

Original Research Article

## Impact of Academic Seniority on General Self-Efficacy of Medical Students at Taif University

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### ABSTRACT

Self- efficacy, which is the individual's confidence in their ability to perform a particular task, plays an integral role in determining an individual's chances of success. General self- efficacy of an individual can be influenced by a number of factors including Academic seniority, age and exercise. Medical Professionals increasingly have an underlying need of high self – efficacy levels as they are often exposed to unforeseen situations. We conducted a cross- sectional study amongst 605 medical students (year 1 to year 6) at Taif University, Saudi Arabia between August and November 2015 to analyze the impact of academic seniority, gender, exercise, hours of study, smoking and socioeconomic status on levels of total and individual self- efficacy. Students were asked to fill a questionnaire that included demographic and validated General Self- Efficacy scale. Total self- efficacy score of medical students at Taif University was then compared to the international average. Although no significant relationship between total or individual self-efficacy and gender, smoking status, socioeconomic status and other demographic factors was found, we identified a strong proportional relationship between academic seniority and regular exercise to total and individual self- efficacy.

**Key Words:** Self-Efficacy, Academic Seniority, Academic Performance, Medical students, Self-esteem, Confidence

### INTRODUCTION

For decades, Albert Bandura original work on Self-efficacy and its impact on human behavior continue to inform multiple fields including medical education. <sup>(1)</sup>

Self-efficacy is defined as an individual's judgement in their abilities to cope with a particular task. <sup>(2)</sup> It is a multi-dimensional construct that is crucial to the social-cognitive approach and conceptualizes individuals as being proactive, agentic, self-evaluative, self-regulatory and purposeful (Komarraju & Nadler, 2013). It is believed that individuals

with higher levels of self- efficacy believe in their ability to face challenges and change their behaviors to achieve positive outcomes, whereas individuals with lower levels report feeling overwhelmed, apathy and despair when faced with difficult situations. <sup>(3)</sup>

Self-efficacy beliefs influences how individual feels, thinks and behave and it can be influenced by a number of factors including self-accomplishment, vicarious learning, verbal persuasion and physiological states such as anxiety. <sup>(4)</sup> The information gathered from these factors

assist an individual in determining their ability to achieve certain tasks and challenges. Taking vicarious learning as an example, one's self efficacy or confidence in their ability to ride a motorbike could be positively influenced by watching a friend ride a bike. Overall, it is argued that self-accomplishment or performance outcomes is the most influential factor on self-efficacy followed by vicarious learning, verbal persuasion and finally physiological changes. <sup>(4)</sup>

Academic self-efficacy is a more specific aspect of self-efficacy and is focused on an individual's perceived competence in the Academic domain. <sup>(5)</sup> According to Komarraju and Nadler, self-efficacy is a determinant of academic achievements as it is reported that students with higher confidence tend to perform better academically. <sup>(6)</sup> Artino argues that students' possession of knowledge and skills does not guarantee they will be applied. <sup>(1)</sup> Instead, they should have the 'skill and will' to apply them across multiple domains and that their self-efficacy beliefs are a more accurate predictor of their motivation and future academic choices as opposed to their actual competence levels.

The relationship between self-efficacy, gender, age and exercise are variable. While self-efficacy had a positive association with age <sup>(7)</sup> and exercise, <sup>(8)</sup> its relationship with gender was found to be inconsistent <sup>(9)</sup>

In this study, we aim to look at the self-efficacy and its association with seniority level. Other factors explored included gender, exercise as well as a number of other demographic variables.

## MATERIALS AND METHODS

A cross-sectional study was conducted amongst Medical students at Taif University, in Taif, Saudi Arabia between August and November of 2015. The study included 605 medical students; 92, 116, 113, 95, 88, and 101 are the number of students for the academic year 1 to 6,

respectively. Male and female students accounted for 56% and 44% of the sample size at 339 and 266 students, respectively.

Self-administered questionnaires were distributed amongst the students after obtaining their consent prior to class start time. The rationale of the questionnaire was explained by the researchers prior to handing out the questionnaires and the students were given ample time to fill out the questionnaires with the research being available to answer any relevant questions. The questionnaire comprised of questions across age, academic year, gender, marital status, and smoking or living with smoker, income, optional self-reported GPA and the future specialty plans. Further questions included data related to general self-efficacy such as exercise and frequency of weekly studies inside and outside the house.

The Arabic version of the self-efficacy scale was used which was initially developed by Al-Manssour, Schwarzer and Jerusalem. <sup>(10)</sup> The scale is one-dimensional and has 10 items with 4-points scale, ranging from 1 to 4 (1 = not at all true, 2 = hardly true, 3 = moderately true or 4 = exactly true). The responses to all 10 items have been summed up to yield the final composite score with a range between 10 to 40. Cronbach's alpha values were between 0.76 and 0.90 across 23 countries and the criterion validity for the scale has also been noted to be appropriate. The Arabic version has been previously validated in Arabic countries. <sup>(11)</sup>

To examine for correlations between general self-efficacy and other variables, we conducted Pearson correlation test.

## RESULTS

Our study found that the average total self-efficacy score of medical students at the Taif University is 28.53. This is consistent with the international average score of 29.55 which was found based on a study conducted across 25 countries. <sup>(12)</sup>

We conducted Pearson correlation test and at 90% Confidence interval and p value of 0.75, the correlation was strong at 0.924 to examine self efficacy and seniority level. This strong correlation was valid for medical students in Academic years 1, 2, 3, and 5. When academic years 4 and 6, were included, no strong correlation between the two variables.

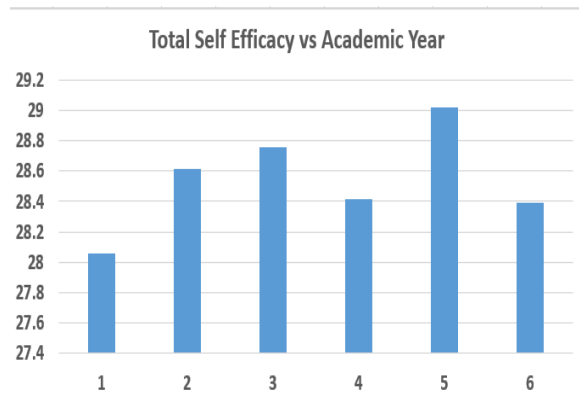


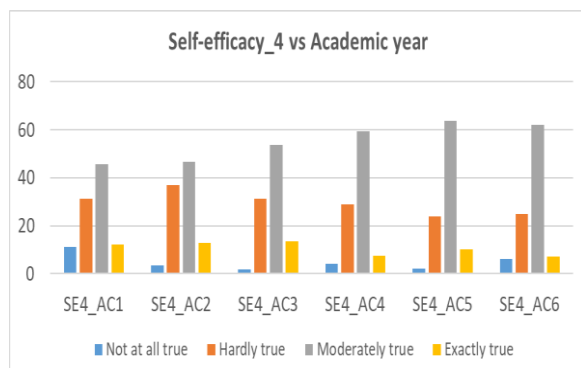
Fig. 1: Total Self Efficacy versus Academic Year

It was interesting to note that the total self-efficacy scores fluctuated for the

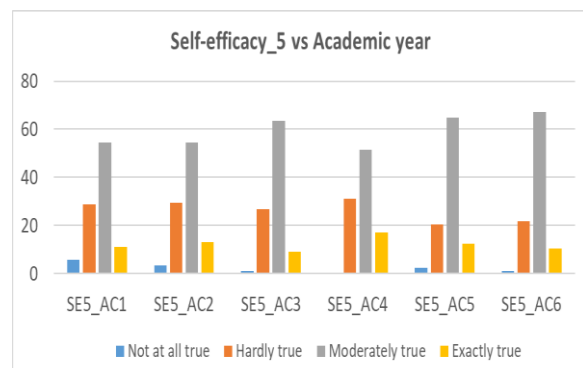
medical students across different academic years at the university. As can be seen in Fig. 1, the results varied with 28 being the lowest score at Academic year 1 and 29 being the high score at Academic year 5. This variation can be due to changes in subject area, level of difficulty and exposure to patients and clinical practice.

Our study found that 61.86% of the medical students in academic year 6 chose “moderately true” for self- efficacy question number 4 (I am confident that I could deal efficiently with unexpected events) as compared to 45.56% in academic year 1. These results are reflected in Fig. 2.

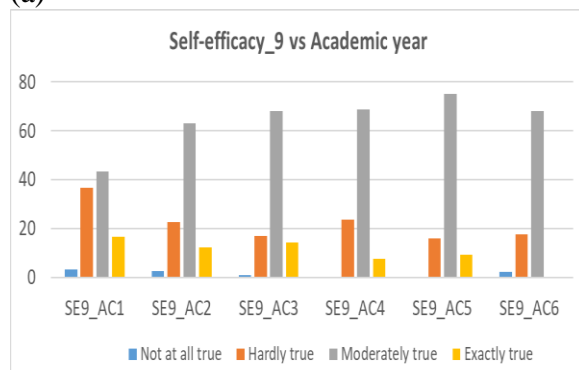
Likewise, we found a similar trend for self-efficacy question number 5 (thanks to my resourcefulness, I know how to handle unforeseen situations), as can be seen in Fig. 2(b); where 77.43% of academic year 6 students reported more positive self- efficacy levels compared to 65.55% in academic year 1.



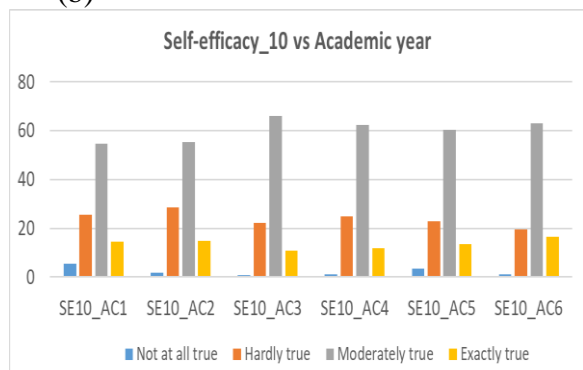
(a)



(b)



(c)



(d)

Fig. 2 (a) Individual Self Efficacy question number 4 versus Academic Year (b) individual Self Efficacy question number 5 versus Academic Year (c) individual Self Efficacy question number 9 versus Academic Year (d) individual Self Efficacy question number 10 versus Academic Year

Similarly, as shown in Fig. 2(c), 40% of the students in academic year 1 reported “not at all true” or “hardly true” for self- efficacy question number 9 (if I am in trouble, I can usually think of a solution) as compared to only 19.59% in academic year 6. The same trend is also evident for self- efficacy number 10 (I can handle whatever comes my way), where 79.38% of the students in academic year 6 were more confident about their efficacy levels to

handle uncertain situations as compared to only 68.88% in academic year 1 as can be seen in Fig. 2(d).

When it comes to the relationship between total self- efficacy and exercise, our study shows that self- efficacy is slightly higher amongst students who exercise for longer than an hour weekly as compared to those who do not exercise at all as reflected in Fig. 3.

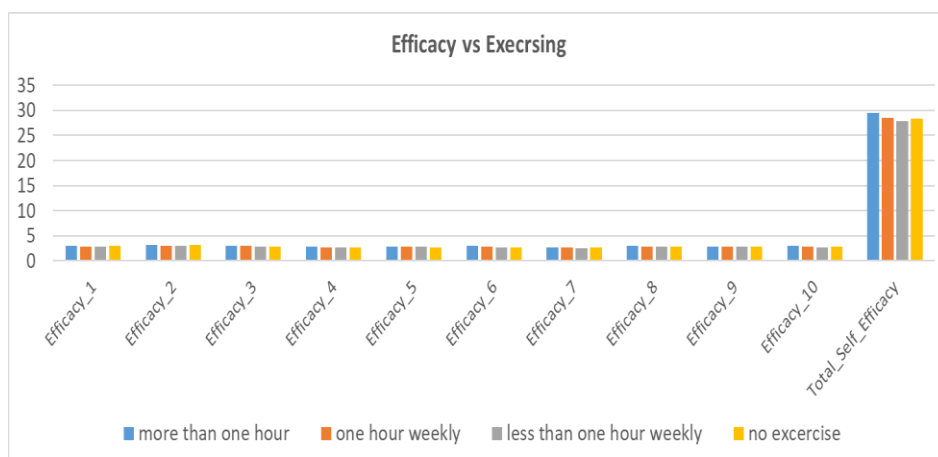


Fig 3: Self- efficacy versus exercise

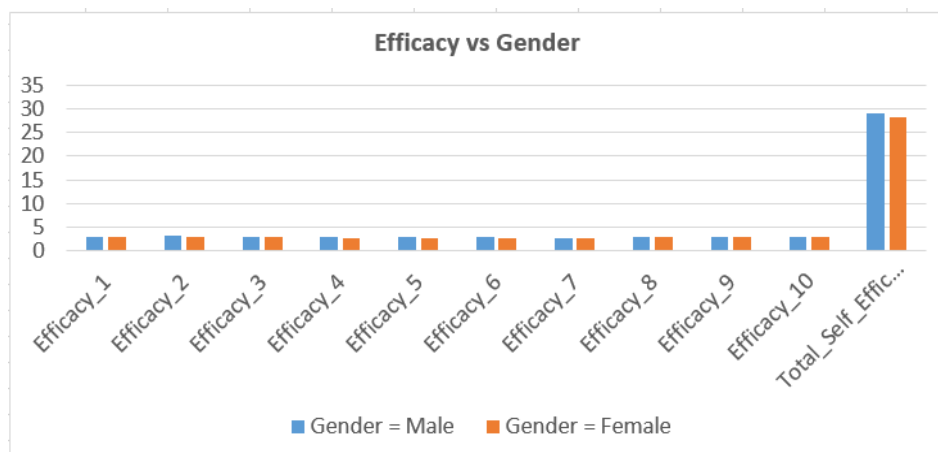


Fig. 4: Self- efficacy versus gender

In terms of association with gender, there was no difference in total or individual self- efficacy levels amongst the students as shown in Fig. 4. Similarly, our study could not find any correlation between total or individual self-efficacies and other variables such as marital status, smoking status and socio-economic status amongst medical students.

## DISCUSSION

Our study found that total self- efficacy is influenced by seniority as reflected amongst the medical students of Taif University. While the first 3 years and year 5 had higher total self-efficacy scores, the levels were lower in year 4 and 6. One of the reasons for this could be when students enter the medical school; their self- esteem and confidence levels are low as

they are new to the system and unsure about the new curriculum demands. As they progress further in their studies, their confidence in dealing with difficult situations further increases consequently their levels of self- efficacy also increases. However, when they become exposed to patients in real hospital settings in academic year 4; their confidence and efficacy levels decrease due to changing levels of difficulties and unforeseen situations because of real world patient experiences as opposed to lecture room settings. In Academic year 5, their self-efficacy levels increase again as they become more comfortable in dealing with the new environment however, it goes down again in year 6 when they started becoming more familiar with the clinical work. As they approach year 6 which signals the beginning of a new role as an intern, their self-efficacy levels go down.

As far as individual efficacies are concerned, our study clearly verifies that academic seniority certainly impacts the levels of self- efficacy amongst the medical students at Taif University. As the age and academic seniority increase, the students' exposure to deal with difficult and unexpected situations increase which makes them more confident to deal with new challenges and unforeseen events. With seniority, students become more motivated, resilient and persistent and thus are better equipped to finding solutions. This result is further supported by prior research which also indicates a positive relationship between experience and self- efficacy.<sup>(7)</sup>

Our study found that exercise was associated with higher self-efficacy levels. Previous research suggested a positive relationship between self-efficacy and exercise.<sup>(8)</sup> Our research also was consistent with previous research which did not find relationship between self- efficacy and gender.<sup>(9)</sup> Finally, there were no correlations between self-efficacy and socio- economic status, marital status and smoking and self-efficacy amongst the students.

## CONCLUSION

Our study found academic seniority influences the levels of self-efficacy. However, further longitudinal research is needed to measure self-efficacy in the same individual across their medical school years. It would be valuable to qualitative look into reasons for lowered self-efficacy years across medical school years in order to inform curriculum development and student support especially around starting clinical years and around graduation.

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How to cite this article: Burney J, Alyami H, Almansour A et.al. Impact of academic seniority on general self-efficacy of medical students at Taif university. *Int J Health Sci Res*. 2018; 8(8):35-40.

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