Mental Health Status of Adolescent Women Dwelling in the Kolkata Slum Area of West Bengal: A Comparative Study

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Abstract

Background: *Adolescence being a very crucial and distinct phase of life, evidence-based research on their mental health issues is important in the developing country setting in India. Rapid urbanization without catering to the basic amenities results in health disparities among adolescent women of urban slums. Although an extant literature is available on the child health, reproductive and communicable diseases of adolescent and non-adolescent women, little is known about the spectrum of mental well-being of adolescent women dwelling in urban slums and only poor knowledge exists on health promotive socio-physical environments in these areas.*
Aim: *This paper, using primary survey of 550 women in slums of Kolkata, West Bengal with current prevalence of mental illness and suicide being higher than the current national average, attempts to identify the nature and barriers of sound mental health among adolescent women compared to non-adolescent women.*
Methods: *Besides descriptive statistics, multinomial logistic regression and principal component analysis are used here.*
Results: *Strikingly, higher education and media exposure cannot really improve the mental health status among the adolescent women of these urban slums of West Bengal. The prime driving factor behind poorer mental health appears to be lack of agency. A significant portion of adolescent women in the Kolkata slum area are unable to recognize the symptoms of mental disorder among them due to lack of information regarding the mental health problem.*
Conclusions: *National Mental Health Policy should focus on Innovative Information-Education-Campaigns so that young minds and their family can improve their overall understanding of the persisting mental health issues among adolescent women. School based mental health literacy programs should be included in school curriculum to alter the developmental trajectory of mental illnesses and lead to improved outcomes*

Keyword: *Adolescents, Non-adolescents, Slum Area, Subjective Well-Being, Mental Disorder, Agency, Peer Role*

1.1. Introduction

The World Health Organization defines mental health as *"a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community"* (WHO, 2001). Mental health is related to the promotion of subjective-well-being consisting of emotional well-being, psychological well-being and social well-being, the prevention of mental disorders, and the treatment and rehabilitation of people affected by mental disorders (Reddy, 2019). Adolescence is a critical period for mental, social, and emotional wellbeing and development. During adolescence, the brain undergoes significant physiological changes, establishing neural pathways and behavior patterns that lasts into adulthood (National Research Council and Institute of Medicine, 2007). Because their brains are still developing, adolescents

are particularly receptive to the positive influences of youth development strategies, social and emotional learning, and behavioral modelling (National Research Council and Institute of Medicine, 2002; Steinberg et al., 2004). But adolescents' developing brains, coupled with hormonal changes, make them more prone to depression and more likely to engage in risky and thrill-seeking behaviors than either younger children or adults. These and other factors underline the importance of meeting the mental, social, and emotional health needs of this age group. For adolescents, mental health issues are among the leading risk factors for death, such as suicides, and causes of disability-adjusted life years or DALY. The prevalence of suicide attempts ranges widely among adolescents aged 12–18 years. Many high-income countries report rates of 5–10 percent, while the rates are slightly higher around 15 percent in several low- and middle-income countries (WHO, 2014). Further, more than half of the burden of mental disorders in adulthood has its onset in adolescence. However, mental health issues tend to be overtaken by other health problems, especially in the rapidly urbanising megacities of developing countries, where a growing number of people are living in slums and unhealthy environments (Gruebner et al., 2012). High levels of environmental pollution, lack of adequate water and sanitation, overcrowding, insecurity of tenure, and non-durability of housing could adversely affect the health of slum dwellers (Sclar et al., 2005). Adolescents living in urban slums area are suffering from different mental disorders due to several risk factors such as migration, high prevalent of communicable disease, poor housing, violence, substance abuse and social vulnerability (Chauhan & Dhar, 2020). Increasing child marriage and poor health care among adolescent girls are not only the key challenges in improving the reproductive and sexual health but also mental health in urban slum area. One major problem that exists in Indian mental healthcare is the treatment gap, or the number of individuals (expressed as a percentage) with an illness who need treatment but do not receive it. Lack of awareness is one of the major barriers to mental health service utilization. Therefore, improvement of mental health literacy is required to overcome the treatment gap (Saxena et al., 2007).

A study in Kaula Bandar revealed that in the context of a severe shortage of trained psychiatric personnel in India, the high prevalence of individuals with high Common Mental Disorder risk highlights a need to explore a community-based expansion of lay health worker-driven psychiatric interventions, as has been studied in clinical settings in India (Patel et al., 2011, Subbaraman et al., 2014). Affirmation of mental health is gradually rising in India, however, in view of this analysis, mental health and well-being needs to be strongly addressed in slums of India. Besides the holistic elevation of slums, the stigma related to mental health needs to be eradicated.

However, evidence shows a lack of comprehensive policy response to the mental health needs of adolescents in both low- and high-income countries (Belfer, 2008). The recent Lancet Commission on adolescent health and well-being (Patton et al., 2016), suggested that the focus of health policy needs to expand from infectious diseases to non-communicable diseases, including mental health and substance use.

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1.2. India's Policy and Program towards Mental Health: A Brief Literature Survey

India has adopted several national policies for different areas of child development, which include the National Policy for Children (1974), National Policy on Education (1986) and Labor (1987), Mental Health Act (1987), National Nutrition Policy (1993), National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disability Act 1999, Charter for Children (2004), and National Plan of Action for Children (2005), but none of these adopted CAMH (child and adolescent mental health) as a policy thrust (Shastri, 2009).The National Health Policy (2002, 2016) and the National Mental Health Policy (2014) provided little emphasis on the mental illness among the young population (Ministry of Health and Family Welfare, Government of India 2014).

At the state level, most states lack an explicit policy on Child and Adolescent Mental Health (CAMH) except Kerala which adopted an intent to improve mental health in the young population (Health and Family Welfare Department, Government of Kerala, 2013). However, some programs, such as the National Mental Health Program and District Mental Health Program, are providing basic psychiatric care to the population in general without special emphasis on CAMH (Murthy, 2007).Other initiatives such as school health program, teacher's orientation program, student enrichment program, and school-based campaigns are done by National Institute of Mental Health and Neuro Sciences (NIMHANS) which aims to increase awareness about psychosocial disorders, understand self, and improve interpersonal relationships with peers and teachers. In addition, few other small-to-medium scale initiatives were taken by autonomous and non-profit agencies in Bangalore, Delhi, Mumbai, and many other cities across India (Kumar, 2017). Such school-based programs are mostly clustered in urban areas and mostly they run for a short duration (Kumar, 2017). Furthermore, the issue of mental health was also recognized as one of the six strategic priorities of national adolescent health strategy named Rashtriya Kishor Swasthya Karyakram (RKSK) (Ministry of Health and Family Welfare, Government of India, 2017). This initiative was conceptualized by the Government of India in 2014 and planned to be implemented by the State Government through the National Health Mission. Along with other activities such as improving nutrition and reproductive health, the program introduced peer counselling at school and community levels. This program is a landmark to improve overall adolescent health at the national level, but it has several limitations to address the mental health issues (Ministry of Health and Family Welfare, Government of India, 2017). Although this initiative aims to improve overall adolescent health, it seems to be inadequate to address the mental health epidemic in adolescent population in India.

National Mental Health Survey 2015–16, was sponsored by the Government of India and was conducted in 12 states of India under the leadership of the National Institute of Mental Health and Neurosciences, Bengaluru (Gururaj et al., 2016) . NMHS was conducted in West Bengal, a state with a total population of more than 9 crores with an overall high literacy rate of 76% (Census of India, 2011). About 1.25 crore of the estimated 9.67 crore population of West Bengal are suffering from various mental health problems and are in need of immediate care (Panigrahi et al., 2020). The current prevalence of mental illness and suicide in the state of West Bengal is higher than the current national average. NMHS found a prevalence of lifetime mental health morbidity of 16.89% and current mental health morbidity of 13.07% in West Bengal. The illnesses covered are schizophrenia, mood disorders (including bipolar disorder and depression), substance use disorders, and anxiety disorders (including panic, phobia, and obsessive-compulsive disorders). This finding reveals that the morbidity related to mental illness is higher in the state of West Bengal than the national average (13.9% vs 10.5%) (Gururaj et al., 2016). The high treatment gap (>85%) in the state of West Bengal suggests a

lack of proper infrastructure, lack of awareness, high stigma, and use of traditional healing practices for mental illness (Rajkumar, 2020). Among all the 12 states, West Bengal is among the top six states in terms of prevalence of mental illness. This finding is worrisome as it needs a greater mental health intervention at the state level. Another finding from the survey that needs increased attention is the prevalence of mental illness, especially schizophrenia, and other psychotic disorders (prevalence >1.2%) and mood disorders (prevalence around 5%) are higher in West Bengal than in other states (Kar et al., 2018). *This adverse pictures of mental health prevailing in the state of West Bengal, instigate the researcher to study the mental health status of adolescent women in West Bengal so that proper adolescent's mental health policy should be addressed and implemented at the state level.*

Research Gap:

In summary, the review of existing literature brings out that though adolescence is usually a healthy period in terms of physical characteristics, several risk factors of adult diseases which begin in adolescence can be prevented with proper interventions during this period. In spite of being a global concern of urban health, mental health problems are not yet adequately addressed in the rapidly urbanising megacities of developing country like India, where a growing number of residents live in slums. Little is known about the spectrum of mental well-being of adolescence in urban slums and only poor knowledge exists on health promotive socio-physical environments in these locales. Lack of data on the burden of disease morbidity and mental health status in slums hampers the efficient allocation of health care initiatives and the provision of appropriate disease prevention services (Sarkar et al., 2023).Though few national level studies have discussed on the adolescents' mental health issues but the states level research on mental health of urban slum adolescents is scarce. In spite of implementation of national and state levels, several policy and programmes, suicide risk is higher in West Bengal compared to other states and morbidity related to mental illness is higher in the state of West Bengal than the national average (13.9% vs 10.5) (Indian Council of Medical Research, 2017). Despite growing concern regarding mental health of adolescents in India, this kind of study is scanty, more so in West Bengal. Moreover, research in the urban slums has primarily focused on child health, and reproductive and communicable diseases but there is almost no such literature focusing on the status of both subjective well-being (consisting of emotional, psychological and social well-being) and persisting mental disorder simultaneously among adolescent women in the slum of West Bengal.

Given this backdrop, present study attempts to locate the nature and barriers of sound mental health of adolescent women residing in urban slums compared to non-adolescent women in the similar localities in West Bengal. The study was carried out in Kolkata district, the capital city of the state of West Bengal in India. Kolkata is the third largest municipal corporation in India with a population of 44, 96,694 (Census, 2011). Kolkata is the only major urban center within over 100 miles (Kundu & Nitai, 2019). In addition, Kolkata's metropolitan area with a population of 14.3 million accounts for 49 percent of the total urban population of West Bengal. In Kolkata there are more jobs, more money, and greater possibilities for employment compared to rural West Bengal. However, there are also many disadvantages as well. Specifically, in Kolkata's slums, living conditions are very difficult. Majority of this population lives below the poverty line and works as domestic workers, daily wage labourers, factory workers, rickshaw pullers, hawkers and security guards. Adding to their economic challenges are the deplorable living conditions of *bustees* and squatter settlements that make them unfit for human habitation. Hence, it would be worthwhile to do research in the urban slums of Kolkata in West Bengal, India so that the challenges faced by adolescents are increasingly recognized and documented to fulfil the needs of young people through programs and policies directed specifically at them. Additionally, the socio-economic and religious characteristics

make the lives of slum dwellers and the pathways to mental health heterogeneous. Thus, the study also considers the slum dwellers from different types of neighbourhoods: dominated or not dominated by people following Islam.

Following this introduction with brief literature review to understand the availability of current government policies and programs aimed at adolescents' mental health and research gap, Section 2 outlines the data (sample frame, size and characteristics) and methodologies are used. The results identifying the barriers of sound mental health are presented in Section 3. Discussions and conclusions are given in Section 4and 5 respectively.

2. Data & Methodology

The study has used only primary data. In fact, no publicly available secondary dataset is available on dimensions of mental health in India. For the primary survey, the sample was drawn from slums under Kolkata Municipality Corporation. From the Corporation sources, information for 126 registered slums was received on personal request. These slums were divided in four quartiles (consisting of 32, 31, 32 and 31 slums respectively) on the basis of size of slum which is characterized by the number of households in each slum. The information on share of households belonging to Islam belief ranged from 0-100%. The study divided them in three categories: low (0-32%), medium (33-75%) and high (76-100%). The sample was drawn from the categories combining both size of slum (S) by number of households and share of households following Islam belief (I). Out of the total, 6 sub-categories were created from which the sampled households would be chosen: Lowest S, Low I; Lowest S, Medium I; Lowest S High I; Highest S, Low I; Highest S, Medium I and Highest S, High I. Then from each category, one slum is chosen randomly. Survey data are collected from 550 respondents from six wards which are chosen on the basis of size of slum by number of households and share of households following Islam belief. The distribution of these 550 households between 6 wards was done in accordance with the proportionate share of the total households in these selected wards. Out of 550 households, respondents of 6 households did not respond properly. So out of 544, 318 respondents are adolescents and 226 respondents are non-adolescents. Adolescents are within the age group 15 to 19 years and non-adolescents are within the age group 20 to 30 years. The selection of households from a given ward was done on the basis of systematic sampling. Starting from a corner of the ward, every 10^{th} household was chosen from north-west corner. The survey was done on the youngest woman available in the household.

Apart from simple statistical tools such as making Index (using the concept of Human Development Index), Differences between Means-t-ratios, Chi-Square test, specific econometric methods, namely, Principal Component Analysis (PCA) and Multinomial Logistic Regression Model have been used in this paper. Mental health being a multi-dimensional concept, it needs to be captured by several sub-themes. The two such major sub-themes are subjective well-being, which captures emotional, psychological and social well-beings and Mental Disorder. Mental Disorder status considers the presence of mental diseases, including depression, anxiety etc. Subjective well-being and absence of mental disorders together represent the holistic measurement of Mental Health Index. In other words, mental health as a complete state consisting of not merely the presence and absence of mental disorders such as major depression, anxiety etc but the presence and absence of levels of specific dimensions of Subjective well-being (i.e., emotional well-being, psychological well-being, and social well-being) (Keyes, 2002, 2003, 2005).

The study of subjective well-being has been divided into two streams of research. The *hedonic tradition* is reflected in the stream of research on *emotional* well-being embodies human

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concerns with maximizing the amount or duration of positive, pleasant feelings while minimizing the amount or duration of negative, unpleasant feelings. The *eudemonia stream* equates mental health with human potential that, when realized, results in positive functioning in life. This tradition has been measured in terms of *psychological* (Ryff, 1989) and *social well-being* (Keyes, 1998) that reflect how well individuals see themselves functioning in life. Ryff's (Ryff, 1989; Ryff & Keyes, 1995) multidimensional model includes six dimensions of psychological well-being indicating the challenges that individuals encounter as they strive to function fully and realize their unique talents: self-acceptance, personal growth, purpose in life, positive relations with others, autonomy, and environmental mastery. Following Ryff (1989), the study identifies seven dimensions in the respondent's life related to accepting her own physical appearances, personality etc shown in **Table 1.**

Keyes' (1998) multidimensional model of *social well-being* consists of five dimensions that indicate whether and to what degree individuals are functioning well in their social lives: social integration, social contribution, social coherence, social actualization, and social acceptance. Following this, the study considers five dimensions of *social well-being* which is shown in **Table 1**. Each symptom under three categories of *emotional, psychological* and *social well-being* are transformed into binary scale from the five-point scale. Each symptom of *emotional, psychological* and *social well-being* having the value below mean level is considered under the category of *low* and having the value at least mean level clubbing under the category *high*. *Low* value is the indicator of poor well-being status whereas *high* value indicates better well-being status. After creation of two categories (*Low & High*) of each symptom of *emotional, psychological* and *social well-being,* the continuous variable *Subjective Well-Being (SWB)* has been constructed trough PCA method and an index on the value of *Subjective Well-Being* has been generated which is called ***Subjective Well-Being Index*** *(SWBI).*

Mental Disorder Index *(MDI)* is focusing on the common mental disorders such as anxiety disorders, eating disorders, mood disorders, personality disorders, psychotic disorder etc. Each type of mental disorder causes its own symptoms. But many share some common characteristics. Common signs of several mental disorders are captured by asking following questions of Two Point Scale (Yes =1& No=0) from the standard International General Health Questionnaire (Goldberg & Hillier, 1979). The category *yes* implies persistence of lower mental illness and vice-versa for another category. After running the PCA method on the several mental disorders which are the binary variables, the study construct a variable ***Mental Disorder Index*** which is a continuous in nature and an index. With increasing the value of this index, mental illness is going to be lower, thus indicating a positive indicator. The questions considered under MDI are listed in **Table 2**.

Mental Health Index *(MHI)* is the composite index of two separate indices such as *Subjective Well-Being Index* and *Mental Disorder Index*. *MHI* is created by arithmetic mean of *SWBI* and *MDI*. Each index shows an improvement in well-being with increasing the value.

Here, Subjective Well-Being Index (SWBI) for ith individual as:

$$SWBI = \frac{(max\, X_i - actual X_i)}{(max X_i - min X_i)}$$

Similarly, Mental Disorder Index (MDI) has been constructed for ith individual by the formula

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$$MDI = \frac{(max\, X_i - actual X_i)}{(max X_i - min X_i)}$$

Composite index or average index for Mental Health Index (MHI), is then defined by taking the simple average of the two indices (SWBI and MDI):

$$MHI = \frac{(SWBI + MDI)}{2}$$

After computing the *Mental Health Index*, *tertile* values (any of the two points that divide an ordered distribution into three parts, each containing a third of the population is called *tertile*) of this index has been constructed to generate three categories of the variable named *Mental Health* such as *Poor Mental Health* with value 0*, Moderate Mental Health* with value 1and *Complete Mental Health* with value 2.

Complete Mental Health is a state of mental health in which people are free of any major depressive, anxiety episodes i.e. people are free from major mental disorders and fit the criteria for leading a happy and peaceful life with high levels of emotional, psychological, and social well-being. In contrast, *Poor Mental Health* is a state of being mentally unhealthy in which individuals have low levels of emotional, psychological, and social well-being and fit the criteria for major depression or even major anxiety. Individuals who are not falling under these two categories are called *Moderately Mentally Healthy.*

The primary survey captured several questions from the standard General Health Questionnaire (Goldberg & Hillier, 1979) on very common mental disorder. Following this, a modified questionnaire has been developed, focusing a few dimensions of mental health using proxy variables suitable for the setting. Three specific dimensions of subjective well-being such as emotional well-being, psychological well-being, and social well-being are captured for forecasting the mental health status by several questions shown in following **Table 1**

Table 1: Dimensions of Subjective Well-Being

Emotional Well-Being	***Psychological Well-Being***	***Social Well-Being (SWBI)***
Five Point Scales (all=4;most=3;some =2;a little=1;none of the time=0)	Five Point Scales (agreed strongly=5;agreed moderately=4; neither agreed nor disagreed=3;disagreed moderately=2;disagreed strongly=1)	Five Point Scales (agreed strongly=5;agreed moderately=4; neither agreed nor disagreed=3;disagreed moderately=2;disagreed strongly=1)
Feel cheerful and happy	Liking most of her own personality	People in her neighbourhood are willing to help each other
Feel calm and peaceful	Liking most of her own physical appearances	Regularly stopping and talking with people in her neighbourhood
	Feeling safe in the house/family	Going to someone in her neighbour-hood to get advice
	Feeling safe in the neighbourhood	Close to other people in my community
	Accepting life has been a continual process of learning, changing and growth	Volunteering on a regular basis to help others in her community
	Believing to be able to do anything more or greater in her life	
	Managing the responsibilities of daily life	

Source: Primary Survey Questionnaire on Kolkata slum area, WB (2018)

Mental Disorder is focusing on the few common mental disorders such as anxiety disorders, eating disorders, mood disorders, personality disorders, psychotic disorder etc

(https://medlineplus.gov/mentaldisorders.html, 2022). Each type of mental illness causes its own symptoms. But many share some common characteristics. Common signs of several mental illnesses are captured by asking following questions of Two Point Scale (Yes =1 & No=0) given in Table 2.

Table 2: Information regarding persisting Mental Disorder

Type of Mental Disorders	Questions asked about
Anxiety disorder	Getting nervous while talking to other people
	Being always under pressure
Bipolar disorder	Being unable to get good sleep
	Feeling irritability
	Being unable to understand herself
Eating disorder	A feeling of appetite is all right.
Social anxiety disorder	Being afraid of new environments
Behavioural and emotional disorder	Getting excited very easily
Depressive disorder	Thinking the idea of failure is dreadful to herself
	Thinking of good for nothing
	Thinking about ending her life
Schizoid personality disorder	Liking to make relationship with friends

Source: Primary Survey Questionnaire on Kolkata slum area, WB (2018)

In our study the outcome variable of Multinomial Regression Model is *Mental Health* which has three categories such as *Poor Mental Health* with value 0*, Moderate Mental Health* with value 1and *Complete Mental Health* with value 2. Apart from a number of straight forward household and individual characteristics which are used as control variables in regression, a few variables such as ***Decision making, Media exposure, Peer role, Attachment with family*** are created through PCA method. ***'Attachment with family'*** considers whether the parents or in-laws try to understand respondent's problem or they are very close to respondent to discuss about what is right and wrong in sexual behavior. This variable also focuses on their interest in respondent's education, relation with friends etc. If the value of this variable increases implying respondent is very much close to her family.

Higher value of the variable ***'Peer role model'*** is capturing the influence of peer's positive sides of character like responsible by nature, following the rules of their parents/in-laws make for them. ***'Decision making'*** considers whether the respondent faces problems in *final say on respondent's own health care, making large household purchases, making household purchases for daily needs, visiting to family or relatives*. If the score value of this factor increases, the women tend to lose her autonomy and other members in family take decision on these issues. The variable domestic violence takes value 1when there is report of domestic violence in any one form of victimization and 0 otherwise.

One of the objectives of this chapter is to study the age difference (adolescent and non-adolescent age groups) in well-being (emotional, psychological, and social well-being) gaining process. For this purpose, t-ratio analysis was used to know any significant differences in the adolescents and non-adolescents regarding their development of well-being.

3. Results & Analysis

3.A. Status of Mental Health among Adolescent and Non-adolescent Women

One of the objectives of the research was to study the difference in better mental health gaining process between adolescent and non-adolescent women. For this purpose, t-ratio analysis was used to know any significant differences in the adolescents and non-adolescents regarding their development of mental health.

Table 3 shows the means, standard deviations, and t-ratios of all the measured variables for both the adolescents and non-adolescents. The Mean value of Subjective Well-Being Index is higher i.e 0.59 (median 0.627) for adolescent women whereas mean value for non-adolescent women is 0.57 (median 0.567). Mean value of Mental Disorder Index is higher i.e 0.93 (median .989) for adolescent women whereas mean value for non-adolescent women is .88 (median .980). Mean value of Mental Health Index which is the composite index of Subjective Well-Being Index and Mental Disorder Index is higher i.e. 1.53 (median 1.59) for adolescent women whereas mean value for non-adolescent women is 1.45 (median 1.49).

Adolescents and non-adolescents differ significantly in their mental health status ($t(539) = 2.23$, $p < 0.05$) and in persistence of mental disorder ($t(540) = 3.38$, $P < 0.01$) but the difference in mean value of subjective well-being between adolescent and non-adolescent is insignificant shown in (**Table 3**). As the difference in mean value of mental health index and mental disorder index between adolescent and non-adolescent is positive and significant implying on an average adolescents have better mental health status compared to non-adolescent

Table 3: Means, Standard Deviation and t-ratio of different Mealth Health related Index of adolescent and non-adolescent women

	Adolescent		Non-adolescent		Difference
Variables	Mean	SD	Mean	SD	t-statistics
Mental Health Index	1.53	0.38	1.45	0.43	2.23*
Subjective Well- Being Index	0.59	0.32	0.57	0.31	0.95
Mental Disorder Index	0.93	0.14	0.88	0.22	3.38**

***significant at 1 % level, * significant at 5 % level Source: Analysis of Primary Survey (2018) on Kolkata slum area, WB*

Analysis of corresponding t-statistic suggests that adolescents and non-adolescents do not differ significantly from one another in all the components of all subjective well-being (**Table 4**). Difference in mean value of all the indicators of social well-being between adolescents and non-adolescent women are not significant but the difference in mean value of the two indicators of emotional well-being is significant implying adolescents are more cheerful, happy, and peaceful compared to non-adolescents.

Table 4: Showing Means, Standard Deviation and t-ratios of samples of adolescent and non-adolescent women on different variables of Subjective Well-Being

	Adolescent		Non-adolescent		Difference
Variables of Subjective Well-Being	Mean	SD	Mean	SD	t-statistics
Emotional Well-Being					
Cheerful and happy	2.86	0.84	2.67	0.98	2.49**
Peaceful	2.83	0.75	2.71	0.85	1.67*
Psychological Well-Being					

Liking most of her own personality	4.46	0.78	4.41	0.81	0.73
Liking most of her own physical appearances	4.41	0.82	4.36	0.87	0.63
Feeling safe in the house/family	4.81	0.57	4.78	0.57	0.61
Feeling safe in the neighbourhood	4.29	1.07	4.31	0.97	-0.1
Accepting life has been a continual process of learning, changing and growth	4.25	1.09	4.47	0.88	-2.52**
Believing to be able to do anything more or greater in her life	3.35	1.48	2.99	1.47	2.77**
Managing the responsibilities of daily life	4.39	0.79	4.53	0.59	-2.23*
Social-Well-Being					
People in her neighbourhood are willing to help each other	4.11	1.06	3.97	1.17	1.39
Regularly stopping and talking with people in her neighbourhood	4.27	1.07	4.31	0.99	-0.23
Going to someone in her neighbour-hood to get advice	3.39	1.39	3.37	1.36	0.14
Close to other people in her community	3.74	1.2	3.71	1.18	0.34
Volunteering on a regular basis to help others in her community	3.81	5.34	3.5	1.3	0.86

***significant at 1 % level, * significant at 5 % level, Source: Estimated from Primary Survey (2018) in WB*

Adolescents are stronger in the positive thinking that they can do anything more or better in her life compared to non-adolescents (when looked via the lenses of psychological wellbeing) which upholds the characteristics of adolescent in the context of the study in West Bengal that they have more self-esteemed or self-motivated compared to the non-adolescents. However, the adolescents cannot foresee the future changes in life, neither they are confident about their ability of handling responsibilities in daily life. Non-adolescents are much capable in managing the responsibilities of daily life and they have better experience about the life which is a continual process of learning, changing and growth compared to adolescents as the t-statistic shows negative but significant value in the context of psychological well-being. The difference between age group is not significant in case of different dimensions of *social well-being*. In short, the results of **Table 4** indicate the contradictions inherent within the minds of the adolescents: higher aspirations, cheerful and happy, but not confident about handling their responsibilities.

Table 3 shows that the MDI is significantly different between the adolescent and non-adolescent women (significant at 1 percent level) implying persistence of mental disorders among the adolescent women comparatively lower than the non-adolescent women. Primary survey suggests that 25.47 percent adolescent and 21.33 percent non-adolescent women are getting nervous while talking to others. 29.87 percent adolescent and 25.78 percent non-adolescent women are unable to understand themselves.16.35 percent adolescent women are afraid of new environment. 7.86 percent adolescent women are getting excited easily whereas 14.22 percent non-adolescent women facing this similar situation. The difference is significant as the chi^2 value (5.67) is significant at 5 percent level. 31.76 percent adolescent women are unable to have good sleep whereas 27.56 percent non-adolescent women are the sufferer here. Chi^2 value (13.43) is significant at 1 percent level revealing that there is a relation between this sleep disorder with adolescent and non-adolescent age groups. 16.04 percent adolescent and 20 percent non-adolescent women think that they are good for nothing. 6.29 percent adolescent women are always under pressure whereas 16 percent non-adolescent women have similar mental disorder. 5.35 percent adolescent women and 13.33 percent non-adolescent women are becoming irritated always. The value of chi^2 (10.63) is significant at 1 percent level implying difference is significant here between these two age groups. Surprisingly 39.94 percent

adolescent and 44 percent non-adolescent women do not prefer to make friendship which upholds the fact a significant portion of adolescent and non-adolescents are not influenced by their peer's activities in any aspect of life. Though non-adolescent has better mental health status than the adolescents with respect to some of the individual components, but on the average, adolescent women have better composite mental health (which is captured by the higher mean value of mental disorder index, mental health index projected in **Table-3**).

3.B. Socio-Economic-Demographic Profile of Adolescent and Non-adolescent Women in Status of Mental Health

To find out the socio-economic and demographic profile of the adolescent and non-adolescent women in case of mental health status, the study categorises the Mental Health Index (MHI) into three categories such as poor mental health, moderate mental health and better mental health. 36.84 percent adolescent and 28.70 percent non-adolescent women have better mental health status. Percentage share of moderate and poor mental health status is higher among non-adolescent women. Looking at the incidence of poor mental health status across several social and economic sub-groups in the sample, the study finds that poor mental health status is the highest among the adolescent and non-adolescent women of poorer class (**Table 5**). On the contrary prevalence rate of better mental health status is high among the richest group of the society. Chi^2 value (18.60 for adolescent, 16.46 for non-adolescent) is significant in case of wealth index for both age groups implying wealth index has significant relation with status of mental health for both the age groups. Prevalence rate of poor mental health status is more among the non-adolescent women (46 percent) belonging to Hindu family compared to Hindu adolescent women (26.44 percent). 37.14 percent of adolescent women living in joint families seem to suffer from poor mental health, though the corresponding share among non-adolescents is significantly lower at 29.87 percent. Chi^2 statistic is significant at 5 percent level in case of women's education for both the age groups implying there is a relation between women's education with the mental health status.35.48 percent working adolescents have better mental health status whereas 31.03 percent working non-adolescent women having good mental health status. 40.00 percent adolescent women belonging to female headed family have better mental health status whereas 19.44 percent non-adolescent women of female headed family have only better mental health status

Table 5: Socio-economic-demographic profile of adolescent and non-adolescent women in status of Mental Health (%)

Mental Health	Adolescent			Non-adolescent		
	Poor Mental Health	Moderate Mental Health	Better Mental Health	Poor Mental Health	Moderate Mental Health	Better Mental Health
Wealth index						
Poorest	50.00	26.32	23.68	48.48	30.3	21.21
Poorer	23.61	38.89	37.5	44.44	44.44	11.11
Middle	26.87	31.34	41.79	32.50	27.5	40.00
Richer	28.57	33.93	37.5	37.74	39.62	22.64
Richest	23.40	29.79	46.81	26.67	31.67	41.67
Women's education						
No education +primary	40.68	23.73	35.59	55.56	28.89	15.56
Secondary	33.52	34.08	32.40	37.50	35.42	27.08
Higher	20.00	33.75	46.25	24.39	37.80	37.80
Religion						
Hindu	26.44	35.63	37.93	46.00	32.00	22.00
Muslim and others	33.33	30.74	35.93	33.53	35.84	30.64
Household structure						

Joint	37.14	27.62	35.24	29.87	35.06	35.06
Nuclear	28.07	33.33	38.60	41.12	30.84	28.04
Broken	30.95	38.1	30.95	35.9	46.15	17.95
Household head's Sex						
Male	31.8	32.16	36.04	37.43	32.09	30.48
Female	28.57	31.43	40.00	30.56	50.00	19.44
Women's occupation						
No	31.01	32.40	36.59	36.97	35.15	27.88
Yes	35.48	29.03	35.48	34.48	34.48	31.03
Marital Status						
Married	31.30	25.19	43.51	39.47	34.21	26.32
Unmarried	31.55	36.90	31.55	33.03	35.78	31.19
Health status						
Poor +fair +good	23.66	32.26	44.09	45.57	30.38	24.05
Very good	30.21	34.38	35.42	28.33	38.33	33.33
Excellent	60.61	18.18	21.21	45.83	33.33	20.83
Bank account						
No	33.33	27.78	38.89	43.75	33.93	22.32
Yes	28.33	39.17	32.5	28.83	36.04	35.14
Participation in co-curriculum activities						
None	33.65	32.69	33.65	56.9	27.59	15.52
Any of the sports, swimming, cultural function	30.37	31.78	37.85	29.09	37.58	33.33

Source: Estimated from Primary Survey (2018) in Kolkata slum area, WB

Percentage share of adolescent women of better mental health status is higher among married (43.51 percentage) compared to unmarried adolescents (31.55 percent). Chi^2value (6.31) is significant at 5 percent level here for adolescent women only forecasting a relation between marital status with mental health status. However, exactly the opposite results emerge among non-adolescent women, indicating that the married older women actually face worse mental health, though married younger women enjoy better mental health. This perhaps hint that as women get older, their marriage length increases, the pressure on them from the family tends to increase, making married non-adolescents having worse mental health status.

Again, it is striking that 60.61 percent adolescents and 45.83 percent non-adolescents actually possess poor mental health status who perceive to enjoy excellent self-reported general health status. This is a crucial finding of the study which upholds poor recognition of mental illness persisting among the women either by themselves or family. So it is important to find out the correlates for the barriers of better mental health status among the adolescents as the chi^2value (16.76) is highly significant (1 percent level) implying persistence relation between the variable physical health status and mental health for adolescents only.

But it is that 39.94 percent adolescent and 44 percent non-adolescent women do not prefer to make friendship, which implies a significant portion of adolescent and non-adolescents are not influenced by their peer's activities in any aspect of life. Now a days where peer's involvement is the concern of the literatures as it disseminates the knowledge, awareness and beyond that a spending qualitative time with peer makes the people more happy and refreshed, adolescent women of Kolkata slum area in West Bengal are living beyond the flavour of enrichment of their life.

3. C. Barriers of Sound Mental Health

The results of unordered multinomial logistic regression (**Table 6**) show the major barriers of sound mental health (captured by higher MHI) among the adolescents with respect to non-adolescents women. Wealth index has a significant positive impact on adolescent to be completely mentally healthy though it has no effect on non-adolescent women. For the richest wealth quintile probability of getting highly mentally healthy is significantly high shown by the higher value of RRR (15.22).

Table 6: Relative Risk Ratios of multinomial logistic regression model for mental health of adolescent, non-adolescent women in Kolkata Slums, West Bengal

Mental Health (Ref Poor Mental Health)	Adolescent		Non-adolescent	
	Moderate Mental Health	*Complete Mental Health*	*Moderate Mental Health*	*Complete Mental Health*
	RRR	RRR	RRR	RRR
***Wealth index** (Ref poorest)*				
Poorer	3.42**	7.07***	1.67	0.63
Middle	2.01	6.32***	0.85	1.61
Richer	2.04	5.67**	1.01	0.73
Richest	3.12	15.22***	1.09	1.85
***Women's education** (Ref No education + primary)*				
Secondary	0.88	0.66	1.16	0.77
Higher	0.76	1.45	1.13	0.72
***Religion**: Muslim & others (Ref Hindu)*	0.53	0.49	1.91	1.66
***Household head sex**: Female (Ref male)*	0.54	0.72	1.92	1.04
***Women's occupation**: Yes (Ref no)*	0.51	0.57	0.92	1.04
***Household structure** (Ref joint)*				
Nuclear	1.46	1.91	0.63	0.44
Broken	2.46	2.16	0.6	0.21*
***Marital status**: Unmarried (Ref married)*	0.68	0.32*	0.94	2.11
***Bank account:** Yes (Ref no)*	2.03	1.31	1.41	1.78
***Domestic violence**: Yes (Ref no)*	0.18***	0.08***	0.91	0.44*
Decision making	0.40***	0.16***	0.91	0.50**
Peer role model	0.88	0.73	0.69**	0.5***
Attachment with family	1.64**	2.27***	2.1***	5.25***
Media exposure	0.94	0.56**	0.93	0.76
Participation in co-curricular activities: Yes (Ref no)	0.63	0.76	2.16	2.45
Constant	2.21	1.01	0.41	0.37
Number of observations	317		222	
LR $chi^2(23)$	199.45***		102.58***	
Prob> chi^2	0.00		0.00	
Pseudo R^2	0.29		0.21	

**** significant at 1 % level, ** significant at 5 % level , * significant at 10% level*

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Source: Analysis of Primary Survey (2018) in WB

The three prime factors that emerge to crucially control the mental health among adolescent women in Kolkata slums are suffering from domestic violence (inversely), decision making power (positively) and attachment with family (positively). Domestic violence affects the adolescent women more compared to non-adolescents women in the Kolkata slum area. Similarly lack of decision making power is very much influential factor for adolescent women compared to non-adolescent women. Among several other control variables, education, peer's role, religion, participation in labour force have no effect either. Media exposure has negative impact on adolescent's complete mental health status. Participation in co-curricular activities has no impact on improving the mental health status of adolescents.

4. Discussion

The study explores the crucial findings on the mental health status of adolescent women in Kolkata slum of West Bengal. Adolescent women are more self-esteemed or self-motivated compared to the non-adolescent women as they nurture the positive thinking in their life but they are neither capable to foresee the future changes in their life nor to manage the responsibilities in their daily life. Contradictions inherent within the minds of the adolescents: higher aspirations, cheerful and happy, but not confident about handling their responsibilities. Persisting of fewer mental disorders (getting nervous while talking to others , unable to understand themselves, getting excited easily, thinking of good for nothing, unable to have good sleep) among adolescent women causes to overall better mental health status compared to non-adolescent women. The study points out that 60.61 percent adolescents and 45.83 percent non-adolescents of those, who self-report to have good health status, actually possess poor mental health status in Kolkata slum area. It implies in spite of having poor mental health status, women are unable to recognise this. This may be due to the poor awareness on the mental health issues, women are less bothered about their mental health status. The physical health status is only the concern of the treatment in the society. Besides, adolescent women have poor agency which may also cause to poor recognition about persisting mental health problem among adolescents compared to non-adolescents. Income of the family (captured by the wealth index) improves the mental health status among the adolescents, but it fails to do the same among non-adolescents. If the adolescents are the victims of domestic violence or they have lower decision making power causes to deteriorate the mental health status. This is a crucial finding, though peer role has no significant impact but increasing the attachment with family helps to improve the mental health status among adolescents. Adolescents with better attachment with their family members can share their problems easily expecting that the source of better remedy will be instrumented by the members. Media has a negative impact on the mental health status. Mental disorders increases among the non-adolescent women compared to adolescent women.

5. Conclusion and Policy

The majority of psychological problems plaguing slum dwelling adolescent women are results of the powerlessness they experience in their everyday lives. Adolescent women of Kolkata slum area have no agency in every aspects of their life compared to non-adolescent women. Empowering women in economic, political and social arenas can go a long way in erasing their feelings of victimisation and improving their self-esteem, thus paving the way for better mental health among adolescent women. A significant portion of adolescent women in Kolkata slum area are unable to recognize the symptoms of mental disorder among them due to lack of information regarding the mental health problem. School based mental health literacy programs

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should be included in school curriculum to alter the developmental trajectory of mental illnesses and lead to improved outcomes. As the study upholds a significant portion of adolescents do not prefer to make friend, school will incorporate different group activities (like singing, dancing, swimming, performing in cultural activities, sports) in their course structure and monitor whether most of the adolescents are involved themselves in these activities. Besides that, participation in different kind of inter group activities may enrich adolescents so that they are able to make more friends. Through this participation in several activities, not only they share their feelings and happiness, they can share their acquired knowledge and awareness to each other which help them to have better mental health status. The already existing Kanyashree clubs can be used for these activities in West Bengal. There is a complete denial of need for professional help to correct mental disorder within the greater society. It is truer for the adolescent women, whose family members are stigmatised to take her for psychological counselling and psychiatric medication primarily because of non-acceptance of mental health issues in marriage market. National mental health programme should focus on media to spread the awareness regarding the mental health problem so that the parents and adolescent women both will be the informed that now a day the persistence of mental health problem among adolescent women is a serious issue. The symptoms of depression and unhappiness must be shared by IEC programmes and TV/ radio updates. The study identifies not only the fact that utilization of crucial health care among adolescent women of Kolkata slum is not at par with older women, but also locates stickiness in mindset to improve the situation. The problem lies primarily in three dimensions: lack of awareness, lack of agency and lack of services. These three create a complete vicious cycle of neglect of the adolescent women in India, who constitute the largest section of population demography. A near complete vacuum in direct policy intervention for these women calls for immediate attention for policy makers. A comprehensive integration of all service providers, namely, teachers, ASHAs, AWWs, ANMs, doctors, nurses, SHG members is the only way out to address the mental health problems associated with this age group of Kolkata slum area. For the states, like West Bengal, Haryana etc where adolescent programmes are running, the government can utilize their networks for all kinds of physical and mental health care awareness. It must be remembered that without a coordinated approach involving all line departments (health, social welfare, school education, SHG etc) to the problem, an all-embracing solution remains a far cry, moving slowly to the notoriously infamous coordination failure.

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