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## Studying self-efficacy beliefs in medical education

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### Abstract

The aim is to identify a relevant framework to study self-efficacy in relation to the impact of medical education curricula. In medical education research, self-efficacy beliefs have mostly been studied in relation to their impact on the mastery of communication competencies and clinical skills. Few studies are available – in the medical domain – that centre on a broader range of medical curriculum competencies, the way self-efficacy improves self-regulated learning, how self-efficacy affects motivation, provides study support, how self-efficacy boosts the career development of students and, how self-efficacy influences social and emotional support of students.

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*Keywords:* medical students; medical research; self-efficacy

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### 1. Introduction

Self-efficacy beliefs can be defined as an individual's beliefs about his/her capabilities to learn or perform behavior at a defined level (Bandura, 1998). From a review of available theoretical and empirical research about self-efficacy beliefs, we can conclude that self-efficacy beliefs affect critical student variables and processes: a) improving achievement, b) improving self-regulated learning skills and motivation, c) providing study support, d) students' career development and, e) providing social and emotional support to students. A separate research area centers on: f) the potential of adopting self-efficacy as a critical variable when evaluating innovation of the medical curriculum.

In this study, we searched the databases Medline, the Educational Resources Information Centre (ERIC) and PsycARTICLES from 1985 to October 2010. Key words included: "medical education" and combinations of "self-efficacy" and "self-efficacy beliefs". We look into how self-efficacy beliefs have been theorized and researched in relation to student learning processes and variables affecting learning processes.

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## **2. Self-efficacy**

Below we discuss the self efficacy in light of educational literature and give example of studies on medical education.

### *2.1. Improving achievement*

Research findings have confirmed that self-efficacy significantly correlates with achievement outcomes (Bandura, 1997; Pajares & Schunk, 2001; Schunk & Pajares, 2002). Since improving achievement is the main goal of medical schools, self-efficacy beliefs can be adopted to predict and increase the medical students' achievement. A few studies are available that focus on self-efficacy and academic performance in medical education (Chaput & Dunn, 2001; Johnston et al., 2004; Kell, 2006).

### *2.2. Improving self-regulated learning skills and motivation*

As Bandura (1986) contended, human motivation and behavior influence each other reciprocally. Increasing students' self-efficacy beliefs would therefore be expected to improve their achievement, motivation and self-regulated learning skills, and vice versa. The nature of medical curricula is in this context of importance. Papinczak et al. (2008) reported a significant association between high self-efficacy and having a deep learning approach; however, they found that during the first year of medical studies, students tend to lose self-efficacy and move away from deep-strategic learning approaches towards more surface approaches.

### *2.3. Providing study support*

Students' difficulties with basic academic skills are often directly related to their beliefs. Recently, Caprara and his colleagues (2008) found a relationship between self-efficacy beliefs and high school completion. Therefore, recognizing self-efficacy beliefs might be helpful to identify and support students at risk of dropping out, or completing successfully.

### *2.4. Career development of students*

Bandura argued that psychosocial skills contribute to career success more than mastery of occupational technical skills (Bandura, 1998). Research points towards low self-efficacy perceptions rather than lack of capability or skill as a main reason for students to avoid academic courses and subsequent career opportunities (Hackett, 1995). Assessing students' self-beliefs can, therefore, provide an important insight into how they make future study and career choices.

### *2.5. Providing social and emotional support to students*

Self-efficacy beliefs influence individuals' thought patterns and emotional reactions. People with low self-efficacy levels believe things are tougher than they really are, which gives rise to stress and depression, and limits their ability to solve problems (Pajares, 1996; Bandura, 1998). Therefore, assessing and improving self-efficacy beliefs may help to provide students with emotional and social support.

### *2.6. Evaluation of an innovation and/or curriculum*

Changes in the design of a curriculum can have particular implications, considering their impact on self-efficacy. In line with this theoretical perspective, medical educators have shown a growing interest in research about the

relationship between – eventually changes in - the curriculum and self-efficacy beliefs. Most of these studies concerned communication competencies (Allen et al., 1998) and clinical skill performance (Tresolini & Stritter, 1994; Mann et al., 1997; Johnston et al., 2004; Mason & Ellershaw, 2004; Katz et al., 2005; Wright et al., 2006; Morton et al., 2006). Other studies aimed at determining the role of self-efficacy beliefs in domains such as research skills (Baken et al., 2010), diagnostic abilities (Sobral, 2000), and team tasks (Sobral, 1998).

### 3. Discussion and conclusion

In the present literature study, we looked at self-efficacy beliefs from the perspective of educational theories, and screened the literature as to how self-efficacy beliefs have been approached thus far in the medical education literature.

From the scarce literature we found on self-efficacy beliefs in the medical domain and their relationship with students' learning skills, career development and emotional state. We conclude that medical teachers and researchers should direct more attention to the study of medical students' self-efficacy beliefs, in other domains than it has been done thus far.

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