

Overall, and Specific Life Satisfaction Domains: Preliminary Iranian Students Norms

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Abstract

Background: The WHOQOL-BREF is one of the best-known instruments that have been developed for cross-cultural comparisons of quality of life and currently it is available in more than 40 languages. Current study was done to provide: (1) the psychometrics properties of the Iranian version of WHOQOL-BREF and (2) the norm scores for satisfaction with life overall and satisfaction with specific Life domains of Iranian students.

Methods: A sample of 1000 Iranian undergraduate students, (Males= 490 and Females= 510) were pooled using multi-stage random method and asked to complete the Iranian version of the WHOQOL-BREF.

Results: The results of current study indicated that a good internal consistency ($\alpha = 0.89$) for WHOQOL-BREF (26 items) as well as four domain ratings. Our findings also showed no floor or ceiling effect for the 4 domains as well overall QOL and general health facets. Moreover, General norms for the satisfaction with life overall, general health and satisfaction with specific life domains (physical health, psychological well-being, social relationships, and environmental support) were obtained using WHOQOL-BREF.

Conclusion: The Iranian version of WHOQOL-BREF was deemed reliable in assessing the quality of life of a student population in Iran. Our results of calculating and presenting norm scores for satisfaction ratings can be used as preliminary Iranian students' norms for those researchers who are interested in measuring and interpreting satisfaction ratings using WHOQOL-BREF.

Keywords: WHOQOL-BREF, Overall life satisfaction, Health, Psychological well-being, Social relationships, Environmental support, Iran

Introduction

In spite of James Set's article (1), has been considered as, the first known scientific paper which used the quality of life concept, popular usage of the quality of life concept date back only to the second half of the twentieth century (2). Campbell (3) states that the term 'quality of life' was first used in America shortly after the Second World War to portray the view that there was more to having a good life than just being financially secure. A Variety of definitions of quality of life has have been proposed by different researchers. However, it seems there is no general agreement on an accepted definition of QOL in the extensive literature, which has been generated on this subject over the past thirty years. It has also been claimed that there are almost as many definitions of the concept 'quality of life' as there are people who use

the term (4). On the basis of an analysis on the concept of the quality of life, Meeberg (4) concluded that the quality of life is a feeling of overall life satisfaction, as determined by the mentally alert individual whose life is being evaluated and other people, preferably those from outside that person's living situation, must also agree that the individual's living conditions are not life-threatening and are adequate in meeting that individual's basic needs (4).

The World Health Organisation (WHO) has defined "Quality Of Life" as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns"(5). The WHO states that quality of life is affected by an interaction of the individual's health, mental state, spirituality, rela-

tionship and elements of their environment (6). Some authors define QOL in terms of life satisfaction or satisfaction of needs (7), or as 'a person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to him/her' (8). In conventional usage, "satisfaction" refers to the fulfillment of needs, expectations, wishes, or desires (9), and an assessment of the overall conditions of existence as derived from a comparison of one's aspirations to one's actual achievements (7). Veenhoven (10, 11) uses the definition of life satisfaction as "the degree to which an individual judges the overall quality of his life-as-a-whole favorably." In order to study quality of life or other related concepts, we must be able to measure it. Self-report rating scales are one of the most common methods to assess overall life satisfaction. A rating scale, like all other measurement tools, is useful only if it provides an unbiased, reliable and valid measure.

Among different instruments to measure subjective well-being, two main categories can be distinguished: Single-item and multiple measures. Also within each category, alternative formats, wording, etc. cause considerable heterogeneity. Consider, for example, the number of items, which compose different multiple-item measures: While Diener (12) uses a five-item satisfaction-whit-life scale; Campbell et al. (7) propose a well-being scale of eight semantic differentials. Bradburn's and Caplovitz's (13) positive and negative affect scales draw on ten items, and Larsen (14) uses as many as forty items to construct his affect intensity scale.

The WHOQOL-BREF is one of the best-known instruments that have been developed for cross-cultural comparisons of quality of life and currently it is available in more than 40 languages. The WHOQOL-BREF is a modified version of The World Health Organization Quality of Life Instrument.

As there is no available literature reporting Iranian student's norms or psychometric properties for the WHOQOL-BREF on Iranian student population, the present study provides some pre-

liminary estimates of student's norms and some psychometric properties of WHOQOL-Bref.

Materials and Methods

Participants

A sample of 1000 volunteering students, fill out the Iranian version of the WHOQOL-BREF (15), concerning their current overall life satisfaction, general health and their satisfaction in four different domains of life: physical health, psychological well-being, social relationships, and environmental support.

The brief version of the WHO's QOL scale (WHOQOL-BREF) was used for current study. This questionnaire contains 26 questions divided into four domains. The WHOQOL-BREF has 26 items derived from the WHOQOL-100. The items are rated on a 5-point Likert scale. The four domain scores are scaled in a positive direction, with a score range of 0-20, which provides measures for four domains, concerning to quality of life: physical health, psychological, social relationships, and environment.

Statistical Analyses

Descriptive statistics such as mean, standard deviation, 95% confidence, min-max scores, and the measure of skewness were calculated for all Qol ratings. Z and deciles scores as well as the percentile ranks of the WHOQOL-Bref measures were calculated as the preliminary student's norms. Pearson correlations between all WHOQOL-Bref measures computed to further investigate the relationship of the scores obtained from WHOQOL-Bref scale. Cronbach alpha (internal consistency index) was used to estimate the reliability of the WHOQOL-Bref.

Results

Means, standard deviations, 95% CIs for mean ratings, measures of skewness and Z scores for the four domains; physical health (DOM1), psychological well-being (DOM2), social relationships (DOM3), and environmental support (DOM4); and two overall QOL (Q1) and general health (Q2) items are presented in the Table 1.

As Table 1 shows, among the different domains, the highest and the lowest mean satisfaction rating was found for DOM1 (physical health, Mean= 14.71) and DOM4 (environmental support, Mean= 12.22), respectively..

To compare the significant difference between score means of different domain ratings, the dependent t-tests were used and the results are presented in Table 2.

As seen in Table 2, significant differences were found between all four different domain ratings. Deciles scores and the percentile ranks of the WHOQOL-Bref measures are presented in Table 3.

As Table 3 shows, for DOM1 (Physical health), DOM2 (Psychological Well-being), and DOM4 (Environmental support) over 25% of all cases obtained scores in the top three deciles. For DOM3 (Social relation) 20% obtained scores less than the top three deciles. For all domains, around 20% of

all cases obtained score in the down two deciles.

Table 4 is presented to indicate the relationship between scores obtained from different domains and overall QOL (Q1).

As seen in Table 4, a strong correlation between all satisfaction ratings was found. All correlations were found statistically significant.

Cronbach's alpha was applied to examine the internal consistency of WHOQOL-BREF scale (26 items) as well as the four satisfaction domains.

As Table 5 shows, using all the items of the WHOQOL-BREF (26 items), the scale showed good internal consistency ($\alpha = 0.89$). Moreover, the calculated Cronbach's alpha coefficient for all domains showed acceptable results. For domains of WHOQOL-BREF, Cronbach's alpha ranged from 0.62 for social relationship domain to 0.76 for psychological well-being, indicating a good internal consistency.

Table 1: Descriptive Statistics for the four Domains and the two 'Overall QOL'

| Scale | Group | N | Mean | sd | 95% CI | Skew-ness | Z score | |
|-------|--------|-----|-------|------|-------------|-----------|---------|------|
| | | | | | | | Min. | Max. |
| Q1 | Male | 485 | 3.50 | .84 | 3.46-3.54 | -.63 | -2.98 | 1.79 |
| | Female | 505 | 3.72 | .82 | 3.68-3.76 | -.65 | -3.31 | 1.56 |
| | Total | 990 | 3.61 | .84 | 3.56-3.66 | -.66 | -3.12 | 1.66 |
| Q2 | Male | 486 | 3.86 | .89 | 3.82-3.90 | -.79 | -3.23 | 1.28 |
| | Female | 505 | 4.01 | .91 | 3.96-4.04 | -.96 | -3.31 | 1.10 |
| | Total | 991 | 3.93 | .84 | 3.87-3.99 | -.87 | -3.26 | 1.18 |
| DOM1 | Male | 479 | 14.57 | 2.38 | 14.46-14.68 | -.51 | -4.44 | 2.28 |
| | Female | 500 | 14.84 | 2.43 | 14.73-14.97 | -.60 | -3.76 | 2.12 |
| | Total | 979 | 14.71 | 2.41 | 14.56-14.86 | -.55 | -4.44 | 2.20 |
| DOM2 | Male | 482 | 12.91 | 2.70 | 12.79-13.03 | -.28 | -3.30 | 2.38 |
| | Female | 502 | 13.20 | 2.81 | 13.08-13.33 | -.27 | -3.27 | 2.42 |
| | Total | 984 | 13.06 | 2.76 | 12.89-13.23 | -.26 | -3.28 | 2.51 |
| DOM3 | Male | 469 | 13.20 | 3.46 | 13.04-13.36 | -.40 | -2.66 | 1.97 |
| | Female | 483 | 13.81 | 3.48 | 13.65-13.97 | -.55 | -2.82 | 1.78 |
| | Total | 952 | 13.50 | 3.48 | 13.28-13.72 | -.46 | -2.73 | 1.87 |
| DOM4 | Male | 478 | 11.97 | 2.61 | 11.85-12.09 | -.30 | -3.06 | 2.69 |
| | Female | 504 | 12.46 | 2.69 | 12.34-12.58 | -.27 | -3.14 | 2.80 |
| | Total | 982 | 12.22 | 2.66 | 12.05-12.39 | -.27 | -3.09 | 2.92 |

Table 2: Paired Sample *t*-Test for the four Domain ratings

| | | Paired Differences | | | | <i>t</i> - Test | df | Sig. (2-tailed) |
|--------|-------------|--------------------|----------------|-----------------|---|-----------------|--------|--------------------|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | |
| | | | | | Lower | Upper | | |
| Pair 1 | DOM1 - DOM2 | 1.659 | 2.219 | .070 | 1.519 | 1.798 | 23.374 | .001 |
| Pair 2 | DOM1 - DOM3 | 1.219 | 3.226 | .104 | 1.013 | 1.425 | 11.617 | .001 |
| Pair 3 | DOM1 - DOM4 | 2.483 | 2.488 | .079 | 2.327 | 2.639 | 31.191 | .001 |
| Pair 4 | DOM2 - DOM3 | -.410 | 3.122 | .101 | -.609 | -.211 | -4.050 | .001 |
| Pair 5 | DOM2 - DOM4 | .824 | 2.674 | .085 | .657 | .992 | 9.650 | .001 |
| Pair 6 | DOM3 - DOM4 | 1.255 | 3.289 | .106 | 1.046 | 1.465 | 11.748 | .001 |

Table 3: Deciles scores and the percentile ranks

| Scale | Group | DOM1 | | DOM2 | | DOM3 | | DOM4 | |
|----------|--------|------|-------|------|-------|------|-------|------|-------|
| | | N | % | N | % | N | % | N | % |
| 0-10 | Male | 51 | 10.65 | 58 | 12.70 | 56 | 11.94 | 58 | 12.13 |
| | Female | 60 | 13.02 | 54 | 11.20 | 48 | 9.93 | 54 | 10.7 |
| | Total | 111 | 11.33 | 112 | 11.38 | 104 | 10.92 | 112 | 11.41 |
| 10.1-20 | Male | 51 | 10.65 | 46 | 10.07 | 63 | 13.43 | 35 | 7.32 |
| | Female | 34 | 7.38 | 54 | 7.05 | 42 | 8.69 | 63 | 12.3 |
| | Total | 87 | 8.89 | 100 | 10.16 | 105 | 11.03 | 98 | 9.98 |
| 20.1-30 | Male | 88 | 10.37 | 42 | 9.19 | 52 | 11.08 | 69 | 14.43 |
| | Female | 22 | 4.77 | 70 | 14.52 | 41 | 8.48 | 36 | 7 |
| | Total | 138 | 14.10 | 156 | 15.85 | 98 | 10.29 | 105 | 10.69 |
| 30.1-40 | Male | 43 | 8.98 | 50 | 9.41 | 38 | 8.10 | 76 | 15.89 |
| | Female | 45 | 9.76 | 46 | 9.54 | 35 | 7.25 | 66 | 12.9 |
| | Total | 97 | 9.91 | 96 | 9.76 | 75 | 7.88 | 142 | 14.46 |
| 40.1-50 | Male | 34 | 7.10 | 52 | 11.38 | 38 | 8.10 | 42 | 8.78 |
| | Female | 39 | 8.46 | 40 | 8.30 | 40 | 8.28 | 42 | 8.3 |
| | Total | 73 | 7.46 | 93 | 9.45 | 90 | 9.45 | 84 | 8.55 |
| 50.1-60 | Male | 56 | 11.69 | 41 | 12.25 | 56 | 11.94 | 38 | 7.94 |
| | Female | 76 | 16.49 | 50 | 10.37 | 74 | 15.32 | 44 | 8.9 |
| | Total | 132 | 13.48 | 91 | 9.25 | 132 | 13.87 | 82 | 8.35 |
| 60.1-70 | Male | 42 | 8.77 | 53 | 9.19 | 73 | 15.56 | 9 | 1.88 |
| | Female | 45 | 9.76 | 36 | 7.47 | 83 | 17.18 | 71 | 14.1 |
| | Total | 87 | 8.89 | 89 | 9.05 | 161 | 16.91 | 80 | 8.15 |
| 70.1-80 | Male | 32 | 6.68 | 41 | 7.01 | 41 | 8.74 | 94 | 19.66 |
| | Female | 43 | 9.33 | 41 | 8.51 | 52 | 10.76 | 34 | 6.8 |
| | Total | 70 | 7.15 | 82 | 8.33 | 93 | 9.77 | 128 | 13.04 |
| 80.1-90 | Male | 35 | 7.31 | 46 | 10.07 | 28 | 5.97 | 20 | 4.18 |
| | Female | 60 | 13.02 | 56 | 11.62 | 21 | 4.34 | 46 | 9.3 |
| | Total | 119 | 12.16 | 102 | 10.37 | 54 | 5.67 | 66 | 6.72 |
| 90.1-100 | Male | 47 | 9.81 | 28 | 6.13 | 17 | 3.4 | 37 | 7.74 |
| | Female | 37 | 8.03 | 35 | 7.26 | 20 | 5 | 48 | 9.7 |
| | Total | 65 | 6.64 | 63 | 6.40 | 40 | 4.20 | 85 | 8.66 |

Table 4: Correlation coefficients among different domains

| | Q1 | Q2 | DOM1 (4-20) | DOM2 (4-20) | DOM3 (4-20) | DOM4 (4-20) |
|-------------|----|----------|-------------|-------------|-------------|-------------|
| Q1 | 1 | .422(**) | .448(**) | .546(**) | .354(**) | .453(**) |
| Q2 | | 1 | .443(**) | .442(**) | .270(**) | .277(**) |
| DOM1 (4-20) | | | 1 | .639(**) | .444(**) | .521(**) |
| DOM2 (4-20) | | | | 1 | .516(**) | .514(**) |
| DOM3 (4-20) | | | | | 1 | .453(**) |
| DOM4 (4-20) | | | | | | 1 |

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

Table 5: Reliability statistics for the WHOQOL-BREF

| Scale | Number of items | Alpha Coefficients |
|---------------------------------|-----------------|--------------------|
| WHOQOL-BREF | 26 | 0.89 |
| Physical health (DOM1) | 7 | 0.72 |
| Psychological well-being (DOM2) | 6 | 0.76 |
| Social relationships (DOM3) | 8 | 0.62 |
| Environmental support (DOM4) | 3 | 0.75 |

Discussion

As Table 2 showed, among the different domains, the highest mean satisfaction rating was found for DOM1 (physical health, Mean= 14.71), implying good activities of daily living, enough energy, less pain and discomfort, sufficient sleep and rest. Moreover, the lowest mean score was shown for DOM4 (environmental support, Mean= 12.22), indicating not very good financial support, freedom, physical safety and security, health and social care, leisure activities physical environment and transport.

Our findings showed no floor or ceiling effect for the 4 domains as well overall QOL and general health facets. However, higher standard deviations was appeared in the DOM3 (social relations) compared to all other domains. Greater spread in the distribution of the data obtained from DOM3 (social relations) might be associated with different interpretations of the questions used for measuring this domain.

Reliability analysis indicated an acceptable internal consistency of WHOQOL-BREF scale. However, it seems that reliability of the social relationships domain needs more investigation ($\alpha = 0.62$). However this lower value may not be unexpected. As the social relationships domain consists of only 3 items, and all other domains are based on 6 to 8 items. In conclusion, the results of current study indicated that the Iranian version of WHOQOL-BREF was deemed reliable in assessing the quality of life of a student population in Iran. Moreover presenting norm scores for satisfaction ratings can be used as preliminary Iranian students' norms for those researchers who are interested in measuring and interpreting satisfaction ratings using WHOQOL-BREF.

Ethical Consideration

All Ethical issues (such as informed consent, conflict of interest, plagiarism, misconduct, co-authorship, double submission, etc) have been considered carefully.

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