



Correlation Between Happiness and Academic Achievement in Iranian Students: A Meta-Analysis Letter

Masoumeh Otaghi¹, Kourosch Sayehmiri², Reza Valizadeh³ and Hamed Tavan^{4,*}

¹School of Nursing and Midwifery, Ilam University of Medical Sciences, Ilam, Iran

²School of Medicine, Psychosocial Injuries Research Center, Ilam University of Medical Sciences, Ilam, Iran

³School of Medicine, Ilam University of Medical Sciences, Ilam, Iran

⁴Student Research Committee, Faculty of Nursing and Midwifery, Ilam University of Medical Sciences, Ilam, Iran

*Corresponding author: Student Research Committee, Faculty of Nursing and Midwifery, Ilam University of Medical Sciences, P.O. Box: 69391-77143, Ilam, Iran. Tel: +98-9187474221, Fax: +98-8412227134, Email: hamedtavan@gmail.com

Received 2019 May 23; Revised 2019 June 09; Accepted 2019 June 13.

Abstract

Context: Several studies declared a significant correlation between academic achievement as a behavioral index and happiness among Iranian students.

Objectives: The present study aimed to explore the relationship between happiness and academic achievement in students through a systematic review and meta-analysis approach. We also aimed to categorize the influencing factors based on their type and study fields.

Evidence Acquisition: Based on a systematic review and meta-analysis approach, we retrieved articles published in PubMed, Scopus, Web of Science, and Google Scholar databases using keywords including correlation, happiness, academic achievement, and students. We also searched the Persian equivalents of the keywords in a Persian database (i.e. SID) from 2013 to 2017. The Q statistic and I² index were utilized for seeking heterogeneity between studies. The statistical analyses were conducted by STATA 11.1 software.

Results: Assessing the correlation coefficient between academic achievement and happiness scores led to $z = 0.25$ (95% CI: 0 - 7.56, I² = 98.7%) and $r = 0.24$ (95% CI: 0 - 50) in university students.

Conclusions: Happiness improves the student's academic achievement. Thus, this factor should be considered for improving the students' performance.

Keywords: Happiness, Academic Achievement, Meta-Analysis

1. Context

Several studies declared a significant correlation between academic achievement as a behavioral index and happiness among Iranian students (1). For Canadian students in 2005, a relationship was also reported between academic achievement and happiness (2). Higher academic achievement was also observed in teenagers with more happiness feeling (3, 4). Currently, there is no integrated study to gather all data from published articles through a meta-analysis approach. Meta-analysis is a quantitative study that uses published research to make a firm conclusion. A meta-analysis uses specific statistical procedures to estimate the effect of risk factors on the system better than individual studies do. Therefore, a meta-analysis integrates the outcomes of independent research to obtain reliable trends across the studies. Nevertheless, there was no comprehensive systematic review and meta-analysis on the factors affecting students' academic achievement and their relationship with students' happi-

ness in Iran. Regarding multiple studies concerning the factors influencing academic achievement in university students, a meta-analysis seemed necessary to pool and validate the results of available studies and provide a more precise guide for researchers and policymakers in the field (5, 6).

2. Objectives

The present study aimed to explore the relationship between happiness and academic achievement in students using a systematic review and meta-analysis approach. We also aimed to categorize the influencing factors based on their type and study field.

3. Evidence Acquisition

This study was a systematic review and meta-analysis. The data were gathered from studies performed across the

world. The literature search was conducted in PubMed, Scopus, Google Scholar, and Web of Knowledge databases using keywords including students, happiness, and effective factors, as well as their Persian equivalents in 2013 - 2017.

4. Study Selection and Qualification

The STROBE checklist (3) was utilized for screening the papers. Each item of the checklist was scored from 0 to 2 independently by two of the authors. Accordingly, the studies were categorized into either of the poor, moderate, and good groups corresponding to 1 - 15, 16 - 30, and 31 - 44 scores, respectively. Studies reaching at least the score 16 (i.e. well-designed studies) were included in the meta-analysis.

4.1. Study Selection and Data Extraction

Initially, the researcher searched for Iranian studies of the effective factors on students' happiness and academic achievement. After the literature search, a checklist of related abstracts was prepared. We selected all the articles with "academic achievement" and "student happiness" and "regression" and "correlation" in their titles. Articles related to academic failure and associated factors were omitted at this stage. In the next step, these studies were re-evaluated for final inclusion in the meta-analysis, as shown in the study flowchart in Figure 1.

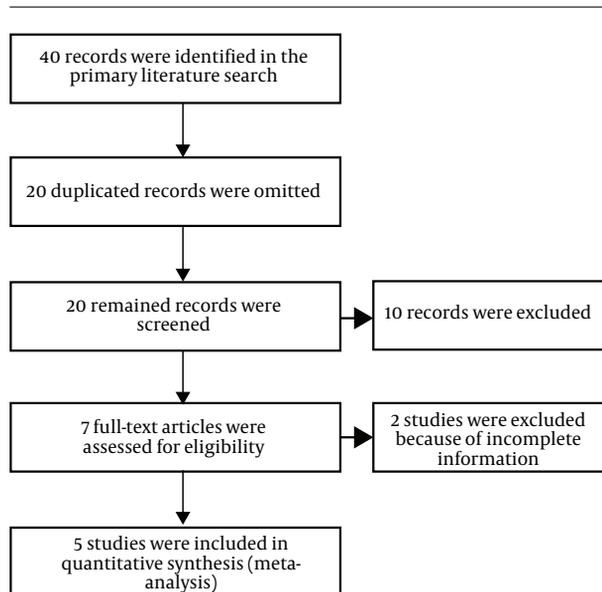


Figure 1. Flowchart of the present systematic review and meta-analysis

4.2. Statistical Analysis

Considering the high heterogeneity between studies (demonstrated by statistically significant heterogeneity index (I^2)), a random-effects model was utilized for meta-analysis. The data were analyzed using STATA (version 11.1).

5. Results

Figure 2 shows the association between academic achievement and happiness scores in both school and university students. Considering the correlation coefficient within $-1 \leq r \leq 1$ and the non-normal distribution of the coefficient, the value was normalized by applying following equation.

$$z = \frac{1}{2} \ln \frac{1+r}{1-r}$$

Then, the standard deviation was calculated using $SE = \frac{1}{\sqrt{n-3}}$ formula. Finally, the meta-analysis was performed on Z scores and then, the Z values were transformed to r (correlation coefficient) using $r = \frac{e^{2z}-1}{1+e^{2z}}$ equation.

Sensitivity analysis showed that the study by Tabbodi was influential so that it remarkably changed the obtained results of in the current study (Figure 2B). Table 1 shows the characteristics of the articles examining the relationship between academic achievement and happiness in students.

The obtained results in the current study were in line with those by Robbins et al. (12) and Wei et al. (13). Lower happiness scores were reported from Kuwait and England than the international scores (14, 15). Students with higher levels of happiness were found to place in the category of higher academic achievement and health by Walton and Cohen (16). There are also other studies reporting higher mean scores for happiness than the mean score found in the current study (17, 18).

6. Conclusions

In spite of the interaction of happiness with academic achievement, yet no correlation has been reported between these parameters. Academic achievement can lead to student's satisfaction and happiness. Mentally healthy students with suitable levels of happiness obtain better results in terms of education and academic performance (7, 19). Happiness also improves students' academic achievement; thus, this effective factor should be considered for improving the students' performance.

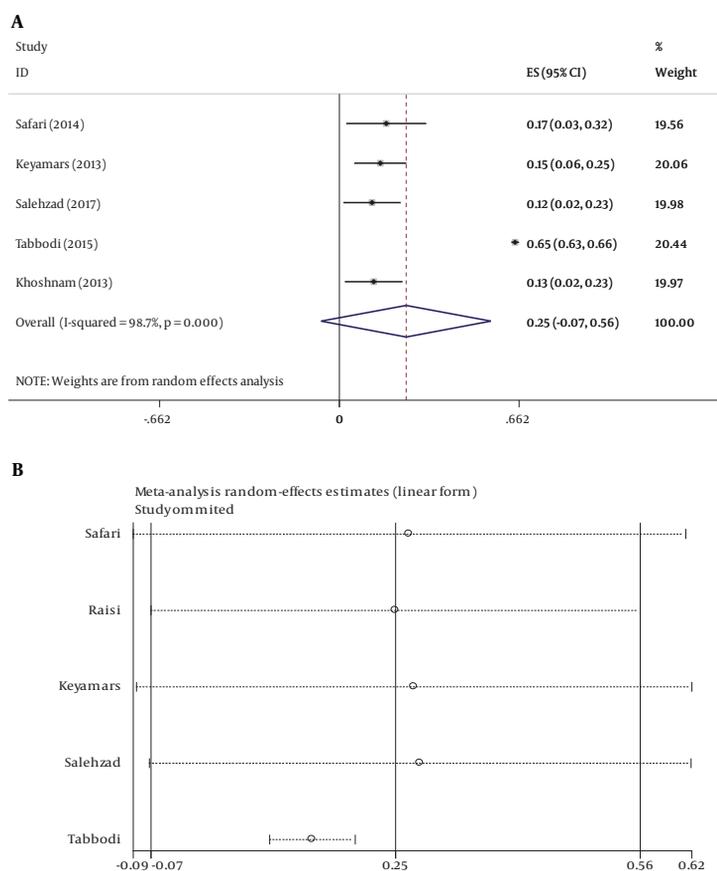


Figure 2. Forest plot of the relationship between academic achievement and happiness scores in school and university students with a 95% confidence interval. A) The mean correlation coefficient between academic achievement and happiness scores obtained as $z = 0.25$ (95% CI: 0 - 7.56, $I^2 = 98.7\%$) $r = 0.24$ (95% CI: 0 - 50) in university students. B) Sensitivity analysis of the correlation between happiness an academic achievement in students.

Table 1. Characteristics of Articles Examining the Relationship Between Academic Achievement and Happiness in Students^a

Authors (Ref.)	Year	City in Iran	Total Sample Size	Female (N)	Male (N)	Academic Achievement Score	Happiness Score	Study Group	Job
Safari et al. (7)	2014	Tehran	180	36	144	61.6	12.65	University students	Medical, nursing and midwifery
Kiamarsi and Momeni (8)	2013	Ardabil	420	420	0	47.4	15.99	High school students	High school
Salehzadeh et al. (9)	2017	Yazd	350	350	0	-	-	University students	High school girls
Tabbodi et al. (10)	2015	Shiraz	18465	10235	8230	57.5	15.89	University students	Students of Azad University of Medical Sciences
Khoshnam et al. (11)	2013	Tehran	341	211	130	50.04	16.75	High school students	High schooler

^aSince the studies did not use the same tools, the extracted data were homogenized by multiplying them in certain coefficients so that the data of all studies were comparable; thus, a better comparison could be made.

Acknowledgments

We thank the students participating in the study. We also thank the deputy of research and technology of Ilam

University of Medical Sciences for financial support (Ethical code: IR.MEDILAM.REC.1397.079).

Footnotes

Authors' Contribution: All authors contributed to data collection, Hamed Tavan, and Masoumeh Otaghi to statistical analysis, Kourosh Sayehmiri and Hamed Tavan to study design, Reza Valizadeh and Hamed Tavan to quality assessment, all authors to final revision and grammar checking.

Conflict of Interests: The authors declare that they have no conflicts of interest.

Ethical Considerations: All ethical principles were considered in this study. Ethical issues (including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) were completely observed by the authors.

Funding/Support: Ilam University of Medical Sciences funded the study.

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