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Assessment of mental health and various strategies among Health Professions' (HP) students: A cross sectional study in King Saud Bin Abdulaziz University for Health Sciences

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Abstract:

BACKGROUND: The education environment of medical colleges is known to have a burdensome effect on the overall mental health of the students. This study aimed to investigate the immediate impact of the medical education environment on mental health and quality of life among Health Profession students and to identify various coping strategies used by students to mitigate the stress.

MATERIALS AND METHODS: An online survey was conducted between April 1 and May 10, 2021, using a validated questionnaire based on DASS-42, employing a snowball sampling technique.

RESULTS: A total of 338 students filled the questionnaire. The respondents had a high level of depression and anxiety scores, categorized as very severe which were significantly different among level of education ($P < .05$), for example, 88.9% of sixth year students had very severe depression compared to just 37% of first year ones. Gender-wise very severe scores varied from lowest 45.8% to 70.3% with comparable results for both males and females. Additionally, more than 30% of the students listed that the amount of material to be covered, lack of time to study the material to be tested, heavy demand to study, concern about trying to learn all the content, and competitiveness among students to be the top reason which affect their mental state of mental health.

CONCLUSIONS: This study identifies the need to provide the free professional and psychological services to help cope with stress to the health profession students.

Keywords:

Anxiety, DASS, depression, healthcare, mental health, stress

Introduction

Life of a University students is like a roller coaster ride—full of ups and downs constituting huge amounts of numerous varieties of stress.^[1] University life of a student is subjected to various sources of

stress emanating from academic pressures; peer pressures; personal, emotional, or social issues; environmental factors; and huge and rigorous curriculum. During the academic life, students must face all these issues and navigate carefully to succeed

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in this competitive world.^[2] Health professions (HP) education usually is known to have one of the toughest and challenging curriculum which provides a highly toxic and unfavourable environment for the students, negatively affecting their mental health in numerous ways.^[3-5]

Generally, students of HP have an additive stress of high academic burden, adjustment to the novel school environment, information overload, lack of quality relaxation time, huge amount of study material to be learned, repeated formative and summative examinations, maintenance of viable attendance, financial indebtedness, family-related stressors, pressures of work, work relationships, and future career choices.^[5-7]

A number of studies have reported that the constant exposure to the various stressors primes the HP students to depression.^[7-9] Additionally, the students who suffer from both anxiety and depression are usually at risk of poor academic performance with lower grade point averages.^[10] A recent study identified the most common mental health problem among HP students to be anxiety (41.1%-56.7%), followed by depression (12%-30%) and stress (11.8%-19.9%).^[3] Depression being a single most effect of various stressors in HP students' life is actually a multidimensional disorder that unfavourably affects interpersonal, social, and occupational domains of students' life.^[11] However, it being modifiable and treatable, managing depression to improve academic performance has become the topmost priority for the medical educationist around the world nowadays.^[7]

A number of techniques and strategies have been identified by psychologists to master, reduce, tolerate, or minimize the effects of stressors. All these are referred to as coping strategies and usually include mindfulness-based stress reduction classes, wellness electives, informal support groups, and mentoring programs.^[12]

Coping methods often used by HP students include effective time management, social support, positive reappraisal, and engagement in leisurely pursuits.^[13] Other studies have demonstrated that establishing a positive academic environment that is healthy and well-managed and overlapping it with stress management programs can potentially resolve the stress and enhance performances.^[14]

Therefore, we designed this study to assess the perceptions of HP students toward various stress factors, their sources, and their severity. This study would also identify various coping strategies the HP students use and gauge their effectiveness.

Materials and Methods

Study design and settings

A cross-sectional study was conducted in between November 1 and February 9 at King Saud Bin Abdul Aziz University for Health Science (KSAU-HS), Jeddah. All HP students from College of Medicine, College of Applied Medical Sciences, and College of Nursing were included in this study and were selected by convenience sampling method to complete a self-administered validated questionnaire after being provided with an informed consent.

Study participants and sampling

Sample size was calculated by using the Raosoft software, with the following parameters—90% confidence level with an estimated 50% prevalence of awareness of mental state and a margin of error $\pm 5\%$. Total number of students studying in our University in Jeddah Campus being ~2500, a necessary sample size was calculated to be 245.

Data collection

A snowball sampling technique was used for the collection of the data. The data collection was continuous during this period solely focused to include as much participants as we can to have the appropriate sample size. A self-determined, predesigned questionnaire consisting of two tools was used to obtain a dataset composed of sociodemographic and physical characteristics. The survey-based study was conducted by using two tools: Tool 1 (attachment 1) is DASS-42 which is a freely available, standardized questionnaire to assess depression, stress, and anxiety. Participants answer this questionnaire by choosing one of the numbers (0, 1, 2, 3) that indicate how much has the sentence been applied to the participant over the past week. Tool 2 (attachment 2) is a validated questionnaire to assess various strategies used by students for coping the stress and answers were acquired through Likert scale. For qualitative data, frequencies and percentage and mean and standard deviation were used for quantitative variables.

Data analysis

Data were analyzed using SPSS version 22.0. For the quantitative variables, dispersion measures and central tendency were used. For the qualitative variables, data were tabulated and the results were expressed in relative frequencies and percentages. For the comparisons between the two groups, a contrast test for quantitative variables with parametric distribution using Student's *t*-test was carried out. The normal distribution with the Kolmogorov-Smirnov test was checked. For the comparison of categorical variables, Chi-square test was used. U Mann-Whitney test was used for nonparametric distributions. Correlation of quantitative variables

was done by Spearman test. *P* value less than .05 was considered significant.

Ethical consideration

The study protocol and the questionnaire thereof was reviewed and approved by the Institutional Review Board of King Abdullah International Medical Research Centre (KAIMRC), a research wing of KSAU-HS, Jeddah (Reference No: RJ19/148/J; Dated: 24/05/2020).

Results

A total of 338 participants responded to the survey, of them, 220 (65.1%) were males, while 118 (34.9%) were females. Moreover, 333 (98.5%) of respondents were single, four (1.2%) of them were married, and one (0.3%) were divorced. Twenty seven (8%) of the students were first year, 28 (8.3%) were second year, 75 (22.2%) were third year, 180 (53.3%) were fourth year, 19 (5.6%) were fifth year, and nine (2.7%) were sixth year medical students. Additionally, based on the colleges, college of medicine represented around 34.32% of students, while college of nursing students were 29% [Table 1].

Analysis of DASS-42 scores [Table 2] revealed that male and female participants' results were comparable in depression, anxiety, and stress (*P* value > .05) as shown in Table 3 [Figure 1]. Based on the severity among males, 22 (10%) had moderate, 27 (12.3%) had severe, and 120 (54.5%) had extremely severe depression, while among females, 17 (14.4%) had moderate, 18 (15.3%) had severe, and 65 (55.1%) had extremely severe depression. As for anxiety, 19 (8.6%) of males had moderate, 16 (7.3%)

had severe, and 149 (67.7%) had extremely severe anxiety, regarding females, seven (5.9%) were moderate, 13 (11%) were severe, and 83 (70.3%) were very severe.

Finally, males' scores were 17 (7.7%) moderate, 24 (10.9%) severe, and 109 (49.5%) were very severe in stress. Also, 20 of females scored (16.9%) moderate, 13 (11%) severe, and 54 (45.8%) extremely severe in stress [Table 3]. Ten (37%) of first year, 17 (60.7%) of second year, 46 (61.3%) of third year, 92 (51.1%) of fourth year, 12 (63.2%) of fifth year, and eight (88.9%) of sixth year students have shown

Table 1: Demographics of the participants

	<i>n</i>	Percentage
Gender		
Male	220	65.1
Female	118	34.9
Marital Status		
Single	333	98.5
Married	4	1.2
Divorced	1	0.3
Academic Year		
First Year	27	8.0
Second Year	28	8.3
Third Year	75	22.2
Fourth Year	180	53.3
Fifth Year	19	5.6
Sixth Year	9	2.7
Health Profession Programs		
College of Medicine	116	34.32
College of Nursing	98	29.00
College of Applied Medical Sciences	69	24.41
College of Health Professions	55	16.27
Total	338	100.0

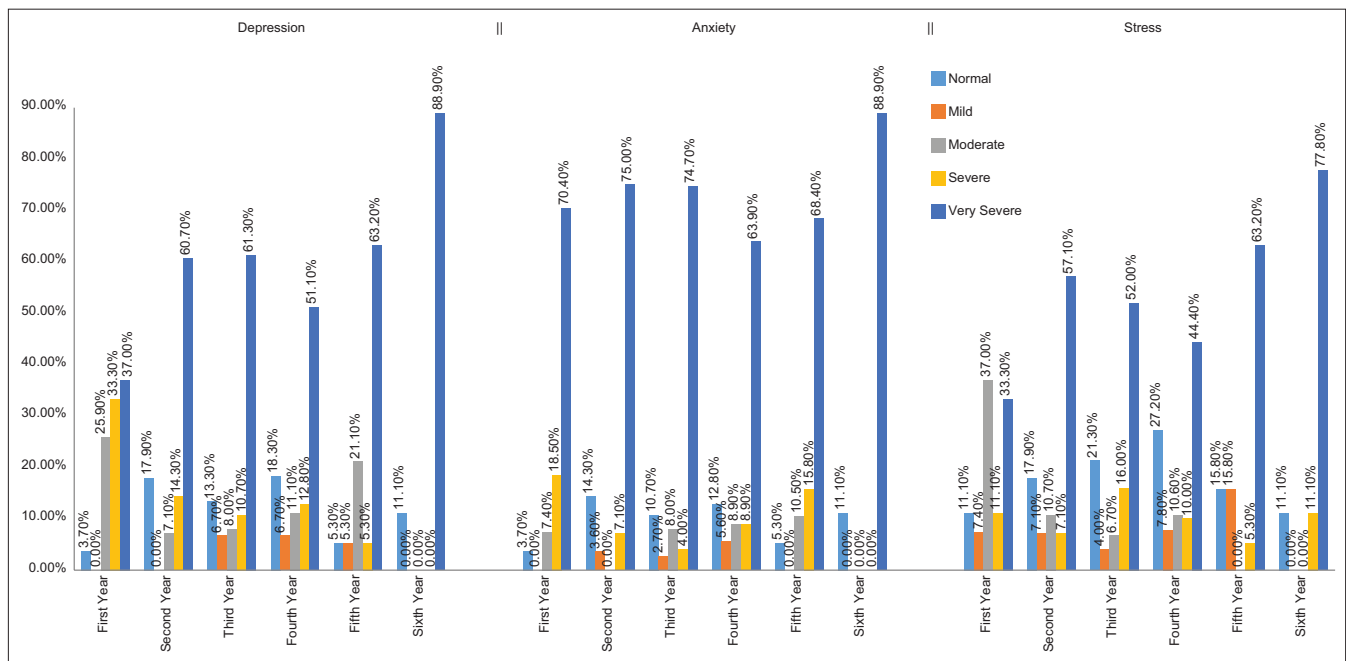


Figure 1: Distribution of participants on different depression, anxiety and stress scores

Table 2: Participants perceptions of depression, anxiety, and stress on the DASS-42 scale

Item in DASS-42	Questions	Did not apply to me at all	Applied to me to some degree or for some of the time	Applied to me to a considerable degree or for a good part of time	Applied to me very much or most of the time
1	I found myself getting upset by quite trivial things	75 (22.2)	137 (40.5)	90 (26.6)	36 (10.7)
2	I was aware of dryness of my mouth	152 (45.0)	84 (24.9)	65 (19.2)	37 (10.9)
3	I couldn't seem to experience any positive feelings at all	176 (52.1)	100 (29.9)	47 (13.9)	15 (4.4)
4	[I experienced breathing difficulty (e.g. breathlessness or excessively rapid breathing in the absence of physical exertion)	199 (58.9)	74 (21.9)	47 (13.9)	18 (5.3)
5	I just couldn't seem to get going	136 (40.2)	102 (30.2)	66 (19.5)	34 (10.1)
6	I tended to over-react to situations	106 (31.4)	128 (37.9)	68 (20.1)	36 (10.7)
7	I had a feeling of shakiness (e.g. legs going to give way)	224 (66.3)	68 (20.1)	27 (8.0)	19 (5.6)
8	I found it difficult to relax	93 (27.5)	119 (35.2)	84 (24.9)	42 (12.4)
9	I found myself in situations that made me so anxious I was most relieved when they ended	76 (22.5)	71 (21.0)	115 (34.0)	76 (22.5)
10	I felt that I had nothing to look forward to	154 (45.6)	73 (21.6)	69 (20.4)	42 (12.4)
11	I found myself getting upset rather easily	92 (27.2)	135 (39.9)	66 (19.5)	45 (13.3)
12	I felt that I was using a lot of nervous energy	100 (29.6)	97 (28.7)	83 (24.6)	58 (17.2)
13	I felt sad and depressed	102 (30.2)	110 (32.5)	79 (23.4)	47 (13.9)
14	I found myself getting impatient when I was delayed in any way (e.g. lifts, traffic lights, being kept waiting)	113 (33.4)	109 (32.2)	71 (21.0)	45 (13.3)
15	I had a feeling of faintness	206 (60.9)	79 (23.4)	34 (10.1)	19 (5.6)
16	I felt that I had lost interest in just about everything	139 (41.1)	98 (29.0)	42 (12.4)	59 (17.5)
17	I felt I wasn't worth much as a person	180 (53.3)	70 (20.7)	47 (13.9)	41 (12.1)
18	I felt that I was rather touchy	169 (50.0)	95 (28.1)	48 (14.2)	26 (7.7)
19	I perspired noticeably (e.g. hands sweaty) in the absence of high temperatures or physical exertion	218 (64.5)	65 (19.2)	33 (9.8)	22 (6.5)
20	I felt scared without any good reason	180 (53.3)	96 (28.4)	39 (11.5)	23 (6.8)
21	I felt that life wasn't worthwhile	173 (51.2)	85 (25.1)	43 (12.7)	37 (10.9)
22	I found it hard to wind down	159 (47.0)	117 (34.6)	41 (12.1)	21 (6.2)
23	I had difficulty in swallowing	273 (80.8)	44 (13.0)	16 (4.7)	5 (1.5)
24	I couldn't seem to get any enjoyment out of the things I did	146 (43.2)	107 (31.7)	54 (16.0)	31 (9.2)
25	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	157 (46.4)	98 (29.0)	51 (15.1)	32 (9.5)
26	I felt down-hearted and blue	186 (55.0)	83 (24.6)	40 (11.8)	29 (8.6)
27	I found that I was very irritable	129 (38.2)	116 (34.3)	58 (17.2)	35 (10.4)
28	I felt I was close to panic	159 (47.0)	96 (28.4)	43 (12.7)	40 (11.8)
29	I found it hard to calm down after something upset me	145 (42.9)	93 (27.5)	69 (20.4)	31 (9.2)
30	I feared that I would be "thrown" by some trivial but unfamiliar task	175 (51.8)	91 (26.9)	42 (12.4)	30 (8.9)
31	I was unable to become enthusiastic about anything	162 (47.9)	77 (22.8)	53 (15.7)	46 (13.6)
32	I found it difficult to tolerate interruptions to what I was doing	144 (42.6)	114 (33.7)	47 (13.9)	33 (9.8)
33	I was in a state of nervous tension	129 (38.2)	112 (33.1)	53 (15.7)	44 (13.0)
34	I felt I was pretty worthless	215 (63.6)	55 (16.3)	28 (8.3)	40 (11.8)
35	I was intolerant of anything that kept me from getting on with what I was doing	153 (45.3)	107 (31.7)	57 (16.9)	21 (6.2)
36	I felt terrified	193 (57.1)	85 (25.1)	31 (9.2)	29 (8.6)
37	I could see nothing in the future to be hopeful about	199 (58.9)	73 (21.6)	38 (11.2)	28 (8.3)
38	I felt that life was meaningless	195 (57.7)	73 (21.6)	38 (11.2)	32 (9.5)
39	I found myself getting agitated	165 (48.8)	99 (29.3)	48 (14.2)	26 (7.7)
40	I was worried about situations in which I might panic and make a fool of myself	157 (46.4)	87 (25.7)	49 (14.5)	45 (13.3)
41	I experienced trembling (e.g. in the hands)	224 (66.3)	67 (19.8)	26 (7.7)	21 (6.2)
42	I found it difficult to work up the initiative to do things	123 (36.4)	99 (29.3)	52 (15.4)	64 (18.9)

extremely severe level of depression. Nineteen (70.4%) of first year, 21 (75%) of second year, 56 (74.7%) of third year, 115 (63.9%) of fourth year, 13 (68.4%) of fifth year, and eight (88.9%) of sixth year students have shown extremely severe level of anxiety. Nine (33.3%) of first year, 16 (57.1%) of second year, 39 (52%) of third year, 80 (44.4%) of fourth year, 12 (63.2%) of fifth year, and seven (77.8%) of sixth year students have shown extremely severe level of stress [Table 4]. We also found that the most frequently used coping methods were listening to music, watching television, and social networking. The least used coping strategies were academic counselling, student rights, and identifying oneself with models of physicians who prioritize their quality of life [Table 5].

Discussion

HP students are more exposed to stressors due to the

nature of their studies,^[5-7] piling up these stressors play a significant role in developing depression and anxiety which end up being the cause of the drop in their academic performance.^[7-10] Therefore, we here aim to discuss the various stressors and the degree of which they affect HP students' mental health, their coping mechanisms, and their effectiveness. In this research, we found that HP students suffered from different levels of depression, anxiety, and stress which they tried to handle in a variety of ways. We also found that the levels of these conditions were not affected by gender or academic year (*P* value > .05).

The outcomes showed higher levels in depression (84.9%), anxiety (88.8%), and stress (77.2%) in comparison to other studies from Syria and India,^[15,16] although our findings did not show any significant difference in the levels of depression and anxiety in relation to gender. Al Saadi

Table 3: Frequency distribution of various scales of DASS-42 based on gender

	Normal		Mild		Moderate		Severe		Very severe		<i>P</i>
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Depression											0.275
Male	36	16.4%	15	6.8%	22	10.0%	27	12.3%	120	54.5%	
Female	15	12.7%	3	2.5%	17	14.4%	18	15.3%	65	55.1%	
Anxiety											0.299
Male	29	13.2%	7	3.2%	19	8.6%	16	7.3%	149	67.7%	
Female	9	7.6%	6	5.1%	7	5.9%	13	11.0%	83	70.3%	
Stress											0.106
Male	55	25.0%	15	6.8%	17	7.7%	24	10.9%	109	49.5%	
Female	22	18.6%	9	7.6%	20	16.9%	13	11.0%	54	45.8%	

Table 4: Participants overall scores on the DASS-42 scale based on the academic year and severity of depression, anxiety, and stress

	Normal		Mild		Moderate		Severe		Very severe		<i>P</i>
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Depression											0.028
First Year	1	3.7%	0	0.0%	7	25.9%	9	33.3%	10	37.0%	
Second Year	5	17.9%	0	0.0%	2	7.1%	4	14.3%	17	60.7%	
Third Year	10	13.3%	5	6.7%	6	8.0%	8	10.7%	46	61.3%	
Fourth Year	33	18.3%	12	6.7%	20	11.1%	23	12.8%	92	51.1%	
Fifth Year	1	5.3%	1	5.3%	4	21.1%	1	5.3%	12	63.2%	
Sixth Year	1	11.1%	0	0.0%	0	0.0%	0	0.0%	8	88.9%	
Anxiety											0.561
First Year	1	3.7%	0	0.0%	2	7.4%	5	18.5%	19	70.4%	
Second Year	4	14.3%	1	3.6%	0	0.0%	2	7.1%	21	75.0%	
Third Year	8	10.7%	2	2.7%	6	8.0%	3	4.0%	56	74.7%	
Fourth Year	23	12.8%	10	5.6%	16	8.9%	16	8.9%	115	63.9%	
Fifth Year	1	5.3%	0	0.0%	2	10.5%	3	15.8%	13	68.4%	
Sixth Year	1	11.1%	0	0.0%	0	0.0%	0	0.0%	8	88.9%	
Stress											0.011
First Year	3	11.1%	2	7.4%	10	37.0%	3	11.1%	9	33.3%	
Second Year	5	17.9%	2	7.1%	3	10.7%	2	7.1%	16	57.1%	
Third Year	16	21.3%	3	4.0%	5	6.7%	12	16.0%	39	52.0%	
Fourth Year	49	27.2%	14	7.8%	19	10.6%	18	10.0%	80	44.4%	
Fifth Year	3	15.8%	3	15.8%	0	0.0%	1	5.3%	12	63.2%	
Sixth Year	1	11.1%	0	0.0%	0	0.0%	1	11.1%	7	77.8%	

Table 5: Participants stress factors and strategies for coping with it

#	Questions	Strongly disagree	Disagree	Unsure	Agree	Strongly agree
1	The amount of material to be covered	34 (10.1)	49 (14.5)	51 (15.1)	76 (22.5)	128 (37.9)
2	Lack of time to study the material to be tested	34 (10.1)	46 (13.6)	50 (14.8)	88 (26.0)	120 (35.5)
3	Frequent tests/exams	52 (15.4)	51 (15.1)	61 (18.0)	74 (21.9)	100 (29.6)
4	Many tests at the same time	84 (24.9)	67 (19.8)	60 (17.8)	53 (15.7)	74 (21.9)
5	Test subject matter goes beyond what was covered	54 (16.0)	73 (21.6)	63 (18.6)	69 (20.4)	79 (23.4)
6	Studying at night	65 (19.2)	49 (14.5)	57 (16.9)	66 (19.5)	101 (29.9)
7	Dealing with new forms of assessment	63 (18.6)	38 (11.2)	79 (23.4)	87 (25.7)	71 (21.0)
8	Missing classes	98 (29.0)	63 (18.6)	77 (22.8)	48 (14.2)	52 (15.4)
9	Studying material that I consider unnecessary	59 (17.5)	54 (16.0)	61 (18.0)	66 (19.5)	98 (29.0)
10	Amount of details required by teachers	54 (16.0)	57 (16.9)	69 (20.4)	74 (21.9)	84 (24.9)
11	Amount of extracurricular activities	110 (32.5)	64 (18.9)	72 (21.3)	46 (13.6)	46 (13.6)
12	Difficulty in memorizing the content	54 (16.0)	54 (16.0)	60 (17.8)	76 (22.5)	94 (27.8)
13	Heavy demand to study	36 (10.7)	52 (15.4)	54 (16.0)	67 (19.8)	129 (38.2)
14	Concern about trying to learn all the content	33 (9.8)	21 (6.2)	55 (16.3)	63 (18.6)	166 (49.1)
15	Competitiveness among students	45 (13.3)	66 (19.5)	55 (16.3)	45 (13.3)	127 (37.6)
16	Daily activities unrelated to school	79 (23.4)	70 (20.7)	70 (20.7)	60 (17.8)	59 (17.5)
17	Teachers' lack of time	105 (31.1)	79 (23.4)	91 (26.9)	35 (10.4)	28 (8.3)
18	Feelings of guilt at giving more priority to personal life	68 (20.1)	45 (13.3)	64 (18.9)	65 (19.2)	96 (28.4)
19	Waking up very early to go to school	76 (22.5)	59 (17.5)	75 (22.2)	52 (15.4)	76 (22.5)
20	Family problems	123 (36.4)	68 (20.1)	54 (16.0)	36 (10.7)	57 (16.9)
21	Marriage and children	247 (73.1)	24 (7.1)	44 (13.0)	11 (3.3)	12 (3.6)
22	High parental expectations	124 (36.7)	41 (12.1)	57 (16.9)	59 (17.5)	57 (16.9)
23	Identifying yourself with models of physicians who prioritize their quality of life	105 (31.1)	57 (16.9)	85 (25.1)	56 (16.6)	35 (10.4)
24	Studying the minimum needed to pass subjects	140 (41.4)	66 (19.5)	53 (15.7)	43 (12.7)	36 (10.7)
25	Respecting my physical limits, avoiding spending many hours without sleeping	73 (21.6)	54 (16.0)	76 (22.5)	67 (19.8)	68 (20.1)
26	Avoiding comparing grades with other students	67 (19.8)	45 (13.3)	57 (16.9)	58 (17.2)	111 (32.8)
27	Skipping classes to perform activities that give pleasure (sports, etc.)	118 (34.9)	72 (21.3)	54 (16.0)	41 (12.1)	53 (15.7)
28	Going to the cinema/outings on weekends	80 (23.7)	46 (13.6)	57 (16.9)	57 (16.9)	98 (29.0)
29	Going for long walks/trekking etc	89 (26.3)	64 (18.9)	62 (18.3)	49 (14.5)	74 (21.9)
30	Getting together with family and friends	31 (9.2)	36 (10.7)	73 (21.6)	82 (24.3)	116 (34.3)
31	Cooking	129 (38.2)	59 (17.5)	64 (18.9)	35 (10.4)	51 (15.1)
32	Eating well	78 (23.1)	46 (13.6)	64 (18.9)	70 (20.7)	80 (23.7)
33	Reading nonmedical literature/novels etc.	106 (31.4)	46 (13.6)	56 (16.6)	56 (16.6)	74 (21.9)
34	Listening to music etc.	42 (12.4)	33 (9.8)	50 (14.8)	59 (17.5)	154 (45.6)
35	Watching television for Dramas/Sports/Religious etc.	55 (16.3)	32 (9.5)	52 (15.4)	58 (17.2)	141 (41.7)
36	Going out to dinner	64 (18.9)	42 (12.4)	65 (19.2)	71 (21.0)	96 (28.4)
37	Social networking - Facebook, Instagram, Twitter	54 (16.0)	58 (17.2)	66 (19.5)	56 (16.6)	104 (30.8)
38	Taking solace in Religion - Prayers and Quran	45 (13.3)	50 (14.8)	63 (18.6)	85 (25.1)	95 (28.1)
39	Participating/Playing Sports	79 (23.4)	64 (18.9)	60 (17.8)	66 (19.5)	69 (20.4)
40	Academic Counselling	161 (47.6)	78 (23.1)	59 (17.5)	22 (6.5)	18 (5.3)
41	Student Rights	143 (42.3)	67 (19.8)	75 (22.2)	18 (5.3)	35 (10.4)

et al. results showed higher prevalence in females, while Iqbal *et al.* noticed higher levels of stress in females as well.^[15,16] Our study also revealed same levels of mental morbidities across all academic years. This did not match the study from India that showed higher incidence in students in their fifth semester (third year) of their medical studies.^[16]

Listening to music and social networking, which were of the most coping strategies our participants agreed upon, have been associated with aggravating negative

feeling and tendency toward self-isolation in previous literature.^[17] We noticed that students' behavior was not directed toward positive coping strategies like academic counseling and cooking.^[18,19] In alignment with previous papers regarding this topic, our research has also shown high levels of mental morbidity that could be attributed to the stressful life of HP students. However, higher levels in these mental condition in our research might have been due to the fact that the students were surveyed during the beginning of the COVID-19 pandemic and quarantine. The impact of gender that has been

demonstrated in other literature may have been caused by the male predominance in our sampling that could have affected the results. The inconsistency between our paper and Shawaz Iqbal's paper regarding the effect of the academic year also can be referred to the fact that their curriculum differs from ours.

DASS-42 was our first tool of data collection which has proven its effectiveness in measuring depression, anxiety, and stress levels.^[20] The other tool that we used aimed to explore how the HP students coped with their psychological disturbances. Convenient sampling was the better available choice due to the low number of respondents. In spite of the relatively low number of participants, the study was able to yield a rough estimation of the psychological burden of students in KSAU-HS Jeddah.

Limitations and recommendations

This study has a number of weaknesses and limitations. The sampling was convenient and there were discrepancies in the participants in terms of gender, medical year, and marital status. Also, the respondents were surveyed during the pandemic which could have played a major role in their mental health status. In addition, the study was self-reported which could subject it to systemic bias. Data collection was via an online form which has a risk of the inherent recall bias.

Conclusion

This study identifies the need to provide the free professional and psychological services to help cope with stress to the HP students. We also identify dire need of implementation of an effective destressing and counselling programs, curricular activities, and awareness campaigns for HP to help them in strategizing their priorities in the demanding phase of their student life.

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Ethical clearance

This study was approved by the Institutional Review Board of King Abdullah International Medical Research Centre (KAIMRC), a research wing of KSAU-HS, Jeddah (*Reference No: RJ19/148/J; Dated: 24/05/2020*).

Author contributions

S.S.A. conceptualized the project, designed the study questionnaire in its final form surveyed the existing literature, and wrote the entire manuscript.

Z.S.J.A., A.N.M.A., A.G.M.A., and O.G.M.A. collected the data of the study and equally contributed in writing the draft of this manuscript.

M.A.Q, S.S.A. and B.K. reviewed and revised the manuscript.

M.A.K. analyzed the collected data and made sense of it and reviewed the manuscript.

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Conflicts of interest

There are no conflicts of interest.

References

1. Gomathi KG, Ahmed S, Sreedharan J. Psychological health of first-year health professional students in a medical university in the United Arab Emirates. *Sultan Qaboos Univ Med J* 2012;12:206-13.
2. Abdel Rahman AG, Al Hashim BN, Al Hiji NK, Al-Abbad Z. Stress among medical Saudi students at College of Medicine, King Faisal University. *J Prev Med Hyg* 2013;54:195-9.
3. Yusoff MS, Abdul Rahim AF, Baba AA, Ismail SB, Mat Pa MN, Esa AR. The impact of medical education on psychological health of students: A cohort study. *Psychol Health Med* 2013;18:420-30. doi: 10.1080/13548506.2012.740162.
4. Yusoff MS, Najib M, Esa R, Rahim AF. Mental health of medical students before and during medical education: A prospective study. *J Taibah Univ Medical Sci* 2013; 8:86-92.
5. Gazzaz ZJ, Baig M, Al Alhendi BSM, Al Suliman MMO, Al Alhendi AS, Al-Grad MSH, et al. Perceived stress, reasons for and sources of stress among medical students at Rabigh Medical College, King Abdulaziz University, Jeddah, Saudi Arabia. *BMC Med Educ* 2018;18:29. doi: 10.1186/s12909-018-1133-2.
6. O'Ferrall-González C, Almenara-Barrios J, García-Carretero MÁ, Salazar-Couso A, Almenara-Abellán JL, Lagares-Franco C. Factors associated with the evolution of attitudes towards mental illness in a cohort of nursing students. *J Psychiatr Ment Health Nurs* 2020;27:237-245. doi: 10.1111/jpm.12572.
7. AlFaris E, Irfan F, Qureshi R, Naeem N, Alshomrani A, Ponnampuruma G, et al. Health professions' students have an alarming prevalence of depressive symptoms: Exploration of the associated factors. *BMC Med Educ* 2016;16:279.
8. Turner DP, Thompson ME, Huber LR, Arif AA. Depressive symptoms and academic performance of North Carolina college students. *N C Med J* 2012;73:169-75.
9. Ibrahim AK, Kelly SJ, Adams CE, Glazebrook C. A systematic review of studies of depression prevalence in university students. *J Psychiatr Res* 2013;47:391-400. doi: 10.1016/j.jpsychires.2012.11.015.
10. Akinsola EF, Nwajei AD. Test anxiety, depression and academic performance: assessment and management using relaxation and cognitive restructuring techniques. *Psychology* 2013;4:18-24. doi: 10.4236/psych.2013.46A1003.
11. Sadock BJ, Kaplan H. Kaplan and Sadock's synopsis of psychiatry: Behavioral sciences/clinical psychiatry. 10th ed. Philadelphia: Lippincott Williams and Wilkins; 2007.
12. Soliman M. Perception of stress and coping strategies by medical students at King Saud University, Riyadh, Saudi Arabia. *J Taibah Univ Medical Sci* 2014;9:30-5.
13. Bamuhair SS, Al Farhan AI, Althubaiti A, Agha S, Rahman S,

- Ibrahim NO. Sources of stress and coping strategies among undergraduate medical students enrolled in a problem-based learning curriculum. *J Biomed Educ* 2015;57:5139. <https://doi.org/10.1155/2015/575139>.
14. Alosaimi FD, Alawad HS, Alamri AK, Saeed AI, Aljuaydi KA, Alotaibi AS, et al. Stress and coping among consultant physicians working in Saudi Arabia. *Ann Saudi Med* 2018;38:214-24. doi: 10.5144/0256-4947.2018.214.
 15. Al Saadi T, Zaher Addeen S, Turk T, Abbas F, Alkhatib M. Psychological distress among medical students in conflicts: A cross-sectional study from Syria. *BMC Med Educ* 2017;17:173.
 16. Iqbal S, Gupta S, Venkatarao E. Stress, anxiety and depression among medical undergraduate students and their socio-demographic correlates. *Indian J Med Res* 2015;141:354-7. doi: 10.4103/0971-5916.156571.
 17. Stewart J, Garrido S, Hense C, McFerran K. Music use for mood regulation: Self-awareness and conscious listening choices in young people with tendencies to depression. *Front Psychol* 2019;10:1199.
 18. Sharif F, Armitage P. The effect of psychological and educational counselling in reducing anxiety in nursing students. *J Psychiatr Ment Health Nurs* 2004;11:386-92. doi: 10.1111/j.1365-2850.2003.00720.x.
 19. Farmer N, Touchton-Leonard K, Ross A. Psychosocial Benefits of Cooking Interventions: A Systematic Review. *Health Educ Behav* 2018;45:167-80. doi: 10.1177/1090198117736352.
 20. Crawford JR, Henry JD. The Depression Anxiety Stress Scales (DASS): Normative data and latent structure in a large non-clinical sample. *Br J Clin Psychol* 2003;42:111-31. doi: 10.1348/014466503321903544.