Original Article

Nursing students' motivation regulation and its relationship with engagement and burnout

Abstract

Motivation regulation, study engagement, and students' well-being are critical components of skillful self-regulated learning. However, few studies have focused on these factors and their relationship in nursing education and as there is an increase usage of blended learning in nursing education there is an urge in measuring students' learning in this setting. This person-oriented, quantitative study explored first-year nursing students' (N=90) motivation regulation related to study engagement and study burnout in blended and traditional learning environments in two undergraduate nursing programs. Regardless of the learning environment, majority of the nursing students (65,6%) had high-developed motivation regulation profile. They performed high on motivation regulation, showed strong engagement, and more reduced exposure for study burnout than those with less-developed motivation regulation profiles. It is suggested that motivation regulation, study engagement, and experienced burnout influence nursing students' learning. These components should be emphasized in developing nursing education and facilitating nursing students' learning.

Keywords

nursing education, self-regulative learning, motivation regulation, blended learning

Introduction

Self-regulated learning has been associated with study success among nursing students.[1 - 5] However, is has been proposed that the regulation of cognitive activity is not sufficient; the ability to regulate motivation is regarded as a fundamental part of self-regulated learning, commitment to learning, and academic success.[6 - 9] Accordingly, nursing students' ability and willingness to regulate cognition and motivation enable them to create and maintain study engagement.

The learning environment has been identified as one determinant affecting students' motivation regulation and study engagement.[10] For example, in different study conditions, self-regulated learning occurs differently.[11] Despite the increased usage of blended learning (BL), empirical studies investigating motivation regulation and its relation to study engagement and study burnout in nursing education in different learning environments are still lacking.[12 - 14]

Background

Motivation regulation is an ingredient of self-regulated learning[15,16] referring to the conscious and active level of processing thoughts and actions and in which students intentionally try to influence their motivation concerning certain learning activities.[17] Effective motivational regulation includes the knowledge of motivation (meta-level understanding about motivation), the monitoring of motivation (ability to be aware, observe, and collect feedback on students' level of motivation for academic activities),

and the control of motivation, which entails the use and implementation of strategies, including purposeful interventions to control motivation, endeavors, and perseverance.[8] Students can utilize various motivation regulation strategies, such as self-consequating, self-efficacy, task valuing, environmental structuring, interest enhancement, goal-oriented self-talk, attribution control, efficacy management, and emotion regulation.[17] Nursing students have, for instance, shown to utilize peer support to make coursework more interesting, to increase their effort when the coursework feels difficult, and arrange a quiet place for studying to minimize distractions.[18] In addition, adjusting intrinsic motivation and enhancing self-efficacy has been shown to promote nursing students' adaption to learning environments and understanding of new concepts.[1,19] Students' advanced motivational regulation has also been associated with mastery orientation,[20] valuing study content,[8] the utilization of metacognitive learning strategies, success in academic achievement,[21,10,22] and engagement to learning and studying.[23,24]

Study engagement, in turn, is suggested to be a hallmark of optimal study experience characterized by vigor to invest effort in one's studies; dedication, entailing strong work involvement and identification of one's studies; and absorption, referring to intensive concentration and engrossing feelings that time flies and it is hard to detach from one's studie.[25,26] Nursing students experiencing study engagement have shown to perform better in their studies [27,28] and display more effective time management disposition than their less engaged counterparts.[29] Frequent course completion, regular

lecture attendance, and a student-centered learning environment are associated with increased levels of experienced engagement, where as excessive amount of part-time work decreased nursing students' study engagement and academic performance.[3,27,30] Experiencing vigor and dedication has shown to be related to a reduced risk for developing burnout, particularly experiencing exhaustion and cynicism.[31] This implies that nursing students who experience high levels of engagement are less likely to experience a lack of energy and display a cynical attitude toward their studies.

Study burnout is regarded to result from extensive and prolonged study-related stress.[32] It is composed of two distinctive symptoms: exhaustion and cynicism.[33,34] Exhaustion is characterized by intensive emotional study-related and chronic fatigue and results from overtaxing work.[35] Cynicism entails indifferent and underestimating attitudes toward studying and students' loss of interest and sense of meaning toward academic work.[35] Increased levels of cynicism and inadequacy are associated with reduced levels of academic achievement and study engagement.[32] An increase in nursing students' experienced exhaustion and disengagement has predicted less engagement in the learning and mastery of occupational tasks, and more study burnout has been associated with less use of evidence-based research utilization in practice.[36]

Engaging learning environment for nursing students

Nursing studies do not always provide an optimal learning environment for students. Nursing students have shown to suffer from increased levels of stress during their

studies[37-40] and to experience both academic and clinical studies as equally stressful.[41] Multiple demands of personal lives (e.g., employment, family life, finances) and academic expectations (assignments, examination, course workload) have been identified as primary sources of stress for nursing students.[37,42-44] In turn, high-quality teaching, support, and relationships with academic staff [38] peer learning strategies[45] and strategies that enhance nursing students' self-efficacy [46] are shown to contribute to students' engagement and reduce their stress.

Some students face difficulties engaging in learning and achieving their goals.[47] In fact, a significant number of nursing students drop out at the end of the first and second years of study due to low clinical or academic performance.[28,48] Without a supportive learning environment and attention to the enhancement of motivational factors, nursing students can feel overloaded and incapable of fulfilling course demands, impeding their engagement in academic progress [27,48] and, eventually, leading them to develop study burnout. There is partly contradictory results on the pros and cons of traditional versus BL environments' ability to facilitate nursing students' motivation regulation as a part of self-regulated learning.[49,50] BL may contribute nursing students' high academic achievement[13] and, for instance, enhance the use of summarizing and scripts in online discussions.[51] Moreover, teachers' encouragement of students' autonomy to share knowledge and have relevant communication with peers has been shown to motivate and engage students in BL.[49] Conversely, nursing students can also face difficulties in

BL environments[14] including feelings of isolation, uncertainty and overloading, concerns of maintaining a sense of community, time-management problems, technological problems, and the invasiveness of BL.[49,50,52] Regardless of the learning environment, however, it can be argued that nursing students benefit from well-developed motivation regulation skills that can support students' learning and engagement.

Aims

The aim of this study was to gain a better understanding of individual variations in first-year nursing students' motivation regulation skills by employing a person-centered approach. Moreover, associations between the motivation regulation profiles and experienced study engagement, study burnout, and performance on students' entrance examination were explored. We also examined the relationship between motivation regulation profiles versus working during their studies and having children or not under 18 year's old status. Students studying in BL and in traditional learning environments were compared.

The purpose of this study was to answer the following research questions: "What kinds of motivation regulation profiles can be detected among the first-year nursing students? " How do these profiles relate to experienced study engagement and study burnout?" "Are there differences in motivation regulation profiles between students studying either in BL or in traditional learning environments?"

Method

Nurse education in Finland is carried out at universities of applied sciences (UAS) and is based on the European Union's training requirements for general care nurses[53] qualifying students as registered nurses (Bachelor of Health Care). The degree program is comprised of 210 (ECT) credits (3.5 years, including clinical training, 90 ECT), and can be completed either in a traditional classroom or in a BL program, which combines face-to-face and online learning. Most BL program studies take place in tutored, technology enhanced online learning management systems, allowing students to study in a more flexible manner and regardless of the time and place. In BL, students attend a classroom-based lecture one period (4–5 days) per month, whereas in a traditional program students attend class in a classroom weekly and almost every weekday during the semester.

The study was approved by our institution's review board and the permission was obtained from the director of education, research, development, and innovation in healthcare and nursing education and from the participants. The participants were informed about the study before the data collection. Participation in the study was voluntary, and the participants were informed that the decision concerning their participation would not have any effect on their studies.

Participants

Altogether, 90 first-year Finnish nursing students (73 women, 81.1%; 17 men, 18.9%) from the UAS in northern Finland participated in the study. The sample consisted of all the first-year baccalaureate nursing students in two separated degree program units. The response rate was 85.7%. The average age was 28 years (M = 27.55, SD = 7.21). Thirty-four of the participants studied in a BL environment, whereas 56 students studied in a traditional learning environment. A slight majority of the students were not working (53.3 %) during their studies, whereas 36.7% had part-time and 10% full-time jobs. The groups differed from each other in terms of their work status. In the BL group, most students were working (73.5%, n = 25), where as in the traditional learning group, most students did not work alongside their studies 69.6% (n = 39) (see Table 1).

Measurement

The data were collected via a survey during spring 2016 by the researcher during a lecture. The online survey was sent via email to students who did not attend the lecture. Before the data collection, the researcher informed the participants about the study and their rights including voluntary participation, commitment to anonymity, and confidentiality. Prior studies with different population-validated scales on motivation regulation, study engagement, and study burnout were utilized. The Motivation Regulation Scale (26 items, see Table 2) contained subscales for the regulation of value (six items), the regulation of performance (five items), self-consequating (five items),

environmental structuring (four items), and the regulation of mastery goals (six items).[8] The study engagement scale (nine items; see Table 3) comprised of vigor, dedication, and absorption were employed.[25,35] The study burnout scale (see Table 4) was comprised of exhaustion (five items) and cynicism (three items).[32,54,55]

Respondents used a seven-point Likert scale ranging from strongly disagree (1) to strongly agree (7) to rate each item. In addition, four background questions concerning age, gender, whether they have underage dependents, and employment status (full-time, part-time, unemployed) were included in the survey. The students' entrance examination results were received from the university's administrative register.

Analysis

Data were analyzed using SPSS version 22 (2013). After the normality of the variables was checked, a series of exploratory factor analysis (EFA) using maximum likelihood extraction and both varimax and direct oblimin rotations were conducted to determine the underlying structure of the variables of motivation regulation, study engagement, and study burnout. The results suggested that the six-factor solution for the motivation regulation scale, including the regulation of performance goals, the regulation of mastery goals, self-consequating, environmental structuring, the regulation of value/meaningfulness, and the regulation of value/utility, should be retained. As for the regulation of value scale, the results of EFAs indicated that two factors, meaningfulness and utility value, should be retained.

A series of EFA models ranging from one to three factors was tested separately for the study engagement and study burnout variables. The results suggested a one-factor solution for the study engagement scale and a two-factor solution of cynicism and exhaustion for the study burnout scale provided a parsimonious solution and a good fit to the data.

To examine students' motivation regulations profiles, a series of K-means cluster analyses using the motivation regulations subscale scores as the constituting dimensions were performed. Two- and three-cluster solutions were tested and evaluated based on both statistical criteria and the interpretability of the results. Based on this and on the examination of the external validity of the obtained cluster solutions with respect to all the measured outcome variables, a two-cluster solution was selected. Independent-sample t-tests and corresponding nonparametric tests were performed to investigate the differences between clusters in study engagement and study burnout and whether there was a difference in students' motivation regulation, engagement, and study burnout in different programs.

Results

The results indicated that, on average, nursing students displayed high levels of motivation regulation (see Table 5). They showed high levels of all motivation regulation activities, ranging from $M = 4.25$ to $M = 5.60$. The standard deviation rate was higher in self-consequating ($SD = 1.30$) and environmental structuring ($SD = 1.32$)

than in other motivation regulation variables. Particularly high levels of the regulation of value in utility and environmental structuring were reported. Students reported employing strategies like thinking up situations in which it would be helpful for them to know the material; they kept telling themselves that it is important to learn the material because they will need it later in life. Environmental structuring referred to the effort that students attempted to ensure they have as few distractions as possible.

Students were highly engaged in their studies, experiencing vigor, dedication, and absorption (see Table 5). For example, they reported being inspired by their studies, experiencing high energy, being immersed, and finding their studies meaningful. At the same time, they suffered low levels of exhaustion and cynicism, reporting slightly higher levels of exhaustion than cynicism. Accordingly, students rarely experienced their workload as overly high or considered their studies useless. More variation in experienced exhaustion was reported. The results indicated that the first-year nursing students were engaged in their studies and suffered a low risk of burnout. Descriptions of the study variables can be found in Table 5.

Further investigation revealed that there were no significant differences between the students studying in the BL and traditional learning programs. The entrance examination results also indicated no significant differences between the groups. We found no relationship between motivation regulation profiles and working during their studies or having children or not under 18 year’s old status.

Nursing students' motivation regulation profiles

Two distinctive student profiles were detected (see Figure 1). The first motivation regulation profile culled from our analysis was students with a high level of motivation regulation. This was the most common profile among the nursing students, with a 65.6% (n = 59) sample share. These students displayed high levels of the regulation of performance, the regulation of mastery goals, self-consequating, environmental structuring, combined with high levels of reported use of both the regulation of value of meaningfulness and utility. The second profile, less-developed motivation regulation, represented slightly over one-third (34.4%, n = 31) of the nursing students in the sample. The less-developed motivation regulation profile holders showed moderate levels of regulation of performance, regulation of mastery goals, and self-consequating. They also reported lower levels of environmental structuring and the regulation of value, showing slightly lower levels of valuing meaningfulness and utility. There were no differences between students' motivation regulation profiles based on their learning environments.

Significant differences between the profiles were detected (see Figure 1.). Nursing students entertaining high-level motivation regulation profiles experienced more study engagement (M = 4.93, SD = .90) (t (57.19) = - 4.03, $p < .001$) than those with less-developed motivation regulation (M = 4.09, SD = .97). Students displaying high-level motivation regulation also suffered less on cynicism (M = - .17, SD=.64) (t (38.82) =

2.13, p = .039) than students with less-developed motivation regulation (M = 0.33, SD = 1.22). No statistically significant differences were detected in experienced exhaustion between the profiles.

Conclusion

Most of the first-year nursing students in the present study displayed high-level motivation regulation profiles. This supports the finding in a previous study that, in addition to being highly motivated at the beginning of their nursing studies,[19] most the nursing students had good motivation regulation skills. However, many students displayed less-developed motivation regulation profiles, indicating that they may face difficulties in motivation regulation from the very beginning of their studies, especially if they do not receive adequate support in developing motivation regulation skills. The results showed that displaying high motivation regulation was associated with experiencing increased levels of study engagement and reduced exposure for study burnout among nursing students. It has been indicated that the interrelation between motivation regulation and study engagement is likely to be bidirectional.[56,57] Based on the present study it can be assumed that higher motivation regulation skills are likely to enhance nursing students' study engagement and reduce their risk for study burnout, both by enhancing learning and by providing a tool for coping with study-related challenges. The increased engagement and reduced risk for developing study burnout is likely to increase students' efforts in studying and further promote their development of

higher-order learning skills.

There were no statistically significant differences between the profiles for experienced engagement or study burnout in the two different learning environments, although students' experiences varied slightly more in the blended setting. The results strengthen the understanding that motivation regulation and study engagement can be enhanced in both blended and traditional learning environments.[13,49,52] However, a lack of differences may also result from relatively short exposure to the learning environments since the participants were first-year nursing students. Accordingly, further longitudinal studies are needed to explore the profile trajectories, the learning environment effect, and the profiles' impact on academic performance. Furthermore, the small sample of nursing students was a limitation of the study. Accordingly, in the future, larger and more representative samples are needed to gain more reliability, validity, and statistical power.

Conflict of interest

The authors declare that there is no conflict of interest.

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Table 1. Participants.

Variables	Total (*N* = 90)	%	Traditional (*n* = 56)	%	Blended (*n* = 34)	%
Gender						
Female	73	81.1	48	85.7	25	73.5
Male	17	18.9	8	14.3	9	26.5
Age (*M*)	27.6		26.3		28.8	
Work status						
Not working	48	53.3	39	69.6	9	26.5
Full-time work	9	10.0	1	1.8	8	23.5
Part-time work	33	36.7	16	28.6	17	50.0
Students with underage dependents	42	46.7	18	32.1	24	70.6

Table 2. Motivation regulation scale and items.[8]

Scale	Items
Regulation of value	I think up situations where it would be helpful for me to know the material or skills. I try to make the material seem more useful by relating it to what I want to do in my life. I make an effort to relate what we're learning to my personal interests. I try to connect the material with something I like doing or find interesting. I tell myself that it is important to learn the material because I will need it later in life. I try to make myself see how knowing the material is personally relevant.
Regulation of performance	I remind myself about how important it is to get good grades. I think about how my grade will be affected if I don't do my reading or studying. I remind myself how important it is to do well on the tests and assignments in this course. I convince myself to keep working by thinking about getting good grades. I tell myself that I need to keep studying to do well in this course.
Self-consequating	I promise myself some kind of a reward if I get my readings or studying done. I make a deal with myself that if I get a certain amount of the work done I can do something fun afterwards. I tell myself I can do something I like later if right now I do the work I have do get done. I set a goal for how much I need to study and promise myself a reward if I reach that goal. I promise myself I can do something I want later if I finish the assigned work now.
Environmental structuring	I try to get rid of any distractions that are around me. I make sure I have as few distractions as possible. I change my surroundings so that it is easy to concentrate on the work. I try to study at a time when I can be more focused.
Regulation of mastery goals	I persuade myself to keep at it just to see how much I can learn. I tell myself that I should keep working just to learn as much I can. I challenge myself to complete the work and learn as much as possible. I convince myself to work hard just for the sake of learning. I tell myself that I should study just to learn as much as I can. I eat or drink something to make myself more awake and prepared to work.

Table 3. Study engagement scale and items.[25,35]

Scale	Items
Vigor	In my studies, I feel like I am bursting with energy. In my studies, I feel strong and vigorous. When I get up in the morning, I feel like going to study.
Dedication	I find studying full of meaning and purpose. I am enthusiastic about my studies. Studying inspires me.
Absorption	Time flies when I am studying. When I am studying, I forget everything else around me. I am immersed in my studying.

Table 4. Study burnout scale and items.[32,54,55]

Scale	Items
Exhaustion	I feel overwhelmed by my schoolwork. I often sleep badly because of matters related to my schoolwork. I feel totally exhausted. I brood over matters related to my schoolwork a lot during my free time. The pressure of my schoolwork causes me problems in my close relationships with others.
Cynicism	I feel a lack of motivation in my schoolwork and often think of giving up. I feel that I am losing interest in my schoolwork. I'm continually wondering whether my schoolwork has any meaning.

Table 5. Descriptions of motivation regulation, study engagement, and study burnout among nursing students.

Variables	*Cronbach's alpha*	Total (*N* = 90)		Traditional (*n* = 56)		Blended (*n* = 34)	
		M	*SD*	*M*	*SD*	*M*	*SD*
Motivation regulation							
Regulation of performance goals	.84	4.42	1.15	4.45	1.09	4.37	1.26
Self-consequating	.82	4.25	1.30	4.37	1.23	4.04	1.39
Regulation of value/meaningfulness	.76	4.89	1.10	4.74	1.10	5.13	1.06
Regulation of value/utility	.73	5.60	1.03	5.47	1.11	5.80	.84
Environmental structuring	.91	5.10	1.32	5.11	1.30	5.10	1.37
Regulation of mastery goals	.72	4.76	1.21	4.72	1.16	4.81	1.31
Engagement	.92	4.64	1.00	4.52	.97	4.84	1.04
Experienced burnout							
Exhaustion	.91	2.91	1.26	2.83	1.28	3.04	1.22
Cynicism	.85	1.67	.87	1.71	.94	1.59	.76

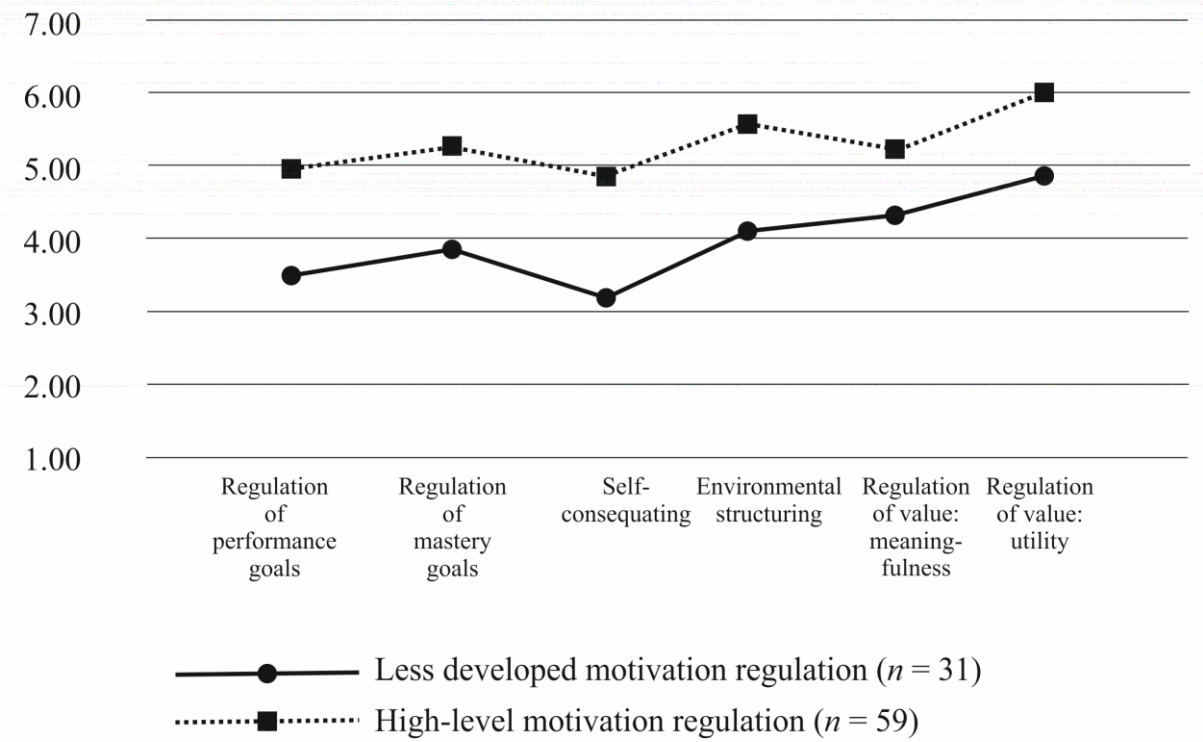

Figure 1. First-year nursing students' motivation regulation profiles.