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Biorhythm Management Modeling of Iranian Public School Principals with Fuzzy Delphi Approach

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Abstract

Purpose: The purpose of this study was to design a biorhythm management model for Iranian public school principals with a fuzzy Delphi approach.

Methodology: The design of the present study was qualitative with fuzzy Delphi method. Statistical population, professors of organizational behavior management in universities of Mazandaran province and senior managers of education departments in cities of Mazandaran province were selected and four rounds of fuzzy Delphi technique were performed with their cooperation. This selection and interviewing continued until the theoretical saturation was reached. Using the "rich information" sampling method with 15 professors of organizational behavior management in the universities of Mazandaran province and senior managers of education departments in the cities of Mazandaran province, the required information with semi-structured questionnaires Collected in four rounds. SPSS software was used to analyze the data.

Findings: The results showed that the biorhythm management model of Iranian public school principals has four cycles and 28 dimensions of physical cycle (physical) (high mobility and energy, high physical strength, physical endurance and stability, physical weakness (negative), decreased physical ability (negative), inactivity and lethargy (negative), doing useful work and extreme fatigue (negative)), Emotional cycle (interest in work and life, kindness, immorality and temper (negative), irritability (negative), confusion and mental weakness (negative), love of others, the power of creativity in affairs and mobility in Against the behavior of others (negative), intellectual cycle (mental) (rational) (promotion of intelligence, comprehension and memory, forgetfulness (negative), mental laziness (negative), poor decision-making power (negative), thinking power in affairs , Gaining new ideas and not focusing on personal and work affairs (negative) and intuitive cycle (inner inspiration, strong sixth sense, absorbing negative energy (negative) and attracting the spiritual forces of nature).

Conclusion: Investigating the effect of biorhythm and different situations of employees on their job performance is an important issue and should be considered to prevent problems and increase performance, so identifying the explanatory dimensions of biorhythm management among managers of educational organizations, according to their critical tasks, is very important. And it seems necessary.

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1. Introduction

Basically, any kind of progress and development is directly related to scientific research. The association of a large volume of research with the development of developed countries shows this fact. One thinker states that about 98% of the research and scientific development costs in the world belong to these countries. Due to their extensive research, these countries usually use superior methods and skilled labor and save a lot on their resources. Ongoing and extensive research in these countries has led them to always be decades ahead of many countries. Another link between research and development is related to its long-term and strategic nature. Research has a key aspect due to its wide scientific and applied nature and as a result, especially because of its relationship with growth and development, it requires national determination, serious will and urgent planning. This is important in relation to research and also on the issue of biorhythm management model (Kujawinska, et al., 2018).

Biorhythm is the knowledge of the rhythm of the human body. Biorhythm theory says; your body has four main rhythms and cycles, which are; Emotional, intellectual, physical and intuitive period. Each period lasts a certain amount of time and continues periodically throughout your life. If we draw each period as a function of time, sinusoidal functions will be formed, which in biorhythm is one of the newest topics in the field of ergonomic identification of people's minds, which by examining and recognizing the mental-physical-mental aspects of managers can Reducing natural disasters caused by daily work and reducing mistakes seem to be very effective for no apparent reason (Shirazian, 2016). In the present era, in the advanced organizations of the world, human resource planning is done according to the biorhythm conditions of the employees. Today's leading organizations pay special attention to organizational research in the field of biorhythm for organizational exploitation. But there is a long way to go before all the dark aspects of biorhythm emerge and affect organizational behaviors and practices. Investigating the effect of biorhythms and different situations of employees on their job performance is an important issue and should be considered to prevent problems and increase performance. Being in the workplace and spending a significant portion of your daily time doing work and worrying about work activities has led people to voluntarily devote a lot of time to work activities voluntarily (Balducci, et al., 2017).

Without adequately resting and entertaining and devoting time to family and friends; therefore, they often experience a lot of stress and their work causes physical and mental problems for them, some of them are referred to as work addicts and this feature is called biorhythm (Moldovan, et al., 2017). In fact, the main problem of the research is that the phenomenon of biorhythm causes physical and psychological problems for employees of service organizations with sensitive responsibilities, such as training centers and their neglect of themselves and their families and its possible impact on physiological performance of individuals. , Is very important, because the presence in service environments creates a very high level of mental concern in people and causes people to be constantly striving for their promotion due to organizational requirements as well as competitive conditions. Statistics show that the issue of biorhythm management model is one of the most fundamental issues that is debatable and plays a decisive role in the opinions of management thinkers and researchers (Radu, et al., 2017).

Rahavi Ezabadi, Abbasi Bafghi, Farimeh (2017) conducted a study entitled the effect of cognitive biorhythm feedback training on motor performance of athletic and non-athletic students. The results showed that biorhythm feedback in a cognitive effect on the agility of athletes and non-athletes and performance of agility increased. Mir Mozaffari, Rahmati Nodehi (2015) the study of the relationship between biorhythm and organizational performance in employee's Case study: Pars Petrochemical Company. According to the results, a close relationship between the proximity to the critical day in each of the biorhythmic cycles and the quality of performance of Pars Petrochemical Company employees, in other words, biorhythmic cycles have been effective on the quality of performance in the company. Kiani (2014) has investigated the effect of biorhythm on the incidence of administrative violations of the staff of the Ministry of Jihad Agriculture. Has achieved intermediate but has not revealed any significant effect of the

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emotional cycle on the occurrence of the violation. Moldovan et al. (2017) conducted a study entitled The Impact of Human Biorhythm on Sports Performance Activities. According to the results, the functions that make up the research samples were not only collected from the positive stages of these biorhythmic cycles, but also contained negative conditions. However, those in the positive stages had a significant advantage over those in the negative stages of the tricycle. Yassin Al-Khalil and Hassan Qader (2014) evaluated the biological rhythm during the physical, emotional and mental cycle. The results of the study showed; Significant differences between biological rhythm stages in the balance test between the day of birth, the day of descent to the starting line with respect to the day of birth; There is a day to reach the peak, a day to descend to the starting line according to the day to reach the peak and a day to end at the starting line and a day to climb to the starting line according to the ascent to the starting line. Also, there were significant differences for biological rhythm stages in the emotional test between the days of birth, the day of descent to the starting line according to the day of birth, but there was no significant difference between the other stages. Singh, Sharma (2011) in a study investigating the effect of biorhythm cycles on labor accidents of 462 casting workers. The results showed that the events studied included all injuries related to the skeletal system, disorders and amputations, treatment or hospitalization that required long-term treatment was associated with biorhythms.

What is important is that addressing the issue of biorhythm management model can open new horizons in the presentation of organizational behavior management to thinkers. Therefore, there is a need to address the issue of the biorhythm management model and the impact of its cycle on physiological performance in a broader way, and this issue should be extended to the issues ahead and future research perspectives. Doing research in this field in the education system is very necessary and important because addressing the causes of biorhythm can be very useful in identifying, managing and modifying this phenomenon at the level of organizations such as schools, although a lot of research The phenomenon of "biorhythm" has been studied, but little research has been done on understanding this concept. Various studies indicate the existence of different factors influencing the formation of biorhythm, such as demographic characteristics (such as age, gender, and type of occupation The characteristics of the environment and working conditions, the feeling of dissatisfaction with the current situation and the need to improve their situation and the values that govern the workplace are among the factors that are effective in the formation and emergence of biorhythms. In the present study, we intend to know and interpret the biorhythm of managers to know what is the appropriate local model of biorhythm management for managers? And what cycles and dimensions does this model have?

2. Methodology

According to the purpose of the present study, which was to design a biorhythm management model for public school principals in Iran, the research design was a qualitative research design with fuzzy Delphi method. The statistical population of the study was professors of organizational behavior management in the universities of Mazandaran province and senior managers of education departments in the cities of Mazandaran province and four rounds of fuzzy Delphi technique were performed with their cooperation. This selection and conduct of the interview continued until the theoretical saturation was reached and then stopped. The characteristics required for individuals to be experts included: aristocracy in biorhythm management, aristocracy in organizational behavior management, and aristocracy in leadership in the organization. In order to sample in this section, due to the importance of the research topic, efforts were made; a range of key experts in the field of customer relationship management and banking policies were selected. Due to the dominance of the qualitative approach, one of the "rich information" sampling methods was used. In other words, theoretical sampling was used. Theoretical sampling is a purposeful sampling that focuses on the development of theory and finally 15 people were selected as the research sample.

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The Delphi technique is a powerful process based on group communication structure that is used in cases where incomplete and unreliable knowledge is available (Häder, Häder, 1995) with the aim of achieving group consensus among experts (Keeney, Hasson, McKenna, 2001). . In the classical Delphi method, the opinions of experts are expressed in the form of definite numbers, while experts use their mental competencies to express opinions, and this indicates the possibility of uncertainty prevailing in this situation. The probability of uncertainty is compatible with fuzzy sets. Therefore, it is better to obtain data in the form of natural language from experts and analyze it using fuzzy sets (Azar. Faraji, 2010), for this purpose, a proposal to integrate the traditional Delphi method with fuzzy theory was proposed under the title of fuzzy Delphi method (Murry, et al., 1985). In this method, membership functions are used to show the opinion of experts (Kardaras, et al., 2013).

Ishikawa et al. (1993) developed an integrated Delphi alpine algorithm using fuzzy theory in the Delphi method. The advantage of the fuzzy Delphi method is in considering each of the ideas and integrating them to reach a group agreement (Kuo, Chen, 2008). The implementation steps of this method are a combination of the traditional Delphi method and data analysis of each step using definitions of fuzzy set theory (Figure 1). Fuzzy numbers are used to fuzzy expert opinions. Fuzzy numbers are fuzzy sets that are defined in the face of uncertainty about a phenomenon along with numerical data. In this study, a triangular fuzzy number is used. A triangular fuzzy number with three real numbers is represented as M = (1, m, u). Upper limit (u) is the maximum value of fuzzy number M, lower limit (1) is the minimum value of fuzzy number m, and M is the most probable value of a fuzzy number. The membership function of a triangular fuzzy number is as follows:

(Relationship 1):

$$u_M(x) = \begin{cases} \frac{x-l}{m-l} & l \le x \le m \\ \frac{u-x}{u-m} & m \le x \le u \\ 0 & otherwise \end{cases}$$

The steps of fuzzy Delphi method are as follows (Cheng, Lin, 2002):

Step 1: Gather the opinions of experts; in the first Delphi stage, a structured questionnaire was designed based on the results of the first stage of the research and experts were asked to determine the importance of each of the identified stages using very low, low, medium, high and very high verbal variables. Step 2: Convert verbal variables to triangular fuzzy numbers; at this stage, the verbal variables were defined as triangular fuzzy numbers according to Table (1).

Table1. Triangular fuzzy numbers corresponding to verbal variables

Verbal variables	Corresponding real numbers	Triangular fuzzy number (1, m, u)
very much	7	(0/9 ،1 ،1)
Much	6	(0/75 ،0/9 ،1)
Medium to high	5	(0/5 ،0/75 ،0.9)
medium	4	(0/3 ،0/5 ،0/75)
Low to medium	3	(0/1 ،0/3 ،0/5)
Low	2	(0 ،0/1 ،0/3)
very little	1	(0 ، 0 ،0/1)

Thus, triangular fuzzy numbers were given to each expert and the set of triangular fuzzy numbers for each expert was obtained using Equation (2).

(Equation 2):

$$F_{AVE} = \frac{\sum l}{n}, \frac{\sum m}{n}, \frac{\sum u}{n}$$

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Step 3: At this stage, the average of the collections $(\tilde{A}_m^{(i)})$ from all collections $(\tilde{A}^{(i)})$ was calculated through Equation 3.

(Equation 3):

$$\widetilde{\mathrm{A}}_{\mathrm{m}} = (a_{m1}\,, a_{m2}\,, a_{m3}) = (\frac{1}{n}\sum_{i=1}^{n} a_1^i\,, \frac{1}{n}\sum_{i=1}^{n} a_2^i\,, \frac{1}{n}\sum_{i=1}^{n} a_3^i)$$

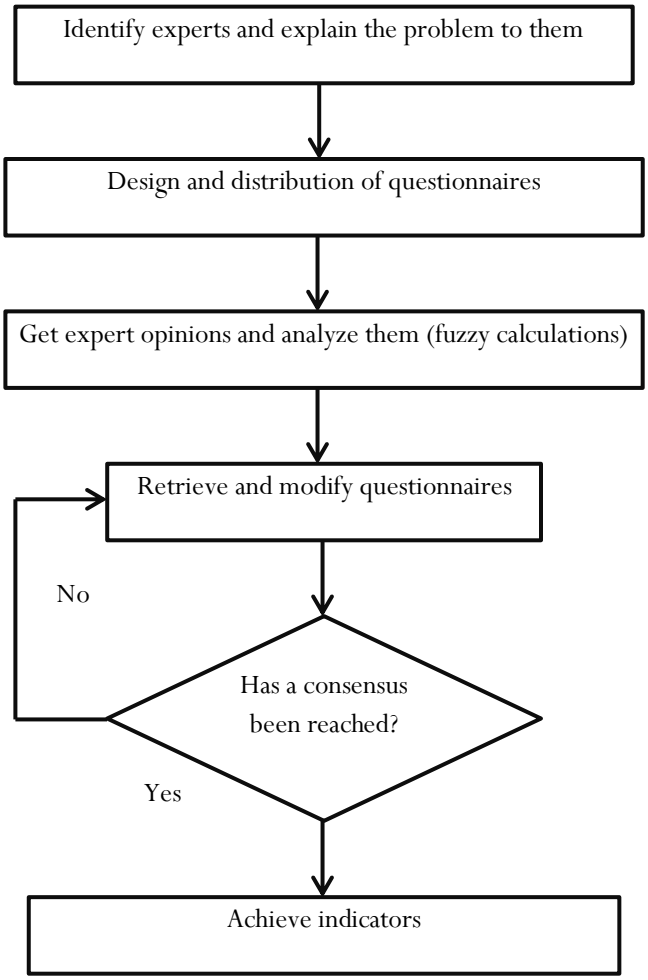

Figure1. Steps of fuzzy Delphi method

Then for each expert, the amount of difference from the mean was calculated using Equation (4).

(Relationship 4):

$$\left(a_{m1} - a_1^{(i)}\,, a_{m2} - a_2^{(i)}\,, a_{m3} - a_3^{(i)}\right) = (\frac{1}{n}\sum_{i=1}^{n} a_1^{(i)} - a_1^{(i)},$$

$$\frac{1}{n}\sum_{i=1}^{n} a_2^{(i)} - a_2^{(i)}\,, \frac{1}{n}\sum_{i=1}^{n} a_3^{(i)} - a_3^{(i)})$$

In the second stage, in order to check the agreement between the experts, the questionnaire of the first stage, after making the necessary changes, along with the average of the experts' opinions and the previous

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disagreement of each of them with the average, was sent again to the panel members. And, if necessary, reconsider their opinions and judgments.

Step 4: After the initial feedback was given to the experts and the second stage of Delphi was done, the corrected opinions of the experts in the form of triangular fuzzy numbers became Equation 5.

(Equation 5):

$$\tilde{B}^{(i)} = \left(b_1^{(i)}, b_2^{(i)}, b_3^{(i)}\right) \qquad i = 1,2,3,\ldots,n$$

In this stage, as in the second step, the average of the modified expert opinions $\left(\tilde{B}_m^{(i)}\right)$ in the second Delphi stage was calculated through Equation (6).

(Equation 6):

$$\widetilde{\mathrm{B}}_{\mathrm{m}} = (b_{m1}, b_{m2}, b_{m3}) =$$

$$\left(\frac{1}{n}\sum_{i=1}^{n} b_1^i, \frac{1}{n}\sum_{i=1}^{n} b_2^i, \frac{1}{n}\sum_{i=1}^{n} b_3^i\right)$$

Step 5: De-fuzzy; There are several methods for fuzzing the final values of each index. In this study, the simple center of gravity method based on Equation (7) was used to de-fuzzy the values of each of the Delphi stages (Cheng, Lee, Tang, 2009; Hsu et al., 2010; Wu, Fang, 2011).

(Relationship 7):

$$\text{if } \tilde{F} = (L, M, U) \;\; Then \;\; \mathrm{F} = \frac{L + M + U}{3}$$

Step 6: Calculate the amount of disagreement of experts in two steps; the degree of disagreement of experts in the two Delphi stages was calculated through Equation (8). The repetition of the Delphi process went so far that the disagreement of the experts between the two stages of the survey reached a very low threshold (0.2) and in this case the poll process stopped (Cheng, Lin, 2002).

(Relationship 8):

$$S\left(\tilde{B}_m, \tilde{A}_m\right) = \left|\frac{1}{3}\left[(b_{m1}, b_{m2}, b_{m3})\right.\right.$$

$$\left.\left.-(a_{m2}, a_{m2}, a_{m3})\right]\right|$$

The important point in performing the Delphi technique is the size of the panel of experts. There is no consensus on the panel size required for traditional Delphi and fuzzy Delphi (Mullen, 2003). But the typical size of an expert panel is between 8 and 12 (Cavalli-Sforza, Ortolano, 1984) or between 10 and 18 (Okoli, Pawlowski, 2004). Expert panel members are identified and selected based on the four characteristics of knowledge, experience, willingness and sufficient time to participate in the Delphi stages, After determining the panel members, questionnaires of each round in person and in cases where it is not possible to access the experts. The electronic method will be distributed and collected (Latifi, et al., 2018). The software used for data analysis is Excel and SPSS software. Finally, the semi-structured questionnaires of this study were administered with the coordination and honest cooperation of respected professors and experts. These interviews were pre-arranged and selected experts participated in the study willingly.

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3. Findings

According to the research background of the previous research, four main cycles: physical (7 dimensions), mental (7), mental (emotional) (7 dimensions) and intuitive (chemical) (4 dimensions) as an explanatory model Biorhythm management of Iranian public school principals was considered. The initial proposed model of this research is presented below.

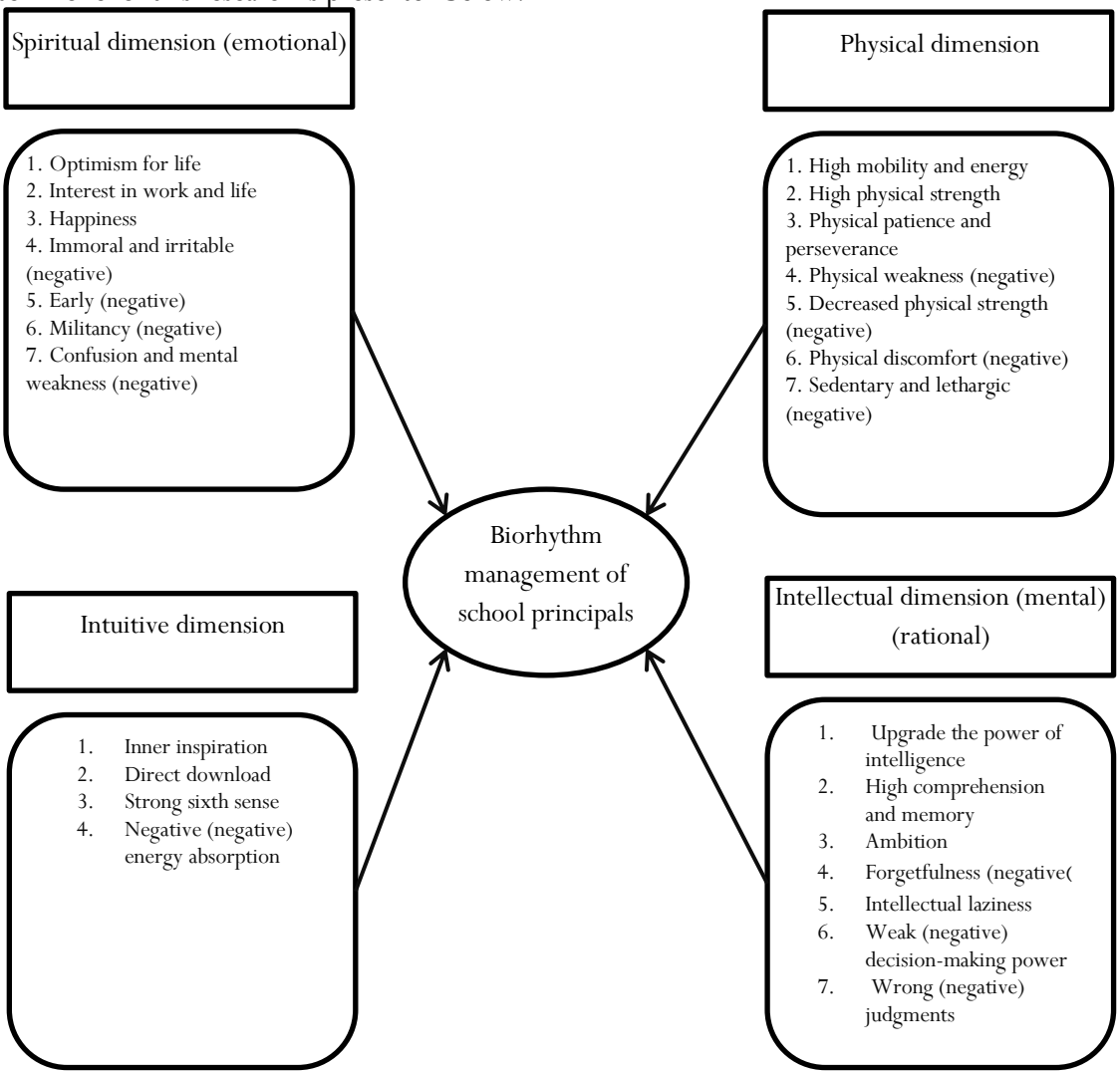

Figure2. The proposed initial model, based on previous research

First round - converting verbal values into real numbers

The initial semi-structured questionnaire was researched based on the Delphi method of a seven-point Likert scale and verbally adjusted taking into account the dimensions of each cycle and provided to experts (15 people). Therefore, in the first round, we extracted the verbal expression of the questionnaires as a number. This can be done in two ways: from the verbal mode to extract directly as fuzzy numbers or from the verbal mode first convert to numerical (according to the Likert spectrum) (very low 1, low 2, low to medium 3, average 4, Average to high 5, high 6 and very high 7) and then convert real and integer numbers to fuzzy numbers. In this research, the second method is used to have the usual average of expert opinions. Some indicators may be very insignificant to experts, so we can identify, separate, and even eliminate minor and very insignificant indicators by having a simple Delphi numerical average from the first round. Continue the steps to avoid inefficient data overload.

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Table2. Table of nine dimensions of the physical cycle / after correction of experts

First round	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Expert 9	Expert 10
Physical index 1	1	3	4	5	7	6	5	3	2	6
Physical index 2	3	1	4	4	7	5	7	7	6	7
Physical index 3	4	6	5	6	2	5	7	4	7	3
Physical index 4	4	6	6	5	2	3	7	5	2	6
Physical index 5	3	7	3	2	5	7	6	4	5	7
Physical index 6	2	3	5	4	6	1	5	3	2	5
Physical index 7	5	6	3	2	7	4	6	5	4	6
Physical index 8	7	4	1	3	6	3	5	5	6	3
Physical index 9	2	7	5	4	3	7	7	5	5	4

At the end of the Delphi round, two dimensions were added to the seven dimensions of the "physical" cycle, and according to experts, two dimensions were added to describe useful work and excessive (negative) fatigue.

Table3. The Ten Dimensions of the Spiritual Cycle (Emotional) / After Expert Correction

First round	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Expert 9	Expert 10
Mental index 1	2	1	5	4	3	2	7	5	3	4
Mental index 2	6	7	3	2	5	7	6	4	5	7
Psychological index 3	5	1	7	4	6	7	1	3	2	5
Mental index 4	5	6	3	2	7	4	6	5	4	6
Mental index 5	7	4	1	3	6	3	5	5	6	3
Spiritual index 6	2	5	3	4	3	1	7	5	2	4
Mental index 7	7	7	3	2	7	4	7	5	4	6
Mental index 8	7	4	1	3	6	3	5	5	6	3
Mental index 9	2	7	5	4	3	7	7	5	5	4
Mental index 10	5	7	3	2	7	4	6	7	5	6

At the end of a Delphi round, and according to experts, three dimensions were added to the seven dimensions of the "emotional" cycle, describing love for those around you, creativity in affairs, and mobility in the face of (negative) behavior.

Table4. Table of Ten Dimensions of the Intellectual (Mental) Cycle / After Correction of Experts

First round	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Expert 9	Expert 10
Intellectual index 1	4	6	6	5	2	3	7	1	2	6
Intellectual index 2	3	7	3	2	5	7	6	4	5	7
Intellectual index 3	5	1	5	4	6	1	1	3	2	5
Intellectual index 4	1	3	4	5	7	6	5	3	2	6
Intellectual index 5	3	1	4	4	7	5	7	7	6	7
Intellectual index 6	2	3	5	6	2	5	7	4	7	3
Intellectual index 7	7	3	4	3	1	1	5	2	4	6
Intellectual index 8	7	3	2	7	4	7	5	4	6	7
Intellectual index 9	4	1	3	6	3	5	5	6	3	7
Intellectual index 10	7	5	4	3	7	7	5	5	4	6

At the end of the Delphi round, three dimensions were added to the seven dimensions of the "intellectual (mental)" cycle, and according to experts, three dimensions were added to describe the power of thinking in matters, acquiring new ideas and not focusing on personal and work (negative) matters.

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Table5. The four dimensions of the intuitive cycle / after correction of experts

First round	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Expert 9	Expert 10
Intuitive index 1	3	7	3	2	5	7	6	4	5	7
Intuitive index 2	5	1	5	4	6	1	1	3	2	5
Intuitive index 3	5	6	3	2	7	4	7	5	4	6
Intuitive index 4	7	4	1	3	6	3	5	5	6	3
Intuitive index 5	2	7	5	4	3	7	7	5	5	4

At the end of the Delphi round, and according to experts, a dimension was added to the four dimensions of the "intuitive" cycle in order to attract the spiritual and spiritual forces of nature.

First Round - Converting Real Numbers to Triangular Fuzzy: In this step, the numbers of all the tables of the first round are converted to amplified fuzzy and after calculating the mean of fuzzy and de-fuzzy, the results of the following four cycles are as follows. According to the results of fuzzy mean and de-fuzzy-physical (physical) cycle, the physical index (6) exceeded the allowable threshold intensity and was eliminated in the first round. The values of fuzzy decoupling coefficient for the remaining eight indices were 0.73, 0.94, 0.98, 0.87, 0.94, 0.96, 0.98 and 0.94, respectively. According to the results of fuzzy mean and de-fuzzy-emotional (emotional) cycle, the values of de-fuzzy coefficient for its ten indicators are 0.97, 0.77, 0.98, 0.77, 0.99, 0.87, / 77, respectively. 0, 0.91, 0.97 and 0.71 were determined. According to the results of fuzzy mean and de-fuzzy-intellectual (mental) cycle, the intellectual index (3) was more than the allowable threshold intensity and was eliminated in the first round. The values of fuzzy decoupling coefficient for the remaining nine indices were 0.82, 0.78, 0.79, 0.82, 0.96, 0.81, 0.75, 0.98 and 0.79, respectively. According to the results of fuzzy mean and de-fuzzy-intuitive cycle (chemical), the intuitive index (2) exceeded the allowable threshold intensity and was eliminated in the first round. The values of fuzzy decoupling coefficient for the remaining four indices were 0.94, 0.74, 0.83 and 0.80, respectively.

Second round - conversion of real numbers to triangular fuzzy: According to the results of fuzzy mean and de-fuzzy-physical cycle (physical), the values of de-fuzzy coefficient for its eight indicators are 0.73, 0.99, 0.98, and 0.74, respectively, were determined to be 0.83, 0.91, 0.98 and 0.80. According to the results of fuzzy mean and de-fuzzy-emotional (emotional) cycle, the emotional index (1) was more than the allowable threshold intensity and was eliminated in the second round. The values of de-fuzzy coefficient for the remaining nine indices were determined as 0.77, 0.77, 0.77, 0.99, 0.87, 0.77, 0.93, 0.97 and 0.86, respectively, according to the results. Fuzzy mean and de-fuzzy-intellectual (mental), intellectual index (7) was more than the allowable threshold intensity and was eliminated in the second round. The values of fuzzy decoupling coefficient for the remaining eight indices were 0.85, 0.93, 0.79, 0.82, 0.95, 0.75, 0.90 and 0.79, respectively. According to the results of fuzzy mean and de-fuzzy-intuitive cycle (chemical), the values of fuzzy de-coefficient for its four indicators were determined as 0.93, 0.85, 0.82 and 0.75, respectively.

Third round - conversion of real numbers to triangular fuzzy: According to the results of fuzzy mean and de-fuzzy-physical cycle (physical), the values of de-fuzzy coefficient for its eight indicators are 0.73, 0.92, 0.84, and 0.74, respectively, were determined to be 0.79, 0.98, 0.84 and 0.72. According to the results of fuzzy mean and de-fuzzy-emotional (emotional) cycle, the emotional index (6) exceeded the allowable threshold intensity and was eliminated in the second round. The values of fuzzy decoupling coefficient for the remaining eight indices were 0.80, 0.77, 0.72, 0.92, 0.80, 0.86, 0.98 and 0.86, respectively. According to the results of fuzzy mean and de-fuzzy-intellectual (mental), the values of de-fuzzy coefficient for its eight indicators are 0.87, 0.97, 0.70, 0.97, 0.91, 0.82, 0.81 and was set to 0.70. According to the results of fuzzy mean and de-fuzzy-intuitive cycle (sham), the values of fuzzy de-coefficient for its four indicators were determined as 0.80, 0.74, 0.76 and 0.75, respectively.

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Fourth round - conversion of real numbers to triangular fuzzy: According to the results of fuzzy mean and de-fuzzy-physical cycle (physical), the values of de-fuzzy coefficient for its eight indicators are 0.79, 0.72, 0.84, and 0.92, respectively. 0.84, 0.74, 0.79 and 0.72 were determined. That is, in the fourth round, no dimension was removed from the physical cycle. According to the results of fuzzy mean and de-fuzzy-emotional (emotional) cycle, the values of fuzzy de-coefficient for its eight indicators are 0.86, 0.77, 0.74, 0.80, 0.77, 0.86, and 98, respectively. 0 and 0.77 were determined. That is, in the fourth round, no dimension was removed from the emotional cycle. According to the results of fuzzy mean and de-fuzzy-intellectual (mental), the values of de-fuzzy coefficient for its eight indicators are 0.97, 0.97, 0.70, 0.97, 0.91, 0.97, 0.81 and was set to 0.70. That is, in the fourth round, no dimension was removed from the mental cycle. According to the results of fuzzy mean and de-fuzzy-intuitive cycle (sham), the values of fuzzy de-coefficient for its four indicators were determined as 0.82, 0.74, 0.80 and 0.75, respectively. That is, in the fourth round, no dimension was removed from the intuitive (chemical) cycle. Finally, after performing four rounds of fuzzy Delphi quality technique, the correction model was presented as shown in Figure (3):

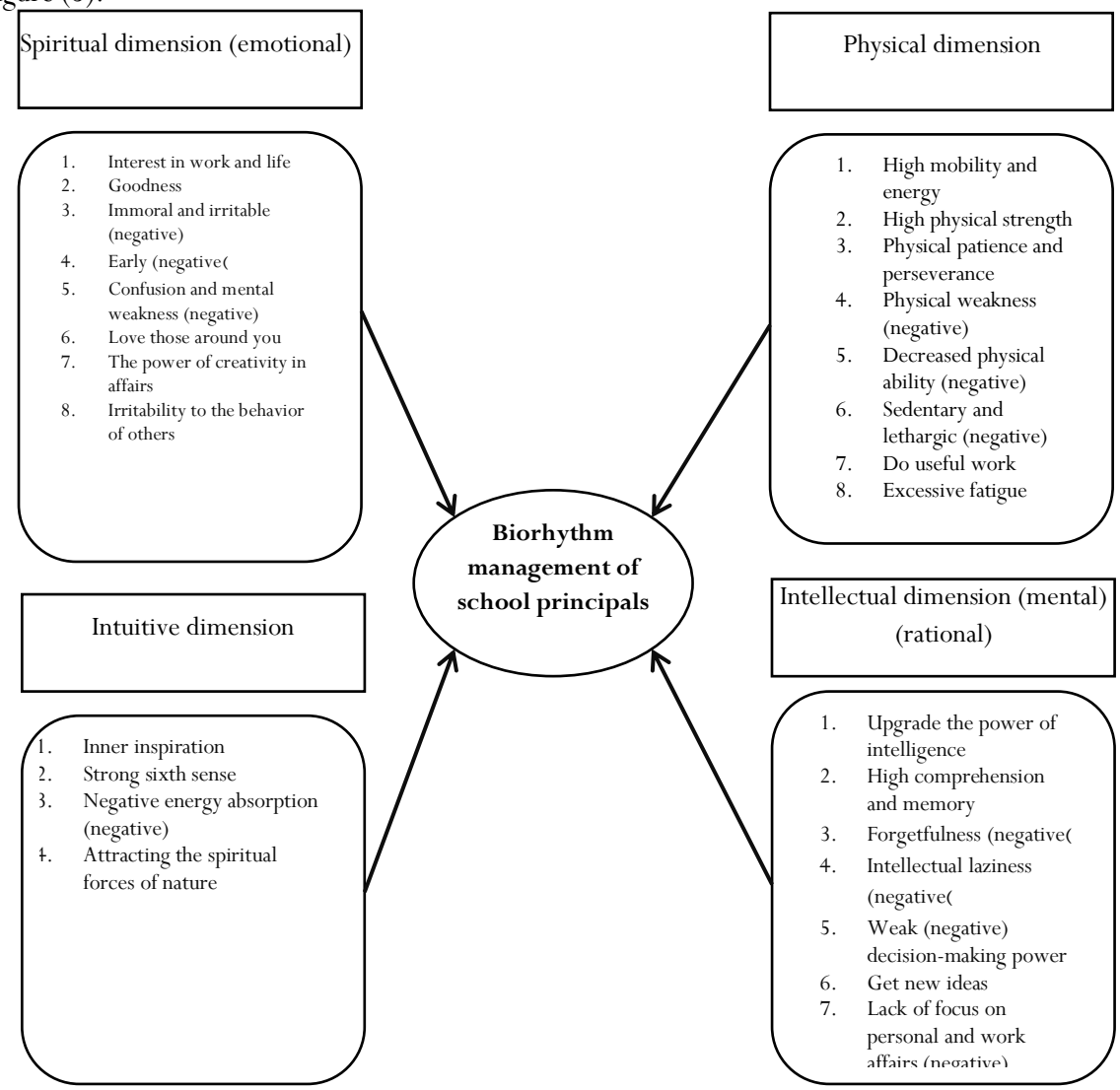

Figure3. Complete model of experts after four rounds of fuzzy Delphi

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4. Discussion

The purpose of this study was to design a biorhythm management model for Iranian public school principals with a fuzzy Delphi approach. The results showed that the biorhythm management model of Iranian public school principals has four cycles and 28 dimensions in terms of physical cycle (physical) (high mobility and energy, high physical strength, physical patience and stability, physical weakness (negative), reduced physical ability (Negative), inactivity and lethargy (negative), doing useful things and excessive fatigue (negative), mental cycle (emotional) (interest in work and life, good humor, bad temper (negative), irritability (negative), Confusion and mental weakness (negative), love of others, the power of creativity in affairs and mobility against the behavior of others (negative), mental cycle (mental) (rational) (enhancing intelligence, comprehension and memory, forgetfulness (negative)), Mental laziness (negative), poor decision-making power (negative), power of thinking in affairs, acquiring new ideas and not focusing on personal and work affairs (negative) and intuitive cycle (negative) (inner inspiration, sixth sense) Strong, negative energy absorption (negative) and absorption of the spiritual and spiritual forces of nature) were the results of the research of Moldovan, et al (2017), Radu, et al. (2017), Rahavi Ezabadi, et al (2017) and Mir Mozaffari, Rahmati Nodehi (2015) was consistent.

In the explanation of the present study, it can be acknowledged that Moloudan et al (2017) acknowledged that work constitutes a large part of human life, work engages human beings physically and mentally, and at the same time, the turbulent world of acquisition And work has put countless pressures on business owners (Shimazu, et al., 2015). People's biorhythms express all their physical, mental and mental characteristics in different days of their lives. By considering these characteristics in different work situations, organizational goals can be achieved better and faster (Rabiee, Khatamino, 2011). Therefore, recognizing and applying this theory can play an important role in improving performance, and managers can identify this new phenomenon and use its software to enable its application in the organization (Talaei-Zavareh, 2010). According to Snyer and Zohar (2008) typology, biorhythm is determined based on the amount and degree of three components of work involvement, inner desire to work and job pleasure. In work addicts, the degree of work involvement is high. And they have a lot of traction, but they do not enjoy work very much. In contrast, work enthusiasts engage with work but enjoy their work and do not use extreme traction (Shimazu, et al., 2015). Biorhythm can have different effects on the physical and psychological health of individuals, their families and co-workers. The most common consequences of biorhythm are related to high levels of job stress and work-family conflict; However, the following can also be mentioned (Radu, et al., 2017): Increased symptoms threatening health (physical and psychological), job burnout, creating problems and issues in teamwork (teamwork), withdrawal and avoidance of interactions and Family relationships, problems communicating with others, low life satisfaction, lack of enjoyment of leisure time. Labor investment has been linked to research into the biorhythm management model, as it must be made more efficient in order to be more productive of the labor force, also; efficient training and empowerment of staff in the application of new methods in relation to biorhythm management, which is not possible without scientific research. On the other hand, another key factor in the growth and development of employees is the advancement of technology, which is itself a living link with scientific research (Kujawinska, et al., 2018). Given that education builds the thinking of the next generation and principals have a significant role in educating students, so knowing the status of principals in schools in terms of physical, sensory and perceptual can be a great help for better use and More desirable than their abilities to advance educational goals.

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