Systematic Review and Meta-analysis of Quality of Work Life in Iran (2011–2017)

Abstract
Background: Quality of work life (QWL) is considered as a universal concept in human resource management and organizational development, and its promotion is the key to the success of organizations’ management. Therefore, the present study aimed to evaluate the QWL in Iran through systematic review and meta-analysis. Methods: In this study, all articles related to the QWL in Iran during the years 2011–2017 were systematically reviewed by searching national and international databases such as Science Direct, PubMed, Scopus, Web of Science, Springer, SID, Magiran, Barakat Knowledge Network System, Medlib, and the Google Scholar search engine using valid keywords. The results of the studies were combined using the random effects model. The heterogeneity of studies was studied using the I2 index. Data analysis was done using STATA ver 11. Results: The mean QWL score of 15,323 samples were 60.13, 36.80, 76.19, 58.90, 68.78, 50.69, 32.24, 8.01, 70.63, 39.70, and 44.41 based on Walton, Casio, Sirgy, Mirepasi, SF-36, Ghasem zadeh, Dehghan, Dargahi, NIOSH, Venlar, Quality of nursing work life questionnaires, respectively. Meta-regression showed that the QWL of employees had no significant relationship with the sample size and years of research. Conclusions: The mean score of QWL in Iranian employees was 56.90, with the highest and the lowest score for the questionnaire.

Keywords: Iran, meta-analysis, quality of work life (QWL)

Introduction
Quality of life is a significant criterion that illustrates the inefficiency of health care, physical, mental, and psychological status.[1] The quality of life, in a way, expresses the status of people living in a country or region. Early thinking about quality of life has focused on individual concern and priority, but in recent years, the theoretical debate has shifted from social focus to social concerns such as security, freedom, the extent of quality of work life (QWL), and the structure and quality of social relationships of individuals in society.[2-4] QWL is a comprehensive program that increases the consent of members, supports the acquisition of knowledge or skills, and supports them to manage change.[7,8]

In other words, employees’ satisfaction with the fulfillment of their needs through the resources, activities, and outcomes resulting from engagement in the workplace is called QWL.[9] The concept of QWL was first introduced in 1930 and was first described by Walton in the 1970s. He suggested that QWL is classified in eight areas: fair and adequate pay, a safe and healthy working environment, human capacity development, the opportunity for growth and sustained security, social integration and solidarity, legalism, the overall living space, and social affiliation. In the cases mentioned by Walton, there is a collection of actual working conditions in an organization.[10]

The term “QWL” has become widespread in recent years. The reason might be that this variable refers to a set of results for employees such as job satisfaction, growth opportunities, psychological issues, job security, employer-employee relationship, and low incidence rates.[11] The QWL in each organization is essential for the attraction and maintenance of employees.[12] In general, the QWL represents a kind of organizational culture or management style, based on which employees feel ownership, autonomy, responsibility, and self-esteem, and the effectiveness and efficiency of the organization increase through promoting the status of the individuals.[13] Since the QWL is dynamic and multidimensional, it includes concepts such as job security,

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Address for correspondence:
Dr. Leila Jouybari,
School of Nursing and Midwifery,
Golestan University of Medical Sciences,
Gorgan, Iran.
E-mail: jouybari@goums.ac.ir;
Miss. Diana Sarokhani,
Master of Information Technology,
Psychosocial Injuries Research Center,
Ilam University of Medical Sciences,
Ilam, Iran.
E-mail: diana_sarokhani@yahoo.com

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reward systems, educational and career development opportunities, and participation in decision-making.\[^{[7,8]}\] Cole et al. concluded in their research that improving the QWL of employees in any organization, especially in occupations, such as nursing, in which employees are in contact with humans, is of great importance and affects different levels of work. Moreover, Hood and Smith also concluded that QWL affects staff performance.\[^{[14,15]}\]

Several studies have been conducted in different regions of Iran with the aim of evaluating the QWL, but there is still no general estimate of the QWL in Iran, and they estimated QWL difference in studies. So, an overall and reliable estimate of QWL in Iran is not available. Therefore, the aim of this study is to estimate the QWL according to different scales, components, sex, job, city, and marital status in Iran.

**Methods**

**Protocol of study**

We registered the study protocol on the PROSPERO site (ID: 128051, Date: 09/03/2019).

**Search strategy**

The present study is a systematic review and meta-analysis conducted through a review of existing articles published during the years 2011–2017. To access the documentations conducted in Iran, national and international databases, such as Science Direct, PubMed, Scopus, Web of Science, Springer, SID, Magiran, Barakat Knowledge Network System, Medlib, and the Google Scholar search engine, were searched using valid keywords. This study was conducted based on preferred reporting items for systematic review and meta-analysis protocols (PRISMA).\[^{[16]}\] To maximize the search comprehensiveness, national databases were searched using general Persian keywords such as “یراک یگدنز تیفیک و ناریا” and for international databases “quality of work life,” “score of quality of work life,” “meta-analysis,” and “Iran”, the English equivalents, MeSH keywords, and their combinations were used with AND/OR operators. To find more studies, the references of articles were searched manually.

**Inclusion and exclusion criteria**

Inclusion criteria were the studies that examined the QWL in Iran during 2011–2017. Exclusion criteria were studies conducted in countries other than Iran, studies with nonrandom sample size, studies outside the period of 2011–2017, studies that did not have the required quality, and studies that did not include the required data (such as score of QWL or its dimensions or number of samples).

**Qualitative assessment of studies**

The standard, international STROBE checklist\[^{[17]}\] was used to assess the quality of studies. This checklist consists of 22 different sections with a score of 0 if the item is absent and 1 if the item is present in the study. The total score was between 0 to 44. The study with score less than 11 were not included in the study.

**Data extraction**

To reduce bias and error in data collection, two researchers independently extracted data from the articles using data extraction form, including name of author, year of study, place of study, sample size, QWL score and its components, number of women and men, name of the questionnaire, and statistical community.

**Questionnaires**

**Walton’s questionnaire**

The first part of the questionnaire consists of 10 items about the demographic variables of the staff and the second part contains 31 items about the QWL, which are in eight dimensions. The “fair and adequate payment” dimension includes three items; “safe and healthy work environment” includes five items; “development of human capabilities” includes five items; “growth and security opportunities” includes four items; “integration and social cohesion” includes four items; “legalism” includes four items; “the overall space of life” includes two items; and “social affiliation and work life” includes four items.\[^{[18]}\] The questionnaire is based on a five-degree spectrum (very low, low, moderate, high, and very high) and is divided into three levels—low, moderate, and high. The scoring range is between 24 and 120.\[^{[13]}\]

**Casio’s questionnaire**

This questionnaire, which includes six indices (material privileges, education, democracy in participation, participating in decision making, job design, and designing the organization workspace), was designed by Casio et al. in the form of 29 questions in the Likert spectrum—a score of 1 to 5 and a scoring range of 29–145. The reliability of the tool in previous research was also expressed by the Cronbach’s alpha of 0.86, which indicates its internal consistency.\[^{[19]}\]

**Quality of nursing work life questionnaire**

It includes four dimensions of QWL and 44 questions with a measurement scale on a 6-point Likert spectrum. Personal life dimension with eight questions, work framework with 10 questions, background dimension with 20 questions, and global dimension of work with six questions were measured and evaluated.\[^{[20]}\]

**Dargahi’s questionnaire**

It is evaluated in the form of 30 components and is adjusted based on a 5-option Likert spectrum (from “totally agree” to “totally disagree”).\[^{[21]}\]

Dheghian Naeeri’s questionnaire contains 45 items on the Likert scale (from very high to very low). On this scale, a score of 1–5 is assigned to each item, with a score of 5 for very high and a score of 1 for very low.\[^{[22]}\]
Qhasemzadeh’s questionnaire

This questionnaire has 53 questions designed by Ghasemzadeh and Ahmadi.[23] Responses are on a Likert spectrum. The internal consistency of this questionnaire has been reported by Cronbach’s alpha of 0.96.[24]

Statistical analysis

Considering that the QWL score and its subgroups score were quantitative, the mean and standard deviation of these indices were extracted in each study and the variance of the mean was calculated using normal distribution \( \left( se_{mean} = \sigma / \sqrt{n} \right) \). To pool the results of studies, we used the metaan command in STATA ver 11. Considering the heterogeneity of the studies, a random effects model was used to combine the results of the studies. The I^2 index was used to investigate the heterogeneity of the studies. In studies that showed the percentage of quality of life and qualitatively assessed the QWL, the variance of each study was calculated using binomial distribution. Meta-regression was used to check heterogeneity among the studies and to find any association between the year of study and the sample size with QWL. Subgroup analysis was done according to sex, components, and questionnaire. All statistical analyses were performed using STATA development services in Chicago (STATA ver 11).

Results

Overall, the sample size in the 80 papers reviewed during the period 2011–2017 was 15,323 people. The characteristics of the examined articles are listed and the flowchart of the entry of studies into this meta-analysis is presented in Chart 1 and Table 1.

![Flowchart of the entry of studies into the meta-analysis](image)

The mean scores of QWL based on Walton, Casio, Sirgy, Mirsepasi, F-36, Ghasem zadeh, Dehghan, Dargahi, NIOSH, Venlar, Quality of nursing work life questionnaires were 60.13 (95% CI: 57.09–63.16), 36.80 (95% CI: 0–106.18), 76.19 (95% CI: 35.72–116.66), 58.90 (95% CI: 56.28–61.51), 68.78 (95% CI: 66.28–71.27), 50.69 (95% CI: 0–105.51), 32.24 (95% CI: 0–91.92), 8.01 (95% CI: 0–18.79), 70.63 (95% CI: 69.40–71.85), 39.70 (95% CI: 37.10–42.29), and 4.41 (95% CI: 14.42–74.41), respectively [Table 2]. According to the Walton’s questionnaire, the prevalence of good work life was 6%, relatively good work life was 74%, and poor work life was 21% [Table 3 and Figure 1].

The meta-regression analysis showed no significant relationship between the mean score of QWL in Iran and the sample size \( (P = 0.696) \) [Figure 2]. In addition, no significant relationship was found between the mean score of QWL in Iran and the year of the research \( (P = 0.151) \) [Figure 3].

Discussion

The present meta-analysis was conducted to assess the QWL in Iran during 2011–2017. In 80 articles with a sample size of 15,323 people, the mean QWL score based on Walton Casio, Sirgy, Mirsepasi, SF-36, Ghasem zadeh, Dehghan, Dargahi, NIOSH, Venlar, and Quality of nursing work life questionnaires were 60.13, 36.80, 76.19, 58.90, 68.78, 50.69, 32.24, 8.01, 70.63, 39.70, and 4.41, respectively.

Similar to the study results of Dracup et al., Testa and Simonson, and Boonrod, the mean QWL score of women was slightly higher than that of men, which did not show significant differences between the two genders.[25-27]

However, the study results are not consistent with those of Tajuddin and Ullah who conducted their study in general hospitals in Bangladesh that reported low QWL of the employees.[103] The results of other research report a correlation between the QWL and the performance of the employees as well as between the components of the QWL and the performance of the staff. The legislation of the organization, social affiliation, working life, safe working environment, opportunities for continuous growth, development of human capabilities, the general spatial life, and fair pay are highly correlated with employee performance.[9,104]

Moreover, another study reported that nurses with high quality of life had more clinical competence, thus proving a positive and significant correlation between the QWL and the clinical competence of nurses.[105]

The meta-regression analysis showed no significant relationship between the mean score of QWL in Iran and the sample size \( (P = 0.696) \) [Figure 2]. In other words, increasing the number of samples did not result in increased...
Figure 1: The mean score of the quality of working life based on the name of the author and the year of the research by the questionnaires (on the basis of 100)
Table 1: Data extracted from articles that were entered into the meta-analysis process

| Author | City | Year | Name of questionnaire | Subjects | Sample size | QWL Scores (mean±SD) | QWL Scores (mean±SD) based on 100 | STROBE Score |
|--------|------|------|------------------------|----------|-------------|----------------------|-----------------------------------|------------|
| Seifi, L et al.[28] | South Khorasan Province | 2014 | Walton | Public library librarians | 86 | 2.96±0.58* | 59.2±0.48 | 30 |
| Arab, M et al.[29] | Tehran | 2011 | Walton | Specialists | 400 | 2.91±0.63* | 58.2±0.52 | 30 |
| Nasiripour, AA et al.[30] | Tehran | 2013 | Casio | Nurses | 215 | 10.48±3.40 | 72.2±1.88 | 28 |
| Zarei, G et al.[31] | Tehran | 2013 | Walton | Health workers | 185 | 2.70±0.50* | 54.0±0.41 | 23 |
| Omidi, H et al.[32] | Semirom | 2011 | Walton | Company employees | 30 | 10.48±3.40 | 72.2±1.88 | 28 |
| Hadizadeh Talasaz, Z et al.[33] | Mashhad | 2013‑2014 | Walton | Employed midwives | 230 | 65.23±12.16 | 54.3±10.13 | 30 |
| Abdollahzade, F et al.[34] | Tabriz | 2014‑2015 | Sirgy | Nurses | 147 | 44.65±8.40 | 55.8±10.5 | 32 |
| Shafipour, V et al.[35] | Sari | 2016 | Walton | Nurses | 180 | 69.20±17.71 | 57.6±14.75 | 27 |
| Shojaei, P et al.[36] | Qazvin | 2011 | Casio | University staff | 120 | 2.66±0.64 | 1.4±0.35 | 21 |
| Marzban, S et al.[37] | Tehran | 2014 | Walton | Hospital staff | 530 | 48.21±13.34 | 40.1±11.11 | 28 |
| Rostami, R et al.[38] | Kermanshah | 2015 | Walton | University staff | 217 | 22.30±0.91 | 18.5±0.75 | 22 |
| Hatam, A et al.[39] | Rasht | 2012 | Walton | Hospital staff | 216 | 20.25±1.20 | 16.8±1 | 31 |
| Zamanian, Z et al.[40] | Shiraz | 2014 | McGill quality of life | Dentists | 200 | 73.53±30.70 | 43.25±18.05 | 28 |
| Parsa, SH et al.[41] | Oshnavieh | 2014 | Walton | Hospital staff | 158 | 63.10±20.89 | 52.5±17.4 | 26 |
| Pourghaz, A et al.[42] | Zabol | 2016 | Walton | Employees of the electricity administration | 86 | 82.25±4.29 | 68.5±3.57 | 28 |
| Arab Feiz Abadi, SH et al.[43] | Zahedan | 2014‑2015 | Walton | Teachers | 345 | 4.31±0.29* | 86.2±0.24 | 31 |
| Ardalan, MR et al.[44] | Hamadan | 2015 | Walton | University staff | 186 | 3.80±0.85* | 76±0.7 | 28 |
| Navidian, A et al.[45] | Kerman | 2012 | Quality of work life nursing | Nurses | 266 | 146.96±45.14 | 55.6±17.09 | 31 |
| Zarei, E et al.[46] | Sarpol-e Zahab | 2014 | Walton | Health workers | 332 | 2.90±0.57* | 58±0.47 | 30 |
| Amrollahi, A et al.[47] | Urmia | 2014 | Walton | University staff | 123 | - | 60.2±0.58 | 24 |
| Lourak Agh, Z et al.[48] | - | 2015 | Walton | Employees of Irankhodro Co. | 341 | 83.07±18.63 | 69.2±15.52 | 23 |
| Malaei Zarandi, A et al.[49] | - | 2016 | Walton | Staff of the ministry of sports and youth | 210 | 9.68±2.03 | 8±1.69 | 28 |
| Mahmoodi, GH et al.[50] | Talesh | 2013 | Walton | Health center staff | 196 | 76.58±19.36 | 63.8±16.13 | 26 |
| Ghazanfari, F et al.[51] | Khorramabad | 2015 | Walton | Hospital staff | 205 | 79.86±8.35 | 66.5±6.95 | 27 |
| Imani, B et al.[52] | Hamadan | 2013 | Walton | Employees of the Martyr Foundation | 44 | 2.80±0.01* | 56±0.01 | 28 |

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Table 1: Contd...

| Author                  | City         | Year       | Name of questionnaire | Subjects                      | Sample size | QWL Scores (mean±SD) | QWL Scores (mean±SD) based on 100 | STROBE Score |
|-------------------------|--------------|------------|-----------------------|-------------------------------|-------------|----------------------|-----------------------------------|--------------|
| Ebrahiminejad, M et al. | Kerman       | 2016       | Sirgy                 | Administrative department managers | 28          | 77.67±19.70          | 97.1±24.62                       | 24           |
| Zakerian, SA et al.    | Tehran       | 2012       | Van lar               | Automotive workers            | 150         | 39.73±16.23          | 39.7±16.23                       | 26           |
| Choobineh, A et al.    | Shiraz       | 2013       | NIOSH                 | University staff              | 218         | 127.51±16.61         | 70.63±9.22                       | 28           |
| Mohsenpour, M et al.   | Sabzevar     | 2013       | Dargahi               | Nurses                         | 61          | 20.51±16.04          | 13.6±10.69                       | 30           |
| Imani, B et al.        | Hamadan      | 2013       | Walton                | Employees of the Martyr Foundation | 44          | 2.80±0.01*           | --                                | 28           |
| Sabeghi, F et al.      | Kahnuj       | 2014       | Dargahi               | Teachers                       | 285         | 3.95±0.51            | 2.6±0.34                         | 26           |
| Islami, S et al.       | Mazandaran   | 2011       | Walton                | Public library managers       | 52          | -                    | --                                | 22           |
| Mogharab, M et al.     | Birjand      | 2011       | Walton                | Nurses                         | 300         | 40.79±10.77          | 30.8±6.77                        | 31           |
| Mohmmadi Puya, S et al.| Tehran       | 2014-2015  | Walton                | Practice teachers             | 59          | 94.7±52.00           | 78.5±43.3                        | 27           |
| Naeimi, G et al.       | Tehran       | 2011       | Walton                | Male employees                | 200         | 73.63±13.56          | 62.9±11.3                      | 26           |
| Parsa, A et al.        | Ahvaz        | 2013       | Walton                | School directors              | 36          | 114.03±10.13         | 95.5±8.44                        | 24           |
| Ghanbari, S et al.     | Hamadan      | 2014-2015  | Walton                | Teachers                       | 310         | 3.03±0.63*           | 60.6±0.52                       | 27           |
| Rezaei, L et al.       | Arsanjan     | 2011       | Walton                | University staff              | 70          | 99.7±5.03           | 82.7±4.19                        | 26           |
| Jalilpour, P et al.    | Ahvaz        | 2012       | Walton                | Librarians                     | 60          | 128.00±19.13         | 90.5±15.94                      | 27           |
| Khosravizadeh, E et al.| Arak         | 2013       | Walton                | Employees                      | 138         | 92.89±16.86          | 77.4±14.05                      | 26           |
| Foroghinia, MH et al.  | Birjand      | 2011-2012  | Walton                | Teachers                       | 188         | 3.6±0.43*           | 72.4±0.35                        | 27           |
| Hesam, M et al.        | Gorgan       | 2011       | Walton                | Nurses                         | 167         | 47.7±9.21            | 39.7±7.67                        | 30           |
| Saber, S et al.        | Kerman       | 2012       | Walton                | Quality of nursing work life  | 266         | 146.96±45.14         | 55.6±17.09                       | 24           |
| Fatollahzadeh, F et al.| Khorasan     | 2016       | Walton                | Public library librarians      | 24          | 3.1±1.26*           | 62.4±1.05                        | 27           |
| Bakhshi, E et al.      | Esfahan      | 2015       | Walton                | Health workers                | 136         | 76.9±13.25          | 64±11.04                        | 30           |
| Marofi, M et al.       | Esfahan      | 2014       | Marofi                | Nurses                         | 76          | 48.2±12.33          | 48.2±12.33                      | 30           |
| Mohammadi, J et al.    | Tabriz       | 2014       | Marofi                | Quality of nursing work life  | 186         | 28.96±9.76          | 10.9±3.69                        | 30           |
| Farsi, Z et al.        | Tehran       | 2012-2013  | Dehghan               | Nurses                         | 322         | 106.67±13.15        | 62.7±7.73                        | 31           |
| Jannati, A et al.      | Tabriz       | 2013       | Dehghan               | Physicians                     | 63          | 38.7±11.84          | 32.2±7.86                        | 31           |
| Banidavoodi, SH et al. | Ahvaz        | 2014       | Dehghan               | Nurses                         | 100         | 3.12±0.60           | 1.08±0.35                        | 30           |
| Hosseinabadi, R et al. | Tabriz       | 2011       | Walton                | University staff               | 240         | 100.99±21.41        | 84.1±17.84                      | 24           |
| Ardalan, M et al.      | Shiraz       | 2012-2013  | Ghasemzadeh           | Teachers                       | 271         | 3.95±0.21           | 1.04±0.07                        | 26           |

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| Author                  | City         | Year | Name of questionnaire | Subjects                                                                 | Sample size | QWL Scores (mean±SD) | QWL Scores (mean±SD) based on 100 | STROBE Score |
|-------------------------|--------------|------|------------------------|---------------------------------------------------------------------------|-------------|----------------------|-------------------------------------|--------------|
| Madankar, A et al.      | Tehran       | 2011 | Walton                 | Bank employees                                                            | 600         | 70.8±20.00           | 59±16.66                           | 27           |
| Rasouli, B et al.       | Tehran       | 2011 | Walton                 | Public library librarians                                                | 224         | 93.38±17.23          | 77.8±14.35                         | 31           |
| Massah, H et al.        | Esfahan      | 2011 | Walton                 | Cultural and Recreational Organization Employees of Water and Wastewater Company | 62          | 29.8±47.88           | 91.9±39.9                          | 27           |
| Arab, N et al.          | Esfahan      | 2012 | Walton                 | Ghasemzadeh                                                              | 244         | 237.82±46.24         | 89.7±17.44                         | 30           |
| Majidi, A et al.        | -            | 2012 | Walton                 | Medical staff                                                            | 207         | 90.57±11.66          | 75.6±9.71                          | 26           |
| Hashemzadeh, A et al.   | Tabriz       | 2011-2012 | Walton             | Teachers                                                                 | 175         | 44.36±11.19          | 36.9±9.32                          | 27           |
| Elmi, M et al.          | Tabriz       | 2011-2012 | Walton             | Teachers                                                                 | 373         | 44.87±12.10          | 37.3±10.08                         | 27           |
| Mahdavi, AM et al.      | -            | 2011 | Walton                 | Staff of the Court of Justice                                          | 115         | 59.94±10.04          | 49.9±8.36                          | 26           |
| Varghaei, N et al.      | Zanjan       | 2012-2013 | Walton             | School directors                                                        | 92          | 88.58±12.69          | 73.8±10.57                         | 27           |
| Navidi, I et al.        | Arak         | 2015 | SF36                  | Health workers                                                           | 140         | 68.7±15.04           | 68.7±15.04                         | 23           |
| Ghaleeci, A et al.      | Hamedan      | 2013 | Walton                 | University staff                                                        | 178         | 2.80±0.32*           | 56±0.26                            | 31           |
| Kamalzadeh, H et al.    | Shiraz       | 2012 | Walton                 | Ghasemzadeh                                                              | 187         | 161.87±24.59         | 61±9.27                            | 26           |
| Ardalan, MR et al.      | Hamedan      | 2012 | Walton                 | Faculty members of universities                                          | 254         | 2.89±0.21*           | 57.8±0.17                          | 28           |
| Bakhtiarpour, S et al.  | Ilam         | 2011 | Walton                 | University staff                                                        | 300         | 71.17±13.96          | 59.3±11.63                         | 26           |
| Zarei, E et al.         | Tehran       | 2014 | Walton                 | Hospital staff                                                           | 126         | 2.68±0.47*           | 53.6±0.39                          | 28           |
| Momeni, M et al.        | Tehran       | 2014 | Walton                 | General Directorate of Social Security Managers of the Cooperative Directorate | 38         | -                    | --                                 | 27           |
| Momeni, M et al.        | Tehran       | 2014 | Walton                 | Cooperatives                                                            | 32          | -                    | --                                 | 27           |
| Borhani, F et al.       | Kerman       | 2015 | Walton                 | Quality of nursing work life                                             | 266         | 146.96±45.14         | 55.6±17.09                         | 31           |
| Mahmoodi, GH et al.     | Kashan       | 2012 | Walton                 | Nurses                                                                   | 200         | 84.36±21.64          | 70.3±18.03                         | 26           |
| Khammarinia, M et al.   | Zahedan      | 2014 | Walton                 | Nurses                                                                   | 220         | 79.10±18.22          | 65.9±15.18                         | 31           |
| Heidarie, A et al.      | Ahvaz        | 2010 | Mir sepasi             | University staff                                                        | 188         | 117.80±36.62         | 58.9±18.31                         | 28           |
| Hosseinabadi, R et al.  | Hamedan      | 2013 | Walton                 | Emergency staff                                                          | 24          | 61.29±3.98           | 51±3.31                            | 32           |
| Hosseinabadi, R et al.  | Malayer      | 2013 | Walton                 | Emergency staff                                                          | 16          | 56.87±8.38           | 47.3±6.98                          | 32           |
| Bagheri Nesami, M et al.| Sari         | 2015 | Walton                 | Nurses                                                                   | 285         | 85.57±16.77          | 71.3±13.97                         | 31           |

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average QWL quality in Iran. There was no significant relationship between the mean score of QWL in Iran and the year of the research ($P = 0.151$) [Figure 3]. Between 2011 and 2017, the QWL in Iran increased slightly but was not statistically significant.

Other studies reported a significant relationship between QWL and productivity of the nurses. The productivity increases as employees get happier and more satisfying.$^{[106]}$ Results showed that the case group had a significant difference between the scores of motivational factors ($P = 0.001$), total score of job satisfaction ($P = 0.003$), and scores of some QWL components including capacity utilization and development ($P = 0.008$), total living space ($P = 0.003$), and total QWL scores ($P = 0.030$) as compared to the control group.$^{[107]}$

Hamburg et al. reported that the quality of life of workers will improve by increasing the salary levels.$^{[108]}$ A study in Chicago reported that the QWL of nurses working in Intensive Care Units is low.$^{[109]}$ Kintner states that employed people have a better work life than the unemployed.$^{[110]}$ Among people who had a job, those with higher academic qualifications, because of having more important jobs, can have a better work life.$^{[111]}$ Lees and Kearns. stated that the more work experience employees had, the higher their satisfaction and QWL were.$^{[112]}$ The results of other studies showed that increasing the QWL of the organization leads to increased productivity, reduced costs, absence, and increased employee participation in the organization.$^{[16]}$ In addition, QWL affects personnel performance and reaches its maximum goals by increasing the QWL of the organization.$^{[21]}$

There is a direct and positive relationship between the QWL and performance optimization as increased QWL results in increased performance and improvements.

The strengths of our study were the large sample size, diversity of population, regions, age group, scale, and duration of studies (2011-2017).

### Table 1: Contd...

| Author                     | City                  | Year             | Name of questionnaire | Subjects                      | Sample size | QWL Scores (mean±SD) | QWL Scores (mean±SD) based on 100 | STROBE Score |
|----------------------------|-----------------------|------------------|-----------------------|-------------------------------|-------------|----------------------|-----------------------------------|--------------|
| Toulabi, Z et al.$^{[96]}$ | Ilam                  | 2011-2012        | Walton                | Teachers                       | 269         | 2.57±0.66*           | 51.4±0.55                          | 30           |
| Parsa, B et al.$^{[97]}$  | Hamedan               | 2013             | Parsa                 | Academics                      | 307         | 38.50±8.30           | 96.2±20.75                         | 28           |
| Hashemi Dehaghi, Z et al.$^{[98]}$ | Tehran     | 2012             | Walton                | Nursing Managers               | 50          | 93.40±19.40          | 77.8±16.16                         | 22           |
| Maghaminejad, F et al.$^{[99]}$ | Kashan     | 2012             | Walton                | Faculty Members of Universities | 65          | 72.98±9.62           | 60.8±8.01                          | 30           |
| Bolhari, A et al.$^{[100]}$ | Tehran               | 2010             | Walton                | IT staff                        | 292         | 74.37±13.00          | 61.9±10.8                          | 28           |
| Shahrokh Shahi, M et al.$^{[101]}$ | North Khorasan Province | 2016         | Walton                | Police Command Staff           | 246         | 102.56±15.41         | 85.4±12.84                         | 27           |
| Sharifzadeh, F et al.$^{[102]}$ | -                    | 2011             | Sharifzadeh NAJA police personnel | 160         | -                    | --                                 | 26           |

*Score computed from 5

![Figure 2: Relationship between the mean QWL (2011–2017) in Iran and sample size using the meta-regression model. QWL: Quality of work life](image1)

![Figure 3: Relationship between the mean QWL (2011–2017) in Iran and the year of the research using the meta-regression model. QWL: Quality of work life](image2)
Limitations

There were many limitations to this study such as use of different tools for QWL analysis, lack of published articles in some cities and some jobs, and heterogeneity among populations.

We suggest conducting a QWL survey in the cities as we do not have any estimation about QWL in the cities. In low QWL regions, the risk factors for low QWL should be identified and intervened to improve the QWL.

Conclusion

The mean score of QWL in Iranian employees was 56.90 (95% CI: 49.59–64.20), with the highest and the lowest scores for the questionnaire. However, given the

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varying number of studies conducted in each subgroup, it is not possible to accurately compare the results of the different questionnaires.

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