

## STRESSFUL LIFE EVENTS A RISK FACTOR FOR DEPRESSION AMONG ADOLESCENTS: AN ANALYTICAL STUDY WITH INTERVENTIONAL COMPONENT

JAYANTHI P

Assistant Professor, Omayal Achi College of Nursing, Puzhal, Chennai, Tamil Nadu, India

### ABSTRACT

**Objective:** To examine the relationship between stressful life events and depression among adolescents.

**Methods:** A case control study was conducted at higher secondary schools in South India. 1120 adolescents were included in the study.

**Results:** The odds ratio analysis revealed that adolescents who had stressful life events were found to have 2.9 times (95% CI= 1.2 - 6.9 and p - value 0.01) more risk of developing depression than the adolescents without stressful life events.

**Conclusions:** Adolescents with stressful life events has to be identified earlier and prompt interventions will prevent future psychiatric illnesses. As an intervention towards the educational component Stress Management Strategies were taught to the adolescents.

**KEYWORDS:** Depression, Adolescents, Stressful Life Events

### INTRODUCTION

Adolescence is a transitional stage from childhood to adulthood and is a time of major changes in all areas of functioning. Children and adolescents can experience various life stresses ranging from catastrophic or traumatic life events, persistent strain and daily hassles [1]. Stressful life events are described as discrete quantifiable circumstances that can have severe negative impact [2]. Stressful life events and daily stressors are associated with the onset and exacerbation of chronic illness, poor academic functioning, school absenteeism, high utilization of school services, and suicide [3].

Suicide is the third leading cause of death among adolescents. The major reason for suicide is unrevealed depression and the contributing factor is stressful life events. This study aimed to explore the relationship between depression and stressful life events.

### METHODS

This case control study was conducted at higher secondary schools in South India, between July 2013 and January 2014. Ethical approval was obtained from the Institutional Ethics Review Board. Permission was obtained from Chief Educational Office (CEO), Thiruvallur District and the Principal of private schools. The sample was recruited from three private and one government higher secondary school.

A total of 2432 school going adolescents studying in 9<sup>th</sup> to 12<sup>th</sup> grade were screened using MINI-KID [4, 5] which is a screening tool for depression. 640 students who had a high score in Mini-kid were subjected to assessment by the Psychiatrist. On confirmation by the psychiatrist using assessments and Mental Status Examination 612 students were

enrolled for the case group. 612 students who had a low score in Mini-kid were enrolled for the control group. Prior to data collection informed consent form was handed over to the 1224 students (612-cases & 612-control) and 1198 parents gave their written informed consent. Finally 1120 adolescents (560-cases and 560-control group) were included for analysis based on matching.

Beck Depression Inventory (BDI)[6] was administered to the adolescents in case group. BDI was used specifically to classify the case group adolescents into minimal, mild, moderate and severe depression. BDI proved to be a psychometrically sound measure for screening depression among adolescents [7, 8]. Modified Coddington's Life Events Scale for Adolescents (CLES-A) [9] was administered to the adolescents in case and control group. This inventory generally has high reliability and in the present study reliability score for Beck depression inventory was 0.85 and Modified Coddington's Life Events Scale for Adolescents was 0.8.

### Statistical Analysis

Statistical analysis was performed using the Statistical Package for Social Sciences Programme (SPSS) version 17.0. Descriptive statistics was used to describe the demographic variables. Student's independent t-test was used to compare the stressful life events score between case and control group. Karl Pearson correlation coefficient was used to examine the relationship between the level of depression and stressful life events. Chi square test was used to find the association between stressful life events and the demographic variables. Odds Ratio and Multivariate logistic regression was used to examine the strength of association between the level of depression and stressful life events.

## RESULTS

Six hundred and twelve adolescents (25%) were diagnosed to have depression during the study period. The Beck Depression Inventory scoring revealed that 45.7% of the adolescents had moderate, 25.4% had mild, 19.6% had severe, and 9.3% had minimal depression.

In case group, the mean stressful life events score was 4.22 with SD of 1.578 where as in control group score was 0.68 with SD of 1.024. The mean difference was high and statistically significant at  $p < 0.01$  level.

The study findings reported that there is a positive, and moderate relationship between the level of depression and the level of stressful life events. The  $r$  value was 0.48 at  $p < 0.001$  level which is depicted in **Figure 1**.

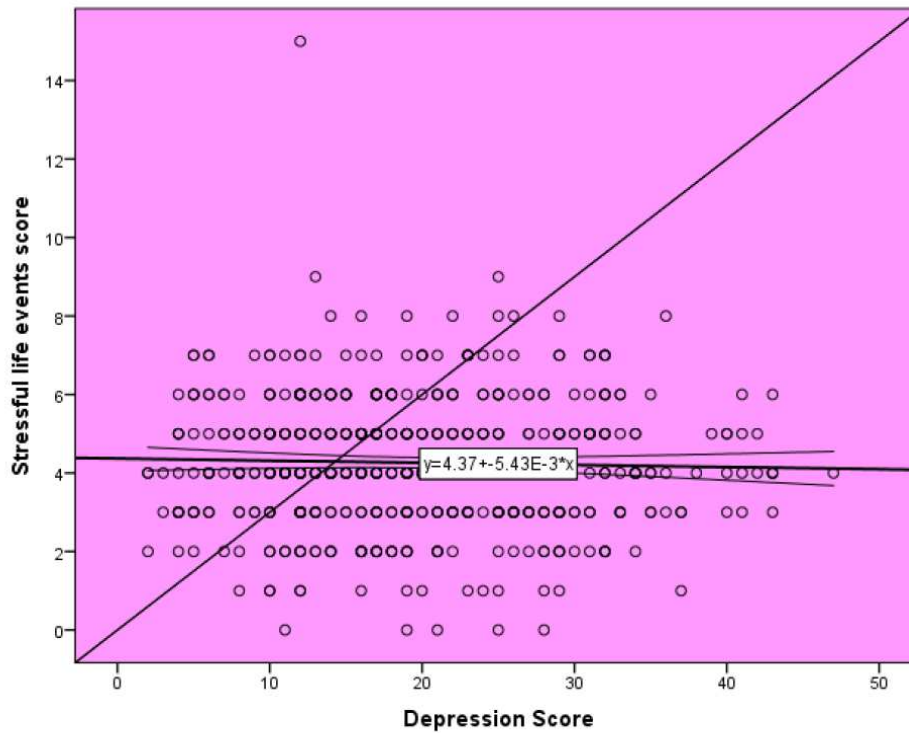


Figure I: Scatter plot with regression estimate shows the positive correlation between depression score and stressful life events score

The odds ratio analysis revealed that adolescents who had stressful life events were found to have 2.9 times (95% CI= 1.2-6.9) ( $p < 0.01$ ) more risk of developing depression than the adolescents without stressful life events. Demographic variable such as type of family have significant association with stressful life events [Table 1].

## DISCUSSIONS

The study findings revealed that the overall mean stressful life events score difference between case and control group adolescents was 3.54. There was a positive correlation between depression and stressful life events. Adolescents with depression had moderate stressful life events than adolescents without depression.

Stressful life events score among adolescents with depression was high comparing with adolescents without depression. It was consistent with the study conducted by Craig A Johnston et al, 2003 [10], Bouma et al, 2008 [11]. Adolescents (aged 13-18) reported significantly more stressful life events than pre adolescents (aged 10-12) and children (aged 7-9). Parents also reported more stressful life events for adolescents than for pre adolescents and children. Stressful life events, whether reported by children or their parents, have been associated with negative developmental outcomes and consequences [12, 13].

Another important stressful life event among adolescents in case group was conflict between adolescents and parents. This was consistent with the study conducted by Bannink R et al (2013) and the findings revealed that an unfavourable parent-adolescent attachment was associated with a higher risk of mental health problems among adolescents with one life event (RERI 1.56; 95% CI 0.15 – 2.96) and multiple life events (RERI 3.32; 95% CI 0.80 – 5.84) compared to those without a life event [14]. When conflict occur between adolescent and parent, emotion, hostility, and aggression

may be involved because the conflict is interpersonal [15]

The current study is limited because of adolescents sickness, absenteeism, unwillingness, incomplete questionnaire and matching. The findings implied that stressful life events is a risk factor for depression among adolescents. Adolescents with stressful life events have to be identified earlier and prompt interventions will prevent depression, suicide and other psychiatric illnesses. As an intervention towards the educational component Stress Management Strategies (social support, mentoring relationships, breathing and relaxation techniques, and involvement in sports and extra curricular activities) were taught to the adolescents.

**Table 1: Association between the Level of Stressful Life Events and Demographic Variables**

Demographic Variables		Level of Stressful Life Events		Total	Chi Square
		Low	Moderate		
		n (%)	n (%)		
Type of Family	Nuclear family	394 (90.8%)	40 (9.2%)	434	$\chi^2=6.69$ P=0.03*
	Joint family	105 (98.1%)	2 (1.9%)	107	
	Extended family	18 (94.7%)	1 (5.3%)	19	

Conflict of Interest None

Role of Funding Source None

## CONCLUSIONS

Adolescents with stressful life events has to be identified earlier and prompt interventions will prevent future psychiatric illnesses. As an intervention towards the educational component Stress Management Strategies were taught to the adolescents.

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