Original Article

Level of Stresses and Coping Strategies in Management of Stress in Healthcare Undergraduates; Sri Lankan University Perspectives

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Abstract

University is the best platform which provides opportunities for undergraduates to develop their successful career. However, it is noticed that university life has become stressful for undergraduates due to different reasons. Stress is known as a serious issue which affects the performance of undergraduates of healthcare system. Coping strategies are in demand for managing stress in the context of delivering prudent healthcare professionals to the nation. This study aimed to identify the types of stressors and coping strategies practiced by healthcare undergraduates of University of Ruhuna, Sri Lanka. The study was based on a cross sectional survey. Data were collected from 343 healthcare undergraduates from Faculty of Medicine and Faculty of Allied Health Sciences, University of Ruhuna, having used stratified random sampling method and a self-administered structured questionnaire. Data were analysed using SPSS version 16.0 software. The study revealed that majority of undergraduates (98.8%) were affected by stress. The level of stress reported regarding examinations was very high (52.7%) compare to the other stressors. Results showed that the commonly practiced coping strategies were sleeping (93.6%) and talking to a friend/ meeting loved ones (89.8%). Results suggested that facilities rendered by two faculties including student counselling services (79.9%), mentoring programme (75.8%) and career guidance services (69.4%) were used by considerable number of undergraduates as coping strategies. There were statistical significant differences among coping strategies with regard to gender, year of study, faculty and degree programme. Our findings suggested that the majority of healthcare undergraduates in University of Ruhuna were affected by stress. The present study revealed that most of students used positive stress management strategies while some students used maladaptive coping strategies. The results provided valuable information for academics in healthcare undergraduate programmes and university administrators in supporting students with stress.

Keywords: Coping strategies, healthcare undergraduates, stress, university

Introduction

Stress is defined as any type of change that causes emotional, physical, or psychological strain [1]. All types of stresses are not harmful. Stress can be short-term or long-term with variety of symptoms. Acute stress is a very short-term type of stress that can either be positive or more distressing. Chronic stress is long-term which is never ending and inescapable [2]. Stress has become a serious issue in a variety of social, employment and academic settings [3]. The studentship of the

university is a stressful time for many students because they go through process of adapting to new educational and social environments. Transition of the status of the students from school to university may cause a psychological, academic and social shock due to the new/unfamiliar environment/ education system of the universities [3-6]. Researchers have documented the prevalence of stress to be high among university students [5] and this is even worse among healthcare professional students due to the trainings that expose them to stress. It is reported that the effects of stress could be reflected in student's social, mental health and academic performance [7]. Research studies conducted on stressors and their implications for both students and lecturers in the university environment have showed that stressors are increased over the years [3-11]. Healthcare undergraduate degrees are stressful programs of study due to complexity of academic curricula and clinical trainings [12,13]. Implementing stress-management techniques in these degree programs have a positive effect on student retention and their academic performances [14]. Every individual face event and circumstance in a way which is unique to them. Hence some will be able to adopt new circumstances and some may have end up with stress. People use different strategies consist of cognitive and behavioral efforts to tolerate, reduce the stress. These stress management strategies play a vital role in adaptation to stressful life events [15-17]. Use of correct stress management strategies helps to overcome stress while maladaptive rendered by the Faculty of Medicine and Faculty of Allied Health Sciences of University of Ruhuna for reducing the impact of stress. The sample size was calculated based on proportion in a single cross-sectional survey with the expected proportion was considered as 50% [19]. Since the estimated sample size was 384 for an absolute precision of 5%, 400 subjects were included accounting for 5% of

strategies reinforce stress [18]. Hence it is essential to identify types of stresses and stress management strategies used by healthcare undergraduates in order to help them to overcome the stress, maintain and achieve their academic goals. Although many studies on stress management have been conducted internationally, there are few studies conducted and reported on stress management among healthcare undergraduates of University of Ruhuna in Sri Lanka. Therefore, this study was aimed to identify the types of stresses faced by healthcare undergraduates of University of Ruhuna, Sri Lanka, and the coping strategies used to manage stress.

Materials and Methods

This is a descriptive cross-sectional study carried out among first year and final year students of Faculty of Medicine and Faculty of Allied Health Sciences, University of Ruhuna, Sri Lanka with the aim of identifying the types of stresses faced by healthcare undergraduates of the university and the coping strategies used to manage stress. Specific objectives were to assess stress and identify stressors among healthcare undergraduates, to determine coping strategies used by healthcare undergraduates, to compare coping strategies between healthcare undergraduates with regard to faculty, degree program, year of study and gender and to appraise facilities

non-respondents. Stratified random sampling method was used to include adequate and representative sample units from each stratum by considering that the first year and final year students have higher level of stress. All male and female first and final year (fifth year) undergraduates from Bachelor of Medicine and Bachelor of Surgery (MBBS) degree program and all male and female first and final year

(fourth year) undergraduates from Bachelor of Science (BSc.) in Nursing degree program, Bachelor of Pharmacy (B. Pharm) degree program and Bachelor of Science in Medical Laboratory Science (BSc. MLS) degree program who can understand English questionnaire and willing to participate were included in the study whereas students who did not consent the participation for the study were excluded. Data collection was started after obtaining the approval from the Ethical Review Committee of the Faculty of Allied Health Sciences, University of Ruhuna, (Reference No: 30.05.2019:2.30). Institutional approvals were obtained from Deans of each faculty. Student counts of each batch were obtained and calculated the number of students required to represent each stratum. Participants were informed that data will be used for the study purpose only and that participant's identity and responses will not be revealed to any third party. Informed written consent was obtained from participants prior to administration of questionnaire. Data collection was carried out by distributing a self-administered structured questionnaire among the consented students. The structured questionnaire was drafted and tested for content and face validity. The questionnaire is consisted of three parts including, Part A consisted of basic demographic data of students, and Part B consisted of nature of the stress and types of the stressors. Nature of stress was assessed by using a five-rating scale (always to never) and level of stress was assessed by six-rating scale (not applicable to very high), Part C was used to determine usage of stress management strategies/coping strategies and how those were helpful to them. It was assessed by using five rating scale (very helpful-not helpful).

Data was analyzed by using Statistical Package for Social Sciences (SPSS) software version 16. Standard descriptive statistics were used to characterize the study population and responses to survey items. Chi-square test was used to determine the associations between variables. Statistical significance was set at $p < 0.05$.

Results

Baseline characteristics of the study sample
The response rate of the study was 85.75% (343/400) as shown in the Table 1.

Table 1: Baseline characteristics of participants.

Variable	Category	No. of respondents (%)
Gender	Male	94 (27.41)
	Female	249 (72.59)
Year of study	First year	198 (57.73)
	Final year	145 (42.27)
Faculty	Medicine	226 (65.89)
	AHS	117 (34.11)
Degree programme	MBBS	226 (65.89)
	B.Pharm	32 (9.33)
	B.MLS	29 (8.45)
	BSc.Nursing	56 (16.33)

The study revealed that majority of participants (n=339, 98.8%) was affected by stress. There were, 35.6% (n=122) who are "often" encountered stress, followed by 28% (n=96) responded that they "more often" encountered stress, and 20.1% (n=69) "always" encountered stress. There were 52 (15.2%) who encountered stress "less often" and there were 4 (1.2%) responded that they were not stressed. Academic curriculum was the major cause of stress prevailing amongstudents (n=330, 97.6 %). However effect of stress was very high due to the examination (n=178, 52.7%) followed by examination time table (n=118, 36.2%) (Table 2).

Table 2: The effect of stress caused by academic activities.

Types of stressors	Prevalence						
	Very high N (%)	High N (%)	Modest N (%)	Low N (%)	No stress N (%)	Not applicable N (%)	Total
1. Academic curriculum	93 (27.5)	**111 (32.8)**	102 (30.2)	24 (7.1)	7(2.1)	1(0.3)	338
2. Clinical training	42 (15.5)	46 (17)	53 (19.6)	18 (6.6)	6 (2.2)	**106 (39.1)**	271
3. Lectures	38 (11.2)	63 (18.6)	**118 (34.9)**	70 (20.7)	46 (13.6)	3 (0.9)	338
4. Lecturers	47 (14.2)	57 (17.2)	**119 (35.8)**	71 (21.4)	35 (10.5)	3 (0.9)	332
5. Assignments	70 (22)	77 (24.2)	**86 (27)**	39 (12.3)	16 (5)	30 (9.4)	318
6. Presentations	69 (22)	68 (21.7)	**96 (30.6)**	48 (15.3)	11 (3.5)	22 (7)	314
7. Exams	**178 (52.7)**	105 (31.1)	26 (7.7)	15 (4.4)	14 (4.1)	0 (.0)	338
8. Academic time table	75 (23.1)	87 (26.8)	**89 (27.4)**	57 (17.5)	16 (4.9)	1 (0.3)	325
9. Exam time table	**118 (36.2)**	88 (27)	79 (24.2)	29 (8.9)	9 (2.8)	3 (0.9)	326
10. Results	73 (22.3)	68 (20.7)	**79 (24.1)**	61 (18.6)	42 (12.8)	5 (1.5)	328

Apart from academic related activities, study found that students were affected by some other factors not related to academic activities (**Table 3**).

Table 3: The effect of stress caused by activities not related to academic.

Types of stressors	Prevalence						
	Very high N%	High N (%)	Modest N (%)	Low N (%)	No stress N (%)	Not applicable N (%)	Total
1. Food	33 (9.9)	38 (11.4)	59 (17.7)	83 (24.9)	**102 (30.5)**	19 (5.7)	334
2. Money	36 (10.8)	64 (19.2)	**78 (23.4)**	77 (23.1)	69 (20.7)	9 (2.7)	333
3. Family/ Home	24 (7.5)	24 (7.5)	47 (14.7)	72 (22.6)	**133 (41.7)**	19 (6)	319
4. Girl/boy friend	12 (3.8)	10 (3.2)	29 (9.2)	49 (15.6)	**127 (40.4)**	87 (27.7)	314
5. Friends	13 (4)	13 (4)	59 (18.4)	79 (24.6)	**143 (44.5)**	14 (4.4)	321
6. Loneliness	23 (7.3)	29 (9.2)	63 (20)	73 (23.2)	**102 (32.4)**	25 (7.9)	315
7. Senior students	4 (1.2)	7 (2.2)	28 (8.6)	56 (17.2)	**190 (58.5)**	40 (12.3)	325
8. Health problems	9 (2.8)	26 (8.2)	66 (20.7)	**103 (32.3)**	95 (29.8)	20 (6.3)	319
9. Hostel life	20 (6.3)	26 (8.3)	47 (14.9)	60 (19)	70 (22.2)	**92 (29.2)**	315
10. Boarding life	11 (4)	13 (4.7)	29 (10.5)	39 (14.2)	51 (18.5)	**132 (48)**	275

Stress Management Strategies / Coping Strategies

Results showed that most commonly practiced coping strategy was sleeping (n=321, 93.6%) followed by talking to a friend/ meeting loved ones (n=308, 89.8%). Facilities rendered by two faculties including student counselling services (n=274, 79.9%), mentoring programme (n=260, 75.8%) and career guidance services (n=238, 69.4%) were also used by considerable number of undergraduates as coping strategies **(Table 4)**. In addition to that, students have used maladaptive strategies such as using alcohol (n=178, 51.9%) and smoking (n=173,50.4%) as stress management strategies.

There were statistical significant differences among coping strategies with regard to gender, year of study, faculty and degree programme **(Table 4).**

Table 4: Association between commonly practiced stress management strategies and socio-demographic and academic characteristics of healthcare undergraduates of University of Ruhuna.

Coping Strategies	Usage of coping strategies N (%)	No. of undergraduates/ (%)			
		Gender	Year of study	Faculty	Degree Programme
Counselling from student counsellors, UOR	274 (79.9)	M – 80 (29.2)	1 – 154 (56.2)	MED – 175 (63.9)	MED – 175 (63.9)
		F – 194 (70.8)	Fi - 120 (43.8)	AHS - 99 (36.1)	PHA – 27 (9.8)
					MLS – 23 (8.4)
					NUR - 49 (17.9)
Counselling from psychologists	240 (70)	M - 75(31.2) *	1 – 134 (55.8)	MED – 153 (63.7)	MED – 153 (63.7)
		F - 165(68.8)	Fi - 106 (44.2)	AHS - 87 (36.3)	PHA – 23 (9.6)
					MLS – 18 (7.5)
					NUR - 46 (19.2)
Career Guidance Services, UOR	238 (69.4)	M -69 (29.0)	1 – 134 (56.3)	MED – 151 (63.4)	MED – 151 (63.4)
		F - 169 (71.0)	Fi - 104 (43.7)	AHS - 87 (36.6)	PHA – 24 (10.1)
					MLS – 18 (7.6)
					NUR - 45 (18.9)
Mentoring program	260 (75.8)	M - 74 (28.5)	1 – 149 (57.3)	MED – 164 (59.9)	MED – 164 (59.9)
		F - 186 (71.5)	Fi - 111 (42.7)	AHS - 96 (40.1)	PHA – 27 (10.4)
					MLS – 23 (8.8)
					NUR - 46 (20.9)
Meditation	260 (75.8)	M - 75 (28.8)	1 – 152 (58.5)	MED – 158 (60.8) *	MED – 158 (60.8) *
		F - 185 (71.2)	Fi - 108 (41.5)	AHS - 102 (39.2)	PHA – 28 (10.8)
					MLS – 26 (10)

					NUR - 48 (18.4)
Taking a walk	288 (84)	M - 79 (27.4)	1 – 165 (57.3)	MED – 181 (62.8) *	MED – 181 (62.8) *
		F - 209 (72.6)	Fi - 123 (42.7)	AHS - 107 (37.2)	PHA – 31 (10.8)
					MLS – 26 (9.0)
					NUR - 50 (17.4)
Eating	296 (86.3)	M - 79 (46.2)	1 – 171 (57.8)	MED – 185 (62.5) *	MED – 185 (62.5) *
		F - 217 (53.8)	Fi - 125 (42.2)	AHS - 111 (37.5)	PHA – 32 (10.8)
					MLS – 26 (8.8)
					NUR - 53 (17.9)
Sleeping	321 (93.6)	M - 84 (26.2)	1 – 187 (58.3)	MED – 205 (63.9) *	MED – 205 (63.9) *
		F - 237 (73.8)	Fi - 134 (41.7)	AHS - 116 (36.1)	PHA – 31 (9.7)
					MLS – 29 (9.0)
					NUR - 56 (17.4)
Aesthetics activities	280 (81.6)	M - 74 (26.4)	1 – 163 (58.2) *	MED – 173 (61.8) *	MED – 173 (61.8) *
		F - 206 (73.6)	Fi - 117 (41.8)	AHS - 107 (38.2)	PHA – 29 (10.4)
					MLS – 27 (9.6)
					NUR - 51 (18.2)
Talking to a friend/ Meeting loved one	308 (89.8)	M - 84 (27.3)	1 – 181 (58.8)	MED – 193 (62.7) *	MED – 193 (62.7) *
		F - 224 (72.7)	Fi - 127 (41.2)	AHS - 115 (37.3)	PHA – 32 (10.4)
					MLS – 28 (9.1)
					NUR - 55 (17.9)
Surfing in social media	280 (81.6)	M - 80	1 – 164	MED – 178	MED – 178

		(28.6)	(58.6)	(63.6)	(63.6)
		F - 200 (71.4)	Fi - 116 (41.4)	AHS - 102 (36.4)	PHA – 25 (8.9)
					MLS – 28 (10.0)
					NUR - 49 (17.5)
Watching T.V., films	289 (84.3)	M - 79 (27.3)	1 – 162 (56.1)	MED – 179 (61.9) *	MED – 179 (61.9) *
		F - 210 (72.7)	Fi - 127 (43.9)	AHS - 110 (38.1)	PHA – 27 (9.3)
					MLS – 29 (10.0)
					NUR - 54 (18.7)

*$p<0.05$, *M–Male, F-Female, 1-First year, Fi-Final year, MED-Medical Faculty/MBBS Degree Program, AHS-Allied Health Science Faculty, PHA-Pharm, MLS-B.MLS, NUR-BSc. Nursing.*

Discussion

Stress is a global phenomenon and it has become an important issue in a variety of social, employment and academic settings [26]. University is a stressful time for many students because they have a process of adopting to new educational and social environments. It may cause a psychological, academic and social shock to students because of the huge differences in the educational system. Researchers have documented the prevalence of stress to be high among university students and this is even worse among healthcare professional students [5]. Because of all these, stress management has become a more important issue in order to cope up with stress and to bring out higher academic achievements and to balance the social life as well. The study findings suggested that almost all participants (98.8%) were affected by stress. similarly, studies conducted in Universities in Sri Lanka, Uganda and Saudi Arabia reported that relatively high stress prevalence were observed among undergraduates [5-6, 20-22]. Academic curriculum (97.6 %) is found as the most

common type of stressor perceived by study participants followed by exam timetable (96.3%), exams (95.8%) and academic timetable (94.8%). Similarly, some studies have shown that academic curriculum, performance in examinations, workload, lack of time for recreation, competition with fellow students are very stressful for healthcare undergraduates [4, 20]. A study also reported that perceived high expectations from parents was the most stressful factor for both third year and fourth year medical students [4].

The current study suggested that, the most common coping strategy used by the study participants were sleeping (93.6%), followed by talking to a friend/ meeting loved one (89.8%) (**Table 04**). Similar finding was observed in a study carried out in Islamia University of Bahawalpur, Pakistan on the coping strategies which the students used were watching TV/movies, listening to music or taking part in other leisure time activities [23]. The current study found that the participants using alcohols and smoking as maladaptive coping strategies. Several studies also reported usage of alcohol,

smoking and illicit substances among undergraduates with lesser and higher prevalence [24, 25]. The study suggested that most of the coping strategies showed significant association with type of the faculty and degree program, but few coping strategies showed significant association with gender and year of study (**Table 04**). Similar finding was observed in a study conducted in Nepal. It has revealed that the coping strategies showed variation by GHQ-caseness, year of study, gender and parents' occupation [7]. In contrast Abasimi, et al. reported that there was no significant difference in coping strategies between male and female students [26].

The findings of the present study also suggested that the frequency of the usage of the facilities such as counselling from student counsellors (79.9%), career guidance services (69.4%) and mentoring program (75.8%) rendered by the University of Ruhuna for stress management were well acquired by the participants.

Conclusions

Our findings suggested that the majority of healthcare undergraduates in university of Ruhuna were affected by stress. The present study revealed that most of students used positive stress management strategies while some students used maladaptive coping strategies. The results provided valuable information for academics in healthcare undergraduate programs and university administrators in identifying students' needs, effective strategies to reduce excessive stress and increase the utility of positive coping strategies.

Acknowledgement

Conflict of Interests

The authors declare that there is no conflict of interest.

Ethical Approval

The ethical approval was granted by the Ethics Review Committee of Faculty of Allied Health Sciences, University of Ruhuna under the reference no: 30.05.2019:2.30.

Informed Consent

Participants were informed that data will be used for the study purpose only and that participant's identity and responses will not be revealed to any third party. Informed written consent was obtained from participants prior to administration of questionnaire.

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