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Original Research Article

Co-relation of socio-economic status with Revised- Life Orientation Test (LOT-R) outcome in health professional students

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Abstract: Medical education has and will be stressful in terms of psychological well-being mainly and physical strain. This stress is associated with various factors some of them are individual's attitude and approach towards workload, socio economic status, interest to join the program. These affect the academic performance of students which further affect their focus over the course taught. To find correlation of socioeconomic status (SES), Revised Life Orientation test score (LOT-R), academic score (AS) and willingness to join the course in first year medical students of two private medical institutes of India. 250 students enrolled for academic year 2015-16 in medicine program in institutes of Sumandeep Vidyapeeth (SV), Vadodara and National Institute of Medical Science (NIMS), Jaipur were considered. Non-randomized and purposive study was done by providing survey questionnaire to the students. Average academic score of Anatomy course was used for analysis excluding physiology and biochemistry due to non-availability of tangible data at the time of study. Data was collected, analyzed statistically using SPSS Version23.138 students from SV and 100 from NIMS were included as per filled questionnaire and academic score results. Statistical significance value between the groups in SES, LOT-R score and Academic score was observed in NIMS institute but not for SV. Low level correlation (.214) was observed in academic score of NIMS students with their LOT-R score level. Statistical significance as per gender in SES, LOT-R score and academic score was observed for NIMS not SV students. In NIMS, Jaipur there are certain positive factors which have modified the academic performance of the students while no such effect is observed among SV students. There are hidden factors affecting students' performance which needs to be explored further.
Keywords: Optimism, socio-economic status, academic performance, interest, medical students

INTRODUCTION

To help and serve people in need used to be the prime reason for most of the students to join medical profession during earlier days. Although proportion of medical students have increased now-a-days to great extend but the proportion of achieving good health network within the country has decreased. Various reasons have been proposed by the researchers for the same.

To be a student in medical college has and will be stressful [1-3]. Studies have revealed high level of distress and depression symptoms [4, 5] among medical students other than having suicidal tendencies [6, 7]. Attention has been paid to psychological well-being and stress level during past decades [8, 9] but only few studies have focused on life orientation test in medical students.

Optimistic and pessimistic approach is a mode to convey individual's attitude and expectation about the future in positive and negative manner. Life orientation test is considered as an empirical research [10] to define negative or positive expectations about future. Individual attitude towards things or problem directly or indirectly affects his or her physical and

mental state of health and response towards an issue has an implication towards positive or negative adaptation in their life [11].

Optimist always projects himself to achieve his target. This approach gives him enough impetus to face the vagaries of life. On the other hand pessimistic attitude lacks energy and drive to fulfill the desired goal and always thinks about failure rather than success [12].

Medical educators need to be aware that socioeconomic factors have meaningful patterns of association with students' mental and physical health, and their characters relating to personal and professional development [13]. Thus socio economic status does impact the academic performance of students. In our study we have assessed the SES using Kuppuswamy's scale of socioeconomic status- updated for 2011 [14].

Life Orientation Test (LOT) is to assess the individual's difference in optimism and pessimism developed by Scheier and Carver and used for the first time by Goodarzi [15]; which was standardized and validated by Kajbaf et al. [16].

Some of the researchers in India have found that dissatisfaction with the career choice that may have been forced on them could be a reason for lack of interest, lack of concentration, depression and ultimately poor academic performance [17]. Adult learners are self-directed and independent. They have a wealth of experience from which to draw when learning, and a need to see immediate relevance in their education as it relates to their current social roles [18]. Students adopting a deep approach are motivated by an interest in the subject material and/or recognition of its vocational relevance. There is an intention to understand; to focus on the concepts applicable to problem solving [19]. Thus it is important to assess if the students is willing to join the course specifically medicine since it requires immense dedication towards self-study effort.

Aim of the study is to find correlation of socioeconomic status (SES), Revised Life Orientation test score (LOT-R), academic score (AS) and willingness to join the course in first year medical students of two private medical institutes of India.

OBJECTIVES

- To assess the socio-economic status, academic performance and LOT-R score of first year medical students of two private medical institutes.
- To compare the LOT-R score with academic performance and with socio-economic status of medical students.
- To correlate the outcome of two medical institutes for socioeconomic status, LOT-R score, academic score and willingness to join the course.
- To analyze the gender variation for each component in two private medical institutes.

MATERIALS AND METHODS

A questionnaire based, non-randomized, observational, cross sectional study was conducted at Smt.B.K.Shah Medical Institute and Research center (SBKSMI&RC) after approval granted by the ethical committee of Sumandeep Vidyapeeth University. Same questionnaire survey was conducted at National Institute of Medical Science (NIMS), Jaipur after receiving acceptance letter from that institute. Students enrolled for medical course from both the institutes for the academic year 2015-2016 were included in the study. Repeater students from previous batch were excluded. Out of 150 students enrolled in SBKSMI&RC 138 student's data was included while in NIMS all the 100 enrolled students data was included for statistical analysis. Exclusion was based on filling of incomplete or inappropriate questionnaire. Secondly students who did not attempt first formative assessment for Anatomy were excluded at both the institutes.

All students were given a set of questionnaire revealing their personal economic status, questions which directly or indirectly assessed their willingness to join the course and revised life orientation test (LOT-R) to analyze their socioeconomic status as per Kuppuswamy's score, willing to be in the profession and personality type and self-esteem approach. The questionnaire was distributed in Anatomy lecture hall, having their roll numbers written so that each student's academic score could be compared. Aim and objectives of the study were explained to the students and verbal consent was received for the same within the first month of joining respective program at both the institutes. It was assured to the students that their data will be secure with the primary investigator and will be used only for present study.

The mean academic score for first formative assessment for Anatomy were calculated for each student and was used for our analysis. Academic score from Physiology and Biochemistry course was not included due to non-availability of tangible data at the time of study from both the institutes.

Data collected was compiled and statistically analyzed using SPSS-23 software.

RESULT

Sumandeep Vidyapeeth University enrolls 150 and NIMS 100 medical students every year as per Medical Council of India. In this study we have

included medical students from both the institutes for the academic session 2015-2016, within a month after starting of the medical programs.

138 from SV and 100 from NIMS were included after going through the filled questionnaire and academic score results.

Table-1: Descriptive Statistics for LOT-R score, SES, Willingness to join the course and academic score% for first year medical students in SBKSMI&RC under SV and NIMS.

University	Parameters	Minimum	Maximum	Mean	Std. Deviation
SV (N=138)	LOT-R Score	4.0	23.0	15.964	3.53
	SES	10.0	29.0	24.145	4.53
	Willing to Join course	1.0	2.0	1.319	.47
	Academic Score	00	88.0	36.377	22.61
NIMS (N=100)	LOT-R Score	5.0	21.0	14.114	2.68
	SES	12.0	29.0	23.305	4.65
	Willing to Join course	1.0	2.0	1.095	.295
	Academic Score	7.8	90.0	47.026	18.47

Minimum and maximum score for the four parameters in two medical institutes showed value ranging from 4 to 23 for LOT-R score, 10 to 29 for SES socioeconomic status, and 0.0 to 90 for academic score percentage. Mean for willingness to join the course as 1.095-1.319 were 1 suggests yes and 2 as no for joining the course in two institutes.

Table-2: ANOVA for each parameter in two medical institutes

University	Parameters		Sum of Squares	df	Mean Square	F	Sig.
SV (N=138)	LOT-R Score	Between Groups	4.37	1	4.37	.349	.556
		Within Groups	1702.45	136	12.52		
	SES	Between Groups	2.77	1	2.77	.134	.714
		Within Groups	2804.33	136	20.62		
	Willing to Join course	Between Groups	.50	1	.50	2.322	.130
		Within Groups	29.47	136	.22		
	Academic Score	Between Groups	195.34	1	195.34	.380	.538
		Within Groups	69849.07	136	513.60		
NIMS (N=100)	LOT-R score	Between Groups	34.51	1	34.51	5.005	.027*
		Within Groups	710.12	103	6.90		
	SES	Between Groups	141.25	1	141.25	6.892	.010*
		Within Groups	2111.0	103	20.5		
	Willingness to join the course	Between Groups	.000	1	.000	.001	.973
		Within Groups	9.048	103	.09		
	Academic score	Between Groups	8244.29	1	8244.29	31.195	.000*
		Within Groups	27220.68	103	264.28		

***** The mean difference is significant at the 0.05 level.

Statistical significance value between the groups in SES, LOT-R score and Academic score is observed in NIMS institute but no statistical significance is observed in students of SV for those parameters.

Table-3: Correlation analysis for four parameter's within each medical institute.

Parameters in University		LOT-R Score for SV/ NIMS	SES-SV/ NIMS	Willing to Join course-SV/ NIMS	Academic Score-SV/ NIMS
LOT-R Score for SV	Pearson Correlation	1	-.054	-.073	.044
	Sig. (2-tailed)		.526	.398	.605
SES-SV	Pearson Correlation	-.054	1	-.015	.167
	Sig. (2-tailed)	.526		.861	.051
Willing to Join course-SV	Pearson Correlation	-.073	-.015	1	-.072
	Sig. (2-tailed)	.398	.861		.400
Academic Score-SV	Pearson Correlation	.044	.167	-.072	1
	Sig. (2-tailed)	.605	.051	.400	
LOT-R Score for NIMS	Pearson Correlation	1	-.013	.214*	.214*
	Sig. (2-tailed)		.896	.028	.028
SES for NIMS	Pearson Correlation	-.013	1	-.004	-.004
	Sig. (2-tailed)	.896		.970	.970
Willing to Join course for NIMS	Pearson Correlation	.182	-.014	.116	.116
	Sig. (2-tailed)	.063	.888	.238	.238
Academic Score for NIMS	Pearson Correlation	.214*	-.004	1	1
	Sig. (2-tailed)	.028	.970		

* The mean difference is significant at the 0.05 level.

Correlation of medium level is observed in academic score of NIMS medical student with their LOT-R score level.

Table-4: Descriptive analysis as per gender variation in SV and NIMS University

	Gender	N	Mean	Std. Deviation	Std. Error Mean
LOT-R Score for SV	Male	78	15.81	3.48	.40
	Female	60	16.17	3.61	.47
SES- for SV	Male	78	24.27	4.81	.54
	Female	60	23.98	4.17	.54
Willing to Join course- for SV	Male	78	1.37	.49	.06
	Female	60	1.25	.44	.06
Academic Score- for SV	Male	78	35.33	22.50	2.55
	Female	60	37.73	22.87	2.95
SES-NIMS	Male	69	22.55	5.15	.60
	Female	31	25.10	2.40	.43
LOT-R score-NIMS	Male	69	13.74	2.56	.30
	Female	31	15.00	2.78	.50
NIMS- Willing to join course	Male	69	1.10	.29	.03
	Female	31	1.10	.30	.05
Academic score-NIMS	Male	69	41.29	17.53	2.03
	Female	31	60.72	12.65	2.27

Table-4, Figure1&2 shows 78 male and 60 female medical students participated in the study with mean value are of higher level in SV students except for academic score were value are much higher in NIMS male (69) and female (31) students.

Table-5: Independent T-test for various parameters as per gender in two private institute

		t-test for Equality of Means		
		Df	Sig. (2-tailed)	Mean Difference
LOT-R Score for SV	Equal variances assumed	136	.556	-.3590
	Equal variances not assumed	124.764	.558	-.3590
SES-SV	Equal variances assumed	136	.714	.2859
	Equal variances not assumed	134.007	.709	.2859
Willing to Join course-SV	Equal variances assumed	136	.130	.1218
	Equal variances not assumed	132.727	.125	.1218
Academic Score-SV	Equal variances assumed	136	.538	-2.4000
	Equal variances not assumed	126.036	.539	-2.4000
SES-NIMS	Equal variances assumed	103	.10	-2.54
	Equal variances not assumed	101.78	0.001*	-2.54
LOT-R score-NIMS	Equal variances assumed	103	0.027*	-1.26
	Equal variances not assumed	52.36	0.035	-1.26
Willing to Join course-NIMS	Equal variances assumed	103	0.973	-0.002
	Equal variances not assumed	55.34	0.973	-0.002
Academic Score-NIMS	Equal variances assumed	103	0.000*	-19.43
	Equal variances not assumed	77.16	0.000*	-19.43

*The mean difference is significant at the 0.05 level.

Table-5 shows statistical significance in SES, LOT-R score and academic score of NIMS institute while no significance is observed in SV students.

Table-6: Paired Samples Correlations for two private institutes

		Correlation	Sig.
Pair 1	LOT-R score-SV & LOT-R score-NIMS	.181	.065
Pair 2	SV-Academic Score & NIMS-Academic Score	-.124	.208
Pair 3	SV-SE Status & NIMS-SE Status	.173	.078
Pair 4	SV-Willingness to join the course & NIMS-Willingness to join the course	.244	.012*

*The mean difference is significant at the 0.05 level.

Correlation of medium level is observed for willingness to join the course at two institutes but not for other parameters.

Table-7: Paired Sample statistics for each parameter for two institutes

		Paired Differences				T	df	Sig. (2-tailed)
		Mean±SD	Std. Error Mean	95% C I of the Difference				
				Lower	Upper			
Pair 1	LOT-R score-SV - LOT-R score-NIMS	2.04±3.6	.39	1.25	2.82	5.16	104	.0001*
Pair 2	SV-Academic Score - NIMS-Academic Score	-8.78±22.5	3.01	-14.75	-2.81	-2.92	104	.004*
Pair 3	SV-SE Status - NIMS-SE Status	0.70±4.6	.58	-.45	1.84	1.20	104	.232
Pair 4	SV-Willingness to join the course - NIMS-Willingness to join the course	0.25±0.5	.05	.15	.34	5.12	104	.0001*

*The mean difference is significant at the 0.05 level.

Table-7 shows high statistical significance between LOT-R score, academic score and willingness to join the program after using independent T-test for the parameters at two different medical institutes.

DISCUSSION

Earlier studies have shown a strong association between poor performance in preclinical years, burn out and serious professional misconduct in later practice [20,21]. In present study statistical significance was found between the group in socioeconomic status (SES), Revised Life Orientation test (LOT-R) score and academic score in NIM students. Although no statistical significance was observed in SV medical students.

The mean difference in Pearson correlation test was significant for in academic score with LOT-R score for NIMS students while no significant correlation was observed for other parameters of NIMS as well as any of the parameter in SV students. This is in concordance with Puja D. [12] were no significant correlation was observed for LOT-R and academic score for health professional students. Result from NIMS shows that optimistic or pessimistic approach of student does affect the academic performance, but there might be further unexplored factors which are showing this change, which we need to look into.

Our findings are partially consistent with that of Stewart [22] in their longitudinal study for two years were academic performance before & during medical school were negatively related to reported stress level. Schumacher [23] found no significant difference existing between grade level and optimism using GRE scale for assessing optimism and pessimism. Stoecker's [24] in his study indicated no relationship between optimism scores and expected grades. However, could find a correlation between grade expectancies and cumulative grade-point average suggesting LOT-R measured students' expectations of how they would perform in the hypothetical course based on their performance in previous course. Although Hall, Spruill and Webster [25] found higher grade point average (GPA's) in students who felt they had a greater sense of control over their future.

Mandal A. [17] also has not found socioeconomic background to be a significant factor affecting performance as per Indian context. Ahmar F. [26] showed the difference between high and low socioeconomic status group and found that the academic achievement was influenced by this difference, where high SES showed better performance. Our study is conducted in private medical universities were students SES range has no significant difference that is why we are not able to find a significate correlation. Tejas PG. [27] found that in government medical college socioeconomic status and parental educational background has much influence on student's higher education selection.

Ogunshola F. [28] identified parental educational qualification and health statuses of the students to have statistical significant effect on the academic performance of the students. Puddey IB. [29] in Australia and New Zealand showed better performance of candidates linked to increase in socioeconomic advantage. In non-Asian countries majority of students have to finance their own for higher education thus puts in maximum effort to have best academic performance. While in Asian countries like India parents provide financial support to their child for higher education and many times they do force child to join the course as per their inner wish.

Gender variation for these four parameters in two medical institute showed high significance value ($p=0.05$) in NIMS students for SES, LOT-R score and Academic score but no statistical significance was found in SV students for any of the parameter. This implies that there is similar association for these parameters with male and female students at NIMS compared to that in SV. However, Tanhamani N. [11] results showed a significant difference between Life Orientation with stress, depression and anxiety but no significant difference between optimism with pessimism females and males. Study by Singh and Jha [30] also showed non significance for gender variation for optimistic and pessimist students.

Comparing LOT-R score, SES and academic score at two institute shows medium correlation with 0.001 level of mean significant difference but no statistical significant for SES of the students at two institutes. This relation suggests that there are many more hidden factors which affect the students' performance. We as faculties need to explore those so as to have a better learning and motivation within the students.

CONCLUSION& RECOMMENDATIONS

Our study concludes that there are many more hidden parameters which influences the overall performance of medical student in Indian private medical institute other than socioeconomic status, willingness to join the course and there optimistic and pessimistic approach. Our findings have revealed two different results at two different locations of country. In NIMS, Jaipur there are certain positive factors which have modified the academic performance of the students. Although in every institutes students undergo mentorship program. Approach towards learning in medical program can be explained to the students so that their focus and approach would be towards the right direction. Students having pessimistic personality should be motivated by the faculty members and guided by student's counsellor in-order to cope the college environment in better way. Hidden parameters affecting the students' performance should be explored. We as faculties can play a role model for those students's and motivate them so that they can succeed in their chosen

field. We will be able to detect pessimistic student at the earliest before it becomes too late for us to rectify the flaw within the child. This approach will help faculty and moderators to encourage and guide the student in a better way so as to bring the best out of the student.

CONFLICT OF INTEREST

The authors report no conflict of interest. The research involves first year medical students as human participants who were explained about the study before signing the consent form.

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