



Health outcomes: a study within undergraduate professional health students

Abstract

Background of the problem: The vast syllabus, regular examination process, exhausting work, expectation for earning high academic grades, lack of time management, and socioeconomic factors adversely affect students' health outcomes. **Objectives:** The purpose of the study was to determine the differences of health outcomes in different period of study in medical students. **Methods:** Total 347 medical students of different years of study were selected during the academic year 2014-15 for the present study. The health outcomes of the students were measured through the questionnaires of the Medical Outcome Study: Short-form 36 (MOS SF-36) for present study. **Results:** The result reveals that significant differences were found in mental health. However, insignificant differences were found in perceived general health, physical functioning, social functioning, body pain, vitality, physical role, and emotional role among year wise male medical students. **Conclusion:** The findings of the study show that fourth year male medical students incur significantly sound mental health than their counterpart male medical students.

Keywords: Mental health, perceived general health, body pain, vitality

Sinku Kumar Singh

*School of Educational Sciences, Swami
Ramanand Teerth Marathwada University,
Nanded, Maharashtra, India*

Correspondence: Dr. Sinku Kumar Singh,
School of Educational Sciences, Swami
Ramanand Teerth Marathwada University,
Nanded-431606, Maharashtra, India.
drsinkusingh@gmail.com

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INTRODUCTION

Medical education is an important professional education contributing to robust healthcare system in every society. In international level, several studies have revealed high rates of health problems in medical students because of their studies.[1-15] Health outcomes are changes in health status that result from measures or specific healthcare investments or interventions. There are reports that stress increases in undergraduate students in various fields of study.[9,16] Medical students in particular, and from several countries around the globe are found to be at risk of stress, mental disorders, and declination of life satisfaction.[1] The goal of medical education is to graduate knowledgeable, skilful, and professional physicians that will play an essential role for the society to enhance the healthcare system. There are several research reports available and indicate that the atmosphere of medical school is not congenial and friendly to enhance physical and psychological health of students.[7-9,17-22]. Less than three per cent in any population suffers from psychological disorders. Similar figure is also observed with medical students before taking admission in medical school.[13,23] The outcomes may be depression, stress, anxiety, and burnout reactions.[3,4,7,24] Several studies are available in the literature regarding students' stress and health but there is dearth of studies conducted on health outcomes in health professional students. Because of scarcity of research reports on health outcomes of medical students, the effort taken by the investigator can prove useful for improved healthcare of students.

METHODS

In all, 347 medical students (male) during the academic year 2014-2015 were selected as sample for the study. The data was collected from Government Medical College, Aurangabad; Mahatma Gandhi Mission (MGM) Medical College, Aurangabad; Medical College, Latur; Dr. Shankarrao Chavan Government Medical College, Nanded; Government Medical College, Akola; and Dr. Punjabrao Deshmukh Memorial Medical College, Amravati, Maharashtra, India. Instructions were given to the students before filling these questionnaires by the researcher. This study was a part of research project funded by Indian Council for Social Science Research, New Delhi (Government of India) and ethically cleared by university research committee.

Demographic information

The demographic information of undergraduate professional health students was collected through personal datasheet. The demographic information about, age, sex, period of the study, name of the colleges, daily smoking, etc. were collected before seeking responses.

Consent form

The consent form was prepared in English language by the investigator and distributed to all participants (undergraduate professional health students) of this study. The written consent was collected from each student before screening procedure the questionnaire.

Assessment of health outcomes

The health outcomes of the undergraduate professional health students were measure through the questionnaires of the Medical Outcome Study: Short-form 36 (MOS SF-36) for present study.[25] It assesses eight health concepts of 36 items including five items of perceived general health, ten items of physical functioning, two items of social functioning, two items of bodily pain, four items of vitality, four items of physical role, three items of emotional role, and five items of mental health.

Data processing

The data was checked for accuracy and completeness and was coded and put up into the Statistical Package for the Social Sciences (SPSS) descriptive statistics for all studied variables, One-way analysis of variance (F-ratio) and Scheffe post-hoc test was used and the level of significant was set-up at 0.05 level.

RESULTS

Table 1 shows the mean scores and standard deviations of health outcomes and its eight subscales of year-wise male medical students. The fourth-year male medical students obtained highest mean score of health outcomes 91.81 and second-year male medical students got lowest mean score (90.34).

Table 2 depicted the differences of health outcomes along with its eight subscales of year-wise male medical students. The result given in Table 2 reveals that insignificant difference of health outcomes was found in year-wise male medical students ($F=0.18$). To find out the differences of eight subscales of health outcomes between year-wise male medical students, F-ratio was computed for each category separately. The result reveals that only significant differences were found in mental health ($F=3.06$, $P<0.05$). However, insignificant differences were found in perceived general health ($F=0.14$), physical functioning ($F=1.71$), social functioning ($F=0.38$), body pain ($F=1.88$), vitality ($F=0.69$), physical role ($F=1.11$), and emotional role ($F=0.75$) among year-wise male medical students.

The results of the study showed that (Table 3), there was significant difference of mental health between first and second year, first and fourth year, second and fourth year, as well as third and fourth year male medical students. Whereas, insignificant difference of mental health was found between first and third year as well as second and third year male medical students.

DISCUSSION

The findings of the study show that significant differences of mental health were found between year wise male medical students. However, insignificant differences were found in perceived general health, physical functioning, social functioning, body pain, vitality, physical role, and emotional role with combine sample of health outcomes between year-wise male medical students. The fourth-year medical students were found to have got more sound mental health to their counterpart male medical students. This study supported by Taylor[10] and Manjunath and Kulkarni[18] who investigated the poor mental health status among fresh

Table 1: Mean scores and standard deviations (SDs) of the health outcomes among year-wise male medical students

Sr. No.	Health outcomes	Years of male medical students	Number	Mean scores	Standard Deviations
1	Perceived general health	First	170	23.17	5.88
		Second	108	23.16	6.16
		Third	78	22.67	6.12
		Fourth	32	22.90	5.80
2	Physical functioning	First	170	5.94	1.48
		Second	108	6.14	1.51
		Third	78	6.11	5.52
		Fourth	32	5.50	1.70
3	Social functioning	First	170	5.67	2.02
		Second	108	5.61	2.05
		Third	78	5.39	1.74
		Fourth	32	5.68	1.46
4	Body pain	First	170	4.66	1.84
		Second	108	4.87	1.89
		Third	78	4.46	2.04
		Fourth	32	5.34	1.89
5	Vitality	First	170	30.65	5.44
		Second	108	29.87	6.38
		Third	78	30.91	5.50
		Fourth	32	31.03	5.79
6	Physical role	First	170	4.76	1.33
		Second	108	4.91	1.43
		Third	78	4.61	1.20
		Fourth	32	4.53	1.29
7	Emotional role	First	170	11.55	2.22
		Second	108	11.38	2.52
		Third	78	11.96	3.60
		Fourth	32	11.53	1.81
8	Mental health	First	170	4.64	1.52
		Second	108	4.37	1.35
		Third	78	4.60	1.54
		Fourth	32	5.28	1.80
9	Health outcomes	First	170	91.08	10.42
		Second	108	90.34	11.70
		Third	78	90.74	10.74
		Fourth	32	91.81	10.92

medical students of India.[2,6,10-12,19-21,25]. In general, the fresh medical students have more credit hours per year, more teaching sessions per week, and more frequent examinations, consequently leading to more hours of study, less time for rest, and academic stress, factors which can negatively affect mental health.[9] The others findings of the researches have reported a worsening mental health of students who are newly admitted in a medical college and this condition

Table 2: Differences of health outcomes of year-wise male medical students

Sr. no.	Health outcomes	Source of variance	DF	SS	MSS	F-ratios
1.	Perceived general health	Between groups	3	15.55	5.18	0.14
		Within groups	384	13855.41	36.08	
2.	Physical functioning	Between groups	3	11.88	3.96	1.71
		Within groups	384	886.11	2.30	
3.	Social functioning	Between groups	3	4.30	1.43	0.38
		Within groups	384	1448.77	3.77	
4.	Body pain	Between groups	3	20.50	6.83	1.88
		Within groups	384	1390.67	3.62	
5.	Vitality	Between groups	3	69.09	23.03	0.69
		Within groups	384	12717.73	33.11	
6.	Physical role	Between groups	3	5.95	1.98	1.11
		Within groups	384	685.26	1.78	
7.	Emotional role	Between groups	3	15.47	5.15	0.75
		Within groups	384	2624.54	6.83	
8.	Mental health	Between groups	3	20.85	6.95	3.06*
		Within groups	384	871.15	2.26	
9	Health outcomes	Between groups	3	67.37	22.45	0.18
		Within groups	384	45590.91	118.72	

DF (Degree of Freedom), SS (Sum of Square), and MSS (Mean of Sum of Square)

* = Significance

Table 3: Scheffe post hoc test for the differences between the adjusted posts paired means on mental health of year wise male medical students

Mean scores				Mean difference	C.d. at 0.5% level
I year	II year	III year	IV year		
4.64	4.37			0.27	0.24*
4.64		4.60		0.04	0.53ns
4.64			5.28	0.63	1.44*
	4.37	4.60		0.23	0.86
	4.37		5.28	0.91	0.76*
		4.60	5.28	0.67	0.56*

* = Significance

remains poor throughout their training.[10,17] In a global perspective, it may be possible that, effects of different political systems, national economic standards, or different healthcare systems have an impact on medical students' well-being, equally or even more relevant than variables such as academic stress, personality, economy, or gender.[4,5] In addition, the result also reveals that second years medical students' incur significantly poor mental health as compared to first year medical students. This is unexpected finding that first-year male medical students were reported good mental health. The unexpected findings may be due to the small sample size of second-year medical students. More research with a larger sample size will be needed in future.

AUTHOR CONTRIBUTIONS

SKS: Concepts, design, definition of intellectual content, clinical studies, data acquisition, data analysis, statistical

analysis, manuscript preparation, manuscript review, manuscript editing, guarantor.

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