

# The Quality of Life in Iranian Military Students Versus Iranian Students Norms: Effect of Physical Activity

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## ABSTRACT

**Purpose:** The quality of life is the overall well-being of individuals and societies. This study aimed to compare the quality of life between students in Imam Hossein University and Iranian students' norms and the effects of high and moderate physical activity on the quality of life.

**Materials and Methods:** This study was a cross-sectional, retroactive and comparative research. A sample of 227 scholar students of Imam Hossein University was randomly selected and asked to fill out WHOQOL-BREF and Global Physical Activity Questionnaire.

**Results:** The results pointed out that physical and environmental dimensions show the highest and the lowest scores, respectively, among quality of life domains. Moreover, it was shown that psychological ( $t = 7.75, P = .0001$ ) and environmental ( $t = 6.33, P = .0001$ ) domains of Imam Hossein University students were better than Iranian students' norms. In addition, students with high physical activity had higher scores of Physical health ( $t = 2.94, P = .004$ ), psychological well-being ( $t = 2.17, P = .031$ ), and total quality of life ( $t = 2.57, P = .011$ ) in comparison with those with moderate levels of physical activity.

**Conclusion:** Imam Hossein University students had a better perceived image of their body and appearance, more positive feelings, more self-esteem, more spiritual orientation, and religious and constructive personal beliefs. They also showed better learning potential, better memory, and better concentration powers while they had lower negative feelings. These findings were attributed to Imam Hossein University students' monetary provisions, scholarships and the curriculum. Furthermore, it seems that high physical activity triggers better quality of life in young students, overall.

**Keywords:** quality of life; motor activity; military personnel.

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## INTRODUCTION

The Quality of Life (QOL) refers to the ways in which individuals perceive their positions in life considering background cultural and value systems that they act upon and live in, with regards to their goals, expectations, standards and concerns.<sup>(1)</sup> It includes individuals' perception of physical health, psychological state, social relationship, and environmental characteristics.

The QOL model of World Health Organization (WHO) is one of the well-established models in this field that well defines the main involved concepts, provides a multipurpose classification and serves as a unified and

standard frame of reference for health care workers, researchers, policy-makers, and the public. It can be utilized to help devising the interventions for health and functional goals, worldwide;<sup>(2)</sup> accordingly, WHOQOL-BREF Questionnaire has been developed.

This questionnaire is an instrument to assess the quality of life between and across cultures. It not only assesses the individuals' perceptions in line with the cultural and value systems they are living with, but also their personal goals, standards and concerns. The WHOQOL instrument has received worldwide collaborative efforts in its development in a number of centers around the

world, and has also seen wide and inclusive field-tests.

The norm of Iranian students QOL published in Iranian Journal of Public Health feasibly proves the comparison of other groups.<sup>(3)</sup> Some theories developed to explain QOL, especially in students' lives, claim that physical activity and exercise are essential to improve QOL. In this regard, Gill and colleagues have shown that physical activity contributes to multiple aspects of QOL.<sup>(4)</sup> However, in some research, it has been shown that high physical activity leads to an improvement in QOL.<sup>(5-8)</sup> On the other hand, Pucci and colleagues brought out a direct relationship between physical activity and QOL, and argued that this is an association that can vary according to the type and intensity of physical activity and is different across QOL domains.<sup>(9)</sup>

Considering this fact, some intensities of physical activity may have benefits to the improvement of the QOL. In this spirit, this study set out to compare the quality of life between military and civilian Iranian students and also to investigate the association of physical activity with quality of life among Students of Imam Hossein University. The objective was to survey the quality of life among students of Imam Hossein University (IHU) and to compare their score with Iranian students' norm. The study is also an attempt to investigate the differences in quality of life between students with high physical activity (HPA) level and those with moderate levels of physical activity (MPA) in IHU.

## MATERIALS AND METHODS

### Subjects

This study was a cross-sectional, retroactive and comparative research that was conducted from May to July of 2011. A sample of 250 scholar students of IHU of Iran was randomly selected based on Krejcie & Morgan's method. This academic place is a governmental university located in Tehran, Iran and offers military sciences as courses. Inclusion criteria included being male, an undergraduate scholarship student and having at least 1 year of education at IHU. 227 subjects responded to our request and took part in this study which was approved by the ethical committee of the deputy of research and technology of IHU.

### Measurement Tools

In this research, two World Health Organization (WHO) questionnaires including WHOQOL-BREF and Global Physical Activity Questionnaire (GPAQ) were employed.

WHOQOL-BREF comprises 26 questions in four

domains to do with quality of life: physical health, psychological relationships, social relationships, and environment. The items are rated on a 5-point Likert scale. The scores for the four domains are scaled in a positive direction, with a score range of 0-20.<sup>(1,3)</sup> Mazaheri has affirmed that this analytic tool has a good internal consistency ( $\alpha = .89$ ).<sup>(3)</sup> In this study, the internal consistency was  $\alpha = .85$ . Also, the construct validity values, by means of correlation coefficient between QOL and its subscales, were ranged between .42 to .86; and Cronbach's Alpha was .88 for total QOL.<sup>(3)</sup> The Global Physical Activity Questionnaire (GPAQ) was used as well. This questionnaire has been devised and planned out by WHO. GPAQ is composed of 19 questions that are intended to address the individuals' physical activity in different behavioral domains including work, transport and discretionary (also known as leisure or recreation). When it comes to domains of work and discretionary, questions assess the frequency and duration of two different groups of activities designated by the energy requirement or intensity (vigorous- or moderate-intensity).

In the transport domain, items look at how often and for how long the individual does walking and cycling for purposes of commute. Distinguishing these activities fails to be a dimension captured by the items. Another item captures the time spent in sedentary activities.<sup>(10)</sup> This questionnaire has been carried out in 49 countries including Iran.<sup>(10)</sup> Reliability coefficients of GPAQ show moderate to substantial strength (Kappa .67 to .73; Spearman's rho .67 to .81).

Also, concurrent validity between IPAQ and GPAQ was a moderate to strong positive relationship (range .45 to .65). In addition, criterion validity was approximately between .06 to .35.<sup>(11)</sup> In addition, demographic characteristics such as sport participation, health status and marital status were collected.

### Procedures and Data Collection

Before conducting the study, a consent was obtained from deputy of research and technology of IHU. Then, the researcher delivered a package containing study questionnaires and an informed consent document to the sample members. Students were provided with the necessary pieces of information about the study, and the instructions about how to respond to questionnaires were brought to their attention.

Data was collected in student dormitory through self-reported paper-pencil assessment. Statistical analysis data were analyzed by one-sample t-test and independent t-test

using SPSS 20.0 (IBM Corp., Armonk, NY, USA), at significance level of  $P = .05$ .

## RESULTS

Normality assumption of data was checked by Kolmogorov-Smirnov test and was also approved (for all variables, significant range was .120 to .340).

All subjects were healthy without any chronic illness; 33.5% of them were athletes and 95.2% were single. We categorized QOL scores in 5 groups as follows: (4 - 7.99 = very poor, 8- 10.99 = poor, 11- 13.99 = moderate, 14- 16.99 = good and 17 - 20 = very good) (Table 1). The results show that physical and environmental domains received the highest and the lowest scores among QOL domains, respectively.

This study, using One-sample t-test, examined the significant differences of the norms in quality of life between IHU students and Iranian students and its subscales. The means, standard deviations and comparison of QOL domains between IHU students and Iranian students' norms are presented in Table 2. As it can be

seen, psychological and environmental domains of IHU students were better than the Iranian students' norm.

Also, in this study, independent  $t$  test was used to examine the significant differences between QOL and its subscales among students of IHU with high physical activity and moderate physical activity. Table 3 shows the QOL domains and the total scores and differences between students with high physical activity and moderate physical activity in IHU.

As the results suggest, there is a significant difference between students with high physical activity and moderate levels of physical activity in scores covering physical, psychological and total quality of life, with students engaged in higher physical activity seeming to be in a better state along all of these dimensions.

## DISCUSSION

As it can be seen from the results of this study, IHU students had the highest score in the domain of physical health and the lowest score in the environmental domain of QOL.

Table 1. The number and percent of students in QOL domains

Groups	Physical No (%)	Psychological No (%)	Social No (%)	Environmental No (%)
Very poor IHU students	3 (1.3)	3 (1.3)	8 (3.5)	8 (3.5)
Very poor Norms*	198 (20.3)	212 (21.6)	209 (22)	210 (21.4)
Poor IHU students	4 (1.8)	29 (12.8)	19 (8.4)	23 (10.1)
Poor Norms	235 (24)	252 (25.6)	173 (18.2)	247 (25.1)
Moderate IHU students	38 (16.8)	23 (10.1)	87 (38.3)	77 (33.9)
Moderate Norms	205 (20.9)	184 (18.7)	222 (23.3)	166 (16.9)
Good IHU students	127 (55.9)	118 (52)	89 (39.2)	90 (39.7)
Good Norms	157 (16)	171 (17.4)	254 (26.7)	208 (21.2)
Very good IHU students	55 (24.2)	54 (23.8)	24 (10.6)	29 (12.8)
Very good Norms	184 (18.8)	165 (16.7)	94 (9.8)	151 (15.3)

\*Iranian Students Norms (Mazaheri, 2010)  
IHU: Imam Hossein University

Table 2. Mean  $\pm$  SDs and one sample  $t$  test of QOL

Domains	M $\pm$ SD of IHU students	M $\pm$ SD of Iranian students norms*	$t$	df	$P$
Physical	14.67 $\pm$ 2.46	14.71 $\pm$ 2.41	-.25	226	.80
Psychological	14.42 $\pm$ 2.71	13.06 $\pm$ 2.76	7.75	226	.0001
Social	13.60 $\pm$ 3.01	13.50 $\pm$ 3.48	.50	226	.62
Environmental	13.43 $\pm$ 2.89	12.22 $\pm$ 2.66	6.33	226	.0001

Table 3. Comparison of QOL between HPA and MPA students

Domains	M $\pm$ SD of HPA	M $\pm$ SD of MPA	$t$	df	$P$
Physical	15.36 $\pm$ 2.19	14.37 $\pm$ 2.48	2.94	226	.004
Psychological	15.07 $\pm$ 2.39	14.24 $\pm$ 2.83	2.17	226	.031
Social	14.11 $\pm$ 2.21	13.32 $\pm$ 3.21	1.85	223	.065
Environmental	14.43 $\pm$ 2.89	12.3 $\pm$ 2.4	1.57	223	.117
Total QOL	13.89 $\pm$ 2.77	13.27 $\pm$ 2.84	2.57	223	.011

These scores for the first domain attest to the fact that students enjoyed higher levels of daily activity, adequate energy and lower or no fatigue, sufficient sleep and rest, and less pain and discomfort. Subscales of the environmental domain, on the other hand, indicated that the students suffered from things like less freedom, poor physical safety and security, insufficient health and social care, lack of skills and opportunities to acquire new information, lack of enough sources of recreation and chances to participate in leisure activities, poor physical environment (pollution / noise / traffic / climate) and transport.

These results fell in line with those of Mazaheri who showed that the afore mentioned domains respectively, received the highest and the lowest scores among Iranian students.<sup>(3)</sup> Another observed finding was that psychological and environmental domains in IHU students were better than Iranian students' norms. This means that IHU students had a better perception of body image and appearance, more positive feelings, more self-esteem, better spiritual, religious, and personal beliefs, better ways of thinking and attitudes, better learning potentialities, better memory, retention and concentration powers and had lower negative feelings in comparison with the Iranian students' norm.

Since IHU students were scholarship students, they received financial assistance from the University, which might help them have less concern about their future jobs. The questionnaires did not directly tap into the religious beliefs of the students, but given the fact that the IHU is a scientific, religious and military university with religious programs for students, and that its special entrance exam and interview have to be passed by the students with relatively strong religious beliefs, these results can be seen to be justifiable and logical. In these respects, it has been observed that students' use of religion as a coping mechanism is effective in improving psychological and social quality of life.<sup>(12)</sup>

According to these results, spirituality and religiousness were found to be major components of health-related quality of life.<sup>(13)</sup> According to the results, the percentage of IHU students against that of Iranian students' norms who understood the quality of life domains as moderate to high were respectively as follows: physical health 96.9% vs 55.7%; psychological well-being 85.9% vs 52.8%; social relationship 88.1% vs 59.8 and environmental support 86.4% vs 53.4%. In all the domains, the IHU students proved to be descriptively better than the Iranian student's norm.

In addition, it was found that students with higher

physical activity were better in terms of physical health, psychological well-being, and total QOL comparing with those with lower levels of physical activity. These results were in agreement with those of some other research studies.<sup>(6,8,9,14-17)</sup> Brown, for example, recommended that a higher rate of physical activity may very well be needed to enhance the QOL, especially in young adults.<sup>(17)</sup>

Duck and colleagues also implied that physical activity participants generally benefited from the physical and psychological effects offered by such physical activity and that they can reduce the risks of ill-health conditions, improve fitness levels and improve psychological health.<sup>(14)</sup> However, Bize and colleagues argued that when one reviews cross-sectional evidence, higher physical activity levels prove to be consistently correlated with higher/better scores in various components of the QOL related to health.<sup>(15)</sup> They provide support for the existence of a relationship between health-related quality of life and physical activity level. These findings were consistent with peak moments quadrant of the feeling and performance model. It seems peak performance triggers strong perceptions of competence, excellence, mastery, and self-efficacy that can promote the quality of life. Such perceptions tend to bring about feelings of satisfaction and well-being that are crucial to the quality of life.<sup>(18)</sup>

Another interesting finding was that high-intensity exercise created higher and better perceptions of enjoyment in comparison with what moderate intensity exercise did<sup>(19)</sup> and enjoyable activities enhanced the quality of life by providing interesting, rewarding, and truly memorable experiences.<sup>(20)</sup> Also Vuillemin and colleagues found that subjects meeting public health recommendations for physical activity had better health related quality of life than those who did not.<sup>(21)</sup> Their data suggest that 30 minutes of moderate physical activity undertaken in leisure time and regularly every day may carry health-related benefits for the quality of life and higher intensity leisure time physical activity is seen to be associated with even further health-related quality of life.<sup>(21)</sup>

In light of these insights, they concluded that it is of great importance to promote at least moderate physical activity.<sup>(21)</sup> Brown and colleagues maintained that when they focused on the relationships between physical activity and health related quality of life separately for moderate and vigorous activity, both overall and by age group, they found curvilinear relationships as a lower health related quality of life was always more likely among those with no physical activity, usually more likely among individuals with daily (7 days a week)



activity, almost always more likely for those with activity of short duration (< 20 min.d-1), and more likely more than half the time for those with very long duration (< 90 min.d-1).<sup>(22)</sup>

They focused on this issue with regards to the relationship between physical activity/exercise dose and physiologic measures or other health outcomes. They brought out diminished benefits associated with higher amounts of training. Associations were found to exist between prolonged endurance exercises and adverse immune response reactions.<sup>(22)</sup>

Morgan and colleagues found that disorders in mood went up in response to an increasingly greater training stimulus or volume among both women and men.<sup>(23)</sup> These discrepancies can be explained by the existence of different methods to assess physical activity level in different studies, types of quality of life and subject characteristics. Usually, with health related quality of life, there seems to have been more focus on elder populations with chronic conditions, and as we know, it is moderate physical activity that is usually recommended to them.<sup>(24)</sup>

Furthermore, it seems that for military students, carrying out at least moderate physical activity is mandatory, and they need higher levels of physical activity to pass the courses in their curriculum. Thus, authorities place a premium on accomplishing this high level of physical activity, always encouraging students to do so. Rather contrary to the results of this research, significant and inverse relationship was shown to exist between overall scores of quality of life and physical activity in patients with type 2 diabetes.<sup>(25)</sup> This difference can be due to the types and intensity of physical activity and characteristics of subjects.

One glance at the curriculum for IHU students and their reports in demographics questionnaire, as well as at the results of this study, we concluded that these students seemed to be benefiting from financial aid rewards, offered scholarship and promising job security, and good health care; they were also engaged in more and better physical activity and showed commensurate psychological well-being which may be due to the higher rate of physical activity in the curriculum, individual attitude and participation in some sports, religious beliefs and the sessions held in the university.

The interesting thing was that IHU students, instead of the comments and suggestions in the questionnaires, reported lack of sleep and complained about this issue. So it seems that, despite desirable conditions in terms of the QOL, the sleep conditions of these students must be addressed by authorities.

## CONCLUSIONS

This study showed that students in IHU had a high perception of their physical aspects but, environmentally, they had the lowest perceptions.

Also, these students were psychologically and environmentally better than Iranian students' norms. This shows that IHU students had a better perception of their body image, higher self-esteem, more positive feelings, better thinking and attitudinal capabilities, better learning, memory and concentration powers and, finally, had lower and fewer negative feelings. They were also better in terms of spiritual, religious, and personal beliefs,

In addition, we have shown that students with a higher amount of physical activity had higher overall physical health, higher psychological well-being, and total QOL score than those with lower and moderate levels of physical activity. These findings were attributed to the financial aid and scholarships offered to IHU students, and also their particular and optimized curriculum. Furthermore, it seems that, all in all, high rates of physical activity allow a better QOL in young students.

The findings from this study are also subjected to some limitations. Since the research was cross-sectional, detecting and determining cause and effect was impossible. It also seems that the population for this study was a very special one and to generalize these findings, what is needed is another similar sample of subjects to investigate, or probably more than just one sample for that matter. In addition, all of the variables in the present study were investigated through self-reported questionnaires.

It seems that to objectively measure physical activity and quality of life, we are in need of obtaining more precise information. Moreover, in this study, we didn't survey the personality characteristics of the subjects (such as introverted, extroverted and perfectionist personalities, among many others), that seems to play important roles affecting QOL.

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## CONFLICT OF INTEREST

The Author mention that there is no conflict of interest in this study.

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