

## Research Article

### Identifying and Ranking the Factors Affecting the University Students' Mental Health

<sup>1</sup>Azadeh Sayarifard and <sup>2</sup>Elaheh Sayarifard

<sup>1</sup>Community and Preventive Medicine specialist, Center for Academic and Health Policy,  
Tehran University of Medical Sciences, Tehran, Iran

<sup>2</sup>Guillan University of Medical sciences, Rasth, Iran

**Abstract:** This research has the applied type and is descriptive and analytical based on the nature. This study is analytical because the sample has been used in order to collect data and it is descriptive because its variables are studied and reported as they are in the real world. In this study, we are seeking to rank the effective factors by study and investigation of factors affecting the university students' mental health incoming in 2010-11 according to Chaohang model. The purpose of this ranking is to prioritize planning in order to overcome the students' current problems in the statistical population. In this study, the Cronbach's Alpha method has been used in order to determine the reliability. Furthermore, Kolmogorov-Smirnov test has been used for determining the normality of answers in the questionnaire. The number of samples in the statistical population has been determined based on the computational method. Finally, given the results obtained from the questionnaires, the results are presented in two sections of analyzing the results of questionnaires and ranking the factors affecting the students' mental health.

**Keywords:** Chaohang model, ranking, university students' mental health

#### INTRODUCTION

Nowadays, connoisseurs believe that one of the important reasons of development in the advanced countries is the attention and efforts of their governments in training the creative and effective manpower. University students are the better manpower in terms of talent, creativity and perseverance and are the spiritual resources of each society and the future manufacturers of their own country. It is expected that this group to be the capable, useful and effective individuals for the country by the help of substantial investments which are spent on them from the education to the university. The undeniable reality is that these investments cannot provide those expectations without considering the mental health of society specially the students. This point is important because entering the university create the major change in the social, individual and human life and is considered as a key period. In this period, the individual is faced with the numerous changes in the human and social relationships. The new expectations and roles, which are created at the same time with the entering the university, should be mentioned along with these changes. To be involved in such these conditions is

often along with the pressure and worry and affects the individuals' performance and efficiency.

The new expectations and roles, which are created at the same time with the entering the university, should be mentioned along with these changes. To be involved in such these conditions is often along with the pressure and worry and affects the individuals' performance and efficiency. Most of the students' not being familiar with the university environment at the beginning, being detached from family, disaffection with the accepted field of study, incompatibility with other people in the life environment and inadequate welfare and economic facilities and the corresponding problems are among the conditions which can make the mental problems and disorders and decrease the individual's performance.

Numerous studies have been conducted in the field students' mental health. For instance, Parto (1975) found in his research on investigating 2398 students' mental health at University of Tehran that 14% of male students and 8 % of female students suffer from severe depression. Torkan (1994) also found in his research on investigating the prevalence of depression in students of Medical Sciences of Zahedan that the depression is higher in women than men (Women 65, men 41%) and the prevalence of depression in single or divorced individuals is higher than the married ones. In another

**Corresponding Author:** Azadeh Sayarifard, Community and Preventive Medicine specialist, Center for Academic and Health Policy, Tehran University of Medical Sciences, Tehran, Iran

This work is licensed under a Creative Commons Attribution 4.0 International License (URL: <http://creativecommons.org/licenses/by/4.0/>).

study, conducted by Bagheri *et al.* (1995) on the university students entered in the academic year (1994-95) at university of Tehran, 30% of students suffered from the sadness feeling and depression and 26.8% from the mental stress, also 16.5% were suspected with the mental disorder (Bagheri *et al.*, 1995). In a survey conducted on 200 medical students at Ahvaz University of Medical Sciences, a percent of students suffered from severe depression, 7% from partly mild depression and 40% from mild depression (Ahmadi, 1995). In another study, the level of depression in students of higher education institutions in Ilam city was reported equal to 3.16% and the level of depression in female students was 16.6% and in male students was 16.01% (Torabi, 1997).

Given the increase of students' attendance in university counseling center during the recent years, the psychological, social and educational problems in the students should be simply found. Intervention and counseling services are essential for authorities of handling these kinds of problems. Therefore, this study is conducted with the aim to identify and rank the vulnerable and suspected-with-psychological disorders students' problems in order to provide the better mental health services such as counseling, psychotherapy therapy and drug treatment and develop the students' mental health level by its consequences.

The main objective of this study is to study and investigate the factors affecting the students' mental health in defined statistical population and ranking these factors for authorities' planning in mental health sector. Though this, it is sought to improve the way of planning and budget allocation and consumed costs of programs by ranking the factors and focus on supporting the most effective factors from the beginning of activities.

## LITERATURE REVIEW

The World Health Organization (WHO) defines the mental health as follows: "The mental health is involved in the overall concept of health care and the health means the full ability to perform the social, mental and physical roles" (Ganji, 1997). Several studies have been conducted in different countries in the field of factors affecting the students' mental health, the way of adapting to the university environment and the mental disorders at them. Moreover, numerous studies have been conducted in the field of detached from parents and adapting to the university environment (Lapsley, 1989), the way of dealing with the environmental stress (Retteck, 1990), depression and anxiety (Lloyd and Gartrell, 1994) and mental health (Bahar *et al.*, 1992). Furthermore, by using SCL-90-R 9 test, Kafi *et al.*, (1998) indicated in investigating the students' educational status and mental health entered in four Technical, Art and Literature faculties

of University of Tehran in the academic year 1993-94 that there was no significant different at the beginning of education in terms of mental health between students in Tehran and other cities, male and female students, faculties and acceptance quota.

Early diagnosis of psychiatric disorders while arriving is beneficial in terms of treating the students as well as preventing the university from the unpredicted treatment costs and various problems. Mental health is defined within the overall concept of health. The health means the full ability to perform the social, mental and physical roles (Ganji, 1997). According to Adler's point of view, a person, who has the intimate and appropriate relationship with family and knows well his status in the family and society properly, has the mental health. Moreover, the healthy person is targeted and purposeful in the life and his activities are based on the attempt and following these goals (Hassani and Rahmanian, 2003). Milanifar (1995) believes that the mental health and welfare includes all aspects of life from the family environment to the school, university, job environment and so on; among these the recent factor, job and working play an important role in providing the individuals' mental health. Students' work efforts, appropriate environment and their interest in working are among the criteria which play the role in creating the young people's balance and mental health.

Ranking the Fuzzy Analytic Hierarchy Process (FAHP) has been used in order to rank the factors affecting the students' mental health of. The background of this method has been summarized as follows. Hopf *et al.* (2008) used the AHP in completing the BSC. The first level of a BSC hierarchy contains four prospects of BSC. The second level of hierarchy contains the measurement scales which are used in each prospect. Analytic Hierarchy Process can be used in order to select the scales of measuring the BSC and also help to understand the relative importance of scales. Bozbura *et al.* (2006) proposed a FAHP methodology (Fuzzy analytic hierarchy process) in order to improve the quality of prioritizing the human capital measurement criteria under the uncertainty conditions (Fuzziness) (Bozbura *et al.*, 2006). By an Analytic Network Process (ANP) and BSC approach, Ravi *et al.* (2005) analyzed the alternative methods in reverse logistics for end of life computers. The structure of Analytic Network Process (ANP) in terms of reverse logistics was structured in a hierarchical form and the dimensions of reverse logistics were extracted from different perspectives. According to a research, Hung-Yi *et al.* (2011) have sought to develop the scorecard model by using one of the Multi-criteria Decision-Making Methods (MCDM) in order to evaluate the performance of major research centers in Taiwan. They have used the model VIKOR in order to prioritize the

Table 1: Corresponding fuzzy numbers with priorities in paired comparisons with FAHP

Priority type	Triangular fuzzy number
Full and absolute priority or importance	(7.2, 3, 5.2)
Much stronger priority or importance	(2, 5.2, 3)
Stronger priority or importance	(3.2, 2, 5.2)
Low priority or importance	(1, 3.2, 2)
Almost equal priority or importance	(1.2, 1, 3.2)
Exactly equal priority or importance	(1, 1, 1)

options in four areas of BSC model. In ranking the areas, they have concluded that the development and learning area has had the most important role and highest coefficient in performance evaluation of research centers; and the financial area is put in the next priority. According a research, García-Valderrama *et al.* (2009) designed a model for evaluating the performance and the relationship of four dimensions of BSC by applying the Data Envelopment Analysis method (DEA) in research and development companies. Hung-Yi *et al.* (2010) have designed a model for evaluating the banking system performance with application of FMCDM or Multi-criteria Decision-Making (MCDM) methods in BSC. They have used the FAHP method in order to rank 23 selected indicators of four aspects of BSC and have ranked three selected banks as the research samples based on the designed model by using three models of SAW, TOPSIS and VIKOR and have concluded that the designed model has good performance in order to evaluate the performance of banks (Hung-Yi *et al.*, 2010). In a paper, Lee *et al.* (2008) have designed a model for evaluating the performance of IT in manufacturing companies in Taiwan by integrating the models BSC and FAHP. According to different strategic management models proposed by earlier scholars, the models are presented in Table 1. The model used in this study is the combination of fuzzy SWOT and AHP.

### RESEARCH METHODOLOGY

This research is applied based on the objective and is considered as the descriptive-analytical studies based on the way of collecting and processing the information. Chaohang model, which classifies the factors affecting the mental health into six major categories, has been used in order to determine the factors affecting the students' mental health. These six categories are the physical deprivations, psychological-social factors, bad family patterns, incompatible family structure, pressures due to the industrial modern life and the social- cultural factors. Meanwhile, due to the similarity of factors in the subsets of social-psychological and social-cultural factors, these two factors are integrated under the name "Social factors". Moreover, bad family patterns and incompatible family

structure are integrated with each other under the name "Family factors" and totally four overall factors affecting the students' mental health are discussed in this study. In order to collect the data needed to test the research hypotheses, a questionnaire containing the corresponding questions was used about the demographic features and mental health scale. Mental health scale was introduced by Kamau (1992) in order to determine the students' level of mental health and was used with minor changes in order to be used in Persian samples (Kamau, 1992). The scale of mental health includes 50 questions in order to determine the level of mental health and includes the subscales of individual growth and improvement, lack of anxiety, signs of disability, capacity to deal with other individuals, capacity to cope with stresses of life. The response of each question is rated from 1-5; however, the method of scoring some of the questions is reverse; hence, the score range of each subject in the mental health scale is from 50-250 and the mean 150. The score higher than the mean indicates the mental health in the individual.

**Statistical population:** Statistical Population of this research consists of all male and female students who were educating in all fields at Payam Noor University during the academic year 2010-11. In this study, the gender, age and occupation separation and any statistical population grouping are prevented because it has been sought to evaluate the students' mental health practice. 184 students are selected. Random sampling method has been done and 124 samples been estimated by using Cochran formula:

$$n_{cochran} = \left( \frac{\frac{P(1-p)z_{1-\alpha/2}^2}{d^2}}{1 + \frac{1}{N} \frac{P(1-p)z_{1-\alpha/2}^2}{d^2}} \right) = \left( \frac{\frac{0.5 \cdot 0.5 \cdot (1.96)^2}{(0.05)^2}}{1 + \frac{1}{184} \frac{0.5 \cdot 0.5 \cdot (1.96)^2}{(0.05)^2} - 1} \right) = \frac{384.16}{3.0824} \cong 124$$

Since it is expected that some of the respondents will not complete their questionnaires, 6 individuals were added to the statistical number and the total number of questionnaires increased to 130, thus 128 questionnaires were completed.

**Data collection:** Two methods of library and field research are used in order to collect data and extract the information. In the library studies, a list of books, Valuable English and Persian articles as well as some of available theses about the application of Fuzzy Analytic Hierarchy Process has been used in order to

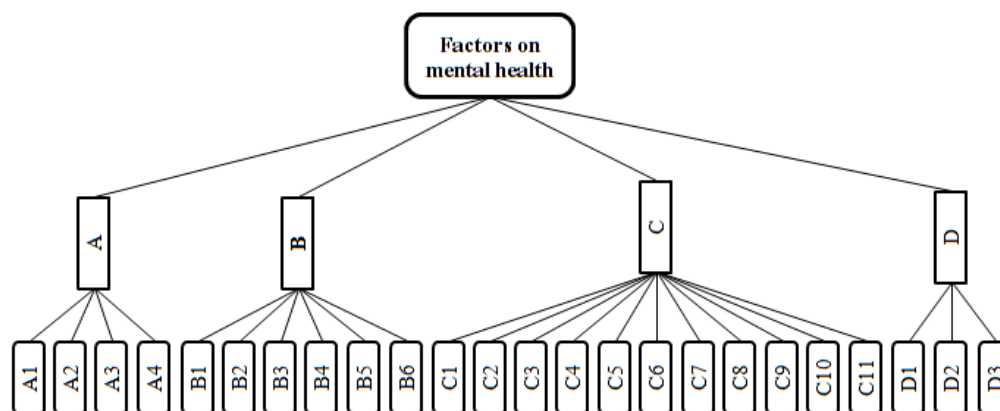


Fig. 1: Research conceptual model

understand the key concepts of this study or the factors affecting the individuals' mental health especially in groups of students.

**Validity and reliability:** The *validity* of a study is the accuracy of indicators and criteria which have been prepared for evaluating the target phenomenon. Since Kamau standard questionnaire has been used in this study in order to assess the students' mental health and its validity has been proved in previous research, there is no need to determine the validity and its validity has been approved in numerous local and foreign studies.

**Reliability** or credibility means the repeatability, stability and consistency in the measurement tool and examines that to what extent the measurement tool assesses the necessary concept strongly at any time. In this study, Cronbach's alpha has been calculated by the help of SPSS software and through the following formula in order to test the reliability:

$$\alpha = (j \div (j-1)) [1 - (\sum s_j^2 / s^2)]$$

$\alpha$  = The estimation of test reliability  
 $j$  = The number of test questions,  
 $s_j^2$  = The variance of subset  $j$   
 $s^2$  = The variance of total test

This value has been calculated higher than 78% for both questionnaires.

**Conceptual research model:** The conceptual research model is shown graphically in Fig. 1. This model consists of three levels. First level is related to the factors affecting the mental health; the second level is about the physical deprivations, social factors, family factors, pressures of industrial modern life; and the third level is about the subset of each factor at the second level in the following order.

**A1-A4:** Poor nutrition, Psychasthenia and emotional traumatic processes, brain injury (Physical deprivations).

**B1-B6:** Mental deprivation, institutionization, deprivation at home and war crimes, discrimination and preconception and employment and economic problems (Social factors).

**C1-C11:** Lack of parent-child relationships, excommunicate, increased support and the emotional deprivations, too much self ruling, parents' unrealistic demands, lack of discipline, lack of communication, incompetent parents, separated families, anti-social families, initial psychological damages (family factors).

**D1-D3:** Unhealthy competition, job demands, complexity of modern life (Pressures of industrial modern life).

### CONDUCTING THE RESEARCH

For conducting the research, first the binary compare of second level is done through the FAHP method and then the binary compare of options in each criterion is calculated separately. Finally, the factors affecting the students' mental health are listed and ranked. The following steps are generally introduced in order to introduce the calculation method.

- Determination of corresponding fuzzy numbers with priorities in paired comparisons among the variables; it is shown in Table 1.
- Determining the triangular fuzzy number; it is determined as follows.
  - The coefficients of each paired comparison, which is a triangular number, is determined ( $s_k$ ):

Table 2: The normality test with the Kolmogorov-Smirnov test

		B	C	D
N		124	124	124
Normal	Mean	5.939	6.301	6.344
Parameters	S.D	0.65800	0.83988	0.69956
Most Extreme Differences	Absolute	0.120	0.245	0.238
	Positive	0.086	0.202	0.174
	Negative	-0.120	-0.245	-0.238
Kolmogorov-Smirnov		1.761	1.550	1.508
Asymp. Sig. (2-tailed)		1.005	1.026	1.025

Table 3: Determining the importance degree of factors

Factors	Physical deprivations	Social factors	Family Factors	Pressures of industrial modern life
Physical deprivations	1	1.5	3	2
Social factors	-	1	5	5
Family Factors	-	-	1	1.3
Pressures of industrial modern life	-	-	-	1

Table 4: Paired fuzzy comparison matrix of main factors

Factors	Physical Deprivations	Social factors	Family factors	Pressures of Industrial modern life
Physical Deprivations	(1, 1, 1)	(2.5, 1.2, 2.3)	(1, 3.2, 2)	(1.2, 1, 3.2)
Social factors	(3.2, 2, 5.2)	(1, 1, 1)	(3.2, 2, 5.2)	(3.2, 2, 5.2)
Family Factors	(1.2, 2.3, 1)	(2.5, 1.2, 2.3)	(1, 1, 1)	(1.2, 2.3, 1)
Pressures of industrial modern life	(2.3, 1, 2)	(2.5, 1.2, 2.3)	(1, 3.2, 2)	(1, 1, 1)

- After calculating  $S_{Ks}$ , the magnitude of them through each other should be obtained. In general, if  $M_1$  and  $M_2$  are two triangular fuzzy numbers, the magnitude of  $M_1$  than  $M_2$  is shown with  $V(M_1 \geq M_2)$  and defined as follows:

$$\text{If } M_1 \geq M_2 \quad V(M_1 \geq M_2) = 1$$

$$\text{Otherwise } V(M_1 \geq M_2) = \text{hgt}(M_1 * M_2)$$

$$\text{Also, we have } \text{hgt}(M_1 \cap M_2) = \frac{u_1 - l_2}{u_1 - l_2} [(u_1 - l_2) + (M_2 - m_1)]$$

- Determining the magnitude (weight of indexes) of a triangular fuzzy number from other k triangular fuzzy number by the following equation:

$$v(M_1 \geq m_2, \dots, m_k) = M_i [v(M_1 \geq m_2) \dots v(M_1 \geq m_k)]$$

- Calculating the weight of indexes in paired comparison matrix, as follows:

$$w^*(X_i) = \text{Min} \{v(s_i \geq s_k)\}, K = 1 \dots n, k \neq i$$

- Determining the vector of index weight as follows:

$$w^* = [w^*(c_1), W^*(c_2) \dots w^*(c_n)]^t$$

- Determining the normalized weights of criteria by the following equation:

$$w_j = w^*_i \div \sum w^*_i$$

The obtained weights are the relative importance coefficient of each of the indicators (criteria) based on fuzzy AHP (by the EA method) and determine the best decision-making option from the decision-making criteria.

**Evaluating the data normalization:** The research data (questionnaire results) should be normal for using the parametric methods and tests. Therefore, Kolmogorov-Smirnov test is used for testing the normality of variables. The results are shown in Table 2.

It is noted that the significant level (Sig) of all variables is higher than 0.05. In other words, the data normality is verified and using the tests is permitted. Then the binary compare of second-level measures are calculated and the results of other criteria are not inserted in order to prevent the repetitive calculations.

**Determining the final matrix of fuzzy paired comparisons of main factors by the method FAHP:**

First, we insert the collected questionnaires in the tables of determining the importance degree of factors. For instance, the response of first questionnaire is shown in Table 3.

Then the numbers and elements of above matrix are converted to fuzzy numbers according to the equivalence in Table 4 of "Fuzzy numbers corresponding with the priorities". For instance, the paired comparison matrix of factors based on the first respondent's view in the fuzzy form is shown in Table 4.

The final prioritization of options (4 factors) the paired comparisons of all respondents should be integrated in a way. Geometric mean is one of the best methods. In other words, a table like the Table 4 is calculated for each respondent. The geometric mean is calculated for the entries a, b, c, ..., n as follows:

$$\text{Geometric mean} = (a * b * \dots * N)^{1/n}$$

here, the final table (Table 5) of combining all Tables four is presented for respondents.

**Calculation of relative and final weights (triangular fuzzy number):** After preparing the fuzzy paired comparison matrix, the relative and final weights

Table 5: Final matrix of fuzzy paired comparisons for main factors by method FAHP

Factors	Physical Deprivations	Social factors	Family factors	Pressures of Industrial modern life
Physical Deprivations	(1.2, 1, 3.2)	(2.5, 1.2, 2.3)	(1, 3.2, 2)	(1, 1, 1)
Social factors	(1.2, 2.3, 3.1)	(2.5, 1.2, 2.3)	(1, 1, 1)	(1.2, 2.3, 1)
Family Factors	(3.2, 2, 5.2)	(1, 1, 1)	(3.2, 2, 5.2)	(3.2, 2, 5.2)
Pressures of industrial modern life	(1, 1, 1)	(2.5, 1.2, 2.3)	(1, 3.2, 2)	(2.3, 1, 2)

Table 6: Prioritization of main factors by using the method FAHP

Index (Criterion)	Weight	Priority
Physical Deprivations	0.246	2
Social factors	0.129	4
Family Factors	0.398	1
Pressures of industrial modern life	0.227	3

Table 7: Prioritizing the sub-factors by using the FAHP method

Group	Index (Criterion)	Weight	Priority
(Physical deprivation)	Poor nutrition	0.130	4
	Psychasthenia	0.259	3
	Traumatic emotional processes	0.281	2
	Brain injury	0.330	1
	Mental deprivation	0.231	1
	Institutionization	0.121	6
	Deprivation at home	0.130	5
(Social factors)	War and Crime	0.198	2
	Discrimination and preconception	0.152	4
	Employment and economic problems	0.168	3
	Lack of child-parent relationship	0.109	5
	Excommunicate	0.120	4
	Increased support and the emotional deprivations	0.083	6
	Too much self ruling	0.068	9
	Parents' unrealistic demands	0.040	11
	Lack of discipline	0.044	10
	Lack of communication	0.071	8
(Family factors)	Incompetent parents	0.123	3
	Separated families	0.126	2
	Anti-social family	0.140	1
	Initial psychological damages	0.076	7
	(Pressures of industrial modern life)	Unhealthy competition	0.226
Job demands		0.400	1
Complexity of modern life		0.374	2

should be calculated. Analytic developmental method has been used in this study. For decreasing the time of calculations, only the triangular fuzzy number of physical deprivations is calculated.

- Determining the coefficients of each paired comparison matrix:

$$S1 = (2.90, 4.50, 5.17) * (0.043, 0.054, 0.072) = (0.125, 0.243, 0.372)$$

$$S2 = (2.4, 2.83, 3.67) * (0.043, 0.054, 0.072) = (.103, .153, .264)$$

$$S3 = (5.5, 7, 8.5) * (0.043, 0.054, 0.072) = (0.215, 0.378, 0.612)$$

$$S4 = (3.07, 4, 5.67) * (0.043, 0.054, .072) = (0.132, 0.216, 0.408)$$

- Calculation of magnitude degree:

$$V(S1 \geq S2) = 1 \quad V(S1 \geq S3) = (0.372 - 0.215) / (0.372 - 0.215) + (0.378 - 0.243) = 157 / 292 = 0.537$$

$$V(S1 \geq S4) = 1$$

$$V(S2 \geq S1) = (0.264 - 0.125) / (0.264 - 0.125) + (0.243 - 0.153) = 139 / 229 = 0.607$$

$$V(S2 \geq S3) = (0.264 - 0.215) / (0.264 - 0.215) + (0.378 - 0.153) = 49 / 274 = 0.179$$

$$V(S2 \geq S4) = (0.264 - 0.132) / (0.264 - 0.132) + (0.216 - 0.153) = 132 / 195 = 0.677$$

$$V(S3 \geq S1) = 1$$

$$V(S3 \geq S2) = 1$$

$$V(S3 \geq S4) = 1$$

$$V(S4 \geq S1) = (0.408 - 0.125) / (0.408 - 0.125) + (0.243 - 0.216) = 283 / 310 = 0.913$$

$$V(S4 \geq S2) = 1$$

$$V(S4 \geq S3) = (0.408 - 0.215) / (0.408 - 0.215) + (0.378 - 0.216) = 193 / 355 = 0.544$$

- Determining the magnitude level (weight of indices):

$$\text{Min } V(S1 \geq S2, S1 \geq S3, S1 \geq S4) = \text{Min}(1, 0.537, 1) = 0.537$$

$$\text{Min } V(S2 \geq S1, S2 \geq S3, S2 \geq S4) = \text{Min}(0.607, 0.179, 0.677) = 0.179$$

$$\text{Min } V(S3 \geq S1, S3 \geq S2, S3 \geq S4) = \text{Min}(1, 1, 1) = 1$$

$$\text{Min } V(S4 \geq S1, S4 \geq S2, S4 \geq S3) = \text{Min}(0.913, 1, 0.544) = 0.544$$

Thus, the non-normalized weight vector of parameters is as follows:

$$w^* = (0.537, 0.179, 1, 0.544)$$

- Determining the weight vector:

$$w_j = w^*_i \div \sum w^*_i \Rightarrow \sum w^*_i = 2.26 \rightarrow W = (0.237, 0.079, 0.44, 0.24)$$

- Determining the normalized weights of criteria  
Therefore, the order of final weight and prioritization of four main factors are shown in Table 6.

As shown, the binary comparison of second level was done. Binary calculations of criteria have been done through the software Choice. In Fig. 2, the output of software, which shows the results of Table 6, has been presented.

The calculated inconsistency rate of index (I.R) for all criteria is from 0 to 0.01; this number indicates the significance of total model and approved accuracy of calculation process. Inconsistency rate at this level is equal to 0.009 which is less than 0.01 and thus the calculations are confirmed.

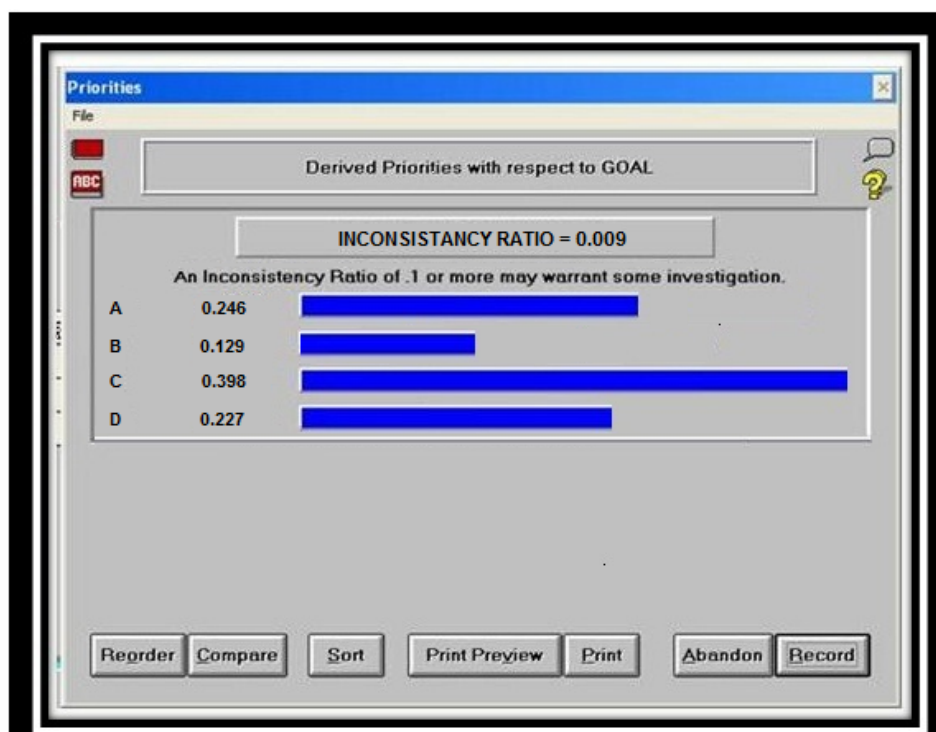


Fig. 2: The software output for binary comparison of second-level criteria

Following the criteria calculations, the prioritization of criteria calculated by the method FAHP for the third level is shown in Table 7.

Calculated Inconsistency Rate (I.R) has been determined equal to 0.007, 0.005, 0.008 and 0.009, respectively for the groups (physical deprivations), (social factors), (family factors) and (pressures of industrial modern life), thus the results of calculations are confirmed.

### CONCLUSION AND SUGGESTION

- Conclusion:** The main objective of this study was to assess the male and female students' mental health at Payame Noor University during the academic year 2010-11. Therefore, from the accepted students, 128 students were selected by random sampling method and completed the questionnaire. Obtained results in two sections of analysis of results and the output of calculations are expressed as follows.

Analysis of data obtained from the questionnaire indicates that totally 4.97 % of accepted students have had the history of depression and mental disorders before entering the university and the amount of their depression and anxiety has been had more than other

disorders. Furthermore, the percentage of positive responses to questions about sadness and depression feeling has been higher than other questions and the obtained difference has been significant. Comparison of accepted male and female individuals' mental health at the beginning of the academic year has shown no significant difference between the male and female students. The results of this section of research are consistent with the findings obtained by Lioyd and Gartrell (1994), Bahar *et al.* (1992) and Kafi *et al.* (1998) and show that there is difference between accepted boys and girls in terms of mental health at the beginning of education. The results of survey also indicate that there is a significant difference between Tehrani and other-city students in terms of mental health; and in this study, Tehrani students have had better mental health than the students from other cities. Like the findings obtained by Fallahi (1991) and Kafi *et al.* (1998), the findings of this research indicate the difference in total score mean obtained by Tehrani and other-city students. This difference may be due to the other-city students' detachment from the family environment, economic problems and concerns about housing which confirm the findings obtained by Lapsley (1989). In this regard, the rate of interest in the field of study affects the accepted students' mental health; the results obtained from the analysis of

variance of accepted students' mean scores indicate that the accepted students' amount of interest in the field of study affects the accepted students' mental health. In other words, the students with high interest in their own field of study have higher mental health than those who have no interest in their own field of study. About the effect of accepted individuals' age on their mental health, the results of this research, like other results obtained by Bahar *et al.* (1992) imply that the accepted individuals' age has no effect on the accepted individuals' mental health.

In conclusion, ranking the factors affecting the results of students' mental health by FAHP method shows that the priority of factors has the following order: family factors, physical deprivations, pressures of industrial modern life and social factors. Calculations of third level criteria (Table 7) also indicate the priorities for each group. These priorities will be helpful as the parts for planners and practitioners of student community mental health.

• **Suggestion:**

- Conducting this research at other universities can provide helpful information about the status of students' mental health at those universities.
- This research on a statistical population has been conducted by a random selection of a faculty of Payame Noor University collection. Obviously, it is better that the similar samples to be conducted in different academic grades and other academic units in order to assess the students' mental health as well as determining the factors affecting the students' mental health and then take the essential step towards improving the level of their mental health and academic achievement.
- Establishing the counseling centers under the supervision of psychological experts is an important step toward shifting the young individuals' motives and effort-centered spirit in the context of learning and developing the healthy and positive thinking in order to create a better future for ourselves and country.

**REFERENCES**

Ahmadi, J., 1995. The rate of depression among the medical students (Ahwaz -1992). *Quart. J. Thoug. Behav.*, 1(4): 6-12.

Bagheri Y.A., J. Bolhari and H. Peyravi, 1995. Investigating the status of students' mental health entered in the academic school year 1994-95. *Univ. Tehran Quart. J. Thoug. Behav.*, 1(4): 30-40.

Bahar, E., A.S. Henderson and A.J. Mackinnon, 1992. An epidemiological study of mental health in Sumatra, Indonesia. *Acta Psychiatr. Scand.*, 85(4): 252-263.

Bozbura, F.T., A. Beskes and C. Kahraman, 2006. Prioritization of human capital measurement indicators using fuzzy AHP. *Exp. Syst. Appl.*, 27: 123-129.

Fallahi, M., 1991. *Contrastive Linguistics and Analysis of Errors*. Iran University Press, Tehran.

Ganji, H., 1997. *Mental Health*. Arasbaran Publications, Tehran.

García-Valderrama, T., E. Mulero-Mendigorri and D. Revuelta-Bordoy, 2009. Relating the perspectives of the balanced scorecard for R&D by means of DEA. *Europ. J. Oper. Res.*, 196: 1177-1189.

Hassani, J. and M. Rahmanian, 2003. Investigating the relationship between the mental health and coping strategies in normal Runaway girls. *Proceeding of the Paper Presented at the 1st Conference on Scientific Explanation of Crime Victims and Preventive Strategies*.

Hopf, R.H., D.J. Litman, L.W. Pratsch, I.M. Ustad, R.A. Welch, T.J. Tychan and P.A. Denett, 2008. *Guide to a Balanced Scorecard: Performance Management Methodology*. Department of Energy, USA.

Hung-Yi, W., T. Gwo-Hshiang and C. Yi-Hsuan, 2010. A fuzzy MCDM approach for evaluating banking performance based on Balanced Scorecard. *Exp. Syst. Appl.*, 36: 10135-10147.

Hung-Yi, W., L. Yi-Kuei and C. Chi-Hsiang, 2011. Performance evaluation of extension education centers in universities based on the balanced scorecard. *Evaluat. Prog. Plann.*, 34: 37-50.

Kafi, S.M., J. Bolhari and H. Peyravi, 1998. Investigating the students' academic status and mental health. *Quart. J. Thoug. Behav.*, 3(4): 59-67.

Kamau, C.W., 1992. *Burnout, locus of control and mental health of teachers in eastern province of Kenya*. Unpublished PhD. Thesis, in Education Submitted in Punjab University Chandigarh, Chandigarh, pp: 123-129.

Lapsley, D.L., 1989. Psychological separation and adjustment to college. *Counsel. Sychol.*, 36: 286- 294.

Lee, A.H.I., W.C. Chen and C.J. Chang, 2008. A fuzzy AHP and BSC approach for evaluating performance of IT department in the manufacturing industry in Taiwan. *Exp. Syst. Appl.*, 34(1): 96-107.



- Lloyd, G. and N.K. Gartrell, 1994. Psychiatric symptoms in medical students. *Compar. Psychiat.*, 25: 552-585.
- Milanifar, B., 1995. *Mental Health*. Ghoomes Publications, Tehran.
- Parto, D., 1975. Analysis of test on the depression distribution. *J. Psychol.*, 4(12).
- Ravi, V., R. Shankar and M.K. Tiwari, 2005. Analyzing alternatives in reverse logistics for end of life computers and balanced approach. *Comp. Ind. Eng.*, 48: 327-356.
- Retteck, S.L., 1990. Cultured difference and similarities in cognitive appraisals and emotional responses new school for social research. Dissertation Abstract International.
- Torabi, N., 1997. Investigating the amount of depression in students in higher education institutions of Ilam. *Scient. J. Ilam Univ. Med. Sci.*, 14.
- Torkan, A., 1994. Investigating the prevalence of depression among the medical students in Zahedan. Ph.D. Thesis, Zahedan University of Medical Sciences.