Investigation of Relationship between Spiritual Intelligence and academic achievement Biomedical Engineering Students of Islamic Azad University Science and Research Branch of Tehran

1Leila Keikavoosi Arani and 2Javad Moghadasi

1Assistant Professor, Health Services Management, Alborz University of Medical Sciences, Karaj, Iran.
2PhD Student of Higher Education Management, Science and Research Branch, Islamic Azad University, Tehran, Iran.

ABSTRACT

Introduction: Today, the spirituality is of the subjects being paid attention widely in the organizations. The current study aims for investigating the Relationship between Spiritual Intelligence and academic achievement Biomedical Engineering Students of Islamic Azad University Science and Research Branch of Tehran. Method: The present study was cross-sectional and of analytical type. The study population was 1397 including BA students majoring in Biomedical Engineering Students of Islamic Azad University Science and Research Branch of Tehran in 2012-2013. The sample size was 301 selected in random sampling considering the ratio of different subfield of Biomedical Engineering. To measure the spiritual intelligence, the questionnaire has been used, to measure achievement, scores mean have been used, and to determine the variables correlation, Pearson correlation coefficient was used. Findings: The findings indicated that the maximum spiritual intelligence belongs to biomedical engineering students, biomechanical subfield by 13.25 and the least one belongs to bioelectric subfield by 7.98. In academic achievement, the maximum mean was to biomechanical engineering by 14.30 and the least one was for bioelectric subfield by 13.80. Also, the results demonstrated that there is a significant relationship between spiritual intelligence and academic achievement of biomedical engineering students (p<0.01).

Conclusion: The academic achievement of BA students majoring in Biomedical Engineering Students of Islamic Azad University Science and Research Branch of Tehran is increased by increasing the spiritual intelligence.

INTRODUCTION

The student’s education status is attributed to one’s education advancement or failure and different devices are used to measure such as semester average, total average, failing terms, and failing or accepted courses. Each university students are considered as each country precious assets and are of fundamental bases of all communities’ development, advancement, and empowerment in human resources. Therefore, it is very important to draw attention to their order in scientific, research, and culture. The appropriate planning on education is of the important duties of universities. Yearly, new students are being accepted and educated by the universities in which paying attention to the training quality has a special position [1]. Education systems can also dysfunction due to defects or the other factors such as any other institution, so that they are not able to perform some parts of their objectives properly, waste the provided assets, and not achieve the appropriate and expecting outcomes. Educated who complete the university by education failure do not attain the acquired scientific capability [2]. So academic achievement and affecting factors, are of the researchers’ priorities, as well as the universities’ training managers [3]. Undoubtedly, the main return is indicator to teach science and the most outstanding indicators must be done by an education system is learners’ academic achievement. Also, each education success depends on the degree has provided the acquired performance of training the educated who have high, motivated, targeted, achievement-oriented, and efficient scientific capability [5]. Today, spirituality and human spiritual growth are of the subjects is being paid attention in the organizations. Spirituality can be discussed as a form of intelligence, as it predicts not only the spirituality, but also the adaptability degree and grand such capabilities to the individual enable one’s to solve the problems and achieve the objectives. Spiritual intelligence is the framework to recognize and organize skills and abilities acquired [6].
Spiritual intelligence enables individuals to achieve more knowledge and understanding and provides the opportunities to reach perfection and progress [7]. The spiritual intelligence is kind of compatibility and problem-solving behavior which assists individual to coordinate with the surrounding phenomenon and achieving the inner and outer consistency and improves the performance [8]. Universities—as the centers produce science, culture, and institution to train the expert country needs—are the origin of many innovations and creativity to solve the current society issues [9]. Excellence, the ability to experience deep consciousness, the ability to govern and sanctifying affairs, the ability to take advantage of spiritual resources to solve the problem and pious potential are in the area of spiritual intelligence [10]. So, the current research—spiritual intelligence among the academia—has the important role on innovation and creativity appears necessary to solve the society issues.

Zabih and Sagharovani [11] conducted a research titled “spiritual intelligence and organizational commitment” to investigate the relationship between spiritual intelligence and organizational commitment of staff. The population was 440. The statistical sample was considered 440 by Chocrane formula. To collect data, it was used standard questionnaire (Amram spiritual intelligence questionnaire and Allen & Meyer organizational commitment questionnaire). The findings demonstrated that there is positive and significant attachment between spiritual intelligence and organizational commitment.

Baezat & Sharifzade [12] did a research titled “the relationship between spiritual intelligence & organizational commitment and occupational stress of university staff” in descriptive and correlation type. Population consisted of all employees in Mazandaran University in 2010-2011. 64 were selected in random. To collect the data, Sibrial Shring emotional intelligence, Amram & Drier comprehensive emotional intelligence (2007), and Iranian norm and Philip Rice job stress questionnaire (1992) measurements were used. Then the data attained was analyzed by Pearson correlation coefficient and multivariate regression analysis. The findings demonstrated that indicators emotional intelligence (17%) and spiritual intelligence (31%) explain the transformation regarding the job stress of university staff.

Yaqoobi conducted a research titled “investigating the relationship between spiritual intelligence and students’ happiness of Bu Ali Hamadan university in descriptive and on correlation type. The population consisted of all students of Bu Ali Hamadan University. 380 (180 boys and 200 girls) were selected as the sample in a multi-stage sampling considering the ratio of each college population, gender and education groups. Spiritual intelligence by 14 options and OHI by 29 options were used as the research device. Analyzing the results by independent and paired T-test and variance analyzing indicated that there is a significance difference between the various students groups i.e. more increment on spiritual intelligence score, more increment on happiness score.

Akbari Lale, Karimi Monqi, Makarem, Esmaili, Ebrahimii [13] conducted a research in One of the medical science Universities type1 in descriptive in 1389 and have 160 faculty members participated in the research by stratified sampling titled “if the spiritual intelligence can be a strategy to improve professional ability of faculty members?” The research devices were King spiritual intelligence questionnaire and capabilities self-inventory of Alabama university. Data were analyzed through analysis tests such as Spearman correlation, T-test, Mann-Whitney, Kruskal-Wallis, Friedman, and Chi II two-way ANOVA. Results showed that the spiritual intelligence of medicine faculty was moderate. It seems professional promotion occurs automatically by increasing spiritual intelligence in faculty member and spiritual intelligence promotion of faculty member results in communicational and professional skills promotion, provides the favorable context to teach and learn.

Hamid & Zemestani [14] conducted a research titled “the relationship among spiritual intelligence, characteristics, and life quality in medical students” by casual or casual comparative method. Population concluded 160 students in 2009-2010 selected in random cluster. Tool utilized in the study consisted of five factor personality inventory, spiritual intelligence questionnaire, and life quality questionnaire. Findings indicated that there is positive and significant multiple relationship among spiritual intelligence, characteristics, and life quality.

The findings of the research of Hoseinpoor Z, Ranjdoost Sh. titled” The relationship between moral intelligence and academic progress of students Third year of high school course in Tabriz city” showed that there is a positive and significant relationship between moral intelligence and students’ achievement. Moreover there is a positive and significant relationship between moral intelligence (honesty, forgiveness and compassion) and students’ achievement. But there was no significant relationship between responsibility and students’ achievement [15].

As it is observed none of the above researches has investigated the relationship between the spiritual intelligence and academic achievements in the students. Also, with regard to the importance of spiritual intelligence on different life fields (including consultation, breeding…) and being research on spiritual intelligence at the beginning way in our country and need for more investigation in different research communities are totally evident. The conducted to investigate the Relationship between Spiritual Intelligence and academic achievement Biomedical Engineering Students of Islamic Azad University Science and Research Branch of Tehran.
Method:
The present study is cross-sectional and of analytical type. The study population was 1397 including BA students majoring in Biomedical Engineering Students of Islamic Azad University Science and Research Branch of Tehran in 2012-2013. The study sample size was 301 using Morgan table, as well as Cochrane formula. They were selected in random sampling considering the ratio of different subfield of Biomedical Engineering. Device to collect the data was questionnaire on spiritual intelligence. The questions were scored by Likert five-option measurement—totally disagree=1 to totally agree=5. To measure the questionnaire reliability, Cronbach’s alpha coefficient is used. The questionnaire Cronbach’s alpha coefficient was obtained 0.89 and suggested that the test has the acceptable reliability. In order to analyze the data from the questionnaire descriptive statics indicators (frequency, percentage, mean, and standard deviation) was used to describe the data. Considering questionnaire failure, 400 questionnaires were distributed. 316 questionnaires were completely filled out of 400 questionnaires. 84 questionnaires were removed due to answers defects. Ultimately considering the ratio of subfields the data of 301 questionnaires were considered. To measure the students’ academic achievements, their scores averages were investigated. Data was analyzed by software SPSS. Variables correlations were determined by Pearson correlation coefficient. The students’ spiritual intelligence average and their scores one were investigated by T-test.

Findings:
Table (1) shows the investigation results of spiritual status of BA students majoring in Biomedical Engineering Students of Islamic Azad University Science and Research Branch of Tehran and suggests that 68 have been majoring in clinical biomedical engineering by spiritual intelligence average 9/05 out of 301. Also, 79 respondents are majored in bioelectric biomedical engineering who have spiritual intelligence average 7.98 and 59 students of biomaterial biomedical engineering by spiritual intelligence 8.35. at last, 95 are studying biomechanical biomedical engineering by spiritual intelligence average 13.25. In general, it can be said that the students of biomedical-biomaterial by average 13.25 have the maximum spiritual intelligence average and the students of biomedical-bioelectric have the least one.

<table>
<thead>
<tr>
<th>Field/subfield</th>
<th>population</th>
<th>Student number (sample)</th>
<th>Spiritual intelligence mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical engineering-clinical</td>
<td>316</td>
<td>68</td>
<td>9.05</td>
</tr>
<tr>
<td>Biomedical engineering-bioelectric</td>
<td>368</td>
<td>79</td>
<td>7.98</td>
</tr>
<tr>
<td>Biomedical engineering-biomaterial</td>
<td>275</td>
<td>59</td>
<td>8.35</td>
</tr>
<tr>
<td>Biomedical engineering-biomechanical</td>
<td>438</td>
<td>95</td>
<td>13.25</td>
</tr>
<tr>
<td>Total</td>
<td>1397</td>
<td>301</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 shows the academic achievement mean of BA students majoring in Biomedical Engineering Students of Islamic Azad University Science and Research Branch of Tehran and suggests that 68 majoring in biomedical engineering-clinical out of 301 have the academic achievement average 14.25. Also, 79 majoring in biomedical engineering-bioelectric have the academic achievement average 13.80, 59 majoring in biomedical-biomaterial have the academic achievement average 14.10, and also 95 majoring in biomedical-engineering biomechanical have the academic achievement average 14.30. In general, it can be said that the students of biomedical-engineering-biomechanical by average 14.30 have the maximum academic achievement and the students of biomedical engineering-bioelectric have the least academic achievement by average 13.80.

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<td></td>
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</tbody>
</table>

As table 3 shows with regard to obtained data from the Pearson correlation coefficient test the significance level equals sig=0.000 in confidence interval 95% i.e. H₀ is rejected and H₁ is accepted (researcher hypothesis) is approved. In other words, there are the significant relationship and correlation between spiritual intelligence degree and academic achievements of BA students majoring in Biomedical Engineering Students of Islamic Azad University Science and Research Branch of Tehran. Regarding r=0.48, the relationship intensity is
moderate. Considering the positivity of correlation coefficient sign, the relationship direction is direct i.e. academic achievement of BA students majoring in Biomedical Engineering Students of Islamic Azad University Science and Research Branch of Tehran is increased by increasing the spiritual intelligence degree.

**Table 3:** Results of Pearson correlation coefficient test regarding the relationship between spiritual intelligence and students’ academic achievement.

<table>
<thead>
<tr>
<th>Academic achievement</th>
<th>Spiritual intelligence</th>
<th>correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.480**</td>
<td>Pearson correlation</td>
</tr>
<tr>
<td></td>
<td>.000</td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td>301</td>
<td>301</td>
<td>N</td>
</tr>
<tr>
<td>1</td>
<td>.480**</td>
<td>Pearson correlation</td>
</tr>
<tr>
<td></td>
<td>.000</td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td>301</td>
<td>301</td>
<td>N</td>
</tr>
</tbody>
</table>

**.** Correlation is significant at the 0.01 level (2-tailed)

Discussion and conclusion:

The current study results showed that there is a significance difference between the averages of various students group based on academic achievement score in spiritual intelligence i.e. more increment on spiritual intelligence, more increment on student's academic achievement. The findings are in line with the findings of Sidikoy research [16] which indicated that spiritual intelligence is more in the students who more excellent motivation to improve and spiritual intelligence facilitates reaching the acquired goals for the students.

Also, the current research findings are consistent with results of Sharifzade et al research (2009) which showed the religious beliefs, specially paying attention to the pray can have good influence on students health and academic achievement confirms the findings of the current research.

The findings of Tabibi and colleagues [17]’ research in investigating the relationship between the spiritual health and academic achievement confirms the findings of the current research.

Arbabisarju et al [18] in a research titled’ the relationship between emotional intelligence, spiritual intelligence and academic achievement” concluded that the cause of many weak performances is the sense of aimlessness.

Since the spiritual factor is highly influenced by culture factors and values systems, it seems the results generalization requires more research on this field. With regard to the research results, it is suggested that universities increase the students’ spiritual intelligence and academic achievement through the following strategies:

- Providing opportunities such as holding religion rituals, praying… to attain the spiritual experiences by students.
- Improving culture of the spiritual experiences development by creating religious affair bureau in the universities, answering to the doctrinal questions, rewarding the religious and doctrinal proposals, holding competitions guarantee the spiritual issues.
- Supporting the research projects regarding universities to become Islamic.
- Creating scientific-doctrinal-cultural committees, supporting and reinforcing the cultural programs such as holding festivals, seminars, scientific and cultural congress with themes such as “university, society, and Islamic culture”.
- Considering the individuals spiritual intelligence degree to attract professor and student.
- Promoting the scientific and cultural participation level of students in institutions and international scientific communities.

REFERENCES


[17] Tabibi, M., et.al., 2013. The Association between Spiritual Health and Academic Achievement in Medical Students of Qom University of Medical Sciences 2011, *Medical Education Supplement*, 7-2. [In Persian]