Strategies to improve academic motivation among nursing students

Strategije poboljšanja akademske motivacije među studentima sestrinstva

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Abstract

Introduction: Academic motivation of nursing students is a broad concept that has an impact on academic success, education and personal satisfaction. Motivation to study often decreases with years of study, thus it is important to find out effective strategies for motivating nursing students.

Methods: A scoping review was conducted in 2020 to determine the scope and body of literature on strategies for motivating nursing students. A literature search was performed in four international databases (PubMed, Medline, ScienceDirect and Google Scholar) using inclusion and exclusion criteria. The literature search and analysis are shown using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) recommendations.

Results: Out of 560 identified studies, a total of 14 studies were included in the final analysis. Most of the identified studies were quasi-experimental studies (n=8; 57.14 %) exploring the effectiveness of existing strategy. Strategies that showed positive effects in raising nursing student's academic motivation are gamification, mobile applications, forums, problem-based learning, and other specific strategies.

Discussion: It is evident that new strategies have positive impact on nursing student's academic motivation. Nevertheless, there is a need for further research and testing before the process of implementing those strategies in specific learning environment.

Conclusion: There is a constant need for education of future nurses. To ensure appropriate nurses' knowledge and skills, academic motivation is needed.

Keywords: nursing, students, motivation, academic achievements

Sažetak

Uvod: Akademska motivacija studenata sestrinstva širok je pojam koji utječe na akademski uspjeh, obrazovanje i osobno zadovoljstvo. Motivacija za učenje često opada s godinama studija, stoga je važno pronaći učinkovite strategije za motiviranje studenata sestrinstva.

Metode: Proveden je opsežni pregled u 2020. godini kako bi se utvrdio opseg i sadržaj literature o strategijama za motiviranje studenata sestrinstva. Pretraživanje literature provedeno je u četirima međunarodnim bazama podataka (PubMed, Medline, ScienceDirect i Google Scholar) pomoću kriterija za uključivanje i isključivanje. Pretraživanje i analiza literature prikazani su pomoću preporučenih stavki izvještavanja za preporuke sustavnih pregleda i metaanaliza (PRISMA).

Rezultati: Od 560 identificiranih studija, u konačnu analizu uključeno je ukupno 14 studija. Većina identificiranih studija bile su kvazieksperimentalne studije (n = 8; 57,14 %) koje su istraživale učinkovitost postojeće strategije. Strategije koje su pokazale pozitivne učinke na podizanje akademske motivacije učenika sestrinstva su gamifikacija, mobilne aplikacije, forumi, učenje temeljeno na problemima i druge specifične strategije.

Rasprava: Očigledno je da nove strategije imaju pozitivan utjecaj na akademsku motivaciju studenata sestrinstva. Ipak, postoji potreba za daljnjim istraživanjima i ispitivanjima prije procesa implementacije tih strategija u određeno okruženje za učenje.

Zaključak: Postoji stalna potreba za obrazovanjem budućih medicinskih sestara. Da bi se osigurala odgovarajuća znanja i vještine medicinskih sestara, potrebna je akademska motivacija.

Ključne riječi: sestrinstvo, student, motivacija, akademska postignuća

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Introduction

Motivation is known as an important factor that directs people for performing specific activities. People have different motives and levels of motivation. Moreover, motivation varies in amount, level and orientation. Berelson and Steiner [1] defined motivation already in 1964 as "the stimulation of any emotion or desire operating upon one's will and promoting or driving it to action." Individuals' motivation can come from within the individual (intrinsic motivation) or can be inspired by others (extrinsic motivation). In academic settings, students must be motivated intrinsically. Academic intrinsic motivation emphasizes the enjoyment of school learning and performing activities for the student's sake. It is characterized with student's curiosity, persistence, learning and mastery [2].

As there is a nurse shortage worldwide, it is important that students chose to study nursing and are highly motivated

during the study [3]. As defined by Rafii et al. [4], the academic motivation of nursing students is "a broad and multidimensional concept that is affected by various personal, family, social, educational, and professional factors". It is also an important factor in achieving a better quality of learning, academic success and satisfaction, creativity, reduction of anxiety and stress, continuing the education process, and training competent nurses. Academic motivation of nursing students is crucial and highly important. However, current studies show that nursing students lose their motivation during study years [5, 6].

To raise the level of motivation different motivational strategies can be used. However, the success of a motivational strategy depends on one's input (effort) and view of the outcome (reward) [7]. Strategies to improve the academic motivation of nursing students dependent on professors, faculty, students and clinical placement [6]. Griffin et al. [8] found out that the most effective learning skills that promote positive academic performance are levels within intrinsic motivational students. Bodin and Winberg [9] found out that intrinsic motivation coupled with student self-interest and belief values did not predict the quality of task performance with many degrees of freedom. However, feelings that correspond to control and concentration, feelings that we expect to trigger student's inertial motivation, were important in predicting performance. According to Khalail's [10] research, a higher self-concept is directly related to greater academic achievement. Moreover, anxiety and intrinsic motivation were found to be significant mediators in the relationship between self-esteem and academic achievement. Besides, intrinsic motivation significantly attenuated the negative effect of test anxiety on academic achievement. The aim of this study was to conduct a scoping review in order to understand which factors are associated with nursing student's academic motivation, how student's motivation can contribute to their success or failure in particular subjects, and what can be done to increase their motivation.

Methods

Study design

A scoping review was chosen to provide an overview of the existing evidence [11]. A scoping review was conducted in March 2020 in order to find out which strategies are effective in motivating nursing students in academic performance. It was performed following steps by Munn et al. [11]. The research question was formulated using the PCC (Population, Concept and Context) mnemonic as follows: *Which strategies are effective (C) in motivating nursing students (P) to perform better in academics (C)?*

Identifying the relevant studies

The literature search was performed using keywords in English language in the following databases: PubMed, Medline, ScienceDirect and Google Scholar. The literature search was performed using inclusion and exclusion criteria. All publications that were published between 2010 and 2020 were included in the final analysis. Other criteria are shown in Table 1.

Table 1. Inclusion and exclusion criteria in literature search

	Inclusion criteria	Exclusion criteria
Population	Nursing students	Students' other study programmes; children; adults; older people
Intervention	Strategies for motivation	Other interventions
Study type	Quantitative studies, qualitative studies, studies with mixed method design, randomised controlled trials, experimental studies, quasi-experimental studies	Literature reviews, Systematic reviews, Scoping reviews, Meta-analyses, Editorials, Study protocols
Time limit	2010 – 2020	Published before 2010
Article availability	Full text available articles	Articles that were not fully available
Language	English	Other languages

The search string was formatted as follows: ("motivation") AND ("nursing student") AND ("study" OR "educate*" OR "engage" OR "learn*" OR "achievement*").

Study selection and extraction

Literature search and further analysis process are shown in the flow diagram (**Figure 1**) using PRISMA recommendations [12]. Studies were included in the final analysis if the scope of the research was strategy or intervention which has an impact on nursing student's motivation. The literature selection and extraction process were performed independently by two reviewers.

Data extraction

The identified hits were extracted in Microsoft Office Excel programme (Supplement material).

Literature synthesis

Identified articles were analysed by study characteristics. All hits were described in Table 2 by the reference, country, study design, study aim, sample, and key findings.

Results

Out of 560 identified hits, only 14 were selected for the final analysis. Most of the studies were quasi-experimental studies (n = 8; 57.14 %) introducing new or testing an existing strategy to raise motivation among nursing students. Other study designs were qualitative studies (n = 3; 21.43 %), cross-sectional studies (n = 2; 14.29 %) and mixed-methods study (n = 1; 7.14 %). All studies focused on motivational strategies or interventions that could improve or raise the level of academic motivation among nursing students.

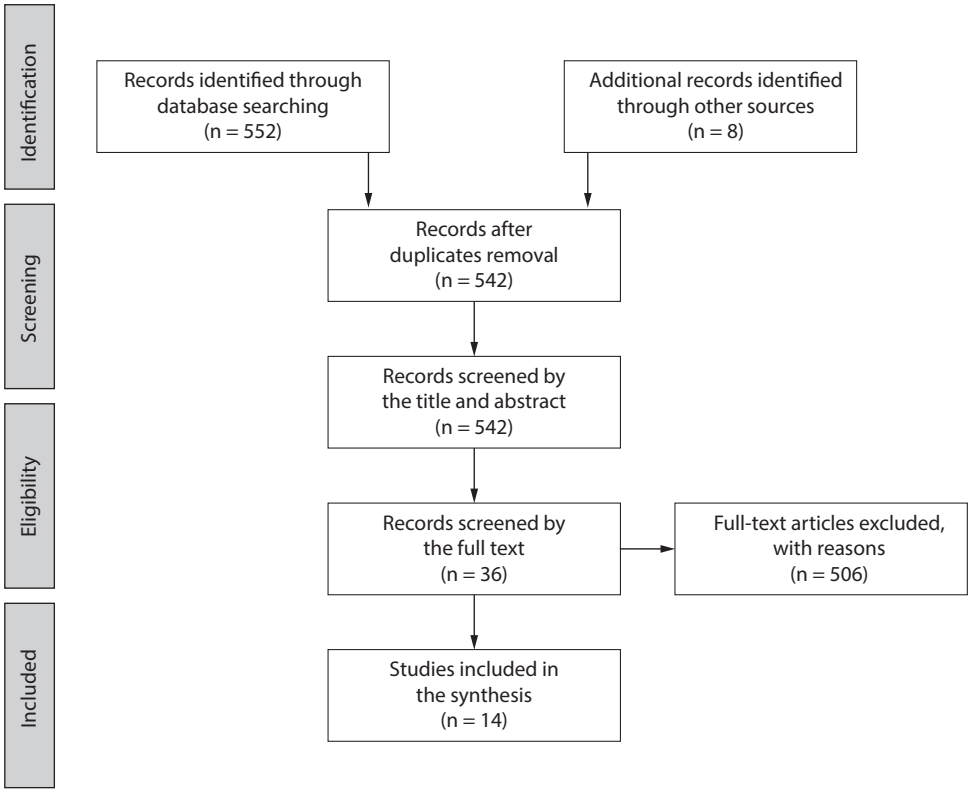

Figure 1. PRISMA flow diagram of literature identification

Four studies (28.58) were conducted in the USA, two in Iran (14.29) and Australia (14.29), and one in each of the following countries: Turkey, China, Lebanon, Korea, Span and Sweden. Other study characteristics are presented in **Table 2**.

Table 2. Characteristics of included studies

#	Reference (country)	Study design	Study aim	Study sample	Key findings
1	Gallegos, et al., 2017 (USA) [13]	Qualitative study	To describe undergraduate nursing students' experiences with a game-based learning platform.	57 nursing students	The student's response to **3D GameLab**© was **negative**. Moreover, it did not have the potential to engage nursing students and enhance their learning.
2	Saeedi & Parvizy, 2019 [6] (Iran)	Qualitative study	To explore existing strategies to improve the academic motivation of nursing students.	34 nursing students	The strategies to promote academic motivation of nursing students were categorized as **strategies pertinent to professors, strategies pertinent to students, strategies pertinent to clinical education** and **strategies pertinent to faculty**.
3	Garnett & Button, 2018 (Australia) [14]	Quasi-experimental study	To explore the usage of digital badges as a motivational reward in classes engaging with online activities and resources.	Nursing students (408 in 2015; 420 in 2016; 418 in 2017)	There was an **increase** in the number of students who were interested in earning **digital badges** in their learning. However, the frequency of using digital badges across the 10 weeks **declined**.
4	Moritz, 2017 (USA) [15]	Quasi-experimental study	To explore which gaming attributes motivate nursing students to become more engaged in course content that is not graded.	No data available	**Game elements positively** influence student motivation and continued engagement in the study. There is a **significant difference** in the engagement of nursing students in non-graded course where badges were offered as rewards as opposed to the course where badges were not offered as rewards.
5	Sanchez, et al., 2019 (USA) [16]	Quasi-experimental study	To explore the benefits of gamification on student learning.	473 university students	Students who completed more **quizzes** performed **better** on tests. Moreover, they had significantly better scores on the first test.

6	Tower, et al., 2015 (Australia) [17]	Quasi-experimental study	To develop a Facebook forum that utilised peer learning, to build self-efficacy related to learning, of nursing students.	236 nursing students	**Facebook forums** are **useful** peer learning strategies that help to build students' self-efficacy. Students shared experiences and verbal persuasion which helped build students' self-efficacy and alleviated physiological response associated with stress.
7	Yardimci, et al., 2017 (Turkey) [18]	Cross-sectional study	To analyse the relationship between the study process, and motivation resources in nursing students.	330 nursing students	Students using **problem-based learning system** scored **higher** on learning approaches, intrinsic motivation and negative motivation. Problem-based learning increases nursing student's intrinsic motivation and helps them to acquire learning skills.
8	Li, et al., 2018 (China) [19]	Mixed methods study	To examine the effects of mobile apps on the learning motivation, social interaction and study performance of nursing students.	20 nursing students	Students actively used **mobile apps** for studying supplementary materials and participating in in-class activities and clinical assessments. The students had relatively **high** levels of academic motivation, but low perceived satisfaction and self-efficacy. They also showed better study performance after using mobile apps for learning.
9	Sanaie, et al., 2019 (Iran) [20]	Quasi-experimental study	To investigate the comparing of lecture and Jigsaw teaching strategies on the nursing students' self-regulated learning and academic motivation.	94 nursing students	After the intervention, the mean scores of self-regulated learning and academic motivation were **significantly different** in the group using the **Jigsaw teaching strategy** from one of the lecture groups.
10	Strickland & Kaylor, 2016 (USA) [21]	Quasi-experimental study	To describe the theoretical basis for the integration of gamification in nursing education.	112 nursing students	Students' and faculty feedback were **positive** regarding **instructional strategy** and also promoted a learner-centred teaching environment.
11	Fawaz, et al., 2016 (Lebanon) [22]	Quasi-experimental study	To examine the impact of using high-fidelity simulation on the development of clinical judgment and motivation among nursing students.	56 nursing students	Nursing students exhibited **significant improvement** in clinical judgment and motivation after **high-fidelity simulation**. There was a significant difference after high-fidelity simulation between the intervention group and the control group in clinical judgment intervention and motivation for academic achievement.
12	Roh & Kim, 2015 (Korea) [23]	Quasi-experimental study	To assess student's motivation and life skills before and after taking a course focusing on problem-based learning and simulation.	83 nursing students	The results demonstrate that an **integrating problem-based learning** and simulation course elicits **significant improvement** in student's motivation. Simulation and problem-based learning are effective at increasing intrinsic motivation, task value, self-efficacy and performance, problem-solving, and self-directed learning.
13	Gómez-Urquiza, et al., 2019 (Spain) [24]	Cross-sectional study	To analyse nursing students' opinions and study motivations after using the "Escape Room" teaching game.	115 nursing students	The nursing students who took part in the **game** believed that it **helped** them learn the subject. They also believed that the game was enjoyable, helped them in the exam, and motivated them to study.
14	Bengtsson & Ohlsson, 2010 (Sweden) [25]	Qualitative study	To explore what students, consider important for their motivation to attain knowledge, in order to shape courses that foster this motivation.	31 nursing and medical students	The motivation must come from the **students** themselves, but dedicated **teachers** giving performance feed-back, discussions in different forms and choices of learning and assessment methods enhance enthusiasm and learning. There is a need for providing an educational **environment** that resonates with the students' needs.

Gamification and game elements

Gamification or the introduction of game elements in education has significant potential in improving learning by increasing student's motivation, engagement and performance [26, 27]. Gamification is a term that usually describes the usage of game elements in a non-gamified context in order to influence one's performance. Often used game elements in education are points, progress bars, levels, badges, leader boards, avatars, etc. [28]. Moritz [15] found out

that the nursing students' engagement in the course where badges were offered as rewards, was better than among students where badges were not offered. Sanchez et al. [16] examined the impact of gamified quizzes on student learning. They found out that students who completed gamified quizzes had significantly better scores on tests. Similar positive outcomes were found in research conducted by Garnett and Button [14]. Nursing students showed interest in using digital badges to enhance and personalise their learning. Another positive example of a teaching game is a Nursing Escape Room. Gomez-Urquiza et al. [24] found out that nursing students who participated in such a teaching game believed that it helped them learn the subject, should be included in the subject, was enjoyable, helped them in the exam and motivated them to study. Moreover, positive responses to the game in the educational system are evident by Strickland and Kaylor [21]. On the other hand, Gallegos et al. [13] introduced a game-based learning platform 3D GameLab© where students gave negative feedback to this educational gaming strategy.

Mobile apps

The usage of mobile technology in education is increasing due to various benefits such as mobility, enhancing interaction and collaborative learning. However, there is a lack of research on mobile learning on student's achievement and academic motivation. Li et al. [19] found out that nursing students actively used mobile apps for studying purposes and in-class activities. The students who often use mobile apps for learning purposes had a high level of motivation for performing and learning, but a relatively low level of perceived satisfaction and self-efficacy while mobile learning.

Forums

Peer learning is an effective strategy to build self-efficacy in relation to learning. Social media present the opportunity where students can autonomously direct and control their learning. Facebook forum is a useful peer learning strategy to build student's self-efficacy related to study among nursing students. Nursing students have the opportunity to share their experiences, provide modeling experiences and use verbal persuasion to resolve different learning problems [17].

Problem-based learning

Problem-based learning (PBL) is an integrated model based on holistic learning based on empirical learning organized around complex real-life problems. PBL in nursing education was introduced to improve students' nursing-care skills using a systematic and bio-psychosocial approach and help them in acquiring skills such as problem-solving, empathy, effective communication and critical thinking [29]. The study conducted among nursing students in Turkey showed that PBL is an effective strategy in increasing the intrinsic motivation of nursing students. Moreover, PBL helped them to acquire effective learning skills. Roh & Kim [23] found out that nursing student's motivation and life skills, problem-solving skills, intrinsic goal orientation, self-efficacy, and self-directed learning skills significantly increased after taking a course involving PBL.

High-fidelity simulation

High-fidelity simulation (HFS) is a strategy that provides students with the ability to integrate competencies used in clinical settings such as physical examination, practical skills, and critical judgment. The HFS is a risk-free learning experience for nursing students that has a positive impact on their motivation and learning experience [22, 30].

Other strategies

Specific strategy designed to improve student's motivation is the so-called Jigsaw teaching strategy (JTS). It is based on cooperative learning and was developed in 1970 [31]. In this method, learners are divided into small groups. Each person in the group is assigned a topic for study and the teacher determines the time for the learners to study. Individuals with a common subject are combined to form a second group in which they share their knowledge of the subject at a specified time. In the end, each person returns to their original group and presents what they have learned [32]. This strategy was tested also among nursing students and showed a positive impact on students' academic motivation and self-regulated learning [20].

Discussion

Nursing is considered a good occupational choice. However, motivation to study nursing decreases with the number of semesters and increases with student's age [33]. The nurse educators and nursing educational institutions have the responsibility to provide quality education programme and maintain high academic standards [34]. Motivating nursing students to acquire fundamental knowledge in their study is important so they can provide safe, patient-oriented, and evidence-based practice in the future as registered nurses.

Motivation has an impact on learning outcomes and retention [35]. However, nursing students acknowledged difficulties in processing the large volume of content during their study [14]. Thus, there is a need for finding new and interesting didactic approaches to motivate and increase nursing student's engagement [15, 33]. Xu [36] outlines teaching strategies for professors, which have an important effect on student's motivation. Those are lectures, high fidelity simulations, mapping, online courses, gamification, role-playing, problem-based learning, etc. With the development of technology, the lecture can be combined with various other techniques. Simulation provides innovative educational experiences that help nurses evaluate and develop clinical competence, promote teamwork, and improve care processes in a realistic and relatively safe environment without potentially harming patients [37]. Simulation often emphasizes the application and integration of knowledge, skills, and critical thinking [22, 38]. Onli-

ne education is widely accepted as student-centred education. To ensure the effectiveness of the online learning environment, instructors need to develop a detailed course plan that includes the selection of course materials and discussion topics, as well as design activities [39]. Of course, games may need to be combined with lectures to provide a well-organized teaching environment. Role-playing can be used to teach communication in nursing education courses. As for nursing education, the classroom strategy can be used to teach the content of many topics both in the classroom and in the workplace. A case study is a useful strategy in nursing education. It can be used both in the classroom and online courses. It is also suitable for teaching about clinical illness, cultural competence, communication skills and other topics. Discussion drives higher-order learning, such as analysis, synthesis, and evaluation [40]. This can help students learn both to read and write critically. Bradshaw and Lowenstein [41] argued that discussion is a useful teaching/learning activity for nurse students at all levels. Discussion can be used to teach a controversial issue or to discuss the trend of nursing education. All students are responsible for investigating the proposed problem. Debaters must examine relevant literature, analyse data, develop a solution or hypothesis, and present their ideas clearly and reasonably during the discussion. After the discussion, students in the audience evaluate the presentations and participate in the discussions after the discussion. This type of feedback debate involves all students in learning, enhances team collaboration, and develops critical thinking. Problem-based learning is widely used to teach a relatively complex or messy problem that has a broad connection with basic knowledge and clinical experience, such as heart failure or pneumonia [18, 23, 36].

Conclusion

Nursing faculties around the world continue to face students' retention problems due to a lack of motivation. Much effort is being made to address the various complex issues facing professors to increase students' retention and employment in nursing programs. The motivating forces for choosing a nursing career, the changing demographics of nursing students, and the motivation of students to learn all, can pose challenges for professors. One of the challenges that professors will face is the number of enrolments and how to increase retention among a very diverse student population. One of the benefits to consider is the students' motivation to learn and how it can affect its retention. Motivation is positively related to learning outcomes, and positive learning outcomes are associated with increased retention in higher education. It is necessary to adjust the programs and the strategy of motivating students so that they can stay in the faculties and successfully complete the study programs, and successfully work after graduation.

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Nema sukoba interesa

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