Original Research Article

Stress among Proficiency Certificate Level (PCL) Nursing Students in Kathmandu

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ABSTRACT

Introduction: Stress is a psychological state that can blight the capabilities of nursing students. Frequent clinical rotation, packed classroom teaching, less recreational activities, workload and assignment might lead them develop psychological stress. Early identification of stressors and management of stress is essential to prevent negative consequences. Thus, our study aimed at finding the prevalence and contributors of stress among the PCL nursing students.

Method: We used descriptive cross-sectional study design with cluster random sampling. We selected four CTEVT (Council for Technical Education and Vocational Training) affiliated nursing colleges for the study. Total sample size was 443. We used Perceived Stress Scale (PSS-10) to identify the prevalence of stress. Bivariate and multiple linear regression analysis were used to estimate contributing factors.

Result: The mean perceived stress score was 20.9. Prevalence of high and moderate level stress was 11.5% and 81.9% respectively. Contributors of moderate and high level of stress were lack of skill to communicate with patients (P-0.002); inflexible clinical practice (P- <0.001); night shift duty (P-0.014); gap between academic objective and clinical work (P 0.046); low quality of clinical practice (P-0.020); unfriendly teachers (P-0.025); assignments beyond students' capacity (P - <0.001); and total study hour at home (P- <0.001).

Conclusion: Moderate level of perceived stress was prevalent among the PCL nursing students. Inflexible clinical practice, night shift duty, low quality clinical practice; gap between academic objectives and clinical work and, unfriendly teachers; assignments beyond students' capacity and total study hour at home were the contributors.

Keywords: Kathmandu, Nursing Students, Proficiency Certificate Level, Stress

BACKGROUND

Stress is one of the psychological features that influence the academic performance and wellbeing of students[1]. Furthermore, it can lead to psychological distress, physical complaints, and behavioral problems[2]. It is more common among nursing students compared to other health-science students since they need to interact with different people in an environment that is considered as highly stressed[3]. A study showed highest percentage of nursing students suffered from stress compared to BDS and MBBS students and needed to explore the causes of stress among nursing students [4,5]

Stressors in nursing students shown by previous studies were maintaining balance between clinical work and studying; fear of making mistake in clinical placement; criticism from peers and senior staffs; inadequate equipments; inadequate information about patients from doctors; getting lower grades, inability to balance

study and leisure time; lack of recreational facilities[1]; making a mistake in work and harming the patient; being in a situation where the student does not know what to do; and confusing treatment[6]. Furthermore, demanding nature of curriculum, assignment, workload, teachers and clinical environment are causing stress to nursing students[7].

PCL students are beginner in nursing education in Nepal. In other hand, most of the PCL nursing students belong to adolescent as they enroll immediately after SEE (Secondary Education Examination). According to World Health Organization (WHO) one in seven adolescent experiences mental health conditions. [8]

Knowledge of the stressors and their severity among nursing students can be helpful in effective management and counseling[9]. The aim of the present study was to identify the prevalence of stress among PCL nursing students and its contributing factors.

METHODS AND MATERIAL

This descriptive cross-sectional study was conducted among Proficiency Certificate Level (PCL) nursing students of Kathmandu district. We selected four out of 18 CTEVT (Council for Technical Education and Vocational Training) affiliated nursing colleges in Kathmandu district[10] using cluster random sampling technique. The sample size was calculated assuming population proportion at 50% [11] with confidence level 95%, absolute precision 5%. Non-response rate and student absent rate at 10% and 5% respectively was added to the sample. The final sample size was 443

All the nursing students available at the time of data collection were included in the study except the students with ANM (Auxiliary Nurse Midwife) background as they have already experienced clinical practice before. The total numbers of student ranged in a college was between 116 and 120 including first, second and third year. However, the participation was ranged

between 100 and 116 in a college excluding absent, ANM and not willing to participate.

We used self administered questionnaire for data collection. The questionnaires which were incompletely filled out on the questions of Perceived Stress Scale and the Possible Stressor were discarded; however, the questionnaires which had missing information on socio-demographic part were included. We found missing information was on age, ethnicity and grade obtained in SEE.

We used ten item Perceived Stress Scale (PSS-10) as it is a reliable and valid instrument for assessment of perceived stress in college students [12]. It is a five point Likert scale scored as 0 for never; 1 for almost never; 2 for sometimes; 3 for fairly often and 4 for very often. Among 10 statements, four (4th, 5th, 7th and 8th) are positive (reverse scoring 4 to 1) and rests of other are negative statements

For measuring the contributors, we developed a five point Likert scale putting together the possible stressors. It had 43 questions.

After collection of data, we checked it for completeness. We entered the data in Epi-data and exported to SPSS-16 for analysis. Shapiro-wilk test was done to test the normality of data. Data were not normally distributed. The association between total PSS score and each question of Possible Stress Scale was measured with bivariate and multiple linear regression analysis. Multicollinearity was assessed and there were no any problems related to collinearity as indicated by Variance Inflation Factor less than 10 [13]. We performed bivariate linear regression analysis between individual score of possible stressors and perceived stress score. The variables which were significant in 95% confidence interval were kept in a model for multiple linear regressions. Model was fit as indicated by ANOVA p-value less than 0.001. We performed bivariate logistic regression analysis for analyzing categorical variables.

The study caused no any physical and psychological harm to participants. Participation in the study was voluntary. The formal written permission was taken from respective campus authority and written informed consent was taken from the participants. The national ethical guideline was followed [14]. We took ethical approval from the Institutional Review Committee of Manmohan Memorial Institute of Health Sciences (Ref. No.77/172).

RESULTS

The mean age of the participants was 18.9 with a standard deviation of 1.8 (n-442). Majority of the participants (57.1%) were of Bhramin/Chhetri ethnicity (n-424). Most of them (90.5%) belonged to Hindu religion; a very few (1.4%) belonged to Kirat. Almost all (97.5%) were unmarried. Highest numbers of students (74.2%) were living with their parents and minorities (2.5%) were living in rental room without parents.

More than two third (36.3%) of participants were from PCL nursing third year; more than half (56.8%) obtained A/A+ grade in SEE exam (n-438). Nearly half (47.8%) studied less than 3 hours in a day (Min: 30 min, Max: 8 hr, n-393). Majority of the participants (74.5%) had their own interest for studying nursing.

The mean perceived stress score of 443 nursing students was 20.9 (SD=5.1), with a median of 21(IQR=18-24). The prevalence of high level and moderate level stress was 11.5% and 81.9% respectively.

Bivariate logistic regression analysis showed no any significant relationship of perceived stress with marital status; interest for studying nursing; and academic year of study.

Table 1: Response to Perceived Stress Score

S.N	Statements	0 (Never)	1 (Almost never)	2 (Sometimes)	3 (Fairly often)	4 (Very often)	Mean	SD
1	In the last month, how often have you been upset because of something that happened unexpectedly?	34(7.7)	54(12.2)	176(39.7)	107(24.2)	72(16.3)	2.3	1.1
2	In the last month, how often have you felt that you were unable to control the important things in your life?	91(20.5)	64(14.4)	147(33.2)	101(22.8)	40(9.0)	1.8	1.2
3	In the last month, how often have you felt nervous and "stressed"?	16(3.6)	46(10.4)	143(32.3)	134(30.2)	104(23.5)	2.6	1.1
4	In the last month, how often have you felt confident about your ability to handle your personal problems?*	65(14.7)	168(37.9)	138(31.2)	52(11.7)	20(4.5)	1.5	1.0
5	In the last month, how often have you felt that things were going your way? *	31(7.0)	78(17.6)	187(42.2)	84(19.0)	63(14.2)	2.2	1.1
6	In the last month, how often have you found that you could not cope with all the things that you had to do?	58(13.1)	85(19.2)	166(37.5)	91(20.5)	43(9.7)	1.9	1.1
7	In the last month, how often have you been able to control irritations in your life? *	40(9.0)	98(22.1)	181(40.9)	94(21.2)	30(6.8)	1.9	1.1
8	In the last month, how often have you felt that you were on top of things? *	24(5.4)	53(12.0)	176(39.7)	116(26.2)	74(16.7)	2.4	1.1
9	In the last month, how often have you been angered because of things that were outside of your control?	53(12.0)	78(17.6)	142(32.1)	94(21.2)	76(17.2)	2.2	1.2
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	65(14.7)	79(17.8)	147(33.2)	87(19.6)	65(14.7)	2.1	1.2

*Reverse scoring

Table 2: Common Stressors Perceived by Nursing Students n-443

Model	Characteristics	ß	SE	T	P-value	VIF
1	Lack of care and guidance from teachers	0.51	0.31	1.67	0.101	8.36
	Do not know how to communicate with patients	1.05	0.31	3.38	*<0.001	5.99
	Inflexible clinical practice	0.94	0.28	3.33	*<0.001	8.19
	Assignments beyond students' capacity	1.32	0.25	5.32	*<0.001	6.94
	Nursing staffs are not willing to help students in clinical learning	0.67	0.30	2.26	*0.022	7.22
	Night shift duty	0.83	0.24	3.43	*<0.001	7.83
	Gap between academic objectives and clinical work	0.47	0.29	1.64	0.101	8.11
	Low quality of clinical practice	0.69	0.28	2.43	*0.021	9.38
	Taking care of too many patients	0.26	0.31	0.85	0.402	8.75
	Unfriendly teachers	0.65	0.30	2.14	*0.031	7.96
	Clinical practice affecting students' involvement in extracurricular activities	0.78	0.26	3.07	*<0.001	7.87

*Significant at 95% confidence interval. P-value obtained from multiple linear regression analysis, R^2 (Predictability) =0.939or 93.9%
Model fitness (p-value:<0.001) dependant: Perceived Stress

Table 2 shows that at 95% confidence level, all others factors that were significant in bivariate analysis are determining factors for perceived stress except the factors: "lack of care and guidance from teachers", "gap between academic objectives and clinical work" and "taking care of too many patients". Model is fit at 95% confidence level using ANOVA and it is able to predict 93.9% about perceived stress.

Table 3: Common Stressors Perceived by Nursing Students after Intervention of Moderation   n=443

Model	Characteristics	ß	SE	T	P-value	VIF
2	Lack of care and guidance from teachers	0.49	0.29	1.66	0.101	8.36
	Lack of skill to communicate with patients	0.94	0.30	3.11	*0.002	6.27
	Inflexible clinical practice	1.07	0.27	3.94	*<0.001	8.28
	Assignments beyond students' capacity	1.23	0.24	5.16	*<0.001	7.04
	Nursing staffs are not willing to help students in clinical learning	0.53	0.29	1.82	0.068	7.32
	Night shift duty	0.58	0.24	2.46	*0.014	8.30
	Gap between academic objectives and clinical work	0.55	0.28	2.00	*0.046	8.23
	Low quality of clinical practice	0.64	0.27	2.33	*0.020	9.41
	Taking care of too many patients	0.21	0.29	0.72	0.469	8.92
	Unfriendly teachers	0.65	0.29	2.25	*0.025	7.96
	Clinical practice affecting students' involvement in extracurricular activities	0.41	0.25	1.62	0.105	8.54
	Total study hour in a day at home	0.89	0.16	5.36	*<0.001	4.02

*Significant at 95% confidence interval. P-value obtained from multiple linear regression analysis, R^2(Predictability) =0.939or 93.9%
Model fitness (p-value: <0.001) dependant: Perceived Stress

Table 3 depicts that the contributors of perceived stress were: "lack of skill to communicate with patients", "inflexible clinical practice", "assignments beyond students' capacity", "night shift duty" "gap between academic objectives and clinical work", "low quality of clinical practice", "unfriendly teachers" and "hour of study at home".

After intervention of moderating variable, the effect of factor, "nursing staffs are not willing to help us in clinical learning" has also been reduced (p-value changed from 0.02 to 0.07). However, the effects of 'clinical works not matching with academic objectives' had increased (p-value changed from 0.10 to 0.046).

Model is fit at 95% confidence level using ANOVA and it is able to predict 94.4% about perceived stress.

DISCUSSION
This study assessed the prevalence of stress among the nursing students and also identified the contributing factors of stress. Findings of this study might be useful to educational institution for minimizing or eliminating the stressors among PCL nursing students by timely identifying the possible stressors. In addition, findings might give insight to nursing teachers for minimizing their unfriendly behavior towards the students.

This study showed 11.5% prevalence of high level stress and 81.9% the moderate level stress among PCL

nursing students whereas the studies from Spain and Sri Lanka showed 47.9% and 82.6% prevalence of stress respectively [15,16] Furthermore, a study among Iranian nursing students showed 54.5% moderate level stress, and 36.7% high level perceived stress [17]. In this study, the mean stress score was 20.9. Whereas, a study among the nursing students of Saudi Arabia found that 52.5% had stress score above mean[18]. Based on mean score, all of the above mentioned study showed moderate level stress among nursing students including ours.

Current study showed lack of students' skill to communicate with patients as one of the contributing factors of perceived stress. The finding is in harmony with the study from Egypt and Saudi Arabia [19,20]. Further, inflexible clinical practice and assignments beyond students' capacity were significantly associated with perceived stress, which is in line with the studies from Macao [21] and Saudi Arabia[20,18]. Further, a study from Philippines showed relationship between assignments beyond students' capacity and perceived stress [22].

This study revealed the gap between academic objectives and clinical work as a contributing factor of perceived stress. This is in harmony with the findings of a study from Saudi Arabia [20]. In addition, low quality of clinical practice was significantly associated with perceived stress in multiple linear regressions which is concord with the findings from a study in Iran [17]. Many nursing colleges in Nepal do not have their own hospital for clinical practice. Some colleges have their own hospital but they do not have sufficient patient occupancy. Moreover, they do not have specialty services so that the specialty practicum (psychiatry, pediatric, cancer, maternity, eye etc) are done in other hospitals where the students do not get opportunity to practice well due to less numbers of patients compared to student.

Moreover, another contributor of perceived stress was "unfriendly teachers". Similarly, the studies from Pokhara, Nepal [23] and Saudi Arabia [20] found relationship between teachers' behavior and perceived stress among nursing students.

We found 'study hour at home' as a contributor of perceived stress among nursing students. Moreover, this study showed 'night shift duty' as a contributor of perceived stress.

Present study revealed no any association between interest for studying nursing and perceived stress. This is in harmony with the findings of a study from Sri-lanka which showed no any association between interest in nursing study and perceived stress [16]. However, a study from Iran showed significant relationship between stress and interest on nursing study [17].

In this study, we found no any association between academic year of students and perceived stress. Contrary to this, studies from Iran and Saudi Arabia showed significant differences in level of stress between senior and fresh students [17,18]

This study showed no any significant relationship between students' age and perceived stress. This is in line with the finding of a study from Kavre, Nepal and India [7,24]. However, a study from Sri-Lanka showed significant relationship between stress and age of students [16].

Our study did not show any relationship between marital status of the students and stress. Contrary to this, studies from Saudi Arabia and India showed significant relationship [18,24]. As in our study, only 2.5% students were married, this could be the reason for not being associated with perceived stress.

CONCLUSIONS

Majority of PCL nursing students had moderate level of perceived stress. Contributors of moderate and high level of stress were lack of skill to communicate with patients; inflexible clinical practice; night shift duty; gap between academic objective and clinical work; low quality of clinical practice; unfriendly teachers; assignments beyond students' capacity and study hour at home. It would be better if

educational institutions strive to minimize or eliminate the stressors among nursing students.

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