেন?	১	২	৩	৪
১৮	আপনি কি আপনার বাবা-মা বা পরিবারের অন্য কোন সদস্যদের বেত, লাঠি, ছুরি, চাবুক ইত্যাদি দিয়ে আঘাত পেতে বা আহত হতে দেখেছেন বা শুনেছেন?	১	২	৩	৪

(১৯-২৬) পরবর্তী প্রশ্নগুলো **আপনার সাথে ঘটে যাওয়া** *কিছু নির্দিষ্ট বিষয় বা ঘটনা নিয়ে করা হয়েছে।*

আপনার জীবনের প্রথম ১৮ বছর বয়সকালীন সময়ে, যখন আপনি বেড়ে উঠছিলেনঃ		অনেকবার	কয়েকবার	একবার	কখনোই নয়
১৯	আপনার বাবা-মা, অভিভাবক বা পরিবারের অন্য কোন সদস্য কি আপনার সাথে চিৎকার, চেঁচামেচি করেছেন বা আপনাকে অভিশাপ দিয়েছেন বা অপমান-অপদস্ত করেছেন?	১	২	৩	৪
২০	আপনার বাবা-মা, অভিভাবক বা পরিবারের অন্য কোন সদস্য কি আপনাকে ছেড়ে চলে যাওয়া বা বাসা থেকে বের করে দিয়েছিলেন অথবা এমন কোন হুমকি দিয়েছিলেন?	১	২	৩	৪
২১	আপনার বাবা-মা, অভিভাবক বা পরিবারের অন্য কোন সদস্য কি আপনাকে চড়, থাপ্পড়, লাথি, ঘুসি বা মার দিয়েছিলেন?	১	২	৩	৪
২২	আপনার বাবা-মা, অভিভাবক বা পরিবারের অন্য কোন সদস্য কি কখনো আপনাকে বেত, লাঠি, ছুরি, চাবুক ইত্যাদি দিয়ে আঘাত করেছেন বা ক্ষত তৈরি করেছিলেন?	১	২	৩	৪
২৩	আপনি চাচ্ছিলেন না তার পরেও কেউ কি আপনাকে যৌনভাবে স্পর্শ করেছে বা জড়িয়ে ধরেছে?	১	২	৩	৪
২৪	আপনার অনিচ্ছা সত্ত্বেও কেউ কি আপনাকে দিয়ে তার শরীরে যৌনভাবে স্পর্শ করিয়েছে?	১	২	৩	৪
২৫	আপনার ইচ্ছার বিরুদ্ধে কেউ কি আপনার সাথে যৌন সম্পর্ক(মুখে, পায়ু বা যোনি পথে) করার চেষ্টা করেছিল?	১	২	৩	৪
২৬	কেউ কি আপনার ইচ্ছার বিরুদ্ধে আপনার সাথে যৌন সম্পর্ক (মুখে, পায়ু বা যোনি পথে) করেছে?	১	২	৩	৪

(২৭) পরবর্তী প্রশ্নটি আপনার **বেড়ে ওঠার সময়কার বুলিং (Bullying) এর অভিজ্ঞত** *সম্পর্কে। যখন একজন বা একদল ব্যক্তি অপর কোন ব্যক্তিকে* **খারাপ বা অপ্রীতিকর কোন কিছু বলে বা তার সাথে খারাপ বা অপ্রীতিকর কোন আচরণ করে** *তাকে বুলিং বলা হয়। এছাড়াও, কোন ব্যক্তিকে অপ্রীতিকরভাবে প্রচণ্ড উত্যক্ত করা বা উদ্দেশ্যমূলকভাবে কোনকিছু থেকে বাদ দেয়া -এর সবই বুলিং মধ্যে পরে।*

তবে যখন প্রায় একই শক্তি বা সামর্থ্যসম্পন্ন দুইজন ব্যক্তি কোন ব্যাপারে কথা কাটাকাটি বা লড়াই করে অথবা বন্ধুসুলভ খোঁচাখোঁচি বা জ্বালাতন করে তখন তা বুলিং নয়।

২৭	*আপনার জীবনের প্রথম ১৮ বছর বয়সকালীন সময়ে, যখন আপনি বেড়ে উঠছিলেনঃ* **কত ঘনঘন আপনি বুলিইং এর শিকার হতেন?**	অনেকবার ১	কয়েকবার ২	একবার ৩	কখনোই নয় ৪

(২৮) পরবর্তী প্রশ্নটি ***লড়াই বা মারামারি সম্পর্কে:*** *দুজন কাছাকাছি শক্তি বা ক্ষমতার ব্যক্তি যখন শারীরিকভাবে আঘাত বা পাল্টা আঘাতে লিপ্ত হয় তখন তাকে লড়াই বা মারামারি বলে।*

২৮	*আপনার জীবনের প্রথম ১৮ বছর বয়সকালীন সময়ে, যখন আপনি বেড়ে উঠছিলেনঃ* **কত ঘনঘন আপনি মারামারিতে জড়িয়ে পড়েছেন?**	অনেকবার ১	কয়েকবার ২	একবার ৩	কখনোই নয় ৪

(২৯-৩১) নিচের প্রশ্নগুলো কিছু নির্দিষ্ট বিষয় বা ঘটনা সম্পর্কে যা আপনি ছোটবেলায় **আপনার প্রতিবেশী বা আপনার আশেপাশে ঘটতে দেখেছেন বা শুনেছেন** *(আপনার বাসায় অথবা টেলিভিশন, কিংবা সিনেমা বা রেডিওতে নয়)।*

আপনার জীবনের প্রথম ১৮ বছর বয়সকালীন সময়ে, যখন আপনি বেড়ে উঠছিলেনঃ		অনেকবার	কয়েকবার	একবার	কখনোই নয়
২৯	আপনি কি বাস্তবে কাউকে মার খেতে দেখেছেন বা শুনেছেন?	১	২	৩	৪
৩০	আপনি কি বাস্তবে কাউকে ছুরিকাঘাত হতে বা গুলিবিদ্ধ হতে দেখেছেন বা শুনেছেন?	১	২	৩	৪
৩১	আপনি কি বাস্তবে কাউকে ছুরি বা বন্দুক দ্বারা হুমকির শিকার হতে দেখেছেন বা শুনেছেন?	১	২	৩	৪

(৩২-৩৫) নিচের প্রশ্নগুলো শিশু বয়সে ঘটতে দেখেছেন এমন **দলগত সহিংসতা সম্পর্কিত** *যার মধ্যে রয়েছে যুদ্ধ, সন্ত্রাসী কর্মকান্ড, রাজনৈতিক বা জাতিগত দ্বন্দ্ব, গণহত্যা, দমন-নিপীড়ন, গুম, নির্যাতন এবং দস্যুতা ইত্যাদি ঘটনা।*

আপনার জীবনের প্রথম ১৮ বছর বয়সকালীন সময়ে, যখন আপনি বেড়ে উঠছিলেনঃ		অনেকবার	কয়েকবার	একবার	কখনোই নয়
৩২	এমন কোন ঘটনার পরিপ্রেক্ষিতে বাধ্য হয়ে কখনো কি আপনাকে অন্য কোথাও গিয়ে বসবাস করতে হয়েছিলো?	১	২	৩	৪
৩৩	এমন কোন ঘটনার পরিপ্রেক্ষিতে কখনো কি আপনাদের বসতবাড়িতে হামলা, ধ্বংস বা ক্ষতিসাধন করা হয়েছিল?	১	২	৩	৪
৩৪	আপনি কি সেনা, পুলিশ, বন্দুকধারী বা বখাটেদের দ্বারা হয়রানি বা মারধরের শিকার হয়েছেন?	১	২	৩	৪
৩৫	আপনার পরিবারের কোন সদস্য বা আপনার কোন বন্ধু-বান্ধব কি সেনা, পুলিশ, বন্দুকধারী বা বখাটেদের দ্বারা আহত বা নিহত হয়েছেন?	১	২	৩	৪

A21. *আপনার জীবনের প্রথম ১৮ বছর বয়সকালীন সময়ে, যখন আপনি বেড়ে উঠছিলেনঃ* আপনার পরিবারের তৎকালীন অর্থনৈতিক অবস্থা/পরিস্থিতি কেমন ছিল?	খুব খারাপ ১	খারাপ ২	ভালও নয় খারাপও নয় ৩	ভাল ৪	খুব ভাল ৫

A22. ছোটবেলায় আপনি আপনার পরিবারের (আর্থিক) অবস্থা নিয়ে কতটা সন্তুষ্ট ছিলেন?	খুব অসন্তুষ্ট ১	অসন্তুষ্ট ২	সন্তুষ্টও নয় অসন্তুষ্টও নয় ৩	সন্তুষ্ট ৪	খুব সন্তুষ্ট ৫

Appendix F

Frequency Scoring Method for ACE- IQ

[Items are scored based on the frequency of the ACE. Participant must respond with one of the **bolded responses** in order to receive one for that category.]

ACE Category	Written Question
1. Emotional Neglect	**1.** Did your parents/guardians understand your problems or worries? **[Rarely** or **never]** ***or*** **2.** Did your parents/guardians really know what you were doing with your free time when you were not at school or work? **[Rarely** or **never]**
2. Physical Neglect	**1.** Did your parents/guardians not give you enough food even when they could easily have done so? **[Many times]** ***or*** **2.** Were your parents/guardians too drunk or intoxicated by drugs to take care of you? **[Many times]** ***or*** **3.** Did your parents/guardians not send you to school even when it was available? **[Many times]**
3. Emotional Abuse	**1.** Did a parent, guardian or other household member yell, scream or swear at you, insult or humiliate you? **[Many times]** ***or*** **2.** Did a parent, guardian or other household member threaten to, or actually, abandon you or throw you out of the house? **[Many times]**
4. Physical Abuse	**1.** Did a parent, guardian or other household member spank, slap, kick, punch or beat you up? **[Many times]** ***or*** **2.** Did a parent, guardian or other household member hit or cut you with an object, such as a stick (cane), bottle, club, knife, whip, machete, etc.? **[Many times]**
5. Sexual Abuse	**1.** Did someone touch or fondle you in a sexual way when you did not want them to? **[Any affirmative response]** ***or*** **2.** Did someone make you touch them in a sexual way when you did not want them to? **[Any affirmative response]** ***or*** **3.** Did anyone attempt to have sexual intercourse with you, when you did not want them to?

ACE Category	Written Question
	[Any affirmative response] ***or*** **4.** Did anyone have sexual intercourse with you, when you did not want them to? **[Any affirmative response]**
6. Living with Substance Abuser/ Household substance abuse	**1.** Did you live with a household member who was a problem drinker or alcoholic, or misused street or prescription drugs? **[Yes (1)]**
7. Living with household member who was mentally ill or suicidal	**1.** Did you live with a household member who was depressed, mentally ill or suicidal? **[Yes (1)]**
8. Living with household member who was imprisoned	**1.** Did you live with a household member who was ever sent to jail or prison? **[Yes (1)]**
9. Parental death/Separation	**1.** Were your parents ever separated or divorced? **[Yes (1)]** ***or*** **2.** Did your mother, father, or guardian die? **[Yes (1)]**
10. Domestic Violence	**1.** Did you see or hear a parent or household member in your home being yelled at, screamed at, sworn at, insulted or humiliated? **[Many times]** ***or*** **2.** Did you see or hear a parent or household member in your home being slapped, kicked, punched or beaten up? **[Few times** or **many times]** ***or*** **3.** Did you see or hear a parent or household member in your home being hit or cut with an object, such as a stick (or cane), bottle, club, knife, whip etc? **[Few times** or **many times]**
11. Bullying	**1.** Were you bullied? **[Many times]**
12. Witnessed Community Violence	**1.** Did you see or hear someone being beaten up in real life? **[Many times]** ***or*** **2.** Did you see or hear someone being stabbed or shot in real life? **[Many times]** ***or*** **3.** Did you see or hear someone being threatened with a knife, machete, or gun? **[Many times]**
13. Exposure to war/ collective violence	**1.** Were you forced to go and live in another place due to any of these above events? **[Any affirmative response]** ***or*** **2.** Did you experience the deliberate destruction of your home due to any of these above events?

ACE Category	Written Question
	[Any affirmative response] ***or*** **3.** Were you beaten up by soldiers, police, militia, paramilitary, or gangs? **[Any affirmative response]** ***or*** **4.** Was a family member or friend killed or beaten up by soldiers, police, militia, paramilitary, or gangs? **[Any affirmative response]**
14. Physical fight*	**1.** How often where you in a physical fight? **[Many times]**

Scoring for the ACE Extended categories

ACE Category	Written Question
15. Racism/ Discrimination	**1.** How often did you feel that you are discriminated due to race, ethnicity, skin color, language, accent, or country/culture of origin? [**Always** or **Most of the time** or **sometimes**]
16. Food insecurity	**1.** How often did your parents/guardians cut the size of meals or skip meals because food was not available? [**sometimes, often,** or **very often]**
17. Migration issues	**1.** Did you live in a household where a household member had to leave the country either to live or work? **[Yes (1)]** ***or*** **2.** Did you live in a household where you feared a household member would be forced to leave the country they were living or working in? **[Yes (1)]** ***or*** **3.** Were you ever separated from your caregiver for a long amount of time due to migration? **[Yes (1)]**
18. Family financial problems/poverty	**1.** How was your family's economic/financial situation? **[poor** or **very poor]**

* **ACE Category that are not individually scored**

Appendix G

ACE-IQ Domains and Categories

Domain	ACE Category	Total items	Question No.	Items
Childhood Maltreatment [13 items]				
	1. Emotional Neglect	2 items	***1***	Did your parents/guardians understand your problems or worries? ***and***
			2	Did your parents/guardians really know what you were doing with your free time when you were not at school or work?
	2. Physical Neglect	3 items	***13***	Did your parents/guardians not give you enough food even when they could easily have done so?
			14	Were your parents/guardians too drunk or intoxicated by drugs to take care of you? ***and***
			15	Did your parents/guardians not send you to school even when it was available?
	3. Emotional Abuse	2 items	***19***	Did a parent, guardian or other household member yell, scream or swear at you, insult or humiliate you? ***and***
			20	Did a parent, guardian or other household member threaten to, or actually, abandon you or throw you out of the house?
	4. Physical Abuse	2 items	***21***	Did a parent, guardian or other household member spank, slap, kick, punch or beat you up? ***and***
			22	Did a parent, guardian or other household member hit or cut you with an object, such as a stick (cane), bottle, club, knife, whip, machete, etc.?
	5. Sexual Abuse	4 items	***23***	Did someone touch or fondle you in a sexual way when you did not want them to? ***and***
			24	Did someone make you touch them in a sexual way when you did not want them to? ***and***
			25	Did anyone attempt to have sexual intercourse with you, when you did not want them to? ***and***
			26	Did anyone have sexual intercourse with you, when you did not want them to?
Family/ Household Dysfunction [8 items]				
	6. Living with Substance Abuser/ Household substance abuse	1 item	***5***	Did you live with a household member who was a problem drinker or alcoholic, or misused street or prescription drugs?
	7. Living with household member who was mentally ill or suicidal	1 item	***6***	Did you live with a household member who was depressed, mentally ill or suicidal?
	8. Living with household member who was imprisoned	1 item	***7***	Did you live with a household member who was ever sent to jail or prison?

Domain	ACE Category	Total items	Question No.	Items
	9. Parental death/Separation	2 items	***10***	Were your parents ever separated or divorced? ***and***
			11	Did your mother, father, or guardian die?
	10. Domestic Violence	3 items	***16***	Did you see or hear a parent or household member in your home being yelled at, screamed at, sworn at, insulted or humiliated? ***and***
			17	Did you see or hear a parent or household member in your home being slapped, kicked, punched or beaten up? ***and***
			18	Did you see or hear a parent or household member in your home being hit or cut with an object, such as a stick (or cane), bottle, club, knife, whip etc?
Violence Outside the Home [8 items]				
	11. Bullying	1 item	***27***	Were you bullied?
	12. Witnessed Community Violence	3 items	***29***	Did you see or hear someone being beaten up in real life? ***and***
			30	Did you see or hear someone being stabbed or shot in real life? ***and***
			31	Did you see or hear someone being threatened with a knife, machete, or gun?
	13. Exposure to war/ collective violence	4 items	***32***	Were you forced to go and live in another place due to any of these above events? ***and***
			33	Did you experience the deliberate destruction of your home due to any of these above events? ***and***
			34	Were you beaten up by soldiers, police, militia, paramilitary, or gangs? ***and***
			35	Was a family member or friend killed or beaten up by soldiers, police, militia, paramilitary, or gangs?
	14. Physical fight*	1 item	***28***	How often where you in a physical fight?
Extended ACEs [6 items]				
	15. Racism/ Discrimination	1 item	***3***	How often did you feel that you are discriminated due to race, ethnicity, skin color, language, accent, or country/culture of origin?
	16. Food insecurity	1 item	***4***	How often did your parents/guardians cut the size of meals or skip meals because food was not available?
	17. Migration issues	3 items	***8***	Did you live in a household where a household member had to leave the country either to live or work? ***and***
			9	Did you live in a household where you feared a household member would be forced to leave the country they were living or working in? ***and***
			12	Were you ever separated from your caregiver for a long amount of time due to migration?
	18. Family financial problems/poverty	1 item	***A21***	How was your family's economic/financial situation?

* **ACE Category that is not individually scored**

Appendix H

Connor-Davidson Resilience Scale 10 (CD-RISC-10)

গত **এক মাস বিবেচনায়** নিচের বিবৃতিগুলির সাথে আপনি কতটা একমত তা টিক (√) চিহ্ন দিয়ে নির্দেশ করুন। যদি কোন ঘটনা সম্প্রতি না ঘটে থাকে তাহলে তা আপনার সাথে ঘটলে আপনি কেমন অনুভব করতেন তা বিবেচনায় রেখে উত্তর প্রদান করুণ।

		একদমই সত্য নয়	খুব কমই সত্য	মাঝে মাঝে সত্য	প্রায়ই সত্য	প্রায় সব সময় সত্য
১.	আমি পরিবর্তনের সাথে সামাল/মানিয়ে নিতে সক্ষম/পারি	০	১	২	৩	৪
২.	আমার পথে আসা যেকোন বিষয়ের সাথে আমি মোকাবিলা করতে পারি	০	১	২	৩	৪
৩.	আমি যখন কোন সমস্যায় পড়ি তখন বিষয়গুলোর মজার/রসিকতাপূর্ণ দিক গুলো দেখার চেষ্টা করি	০	১	২	৩	৪
৪.	চাপের সাথে মোকাবিলার মাধ্যমে নিজেকে শক্তিশালী করতে পারি	০	১	২	৩	৪
৫.	অসুস্থতা, আঘাত বা অন্যান্য কঠিন সময়ের পর আমি স্বাভাবিক জীবনে ফিরে আসার প্রবনতা দেখাই ।	০	১	২	৩	৪
৬.	আমি বিশ্বাস করি বাধা বিপত্তি থাকা সত্ত্বে আমি আমার লক্ষ্য বা উদ্দেশ্য অর্জন করতে সক্ষম	০	১	২	৩	৪
৭.	চাপের মধ্যে থেকে, আমি লক্ষ্যে অবিচল থাকি এবং সুস্পষ্ট ভাবে চিন্তা করি	০	১	২	৩	৪
৮.	আমি ব্যার্থতার দ্বারা সহজে নিরুৎসাহিত হই না	০	১	২	৩	৪
৯.	আমি নিজেকে একজন শক্তিশালী ব্যক্তি হিসাবে চিন্তা করি, যখন জীবনের বিভিন্ন চ্যালেঞ্জ এবং সমস্যার সাথে মোকাবিলা করি	০	১	২	৩	৪
১০.	আমি জীবনে অপ্রীতিকর অথবা দুঃখজনক অনুভূতি যেমন- বিষন্নতা, ভয়, রাগ- গুলোকে সামাল দিতে সক্ষম	০	১	২	৩	৪

Appendix I

Connor-Davidson Resilience Scale 10 (CD-RISC-10) ©

initials ☐☐☐ ***ID#*** ☐☐☐☐☐☐☐ ***date*** ☐☐/☐☐/☐☐☐☐ ***visit*** ☐☐ ***age*** ☐☐

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*Please indicate how much you agree with the following statements as they apply to you over the last **month**. If a particular situation has not occurred recently, answer according to how you think you would have felt.*

---

		not true at all (0)	rarely true (1)	sometimes true (2)	often true (3)	true nearly all the time (4)
1.	I am able to adapt when changes occur.	☐	☐	☐	☐	☐
2.	I can deal with whatever comes my way.	☐	☐	☐	☐	☐
3.	I try to see the humorous side of things when I am faced with problems.	☐	☐	☐	☐	☐
4.	Having to cope with stress can make me stronger.	☐	☐	☐	☐	☐
5.	I tend to bounce back after illness, injury, or other hardships.	☐	☐	☐	☐	☐
6.	I believe I can achieve my goals, even if there are obstacles.	☐	☐	☐	☐	☐
7.	Under pressure, I stay focused and think clearly.	☐	☐	☐	☐	☐
8.	I am not easily discouraged by failure.	☐	☐	☐	☐	☐
9.	I think of myself as a strong person when dealing with life's challenges and difficulties.	☐	☐	☐	☐	☐
10.	I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	☐	☐	☐	☐	☐

Add up your score for each column 0 + ____ + ____ + ____ + ___

Add each of the column totals to obtain CD-RISC score = _____

Appendix J

Authors Permission

Gmail

Md. Aminul Islam <aminulrashed77@gmail.com>

Bangla RISC-10
1 message

Jonathan Davidson, M.D. <jonathan.davidson@duke.edu> Fri, Feb 28, 2020 at 2:23 AM
To: "Md. Aminul Islam" <aminulrashed77@gmail.com>

Hello Dr. Islam:

Thank you for your reply. An agreement is attached for you to sign and return, so we can then send the RISC-25. Because you will be creating the RISC-10, we are pleased to waive the customary user fee. In effect, what you will need to do is just to remove the 15 items in the RISC-25 that are not part of the RISC-10, and make some minor changes to the heading of the scale, the instructions and the copyright/terms of use text at the end of the scale. You are not really creating a "new" scale. We'll send the Bangla R-25 and English R-25 and R-10 so you use them as source references in preparing the R-10.

We ask that you use the same wording for the 10 items as they appear in the Bangla RISC-25, and do not make any alterations.

Please let me know if you have any questions.

Sincerely,

Jonathan Davidson

From: Md. Aminul Islam <aminulrashed77@gmail.com>
Sent: Thursday, February 27, 2020 2:43 PM
To: mail cd-risc.com <mail@cd-risc.com>
Subject: Re: New submission from www.connordavidson-resiliencescale.com/contact.php

Dear Dr. Davidson,
I hope this email finds you well. Thank you so much for your quick response. As you have mentioned that there is no Bangla translation of RISC-10, so I would like to have your kind permission to work with Bangla translation of RISC-1 (Validate if required and use accordingly). As your resilience measures are widely appreciated and used in different countries for their supervisor performance in assessing resilience , I believe "CD Risk-10" will proved to be a useful tool for Bangla speaking population. At the same time , it would be highly appreciated if you could provide me Bangla translated RISC-25, prepared in by Dr. SK Sahanowas.
Any other documents or information will be highly welcomed!

Kind Regards,

Md. Aminul Islam
AssistantClinical Psychologist
:+88 01710295100
: **aminulrashed77@gmail.com**

Appendix K

Single-Item Self-Esteem Scale

(Robins, Hendin, & Trzesniewski, 2001)

SISES: "আমার আত্মমর্যাদাবোধ অনেক বেশী" আপনার নিজের সম্পর্কে এই বিবৃতিটির সাথে **আপনি কতটা একমত** তা **টিক (√) চিহ্ন** দ্বারা নির্দেশ করুন। লক্ষ্য করুন যে, বাম দিক থেকে নম্বর যতই বেশি হচ্ছে তা বেশি একমত হওয়া নির্দেশ করে।

Appendix L

Treatment & Health-Related Behaviors

SECTION A. Treatment Seeking: আপনার ক্ষেত্রে প্রযোজ্য উত্তর প্রশ্নের পার্শ্বে লিখিত **হ্যাঁ** বা **না** উত্তরে **টিক** (√) **চিহ্ন** দ্বারা প্রকাশ করুন ।

চিকিৎসা **(Treatment Seeking)**

১. আপনি কি গত ৬ মাসে **শারীরিক রোগের** জন্য কোন চিকিৎসা সেবা নিয়েছেন?	১ হ্যা	২ না
২. আপনি কি পূর্বে কখনো মানসিক রোগের জন্য সেবা নিয়েছেন? (ঔষধ, সাইকোথেরাপি/কাউন্সেলিং)	১ হ্যা	২ না
৩. আপনি কি অসুস্থ হলে তাৎক্ষনিক চিকিৎসা নেন?	১ হ্যা	২ না

SECTION B. Health-Related Behaviors: আপনার ক্ষেত্রে প্রযোজ্য উত্তর প্রশ্নের পার্শ্বে লিখিত **হ্যাঁ** বা **না** উত্তরে **টিক** (√) **চিহ্ন** দ্বারা প্রকাশ করুন ।

a. শারীরিক ও মানসিক কাজ (Physical & Mental Activity)

১. আপনি কি সুস্থ থাকার জন্য নিয়মিত শারীরিক পরিশ্রম করেন? (সপ্তাহে কমপক্ষে আড়াই ঘণ্টা বা ১৫০ মিনিট)	১ হ্যা	২ না
২. আপনি কি নিয়মিত ব্যায়াম করেন? (প্রতিদিন কমপক্ষে ১০ মিনিট)	১ হ্যা	২ না
৩. আপনি কি নিজেকে নিয়মিত **বিভিন্ন মস্তিষ্ক উদ্দীপক কাজে** নিয়োজিত রাখেন? (যেমনঃ বই পড়া, সিনেমা দেখা, লেখালেখি করা ইত্যাদি)	১ হ্যা	২ না

b. খাদ্য গ্রহণ (Vegetable and Fruit Intakes)

১. নিজেকে সুস্থ রাখার লক্ষ্যে আপনি কি নিয়মিত শাক-সবজি খান?	১ হ্যা	২ না
২. নিজেকে সুস্থ রাখার লক্ষ্যে আপনি কি নিয়মিত ফলমূল খান?	১ হ্যা	২ না
৩. আপনি কি নিজেকে সুস্থ রাখার লক্ষ্যে চর্বি মুক্ত, কম লবণ এবং কম চিনিযুক্ত খাবার খান?	১ হ্যা	২ না

c. ঘুম (Sleep)

১. আপনি কি রাতে কমপক্ষে ৬ ঘণ্টা ঘুমান?	১ হ্যা	২ না
২. আপনার কি ঘুমের সমস্যা হয়? (অনিয়মিত ঘুম, ঘুম আসতে দেরি হওয়া বা ঘুমিয়ে থাকতে অসুবিধা, ঘুম আরামদায়ক হয়না এমন)	১ হ্যা	২ না

SECTION C. Health-Risk Behaviors: আপনার ক্ষেত্রে প্রযোজ্য উত্তর প্রশ্নের পার্শ্বে লিখিত **হ্যাঁ** বা **না** উত্তরে **টিক** (√) **চিহ্ন** দ্বারা প্রকাশ করুন ।

a. ধূমপান ও মাদক সেবন (Smoking, Alcohol Intake and Substance Use)

১. আপনি কি বর্তমানে ধূমপান করেন? *[কখনো ধূমপান না করে থাকলে সরাসরি **D16**- এ চলে যান]*	১ হ্যা	২ না
২. কত বছর বয়স হতে আপনি মোটামুটি নিয়মিত ধূমপান শুরু করেন?	.....বছর	
৩. আপনি কি এ পর্যন্ত কমপক্ষে ১০০ সিগারেট খেয়েছেন?	১ হ্যা	২ না
৪. আপনি কি কখনো মদ/অ্যালকোহল জাতীয় পানীয় পান করেছেন?	১ হ্যা	২ না
৫. আপনি কি কখনো গাঁজা, ফেনসিডিল, হেরোইন, ইয়াবা বা এ জাতীয় কোন মাদক সেবন করেছেন?	১ হ্যা	২ না
৬. আপনি কি বর্তমানে কোন ধরনের মাদক সেবন করেন? (নিয়মিত বা অনিয়মিত)	১ হ্যা	২ না

b. ঝুকিপুর্ন আচরণ (Risky Behavior)

১. আপনি কি নিজের **ক্ষতি করার ইচ্ছায়** ঝুকিপুর্ন কোন আচরণ করেছেন? (যেমনঃ অতিরিক্ত মদ্যপান, অনিয়মিত/প্রেসক্রিপশন না মেনে ঔষধ খাওয়া বা বাদ দেয়া, অনিয়মিত খাদ্য গ্রহণ ইত্যাদি)	১ হ্যা	২ না
২. আপনি কি কখনো কনডম/প্রতিরক্ষা ছাড়া **অনিরাপদ যৌন সম্পর্ক** করেছেন?	১ হ্যা	২ না
৩. আপনি কি কখনো ঝুঁকি নিয়ে রাস্তা পারাপার বা ঝুঁকিপূর্ণভাবে গাড়ি চালনার সাথে যুক্ত ছিলেন?	১ হ্যা	২ না

c. নিজের ক্ষতি ও আত্মহত্যা (Self-Harm and Suicide)

১. আপনি কি নিজের ক্ষতি করার ইচ্ছায় কখনো শরীরে কোন স্থান কাটা/ক্ষত তৈরি বা আঘাত করেছেন?	১ হ্যা	২ না
২. আপনি কি গত ৬ মাসে নিজের জীবন নিজে শেষ করে দেয়ার চিন্তা-ভাবনা করেছেন?	১ হ্যা	২ না
৩. আপনি কি কখনো আত্মহত্যার চেষ্টা করেছেন?	১ হ্যা	২ না

d. দুর্ঘটনা (Accident)

১. গত ১২ মাসে, আপনি কি কোন সড়ক দুর্ঘটনা / মোটরযান দুর্ঘটনায় পড়েছিলেন?	১ হ্যা	২ না
২. আপনি কি কখনো কোন গুরুতর আঘাত পেয়েছেন? (যেমনঃ হাড় ভাঙা, কাটা বা ক্ষত, পোড়া, পেশী, রগ বা লিগামেন্টস ছিঁড়ে যাওয়া, অথবা অন্য কোন আঘাত)	১ হ্যা	২ না

Appendix M

List of Judges and Expert

S. No.	Name	Designation
1.	Dr. Mohammad Mahmudur Rahman	Professor and Clinical Psychologist, Department of Clinical Psychology, University of Dhaka.
2.	Dr. S.M. Abul Kalam Azad	Associate Professor, Department of Clinical Psychology, University of Dhaka
3.	Dr. Shahnur Hossain	Assistant Professor, Department of Clinical Psychology, University of Dhaka.
4.	Salma Parveen	Clinical Psychologist and Part-time faculty, Department of Clinical Psychology, University of Dhaka.
5.	Tamima Tanzin	Clinical Psychologist, Rokeya Hall, University of Dhaka.
6.	Sabiha Jahan	Clinical Psychologist and PhD fellow, Department of Clinical Psychology, University of Dhaka.
7.	Kaniz Fatema	Clinical Psychologist, Nasirullah Psychotherapy Unit (NPU), Department of Clinical Psychology, University of Dhaka.

List of List of Expert

S. No.	Name	Designation
1.	Kamal Uddin Ahmed Chowdhury	Professor, Department of Clinical Psychology, University of Dhaka.
2.	Dr. Farah Deeba	Associate Professor, Department of Clinical Psychology, University of Dhaka
3.	Dr. Nafisa Huq	Assistant Professor & Head, Department of Public Health, School of Pharmacy and Public Health (SPPH), Independent University, Bangladesh (IUB)
4.	Rehnuma Parveen Nijhum	Clinical Psychologist and Child Psychologist, Shishu Bikash Kendra, General Hospital, Rangamati.

Appendix N

Adverse Childhood Experiences International Questionnaire (ACE-IQ) Interviewer's Guide as Published by The World Health Organization

Interview Skills

Introduction The quality of the ACE-IQ results and their usefulness for intra- and inter-country comparisons largely depends on the quality of the interviews. This section provides generic guidelines for interviewers.

The ACE-IQ interview is about finding out and recording a list of facts and experiences relating to selected participants.

The participant needs to feel comfortable about the survey and can refuse to be interviewed as participation is voluntary. Your interview should therefore be as natural as possible and conducted politely, like a normal conversation. Some of the questions being asked are very personal and so you should be sensitive to that - remember that there are services available to help participants who may be upset or want to seek help following the interview.

Behaviour & tact The table below provides guidelines on appropriate behaviour during an interview:

Behaviour	Guidelines
Respect confidentiality	Maintain the confidentiality of all information you collect.
Respect participants' time	You are asking participants for their time so be polite and prepared to explain.
Tact	If you feel that a person is not ready to assist you, do not force them but offer to come back later.
Friendly disposition	Act as though you expect to receive friendly cooperation and behave accordingly.
Body language	Maintain good eye contact and adopt appropriate body language.
Pace of interview	Don't rush the interview. Allow the participant enough time to understand and answer a question. If pressured, a participant may answer with anything that crosses their mind.
Patience	Be patient and polite at all times during the interview.
Acceptance	No matter what the responses to questions, do not be judgmental or express shock at a participant's experience. Overt responses of any kind may lead to refusing or concealing important information.
Appreciation	Thank them for their help and cooperation.

Asking questions

The table below provides guidelines for asking questions in an interview:

Topic	Guidelines
Issues relating to childhood experiences	Do not discuss or comment on issues relating to childhood experiences. Participants may not give correct answers to the questions but give the answers they think the interviewer is looking for.
Right or wrong answers	Point out that there are no right or wrong answers and that the interview is not a test.
Biased answers	Ask your questions according to guidelines given in the Question-by-Question Guide to avoid biased answers and ensure comparability of data
Read all options	All options must be read to the participant except for Don't know/Not sure, Refused, and Other.
Reading questions	Questions should be read: • as they are written in the text; • slowly and clearly emphasizing key words in bold; • in a pleasant voice that conveys interest and professionalism; • entirely to make sure the participant has heard it completely. Do not change the: • wording • order of the questions.
Making assumptions	Don't make assumptions about the participants' answers with comments such as "I know this probably doesn't apply to you, but…". This practice may prevent accurate and unbiased information.

Providing clarification

You may need to provide clarification when the participant:

- is unable to answer the question asked;
- does not seem to understand the question and gives an inappropriate reply;
- does not seem to have heard the question;
- is taking a long time to answer the question and hesitates;
- asks about a specific part of the question to be repeated (it is acceptable to
- repeat only that part)
- asks for one option to be repeated (read all options again but you may omit one option if it has clearly been eliminated by the participant);
- asks for one term to be clarified (refer to the explanations provided in the Question-by-Question Guide)

When to probe further

You will need to probe further to get an appropriate response when the participant:

- seems to understand the question but gives an inappropriate response
- does not seem to understand what is asked
- misinterprets the question
- cannot make up his or her mind
- digresses from the topic or gives irrelevant information
- needs to expand on what has been said or clarify the response
- gives incomplete information or an answer is unclear
- says that he or she doesn't know the answer.

Common responses

The table below lists some common responses that may need further probing:

If the participant replies…	**Then…**
"I don't know"	Repeat the question.
"I still don't know"	This may mean that the participant • is taking time to think and wants to gain time; • does not want to answer because of personal reasons; • in fact does not know or has no opinion. Probe once before recording "don't know", for example, ask "Could you give me your best estimate?".
"Not applicable"	• Ask him/her why the question does not apply to him/her. • Write down "not applicable" if it is clear that the question is irrelevant.

Notes:

- Don't know/Not sure, Refuse and Not applicable should be used only as an absolute last resort.

Probing techniques

The table below provides a few techniques to use when probing further:

Technique	Guidelines
Repeat the question	The participant may come up with the right answer if he/she hears the question a second time.
Make a pause	This gives the participant time to collect his/her thoughts and expand on his/her answer.
Repeat the participant's reply	This is often a very effective way of having the participant reflect on the answer he/she has just given.
Use neutral probes	Avoid biased responses and probes. Never give the impression that you approve or disapprove of what the participant says, or that their answer is right or wrong. Instead, if you want more information, ask "anything else?", or "could you tell me more about…?"

Interruptions

Interruptions may occur during an interview. If they become too long or too many, suggest returning at another time to complete the interview.

Take care that even if interrupted or delayed, you should remain patient and polite at all times.

Refusal to answer

Some participants may refuse to be interviewed. Reasons for this are varied and differ from one participant to another. Some participants may not refuse outright but may express hesitancy, reservation or hostility.

You will learn to distinguish between refusals (e.g. hesitancy from a definite refusal). Success in obtaining cooperation will depend upon your manner and resourcefulness.

Participants must not be forced to respond to the whole interview or to any part of the survey process. However, the more refusals that are made, the less representative the survey is of the whole population.

Handling refusals

Be prepared to obtain cooperation from a participant who does not want to be interviewed. In general, be pleasant, good-natured and professional and most participants will cooperate.

Use the table below to help you handle some refusal situations:

If...	Then…
The participant becomes defensive	• show patience and understanding; • provide token agreement and understanding of his/her viewpoint, that is, saying something like, "I can understand that" or "You certainly have the right to feel that way"; • convey the importance of the survey to the participant.
You may have visited at a bad time	Try again later
The participant may have misunderstood the purpose of the visit	Try to explain the purpose again.
You think you may get a "no"	Try to leave and suggest coming back later before you get a partial or an absolute "no".

Language issues

Be aware that if you use ‘interpreters of convenience’ (such as members of he participant’s family or household, the village headman, or domestic staff), you may get incorrect data being recorded.

If you don't get sufficient cooperation due to a language barrier, report this to your supervisor.

Appendix O

Data Collection Permission Letter

02.11.2022

The Director
National Institute of Mental Health and Hospital (NIMH)
Dhaka 1207, Bangladesh.

Subject: **Permission and co-operation for data collection as part of MPhil research.**

Dear Sir,

With due respect, I humbly state that I am a postgraduate student at the Department of Clinical Psychology, University of Dhaka. As a requirement of my MPhil degree, I am conducting research on the "**Impact of adverse childhood experiences on adult mental health**" under the supervision of Dr. M. Kamruzzaman Mozumder, Professor of the department. Data will be collected from the participants through questionnaires. This data collection procedure requires *a minimum of 12 weeks (From November 2022 to February 2023), and all the data will be kept* confidential, and prior permission will be taken from the participants. I am also assuring that no violation of research ethics will occur in the conduction of this research.

I, therefore, hope that you will give permission to collect data from the patients in your authorized institution.

Sincerely yours

Md. Aminul Islam
MPhil. (part II),
Department of Clinical Psychology
University of Dhaka

Supervised by

M. Kamruzzaman Mozumder, PhD
Professor
Department of Clinical Psychology
University of Dhaka

Professor
Clinical Psychology Dept.
Dhaka University

Appendix P

গবেষণা বিষয়ক ব্যাখ্যামূলক বিবৃতি

গবেষণার শিরোনাম: শৈশবের প্রতিকুল অভিজ্ঞতা এবং প্রাপ্তবয়স্কদের মানসিক স্বাস্থ্যের উপর এর প্রভাব (Impact of adverse childhood experiences on adult mental health)

এই ব্যাখ্যামূলক তথ্যসমূহ আপনার কাছে রাখার জন্য

প্রিয় অংশগ্রহণকারী ,

বর্তমান গবেষণায় অংশগ্রহণে সম্মতি প্রদান করায় আপনাকে অসংখ্য ধন্যবাদ । আমি, মোঃ আমিনুল ইসলাম ঢাকা বিশ্ববিদ্যালয়ের ক্লিনিক্যাল সাইকোলজি বিভাগে(Department of Clinical Psychology, University of Dhaka) এম ফিল ডিগ্রীর অংশ হিসেবে বর্তমান গবেষণাটি পরিচালনা করছি । এ গবেষণাটি ক্লিনিক্যাল সাইকোলজি বিভাগের অধ্যাপক ডঃ এম কামরুজ্জামান মজুমদার তত্ত্বধান করছেন । আপনার জানার প্রয়োজনে গবেষণা সম্পর্কিত বিস্তারিত নিচে তুলে ধরা হল ।

গবেষণার বিষয়বস্তু

বিভিন্ন গবেষণায় দেখা গেছে আমাদের শিশুদের প্রতি নির্যাতন ও নানা বিরুপ আচরণ তাদের সুস্থ মানসিক বিকাশের অন্তরায় হয়ে দাঁড়ায় । এর মধ্যে রয়েছে বিভিন্ন প্রকার শারীরিক ও মানসিক অবহেলা ও নির্যাতন যা আমদের অনেকেই ছোটবেলায় বিভিন্ন ভাবে পেয়ে থাকি । আমার এই গবেষণার উদ্দেশ্য হচ্ছে আমাদের দেশে বিভিন্ন বয়সের ব্যাক্তিদের মানসিক স্বাস্থ্যের ওপর শিশু কালে ঘটে যাওয়া বিভিন্ন পীড়াদায়ক ঘটনার (যেমন, বিভিন্ন ধরনের শিশু নির্যাতন ও সহিংসতা ইত্যাদি) প্রভাব খুজে বের করা ।

গবেষণায় যা করা হবে

এক্ষেত্রে প্রশ্নমালা ব্যবহার করে আপনার কাছ থেকে তথ্য সংগ্রহ করা হবে । এ ছাড়া অন্য কোন উপায়ে তথ্য সংগ্রহ করা হবে না । প্রশ্নমালায় আপনার পূর্বের স্মৃতি ও আবেগ এবং বর্তমান স্বাস্থ্য বিষয়ক প্রশ্ন থাকবে । গবেষণায় অংশগ্রহনের জন্য আপনাকে ২৫ থেকে ৩০ মিনিট সময় দিতে হতে পারে ।

গোপনীয়তা ও ঝুঁকি

আপনার কাছ থেকে নেয়া তথ্যের গোপনীয়তা রক্ষার বিষয়টি সর্বোচ্চ বিবেচনায় রাখা হবে । আপনার ব্যক্তিগত তথ্যের গোপনীয়তার স্বার্থে গবেষণার তথ্য সংগ্রহ ফরমে আপনাকে চিহ্নিত করা যায় এমন কোন তথ্য (যেমনঃ নাম, পরিচয়, স্বাক্ষর বা ঠিকানা ইত্যাদি) সংগ্রহ বা কোন তথ্য কারো কাছে বা কোন রিপোর্টে প্রকাশ করা হবে না যা থেকে আপনাকে চিহ্নিত করা সম্ভব । গবেষণায় আপনি যে তথ্যগুলো দিবেন সেসব সংগৃহীত তথ্য সম্পুর্নভাবে গোপন রাখা হবে এবং শুধুমাত্র গবেষণার কাজে ব্যবহার করা হবে ।

গবেষণায় অংশগ্রহনের সাম্ভাব্য সুবিধা

বর্তমান গবেষণা থেকে প্রাপ্ত তথ্য ও এর ফলাফল বাংলাদেশে শিশুদের প্রতি ঘটে যাওয়া নির্যাতন সহিংসতা বা প্রতিকূল পরিস্থিতির ধরন এবং এর প্রভাব সম্পর্কে ধারণা দেবে । আশা করা যায়, এই গবেষণা থেকে প্রাপ্ত তথ্য শিশু নির্যাতন ও তাদের প্রতি সহিংসতা প্রতিরোধের পরিকল্পনায় তাৎপর্যপূর্ণ ভূমিকা পালন করবে । **এই গবেষণা মনোবিজ্ঞানীদের মানসিক স্বাস্থ্যের উপর শৈশবের অভিজ্ঞতার প্রভাবকে আরও ভালভাবে বুঝতে সাহায্য করবে যা** মানসিক স্বাস্থ্য সমস্যায় উপযুক্ত সহায়তা পেতে ভূমিকা পালন করতে পারে । এছাড়া শৈশবের অভিজ্ঞতার প্রভাব এবং মানসিক স্বাস্থ্য বিষয়ক তথ্য শিশুর অভিভাবকদের আরো ভালোভাবে বুঝতে ও সচেতন হতে সহায়তা করবে ।

সাম্ভাব্য অসুবিধা

এই গবেষণায় অংশগ্রহণে আপনার সরাসরি কোন ক্ষতি হবার সম্ভাবনা নেই। যে সব বিষয়গুলো নিয়ে প্রশ্নের উত্তর প্রদান করতে হবে তার অনেকগুলোই আপনার পূর্বস্মৃতি ও আবেগ বিষয়ক হতে পারে এবং এসব আলোচনায় অনেকের মন খারাপ হয়ে যেতে পারে বা এটি সাময়িকভাবে আপনার মধ্যে অস্বস্তি বা কষ্টের উদ্রেক করতে পারে, তবে তা আপনার মধ্যে কোন দীর্ঘস্থায়ী ক্ষতির কারন হবে বলে ধারণা করা হয় না। তবে আপনি মানসিক সহায়তার প্রয়োজন অনুভব করলে হাসপাতালের, মানসিক স্বাস্থ্য বিভাগে যোগাযোগ করতে পারেন।

অংশগ্রহণকারী হিসেবে আপনার অধিকার

এই গবেষণায় অংশগ্রহণ সম্পুর্ন আপনার ইচ্ছার উপর নির্ভর করবে। অংশগ্রহন করতে হবে এমন কোন দায়বদ্ধতা আপনার নেই। গবেষণায় অংশগ্রহণ থেকে বিরত থাকা অথবা গবেষণা থেকে যেকোনো সময় নিজেকে প্রত্যাহার করার অধিকার আপনার আছে।

গবেষণার ফলাফল

এই গবেষণা সংক্রান্ত আপনার যে কোন প্রশ্নের উত্তর বা এই গবেষণার ফলাফল সরাসরি বা পরবর্তীতে যোগাযোগের মাধ্যমে পেতে পারেন। যোগাযোগঃ- মোবাইলঃ 01710295100, ইমেইলঃ aminulrashed77@gmail.com

আপনার সহযোগীতার জন্য আন্তরিক ধন্যবাদ।

মোঃ আমিনুল ইসলাম, এম ফিল গবেষক, ক্লিনিক্যাল সাইকোলজি বিভাগ, ঢাকা বিশ্ববিদ্যালয়।

Appendix Q

Adverse Childhood Experiences International Questionnaire (ACE-IQ) Ethical Approval Overview

Introduction Every ACE-IQ proposal should undergo technical and ethical review and approval. This is to ensure that the ACE-IQ:

- is conducted in a technically and ethically sound manner
- recognizes and protects the rights of participants
- obtains access to information used in the sampling frame.

Process Ideally, ethical approval should be sought by submission of a proposal and application to a national ethics review committee or other relevant body.

Where no such established process exists, it is recommended that an application for ethical review be prepared and submitted through an ad hoc local mechanism within the Ministry of Health.

Informed consent Informed consent needs to be obtained from every survey participant before conducting the interviews. Use the ACE-IQ "Consent Form" and "Participant Information Form" for this purpose.

Making a submission Follow the steps below to make a submission.

Step	Action
1	Determine if the ethics committee has a template for proposals which they require researchers to use.
2	Draft a formal submission (see the ACE-IQ "Ethical Approval Form" for guidance on what to include in an ethical clearance submission).
3	Identify and contact the relevant committees, seeking guidance on rules, submission processes and procedures, and committee sitting times.
4	Adapt submission as necessary and submit to the appropriate committee, requesting guidance on expected timeframe for approval.
5	Follow up with the committee to gain clearance.

Note: The WHO (Prevention of Violence Unit) Geneva ACE-IQ team can provide further advice on making a submission. Contact Dr Alex Butchart (butcharta@who.int).

Expected timeframes Preparing and obtaining approval for submissions to ethics committees can take weeks and even months depending on their rules of operation in the site and how often the committees sit.

Appendix R

Certificate of Ethical Approval from Dept. of Clinical Psychology

চিকিৎসা মনোবিজ্ঞান বিভাগ
ঢাকা বিশ্ববিদ্যালয়
কলা ভবন (৫ম তলা)
ঢাকা – ১০০০, বাংলাদেশ

DEPARTMENT OF CLINICAL PSYCHOLOGY
UNIVERSITY OF DHAKA
Arts Building (4th Floor)
Dhaka 1000, Bangladesh

Tel: 9661900-73, Ext. 7801, Fax: 880-2-9667222, E-mail: clinpsy@du.ac.bd

Date: December 20, 2021

Certificate of Ethical Approval

Project Number : **MP211201**

Project Title : **Impact of adverse childhood experiences on adult mental health**

Investigators : **Md. Aminul Islam** and **M. Kamruzzaman Mozumder**

Approval Period : **20 December 2021** to **19 December 2023**

Terms of Approval

1. Any changes made to the details submitted for ethical approval should be notified and sought approval by the investigator(s) to the Department of Clinical Psychology Ethics Committee before incorporating the change.
2. The investigator(s) should inform the committee immediately in case of occurrence of any adverse unexpected events that hampers wellbeing of the participants or affect the ethical acceptability of the research.
3. The research project is subject to monitoring or audit by the Department of Clinical Psychology Ethics Committee.
4. The committee can cancel approval if ethical conduction of the research is found to be compromised.
5. If the research cannot be completed within the approved period, the investigator must submit application for an extension.
6. The investigator must submit a research completion report.

. . . . . .

Chairperson
Ethics Committee
Department of Clinical Psychology
University of Dhaka

Appendix S

Certificate of Ethical Approval

Government of the People's Republic of Bangladesh
Office of the Director-cum-Professor
National Institute of Mental Health & Hospital
Sher-e-Bangla Nagar, Dhaka-1207

Memo No.NIMH/2023/ 2529 Dated : 02.11.2022.

To

Md. Aminul Islam
MPhil. (part II)
Department of Clinical Psychology
University of Dhaka.

Subject: Ethical Clearance.

With reference to your application on the above subject, this is to inform you that your Research Proposal entitled "**Impact of Adverse Childhood Experiences on Adult Mental Health**" has been reviewed and approved by the ethical committee of the institute. You are given permission to conduct your research activities in NIMH, Dhaka.

(Prof. Dr. Bidhan Ranjan Roy Podder)
Director-cum-Professor
National Institute of Mental Health
Sher-e-Banga Nagar, Dhaka
E-mail: nimhr@hospi.dghs.gov.bd
Phone:58153975

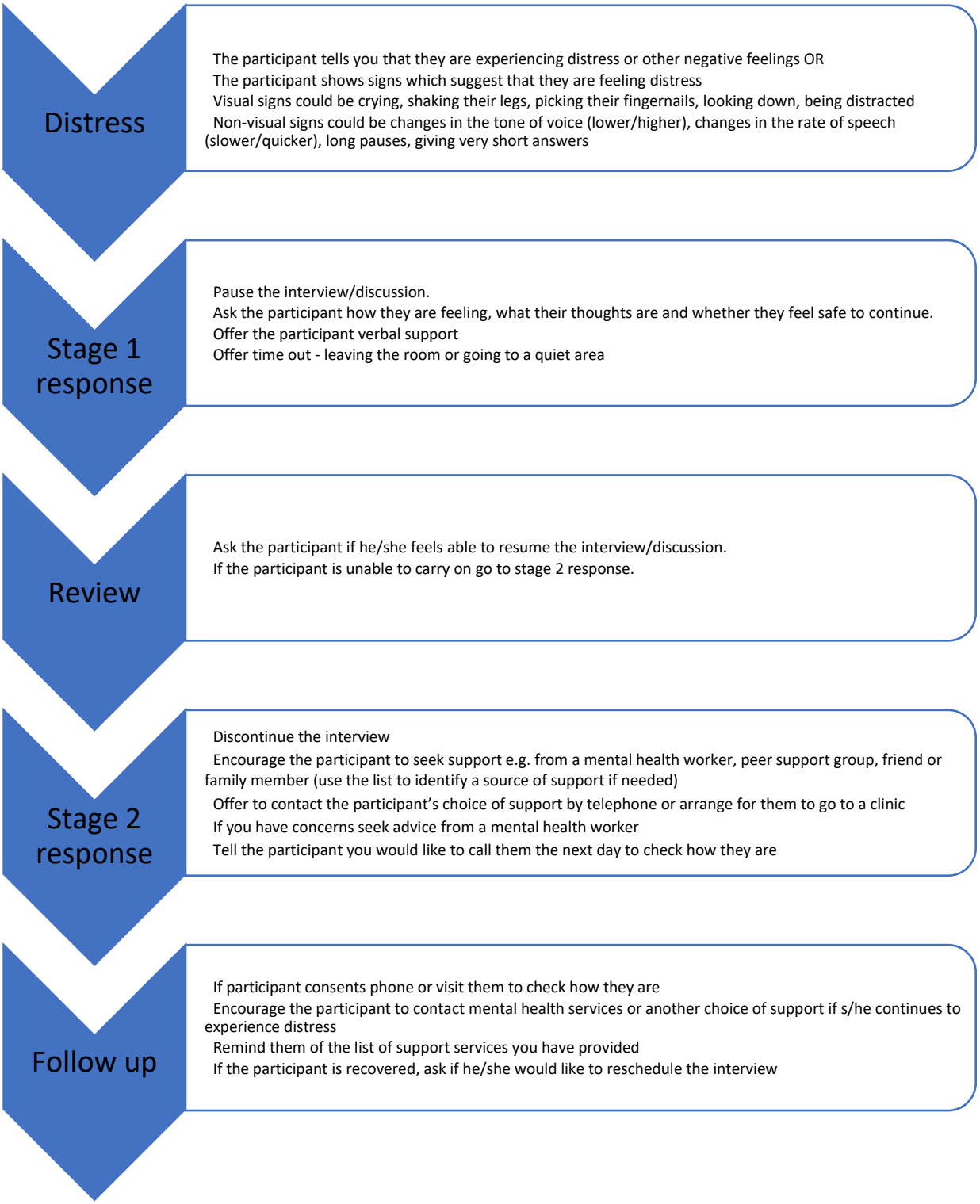
Student/N/501

Appendix T

Protocol for Managing Distress During Research

Distress Protocol for Participants

NB: Before the interview give the participant a list of contact details for local mental health services, peer support and advocacy organisations



Distress Protocol for Researchers

Ref: Wright N, et al. BMJ Open 2020; 10:e038583. doi: 10.1136/bmjopen-2020-038583

Appendix U

মানসিক স্বাস্থ্য সেবা রেফারেল

☐ *কাউন্সেলিং/সাইকোথেরাপিঃ*

প্রতিষ্ঠান	ঠিকানা
নাসিরুল্লাহ সাইকোথেরাপি ইউনিট (এনপিইউ)	ঢাকা বিশ্ববিদ্যালয় ক্যাম্পাস, ক্লিনিকাল সাইকোলজি বিভাগের কক্ষ ৫০১৯, আর্টস বিল্ডিং, ঢাকা ১২০৫, বাংলাদেশ, ফোন: +৮৮০ ১৭৫৫-৬৫৪৮৩৫, Website:www.npudu.org

☐ *জরুরি মানসিক স্বাস্থ্য সেবা চিকিৎসা প্রয়োজনেঃ*

হাসপাতাল	ঠিকানা
জাতীয় মানসিক স্বাস্থ্য ইনস্টিটিউট	শের-ই-বাংলা নগর, ঢাকা-১২০৭ ।
বঙ্গবন্ধু শেখ মুজিব মেডিকেল বিশ্ববিদ্যালয়	শাহবাগ, ঢাকা -১০০০
ঢাকা মেডিকেল কলেজ	বকশি বাজার, রমনা, ঢাকা -১০০০
স্যার সলিমুল্লাহ মেডিকেল কলেজ ও মিটফোর্ড হাসপাতাল	মিটফোর্ড, ঢাকা -১১০০

☐ *পারিবারিক সহিংসতা বা ধর্ষণ বিরোধী সহায়তা ও আইনী সেবা সেবা পেতেঃ*

সেবা মাধ্যম	জাতীয় জরুরী হটলাইন নম্বর
▪ মহিলাদের বিরুদ্ধে সহিংসতা / বাল্যবিবাহ প্রতিরোধের জন্য সরকারী হেল্পলাইন নম্বর মাল্টি সেক্টরাল রেফারেল এবং সাইকোসোসিয়াল সহায়তা	১০৯
▪ পুলিশ এবং হাসপাতালগুলিতে তাতক্ষণিক সেবা জাতীয় জরুরী হটলাইন	৯৯৯
▪ বাল্য বিবাহ এবং যৌন হয়রানির ক্ষেত্রে তদন্ত থেকে কোনও সামাজিক সমস্যার জন্য তাতক্ষণিক সহায়তা	৩৩৩
▪ মহিলাদের বিরুদ্ধে সহিংসতার জন্য জাতীয় হেল্পলাইন কেন্দ্র ক্ষতিগ্রস্থদের জন্য তাতক্ষণিক সেবা এবং সংশ্লিষ্ট সংস্থাগুলির লিঙ্কঃ ডাক্তার, পরামর্শদাতা, আইনজীবী, ডিএনএ বিশেষজ্ঞ, পুলিশ অফিসার	১০৯২১
▪ আইন ও সালিশ কেন্দ্র (এএসকে) আইনী সহায়তা, জরুরি আশ্রয় এবং মানসিক স্বাস্থ্যসেবাঃ (সকাল ৯ টা থেকে বিকাল ৫ টা) ।	০১৭২৪৪১৫৬৭৭