

## Original Research Article

# Assessment of self-efficacy and academic performance of medical students

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### ABSTRACT

**Background:** In present scenario academic self-efficacy is an important key factor to assess academic progress among students, so that their outcome in exams can be enhanced. The aim of this study was to assess academic self-efficacy among medical students according to present curriculum.

**Methods:** This was a cross sectional study conducted among 120 students of Shyam Shah Medical College, Rewa (MP). Samples were selected from exam going students of third professional examination, either current batch or detained batch. A self-administrated, structured questionnaire was developed to collect data from the undergraduates. Assessment according to objective questions from their current syllabus was done to assess academic self-efficacy, the study adapted the questions framed by faculty members of third professional students. 200 questions from all the subjects of third year were included. Data were collected and data analysis was done by applying proper statistical tests.

**Results:** The mean academic self-efficacy in boys was 76.03. Maximum marks obtained were 178/200 among boys and 189/200 among girls. The mean scores of all students were not significantly associated with mean scores from their academic session in college.

**Conclusions:** The findings of this study indicate that more aged students have less academic self-efficacy as compared to their younger batch mates. Females and males were equally sincere in terms of their academic efficacy. Study pattern of medical students is curriculum based.

**Keywords:** Academic self-efficacy, Medical students, Curriculum, Undergraduates

### INTRODUCTION

There is a high time to assess the level of higher education of students in society, and also the future of students depends on this fact. Successful development of the students in medical field depend on academic efficacy of the medical students.<sup>1</sup>

Academic self-efficacy and ability are factors affecting academic achievement.<sup>2</sup> Self-efficacy has a major role in human behavior assessment, hence it improves performance coefficient of students.<sup>3</sup> It is evident that

self-efficacy of medical students and their capacity is useful to assess the academic achievement.<sup>4</sup> Self-efficacy is stronger tool for assessment of academic achievement.<sup>5</sup> Nonetheless, it is important to understand why some students excel academically and others even cannot pass simple examination. It is established that motivational beliefs and learning strategies do affect their academic performance.<sup>6</sup>

However, one cannot deny the role of perceived self-efficacy as this perceived judgment influences people's behaviors (e.g. achievement), choice in activities,

persistence, effort, motivation, thoughts, and emotions.<sup>7-9</sup> So far, the relation between self-efficacy and academic performance has been depicted in other disciplines mainly.<sup>10</sup> Only one study targeted this area in medical education related to practical performance in objective structured clinical examination.<sup>11</sup>

Indeed, medical students are expected to acquire a science knowledge base, develop clinical competencies, and integrate these contextually in clinical decision-making scenarios. It is speculated that these three learning domains may be sensitive to the effects of self-efficacy, but this is yet to be determined.<sup>4,8</sup> Thus, this survey was done for assessment of academic self-efficacy among third year medical students according to curriculum.

## METHODS

It was a cross-sectional study and conducted among third year students of Shyam Shah Medical college, Rewa (MP). The sample of was 120 students, who were exam going student for third professional MBBS exams. The criterion of entering the study was the willingness to participate in the study. Exit criteria were also unwilling to participate in the study. 120 students gave consent for participation in the study. Approval of the institutional ethics committee was taken prior to initiating the study. Study duration was 5 months, i.e. from January to May 2019.

Academic self-efficacy questionnaire was prepared by faculty members for student, which contains 200 objective type questions. One mark was given for correct response while no negative marking, questions need to be answered in 3 hours duration. All 200 questions were

reviewed by all faculty members and were finalized after that. In fact, the total scores of these questions represent the degree of academic self-efficacy in students. The minimum score you get is 0, and the maximum score is 200. Demographic information includes questions (age, gender, college degrees and place of residence). And this demographic question was filled prior to the conduct of study.

## Statistical analysis

After collecting data, by using statistical package for social sciences (SPSS) software, proper statistical tests were applied and result was evaluated. For each parameter, mean and standard deviation were calculated based on assessment scores and self-efficacy scores for different age group and gender. These were tested using one way and two ways ANOVA for significant differences with test of homogeneity. Significance level of <0.05 was taken for study.

## RESULTS

Total 120 students participated in the study. Table 1, shows that mean age of students was 23.07 years while mean academic scores were 69.08 out of 150 and mean self-efficacy scores were 75.92 Out of 200. The male to female ratio was 2:1. Table 2, shows that there was no significant ( $p>0.05$ ) difference among mean scores of their examination according to gender. There was no significant difference in the mean self-efficacy scores according to gender ( $p>0.05$ ). Male and female scores were almost similar in academic examinations. There was no difference in mean self-efficacy scores according to gender.

**Table 1: Mean parameters of students.**

Variables	Minimum	Maximum	Mean	SD
Age (years)	20	27	23.07	1.864
Academic scores (150)	16	149	69.08	34.959
Self-efficacy score (200)	1	189	75.92	48.006

**Table 2: Academic and self-efficacy scores of students with respect to gender.**

Variable	N	Mean	SD	Minimum	Maximum	P value
Gender						
Male	80	23.06	1.931	20	27	0.973
Female	40	23.08	1.745	21	27	
Total	120	23.07	1.864	20	27	
Academic scores (150)						
Male	80	69.8	35.637	21	149	0.752
Female	40	67.65	33.963	16	149	
Total	120	69.08	34.959	16	149	
Self-efficacy score (200)						
Male	80	76.03	47.198	1	178	0.972
Female	40	75.7	50.194	1	189	
Total	120	75.92	48.006	1	189	

**Table 3: Academic and self-efficacy scores of students with respect to age group.**

Variable	N	Mean	SD	Minimum	Maximum	P value
Academic scores (150)						
19 to 21 years	23	66.43	38.488	22	145	0.529
22 to 24 years	70	67.37	34.856	21	149	
25 to 27 years	27	75.78	32.487	16	140	
Total	120	69.08	34.959	16	149	
Self-efficacy score (200)						
19 to 21 years	23	83.7	55.012	12	178	0.497
22 to 24 years	70	76.54	49.538	1	189	
25 to 27 years	27	67.67	36.734	1	143	
Total	120	75.92	48.006	1	189	

In fact, there was no significant difference in self-efficacy scores of students with respect to age group ( $p$  value  $>0.05$ ) and also there was no significant difference in academic scores of students with respect to age group ( $p$  value  $>0.05$ ). But it was observed that mean academic scores were more in students as their age increases. And mean self-efficacy scores were more in younger age group students. Which means that academically stronger are older students while skill based self-efficacy was more gained by younger students.

## DISCUSSION

It is evident from literatures that higher levels of self-efficacy were associated with higher levels of student achievement in various aspects.<sup>4,5</sup> But this was not the scenario of our study as it declined to accept that there was any association between self-efficacy and academic performance. As we included theory as well as practical examination but it could be comparable with a study done by Mavis which highlighted that self-efficacy was not significantly correlated to objective performance.<sup>11</sup> In fact the results shown by other studies are mainly concerned with other than medical students, which might vary in a manner that not be a science knowledge base with clinical competencies that build in a critical thinking virtually in different context.<sup>12-15</sup> Also different studies use different tools for evaluation of academic performance, so self-efficacy evaluation based on different tools produce varying results.<sup>18</sup> Hence, it is also a significant point while assessing any association and comparing results.

The self-efficacy questionnaire is self-administered questionnaire so there is a chance for bias in self-assessment. It was found to be considering skills and knowledge, mediated by perceptions of anxiety, self-confidence and preparedness, therefore, it is not only dependent on self-efficacy and even if there is an association we cannot declare because of self-efficacy.<sup>11</sup> There are some other areas assessed by Schunk as motivation that is related to self-efficacy, which could also be important for learning as well as for performance.<sup>9</sup> Another study demonstrated that participation mediates the relationships between motivation and learning strategies, and medical school

performance.<sup>6</sup> However, participation and self-efficacy beliefs also made unique contributions towards performance. This study showed that males scored similar as females in terms of self-efficacy. While several studies showed males predominance in self-efficacy.<sup>16,17</sup> However, in this study when compared their mean scores in examination, there was not much difference found in their performance.<sup>18</sup> In this study mean academic scores were more in students as their age increases. And mean self-efficacy scores were more in younger age group students. Which means that academically stronger are older students while skill based self-efficacy was more gained by younger students.

## CONCLUSION

General self-efficacy and academic performance of medical students are related to each other and if students are academically strong according to present curriculum, they also have efficient self-efficacy academically and clinically. In this study results depict that no difference was found in between the general self-efficacy and academic achievement at undergraduate level. Age of students influence their academic performance and their self-efficacy. So, it is required to explore further so that other skill-based education can be imparted in academic curriculum, so that every student is sound academically and clinically with efficacy in all aspect which help in their undergraduate as well as postgraduate level.

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## REFERENCES

1. Raeisoon M, Mohammadi Y, Abdorazaghnejad M, Sharifzadeh G. An investigation of the relationship between self-concept, self-esteem, and academic achievement of students in the nursing-midwifery faculty in Qaen during 2012-13 academic year. *Mod Care J*. 2014;11:236-42.
2. Komaraju M, Nadler D. Self-efficacy and academic achievement: why do implicit beliefs, goals, and

- effort regulation matter. *Learn Individ Differ J*. 2013;25:67-72.
3. Bandura A. Perceived self-efficacy in cognitive development and functioning. *Educ Psychol*. 1993;28:117-48.
  4. Bandura A. Self-efficacy: toward a unifying theory of behavioural change. *Psychological Rev*. 1977;84:194-215.
  5. Sugiyama K, Matsui H, Satoh C, Yoshimi Y, Takeuchi M. Effects of self-efficacy and outcome expectation on observational learning of altruistic behaviour. *Shinrigaku Kenkyu*. 1992;63:295-302.
  6. Jager SKM, Schotanus CJ, Themmen AP. Motivation, learning strategies, participation and medical school performance. *Med Educ*. 2012;46:678-88.
  7. Bandura A, Barbaranelli C, Caprara GV, Pastorelli C. Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Dev*. 1996;67:1206-22.
  8. Bandura A, Barbaranelli C, Caprara GV, Pastorelli C. Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Dev*. 2001;72:187-206.
  9. Schunk DH. Self-efficacy and cognitive achievement: implications for students with learning problems. *J Learning Disabilities*. 1989;22:14-22.
  10. Pajares F, Graham L. Self-efficacy, motivation constructs, and mathematics performance of entering middle school students. *Contemporary Edu Psy*. 1999;24:124-39.
  11. Mavis B. Self-efficacy and OSCE performance among second year medical students. *Adv Health Sci Educ*. 2001;6:93-102.
  12. Chen MC, Lin HJ. Self-efficacy, foreign language anxiety as predictors of academic performance among professional program students in a general English proficiency writing test. *Perceptual Motor Skills*. 2009;109:420-30.
  13. Walsh KA. The relationship among mathematics anxiety, beliefs about mathematics, mathematics self-efficacy, and mathematics performance in associate degree nursing students. *Nurs Educ Perspect*. 2008;29:226-9.
  14. Jenicek M. Towards evidence-based critical thinking medicine? Uses of best evidence in flawless argumentations. *Med Sci Monit*. 2006;12:149-53.
  15. Loughlin M. Critical thinking vs Moral expertise: a commentary on the rationale of value-laden medicine. *J Evaluat Clin Pract*. 2003;9:92-4.
  16. Wright AB, Holtum S. Gender identity, research self-efficacy and research intention in trainee clinical psychologists in the UK. *Clin Psychol Psychotherap*. 2012;19:46-56.
  17. Lee TS, Chen YP, Chang CW. Gender differences in the perceived self-efficacy of safer HIV practices among polydrug abusers in Taiwan. *Comprehensive Psychiatr*. 2011;52:763-8.
  18. Khan AS, Cansever Z, Zeynep U. Perceived Self-Efficacy and Academic Performance of Medical Students at Ataturk University, Turkey. *Journal College Physicians Surg Pakistan*. 2013;23(7):495-8.

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