

## Relationship Between Stressful Life Events And Depression

Subedi A<sup>1</sup>, Khattri JB<sup>2</sup>, Tirkey S<sup>3</sup>, Lamichhane RP<sup>4</sup>

1. Lecturer, Department of Psychiatry, Manipal College Of Medical Sciences, Pokhara, Nepal 2. Professor & Head, Department of Psychiatry, Manipal College Of Medical Sciences, Pokhara, Nepal 3. Assistant Professor, Department of Psychiatry, Manipal College Of Medical Sciences, Pokhara, Nepal 4. Lecturer, Lumbini Medical College, Prabhas, Palpa, Nepal

E-mail \*Corresponding author : [anilsubedi1984@gmail.com](mailto:anilsubedi1984@gmail.com)

### Abstract

**Introduction:** Stressful life events are associated with mental health breakdown. Many researches had shown that depression was preceded by stressful life events. The objective of this study was to measure the prevalence of significant score of stress scale in patients diagnosed as depressive episode. The next objective was to find out the association between the different sociodemographic variables and stress score and whether age is the predictor of stress score or not.

**Material And Method:** The patients diagnosed as depressive episodes were selected from the out-patient unit of Department of Psychiatry of Manipal Teaching Hospital, Pokhara, Nepal. The proforma was used to collect the sociodemographic profile of the patient and Holmes and Rahe's stress scale was applied. The diagnosis of depressive episode was made according to the International Classification of Disease-10 Classification of Mental and Behavioural Disorders: Diagnostic Criteria for Research. The stress score more than 150 was considered as significant stress score in this study.

**Results:** The prevalence of significant stressful life events was 42%. The sociodemographic variables found that prevalence of stressful life events was found higher in female gender, illiterate individual, married and business/employed individual. The age of the patient was not the predictors of stress score in this study.

**Conclusion:** These findings help us to understand that stressful life events were associated with depression. Effective coping skills and psychological interventions will improve quality of life in stressed individual.

**Keywords:** Depression, Mental Disorder, Stress.

### INTRODUCTION

Stress can be explained as a feeling of emotional and physical tension which arises from any event that threatens our homeostasis.<sup>1</sup> Stressful life events are associated with the onset, course and treatment of major depression.<sup>2</sup> Life events are the changes occurring suddenly in someone's life. Particularly stressful life events include death of spouse, divorce and marital separation and many other conditions.

Studies suggest that enduring stressful events account for most of the effects of life events on major depression. For example, the adverse effects of unemployment on depression are partly mediated by resultant financial stresses; while the relationship between loss of spouse

and depression is partly mediated by social isolation.<sup>3</sup>

Major depression is the most common psychological disorder affecting 121 million people worldwide. It is projected to become the second leading disorders by 2020. Nearly 1 in 10 adults in U.S is affected by depression.<sup>4</sup> The prevalence of major depressive disorder (current) in adults according to one study in Nepal was 3.4%<sup>5</sup>.

The cardinal features of major depression include deep and prolonged sadness, a lack of interest or pleasure in most activities and feeling of helplessness and worthlessness that negatively impact fundamental domain of life such as interpersonal relationship and work or

school performance. The diagnosis of major depressive episode also experiences at least 4 symptoms from lists that includes changes in appetite and weight, changes in sleep and activity, lack of energy, feeling of guilt, problems thinking and making decisions, and recurring thoughts of death and suicide.<sup>6</sup>

The objective of this study was to study the prevalence of significant score of stress scale in patients diagnosed as depressive episode. The next objective was to find out the association between the different sociodemographic variables and stress score and whether the age of the patient is the predictor of stress score or not.

**MATERIAL AND METHOD**

This cross-sectional study was conducted in the out-patient unit of Department of Psychiatry of Manipal Teaching Hospital, Pokhara. The ethical clearance of the study was taken from Institutional Review Committee of Manipal College of Medical Science, Pokhara, Nepal. The study was conducted from 1<sup>st</sup> April 2020 to 30<sup>th</sup> September 2020. The fifty patients from 15- 70 years of age, who had fulfilled the diagnostic criteria of depressive episode (unipolar, single episode or recurrent episode) according to International Classification of Disease-10 Classification of Mental and Behavioral Disorders, Diagnostic Criteria for Research (ICD-10 DCR) were included in our study.<sup>7</sup> The written consent was taken from each patient. The patients less than 15 years or greater than 70 years, with other psychiatric disorder/medical/surgical conditions and the patient who had not given the informed consent were excluded from the study.

A self-designed proforma was used to record the sociodemographic data of the patients. Holmes and Rahe’s stress scale was used to assess the level of stress. The Nepali- version of Holmes and Rahe’s stress scale was used in this study. Standard translation procedure was followed to develop the Nepali-version which includes forward- backward translation independently carried by two native-speakers of Nepali language. Any discrepancies and incongruence’s were resolved by third consultant by consensus process. A total score of 150 or less suggests a low level of stress, and a low probability of developing a stress-related

disorder. A total score of 150 to 299 suggests a moderate level of stress, and the chances of developing a stress-related disorder are about 50%. A total score of 300 or more suggests a high level of stress, and the chances of developing a stress-related disorder are about 80%. The Holme’s and Rahe’s stress score more than 150 is considered as significant. Gerst et al. tested the reliability of the Social Readjustment Rating Scale (SRRS), and found that rank ordering remained extremely consistent both for healthy adults ( $r = 0.96 - 0.89$ ) and patients ( $r = 0.91$  to  $0.70$ ). Holmes and Rahe’s found a positive correlation ( $+0.118$ ) between Life Change scores and illness scores.<sup>8,9</sup> Data entry and analysis was done in Epi-Info version 7.2.2.6. The statistical methods used were mainly frequency. The relationship between different sociodemographic variables and stress score were tested with the help of chi square test. The linear regression analysis was used to test the relationship of stress score with the age of the patient. The data was considered statistically significant if p value is less than 0.05.

**RESULT**

This study had included a total of 50 patients, 30 were females and 20 were males. The age of the participants ranged from 15 to 70 years with mean age of 39.3 years (SD  $\pm 12.43$  years). The score on Holmes and Rahe’s scale ranged from minimum score of 33 to maximum of 345 score with mean score of 130.80 (SD  $\pm 62.77$ ). The scoring of Homes and Rahe’s stress scale is listed in table 1.

**Table 1: Frequency of Holmes and Rahe’s stress scale score**

Holmes and Rahe’s Stress Scale Score	Frequency	Percentage
1 – 150	29	58.0
151 – 300	20	40.0
>301	1	2.0
<b>TOTAL</b>	<b>50</b>	<b>100.0</b>

Out of total number of 50 patients, 29 (58%) scored less than 150 while 20 (40%) score between 150 to 300 and remaining one (2%) scored greater than 300.

**Table 2: Relationship between sociodemographic variables and Holmes and Rahe's stress scale score**

Sociodemographic Variables		Stress Score		Odds Ratio	r <sup>2</sup>	p-value
		≤150 (%)	>150 (%)			
Gender	Female	15 (50.0)	15(50.0)	0.42	1.97	0.16
	Male	14 (70.0)	6 (30.0)			
Education	Educated	20 (60.6)	13 (39.4)	1.36	0.27	0.60
	Illiterate	9 (52.9)	8 (47.1)			
Marital Status	Married	24 (57.1)	18 (42.9)	0.80	0.07	0.78
	Single/ Separated	5 (62.5)	3 (37.5)			
Occupation	Business/ Employed	10 (52.6)	9 (47.4)	0.70	0.36	0.54
	unemployed	19 (61.2)	12 (38.8)			

**Table 3: Regression analysis of age taking Holmes and Rahe's stress scale as dependent variable\***

Independent variables	Coefficient	95% of CI	Limits	Standard Error	F-test	P value
Age	-0.947	-2.386	0.43	0.71	1.752	0.191
Constant	168	108.8	108.78	227.22	32.53	<0.001

\*Correlation Coefficient: 0.04

Table 2 showed the relationship between sociodemographic variables and Holmes and Rahe's stress scale. There is no statistical significance between gender, education and employment with Holmes and Rahe's stress scale.

In table 3 using linear regression, it was observed that age has no correlation with scores of stress scale. Hence, age is not the predictor of stress score.

**DISCUSSION:**

In the current study, 21 (42%) had stress score > 150 (Score > 150) denotes 50% chances of having stress related disorder. In one study done on Botswana, out of all depressed patients half of the patients were preceded by the stressful life events.<sup>10</sup> Besides these, the large body of evidences had shown that as much as 70% of depressive episodes were preceded by a stressful event and severe life events played a role in the onset of up to 50% of depressive episodes.<sup>11-13</sup>

This study showed that 15 females (50%) and 6 male (30%) had stress score greater than 150 and was not statistically significant which was according to the study done in Canada<sup>14</sup> and US.<sup>15</sup> The prevalence of stress was higher in depressed women than men in study conducted in Sweden<sup>16</sup> and Malaysia.<sup>17</sup> According to many studies conducted in China, the

discrepancies in these results are due to females have more traits that are associated with depression, are more concerned about external stimuli, and are more liable to cope in a passive, pensive, and sentimental way. Thus, they are more prone to depression after encountering an external negative stimulus.<sup>18-22</sup> One meta-analysis done in china concluded that relationship is greater in females.<sup>23</sup>

According to present study, 18 (42.9%) of married and remaining 3 (37.5%) of single or separated had stress score of more than 150. One study done on Canada<sup>24</sup> had shown that married people have more stressors than who is single or separated. The odds ratios for depression showed a steady rise with increasing age for those in single and in common-law relationships compared to married people. In contrast the odds ratios for depression declined with age for those widowed, separated and divorced compared to married people.<sup>25</sup>

In this study, 9 (47.4%) of employed/ business and 12 (38.8%) of unemployed had stress score of more than 150. However, one study done in Canada had shown that level of stress was high in unemployed individuals.<sup>24</sup> Another study done in Mexico showed contrasting results in male population and same results in female population.<sup>26</sup>

This present study showed that the correlation between stress score and age were not statistically significant. There are many studies

suggesting that older persons experience fewer stressful life events than younger persons, and that they rate these events as less severe.<sup>27,28</sup> One study found that age is one of the predictor<sup>29</sup> which contradict to current study findings. However, another study found that age is negatively correlated with stress<sup>30</sup>.

There were some limitations in this study. The cause and effect of relationship could not be estimated due to the cross-sectional nature of this study. Hence, it was not known whether stress leads to depression or vice versa. The next limitation was that as this study was conducted in the hospital setting; the findings couldn't be generalized to the entire populations. But from the mental health perspective, the stressful life events in the depressed patients are a matter of concern. Another limitation of this study was a small sample size of the study samples.

#### CONCLUSION:

This study showed that prevalence of significant stressful life events in depressed patients was 42%. The sociodemographic variables found that prevalence of stressful life events was greater in female gender, illiterate individual, married and business/employed individual. Age was not the predictors of stress score in this study. This study also highlights the need for large scale randomized controlled trials in future studies to test whether this association is causal.

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