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# Evaluation of Relationship between Academic Motivation and Hope for the future with Readiness for Self-directed Learning in Dental Students in Isfahan University of Medical Sciences and Islamic Azad University, Isfahan Branch

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## Abstract

**Background & Objective:** Academic motivation plays a significant role in self-directed learning due to giving energy to learners and directing their activities. This study aimed to evaluate the relationship between academic motivation and hope for the future with readiness for self-directed learning in dental students in Isfahan University of Medical Sciences and Islamic Azad University, Isfahan, Iran.

**Materials and Methods:** This descriptive, correlational study was performed on dental students in Isfahan University of Medical Sciences and Islamic Azad University, Isfahan (Khorasgan) branch. In total, 265 students were selected using Krejcie and Morgan Table. Data collection tools included demographic characteristics questionnaire, adults dispositional hope scale, and academic motivation and self-directed learning readiness scale, which were completed by the participants during the study. In addition, data analysis was performed in SPSS version 16 using Pearson's correlation coefficient and multiple regression tests in a step-by-step form.

**Results:** In this study, there was a positive, significant relationship between academic motivation and hope for the future ($P<0.001$), academic motivation and readiness for self-directed learning ($P<0.001$) and between hope for the future and readiness for self-directed learning ($P<0.001$).

**Conclusion:** According to the results of the study, a positive, significant relationship was identified between academic motivation with hope for the future and readiness for self-directed learning. Our results can be used by dental education planners and professors to improve the quality of dental education as a step toward educational development.

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## Introduction

Success in academic and organizational learning required up-to-date knowledge and skills, as well as self-directed learning (1). In addition, the main feature of new learning environments is the independence and activity of students, according to which self-directed learning is recognized as an important and essential factor for student success (2). Moreover, self-directed learning is a process where learners are responsible for planning, implementing, and evaluating their learning and working independently to achieve learning goals. Some of the advantages of self-directed learning include increasing the power of choice, self-confidence, independence, motivation, effective use of information, and development of lifelong learning skills (3). In other words, self-direction is a process where learners recognize their needs, adjust their goals, identify human and financial resources for learning, select and implement proper learning strategies and evaluate their learning results (4). John Dewey warns that the teacher should guide but not interfere with or control the process of learning (5). In addition, application of self-directed methods in education requires the assessment of students' readiness for self-directed learning (6). Students are ready for self-directed learning when they have the necessary attitudes, individual abilities and personality characteristics for self-directed learning (7).

The fourth stage was data analysis (data summarization). In the first stage, all articles were studied for an overview of the content. After data extraction, a summary of all articles was presented in Table 2 based on the information of the corresponding

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author, year, research objectives, critical evaluation criteria, and conclusion and key findings. The next stage was a content analysis of nursing journal clubs. The fifth step or combination of data provided the results of all elements of the nursing journal. At this stage, researchers first reviewed the selected articles multiple times and classified their content separately. Afterwards, subsequent drafts were developed during joint discussions, and finally a thorough analysis was conducted in collaboration with the four researchers.

While self-directed learning forms the basis of all individual learning, the effectiveness of learning depends on one's motivation. Academic motivation means the learner's desire to properly perform a task in a particular area and evaluate their performance spontaneously. Most behaviors showing academic motivation include persistence in doing challenging assignments and diligence or striving to master and learn assignments that require effort (8). Motivation during the learning and teaching process leads to the facilitation of learning, ease of communication, reduced anxiety, and creativity in learning (9). Evidence suggests that academic motivation is associated with different educational outcomes such as curiosity, perseverance, learning, and better performance (10). Literature review revealed that hope and optimism are factors that have been overlooked in academic motivation despite their considerable role in this regard (11). Hope and optimism are two personality traits that include cognitions that make a person expect to achieve the desired results in the future. These cognitions influence goal orientation behaviors and affect psychological well-being that includes positive and negative emotions (12).

Snyder et al. introduced hope as a positive motivation state functioning on the feeling of success as an active factor (energy and goal-orientation) and path (planning to achieve a goal) (13). Hope helps human beings achieve their goals (14). Eliminating barriers and providing facilities, which are the conditions of hopefulness, require thinking in order to lead to a targeted behavior (15). Given the constant changes in information and the importance of up-to-date knowledge in this field in the field of medical education, it is necessary to pay attention to the training of students who are learning during and after school. In addition to transforming students into lifelong learners, equipping them with self-directed learning abilities leads to training those who can identify and move toward their learning requirements.

When using self-directed learning, students consider academic barriers as challenges and successfully deal with them. Given the significant role of motivation in self-directed learning, and since students' self-direction is a promising part of their specific cognitive competencies, efforts to enhance student motivation will promise a leading education system to independent learners. Since students are educated human resources, the future of society lies in their hands, and their hope and hopelessness are crucial to the development of society. In this respect, Kianfar et al. marked a correlation between hope and educational motivation 11). In addition, Kadkhodaei and Karami reminded the necessity of emphasis on emotional and cognitive dimensions of education (e.g., optimism and meaning of education) in the improvement of educational motivation of students (16). On the other hand, Yousefi and Gordanshekhan found a positive, significant relationship between educational motivation and self-directed learning (8). In a research, Khatib Zanjani et al. reported a significant association between readiness for self-directed learning and academic achievement of students (1). While the mentioned studies were performed on the relationship between hope, educational motivation, and self-directed learning, no research has been conducted on the association between the dimensions of educational motivation and hope for the future with readiness for self-directed learning in dental students. In addition, hope for the future has a huge impact on the lives of individuals, especially students.

The more hopeful the students, the more direct

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and indirect the impact of their hope on the society and social lives of these individuals (14). Given the benefits of self-directed learning outcomes, which are emphasized in by medical universities educational settings (17), and with regard to the role of motivation in self-directed learning (8), and due to the importance of role of hope and optimism in psychological and educational consequences (e.g., motivation) (11), this study aimed to evaluate the relationship between educational motivation and hope for the future with readiness for self-directed learning in dental students in Isfahan University of Medical Sciences and Islamic Azad University, Isfahan (Khorasgan) Branch. In this study, we considered two hypotheses:

1. There is a significant relationship between educational motivation and hope for the future and readiness for self-directed learning in dental students in Isfahan.

2. Educational motivation dimensions and hope for the future can predict readiness for self-directed learning in dental students in Isfahan.

## Materials and Methods

This descriptive, correlational study was performed on 1042 dental students in Isfahan University of Medical Sciences and Islamic Azad University, Isfahan (Khorasgan) Branch. In total, 300 individuals were selected by random cluster sampling using Krejcie and Morgan Table. According to a predetermined schedule, the researcher met with students to ensure their willingness to participate in the study. The questionnaires were provided to the participants at a suitable time and place (such as the school and class of students) and were filled in a free manner. In the end, 265 questionnaires were collected, meaning that the research response rate was reported at 88.33%.

Data collection was performed using hope, academic motivation, and self-directed learning preparation questionnaires, such as the adults dispositional hope scale (ADHS) by Snyder, which has 24 multiple-choice questions (six options) scored based on a five-point Likert scale from completely disagree to completely agree. It is notable that the items 4, 12, 13, 17, 18, and 23 were scored reversely. Moreover, the score range of the questionnaire was 24-120. The face and content validity of the questionnaire was confirmed in a study by Alizadeh Aghfam (13) using the opinions of experts in the field. Furthermore, the reliability of the scale was estimated at the Cronbach's alpha of 0.834, which showed favorable reliability of various items of hope for the future.

Designed by McInerney and Sinclair (1992) (18), the academic motivation scale has 43 items with five options and four subscales of the tendency to acquire ability, the tendency to performance, the tendency to social objective, and the tendency to external goal. Each of these subscales are divided into two minor parts, where the tendency to ability includes doing homework and effort (items 1-11), the tendency to performance involves competition and fame-seeking (items 12-23), social objective includes social dependency and altruism (items 24-31), and external goal includes awards and encouragement (items 32-43). In this scale, each item is scored based on the Likert scale (completely agree, agree, neither disagree nor agree, disagree, completely disagree). The reliability and validity of the scale were evaluated and confirmed by McInerney and Sinclair (19). In Iran, the reliability of the tool was estimated at 0.8 by re-test in a research by Bahrami and Rezvan (20) and was calculated at the Cronbach's alpha of 0.7 in a study by Garshasbi et al. (21). The researcher used this questionnaire to measure academic motivation, citing the mentioned numbers that had a favorable amount.

The self-directed learning readiness scale was designed by Chen et al. in 2010 (18) and includes 20 items and four subscales of learning motivation (six items), planning and implementation (six items), self-monitoring (four items) and interpersonal relations (four items). The scale is scored based on a five-point Likert scale, where the scores of one and five are indicative of high disagreement and agreement,

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respectively. At first, the questionnaire was provided to 10 students, who were homogenous with the subjects of the main sample group, to ensure the comprehension of items and establish face validity. In addition, content validity and item validity were ensured by providing the instrument to 10 experts fluent in teaching and learning psychology issues. The reliability of the tool was formerly confirmed at 0.87 by the researcher in a previous study entitled "evaluation of psychometric properties of self-directed learning scale" (22). Therefore, the scale was applied in the present study based on previous research.

Data analysis was performed in SPSS version 16 using Pearson's correlation and multiple regression tests with a step-by-step method. Moreover, the Kolmogorov-Smirnov test was exploited to assess data normality.

Ethical considerations: required permissions were obtained before registering for the research title. This article was registered with the code of ethics of IR.IAU.YAZD.REC.1397.32. At first, research objectives were explained to the participants and the voluntary participation in the study was ensured. Moreover, informed consent was obtained from the participants prior to the study.

## Results

The demographic characteristics of the participants, as well as the descriptive analysis of the variables are explained in Table 1. In addition, descriptive statistics (mean, standard deviation, and confidence interval of each variable) are shown in Table 2 for the main variables of the research. According to the results of Pearson's coefficient matrix presented in Table 3, the coefficient variable between academic motivation and hope for the future with preparedness for self-directed learning was significant at 99% confidence level. In other words, there was a positive, significant relationship between academic motivation and hope for the future, and between academic motivation and readiness for self-directed learning. Moreover, a positive, significant association was detected between hope for the future and readiness for self-directed learning. According to the coefficient of determination, 11.2% and 27.7% of the variance of academic motivation was explained by hope for the future and readiness for self-directed learning, respectively. Moreover, 20.2% of the variance of hope for the future is explained by readiness for self-directed learning.

Predictive variable: (constant number), hope for the future, the tendency to ability, the tendency to performance, the tendency to social purpose, the tendency to external goal

Dependent variable: readiness for self-directed learning

**Table 1: Demographic characteristics of the participants**

| Variable | | Frequency | Percent |
|---|---|---|---|
| **Sex** | Man | 118 | 44.5% |
| | Female | 147 | 55.5% |
| **Age** | 19 to 25 years | 201 | 76.2% |
| | 26 to 30 years | 51 | 18.9% |
| | 31 to 35 | 7 | 2.6% |
| | 36 years and older | 6 | 2.3% |
| **Marital status** | Single | 226 | 85.3% |
| | Married | 30 | 14.7% |
| **University of Education** | Isfahan Azad University (Khorasgan) | 178 | 67.9% |
| | Isfahan University of Medical Sciences | 78 | 32.1% |

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Table 2: Descriptive analysis of the variables

| Main variable | Mean±SD | Confidence interval |
|---|---|---|
| Academic Motivation | 3.41±0.579 | 1.44-4.95 |
| Hope for the future | 3.55±0.442 | 2.04-4.67 |
| Readiness for Self-directed Learning | 3.58±0.498 | 1.90-5.00 |

Table 3: Pearson's coefficient matrix between variable

| Main variable | Academic Motivation | Hope for the future | Readiness for Self-directed Learning |
|---|---|---|---|
| Academic Motivation | 1 | 0.336** | 0.526** |
| Hope for the future | | 1 | 0.450** |
| Readiness for Self-directed Learning | | | 1 |

**p<0.01

Table 4: ANOVA

| Model | Sum of Squares | df | Mean Square | F | P value |
|---|---|---|---|---|---|
| Regression | 29.306 | 5 | 5.861 | 41.697 | 0.001 |
| Residual | 36.266 | 258 | 0.414 | | |
| Total | 65.572 | 263 | | | |

Table 5. Model Summary

| Model | R | R Square | Std. Error of the Estimate | Statistics F | df1 | df2 | P value | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.669 | 0.447 | 0.803 | 41.697 | 5 | 285 | 0.001 | 1.910 |

Table 6: Coefficients

| | Unstandardized Coefficients | | Standardized Coefficients | t | P value | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Tolerance | VIF |
| (Constant) | 1.032 | 0.209 | | 4.950 | 0.000 | | |
| Tendency to ability | 0.354 | 0.048 | 0.459 | 7.380 | 0.000 | 0.554 | 1.805 |
| Tendency to Performance | 0.005 | 0.048 | 0.007 | 0.098 | 0.922 | 0.381 | 2.624 |
| Tendency to social Purpose | 0.105 | 0.044 | 0.139 | 2.400 | 0.017 | 0.643 | 1.555 |
| Tendency to external Goal | 0.005 | 0.053 | -0.007 | -0.091 | 0.928 | 0.382 | 2.616 |
| Hope for the future | 0.259 | 0.060 | 0.228 | 4.306 | 0.000 | 0.767 | 1.304 |

According to the tables above, the tendency to ability, hope for the future, and the tendency to social purpose significantly predicted the dependent variable of preparedness for self-directed learning, and its linear- regression equation with non-standard coefficients is, as shown below:

Readiness for self-directed learning=tendency to social purpose 0.105 + hope for the future 0.259 + tendency to ability 1.032+0.354 (constant number)

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## Discussion

According to the results of the present study, there was a significant relationship between academic motivation and hope for the future with the variable of readiness for self-directed learning. While no research was directly consistent with our findings, there are studies that can yield similar results to the present study based on the relationship between the evaluated variables. For instance, Kiafar et al. showed that hope is correlated with academic motivation and must be emphasized in academic situations. Therefore, the results of the aforementioned study are in line with our findings. The similarity of these studies was the correlation between similar variables and their difference in type of statistical population and questionnaires. In the mentioned studies, Vallerand AMS was applied, which is different from the scale used in the present study. Moreover, our findings are congruent with the results obtaind by Molavi et al. (19) and Zahiri Nav & Rajabi (18) in terms of effect of hope for the future and the direct relationship between level of hope and academic motivation, respectively. According to these results, it seems that being ensured of the future (e.g., possibility of continuing education and achieving a proper social and economic position) affects the levels of academic motivation in students.

To justify the results of the present study, it could be expressed that although motivation is a prerequisite for success throughout education, it has another place in academic education. This is mainly due to the fact that public education graduates, who enter universities and pursue their desired discipline, have the least academic motivation to succeed. However, there is a need to increase this incentive to make better use of academic education and achieve more desirable results (23). Attitude toward the future affects students' motivation to orientate their goals as well as their performance (24). In other words, people with high hopes feel that they are in control of their personal life events. Therefore, they consider themselves active creatures that are able to self-regulate their behaviors, and this feeling creates a basis for motivation, well-being, and individual achievements in all life dimensions (11). Furthermore, our findings are in accordance with the results obtained by Yousefi and Gordanshekan in terms of the presence of a high correlation between academic motivation and readiness for self-direction among dental students in Isfahan.

Moreover, there is consistency between our findings and the results obtained by Khatib Zanjani et al. regarding readiness for self-directed learning and academic achievement of students (2). This correlation between academic motivation and readiness for self-direction can be explained by the fact that willingness empowers learning and motivation is the most important prerequisite for self-directed learning (8).

According to the results of the present study, the dimensions of academic motivation and hope for the future are able to predict readiness for self-directed learning. In this context, our findings are in line with the results obtained by Nadi et al., who pointed out in a study (medical and dental students' understanding of self-directed learning and its relation to their individual characteristics) that readiness for self-direction can be predicted by citing basic science scores and average score of academic achievement of students. Therefore, in terms of determining the ability to predict readiness for self-directed learning based on academic motivation, the mentioned research is in line with the present study.

One of the major drawbacks of the present study was assessing only dental students, which limited the generalizability of the results to other fields and degrees. In addition, since the data were collected by self-report, the interpretation of results must be carried out with caution. It is recommended that further studies be performed with a qualitative approach and using other methods such as semi-structured and in-depth interviews to yield more valid results. In addition, given that dentists will eventually be part of the health community and treatment team, they need to keep their knowledge up to date. As such,

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it is suggested that more comprehensive studies be performed to identify motivational factors and attitudes toward the future in dental students. By considering these factors in education of the mentioned individuals, we can increase their self-directed learning and ensure their willingness to learn the knowledge of the day even after graduation.

## Conclusion

Given the positive, significant relationship between academic motivation and hope for the future with preparedness for self-directed learning, the dimensions of academic motivation and hope for future are able to predict preparation for self-direction in learning. Our findings can be used by dental curriculum planners and professors to identify the concept of motivation, learn about different motivations, and recognize various aspects of hope for future and their impact on self-directed learning of dental students, so that more effective and cost-effective methods could be used in the design and implementation of educational programs.

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