

The role of self-efficacy in rehabilitation sciences clinical doctoral education

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DESCRIPTION

In the past, the primary job responsibilities of Rehabilitation Sciences professionals included evaluating and treating patients, however, clinicians today need to be able to understand, apply and generate research, manage and administer clinics, and provide education to future professionals (1,2).

Accordingly, the entry level educational requirements for Rehabilitation Sciences professionals have extended from undergraduate to doctoral degrees (2). The current benchmark of clinical practice is evidence-based practice, and we need to ensure that Rehabilitation Sciences professionals are trained to be effective evidence-based practitioners (2,3). Clinical outcomes are highly reliant on clinicians' understanding, integration and production of new research evidence related to clinical knowledge and skills (2).

The purpose of doctoral education in the Rehabilitation Sciences is to produce professionals that are able to consume and contribute to the Rehabilitation Sciences knowledge base. There are two types of doctoral programs available in Rehabilitation Sciences; research and clinical. Students in research doctoral programs are expected to conduct original research by creating and expanding the knowledge and theory in their field of study, and students in clinical doctoral programs are expected to conduct applied research by expanding and applying existing knowledge and research to clinical problems in their professional fields.

The curriculum of clinical and research doctoral programs in Rehabilitation Sciences, are similar, but differ in the number of required research credit hours. Clinical doctoral students are required to complete a smaller number of research credit hours than research doctoral students (2).

Comprehending, conducting, and disseminating research findings are among the chief curricular objectives of Rehabilitation Sciences doctoral programs (2). However, new doctoral graduates may not be confident in their capabilities to comprehend, develop, conduct, and publish research findings, in spite of developing the knowledge and skills required to be consumers and producers of research, (2,4,5).

Research self-efficacy is commonly accepted as an individual's belief in his or her ability to successfully perform research associated tasks (5). The construct of research self-efficacy originates from Bandura's social cognitive theory (6). According to Bandura, individuals formulate their life circumstances by intentionality, foresight, self-regulation and self-reflection (5,7,8). This self-reflection includes the assessment of personal self-efficacy. These self-efficacy beliefs are affected by the triadic interactions between cognitive, behavioral and environmental factors (5,7-9). Self-efficacy influences foresight and goal setting (5). Envisioned futures are limited by the beliefs individuals have about their capability to achieve these goals (8,10).

According to Bandura self-efficacy is established through the cognitive amalgamation of four information cues, including enactive mastery,

vicarious experience, verbal persuasion and emotional arousal (10). Enactive mastery is the most powerful factor in self-efficacy development, since enactive experiences comprise the most reliable evidence of capabilities (8,11-13). Self-efficacy is formed with the introduction of a task at the beginning of skill development (8,11,13). Self-efficacy increases with the repeated successful execution of a specific task (10,11,14). Individuals acquire confidence in their capability to execute a specific task when they are frequently successful in executing the task (8).

On the other hand, repeated failures may decrease self-efficacy (13). The second most influential factor in the formation of self-efficacy is vicarious experiences or modeled performances (8,12,15). Individuals use social models as benchmarks to discern their own capabilities (2,12,13). Individuals judge their abilities by observing the performance of others and equating their accomplishment with that of others (8,13). The explicit and implicit messages that an individual receives from significant others such as peers, faculty members and administrators may affect their judgement of their performance capabilities (8,15). Bandura labels this source of self-efficacy information as verbal persuasion (12).

Evaluative feedback on performance is an example of verbal persuasion (8). Positive verbal encouragement reassures individuals to try and persevere and succeed, which in turn encourages skill expansion and efficacy beliefs (8,12). However, there is also the threat of destabilizing self-efficacy through disingenuous positive feedback (8,12).

Confidence in an individual's research capabilities is reported to be positively associated with his or her research productivity (2,5,14,16-19). This positive association proposes that beliefs about research capabilities effect research behaviors (2). Individuals with high research self-efficacy beliefs are more productive and persist through difficulties when compared to individuals who are not confident in their research abilities (2). However, there is a lack of information on the research self-efficacy beliefs of doctoral students in Rehabilitation Sciences, specifically information on the research self-efficacy of clinical doctoral students (2). Further, little is known about the confidence of doctoral students and clinicians' in their ability to find appraise and apply research findings (2).

Clinical doctoral students have lower participation in research activities. Further, clinical doctoral students are more likely to work on a research project alone rather than in a team with faculty members (2). Therefore, clinical doctoral students compared to research doctoral students have reduced opportunities to develop research self-efficacy through enactive mastery, vicarious experience and verbal persuasion (2). Among Rehabilitation Sciences research doctoral students, working with a faculty member in planning and executing a research study is positively associated with greater research self-efficacy beliefs and research productivity (2).

Clinical doctoral programs that are devoted to improving the research self-efficacy of students will benefit the field of Rehabilitation Sciences in the long run. Clinicians with doctorate degrees need not only be confident consumers of research but also be able to expand the knowledge base in

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their professional fields. They need to be confident in their ability to independently find, appraise and apply clinical practices that are empirically supported (2).

Hence, there is a clear requirement for further exploration of the relationship between research experience and education, and the consumption, application, and production of research among Rehabilitation Sciences clinical doctoral students.

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