

Factors Associated with Self-Esteem among Undergraduate Students of Pokhara Metropolitan City, Nepal: A Cross-sectional Study

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ABSTRACT

Background: Self-esteem is an overall subjective evaluation of one's worth or value which encompasses the positive or negative orientation or beliefs towards oneself. Self-esteem has established itself as an important psychological factor contributing to health and quality of life. Thus, this study aimed at understanding the factors influencing the level of self-esteem among the undergraduate students and its correlation with depression, anxiety and stress symptoms experienced by the students.

Methods: A cross-sectional study was conducted among 618 randomly sampled undergraduates from different academic institutions of Pokhara Metropolitan city. We used Rosenberg self-esteem scale to assess the level of self-esteem and DASS-21 to assess the level of depression, anxiety, and stress. The collected data was analyzed using SPSS statistical software. The chi-square test, binary logistic regression and Pearson correlation analysis were performed to establish the relationship between variables at the level of significance, $p < 0.05$.

Results: More than three-fourth (75.7%) of the students were found to have a normal level of self-esteem while around one-fifth (21.4%) of the students had low self-esteem. There was no statistical relationship established between students' academic discipline and their self-esteem. However, students' academic performance, family history of any psychological distress and their perceived level of social support were the major influencing factors associated with their self-esteem at $p < 0.001$. Based on Pearson correlation analysis, self-esteem was negatively correlated with depression, anxiety and stress at $p < 0.01$.

Conclusion: The students' level of perceived social support, family history of psychological disorder and academic performance are statistically associated with student's level of self-esteem. Furthermore, there existed a negative correlation between self-esteem and depression, anxiety and stress experienced by the students. Thus, strategies aimed to increase students' level of perceived social support and self-esteem can reduce their risks of acquiring any mental health problems in near future.

Keywords: Anxiety, Depression, Factors Associated, Mental health, Undergraduate

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INTRODUCTION

Self-esteem is an overall subjective evaluation of one's worth or value which encompasses the positive or negative orientation or beliefs towards oneself.¹ It is considered as an evaluative component of self-concept which is a border representation of self as well as an emotional state which range from triumph, despair, pride, to shame.² Self-esteem is also taken as a protective mechanism that an individual possess to protect themselves from fear. It can also be a motivating factor for achieving particular goals as high self-esteem could lead to coping in situations and low self-esteem could lead to avoidance of the situations.³

Self-esteem has established itself as an important psychological factor contributing to health and quality of life and a significant etiological agent for mental distress, depressive symptoms and suicidal ideation.^{4,5} Low self-esteem has been linked as a risk factors for several emotional, psychological and behavioral problems.⁶ Moreover, it has been observed that a strong statistically significant relationship exists between self-esteem and depressive symptoms experienced by the students of higher education.^{5,7}

As university period is considered as a stressful period where the students go through the transformation from adolescence to adulthood and make crucial life decisions, several mental disorders might onset at this period of time.^{8,9} In this scenario, it is crucial to understand the factors influencing the level of self-esteem among the student to prevent the onset of psychological problems among them. Thus, this study aimed at understanding the factors influencing the level of self-esteem among the undergraduate students and its correlation with depression, anxiety and stress symptoms experienced by the students.

MATERIALS AND METHODS

This was a cross-sectional study conducted among the undergraduate students enrolled at different academic courses in Pokhara Metropolitan from June to December, 2017. Initially, the sample was estimated at 326 using the Cochran's sample size formula at 95% confidence interval with the estimated proportion of 30.6% and 5% margin of error.⁷ Then the obtained sample size was adjusted with 1.5 design effect and 30% non-response rate to optimize the sample size at 681.

In order to increase the representation of each

academic courses in the sample, stratified random sampling technique was adopted. For this all the available undergraduate courses and the academic institutions inside Pokhara Metropolitan were identified and categorized into seven strata based on their academic discipline such as engineering, management, allied sciences, education, health sciences, humanities, and law. At the time of this study there were a total of 13,126 undergraduate students enrolled at different academic institutions of Pokhara Metropolitan and each stratum consisted of 2304, 5842, 1648, 420, 1525, 835, 552 students respectively (excluding the 1st year students). After identifying all the available courses and the total students enrolled, students were selected proportional to the size of each stratum to reach the sample of 681 students.⁷

The study was executed after acquiring the ethical approval from the Institutional Review Committee of Pokhara University (Ref. No. 23/074/75). The permission from the randomly selected fifteen academic institutions was acquired and the consent letter was signed by the authorities and the students prior to data collection. Self-administered questionnaire was used to collect the data which consisted of questions on socio-demographic profile, academic performance, and family history of psychiatric disorders whereas 12 item Multidimensional Scale of Perceived Social Support (MSPSS) was used to assess the level of perceived social support by the students.¹⁰ The 21-item Depression Anxiety Stress Scale (DASS) was used to assess the level of depression, anxiety and stress among the students,¹¹ along with the Rosenberg self-esteem scale to assess the level of self-esteem.¹ The Rosenberg self-esteem scale is a 10-item scale where all items are answered using a 4-point Likert scale ranging from strong agreement to strong disagreement assessing the self-worth by measuring both positive and negative feelings about the self.¹

The collected data was entered using EpiData software version 3.1 while the Statistical Package for Social Science (SPSS) version 20 was used for the analysis. Association between the independent and dependent variable was analyzed through a chi-square test with the level of significance at $p < 0.05$. Binary logistic regression was used to calculate the unadjusted odds ratio. Pearson correlation analysis was performed to analyze the correlation between self-esteem and depression, anxiety and stress.

RESULTS

In this study it was observed that more than three-fourth (75.7%) of the students had a normal level of self-esteem while a few (2.9%) had a higher self-esteem and around one-fifth (21.4%) of the students had lower self-esteem when measured through Rosenberg self-esteem scale at the cutoff score of <15 for low self-esteem.

Of the total 618 undergraduate students included in this study, majority (62.3%) of them were female and 37.8 percent were male. The average age of the participants in years was 20.39 (SD±1.57), with the range of 18 to 29 years. Majority of the students (67.8%) were living with their family and

almost half (57.8%) had their own house as a place of accommodation (Table 1).

There were a total of 13,126 undergraduate students enrolled at different academic courses running at Pokhara Metropolitan at the time of this study (excluding the 1st year students). Based on the proportion of students enrolled in each academic course, the sample of 618 was distributed among seven major courses running at the Metropolitan. As majority of students were enrolled in Management, Engineering and Allied Sciences courses most of the sampled student were of these academic background at 46.5%, 15.5% and

Table 1: Socio-demographic characteristics of the selected students (n=618)

Variables	N	%
Gender (n=618)		
Male	233	37.7
Female	385	62.3
Age		
Adolescent (≤19 years)	109	17.6
Adult (≥20 years)	509	82.4
Family Type		
Nuclear	405	65.5
Joint	213	34.5
Living accommodation		
Family home	357	57.8
Rented house	204	33.0
At hostel	39	6.3
At relatives	18	2.9
Living with		
Family	419	67.8
Alone	106	17.2
Relatives	18	2.9
Friends	75	12.1
Education level of Father		
No formal schooling	44	7.1
Primary 1-5 year	110	17.8
Secondary or higher secondary 6-12	328	53.1
University education	136	22.0
Education level of Mother (n=618)		
No formal schooling	126	20.4
Primary 1-5 year	180	29.1
Secondary or higher secondary	278	45.0
University education	34	5.5

Table 2: Academic and social attributes of the selected students

Variables	N	%
Academic Discipline (n=618)		
Engineering	96	15.5
Management	286	46.3
Law	28	4.5
Allied Sciences	82	13.3
Health Sciences	61	9.9
Education	22	3.6
Humanities	43	7.0
Academic Performance (n=497)		
Failed at any attended board exam	164	33.0
Regularly passed all attended board exam	333	67.0
Family History of psychiatric disorder (n=618)		
Yes	70	11.3
No	548	88.7
Perceived Social Support (MSPSS) (n=618)		
Low social support	24	3.9
Moderate social support	194	31.4
High social support	400	64.7
Perceived Support from Significant Other Subscale (n=618)		
Low support	148	23.9
Moderate support	171	27.7
High support	299	48.4
Perceived Support from Family Subscale (n=618)		
Low support	7	1.1
Moderate support	63	10.2
High support	548	88.7
Perceived Support from Friends Subscale (n=618)		
Low support	37	6.0
Moderate support	204	33.0
High support	377	61.0

Table 3: Correlations among self-esteem, depression, anxiety and stress scores

Variables	Self-esteem	Depression	Anxiety	Stress
Self-esteem	1	-	-	-
Depression	-0.475**	1	-	-
Anxiety	-0.339**	0.725**	1	-
Stress	-0.386**	0.730**	0.766**	1

**Correlation is significant at the 0.01 level (2-tailed)

Table 4: Association of Self-esteem with student's academic and social attributes

Categories	Self-esteem		χ ²	p-value	Unadjusted Odds Ratio (95% CI)
	Low Self-esteem	High Self-esteem			
Academic Discipline (n=618)					
Engineering	23 (24.0%)	73 (76.0%)	2.292#	0.891	
Management	64 (22.4%)	222 (77.6%)			
Law	6 (21.4%)	22 (78.6%)			
Allied Sciences	16 (19.5%)	66 (80.5%)			
Health Sciences	13 (21.3%)	48 (78.7%)			
Education	3 (13.6%)	19 (86.4%)			
Humanities	7 (16.3%)	36 (83.7%)			
Academic Performance (n=497)					
Failed at any attended board exam	51 (31.1%)	113 (68.9%)	12.011	0.001**	2.140 (1.385-3.307)
Regularly passed all attended exams	58 (17.4%)	275 (82.6%)			Ref
Family history of psychological disorder (n=618)					
Yes	34 (48.6%)	36 (51.4%)	34.802	<0.001***	4.337 (2.586-7.274)
No	98 (17.9%)	450 (82.1%)			Ref
Perceived Social Support (n=618)					
Low social support	15 (62.5%)	9 (37.5%)	77.186	<0.001***	13.148 (5.439-31.784)
Moderate social support	72 (37.1%)	122 (62.9%)			4.656 (3.042-7.125)
High social support	45 (11.3%)	355 (88.8%)			Ref
Perceived Support from Significant Other (n=618)					
Low support	63 (42.6%)	85 (57.4%)	56.442	<0.001***	5.591 (3.459-9.036)
Moderate support	34 (19.9%)	137 (80.1%)			1.872 (1.118-3.133)
High support	35 (11.7%)	264 (88.3%)			Ref
Perceived Support from Family (n=618)					
Low support	4 (57.1%)	3 (42.9%)	65.089	<0.001	6.696 (1.474-30.425)
Moderate support	37 (58.7%)	26 (41.3%)			7.147 (4.124-12.383)
High support	91 (16.6%)	457 (83.4%)			Ref
Perceived Support from Friends (n=618)					
Low support	19 (51.4%)	18 (48.6%)	49.918	<0.001***	7.235 (3.549-14.749)
Moderate support	65 (31.9%)	139 (68.1%)			3.205 (2.101-4.890)
High support	48 (12.7%)	329 (87.3%)			Ref

#Likelihood Ratio; *p-value significant at <0.05, ** significant at p<0.01, *** significant at <0.001

Table 5: Association of Self-esteem with student's socio-demographic characteristics

Categories	Self-esteem		χ ²	p-value
	Low Self-esteem	High Self-esteem		
Age (n=618)				
Adolescent (≤19 years)	25 (22.9%)	84 (77.1%)	0.196	0.658
Adult (≥20 years)	107 (21.0%)	402 (79.0%)		
Gender (n=618)				
Male	45 (19.3%)	188 (80.7%)	0.932	0.334
Female	87 (22.6%)	298 (77.4%)		
Family Type (n=618)				
Nuclear	88 (21.7%)	317 (78.3%)	0.095	0.757
Joint	44 (20.7%)	169 (79.3%)		
Living accommodation (n=618)				
Family home	71 (19.9%)	286 (80.1%)	5.095#	0.165
Rented house	53 (26.0%)	151 (74.0%)		
At hostel	5 (12.8%)	34 (87.2%)		
At relatives	15 (83.3%)	3 (16.7%)		
Living with (n=618)				
Family	83 (19.8%)	336 (80.2%)	4.576#	0.206
Alone	31 (29.2%)	75 (70.8%)		
Relatives	3 (16.7%)	15 (83.3%)		
Friends	15 (20.0%)	60 (80.0%)		
Education level of Father (n=618)				
No formal schooling	3 (6.8%)	41 (93.2%)	10.326	0.016*
Primary 1-5 year	31 (28.2%)	79 (71.8%)		
Secondary or higher secondary 6-12	64 (19.5%)	264 (80.5%)		
University education	34 (25.0%)	102 (75.0%)		
Education level of Mother (n=618)				
No formal schooling	26 (20.6%)	100 (79.4%)	1.231	0.746
Primary 1-5 year	43 (23.9%)	137 (76.1%)		
Secondary or higher secondary 6-12	55 (19.8%)	223 (80.2%)		
University education	8 (23.5%)	26 (76.5%)		

#Likelihood Ratio; *p-value significant at <0.05,

13.3% respectively. Furthermore, in case of academic performance, almost 27 percent of the participants refused to disclose their academic performance and of those who responded 333 (67%) reported to have regularly passed all board exam. A total of 70 (11.3%) students reported having a family history of psychiatric disorder in last three generations and almost two-third (64.7%) of the students reported to have higher level of perceived social support (Table 2).

When the total computed scores of Rosenberg self-

esteem scale was analyzed with the total computed scores of Depression Anxiety Stress Scale (DASS) sub-scale for Depression, Anxiety and Stress a significant Pearson correlation was observed at $p < 0.01$. A negative correlation existed between self-esteem scores and depression, anxiety and stress scores suggesting that as the level of Self-esteem increases these mental health attributes decreased and as the Self-esteem score decrease the level of Depression, anxiety and stress increase. In contrast, a positive correlation was observed between depression, anxiety and stress suggesting

that increase in any of these attributes were likely to increase other and vice versa (Table 3).

It was found that there was no statistical relationship existing between students' socio-demographic characteristics such as age, gender, living accommodation and the students' level of self-esteem. However, a statistically significant relationship was established between student's self-esteem and the education of their father at $p < 0.05$, where students whose father had higher education had a higher level of self-esteem as compared to those students whose father had a lower level of education (Table 4).

It was observed that academic discipline pursued by the students had no influences over their level of self-esteem as no statistical relationship was observed between student's academic courses and their self-esteem. However, the students who had a poor academic performance and failed any of the board exams they appeared in were found to be 2.140 ($p < 0.01$; 95% CI 1.385-3.307) times more likely to have lower level of self-esteem. Likewise, students with a family history of any psychological disorder in past three generations had 4.337 ($p < 0.001$; 95% CI 2.586-7.274) times more odds of having low self-esteem in reference to those students without any family history of psychological disorder. Similarly, the students' self-esteem was highly influenced by their perceived level of social support from overall society, their loved ones, family and friends at $p < 0.001$ when measured with Multidimensional Scale of Perceived Social Support and its subscales (Table 5).

DISCUSSION

In this study we found that almost one-fourth of the sampled undergraduate students had a low level of self-esteem i.e. the prevalence of low self-esteem in this student group was about 21.4%. Similar prevalence rate of low self-esteem was observed among university students in Iran at 22.8%.¹² Similarly, in case of secondary school setting, a study conducted among secondary level students in Vietnam noted the rate of low self-esteem at 19.4%.¹³ However, a cross-sectional study from 2012 performed among Kathmandu University students of Nepal noted that a higher rate of low self-esteem exists among the nursing students at 78%.¹⁴

The academic performance of the students was found to be significantly associated with self-esteem in this study. Similar observation was

shared by a study among secondary school students of Vietnam where the students who had below average or poor results were found to be 3.17 (UOR 3.17; 95% CI: 1.60-6.28) times more likely to have low self-esteem than those who had excellent or good results.¹³ This can be due to a two-way relationship existing between self-esteem and academic performance. The higher academic performance might increase students' feeling of self-worth leading to higher self-esteem and higher self-esteem might increase students' confidence and problem solving skills leading towards higher academic performance. This fact was also supported by a study performed among pre-university students where students' level of self-esteem was significantly correlated with the students' academic achievement.¹⁵ Thus, the relationship between self-esteem and academic achievement is reciprocal in nature.¹⁶ However, a cross-sectional study design cannot explain the causal relationship existing between these attributes so a prospective study aiming at identification of causality of low self-esteem would be appropriate in future research.

In this study it was also observed that students who had higher level of perceived social support from their loved ones, family and friends had a higher level of self-esteem and those who had lower perceived social support had a low self-esteem. Similar result was observed by the study based on nursing students in Nepal where perceived family support was positively correlated with self-esteem.¹⁴ Family members and peers can primarily influence person's self-worth as they highly contribute over how one views him/herself in others' eyes. Family members are the major source of support for person and can shape a person's personality and self-worth by providing positive feedbacks, motivations, appraisal and support. Moreover, social support can also play a positive role to relieve the adverse impact of poor family function on self-esteem.¹⁷ Furthermore, a study based on university students of China noted that self-esteem fully mediates the relationship between social support and academic achievement and the relationship between social support and emotional exhaustion in a path analysis.¹⁸

With regards to mental health, based on Pearson correlation analysis we found that self-esteem is negatively correlated with the level of depression, anxiety and stress experienced by the students. Similar negative correlation between self-esteem level and level of depression, anxiety and stress among students has been expressed by several

studies.^{13, 19-21} Furthermore, positive self-esteem has been established as a dominant predictor of happiness.²² Therefore, it can be said that low self-esteem contributes significantly to anxiety, depression and stress among students and screening for low self-esteem among students can possibly be a good strategy to identify students at risk of mental health problems and other social and behavioral problems. However, in this study the psychosocial environment of the schools was not assessed. The psychosocial environment can also be a potential confounder to our findings because the social situations and classroom climate has been linked with student's overall health and self-worth in other studies.^{23,24}

Limitations: Though this study is one of those few studies that have assessed the level of self-esteem among university students of Nepal, this study is not free from its limitations. So, the findings of this study should be interpreted based on these limitations. This study is a small cross-sectional study which was carried out in one of the metropolitan areas of Nepal so the findings of this study might not be generalizable to the entire Nepalese undergraduates who might have different attributes. Furthermore, as this is a cross-sectional study design, we cannot establish any causal relationship between any dependent and independent variables. Thus, a prospective study aiming at identification of causality of low self-esteem would be appropriate in future research.

CONCLUSION

In this study around one in five (21.4%) undergraduate students had a low self-esteem. Student's level of perceived social support from their loved one, family and peer, family history of psychological disorder in past three-generation and students' academic performance was found to be associated with student's self-esteem. Moreover, a significant level of negative correlation exists among students' self-esteem and the level of psychological distress namely, depression, anxiety and stress experienced by the students. Therefore, the college/campuses and families should play an important role to increase student's perception towards their level of social support and adopt strategies to increase students' self-esteem which aids to reduce their risks of acquiring any mental health problems in near future.

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