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Relationship between Academic Motivation and Self-directed Learning in Nursing Students

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Authors' contributions

This work was carried out in collaboration between all authors. Author MA designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author ZAR managed the analyses of the study. Authors SG and SV managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: Rapid development of knowledge and information in various fields of medical sciences indicates the need to encourage self-directed learning in nursing students to provide quality and updated care. This study examined the relationship between self-directed learning and academic motivation in nursing students.
Materials and Methods: Through a descriptive-correlational study, 305 nursing students studying at the Shahid Beheshti School of Nursing and Midwifery, Rasht were recruited by the census in Spring 2015. These students were asked to complete the Self-Rating Scale of Self-directed Learning (SRSSDL) and Academic Motivation Scale (AMS). Instrument reliability of these scales

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was confirmed in previous studies. Data were analysed by descriptive (mean and standard deviation) and analytic tests (Pearson coefficient of correlation and Chi-square).
Results: There is a positive and significant relationship between self-directed learning and academic motivation (r=0.164; p=0.004). Among components of self-directed learning, the highest coefficient of correlation was related to interpersonal skills (r=0.125, p=0.025) and the lowest was related to evaluation (r=0.111, p=0.053).
Conclusion: Findings showed a significant relationship between academic motivation and self-directed learning. Planners and decision-makers need to plan for increasing academic motivation of students, facilitating and developing self-directed learning to provide optimal care for patients.

Keywords: Self-directed learning; academic motivation; lifelong learning; nursing student.

1. INTRODUCTION

The remarkable growth of information has led to the constant evolvement of medical knowledge [1]. A large part of what medical students learn in college becomes obsolete while working in the clinical environment [2]. For this reason, knowledge and skills acquired at the end of an academic course cannot guarantee sufficient skills in the medical profession; students need to acquire the skills needed for lifelong learning [1].

At the beginning of the twenty-first century, UNESCO considers lifelong learning as an integral part of human life in the current world [3]. Nursing students must continuously update their knowledge and be prepared for lifelong learning [4] to provide multi-dimensional and specialised care in different environments and show professional and ethical behaviour in complex situations [5]. The study of Rensburg and Botma showed that directed learning by the nurse educators had a direct relationship towards the development of a lifelong learning approach by their students, and in turn, self-directed learning will directly impact on the quality of nursing practice [6]. Nursing education is responsible for training and supporting nurses to meet these increasing scientific and social changes in workplaces [7]. Currently, nurses need a type of learning by which they can adapt to growing changes in technology, expectations of patients and health care systems [8]. Considering the significance of lifelong learning, nurses need self-directed learning [9]. Self-Directed learning is one of the strategies of lifelong learning [10]. Self-directed learning was started in nursing education since 1987 [11] to train qualified students for the workplace [12]. Cazan and Schiopca [13] consider self-directed learning as a process in which learners identify needs, set goals, identify human and material resources, adopt learning strategies and assess their learning outcomes with and without the help of others. Self-directed learners are responsible for their learning. Self-Directed learning leads to lifelong learning because it trains students who recognise their learning needs and make efforts to eliminate them [14]. All people are capable of self-directed learning to some different degrees, depending on their learning motivation, self-efficacy, self-esteem, conscience and intelligence. Experts agree that self-directed learning has three motivational, metacognitive and self-regulative dimensions [13]. Although different variables can influence learning in the course of learning activities, motivation is undeniably important. Motivation is the most important condition for learning. Motivation is the heart of learning and learning is the goal of education [15]. Motivation is the creator, maintainer and director of behaviour; there are internal and external motivations. External motivation is derived from extrinsic reward, while the source of reward in internal motivation lies in what is done [15]. The study of El-Khedr and Ibrahim revealed that there were statistically significant correlations between the desire for nursing education and total academic motivation [16]. Motivation and self-direction are intertwined [17]. Active, independent and self-directed learning requires motivation. Studies showed the relationship between academic motivation and self-directed learning in nursing students [14,18]; however, their results cannot be generalised due to cultural and social differences. Considering the increasing growth of information in the current era and rapid and constant changes, it seems essential to train nurses who constantly learn during school and afterwards. This study examines the relationship between self-directed learning and academic motivation of nursing students.

Murad et al. (2010) reported that self-directed learning is associated with moderate improvement of knowledge and suggested that it could effectively improve the affective and

psychomotor domains. He also suggested self-directed learning is as effective as, or better than, traditional teaching methods for the acquisition of clinical knowledge and attitudes [19]. Avdal (2012) suggested that learner students with high self-directed learning abilities score high in terms of the level of achievement [20]. In the same vein, Brydges et al (2009) indicate that self-directed learning clinical technical skills increase greater skills retention [21]. self-directed learning has also been shown to be essential in assisting nurses to meet the challenges of current day health care. It provides acceptable levels of satisfaction to the learners while conducting feasible projects [22,23]. Finkelma and Kenner (2012) emphasise that self-directed learning is important for all students nurses, as it leads to a greater ability to achieve professional lifelong learning [24]. It is, therefore, important to understand that self-directed learning is important for nurse educators and students alike [25]). Several studies have established that self-directed learning is viewed as a powerful motivator for learning and increases participation in classrooms; learners learn how to learn, and are empowered to reflect on their learning process [26].

2. METHODS AND MATERIAL

This was a descriptive (cross-sectional correlation design) study. Samples included 305 nursing students studying at the Shahid Beheshti School of Nursing and Midwifery, Rasht, who were recruited by the census. An inclusion criterion was students after finishing first academic year. Data was collected by the following instruments:

1) The self-rating scale of self-directed learning (SRSSDL) was developed by Williamson [27] comprised of 5 components and 60 items. These five components include awareness, learning strategies, learning activities, evaluation and interpersonal skills, each of which has 12 items. SRSSDL is based on a 5-point Likert scale including (1) always, (2) often, (3) sometimes, (4) rarely (5) and never. Its total score ranges from 60 to 300. A higher score indicates higher self-directed learning and vice versa. Gordanshekan et al. [28] and Yousefi and Gordanshekan [14] estimated its reliability at 0.90, 0.95 and 0.93, respectively. SRSSDL was normalised by Gordanshekan et al. [28].
2) The academic motivation scale (AMS) was developed by Vallerand et al. [29] comprised 28 7-point questions which measure intrinsic motivation, extrinsic motivation and amotivation. The questions are scored on a 5-point Likert scale from 1 (does not correspond at all) to 7 (corresponds exactly). The scores range from 28 to 196. The score 28-70 indicates low motivation; the score 70-112 indicates average motivation and the score 112 and above indicates very good motivation. Reliability of the scale was estimated at 0.84, 0.86 and 0.64 for intrinsic motivation, extrinsic motivation and amotivation, respectively. To determine the Content Validation Index (CVI) and Content Validation Ratio (CVR), 12 faculty members were asked to review the scale; they estimated CVI and CVR at 0.85-0.93 and 0.85-0.91, respectively.
3) Demographic variables included age, gender, marital status, residence (dormitory, private residence, others), literacy level of parents, average grade at the university, degree, non-school study, the average duration of the study, employment while studying, interest in the major, intention to quit the major. To calculate reliability, 15 experts, faculty members and theorists were asked to review and modify the questionnaire. Cronbach's alpha was used to determine the reliability of the questionnaire. Objectives of the study were explained to students. Informed consent was obtained and the students were ensured about confidentiality by informing them about the anonymous usage of data. The study was approved in the ethics committee by the code number of 95022142. In the presence of the researchers, self-report questionnaires were distributed among participants. Agreement of the authorities determined the time of access to students. Raw data were analysed by SPSS 23 using descriptive statistics (mean and standard deviation) and analytic statistics (Pearson coefficient of correlation and Chi-square).

3. RESULTS

Participants included 305 nursing students. Majority of the subjects were women (61.6%), single (79.7%) aged 23.77 (±5.89). Most of the subjects lived with their families (41.6%). The

literacy level of most parents was a high school diploma (44.9% fathers and 46.9% mothers). Majority of the subjects had free studies (71.8%). Most subjects had no student work or did not work while still in school (63.3% and 59%, respectively). Most subjects were interested in their major (51.8%) and most of them did not tend to quit their major (86.2%) (Table1).

Total score of self-directed learning was 236.8 ± 28.91 of 300 (Table 2) and a total score of academic motivation was 127.6 ± 35.2 of 196. Most students (%67.5) had the good academic motivation (Table 3).

As the results show, there is a minor difference between intrinsic motivation (57.52 ± 17.79) and extrinsic motivation (57.58 ± 17.5), as shown in Table 4.

Generally, the analysis showed positive and significant (significant level<0.05) relationship between self-directed learning and academic motivation (r=0.164, P=0.004), that is, academic motivation increased self-directed learning. The highest coefficient of correlation was related to interpersonal skills (r=0.125) and the lowest was related to evaluation (r=0.111), as shown in Table 5.

Table 1. Demographic variables of students

Variable	Status	N (%)
Gender	Man	117 (38.4%)
	Woman	188 (61.6%)
Age (year)		23.77 ± 5.89
Marital status	Single	243 (79.7%)
	Married	62 (20.3%)
Degree	Undergraduate	265 (86.39%)
	Graduate	40 (13.1%)
Residence	Dormitory	120 (39.3%)
	Family	127 (41.6%)
	Others	58 (19.0%)
Paternal literacy	Illiterate	20 (6.6%)
	High school level	66 (21.6%)
	Diploma	137 (44.9%)
	Academic	82 (26.9%)
Maternal literacy	Illiterate	31 (8.9%)
	High school level	96 (31.5%)
	Diploma	143 (46.9%)
	Academic	35 (11.5%)
Semester	2	72 (23.6%)
	3	36 (11.8%)
	4	40 (13.1%)
	5	35 (11.5%)
	6	43 (14.1%)
	7	40 (13.1%)
	8	39 (12.8%)
Grade Point Average(GPA) of previous semester (n = 263)		15.84 ± 1.41
Free studies	Yes	219 (71.8%)
	No	86 (28.2%)
Number of non-school books read		5.03 ± 6.3
Daily studies (hour)		2.61 ± 2.2
Student job	Yes	112 (36.7%)
	No	193 (63.3%)
Having a job while studying	Yes	125 (41.0%)
	No	180 (59.0%)
Interest in the major	Yes	158 (51.8%)
	No	44 (14.4%)
	Somewhat	103 (33.8%)
The tendency to quit the major	yes	42 (13.8%)
	No	263 (86.2%)

Table 2. Components of self-directed learning

Component	Items	Mean±SD	Variations	Minimum	Maximum
Awareness	12	48.15 ± 6.56	12-60	23	60
Learning strategies	12	46.95 ± 6.65	12-60	25	60
Learning activities	12	46.75 ± 7.03	12-60	16	60
Evaluation	12	46.44 ± 7.2	12-60	19	60
Interpersonal skills	12	48.48 ± 6.85	12-60	15	60
Total	60	236.8 ± 28.91	60-300	133	300

Table 3. Academic motivation of students

Academic motivation	N	%
Low (28-70)	26	8.5
Average (71-112)	73	23.9
Good (113-196)	206	67.5
Total	305	100

The results showed a positive and significant relationship between self-directed learning and marital status (p=0.011), grade (p=0.001), residence (p=0.032), work while at school (p=0.023), interest in major (p<0.0001), tendency to quit the major (p=0.01) and age (p<0.0001), as shown in Table 6.

Moreover, there is a significant relationship between academic motivation and marital status (p=0.027), work while at school (p=0.026), interest in major (p=0.03) and tendency to quit major (p=0.026), as shown in Table 7.

4. DISCUSSION

Self-directed learning is one of the most important competencies of students. Self-directed learners attempt to update their knowledge and competence once they are graduated from the formal education system.

This study showed nursing students gained a high score in self-directed learning. This finding is consistent with Safavi et al. [11], Yousefi and Gordanshekan [14], and Soltani Arabshahi and Naeimi [30], while Saha [5] showed that self-directed learning readiness was under than average in the majority of Indonesian nursing students.

Moreover, Krouse [31] and Izadi et al. [32] reported that the majority of nursing students gained an average score in self-directed learning. To be up-to-date, nurses need lifelong learning; self-directed learning is an essential part of lifelong learning. Considering constant and rapid changes in medical science and technology, self-directed learning is essential for nursing students, because this can lead to better care provided for patients.

An important result of this study was the high academic motivation of students. This is consistent with Kareshki and Garavand [33];

Table 4. Mean score of academic motivation in different areas

Area	Items	Mean±SD	Variations	Minimum	Maximum
Intrinsic motivation	12	57.52 ± 17.79	12-84	12	84
Extrinsic motivation	12	57.58 ± 17.5	12-84	12	84
Amotivation	4	12.48 ± 6.84	4-28	4	28
AMS	28	1276.6 ± 35.2	28-196	28	196

Table 5. Pearson coefficient of correlation between components of self-directed learning and academic motivation and coefficient of correlation between components of academic motivation and self-directed learning

Coefficient of correlation between components of self-directed learning and academic motivation			Coefficient of correlation between components of academic motivation and self-directed learning		
Variable	**r**	**P-value**	**Variable**	**r**	**P-value**
Awareness	r=0.181	P=0.002	Intrinsic motivation	r=0.187	P=0.001
Learning strategies	r=0.162	P=0.005	Extrinsic motivation	r=0.154	P=0.007
Learning activities	r=0.115	P=0.045	Amotivation	r=-0.31	P=0.59
Evaluation	r=0.111	P=0.053	AMS	r=0.164	P=0.004
Interpersonal skills	r=0.125	P=0.025			
SRSSDL	r=0.164	P=0.004			

however, other studies showed that the motivation of students was average. Motivation is essential for any job; none of the voluntarily human activities including learning occurs without motivation.

Academic motivation is influenced by both internal and external factors [34]. Based on current findings, components of extrinsic motivation was higher than intrinsic motivation, although the difference was slight. However, one should note that although factors of extrinsic motivation are important, they could be an alert for educational authorities if they undermine intrinsic motivation which enhances inner enthusiasm for knowledge and perfection.

In general, the analysis showed a significant positive relationship between self-directed learning and academic motivation; that is, academic motivation increases self-directed learning. Motivation is the most important condition of learning; one characteristic of self-directed learners is their enthusiasm to learn. Self-directed learners are highly motivated to acquire knowledge [28].

According to results, since nursing students had high motivation, their readiness for self-directed learning was also predictable. This is consistent with Yousefi and Gordanshekan [14] and Regan [18]. The results also indicated the relationship between self-directed learning and academic motivation and numerous personal-social factors.

This study found a significant relationship between self-directed learning and marital status, grade, residence, having a job while studying, interest in Nursing and age. Interest in Nursing, high grade and employment of students lead them to take the responsibility to identify their educational needs, formulate learning goals and evaluate their learning outcomes. Note that this study found no relationship between self-directed learning and age and gender and GPA, which is consistent with Izadi [32].

Table 6. Relationship between self-directed learning and demographic variables of students

Variable	Status	N%	Mean± SD	Statistics	Estimate
Gender	Man	117(38.4%)	234.44 ± 27.91	T=1.19	P=0.258
	Woman	188(61.6%)	238.3 ± 29.05		
Marital status	Married	62(20.3%)	245.09 ± 32.75	T=2.4	P=0.011
	Single	243(79.7%)	234.71 ± 27.53		
Grade	Undergraduate	265(86.9%)	234.71 ± 28.61	T=3.31	P=0.001
	Graduate	40(13.1%)	250.8 ± 27.26		
Residence	Dormitory	120(39.3%)	232.94 ± 29.11	F=3.48	P=0.032
	With Family	127(41.6%)	236.73 ± 25.35		
	Others	58(19%)	245.05 ± 34.18		
Paternal literacy	Illiterate	20(6.6%)	248.45 ± 30.54	F=2.05	P=0.064
	High school level	66(21.6%)	242.04 ± 26.83		
	Diploma	137(44.9%)	239.91 ± 27.94		
	Academic	82(26.9%)	234.64 ± 30.91		
Maternal literacy	Illiterate	31(8.9%)	245.35 ± 26.1	F=1.29	P=0.273
	High school level	96(31.5%)	237.91 ± 27.86		
	Diploma	143(46.9%)	234.33 ± 27.61		
	Academic	35(11.5%)	236.42 ± 37.55		
Having job while studying	Yes	125(41%)	241.32 ± 28.79	T=2.001	P=0.023
	No	180(91%)	233.7 ± 28.66		
Interest in major	Yes	158(51.8%)	244.3 ± 27.4	F=13.2	P=0.0001
	No	44(14.4%)	219.9 ± 33.5		
	Partially	103(33.8%)	232.41 ± 25.07		
Tendency to quit major	Yes	42(13.8%)	223.5 ± 35.48	T=2.75	P=0.01
	No	263(86.2%)	238.9 ± 27.21		
Age (year)	<25	90(83.6%)	234.05 ± 28.15	T=58.45	P=0.0001
	>25	57(16.4%)	249.96 ± 29.15		
GPA of previous semester	<14	36(13.8%)	232.41 ± 25.84	F=0.1	P=0.194
	14-17	186(71.3%)	234.92 ± 27.4		
	>17	17(39%)	241.5 ± 28.7		

Table 7. Relationship between academic motivation and demographic variables of students

Variable	Academic motivation	Low		Average		Good		Total		Estimate
		N	%	N	%	N	%	N	%	
Gender	Woman	19	73.1	41	56.2	128	62.1	188	61.6	P=0.3
	Man	7	29.6	32	43.8	78	37.9	117	38.4	
Marital status	Married	10	38.5	10	13.7	42	20.4	62	20.3	P=0.027
	Single	12	61.5	63	86.3	164	79.6	243	79.7	
Grade	Undergraduate	21	80.8	66	90.4	178	86.4	265	86.9	P=0.429
	Graduate	5	19.2	7	9.6	28	13.6	40	13.1	
Residence	Dormitory	13	50	29	39.7	78	37.9	120	20	P=0.47
	With Family	9	34.6	34	46.6	86	40.8	127	127	
	Others	4	15.4	10	13.7	44	21.4	58	8	
Paternal literacy	Illiterate	4	7.7	4	5.5	14	6.8	20	6.6	P=0.983
	High school level	6	23.1	14	19.2	46	22.3	66	21.6	
	Diploma	10	38.5	35	47.9	92	44.7	137	44.9	
	Academic	8	30.8	20	27.4	54	26.2	82	26.9	
Maternal literacy	Illiterate	3	11.5	5	6.8	23	11.2	31	10.2	P=0.813
	High school level	7	26.9	23	31.5	66	32	96	31.5	
	Diploma	12	46.2	34	46.6	97	47.1	143	46.9	
	Academic	4	15.4	11	15.1	20	9.7	35	11.5	
Work while at school	Yes	16	61.5	23	31.5	86	41.7	125	41	P=0.026
	No	10	38.5	50	68.5	120	58.3	180	59	
Interest in major	Yes	15	57.7	33	45.2	110	53.4	158	51.8	P=0.03
	No	8	30.8	21	28.8	74	35.9	103	33.8	
	Partially	3	11.5	19	26	22	10.7	44	14.4	
Tendency to quit major	Yes	3	11.5	17	23.3	22	10.7	42	13.8	P=0.026
	No	23	88.5	56	76.7	184	89.3	263	86.2	
Age (year)	<24	19	73.1	64	87.7	169	82	252	82.6	P=0.224
	>24	7	26.9	9	12.3	37	18	53	17.4	
GPA of previous semester	<15	3	14.3	8	12.9	25	13.9	36	13.7	P=0.99
	15-17	17	66.7	39	62.9	113	62.8	166	63.1	
	>17	4	19	25	24.2	42	23.3	61	23.2	

Moreover, this study found a significant relationship between academic motivation and marital status, having a job while studying and interest in Nursing. No relationship was found between academic motivation and gender, while some studies found a relationship between motivation and gender. They reported higher academic motivation in female students than male students [35,36]. Molavi et al. [37] also found no relationship between gender and academic motivation.

Interestingly, this study found no relationship between academic motivation and self-directed learning and GPA, while most studies reported this relationship [14]. This finding can be attributed to inaccurately reported GPAs by students.

As the data was collected from Shahid Beheshti School of Nursing and Midwifery" as the sample, the generalisability of this study is inevitably limited. Another limitation of this study can be psychological problems of students while filling the questionnaires, although the author tended to collect data in appropriate times to control this variable. Moreover, missing data was 5 which was excluded from the data analysis; this problem is seen in most self-reporting questionnaires. Results of this study can be used as underlying information of many other studies on self-directed learning and academic motivation.

5. CONCLUSION

The results show that academic motivation influences self-directed learning. Since lifelong learning is a product of self-directed, planners and decision-makers need to make more efforts to increase the academic motivation of students and promote their self-directed learning skills.

CONSENT

Informed consent was collected and preserved by the author(s).

ETHICAL APPROVAL

The study was approved in the ethics committee by the code number of 95022142.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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