

Original Article

Measuring Subjective Happiness by Newly Developed Scale in Tehran, Iran

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Abstract

Background: Happiness as one of the main positive health indicators has drawn more attention in recent years among policy makers and health system managers. There are few studies performed to measure happiness in population-based settings in Iran. In response to this need, our study tends to assess Iranians subjective happiness in Tehran, Capital city of Iran.

Materials and Methods: Present study was conducted in Tehran, Capital of Iran, with more than 7 Million populations in January 2013, using a two-step approach. In first step a conceptual framework of Iranians' happiness was developed. In the second phase of study, a survey recruiting 700 participants was conducted. Stratified cluster sampling method was employed. Participants were recruited from all the 22 municipal divisions of Tehran as strata, proportional to the population size and its gender and age distribution. Happiness was measured by a 40-item questionnaire with scores ranged among 40 to 200.

Results: Conceptual framework of Iranians' happiness based on reviewed documents and consensus building process was the product of first step. At second step, from a pool of 700 persons, 696 (97%) agreed to participate and filled out the questionnaire completely. The mean of happiness score was 143.9 (95% confidence interval, 142.5 to 145.4). The results show that the happiness score of jobless people (135.1, 95%CI: 128.1-142.0) and widowed singles (126.6, 95%CI: 113.0-140.2) were significantly lower than other corresponding groups. There was no significant association between gender, age group, educational level as determinants and happiness.

Conclusion: Happiness level of Tehranians is somewhat higher than the moderate level. This finding is consistent with findings of other conducted studies in country. However, it is not consistent with some of international reports of happiness, For instance, Happy Planet Index. Due to inadequate information, it is necessary to conduct more research to measure subjective happiness and its determinants, specially, in a nation-wide approach.

Keywords: Happiness, Iran, Subjective, Measure, Scale

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Introduction

When people are asked what the most important thing of life is, they often answer "happiness"¹. Perception of happiness denotes an evaluation of life-as-a-whole, making a life worth living and may even

be the most central and important value². Since traditions of Buddhist and works of Aristotle, the concept of happiness have been drawn much attention among different disciplines such as philosophy, psychology, subsequently sociology and recently politics³. Nowadays, countries rank of happiness is

emphasized by main international organizations such as World Bank and UN as a substantial indicator of social development and welfare⁴. The recommendation of the Commission on the Measurement of Economic Performance and Social Progress that suggests shifting emphasis from measuring economic production to measuring wellbeing and happiness is other example^{5,6}.

Measuring happiness has been a major challenge of researchers, as some experts believe that the ordinary concept of happiness is not objective enough to be measured^{7,8}. However, there have been numerous attempts to quantify happiness and develop appropriate tools of measurement with different approaches considering happiness as “entirely resulted from comparison; or the product of thinking against an emotion; a state against trait; or a result for gratification of needs⁹”.

Despite of challenges to measure happiness, a number of main international organizations have made great efforts to quantify happiness level of nations¹⁰. Based on an international study to estimate happiness in 130 nations, in which happiness was measured in a scale ranging from 1 to 10, the mean happiness of Iranians was estimated 5.29. In this study, Denmark and Togo, with average of 8.00 and 3.24, rank at the top and bottom of list, respectively¹¹.

There are few studies evaluating happiness in Iran at national or provincial level¹². Furthermore, the majority of performed studies have recruited specific target populations such as university students, health workers, etc¹³⁻¹⁶. In a recently conducted nationwide survey in which people were asked to determine how happy are they taking everything into consideration in their life at a 5-point happiness scale from very low” to “very much”, 39.4% rated their happiness as 'neither much/nor low', 47.7% as 'low/not at all' and 12.9% as "much/very much", furthermore, the self-rated health was the most significant contributing factor to happiness compared with other significant factors such as employment and income level¹².

Due to inadequate studies performed to monitor happiness in Iran, we conducted a population-based survey in Tehran, capital of Iran with more than 7 million inhabitants, biggest city and most densely populated region of Iran, to portray the happiness

status and its determinants. It should be noted that a newly developed local instrument were utilized to measure happiness.

Methods

Present study was conducted in Tehran, Capital of Iran, with more than 7 Million populations in January 2013 using a two-step approach.

Step 1: Developing conceptual framework of Iranians' happiness and developing preliminary scale

A qualitative approach was employed to generate a conceptual framework and extract items pertaining to the concept of happiness. The aim was to provide a preliminary scale, including items that appropriately covering the content pertaining to the concept of happiness, with acceptable face validity.

To do this, through comprehensive search of evidence such as original articles, similar scales, and books were collected. Then, through content analysis of documents, all items that were likely related to the concept of happiness were extracted until the saturation of qualitative data. The developed framework including 65 items, with a short description, was shared with 15 experts to examine content validity thorough email messaging. They were asked whether the suggested items are related to the concept of happiness using a 4-point Likert type scale. 10 of 15 experts responded to the message. To analysis responses, the items which their average scores were less than 75 % of maximum (3 from 4) were excluded from the framework. The experts also asked how clear and simple the items are. In addition, we represented the items to eight Tehranian citizens to comment on clarity and simplicity of items. Next, we conducted a focus group session with seven experts to make adjustment on items with low level of clarity and simplicity. Discussions were held about the items and ambiguous ones were eliminated.

Finally, a 40-item scale with acceptable content and face validity was provided potential to be used in the second phase of study.

Questions of 40-item developed scale, including both positive and negative worded, were arranged in two groups. In first group responses to each item were given on a 5-point Likert style scale ranged from “strongly agree” to “strongly disagree” (question 1 to

30), but in second group, the given scores were arranged from “always” to “never” (question 31 to 40). The score of items were added up to provide the whole score of happiness ranging from 40 to 200. Higher scores indicate individual’s higher level of happiness.

According to the recommendation of experts, we added a single question asking people about their overall perception of happiness.

Step 2: Measuring happiness of Tehranians and examining validity and reliability of used scale

In the second phase of study, a survey recruiting 700 participants was conducted in Tehran. The individuals had to be a minimum of 18 years old. The demographic questionnaire assessed participant’s characteristics including gender; age; occupational, educational and marital status.

We employed stratified cluster sampling method. Participants were recruited from all the 22 municipal divisions of Tehran as strata, proportional to the population size and its gender and age distribution; the highest from 4th division with 71 participants and the lowest from 17th division with 19 participants.

The participants were visited at their household and instructed to indicate how they feel about each item, with no reference to a specific time. Verbal informed consents were obtained and individuals were assured that their responses would be confidential. After brief description of study by interviewer, the respondents answered to questions by themselves. For illiterates, the items were read completely. To examine the reliability of scale, after 10 days, the survey was repeated using 100 participants selected from the initial 700 participants in a simple random way. This step of study was performed in noted two stages by Iranian Students Polling Agency (ISPA), an expert organization in conducting field surveys, to meet the high level standards.

Data analysis was done using Statistical Package for the Social Sciences (SPSS), Version 16.0 (SPSS Inc. 2008). Descriptive statistics and univariate analysis were employed to define happiness and its determinants. Psychometric properties of used happiness scale were examined in different ways. To assess internal consistency and test-retest reliability, Cronbach’s alpha and ICC

(Intra Class Correlation) coefficient were used, respectively.

Exploratory factor analysis (EFA) was used for determining the potential underling factors. We conducted a principal components analysis followed by a varimax rotation. The sample adequacy for extraction of the factors was confirmed through Kaiser-Meyer-Olkin (KMO) test and Bartlett’s test of sphericity. In this analysis, the factors with values equal or higher than 2 were considered significant and chosen for interpretation. The response rate was %99 (696 out of 700). Indeed, there was little missing data in this study which did not have any major effect on the results

This study was approved by the National Institute of Research on Health ethical board. The author has no known conflicts of interest and certifies his responsibility for this manuscript.

Results

Qualitative phase

Developed conceptual framework of Iranians’ happiness based on reviewed documents and consensus building process is displayed in figure 1. It should be noted that dividing items into two groups is derived from factor analysis that will be explained subsequently.

Demographic Characteristics of respondents participating in second step of study

There was a sampling population with 696 participants, of which 51 % were male. The mean and standard deviation of respondents' age were 38.8 and 14.1, respectively. The percentage of people with different educational levels such as; illiterate, primary education, secondary education, high school diploma, university degree, were 3.0%, 9.6%, 19.5% and

Table 1: Correlation inter-factors and between total happiness score and each factor (Pearson correlation coefficient).

	“Satisfaction with life”	“different affects”
“Satisfaction with life”		0.61**
“different expressions”	0.61**	
Total score	0.91**	0.89**

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

Items predominantly related to life satisfaction (Social dimension of happiness)	Items predominantly related to different affects (Individual dimension of happiness)
<ul style="list-style-type: none"> • Being satisfied with relationship with family members • Ability to deal with different problems • Being optimistic • Being satisfied with income level • Sense of being valuable to others • Social competence • Sense of safety in place of living • Good communications • Being satisfied with job • Achieving determined goals 	<ul style="list-style-type: none"> • Physical health • Mental health • Spiritual feelings • Stress and tension • Pain and physical discomfort • Depression • Anxiety • Sleep quality • Laughing much • Sense of humor • To have control on behaviors • Sense of being relaxed • Self control • Sense of being vigilant • Feeling high level of energy • Sense of humiliation • Sense of being inferior to others • Self esteem • Being impulsive • Sense of vitality

Figure 1. Developed conceptual framework of Iranians' happiness

Table 2: Scores of happiness and its domains.

	N	Min	Max	Mean	SD
Total happiness score	696	78	198	143.9	19.6
“Satisfaction with life” domain	696	32	100	70.9	11.2
“Different affects” domain	696	38	99	73.1	10.5

43.4%, respectively. 45.0% of the participants were employed, 4.5% unemployed, 30.65 housewife, 10.2% student and 9.25 retired. 61.8 % of respondents were married, 29.2% never married singles, 1.7% divorced singles and 2.7% widowed singles.

Psychometric properties of developed scale

The KMO (Kaiser-Meyer-Olkin) test was employed to examine the probability of factor analysis. Noting high probability of correlation between extracted factors, Oblimin with Kaiser normalization was employed as rotational method. Due to the significance of the KMO test at the 5% level (KMO measure=0.9) and the correlation of each question with at least one of the other questions (correlation coefficient>0.3), the factor analysis was performed

on 40-item happiness scale. Two factor, with eigenvalues higher than 2, were emerged accounting for 29% of total variance in happiness. Factor 1 was named as “Satisfaction with life” accounting for 25% of variance and included 20 items pertaining to that dimension of happiness concerning predominantly with social aspects of life (Eigenvalue=9.23). Factor 2 was named as “different affects” accounted for 5% of variance and included 20 items predominantly related to individual aspects of happiness (Eigenvalues=2.01). The total score of happiness was calculated using the 40-item questionnaire. The scores therefore ranged from 40 to 200. The correlation coefficient between the score of each question with the total score of the questionnaire was more than 0.4. For the questionnaire with 40 questions, Cronbach's alpha for internal consistency was estimated to be 0.90. Eliminating none of questions has major effect on Cronbach's alpha. To indicate the internal consistency of the factors of “Satisfaction with life” and “different affects”, Cronbach's Alpha was estimated to be 0.87 and 0.85, respectively. The reliability coefficient (Intra Class Correlation) for 100 samples (taken after 10 to 14 days from the first round of sampling) was estimated to be 0.89. The

Table 3: Happiness score in different demographic groups.

		Number (percent)	Mean of happiness score*	Standard deviation	PV
sex	female	352 (51)	144.5	19.7	0.246
	male	344 (49)	143.5	19.3	
age	18-40	395 (57)	144.7	18.7	0.477
	41-60	252(36)	142.1	20.2	
	60 and higher	49 (7)	144.3	22.5	
Marital status	single (never married)	203 (30)	143.0	19.2	0.015
	single (separated)	11 (2)	126.6	20.3	
	single (widowed)	19 (3)	147.3	25.9	
	married	430 (65)	144.7	18.9	
Educational status	Illiterate	22 (3)	138.1	30.8	0.249
	Primary education	67(10)	141.8	18.1	
	Secondary education	69(10)	141.3	20.2	
	High school Diploma	235(34)	144.5	19.3	
	University degree	302(43)	145.2	18.8	
Occupational status	employed	313 (45)	144.7	18.5	0.019
	housewife	213 (31)	142.3	20.9	
	student	71(10)	147.8	18.9	
	retired	64(9)	146.3	19.8	
	Jobless	31(4)	135.1	18.9	

Corresponding value of the reliability indicator (ICC) for the factors of “Satisfaction with life” and “different expressions” was calculated 0.85, 0.88, respectively. The correlation between the factors and the correlation between the total happiness score and the factors are shown in Table 1.

The situation of happiness and its determinants

The mean of happiness score was 143.9 (95% confidence interval, 142.5 to 145.4). Table 2 shows the details of statistics of happiness and its domains. The results show that the happiness score of jobless people (135.1, 95%CI: 128.1-142.0) and widowed singles (126.6, 95%CI: 113.0-140.2) were significantly lower than other corresponding groups. There was no significant association between gender, age group, educational level as determinants and happiness (see more details in table 3).

In regard to effect of different determinants on “Satisfaction with life” domain, results are summarized as follows:

- The score of “Satisfaction with life” domain of people who are jobless (65.0, 95% CI: 60.9- 69.0) is significantly lower than other occupational categories

(PV<0.05).

- The score of divorced singles (64.2, 95%CI: 57.6-70.8) was lower than people who are married (71.8, 95% CI: 70.8-72.9).
- There was no association between gender, age, and educational status with “Satisfaction with life” domain. Similarly, effects of different determinants on “different affects” domain are summarized as follows:
 - The score of “different affects” domain was significantly higher in males (73.9, 95% CI: 72.7-75.0) than women (72.2, 95% CI: 71.1-73.3) (PV=0.03).
 - The score in people who are 18-40 years old (74.2, 95% CI: 73.2-75.1) was higher than other age categories (PV=0.004)
 - The score of people who are jobless (70.1, 95% CI: 66.3-73.7) and housewives (70.9, 95% CI: 69.4-72.3) were lower than people who are occupied (74.0, 95% CI:72.9-75.1) and students (76.6, 95% CI:74.1-79.0)
 - The score of people with university degree (74.7, 95% CI:73.6-75.9) and high school diploma (73.3, 95% CI:72.0-74.5) was higher than illiterates (67.6, 95% CI:60.6-74.6); people with primary education (68.7, 95% CI:66.3-71.2); and people with secondary education (70.8, 95% CI:68.3-73.4)
 - The score of divorced singles (62.3, 95% CI: 54.4-

70.2) was lower than other categories. ($PV < 0.05$)

Measuring happiness with single question

The mean of happiness score estimated by a single question in scale ranged from 1 to 5, was 3.59 (95% CI, 3.52-3.67). The reliability coefficient (ICC) for 100 samples (taken after 10 to 14 days from the first round of sampling) was measured to be 0.74. The correlation coefficient between this measure estimating happiness with single question and 40-item happiness questionnaire was 0.56.

Discussion

Newly developed happiness scale specific to Iranian context and culture, with acceptable validity and reliability measures, helps us to examine Iranians' happiness more precise than before. While several scales have been developed to assess happiness in a general sense, these scales fail to account for specific Iranian cultural context, for instance spirituality issues. According to the information available to author, there has not been developed a locally scale to measure happiness having potential to be used in field and household setting in Iran so far. In response to this challenge, the developed scale is a brief self-reported scale requiring five to ten minutes to administer that can be easily used. In short, the development of this scale is a needed addition to the repertoire of tools for happiness measurement in Iran and potentially a valuable asset to the happiness literature.

According to conducted principle component analysis, two factors named "Satisfaction with life" and "different affects" were emerged. It is somewhat similar to views of Tenglia¹⁷ and Seligman¹⁸, when they say "the construct of happiness is composed of three main components; satisfaction, positive and negative affects considering that present study doesn't differentiate between positive and negative effects as absolutely separated components. It should be also noted that in spite of demonstrating good internal consistency and reliability, significant correlation between two factors ($r=0.61$) limits considering happiness absolutely as a two factor construct in Iranian context.

Using newly developed instrument, the happiness score of Tehranian people was estimated 140, in a scale ranging from 40 to 200. If we assume the

happiness as a continuous numeric variable instead of being ordinal variable, we can conclude that the happiness level of Tehranians is somewhat higher than moderate level. This finding is consistent with findings of other conducted studies in country using different happiness scales such as oxford happiness inventory.

As noted in methods, we use a single question asking people to estimate their overall happiness in Likert style scale. The results of asking a single question estimating happiness as 3.59, in a scale ranging from 1 to 5, is compatible with the result of 40 question scale (estimating happiness 140 in a range from 40-200). This finding is consistent with recently conducted "national survey of Iranian perception of health" with 27000 participants in 2011 which indicates Tehranian happiness level as 3.43 in a scale from 1 to 5¹². However, it is not consistent with some of international reports of happiness, For instance, Happy Planet Index when it estimates Iran's happiness average as 5.28 in a scale from 1-10¹⁹.

To answer this question: is it possible to use a single general question to measure overall perception of happiness, the correlation of single question with 40-question scale and other psychometric indices should be noted. It seems that according to the correlation coefficient of 0.56 and reliability coefficient of 0.74 of the single question, we can recommend that it is acceptable to estimate happiness using a single overall question particularly in big surveys. This finding is consistent with other similar studies²⁰.

To evaluate the effect of different socio-demographic characteristics on happiness is a main part of happiness studies. Results of present study indicate joblessness and being widowed as risk factor of both total happiness and similarly, the social dimension of happiness names as "life satisfaction". In contrast, our finding does not show any relationship between total happiness and gender, age group and educational status. Examining domain of "different feelings" implies the effect of being male, single widowed, jobless, aged 18-30 and higher educational state on higher scores.

In spite of being consistent with a number of Iranian studies, many other countries' studies indicate that being female and higher educational status as determinant of higher happiness level. For example, based on World Happiness Report 2013, on a global

average basis, women's life evaluations are slightly higher than men's, by about 0.09 on the 10-point scale, or about 2% as large as the 4-point difference²¹. As well as, in respect to the effect of age on happiness, average life evaluations start high among the youngest respondents, fall by almost 0.6 points by middle age, and are fairly flat thereafter.

In regard to issue of generalizability, because of recruiting adequate sample size and cultural diversity of respondents in Tehran, it appears that developed scale is appropriate for using for other populations in Iran. However, additional validation process for particular groups of people such as rural inhabitants should be conducted.

Conclusion

The pursuit of happiness is the ultimate driving force of virtually everything, communities and nations do. Measuring happiness would therefore be vital for efficiency of several health, social and welfare systems. Our study is one the first steps taken to monitor Iranian community wellbeing providing valuable information for policy makers. This study also lays the foundation for further investigation to measure happiness in national and provincial level. Since the findings should be carefully interpreted, further research is necessary to replicate the current findings in different ways.

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Conflict of Interest

The authors have no financial interest in the products discussed in this article.

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