

# Stressful Life Events and Risk of Illness among Urban Adolescents in Bangladesh

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## Abstract

**Introduction:** Adolescence describes the year between 13 and 19 and can be considered the transitional stage from childhood to adulthood. The purpose of the study is to investigate the relationship between stressful life events and risk of illness during the period of adolescence. **Methods:** The study was carried out in two high schools namely Civil Aviation High School and Hossain Ali High School, Tejgaon, Dhaka. Dhaka is the most important capital city in Bangladesh. The duration of the study was 1 year, from 1<sup>st</sup> January to 31<sup>st</sup> December 2017. **Results:** Data on lifetime stress about common life events i.e., Romantic breakup (27.3%), family disruption (22.8%), Change in acceptance by peers (25.5%), Failure in grade in school (22.4%), Not making extracurricular activity (25.3%), Outstanding personal achievement (20.3%) were collected from 384 school-going adolescents. The association between each source of stressful life events and risk of illness was modeled in separate statistical analyses. The proportion of adolescents reporting about senior in college (29.9%), Breaking up with boy/girlfriends (27.3%), Changing in acceptance by friends (25.5%) change in parent's financial status (25%), Failure in grading in school (22.4%) were statically significant. There was a positive relationship between the age of adolescents and getting the risk of illness (df, r, p) and negative relation with a monthly income of the family and getting the risk of illness (df, r, p). About half of the respondents were suffering from a slight risk of illness whether a small portion of respondents was in at risk of illness. The risk of illness is mildly associated with age, sex, monthly income of a family, and profession of the mother. **Conclusion:** Some stressful life events were strongly associated with the risk of illness. Any other occurrences of associated with stressful life events should be addressed properly to reduce the risk of illness.

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## Keywords

Adolscents, Risk of Illness, Stressfull Life Events

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### 1. Introduction

Stress is defined as a process in which environmental demands strain one's adaptive capacity resulting in both psychological demands as well as biological changes that could place at risk for illness (Cohen et al., 1995). Stressors are things that cause stress. Everyone in society, either young or old, rich or poor, is affected by stress. We, all must deal with stress in every fact of life, as life is full to the brim with stress. Stress can be of any size or shape; it can be even caused by our thoughts. There are three theories or prospective regarding stress environmental stress, psychological stress and biological stress (Cohen et al., 1995). The environmental stress perspective emphasizes the assessment of environmental situations or experiences that are objectively related to substantial adaptive demands. The psychological stress perspective emphasizes people's subjective evaluations of their ability to cope with demands presented to them by certain situations and experiences. Finally, the biological stress perspective emphasizes the function of certain physiological systems in the body that are regulated by both psychologically and physically demanding conditions (Cohen et al., 1995). Severe strains are produced by stressful life events or experiences, namely—marriage, divorce, illness or injury, and changing or losing a job. Significant psychological and emotional distress is often associated with exposure to potentially traumatic events. If an event elicits a response of intense fear, helplessness, or horror and if one experiences, witnesses, or confronts a situation that involves actual or threatened death or serious injury to oneself or others by any event, it is considered traumatizing (American Psychiatric Association, 1994). A person is likely to experience a traumatic stress reaction if exposed to such an event. A traumatic stress reaction may be characterized by intense physiological arousal through a variety of negative affective states (e.g., dread, horror), and strong perceptions of vulnerability, loss of control, and decreolization (Herman, 1992). People encounter the most common form of stress arising from one's social environment and it thought to be more intense than other types of stressors (Almeida, 2005). It is well documented that psychopathology is contributed by various socially stressful events, namely—bullying, loss of a loved one, even psychological abuse (Kendler et al. 1999; Kessler, 1997; Bjorkqvist, 2001). Actually, stress exposure alone can be an independent risk factor for various psychiatric disorders, like—depression, anxiety and PTSD (Kendler et al. 1999; Kessler, 1997; Javidi & Yadollahie, 2012). Typically the age between 13 and 19 years is described as adolescence and it is considered to a transitional stage between childhood and adulthood. However, during the preteen or tween years (age 9 through 12), the occurrences of physical and psychological changes during adolescence

can start earlier. This period has been recognized as a unique developmental phase that recommends especial demands on social, psychological and occupational functioning, as well as adapting coping skills. Adolescents are at a greater risk for both exposures to stressful events and increased negative appraisal of stressful experiences. Moreover, adolescence is marked by biological changes that comprise increases in gonadal and adrenal hormones due to maturation processes and alteration in the structural and functional processes of the brain. The elevated rates of illness during adolescence are more likely by biological changes and environmental pressure. Adolescence can be a time of increased engagement in risk behaviors that can affect adolescents' health and well-being. As adolescents seek greater independence, grapple with their self-identity and focus on their peer group and it is also a time when mental health and eating disorders commonly begin (Hockenberry et al., 2012). It is well documented that exposure to family violence during childhood is associated with greater risks of alcohol and drug misuse, internalizing and externalizing behavior problems, and depression and anxiety in adolescence and adulthood (Gilbert et al., 2009) including sexual abuse (Gilbert et al., 2009) parental incarceration (Kjellstrand & Eddy, 2011) and parental separation (Cartwright, 2006) also have negative effects on mental health that often carry through into adulthood. There is a complex relationship between stress and illness. There is a person-to-person variation in susceptibility to stress. It is not mandatory that, an illness caused in a person by an event might also affect other persons. For the manifestation of an illness, there must be an interaction of events with a wide variety of background factors. The susceptibility to stress is influenced by various factors, such as, genetic vulnerability, coping style, type of personality and social support. The seriousness of the problem is assessed when a problem is encountered and the availability of required resources, to cope with the problem, is determined. When it is believed that there is a serious problem and the necessary resources is unavailable to cope with the problem, then one should be termed as under stress (Lazarus, 1966). The difference in susceptibility to illness and overall well-being is made by an individual's way of reacting to various situations. All stress does not always exert a negative effect. Stress is called positive stress when the body tolerates stress and uses it to overcome lethargy or enhance performance. As healthy and challenging, this was termed as eustress by Hans Selye, one of the pioneers of the modern study of stress (Seyles, 1956). When the strength of adaptation mechanisms is increased and forces one to adapt, then the stress is positive. It is a warning that one is not coping well and to maintain optimal health, a lifestyle change is warranted. This action-enhancing stress gives the fighter the competitive edge and the public speaker the enthusiasm to project optimally. Stress is negative when the ability to cope is exceeded, thus the body systems become fatigued and causes behavioral or physical problems. This harmful stress is called distress. Distress produces overreaction, confusion, poor concentration and performance anxiety and usually results in sub-performance (Sal-

leh, 2008). The chronic effect of stress over time is the critical factor associated with it. Chronic stressors include daily hassles, the frustration of traffic jams, work overload, financial difficulties, marital arguments or family problems. There are, of course, many more things that can cause stress, but these are the stressors commonly encountered in daily life. The pent-up anger one holds inside toward any of these situations, or the guilt and resentment one holds toward others and selves, all produce the same effects on the hypothalamus. Instead of discharging this stress, however, one holds it inside where its effects become cumulative. Research shows that chronic stress can almost influence every system in the body. When chronic stress goes unreleased, it suppresses the body's immune system and ultimately manifests as illness. One can only wonder what would happen to the body if it remained in the fight-or-flight response. Fortunately, under normal circumstances, three minutes after a threatening situation is over and the real or imagined danger is removed, the fight-or-flight response subsides and the body relaxes and returns to its normal status. During this time heart rate, blood pressure, breathing, muscle tension, digestion, metabolism, and the immune system all return to normal. If stress persists after the initial fight-or-flight reaction, the body's reaction enters a second stage. During this stage, the activity of the sympathetic nervous system declines and adrenaline secretion is lessened, but corticosteroid secretion continues at above normal levels. Finally, if the stress continues and the body is unable to cope, there is likely to be a breakdown of bodily resources (Salleh, 2008). Adolescents who perceive that they have good communication and are bonded with an adult are less likely to engage in risky behaviors (Resnick et al., 1997). Parents who provide supervision and are involved with their adolescent's activities are promoting a safe environment in which to explore opportunities (Aufseeser et al., 2006). Academic success and achievement are strong predictors of overall adult health outcomes. Proficient academic skills are associated with lower rates of risky behaviors and higher rates of healthy behaviors (Martin & Brown, 2008). Any stressful life event may take its toll in the long run. Monitoring the surrounding is a difficult task. Again, self-reporting may be influenced negatively by friends and peers. Spending a lot of time with the kids is not always possible, especially in nowadays fast-moving modern days. Even though, there may be unexpected happenings. It is not always necessary that any stressful life event has to happen directly to the adolescent, it may happen to anyone nearby or relative or friend. A blooming mind can catch either side—the bright pathway or the darker side of the way of life. In ancient times children were sent to mentors for total development, such as physical mental and spiritual. In modern days, that type of mentor is scarce or costly to be afforded by general people. However, in present, society has various initiations where these adolescents get not only academic education but also a social life for the present and future. Whatever the process or technique may be adapted to enhance the development of a brighter future, there are always some flaws. Even the academic pathway and its success or failure can be a stressor.

Close monitoring and early guidance are helpful. So, this study focuses on the assessment of the risk of illness during adolescence.

## 2. Objectives

### 1) General Objectives:

- To determine the stressful life events and risk of illness among urban adolescents.

### 2) Specific Objective:

- To assess various stressful life events among urban adolescents by Holmes & Rahe stress scale.
- To determine the risk of illness among urban adolescents.
- To determine the socio-demographic status of urban adolescents

## 3. Methods

The study was carried out in two high schools namely Civil Aviation High School and Hossain Ali High School, Tejgaon, Dhaka. Dhaka is the most important and capital city in Bangladesh. The duration of the study was 1 year, from 1<sup>st</sup> January to 31<sup>st</sup> December 2017. The present research has been undertaken with the objective of determining the stressful life events and risk of illness among urban adolescents for achieving the objective mentioned above this study has been carried out systematically and followed the methodology mentioned below.

### Inclusion Criteria

- Adolescents who read in class eight, nine and ten while going to the study.
- Adolescents who are willing to participate.

### Exclusion Criteria

- Adolescents, who are mentally retarded.
- Physically very sick, unable to participate.
- Adolescents in whom parents did not permit.
- Adolescents who were not willing to participate.

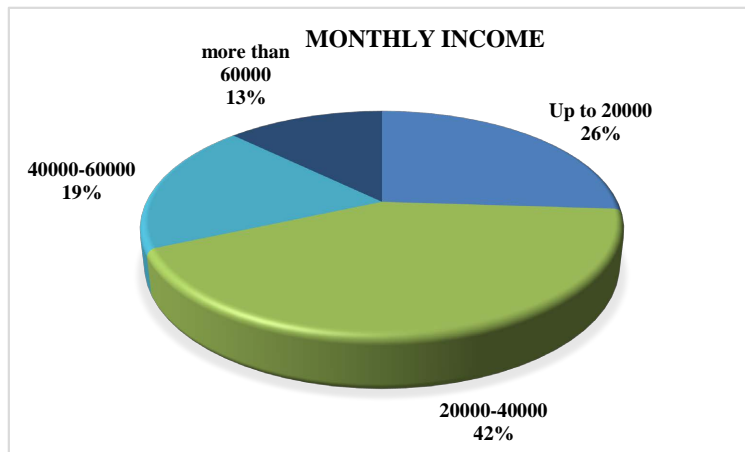
## 4. Results

This cross-sectional study was carried out among 384 urban adolescents to find out their stressful life events and risk of illness among urban adolescents. A face-to-face interview was carried out for quantitative data. This section presents the finding of those data with descriptive analysis and then inferential analysis was done to find out the association. Data were presented through tables and figures under the following sections. Distribution of the respondents according to their age where it is expressed that 151 (39.2%) were 15 years, 101 (26.2%) were 14 years, 89 (23.1%) were 16 years, 25 (6.5%) were 17 years, 16 (4.2%) were 13 years and rest of them 2 (0.5%) were 18 years. The average age of the respondents was 15.03 years with a standard deviation (SD)  $\pm$  0.98 years. The maximum age of the respondents was 18 years and the minimum age of the respondents was 13 years. Distribution of the respondents by their sex where the ma-

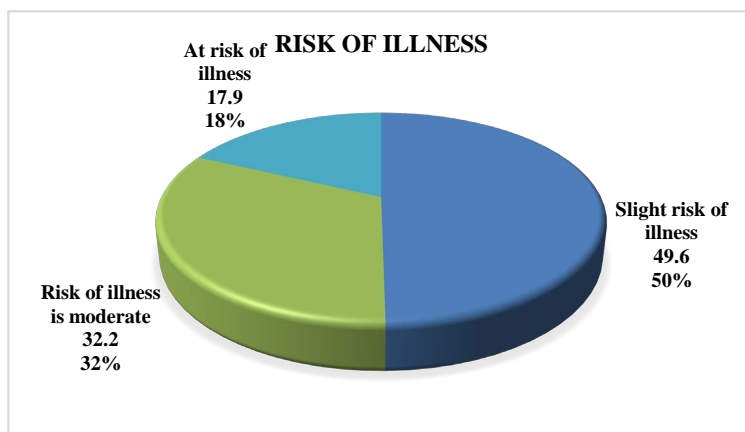
majority 224 (58.3%) of the respondents were girls and 160 (41.7%) respondents were boys [Figure 1]. Study patient's educational level, majority of them 196 (51%) were at class nine, 161 (41.9%) were at class ten and rest of the 27 (7%) were at class eight [Figure 2]. Distribution of the respondents by their religion, most of the respondents 347 (%) were Muslim and 33 (8.6%) were Hindu where few were Christian 3 (%) and Buddhist 1 (0.3%) [Table 1]. Distribution of the respondents according to their father's educational qualification, 143 (%) were at the secondary level, 90 (%) were at the higher secondary level, 54 (%) were at master's level and others were primary and illiterate. The maximum respondent's fathers were job holders 218 (56.6), 139 (36.1) were businessmen, 10 (2.6%) were teachers. Daily labor was 8 (2.1%) and Death was 9 (2.6%). The maximum number of respondents' mothers were housewives 308 (80.2%), 36 (9.4%) were jobholders, 15 (3.9%) were garments workers. The percentage of maid, teacher, business and others were 11 (2.9%), 6 (1.6%), 5 (1.3%) and 3 (0.8%) [Table 1]. From the respondents 83 (42%) monthly income of their family were between 20,000 tk to 40,000 tk, 51 (26%) of the respondents were below 20,000 tk, 37 (19%) of the respondents were 40,000 tk to 60,000 tk, and the rest of them above 6000 tk [Figure 1]. The Table shows the majority of the respondent's parents were married 368 (95.8%), a widow was 11 (2.9%) and 5 (1.3%) were separated [Table 2]. Among the respondents about half of the respondents, 191 (49.7%) were at slight risk of illness, 124 (32.3%) were at moderate risk of illness and the rest of them 69 (18%) were at risk of illness [Figure 2]. The figure shows among the respondents 115 has experienced being senior at college, 105 has to break up with boys/girlfriends, 98 has changed acceptance by friends, 96 has to change in parent's financial status, 86 has a failure in grading in school and 83 has experienced on the birth of brother or sister [Figure 3]. Among the respondents, we find out the stressful life events that occurred in their life but 2 events like Unplanned pregnancy and getting married did not happen in their life but 1 adolescent had experienced on fathering of a child, 1 adolescent had jail of parents and 2 had experienced on suspension from school [Figure 4, Table 3]. The figure shows the relationship between total score and age of adolescent is investigated using Pearson product-moment correlation. Preliminary analysis is performed to ensure no violation of the assumption of Normality, Linearity, and Homoscedasticity [Figure 5, Table 4].

## 5. Discussion

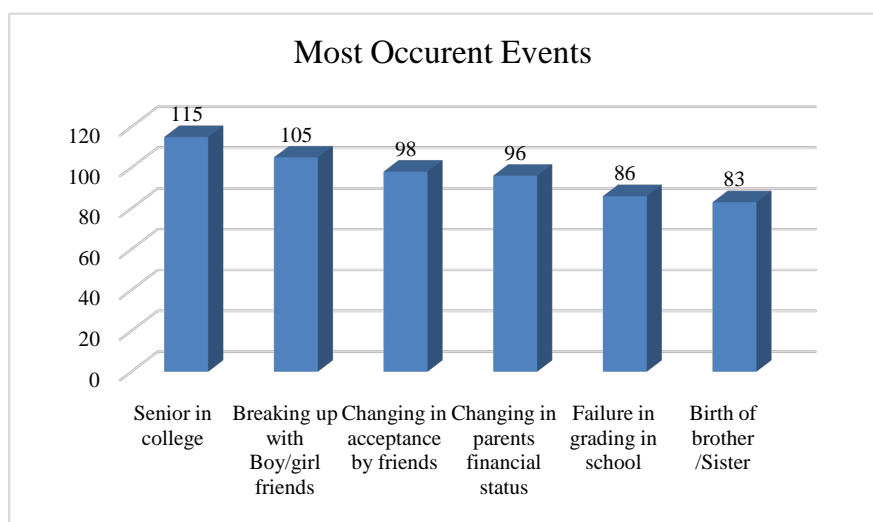
Adolescence is a vital period of life, during this time a future adult is developed. The way of development would indicate the condition of the whole nation. A rough build-up promotes the beginning of a bad nation. Proper care of an adolescent with a hassle-free life indicates the development of a healthy adult, in all spheres of life. This was a cross-sectional study among urban adolescents about their experience of stressful life events and their relationship with the risk of illness. The total number of respondents was 384, according to their age, the



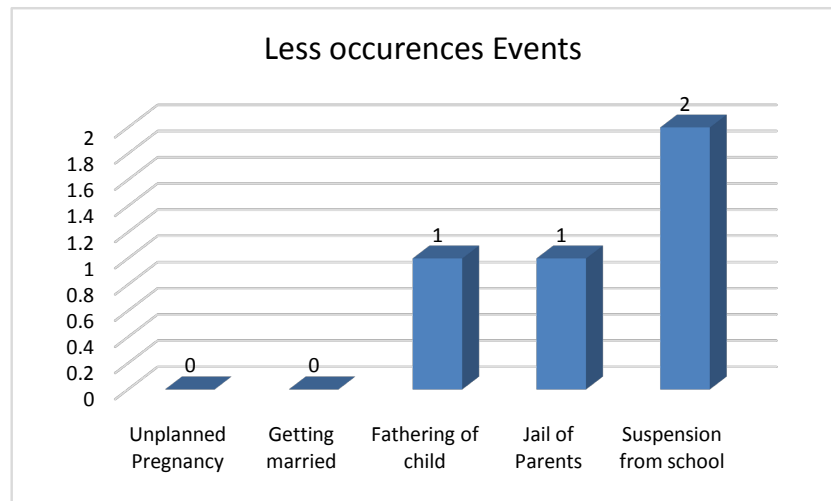
**Figure 1.** Distribution of the respondents of their monthly income of their family (n = 196).



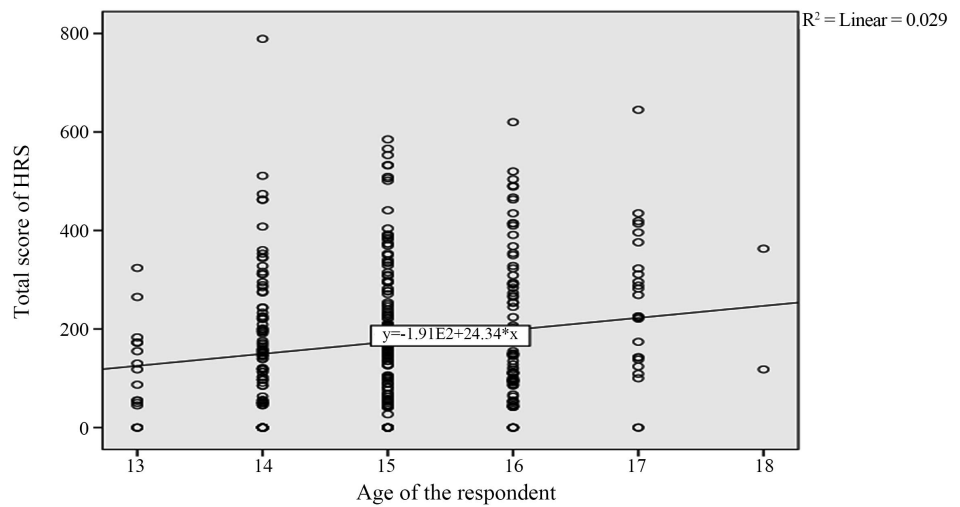
**Figure 2.** Distribution of the respondents according to their risk of illness (n = 384).



**Figure 3.** Distribution of the respondents according to their stressful life events which were most occurred (n = 384).



**Figure 4.** Distribution of respondents according to their stressful life events which were less occurred (n = 384).



**Figure 5.** Distribution of respondents according to their relationship between their age and getting a total score on stressful life events and risk of illness by Holmes and Rahes scale (n = 384).

**Table 1.** Distribution of the respondents by age group (n = 384).

Age of respondent	Frequency	Percentage
13 years	16	4.2
14 years	101	26.2
15 years	151	39.2
16 years	89	23.1
17 years	25	6.5
18 years	2	0.5



## Continued

Gender		
Male	162	41.6
Female	222	58.2
Religion		
Islam	347	90.4
Others	37	9.6
Educational Qualification		
Illiterate	10	2.6
Primary	19	12.8
Secondary	143	37.2
Higher secondary	90	23.4
Bachelor	38	9.9
Masters	54	14.1
Occupation of father		
Job	218	56.6
Business	139	36.1
Others	27	7.3
Occupation		
Housewife	308	80.2
Job	36	9.4
Garments worker	15	3.9
Maid	11	2.9
Others	14	3.7

**Table 2.** Distribution of the respondents according to the marital status of their parents (n = 384).

Marital status	Frequency	Percentage
Married	368	95.6
Separated	5	1.3
Widow/Widower	11	2.9
Total	384	100.0

**Table 3.** Distribution of mostly experienced stressful life events of the respondents with their relation with risk of illness. (n = 384).

Events	Risk of illness			Df, $\chi^2$	p
	Mild	Moderate	At risk		
Breaking up with boyfriend or girlfriend	16	37	52	2, 115.05	0.000
Change in acceptance by peers	12	41	45	2, 98.106	0.000

## Continued

Change in parent's financial status	16	35	45	2, 88.358	0.000
Failure of a grade in school	11	31	44	2, 98.855	0.000
Being a senior in high school	32	44	39	2, 40.886	0.000
Beginning to date	10	31	31	2, 57.115	0.000
Not making an extracurricular activity	26	43	28	2, 28.127	0.000
Birth of a brother or sister	29	28	26	2, 15.244	0.001
Outstanding personal achievement	16	33	29	2, 39.954	0.000
Hospitalization of a parent	8	13	26	2, 53.461	0.000
Decrease in arguments between parents	9	25	24	2, 39.397	0.000
Decrease in arguments with parents	7	23	20	2, 33.635	0.000

**Table 4.** Distribution of less experienced stressful life events among the respondents and relation with the risk of illness. (n = 384).

Events	Risk of illness			Df, $\chi^2$	p
	Mild	Moderate	At risk		
Death of parent	0	3	10	2, 33.073	0.000
Death of a brother or sister	6	13	11	2, 13.347	0.001
Death of close friends	7	22	13	2, 20.688	0.000
Serious illness requiring hospitalization	8	15	12	2, 12.632	0.002
Increase in arguments between parents	4	7	17	2, 38.841	0.000
Accepted at college of choice	19	33	18	2, 17.493	0.000
Hospitalization of a sibling	2	4	10	2, 23.355	0.000
Addition of third adult to family	1	5	10	2, 24.779	0.000
Becoming a full-fledged member of a church	14	18	16	2, 12.336	0.002

highest number of the participant was at the age 15 years (151, 39.2%), followed by 14 years 101 (26.2%), 16 years were 89 (23.1%), 17 years were 25 (6.5%), 13 years were 16 (4.2%) and lowest in the age 18 years 2 (0.5%). The average age of the respondents was 15.03 years with a standard deviation (SD)  $\pm$  0.98 years. The maximum age of the respondents was 18 years and the minimum age of the respondents was 13 years. A study by Low, N.C.P. et al. constituted with much younger respondents as their mean age was  $12.9 \pm 0.4$  years (Low et al., 2012). De Vriendt, T. et al. found the mean age of adolescents in their study as ( $14.7 \pm 1.2$ ), which was similar to this study (De Vriendt et al., 2011). According to the sex of the respondent's majority of the respondents were girls (224, 58.3%) and the rest of the respondents were boys (160, 41.7%). Low, N.C.P. et al. also found the number of girls to be 55%. A large study in Europe comprised of 1140 adolescents also included a higher number of girls (56.8%) in their study (De Vriendt et al., 2011). All the studies showed that girls of higher number, accordingly, Stankovska, Stankovska, G. et al. observed that stressful life events were

strongly correlated with the gender of the subjects ( $r = 0.990$ ,  $p < 0.01$ ) (Stankovska et al., 2016). By identifying the occurrence of various stressful life events among urban adolescents by its prevalence and strength, appropriate measures can be taken into account. Social adolescent workers have to enhance their action for prevention of risk of illness, as it is a well-established phenomenon that, exposure of adolescents to various stressful events might enhance the development of illness, such as psychological social, spiritual, mental and physical.

### Limitations of the Study

The study population was selected purposively from one district with a small sample size, so it does not represent the situations prevailing in another part of the country.

## 6. Conclusion

This study is carried out to determine the stressful life events and risk of illness among urban adolescents. About half of the respondents were suffering from a slight risk of illness whether a small portion of respondents were in at risk of illness. The risk was mildly associated with sex, age group, monthly income of the family, and profession of the mother. Some events i.e. death of a brother or sister; change in acceptance by peers; death of close friends; serious illness requiring hospitalization; failure of a grade in school; not making an extracurricular activity; breaking up with boyfriend or girlfriend; beginning to date; the birth of a brother or sister; outstanding personal achievement; change in parent's financial status; accepted at college of choice; being a senior in high school; decrease in arguments between parents and decrease in arguments with parents had the positive association of risk of illness. In our country adolescents are neglected in this psychological state. More attention and caring are needed to address their need and psychological support.

Based on the findings of this study, the following recommendations were made.

## 7. Recommendations

1) Any occurrence of associated with stressful life events should be addressed properly to reduce the risk of illness.

2) In our country a system of adolescent counseling has to be developed at the national level frequently by psychiatrists and counselors to protect the risk of illness.

3) Adolescents should be a national movement. NGOs and international agencies should extend their hands of cooperation with full strength so that this program covers the whole parts of the country to ensure adolescents' health in physical, mental, and spiritual because health means all of this combination in SDG.

4) Further research is required with greater sample size and in-depth, interviews to identify another risk factor in urban adolescents and its association with

socio-demographic status.

5) A large scale study on rural adolescents in this study is needed to compare between urban and rural adolescents

## Approval

Got from the respective department.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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