

# 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 I<sup>2</sup> 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, Mirsepasi, 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.<sup>[1]</sup> 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.<sup>[2-6]</sup> QWL is a comprehensive program that increases the consent of members, supports the acquisition of knowledge or skills, and supports them to manage change.<sup>[7,8]</sup>

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 the QWL.<sup>[9]</sup> 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.<sup>[10]</sup>

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.<sup>[11]</sup> The QWL in each organization is essential for the attraction and maintenance of employees.<sup>[12]</sup> 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.<sup>[13]</sup> Since the QWL is dynamic and multidimensional, it includes concepts such as job security,

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reward systems, educational and career development opportunities, and participation in decision-making.<sup>[7,8]</sup> 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.<sup>[14,15]</sup>

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).<sup>[16]</sup> To maximize the search comprehensiveness, national databases were searched using general Persian keywords such as “ایران کیفیت زندگی و ناری” 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<sup>[17]</sup> 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.<sup>[18]</sup> 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.<sup>[13]</sup>

#### *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.<sup>[19]</sup>

#### *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.<sup>[20]</sup>

#### *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”).<sup>[21]</sup>

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.<sup>[22]</sup>

## Qhasemzadeh's questionnaire

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

## 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 ( $se_{mean} = \sigma / \sqrt{n}$ ). To pool the results of studies, we used the metan 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). The significance level of the tests was considered to be  $P < 0.05$ .

## 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.

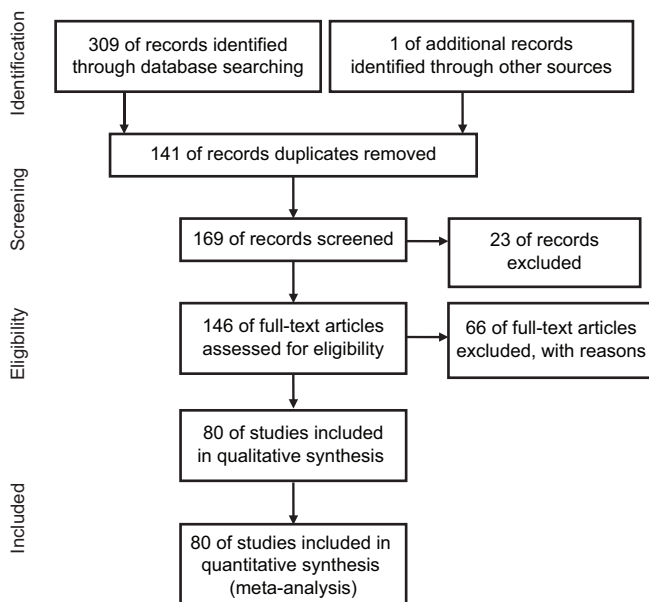


Chart 1: Flowchart of the entry of studies into the meta-analysis

The mean scores of QWL based on Walton, Casio, Sirgy, Mirsepasi, F-36, Ghasemzadeh, 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, Ghasemzadeh, 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 44.41, 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.<sup>[25-27]</sup>

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.<sup>[103]</sup> 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.<sup>[9,104]</sup>

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.<sup>[105]</sup>

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

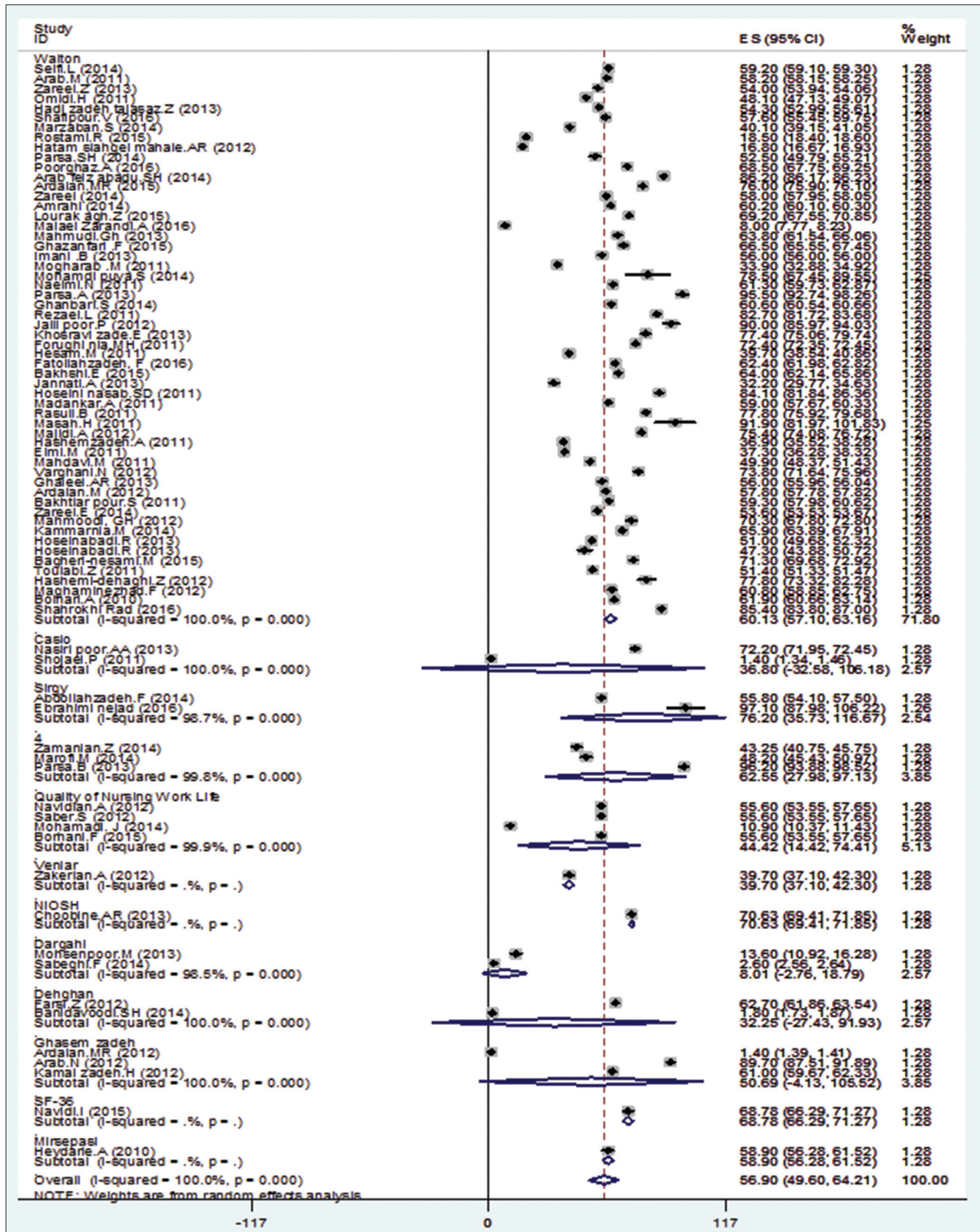


Figure 1: The mean score of the quality of working life based on the name of the author and the year of the research by the questionnaires (on the basis of 100)

**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 100	STROBE Score
Seifi, L et al. <sup>[28]</sup>	South Khorasan Province	2014	Walton	Public library librarians	86	2.96±0.58*	59.2±0.48	30
Arab, M et al. <sup>[29]</sup>	Tehran	2011	Walton	Specialists	400	2.91±0.63*	58.2±0.52	27
Nasiripour, AA et al. <sup>[30]</sup>	Tehran	2013	Casio	Nurses	215	10.48±3.40	72.2±1.88	28
Zarei, G et al. <sup>[31]</sup>	Tehran	2013	Walton	Health workers	185	2.70±0.50*	54±0.41	23
Omidi, H et al. <sup>[32]</sup>	Semirom	2011	Walton	Company employees	30	57.83±3.25	48.1±2.7	30
Hadizadeh Talasaz, Z et al. <sup>[33]</sup>	Mashhad	2013-2014	Walton	Employed midwives	230	65.23±12.16	54.3±10.13	30
Abdollahzade, F et al. <sup>[34]</sup>	Tabriz	2014-2015	Sirgy	Nurses	147	44.65±8.40	55.8±10.5	32
Shafipour, V et al. <sup>[35]</sup>	Sari	2016	Walton	Nurses	180	69.20±17.71	57.6±14.75	27
Shojaei, P et al. <sup>[36]</sup>	Qazvin	2011	Casio	University staff	120	2.66±0.64	1.4±0.35	21
Marzban, S et al. <sup>[37]</sup>	Tehran	2014	Walton	Hospital staff	530	48.21±13.34	40.1±11.11	28
Rostami, R et al. <sup>[38]</sup>	Kermanshah	2015	Walton	University staff	217	22.30±0.91	18.5±0.75	22
Hatam, A et al. <sup>[39]</sup>	Rasht	2012	Walton	Hospital staff	216	20.25±1.20	16.8±1	31
Zamanian, Z et al. <sup>[40]</sup>	Shiraz	2014	McGill	Dentists	200	73.53±30.70	43.25±18.05	28
Parsa, SH et al. <sup>[41]</sup>	Oshnavieh	2014	Walton	Hospital staff	158	63.10±20.89	52.5±17.4	26
Pourghaz, A et al. <sup>[42]</sup>	Zabol	2016	Walton	Employees of the electricity administration	86	82.25±4.29	68.5±3.57	28
Arab Feiz Abadi, SH et al. <sup>[43]</sup>	Zahedan	2014-2015	Walton	Teachers	345	4.31±0.29*	86.2±0.24	31
Ardalan, MR et al. <sup>[44]</sup>	Hamadan	2015	Walton	University staff	186	3.80±0.85*	76±0.7	28
Navidian, A et al. <sup>[45]</sup>	Kerman	2012	Quality of work life nursing	Nurses	266	146.96±45.14	55.6±17.09	31
Zarei, E et al. <sup>[46]</sup>	Sarpol-e Zahab	2014	Walton	Health workers	332	2.90±0.57*	58±0.47	30
Amrollahi, A et al. <sup>[47]</sup>	Urmia	2014	Walton	University staff	123	-	60.2±0.58	24
Lourak Agh, Z et al. <sup>[48]</sup>	-	2015	Walton	Employees of Irankhodro Co.	341	83.07±18.63	69.2±15.52	23
Malaei Zarandi, A et al. <sup>[49]</sup>	-	2016	Walton	Staff of the ministry of sports and youth	210	9.68±2.03	8±1.69	28
Mahmoodi, GH et al. <sup>[50]</sup>	Talesh	2013	Walton	Health center staff	196	76.58±19.36	63.8±16.13	26
Ghazanfari, F et al. <sup>[51]</sup>	Khorramabad	2015	Walton	Hospital staff	205	79.86±8.35	66.5±6.95	27
Imani, B et al. <sup>[52]</sup>	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 100	STROBE Score
Ebrahiminejad, M et al. <sup>[53]</sup>	Kerman	2016	Sirgy	Administrative department managers	28	77.67±19.70	97.1±24.62	24
Zakerian, SA et al. <sup>[54]</sup>	Tehran	2012	Van lar	Automotive workers	150	39.73±16.23	39.7±16.23	26
Choobineh, A et al. <sup>[55]</sup>	Shiraz	2013	NIOSH	University staff	218	127.51±16.61	70.63±9.22	28
Mohsenpour, M et al. <sup>[56]</sup>	Sabzevar	2013	Dargahi	Nurses	61	20.51±16.04	13.6±10.69	30
Imani, B et al. <sup>[52]</sup>	Hamadan	2013	Walton	Employees of the Martyr Foundation	44	2.80±0.01*	--	28
Sabeghi, F et al. <sup>[57]</sup>	Kahnuj	2014	Dargahi	Teachers	285	3.95±0.51	2.6±0.34	26
Islami, S et al. <sup>[58]</sup>	Mazandaran	2011	Walton	Public library managers	52	-	--	22
Mogharab, M et al. <sup>[59]</sup>	Birjand	2011	Walton	Nurses	300	40.79±10.77	33.9±8.97	31
Mohammadi Puya, S et al. <sup>[60]</sup>	Tehran	2014-2015	Walton	Practice teachers	59	94.20±52.00	78.5±43.3	27
Naeimi, G et al. <sup>[61]</sup>	Tehran	2011	Walton	Male employees	200	73.67±13.56	61.3±11.3	26
Parsa, A et al. <sup>[62]</sup>	Ahvaz	2013	Walton	School directors	36	114.63±10.13	95.5±8.44	24
Ghanbari, S et al. <sup>[63]</sup>	Hamadan	2014-2015	Walton	Teachers	310	3.03±0.63*	60.6±0.52	27
Rezaei, L et al. <sup>[64]</sup>	Arsanjan	2011	Walton	University staff	70	99.25±5.03	82.7±4.19	26
Jalilpour, P et al. <sup>[65]</sup>	Ahvaz	2012	Walton	Librarians	60	128.00±19.13	90±15.94	27
Khosravizadeh, E et al. <sup>[66]</sup>	Arak	2013	Walton	Employees	138	92.89±16.86	77.4±14.05	26
Foroghinia, MH et al. <sup>[67]</sup>	Birjand	2011-2012	Walton	Teachers	188	3.62±0.43*	72.4±0.35	27
Hesam, M et al. <sup>[106]</sup>	Gorgan	2011	Walton	Nurses	167	47.70±9.21	39.7±7.67	30
Saber, S et al. <sup>[68]</sup>	Kerman	2012	Quality of nursing work life	Nurses	266	146.96±45.14	55.6±17.09	24
Fatollahzadeh, F et al. <sup>[69]</sup>	azarbaijan e gharbi	2016	Walton	Public library librarians	24	3.12±1.26*	62.4±1.05	27
Bakhshi, E et al. <sup>[70]</sup>	Eslamabade Gharb	2015	Walton	Health workers	136	76.91±13.25	64±11.04	30
Marofi, M et al. <sup>[71]</sup>	Esfahan	2014	Marofi	Nurses	76	48.24±12.33	48.2±12.33	30
Mohammadi, J et al. <sup>[72]</sup>	Tabriz	2014	Quality of nursing work life	Nurses	186	28.96±9.76	10.9±3.69	30
Farsi, Z et al. <sup>[73]</sup>	Tehran	2012-2013	Dehghan	Nurses	322	106.67±13.15	62.7±7.73	31
Jannati, A et al. <sup>[74]</sup>	Tabriz	2013	Walton	Physicians	63	38.73±11.84	32.2±9.86	31
Banidavoodi, SH et al. <sup>[75]</sup>	Ahvaz	2014	Dehghan	Nurses	100	3.12±0.60	1.08±0.35	30
Hosseinabadi, R et al. <sup>[107]</sup>	Tabriz	2011	Walton	University staff	240	100.99±21.41	84.1±17.84	24
Ardalan, M et al. <sup>[76]</sup>	Shiraz	2012-2013	Ghasemzadeh	Teachers	271	3.95±0.21	1.04±0.07	26

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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 100	STROBE Score
Madankar, A et al. <sup>[77]</sup>	Tehran	2011	Walton	Bank employees	600	70.83±20.00	59±16.66	27
Rasouli, B et al. <sup>[78]</sup>	Tehran	2011	Walton	Public library librarians	224	93.38±17.23	77.8±14.35	31
Massah, H et al. <sup>[79]</sup>	Esfahan	2011	Walton	Cultural and Recreational Organization	62	29.84±47.88	91.9±39.9	27
Arab, N et al. <sup>[80]</sup>	Esfahan	2012	Ghasemzadeh	Employees of Water and Wastewater Company	244	237.82±46.24	89.7±17.44	30
Majidi, A et al. <sup>[81]</sup>	-	2012	Walton	Medical staff	207	90.57±11.66	75.4±9.71	26
Hashemzadeh, A et al. <sup>[82]</sup>	Tabriz	2011-2012	Walton	Teachers	175	44.36±11.19	36.9±9.32	27
Elmi, M et al. <sup>[83]</sup>	Tabriz	2011-2012	Walton	Teachers	373	44.87±12.10	37.3±10.08	27
Mahdavi, AM et al. <sup>[84]</sup>	-	2011	Walton	Staff of the Court of Justice	115	59.94±10.04	49.9±8.36	26
Varghaei, N et al. <sup>[85]</sup>	Zanjan	2012-2013	Walton	School directors	92	88.58±12.69	73.8±10.57	27
Navidi, I et al. <sup>[86]</sup>	Arak	2015	SF36	Health workers	140	68.78±15.04	68.78±15.04	23
Ghaleei, A et al. <sup>[87]</sup>	Hamedan	2013	Walton	University staff	178	2.80±0.32*	56±0.26	31
Kamalzadeh, H et al. <sup>[88]</sup>	Shiraz	2012	Ghasemzadeh	Nurses	187	161.87±24.59	61±9.27	26
Ardalan, MR et al. <sup>[44]</sup>	Hamedan	2012	Walton	Faculty members of universities	254	2.89±0.21*	57.8±0.17	28
Bakhtiarpour, S et al. <sup>[89]</sup>	Ilam	2011	Walton	University staff	300	71.17±13.96	59.3±11.63	26
Zarei, E et al. <sup>[90]</sup>	Tehran	2014	Walton	Hospital staff	126	2.68±0.47*	53.6±0.39	28
Momeni, M et al. <sup>[91]</sup>	Tehran	2014	Walton	General Directorate of Social Security	38	-	--	27
Momeni, M et al. <sup>[91]</sup>	Tehran	2014	Walton	Managers of the Cooperative Directorate	32	-	--	27
Borhani, F et al. <sup>[92]</sup>	Kerman	2015	Quality of nursing work life	Nurses	266	146.96±45.14	55.6±17.09	31
Mahmoodi, GH et al. <sup>[50]</sup>	Kashan	2012	Walton	Nurses	200	84.36±21.64	70.3±18.03	26
Khammarnia, M et al. <sup>[93]</sup>	Zahedan	2014	Walton	Nurses	220	79.10±18.22	65.9±15.18	31
Heidarie, A et al. <sup>[94]</sup>	Ahvaz	2010	Mir sepsi	University staff	188	117.80±36.62	58.9±18.31	28
Hosseiniabadi, R et al. <sup>[107]</sup>	Hamedan	2013	Walton	Emergency staff	24	61.29±3.98	51±3.31	32
Hosseiniabadi, R et al. <sup>[107]</sup>	Malayer	2013	Walton	Emergency staff	16	56.87±8.38	47.3±6.98	32
Bagheri Nesami, M et al. <sup>[95]</sup>	Sari	2015	Walton	Nurses	285	85.57±16.77	71.3±13.97	31

Contd...

Table 1: Contd...

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

\*Score computed from 5

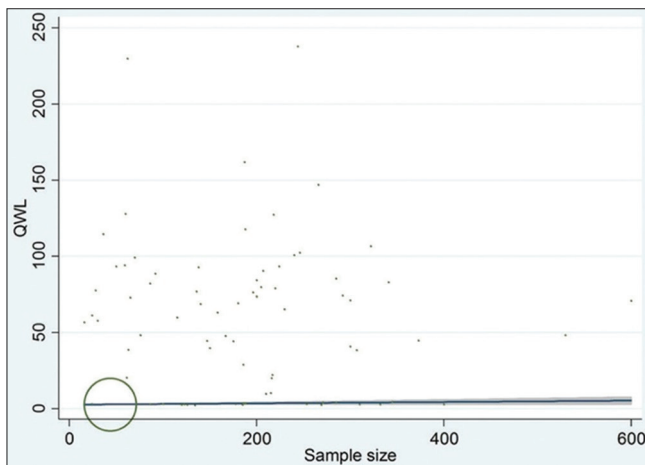


Figure 2: Relationship between the mean QWL (2011–2017) in Iran and sample size using the meta-regression model. QWL: Quality of work life

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.<sup>[106]</sup> 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.<sup>[107]</sup>

Hamburg et al. reported that the quality of life of workers will improve by increasing the salary levels.<sup>[108]</sup> A study in Chicago reported that the QWL of nurses working in

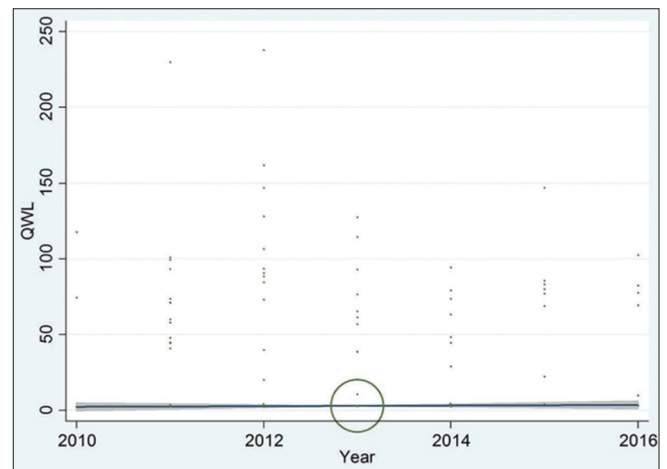


Figure 3: Relationship between the mean QWL (2011–2017) in Iran and the year of the research using the meta-regression model. QWL: Quality of work life

Intensive Care Units is low.<sup>[109]</sup> Kintner states that employed people have a better work life than the unemployed.<sup>[110]</sup> Among people who had a job, those with higher academic qualifications, because of having more important jobs, can have a better work life.<sup>[111]</sup> Lees and Kearns. stated that the more work experience employees had, the higher their satisfaction and QWL were.<sup>[112]</sup> 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.<sup>[16]</sup> In addition, QWL affects personnel performance and reaches its maximum goals by increasing the QWL of the organization.<sup>[21]</sup> 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 2: The mean score of QWL in Iran (2011-2017) by different questionnaires**

Name of questionnaire	Subgroups	Number of study	Mean score of QWL	Low limit*	High limit <sup>†</sup>	P	P <sup>2</sup> (%)
Walton	Total	56	49.49	48.62	50.37	<0.001	100
	Sex						
	Women	4	46.12	0	98.32	<0.001	100
	Men	4	45.25	0	103.45	<0.001	100
	Marital status						
	Single	5	46.41	15.34	77.47	<0.001	99.8
	Married	5	44.86	15.68	74.03	<0.001	99.9
	Components						
	Fair and adequate payment	27	10.7	8.41	12.99	<0.001	100
	Safe and healthy work environment	26	14.75	12.85	16.65	<0.001	100
	The opportunity for growth and sustained security	26	14.87	10.03	19.71	<0.001	100
	Legalism	26	14.3	12.07	16.53	<0.001	100
	Social affiliation	26	12.88	8.61	17.15	<0.001	100
	The overall living space	26	14.17	12.36	15.98	<0.001	100
	Integration and social cohesion	26	14.52	12.61	16.42	<0.001	100
	Development of human capabilities	26	13.29	11.52	15.06	<0.001	100
	Empowerment	2	48.76	32	65.52	<0.001	99.9
	Job performance	4	52.8	25.18	80.42	<0.001	100
	Job satisfaction	4	54.02	34.37	73.68	<0.001	100
	Organizational effectiveness	2	9.13	0	19.62	<0.001	99.6
Organizational learning	2	6.94	0	14.88	<0.001	99.9	
Job stress	3	105.93	0	238.03	<0.001	100	
Job motivation	3	29.36	12.2	46.52	<0.001	100	
Casio	Total	2	6.57	0	14.23	<0.001	99.9
Quality of nursing work life	Total	4	117.44	38.26	196.61	<0.001	99.9
	Components						
	Job satisfaction	1	106.56	104.04	109.08	<0.001	100
Dargahi	Total	2	12.1	0	28.33	<0.001	98.5
Dehghan	Total	2	58.89	0	156.37	<0.001	100
	Components						
	Fair and adequate payment	1	2.92	2.76	3.08	<0.001	100
	Safe and healthy work environment	1	3.22	3.05	3.39	<0.001	100
	The opportunity for growth and sustained security	1	2.95	2.76	3.14	<0.001	100
	Legalism	1	3.1	2.89	3.31	<0.001	100
	Social affiliation	1	3.11	2.88	3.34	<0.001	100
	The overall living space	1	2.69	2.54	2.84	<0.001	100
	Integration and social cohesion	1	3.36	3.2	3.52	<0.001	100
	Development of human capabilities	1	2.94	2.85	3.03	<0.001	100
Ghasemzadeh	Total	3	134.53	0	279.81	<0.001	100
	Sex						
	Women	1	163.39	158.84	167.94	<0.001	100
	Men	1	159.85	154.28	165.42	<0.001	100

\*Low limit of the mean score of QWL; <sup>†</sup>High limit of the mean score of QWL. QWL: Quality of work life

### 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

**Table 3: Good, Fair, and Weak QWL standards based on the Walton's questionnaire**

Studies	Good	Fair	Weak
Hadi Zadeh Talasaz.Z	0.043	0.68	0.278
Shafipour.V	0.067	0.66	0.272
Overall	6 (0.1-12)	74 (66-83)	21 (12-30)
<i>P</i>	<0.001	<0.001	0.091
<i>P</i> <sup>2</sup>	98%	83.5%	53.6%

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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