

ORIGINAL RESEARCH

A Comparative study to assess perceived stress and coping among BSc nursing students regarding annual and semester examination system, at selected nursing colleges, Punjab

¹Hemant Kumar Saini, ²Narendra Kumar Sumeriya, ³Hemlata Saini

¹Associate Professor, University College of Nursing, BFUHS, Sadiq Road, Punja, India

²Professor, Dasmesh College of Nursing, Faridkot, Punjab, India

³Nursing Tutor, Govt. College of Nursing, Alwar, Rajasthan, India

Corresponding Author

Hemant Kumar Saini

Associate Professor, University College of Nursing, BFUHS, Sadiq Road, Punja, India

Email: hemantpushp@gmail.com

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ABSTRACT

Aim: A Comparative study to assess perceived stress and coping among BSc nursing students regarding annual and semester examination system, at selected nursing colleges, Punjab. **Materials and methods:** A cross-sectional descriptive research was undertaken on Bachelor of Science in Nursing students from Punjab. The online questionnaire has three sections: sociodemographic data, a modified perceived stress scale, and a modified brief coping strategies scale. Participants were granted consent and informed of the study's objective via an online survey questionnaire. The questionnaire was self-administered and included socio-demographic information, the Perceived Stress Scale, and the Brief Coping Strategies Scale. The participants were given an email address to express their views or correspond with the writers. Participants who choose not to complete the questionnaire for personal reasons were allowed to withdraw from the research. Data was collected from a sample of 200 students. **Results:** The stress levels of students, with a mean of 34.62 ± 3.64 for the semester and 29.12 ± 2.74 for the yearlong period. The level of stress experienced by students throughout the semester and annual examinations varies. Mild stress was reported by 5 students during the semester and 4 students during the annual exams. Moderate stress was reported by 50 students during the semester and 85 students during the annual exams. Severe stress was reported by 45 students during the semester and 11 students during the annual exams. The Coping scores of students under the semester and yearly test systems. The Low scores are 7 and 11, the Moderate scores are 77 and 84, and the High scores are 16 and 5. **Conclusion:** Our research determined that evaluating the stress levels of students during test preparation was a useful method to identify variables associated with exam-related stress. Hence, it would be advantageous to familiarize oneself with the first indications of stress and techniques to manage exam-related stress.

Keywords: Stress, Coping score, Nursing students, Semester system, Annual system

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INTRODUCTION

The nursing specialization comprises a combination of academic and practical courses that mutually encourage and bolster one another. The theoretical component, which takes place in classrooms via lectures, case studies, and guided discussions, is enhanced by clinical training to allow students to apply and cultivate the information, skills, attitudes, and values taught in classrooms and laboratories. Moreover, clinical training facilitates the acquisition of clinical skills, the application of theoretical

knowledge in practical settings, and the broadening of students' professional aspirations[1]. Recently, clinical instruction in nursing has been enhanced due to technological advancements and the evolving healthcare contexts. The use of certain technology, such as high-fidelity simulators, and instructional strategies, such as organized scenarios, into nursing courses offers several benefits in improving students' knowledge and abilities. However, the acquisition of information and skills occurs via the practical application with real patients in clinical environments,

which is more advantageous[2]. Professional health courses are known to be demanding and stressful, requiring rigorous training and the capacity to handle extremely stressful conditions. Globally, the estimated prevalence rates of stress among health professional students range from 14.3% to 56% [3]. Nurses are essential to the functioning of the health-care system, and being a skilled nurse requires rigorous training starting from the first day of nursing school or college. Throughout the whole period of their training, nursing students often encounter difficult circumstances. A multitude of pressures, including academic demands, adapting to college and hostel, being apart from home, and managing diverse patient populations, significantly jeopardize the well-being of students[4-6]. The stress experienced during nursing training is further intensified by factors such as job transition, role demand, and ambiguity[7]. Chronic stress arising from several factors often impacts the well-being of students and may result in psychological anguish and psychosomatic ailments. The pupils' perception of stress and their capacity to manage stress are mostly influenced by the coping techniques they use. Students who view their stress levels as very high and are unable to adequately manage the situation are more susceptible to various physical and psychological health problems[8-10]. Inadequate coping mechanisms might hinder the successful navigation of the problems inherent in the nursing profession. A multitude of research studies have been undertaken globally to tackle this significant problem, but, there is a scarcity of data specifically from Punjab, India.

The present research aimed to evaluate stress levels and coping mechanisms among nursing students enrolled in a Nursing College in Punjab.

MATERIALS AND METHODS

Cross-sectional descriptive research was undertaken on Bachelor of Science in Nursing students from Punjab. The online questionnaire has three sections: sociodemographic data, a modified perceived stress scale, and a modified brief coping strategies scale.

Sociodemographic Data: The survey includes inquiries on fundamental parameters such as gender, age, type of examination system, qualification of parents, religion, living arrangements (with family or in a hostel), family status, and among others.

Perceived Stress Scale: The Perceived Stress Scale was established by Sheldon Cohen in 1983[11]. The Perceived Stress Scale (PSS) is a very prevalent psychological tool used for assessing individuals' sense of stress. The measure also incorporates many specific inquiries on the present levels of perceived stress. The items are comprehensible, and the answer possibilities are easily comprehensible. Furthermore, the questions are of a generic character and thus do not include specific information related to any

particular subgroup. The inquiries on the PSS pertain to emotions and cognitions experienced during the previous month. For each scenario, participants are queried on the frequency with which they experienced a certain emotion. The level of stress among nursing students was assessed using a previously validated perceived stress scale (PSS), which demonstrated a high level of internal consistency with a Cronbach's α value of 0.85. The scale produced a singular score, where larger scores indicated elevated levels of stress and lower scores indicated reduced levels of stress[12].

Brief Coping Strategy Scale

The Brief-COPE is a 28-item self-report questionnaire specifically created to assess both successful and poor strategies for dealing with a stressful life event[13]. The term "coping" has a wide definition, referring to the many strategies used to reduce the emotional burden caused by unfavorable life events. The scale may assess an individual's predominant coping strategies, including Emotion Focused Coping, Problem Focused Coping, Adaptive Coping, and Maladaptive Coping. Authenticity: The Brief-Cope is a condensed version of the original COPE scale, which consisted of 60 items and was established by Carver et al. (1989). The COPE scale was created by drawing on several coping strategies to provide a theoretical foundation. The Brief-Cope was first validated on a sample of 200 individuals from a community who had been affected by a storm (Carver, 1997). The study demonstrated that the Brief-Cope had a satisfactory factor structure.

METHODOLOGY

Approval was received from the nursing department to conduct the research and ethical clearance was acquired. Participants that met the specified requirements were picked using convenient sampling. Participants were granted consent and informed of the study's objective via an online survey questionnaire. The questionnaire was self-administered and included socio-demographic information, the Perceived Stress Scale, and the Brief Coping Strategies Scale. The participants were given an email address to express their views or correspond with the writers. Participants who choose not to complete the questionnaire for personal reasons were allowed to withdraw from the research. The individuals completed the questionnaire, and additional analysis was conducted. The collected data was kept confidential and used only for research purposes. Data was collected from a sample of 100 people.

STATISTICAL ANALYSIS

The data obtained were structured descriptively, including information such as the student's age, gender, and year of study. The data were then analyzed and presented in tabular form as a percentage distribution. The average score and

standard deviation were calculated for each of the variables being studied, including research measures, year in college, gender, age, religion, qualification, family type, parents' employment, comorbidity in the family, and current location of residence. Perceived stress and coping techniques were subjected to

inferential statistical analysis. The average score and standard deviation were calculated. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) statistical software, specifically version 25.0.

RESULTS

Table 1 Sociodemographic parameter of the participants

Parameter	Parameters	Annual	Percentage	Semester	Percentage
Age(Yrs)	17–20	37	37	35	35
	21–25	45	45	48	48
	26&above	18	18	17	17
Gender	Male	38	38	42	42
	Female	62	62	58	58
Religion	Hindu	23	23	19	19
	Punjabi	55	55	57	57
	Muslim	6	6	7	7
	Christian	15	15	16	16
	Others	1	1	1	1
Residingpresently	Hostel	57	57	55	55
	With family	33	33	31	31
	With relatives	7	7	10	10
	Others	3	3	4	4
Qualification of parents	Higher secondary	27	27	26	26
	Graduation	54	54	53	53
	Postgraduation	19	19	21	21
Typeoffamily	Joint	45	45	42	42
	Nuclear	55	55	58	58
Parentoccupation	Govt.employee	22	22	21	21
	Pvt.Employee	39	39	42	42
	Self employee	34	34	31	31
	Unemployed	5	5	6	6
Comorbidity in family	Present	21	21	19	19
	Absent	79	79	81	81

Table 2 displays the stress levels of students, with a mean of 34.62±3.64 for the semester and 29.12±2.74 for the yearlong period. The level of stress experienced by students throughout the semester and annual examinations varies. Mild stress was reported by 5 students during the semester and 4 students

during the annual exams. Moderate stress was reported by 50 students during the semester and 85 students during the annual exams. Severe stress was reported by 45 students during the semester and 11 students during the annual exams.

Table 2 Comparison of stress level among students of semester and annual system of examination

Parameter	Semester	Annual	Diff 95% CI	p-value	t/chi-square value
Stress	34.62±3.64	29.12±2.74	5.23(3.32- 6.86)	<0.0001**	4.75
Mild	5	4			
Moderate	50	85		0.001	7.24
Severe	45	11			

Table 3 Comparison of Coping score among students of semester and annual system of examination

Copingscore	No of students	Percentage	No of students	Percentage	P value
28–56(Low)	7	7	11	11	0.001
57–84(Moderate)	77	77	84	84	
85–112 (High)	16	16	5	5	

Table 3 displays the Coping scores of students under the semester and yearly test systems. The Low scores

are 7 and 11, the Moderate scores are 77 and 84, and the High scores are 16 and 5. Tables 4 and 5 illustrate

the correlation between the demographic profile and stress levels and coping mechanisms among students in both the semester and yearly assessment systems.

Table 4 Association of demographic profile and stress level among students of semester and annual system of examination

Parameter	Parameters	Annual	Mild	Moderate	Severe	Semester	Mild	Moderate	Severe	Chi-square	p-value
Age(Yrs)	17–20	37	2	20	15	35	1	30	4	2.42	0.001
	21–25	45	3	22	20	48	2	41	5		
	26&above	18	0	8	10	17	1	14	2		
Gender	Male	38	2	16	20	42	2	35	5	3.38	0.14
	Female	62	3	34	25	58	2	50	6		
Religion	Hindu	23	1	14	8	19	1	16	2	5.21	0.31
	Punjabi	55	2	38	15	57	1	47	3		
	Muslim	6	1	2	3	7	1	4	2		
	Christian	15	1	7	7	16	1	12	3		
	Others	1	0	0	1	1	0	0	1		
Residing presently	Hostel	57	2	30	25	55	1	49	5	4.44	0.13
	With family	33	2	15	16	31	1	27	3		
	With relatives	7	1	4	2	10	1	7	2		
	Others	3	0	1	2	4	1	1	2		
Qualification of parents	Higher secondary	27	2	15	10	26	1	22	3	5.86	0.22
	Graduation	54	2	25	27	53	2	44	7		
	Postgraduation	19	1	10	8	21	1	19	1		
Type of family	Joint	45	2	22	21	42	2	36	4	4.39	0.32
	Nuclear	55	3	28	24	58	3	48	7		
Parent occupation	Govt. employee	22	1	12	9	21	1	19	1	5.97	0.24
	Pvt. Employee	39	1	26	12	42	2	36	4		
	Self employee	34	1	11	22	31	1	26	4		
	Unemployed	5	2	1	2	6	1	3	2		
Comorbidity in family	Present	21	1	5	15	19	1	14	4	5.63	0.38
	Absent	79	4	45	30	81	4	70	7		

Table 5 Association of demographic profile and coping score among students of semester and annual system of examination

Parameter	Parameters	Annual	Mild	Moderate	Severe	Semester	Mild	Moderate	Severe	Chi-square	p-value
Age(Yrs)	17–20	37	3	28	6	35	3	30	2	1.76	0.001
	21–25	45	3	35	7	48	5	41	2		
	26&above	18	1	14	3	17	3	13	1		
Gender	Male	38	3	29	6	42	4	36	2	2.74	0.19
	Female	62	4	48	10	58	7	48	3		
Religion	Hindu	23	2	16	5	19	2	17	0	4.48	0.25
	Punjabi	55	2	45	8	57	5	49	3		
	Muslim	6	2	2	2	7	2	4	1		
	Christian	15	2	12	1	16	1	14	1		
	Others	1	1	0	0	1	1	0	0		
Residing presently	Hostel	57	4	44	9	55	5	48	2	4.54	0.29
	With family	33	1	28	4	31	4	25	2		

	With relatives	7	1	4	2	10	1	8	1		
	Others	3	1	1	1	4	1	3	0		
Qualification of parents	Higher secondary	27	2	22	3	26	3	22	1	6.36	0.11
	Graduation	54	3	41	10	53	5	46	2		
	Postgraduation	19	2	14	3	21	3	16	2		
Type of family	Joint	45	3	34	8	42	4	36	2	4.89	0.54
	Nuclear	55	4	43	8	58	7	48	3		
Parent occupation	Govt. employee	22	2	14	6	21	1	20	0	4.73	0.11
	Pvt. Employee	39	2	32	5	42	4	36	2		
	Self employee	34	1	30	3	31	4	26	2		
	Unemployed	5	2	1	2	6	2	3	1		
Comorbidity in family	Present	21	2	16	3	19	3	15	1	6.82	0.65
	Absent	79	5	61	13	81	8	69	4		

DISCUSSION

Student nurses often encounter many stressors throughout their training, and if they do not use effective coping strategies, it may result in physical, psychological, intellectual, and social difficulties in their lives. Students exhibited a significant level of felt stress. Approximately 67.5% of the students indicated experiencing a moderate degree of stress in their daily college life. In 2013, Singh et al. performed a study in Haryana, India which found that nursing undergraduate students in the middle period of their degree had significant psychological distress[5].

The present study's results have indicated interface concerns and academic workload as significant contributors to stress. A considerable proportion of students experience stress as a result of the attitudes of other professions towards nursing, a lack of leisure time, and anxiety over examinations. The results align with the findings of prior research done by Shukla et al. [14] in 2012 and Eldeeb et al. [15] in 2014, which also identified academic stress as the primary source of stress. Al-Dubai et al.[16] from Malaysia and Hamill C[17] from Ireland performed further research, which identified concern about the future and financial troubles as the primary sources of stress.

The present research demonstrated that students often used adaptive coping strategies rather than maladaptive ones. Students mostly prioritized positive tactics such as active coping, positive reframing, and planning to manage their daily stress. This discrepancy contradicts the findings of previous studies conducted by Shiferaw et al.,[7] Ab Latif R,[18] Wejdan et al.[19] and Singh et al.,[20] which identified the utilization of unhealthy coping mechanisms such as avoidance, blaming, problem-solving, optimism, and leisure activities as the primary coping strategies.

The experience of stress and the use of coping mechanisms are closely linked to and influenced by

several circumstances. The results of the current investigation indicated that only a strong interest in nursing was found to be significantly correlated with the amount of stress. The research found that students that were interested in nursing mostly used adaptive coping techniques, in contrast to not-interested students. In their 2015 research, Shiferaw et al. discovered a notable correlation between family size, responsibility, and the deliberate decision of pursuing a nursing profession with the stress levels and coping strategies of students ($P < 0.05$)[7].

The results of this research align with the findings of both a Jordanian and an American study about coping strategies[21]. Students extensively used the coping technique of avoidance to manage stresses related to assignments and patient care, interactions with peers, and interactions with instructors and clinical personnel. Students predominantly used problem-solving as a more effective approach to cope with pressures arising from coursework, patient care, surroundings, and interactions with instructors and clinical personnel. The use of these tactics may be elucidated by the fact that they are the most straightforward for pupils and aligned with their own dispositions. An integrative study found that nursing students had a preference for employing problem-solving approaches rather than emotion-focused coping strategies[22]. Students effectively used two additional methods, namely maintaining a positive outlook and using transference, to manage stress associated with assignments, patient care, their surroundings, social relationships, and daily occurrences, as well as interactions with educators and clinical personnel. These associations exhibited similarities to those reported in the previously stated Jordanian research. A research done on nursing students in three countries shown that alternative coping methods might be useful in managing and controlling stress[23].

CONCLUSION

Our research determined that evaluating the stress levels of students during test preparation was a useful method to identify variables associated with exam-related stress. Hence, it would be advantageous to familiarize oneself with the first indications of stress and techniques to manage exam-related stress.

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