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Self-efficacy for therapeutic mode use among occupational therapy students in Norway

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Abstract: *Background*: The intentional relationship model (IRM) proposes six distinct ways of relating to clients. A new instrument for measuring self-efficacy for using the therapeutic modes in occupational therapy practice was recently found to have good psychometric properties. To date, however, no research has investigated factors associated with self-efficacy for therapeutic mode use. *Aim*: This study aimed to explore sociodemographic and education-related factors associated with self-efficacy for therapeutic mode use in a sample of occupational therapy students in Norway. *Methods*: Occupational therapy students (n = 111) from two education programs completed the Norwegian version of the recently developed "Self-efficacy for therapeutic mode use" (N-SETMU), in addition to reporting sociodemographic and education-related information. Hierarchical linear regression analysis was used to examine factors independently associated with the students' N-SETMU scores. *Results*: Higher N-SETMU scores were associated with better average academic performance among the students. Otherwise, none of the associations were statistically significant. *Conclusions*: As better academic results were linked with higher self-efficacy for therapeutic mode use, the study indicates that some students perform well academically and have high self-efficacy for practical skills, whereas others perform less well academically and have lower self-efficacy for practical skills. A potential transfer of self-efficacy beliefs from one area of performance (academic) to another (practical skills) seems possible, and this may be investigated in future studies.

ABOUT THE AUTHORS

The research group investigates occupational therapy students' self-efficacy for therapeutic use of self in occupational therapy practice. New questionnaires have been developed to measure self-efficacy for three aspects of therapeutic use of self: therapeutic mode use, skills to recognize clients' interpersonal characteristics, and skills to manage interpersonal events of therapy. The research group is in the data collection phase of a longitudinal study designed to explore students' development in these areas during their time in education. The current study uses cross-sectional data from the sample at baseline, and investigates associations between the students' characteristics and their self-efficacy for using therapeutic modes, as described in the intentional relationship model.

PUBLIC INTEREST STATEMENT

Using a conceptual model of the therapeutic relationship as the point of departure, this study found that students who performed better academically also had higher self-efficacy for using self as a tool in occupational therapy practice. This may indicate that some students are "twice blessed" in terms of being well equipped for academic tasks as well as clinical practice tasks, whereas others may perform worse in both areas. Thus, it appears that academic performance may be useful as a prognostic indicator of skills performance.

Subjects: Educational Research; Education Studies; Higher Education; Occupational Therapy

Keywords: academic performance; grades; higher education; intentional relationship model; self-efficacy; therapeutic modes

1. Introduction

Self-efficacy signifies a person's belief that he or she is able to execute successfully the behaviors required to produce a specific outcome. Thus, self-efficacy is the person's belief in his or her capability to control and execute actions in spite of potential obstacles. A person's perceived self-efficacy has a direct influence on the choice of activities and settings, and the stronger the perceived self-efficacy, the more active the efforts to cope with the task at hand (Bandura, 1977). Therefore, self-efficacy affects individuals' decisions concerning the effort they will put into a task, how long and how hard they will persist doing it, and how resilient they are when facing setbacks and problems. In general, higher self-efficacy is linked with greater effort, perseverance and resilience (Van Dinther, Dochy, & Segers, 2011; Zeegers, 2004).

Transferring the above conceptualization of self-efficacy to the realm of education, students' self-efficacy will affect their learning behavior. Self-efficacy influences motivation and cognition by affecting the students' choices, task interest, task persistence, and goals (Van Dinther et al., 2011). Research has shown that self-efficacy beliefs are associated with factors of importance for performance in the educational context, like self-belief constructs, motivation constructs, and academic choices and changes (Pajares, 1996). However, studies have shown differing results concerning the relationship between students' self-efficacy and academic achievement (Cassidy & Eachus, 2000; Multon, Brown, & Lent, 1991; Pajares, 1996; Van Dinther et al., 2011; Zeegers, 2004). For example, a study among students enrolled in a three-year science course found that among first-year students, younger students had higher self-efficacy for academic performance, although similar academic achievements as the older students (Zeegers, 2004). On the other hand, among the third-year students, higher self-efficacy for academic performance was directly associated with academic achievement. Therefore, it appears that the impact of self-efficacy on academic outcomes may increase with more experience from higher education.

Self-efficacy among students has also been associated with higher levels of self-reflection (Van Dinther et al., 2011), a skill which is considered vital for the ability to form therapeutic relationships with clients in therapy. According to the intentional relationship model (IRM; 7), a productive therapeutic relationship is vital not only for the process of therapy, but also for subsequent outcomes. In the development of the IRM, six distinct ways of relating to clients were identified, and these ways of relating are referred to as therapeutic modes (Taylor, 2008). The six therapeutic modes are *collaborating, empathizing, encouraging, advocating, instructing* and *problem-solving*.

The *collaborating* mode is used when the occupational therapist includes the client in all aspects of the therapeutic process. *Empathizing* is described as when the occupational therapist makes substantial efforts to understand the client's inner experience. When using the *encouraging* mode, the occupational therapist cheers on the client in any possible way to enhance motivation. The *advocating* mode is described as when the occupational therapist assists the client in accessing information and other resources. In the *instructing* mode, the therapist takes on a teacher-like role in the relationship to the client, with the aim of educating the client. Lastly, the *problem-solving* mode describes jointly addressing the client's concerns in a logical and analytic way. Importantly, none of the modes is suggested to be preferable above others. Rather, the modes should be used flexibly, with good timing, and according to the client's needs in the situation (Taylor, 2008).

In light of reported associations between higher self-efficacy and better actual performance, occupational therapy students with higher self-efficacy for therapeutic mode use may be in a favorable position to establish well-functioning therapeutic relationships with their future clients.

Examining the factors associated with self-efficacy beliefs related to their use of self in therapy would assist in identifying those likely to work successfully through their therapeutic relationships to clients, and conversely, those at risk of experiencing more challenges in establishing and maintaining therapeutic relationships. To date, no previous studies have explored factors associated with self-efficacy in relation to therapeutic mode use.

1.1. Aim of the study

This study explored sociodemographic and education-related factors associated with self-efficacy for therapeutic mode use in a sample of occupational therapy students in Norway.

2. Method

2.1. Design

The study is part of a larger longitudinal study of occupational therapy students' self-efficacy for using therapeutic modes, for recognizing clients' interpersonal characteristics, and for managing interpersonal events in client–therapist interactions. The present substudy is a cross-sectional design study investigating sociodemographic and education-related factors associated with self-efficacy for therapeutic mode use among the students.

2.2. IRM workshops

Workshops on the IRM were conducted in the classrooms at each university (Norwegian University of Science and Technology in Trondheim, and Oslo and Akershus University College of Applied Sciences in Oslo). The students in Trondheim participated in a six-hour IRM workshop, while the students in Oslo participated in a three-hour IRM workshop. The length of the workshops varied due to differences between the study programs. Both workshops consisted of a theoretical introduction to the IRM model and its main concepts, teacher demonstrations, student role-plays using the therapeutic modes, and a concluding plenary discussion. Two of the authors, who are both academics teaching occupational therapy in mental health, delivered the workshops.

2.3. Participants

Both student groups consisted of second-year occupational therapy students. Students were included in the study based on their enrollment in one of the involved occupational therapy education programs, and provided their informed consent to participate in the study. The students completed the questionnaires during breaks in classrooms approximately two weeks after the IRM workshops in the autumn of 2016.

2.4. Measures

2.4.1. Self-efficacy for therapeutic mode use

The study employed the Norwegian *Self-efficacy for therapeutic mode use* (N-SETMU; 8), which constitutes Part I of a new questionnaire purporting to assess respondents' self-efficacy for the use of self in occupational therapy practice, as described by Taylor (2008). The original questionnaire was developed in the United Kingdom by Yazdani and Tune (2016). It asks respondents to rate their level of confidence that they have the required skills to use each of the therapeutic modes. Following the introductory text: "When I work with clients I am confident in my ability to…," each of the modes is listed as scale items. In accordance with Taylor (2008), the modes are denoted as advocate, problem-solve, instruct, encourage, empathize, and collaborate. In order to provide valid responses, respondents need to have an understanding of the types of therapeutic behaviors that fall under each of the mode descriptors. All items are rated on a 1–10 scale, where a score of "1" indicates the lowest possible level of self-efficacy and a score of "10" the highest possible level.

The instrument was translated from English to Norwegian using a forward-translation and a back-translation procedure. A person proficient in both languages performed the back-translation. The instrument developer checked the content and conceptual clarity of the back-translation by

comparing it with the original version of the questionnaire (Yazdani & Tune, 2016). After checking the back-translation, no further amendments were considered necessary for the Norwegian version. The N-SETMU has been found to have a one-factor structure (Bonsaksen & Carstensen, 2017). Therefore, a sum score may be calculated from all of the six scale items. The scale provides a measure of the respondent's *self-efficacy for therapeutic mode use* at the general level. Factor loadings for the items ranged between 0.68 (instruct) and 0.81 (encourage), and internal consistency was 0.82.

2.4.2. Sociodemographic variables

In addition to the N-SETMU questionnaire, the participants provided information about age in years, gender (male = 0, female = 1), and work status (not in paid work = 0, in paid work = 1).

2.4.3. Education-related variables

The participants also provided information about previous and current education experience: prior education (no prior higher education = 0, prior experience from higher education = 1), hours of course-related independent studying during a typical week (continuous measure), and academic performance (average grade based on completed exams). Academic performance was coded in accordance with the general grading system in Norwegian higher education (2011): fail = 1, sufficient = 2, satisfactory = 3, good = 4, very good = 5, and excellent = 6. All data were self-reported.

2.5. Data analysis

All statistical analyses were performed with the IBM SPSS for Windows software, version 24 (2016). Descriptive analyses were performed using frequencies and percentages for categorical variables, and means and standard deviations for continuous variables. Group differences were analyzed with χ^2-tests and independent *t*-tests for categorical and continuous variables, respectively. Bivariate associations between the study variables were conducted using Pearson's correlation coefficient *r*. Hierarchical linear regression analysis was used to investigate direct associations between each of the independent variables and the N-SETMU scale scores. Independent variables were included in two blocks: (1) age, gender and work status, representing sociodemographic factors; and (2) prior higher education, time spent on independent studies, and average exam grade, representing education-related factors. The fit of the regression model was assessed by examining the outcome variance proportion explained by the model. The level of statistical significance was set at $p < 0.05$, and effect sizes were reported as standardized β weights.

2.6. Ethics

The study was conducted according to ethical guidelines for research (World Medical Association, 2008). The lead researchers (Authors #2 and #6) informed the participants about the aims and procedures of the study, and all participants provided a written consent form. The participant information emphasized that the collected data would be analyzed at an aggregated group level. In addition, to minimize the risk of coercion, it was emphasized that participation in the study was optional. No benefits were related to individuals' participation, and conversely, no disadvantages were related to non-participation. The study received approval from the Norwegian Data Protection Official for Research (project number 49,433).

3. Results

3.1. Sample characteristics

The characteristics of the study participants are displayed in Table 1. The 111 students were predominantly female ($n = 88$, 79.3%) and their mean age was 24.5 years, with the students from Oslo ($M = 26.6$, SD = 7.9) being significantly older than the students from Trondheim ($M = 22.9$, SD = 3.3, $p < 0.01$). The students from Oslo also had significantly better average exam grades ($M = 4.5$, SD = 0.7) than the students from Trondheim ($M = 4.1$, SD = 0.6, $p < 0.01$)—otherwise, no differences between the two sample subsets reached statistical significance.

Table 1. Sample characteristics (*n* = 111)

	All(*n* = 111)	Oslo(*n* = 47)	Trondheim(*n* = 64)	
Variables	***M* (SD)**	***M* (SD)**	***M* (SD)**	***p***
Age				
Years of age	24.5 (6.0)	26.6 (7.9)	22.9 (3.3)	< 0.01
Gender	*n* (%)	*n* (%)	*n* (%)	
Male	23 (20.7)	10 (43.5)	13 (56.5)	0.90
Female	88 (79.3)	37 (42.0)	51 (58.0)	
Work	*M* (SD)	*M* (SD)	*M* (SD)	
In paid work	63 (56.8)	26 (41.3)	37 (58.7)	0.79
Not in paid work	48 (43.2)	21 (43.8)	27 (56.3)	
Education	*M* (SD)	*M* (SD)	*M* (SD)	
Hours of self-studying	10.3 (6.5)	9.9 (6.3)	10.6 (6.7)	0.56
Average grade	4.3 (0.7)	4.5 (0.7)	4.1 (0.6)	< 0.01
	n (%)	*n* (%)	*n* (%)	
Prior higher education	55 (49.5)	24 (43.6)	31 (56.4)	0.79
No prior higher education	56 (50.5)	23 (41.1)	33 (58.9)	
Self-efficacy for therapeutic mode use (single items)	*M* (SD)	*M* (SD)	*M* (SD)	
Advocating	5.5 (1.7)	5.8 (1.9)	5.3 (1.6)	0.16
Problem-solving	6.7 (1.5)	6.9 (1.5)	6.5 (1.5)	0.17
Instructing	6.3 (1.5)	6.5 (1.3)	6.1 (1.5)	0.12
Encouraging	7.5 (1.5)	7.7 (1.5)	7.3 (1.4)	0.16
Empathizing	7.0 (1.7)	7.3 (1.6)	6.7 (1.6)	0.09
Collaborating	7.4 (1.5)	7.3 (1.4)	7.4 (1.5)	0.90
Self-efficacy for therapeutic mode use (scale)	*M* (SD)	*M* (SD)	*M* (SD)	
N-SETMU	40.3 (6.8)	41.5 (6.7)	39.3 (6.7)	0.09

Notes: Statistical tests are χ^2-tests (for categorical variables) and independent *t*-tests (for continuous variables). Hours of self-studying is average number of hours spent during a typical week.

At the time of the data collection, there were 142 students enrolled in the relevant cohorts of the two education programs, yielding a response rate of 78.2%. Among the non-responders (n = 31), the mean age was 23.9 years (SD = 5.2 years) and they were 29 (93.5%) women and 2 (6.5%) men.

3.2. Bivariate associations

Higher average exam grade was significantly associated with higher scores on the N-SETMU scale. The full correlation matrix, displaying the bivariate associations between all of the study variables, is provided in Table 2. In addition, each of the subscales (self-efficacy for using each of the modes) correlated between 0.68 (instructing) and 0.79 (encouraging) with the N-SETMU scale score.

3.3. Self-efficacy for therapeutic mode use

Table 3 displays the results from the multivariate hierarchical linear regression analysis. Applying the N-SETMU scale as outcome, the regression model was not statistically significant (F = 1.12, p = 0.36) and explained only 6.4% of the outcome variance. The larger portion (5.6%) of the outcome variance was accounted for by the education-related variables included in the second block of the model. None of the sociodemographic variables was significantly associated with the outcome. However, having higher average exam grades was associated with higher scores on the N-SETMU (β = 0.22, p < 0.05).

Table 2. Bivariate associations between the study variables (*n* = 111)

	Gender	Work	Prior higher edu	Time self-studying	Average grade	N-SETMU
Age	−0.04	−0.11	0.31**	0.09	0.30**	0.04
Gender		0.23*	−0.12	0.04	0.17	0.04
Work			0.14	−0.15	0.02	0.09
Prior higher education				−0.08	−0.11	−0.07
Time spent self-studying					0.13	−0.03
Average exam grade						0.22*

Notes: Table content is Pearson's correlation coefficient *r*, showing bivariate (uncontrolled) associations between the study variables. Coding: male gender = 0, female gender = 1; not in paid work = 0, in paid work = 1, not having prior higher education = 0, having prior higher education = 1. For all other variables, higher scores indicate higher levels.

*$p < 0.05$.

**$p < 0.01$.

Table 3. Hierarchical linear regression analyses showing direct associations with self-efficacy for therapeutic mode use in the sample (*n* = 111)

Variables	N-SETMU scale score
Age	0.00
Gender	−0.03
Work	0.09
Explained variance	**0.8%**
Prior higher education	−0.09
Time spent self-studying	−0.06
Average grade	0.22*
R^2 change	**5.6%**
Explained variance	**6.4%**

Notes: Table content is standardized β weights, showing the independent variables' association with the dependent variables while controlling for all variables in the model. Coding: male gender = 0, female gender = 1; not in paid work = 0, in paid work = 1, not having prior higher education = 0, having prior higher education = 1. For all other variables, higher scores indicate higher levels.

*$p < 0.05$.

4. Discussion

The results of this study showed that the regression model was not statistically significant and explained 6.4% of the outcome variance. In general, thus, the independent variables included in the model explained only a small proportion of the variance in the students' self-efficacy for therapeutic mode use. In previous studies, sociodemographic factors have been found to be differently associated with measures of self-efficacy. For example, Scholz and coworkers found no correlation between general self-efficacy and age (2002), whereas the researchers in a Norwegian study (Leganger, Kraft, & Roysamb, 2000) reported substantially lower general self-efficacy among adolescents than among adults. A Norwegian population study found that men had higher general self-efficacy than women (Bonsaksen et al., in press), which was also found in a previous study of Norwegian occupational therapy students (Bonsaksen, 2015). However, no similar associations with age and gender were found in the present sample.

According to Bandura (1997), the main sources of self-efficacy are mastery experience, emotional and physiological arousal, verbal persuasion, and vicarious experience (social modeling), among which mastery experience is considered most important. In the current study, we found that having

better average exam results was associated with higher self-efficacy for therapeutic mode use. This finding may be interpreted in light of Bandura's (1997) emphasis on mastery experience as particularly important for self-efficacy beliefs: receiving good grades reflects in itself a mastery experience, and is as such logically linked with increased levels of self-efficacy. Previous studies have shown somewhat diverging results concerning the relationship between self-efficacy and academic achievement (Cassidy & Eachus, 2000; Multon et al., 1991; Pajares, 1996; Van Dinther et al., 2011; Zeegers, 2004). The reasoning in these studies, however, differed from the reasoning in the present study, as self-efficacy was treated as a predictor for (subsequent) academic performance. In the current study, we treated academic performance as a predictor for self-efficacy related to a particular set of skills.

The potential conflict between the different ways of conceptualizing self-efficacy, as predictor or as outcome, may be resolved using Bandura's (1997) concept of "reciprocal determination." There may well be a self-strengthening cycle between the factors. Higher self-efficacy may lead to productive study behaviors, as previously argued (Bonsaksen, Sadeghi, & Thørrisen, 2017; Prat-Sala & Redford, 2010), and subsequently to better academic results. Conversely, as found in this study, good academic results—an indication of actual mastery—may strengthen self-efficacy beliefs. Prior academic achievement has been proposed as the best predictor of academic success (Cassidy & Eachus, 2000), and mastery experience has similarly been shown to influence self-efficacy directly (Van Dinther et al., 2011). Such experiences provide evidence for the individual student that he or she has the capability to perform successfully on the relevant task.

This study adds to the existing literature with particularly one new finding: better academic performance was associated with self-efficacy for a very particular set of practical skills, i.e. self-efficacy for using therapeutic modes in client–therapist relationships. This finding indicates that mastering the academic aspect of the occupational therapy education course is associated with higher self-efficacy, even for performing practical skills in relating to clients. With this in mind, one interpretation is to assume a transfer of self-efficacy beliefs from one area of performance (academic) to another (practical skills). Another, and perhaps more careful interpretation, is to assume that some students perform well academically *and* have high level of self-efficacy for relevant practical skills, whereas others perform less well academically *and* have lower levels of self-efficacy for practical skills.

Students with low levels of self-efficacy for therapeutic mode use may potentially be challenged in their establishing of therapeutic relationships to clients. Following up these students in the educational situation may take different routes. First, it would be important to evaluate the relationship between the self-efficacy belief and the student's actual performance. If observations indicate that performance is good, then efforts to increase the student's self-efficacy in this area would be warranted. According to Bandura (1997), such efforts may be shaped as verbal encouragement following the student's experience of successfully building and sustaining therapeutic relationships. However, if performance is poor, demonstration (social modeling) and careful instruction may be needed to enhance the student's skills in this area. Instruction may include the didactic element of relating the student's behaviors to Taylor's description of modes (2008), in addition to exploring different modes as a response to interpersonal challenges encountered in therapy.

Future longitudinal research is needed to investigate the longer-term development of self-efficacy for therapeutic mode use, and to establish potential causal links between domain-specific self-efficacy, such as self-efficacy for therapeutic mode use, and academic performance. In addition, associations between self-efficacy for mode use and actual clinical performance should be investigated. Moreover, the therapist's clinical performance and the quality of the therapeutic relationship might preferable be assessed from the client's perspective. Evidence concerned with associations between the client's view of the therapeutic relationship and the student or therapist's self-efficacy for therapeutic mode use would make an important contribution to the literature.

4.1. Strengths and limitations

The cross-sectional design precludes establishing causal links between the variables found to be associated. Bandura's theoretical framework (1997), however, indicates that "reciprocal causation" (i.e. cyclical, self-strengthening relationships) may rather be the case. Responding to the questionnaire concerning self-efficacy for therapeutic mode use would require a certain level of understanding of the conceptual content of the modes (Bonsaksen & Carstensen, 2017). Although the students had all participated in a didactic workshop on the IRM and the use of therapeutic modes, there is little doubt that they had varying degrees of familiarity with the mode concepts—which may also have affected their level of self-efficacy for using the modes in practice situations.

The sample was quite homogeneous, comprised largely by young, female students of Norwegian background. This appears to align with the samples used in previous studies of Norwegian occupational therapy students. However, generalizing to the larger occupational therapy student population across geographical and cultural contexts should be done with caution. A convenience sample of exclusively second-year students was used, which also detracts from the study's ability to represent the larger population. However, recruiting participants from two universities adds to the results' external validity.

4.2. Conclusion

This study explored sociodemographic and education-related factors associated with self-efficacy for therapeutic mode use in a sample of occupational therapy students in Norway. Among the participants, better academic results was linked with higher self-efficacy for therapeutic mode use. The finding indicates that students who perform better academically also have higher levels of self-efficacy for using therapeutic modes in client–therapist interaction, compared to students who obtain poorer academic results. If replicated in future studies, the finding may indicate that students with better academic performance also have more confidence that they can manage some of the relationally challenging aspects of occupational therapy practice. On the other hand, students who perform less well academically may also feel more challenged by and insecure in the real-life practice situations they experience throughout the occupational therapy education course. Educators in the occupational therapy education programs may therefore use the student's academic performance as one possible indicator for his or her self-efficacy for performing in relationally challenging clinical practice situations.

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