

Quality Assessment in an Occupational Health Setting Using SERVQUAL Instrument

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ABSTRACT

Good service quality is the company's ability to meet or exceed customer expectations or the degree of discrepancy between customer expectations and perceptions about the quality of offered service. This study was aimed to examine the quality gap of occupational health services in an oil & gas company of Iran. This cross-sectional study was done between March 2013 and April 2014 in Isfahan, Iran. The required data was gathered using a modified SERVQUAL instrument. A total of 194 respondents contributed in the study. Data analysis was done through. The results revealed a negative quality gap in SERVQUAL and its all five dimensions the highest and the least gap was observed in empathy and reliability dimensions, respectively. Also, the highest average gap between workers' perceptions and expectations was seen in the empathy dimension (-5.60), followed by tangibles (-5.58), assurance (-5.44), responsiveness (-5.33) and reliability (-4.65). Also, statistical differences between expectation and perception of employees were confirmed for SERVQUAL and its dimensions ($P < 0.001$). The results revealed the areas in which the studied company falls far from meeting employees' expectations. Therefore, they establish the areas in which prompt quality improvements are needed. Therefore, our findings can be used as a basis for quality planning and designing of organizational initiatives to strengthen the quality of occupational health setting. Quality improvement initiatives should be taken across all five dimensions of SERVQUAL.

KEYWORDS: *SERVQUAL, Quality gap, Customer satisfaction, Occupational health services*

INTRODUCTION

The quality of anything is a part of its nature [1]. It is defined as a post-consumption assessment of goods and services by consumers [2]. Creating a comprehensive definition of service quality is very

difficult [3].

Based on the definition of International Organization for Standardization (ISO), quality of service is one of those features that serve to meet the customers' needs in the best manner [4]. Good service quality is the company's ability to meet or

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exceed customers' expectations [2], or the degree of discrepancy between customers' expectations and perceptions about the quality of offered service [5].

Various authors have mentioned different characteristics and dimensions for service quality. Rust & Oliver have developed a three-dimensional concept of service quality including service production, service environment and service delivery [6]. Also, according to Nordic view, service quality is constructed from two dimensions including technical and functional quality [7]. Johnston et al. have identified fifteen dimensions for service quality and grouped them in three categories as hygiene factors, reinforcing factors and dual-threshold factors [8]. However, since service quality is a subjective and abstract concept and because of the intangible and non-separable nature of services, their heterogeneity and unpredictable nature of the relationship between customer and employee, the objective measurement of service quality is quite difficult [9-10]. In recent years, a variety of techniques such as customer services appraisal, SERVQUAL, SERVPERF and sequential incident technique have been developed for assessing service quality [11]. These tools are different regarding definition, content and assessment method [12]. Among these tools, SERVQUAL is the most frequently used and the most accepted instrument which has been developed based on the gap model by marketing team of Parasuraman et al. [13]. Parasuraman developed a framework called SERVQUAL that measures customer satisfaction regarding the perception-expectation gap. If perceptions exceed expectations, customers are satisfied (positive P-E gap). If their expectations are not met, customers are dissatisfied (negative P-E gap), and when their expectations match their perceptions, customers receive what they expected and therefore they are neither satisfied nor dissatisfied. Original SERVQUAL instrument was consisted of 10 dimensions of service quality which were later revised and regrouped in 5 dimensions including: reliability (ability to work properly or ability to perform service in an accurate manner), responsiveness (willingness to create help and prompt service for the customer), assurance (knowledge and courtesy of the employees), empathy (providing personal attention and care to customer) and tangibles (appearance of physical factors such as equipment, facilities and staff) [14-15]. Although there are some theoretical and operational criticisms about SERVQUAL, many studies have confirmed its validity and reliability for measuring service quality [16-17]. This tool has been widely used in various industries such as healthcare centers [18-19], hospitals [20,22], universities and training centers [3, 23], and retail industry [24].

Occupational health care is a key component of public healthcare systems. Occupational health services include those activities, which involve protecting the workers and improving the job and working conditions. Improvement of working conditions and working environment is a measure of success in social and economic policies and plays an important role in national development. Therefore, World Health Organization's global strategy, "occupational health for all", demands countries to take appropriate activities to provide competitive occupational health services for all individuals at the workplace [25]. Also, in recent years, much attention has been paid to the quality of occupational health services [26] and much interest has been made to evaluate the efficiency and effectiveness of these services. However, there is a lack of empirical published studies in this area [25].

Therefore, the aim of this study was to determine the gap of occupational health services quality by using a modified SERVQUAL instrument.

MATERIALS AND METHODS

The SERVQUAL scale instrument was modified to measure the quality of occupational health services in an oil and gas company in Isfahan, Iran. Expectation and perception items were developed by literature search and consulting experts such as local healthcare professionals and academic staffs. The questionnaire was measured respondents' expectations and perceptions on five dimensions of service quality: reliability, responsiveness, assurance, empathy, and tangibles. In total, 25 items were selected to capture these five dimensions of service quality. The questionnaire was divided into two sections. The right side measured costumers' perception, and the left side measured the costumers' expectations like SERVQUAL instruments [13]. The questionnaire also included questions regarding respondent demographics (age, job history, gender, and educational level). The SERVQUAL measures customer satisfaction regarding the perception-expectation gap. If perceptions exceed expectations, customers are satisfied. If their expectations are not met, customers are dissatisfied, and when their expectations match their perceptions, customers receive what they expected and therefore they are neither satisfied nor dissatisfied.

The modified SERVQUAL questionnaire content and face validity were confirmed by a panel of experts (academic staffs in health promotion, occupational health and health service management). Twenty workers participated in a pilot study to determine the internal consistency of constructs. Cronbach's alpha of the constructs ranging from 0.70-0.86, showed an acceptable

internal consistency. Table 1 shows the detailed description of constructs.

Table 1. Characteristics of the designed SERVQUAL questionnaire

Construct	Sample Questions	Number of items	Scale and Scoring	P	E	Possible Range
Tangibles	Provision of sufficient protective equipment	5	5- point Likert scale*	0.850	0.828	5-25
Reliability	Solid knowledge of occupational health by OHS** person	4	5-point Likert scale*	0.886	0.826	4-20
Responsiveness	Efficient communication with workers by OHS persons	5	5- point Likert scale*	0.930	0.891	5-25
Assurance	Corrective measures proposed by OHS persons are justifiable	6	5- point Likert scale*	0.761	0.883	6-30
Empathy	OHS persons have empathy with workers	5	5- point Likert scale*	0.751	0.732	5-25

P: perception; E: expectation; OHS: Occupational health and safety

* Completely disagree=1, disagree=2, no idea=3, agree=4, and completely agree=5

Questionnaires were distributed to a total of workers who visited the oil and gas clinic in Isfahan. A total of 230 questionnaires were distributed to respondents; of these, 194 were returned and used for further analysis. The survey procedure included all oil and gas industry workers who came to the one selected clinic of Oil Company in Isfahan between 22 Mar 2013, and 19 Apr 2014. Questionnaires were given to subjects by Anonymous occupational hygienists. After responding process, all responses were entered into Microsoft Excel software and then evaluated for descriptive parameters (mean expectation, mean perception). Quadrant charts are drawn by Originpro software, version 8.5.1 (OriginLab, Northampton, MA). All statistical tests and inferences were conducted by SPSS 20.0 for Windows (SPSS Inc, Chicago, IL, USA).

RESULT

Descriptive results: From 230 distributed questionnaires, 194 (84.3%) were returned. Age of participants was in the range of 20 to 66 years (mean=36, SD= 8.1). From 194 respondents who retrieved the questionnaires, 186 (95.9%) were male, and only eight (4.1%) were female. Only 63 respondents (32.5%) had university degrees. Distribution normality of expectations and perceptions were checked by Kolmogorov-Smirnov test. The expectation had a normal distribution ($P=0.2$), but the perception was significantly deviated from a normal distribution ($P<0.001$). Respondents, in general, had a higher level of perception (mean=112.29, SD=18.85) than expectation (mean= 82.92, SD=21.44), which this difference was statistically significant ($P<0.001$).

There was no correlation between expectation and perception in participants ($P=0.144$).

Respondents reported their expected importance of 25 attributes between 4.21 and 4.54 in average in 5-point Likert scales. However, there was no obvious pattern in preferring one specific scale to another regarding expectation scale. In perceived attributes, scores were in the range of 3.03 to 3.80. Relatively assurance attributes gained the highest scores in perceived section.

Also, the highest average gap between workers perceptions and expectations was seen in the empathy dimension (-5.60), followed by tangibles (-5.58), assurance (-5.44), responsiveness (-5.33) and reliability (-4.65).

Scales

Tangibles: In all situations, there was a statistically significant difference between mean perceived and mean expected values (Table 2). Negative perception-expectation (P-E) gap was observed for mean attributes of tangibles in different educational classes, job histories and genders ($P<0.05$). However, there were no significant differences in observed tangibles P-E gap in different genders ($df=9.44$, $t=2.94$, $P=0.775$), educational levels ($df=149.28$, $f=1.51$, $P=0.132$) and job history ($df=33$, $f=0.723$, $P=0.861$). Only 17.5% ($n=34$) of participants reported a positive P-E gap in the attributes of tangibles. Quadrant analysis on tangible attributes showed that none of the attributes lies in quadrant 1. Attributes 1, 4 lied in quadrant 3. Attributes 2 and 3 lied in quadrant 4 and showed the urgent need for revisit and improvement.

Table 2. Tangible dimensions' scores

Parameter		Expectation				Perception				Perception-Expectation Gap		
		Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	P-value
Sex	Male	16.49	4.45	5	25	21.97	3.59	6	25	-5.57	5.80	<0.001
	Female	17.75	2.19	13	20	23.71	1.11	22	25	-5.86	2.34	0.001
Education	School	16.42	4.72	5	25	21.57	3.83	6	25	-5.18	6.23	<0.001
	University	16.80	3.60	8	24	22.98	2.65	12	25	-6.41	4.30	<0.001
Job	<5 years	16.20	3.03	12	20	23.40	0.89	23	25	-7.20	3.19	0.007
History	5-10 years	17.10	3.50	11	25	22.34	3.33	12	25	-5.45	4.85	<0.001
	>10 years	16.43	4.59	5	25	21.92	3.65	6	25	-5.55	5.95	<0.001
Total	-	16.54	4.38	5	25	22.04	3.54	6	25	-5.58	5.70	<0.001

Reliability: The significantly negative P-E gap was observed in reliability dimension in total and all subgroups ($P<0.0001$) (Table 3). Comparison of the mean score of reliability attributes showed a significant difference between male and female scores in both expected ($P=0.001$) and perceived ($P=0.013$) sections. However, only the expectation mean value was different regarding

the level of education ($P=0.02$). Those with university degrees had higher expectation values. There was also no difference in perceived and expected reliability regarding participants' job history. From four attributes related to reliability scale, three were in quadrant 3, and only one attribute was in quadrant 1.

Table 3. Reliability dimensions' scores

Parameter		Expectation				Perception				Perception-Expectation Gap		
		Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	P-value
Sex	Male	12.59	3.73	4	20	17.15	3.69	4	20	-4.68	5.15	<0.001
	Female	15.13	2.17	13	20	19.25	1.16	17	20	-4.13	1.96	0.001
Education	School	12.83	4.01	4	20	16.87	4.09	4	20	-4.19	5.59	<0.001
	University	12.43	3.02	6	20	17.98	2.33	10	20	-5.56	3.64	<0.001
Job	<5 years	11.60	2.19	8	14	18.20	1.92	15	20	-6.60	1.14	<0.001
History	5-10 year	12.44	3.26	6	20	18.06	2.89	6	20	-5.61	4.18	<0.001
	>10 year	12.80	3.86	4	20	17.00	3.83	4	20	-4.34	5.30	<0.001
Total		12.70	3.71	4	20	17.24	3.64	4	20	-4.65	5.05	<0.001

Responsiveness: In all situations, there was a statistically significant difference between mean perceived and mean expected values (Table 4). The negative P-E gap was observed for mean responsiveness attributes in different educational levels, job histories and genders ($P<0.05$).

Quadrant analysis on responsiveness attributes showed that none of the attributes lied in quadrant 1. Attribute 5 lied in quadrant 2 and showed the urgent need for revisit and improvement. Attributes 1, 2 and 3 lied in quadrant 3 and attributed four lied in quadrant 4.

Table 4. Responsiveness dimensions' scores

Parameter		Expectation				Perception				Perception-Expectation Gap		
		Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	P-value
Sex	Male	16.32	5.05	5	25	21.65	4.74	5	25	-5.31	<0.001	<0.001
	Female	18.63	2.33	15	23	24.38	0.74	23	25	-5.75	<0.001	0.001
Education	School	16.89	5.11	5	25	21.21	5.19	5	25	-4.37	<0.001	<0.001
	University	15.47	4.62	5	25	22.92	3.05	8	25	-7.27	<0.001	<0.001
Job	<5 years	17.00	1.41	15	19	23.20	1.10	22	25	-6.20	0.001	<0.001
History	5-10 year	15.89	5.23	5	25	23.09	2.61	14	25	-6.94	<0.001	<0.001
	>10 year	16.52	5.02	5	25	21.40	5.05	5	25	-4.91	<0.001	<0.001
Total		16.42	4.92	5	25	21.76	4.67	5	25	-5.33	6.17	<0.001

Assurance: In all situations, there was statistically significant difference between mean perceived and mean expected values (Table 5). The negative P-E gap was observed for mean assurance attributes in different educational levels, job

histories and genders ($P<0.05$). Quadrant analysis of assurance attributes showed that attributes 1, 3 and 5 lied in quadrant 1. None of the attributes lied in quadrant 2. Attribute 6 lied in quadrant 3 and attributed 2 and four lied in quadrant 4.

Table 5. Assurance dimensions' scores

Parameter		Expectation				Perception			Perception-Expectation Gap			
		Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	P-value
Sex	Male	20.84	5.35	6	30	26.23	5.02	6	30	-5.45	5.15	<0.001
	Female	23.63	2.83	18	26	28.88	0.99	27	30	-5.25	1.96	<0.001
Education	School	21.49	5.61	6	30	25.85	5.55	6	30	-4.45	5.59	<0.001
	University	19.95	4.49	8	30	27.33	3.21	14	30	-7.39	3.64	<0.001
Job History	<5 years	21.20	2.28	19	24	28.00	2.00	26	30	-6.80	1.14	0.01
	5-10 year	19.71	5.46	8	30	27.29	4.04	9	30	-7.94	4.18	<0.001
	>10 year	21.25	5.31	6	30	26.06	5.18	6	30	-4.82	5.30	<0.001
Total		20.96	5.30	6	30	26.34	4.94	6	30	-5.44	6.37	<0.001

Empathy: In all situations, there was a statistically significant difference between mean perceived and mean expected values (Table 6). The negative P-E gap was observed for mean empathy attributes in different educational levels, job histories and genders ($P<0.0.5$). Quadrant analysis of assurance attributes showed that attributes 1, 2, 3 and 4 lied in quadrant 1 and attributed five lied in quadrant 2, and none of the attributes lied in

quadrant 3 and 4. Also, we see that the highest average gap between worker perceptions and expectations exists in the empathy dimension. Among the empathy attributes in the empathy dimension, worker responses indicated that the greatest gap existed in the attribute 5. The next greatest gap existed in attributes 1, 2, 3 and 4. To reduce the gap in empathy, the company, therefore, needs to make improvements in this dimension.

Table 6. Empathy dimensions' scores

Parameter		Expectation				Perception			Perception-Expectation Gap			
		Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	P-value
Sex	Male	16.72	5.62	5	25	22.41	4.05	5	25	-5.65	6.25	<0.001
	Female	20.25	2.96	14	24	24.75	0.71	23	25	-4.50	3.02	0.004
Education	School	17.12	5.93	5	25	22.23	4.46	5	25	-5.06	6.68	<0.001
	University	16.35	4.74	5	25	23.08	2.74	12	25	-6.69	4.74	<0.001
Job History	<5 years	18.20	3.11	15	22	24.20	1.30	22	25	-6.00	2.45	0.005
	5-10 year	15.89	5.39	5	25	23.14	3.02	10	25	-7.20	5.67	<0.001
	>10 year	17.05	5.67	5	25	22.30	4.23	5	25	-5.21	6.30	<0.001
Total		16.87	5.57	5	25	22.51	3.99	5	25	-5.60	6.14	<0.001

All 25 subscales of modified SERVQUAL: Fig. 1 presents the quadrant analysis of all 25 subscales of SERVQUAL dimensions. In all situations, there was a statistically significant difference between mean perceived and mean expected values (Table 7). The negative P-E gap was observed for mean empathy attributes in different educational levels, job histories and genders ($P<0.0.5$). There was no significant difference between male and female groups in

SERVQUAL scores ($P>0.05$). SERVQUAL scale was not significantly different across education levels ($P>0.05$). Table 7 shows the total SERVQUAL scores in the studied population. Only three of tangibles and two of assurance scales attributes placed in quadrant 1. Most of quadrant two attributes belonged to assurance and empathy scales. ANOVA test showed no significant difference between SERVQUAL scales across different job histories ($P>0.05$).

Table 7. SERVQUAL scores in studied population

Parameter		Expectation				Perception			Perception-Expectation Gap			
		Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	P-value
Sex	Male	82.26	21.65	26	125	110.32	18.65	34	125	-29.19	26.00	<0.001
	Female	95.38	10.14	77	110	121.29	3.09	115	124	-23.29	6.21	0.004
Education	School	83.90	23.05	26	125	109.23	20.44	34	125	-26.52	27.55	<0.001
	University	81.00	17.86	36	123	113.91	12.93	62	125	-33.51	20.24	<0.001
Job History	<5 years	84.20	9.01	75	96	117.00	3.61	113	122	-32.80	6.61	0.005
	5-10 year	81.03	21.40	36	125	115.27	10.17	86	125	-34.36	21.80	<0.001
	>10 year	83.27	21.82	26	125	109.38	20.11	34	125	-27.43	26.63	<0.001
Total		82.90	21.40	26	125	110.78	18.39	34	125	-28.91	25.43	<0.001

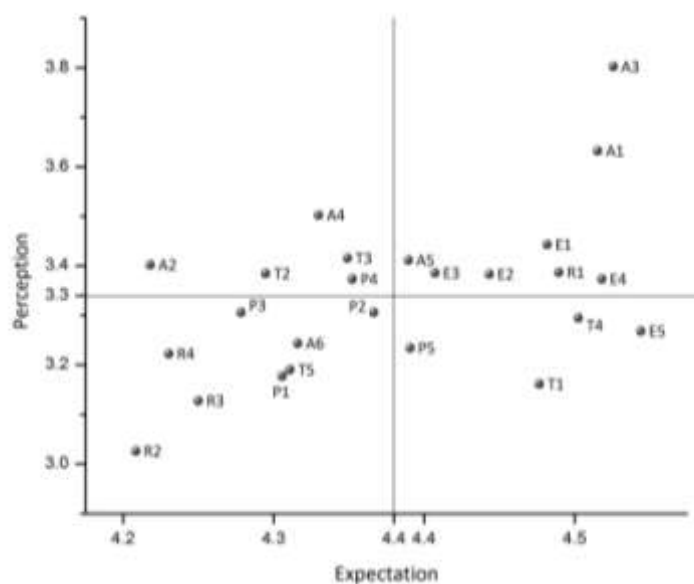


Fig.1. Quadrant analysis of SERVQUAL dimensions' subscales

DISCUSSION

The aim of this study was to investigate the quality gap of occupational health services using a modified SERVQUAL instrument in an oil & gas company in Iran. Research results revealed that the workers' expectations of SERVQUAL were not met. In all of SERVQUAL dimensions (tangibles, reliability, responsiveness, assurance and empathy), a negative P-E gap was observed. It means that quality of services in all dimensions is not satisfactory across the company because perceived quality of services is lower than expected one in all service quality dimensions. The highest average gap between workers perceptions and expectations was seen in the empathy dimension (-5.60), followed by tangibles (-5.58), assurance (-5.44), responsiveness (-5.33) and reliability (-4.65).

The widest P-E gap was found in empathy dimension. Empathy means the caring or individualized attention to customers (9-11). The average negative P-E gap of this dimension also shows that the company has been failed to care its workers as much as they expect. In this dimension, 4 out of 5 items (E1: safety personnel behave well to workers, E2: safety personnel have interest to work:, E3: safety personnel has a good relationship with workers: E4: workers express their opinions without fear) were in quadrant 1 (high expectation-high perception) and only 1 item (E5: safety personnel has a true perception of work condition) was in quadrant 4 (high expectation-low perception). This disparity reveals that the empathy is an important dimension of SERVQUAL in studied population because their expectation from all subscales of empathy is in the high range. Therefore, although the company delivered high-

quality services to some extent from the viewpoint of empathy, it should be improved as a high priority because of its importance. Also, the focus should be given mostly to E5 (safety personnel has a true perception of work condition) because of its lowest perception score among empathy items. Also, the observed negative gap of empathy in males was larger than females. As with the other dimensions, university graduates showed a larger gap than school graduates did. The largest gap in job history was observed in those between 5-10 years' job history, followed by those with less than five years and more than ten years. Therefore, the expectation was higher than perception in females and university graduates and workers with 5-10 years' job history.

The second largest P-E gap existed in tangibles. Tangible means the quality of physical facilities, equipment, and appearance of personnel (9-11). The average negative gap of tangibles indicates that the overall quality of tangibles is unsatisfactory for workers. In quadrant analysis, two items of tangibles (T1: safety unit have adequate facilities, T4: safety unit have personal protecting instrument) were in quadrant 4 (high expectation-low perception) which should be viewed as the area of poor performance that needs to be given a high priority in quality improvement initiatives. Furthermore, one item (T5: safety unit have adequate budget) was in quadrant 3 (low expectation-low perception) which requires some improvements and the last two items (T2: safety unit have appropriate location and building, T3: safety unit have adequate personnel) are in quadrant 2 (low expectation-high perception) which is the best situation in our analysis. The gap in females was larger than males. Also, university

education led to a larger gap than school education. The largest gap in job history was observed in those with less than five years followed by more than ten years and between 5-10 years' job histories. Accordingly, the expectation was higher than perception in females, university graduates, and workers with less than five years job history.

Assurance obtained the third largest negative gap among SERVQUAL dimensions in this study. Responsiveness means a willingness to help customers and provide prompt services for them (9-11). Quadrant analysis showed that three from 5 items of responsiveness namely P1, P2 and P3 (safety personnel has a good relationship with workers) are in quadrant 3 (low expectation-low perception) which their negative gap means that the company is unable to meet the low expectation of the subjects. Also, one item (P5: safety personnel has a good situation among workers) is in quadrant 4 (high expectation-low perception) that needs the critical attention to improving the image of the company in the subjects' mind. Fortunately, the last item of responsiveness (P4: safety personnel gives necessary information to workers) is in quadrant 2 (low expectation-high perception) which shows that in this item the company has a satisfactory performance. The gap in females was larger than males. What was more; university education caused a larger gap than school education. The largest gap in job history was observed in those between 5-10 years' job history, followed by less than five years and more than ten years. Accordingly, the expectation was higher than perception in females, university graduates, and workers with 5-10 years' job history.

The fourth largest negative gap was existed in responsiveness. Responsiveness means a willingness to help customers and provide prompt services for them (9-11). Quadrant analysis showed that three from 5 items of responsiveness namely P1, P2 and P3 (safety personnel has a good relationship with workers) are in quadrant 3 (low expectation-low perception) which their negative gap means that the company is unable to meet the low expectation of the subjects. Also, 1 item (P5: safety personnel has a good situation among workers) is in quadrant 4 (high expectation-low perception) that needs the critical attention to improving the image of the company in the subjects' mind. Fortunately, the last item of responsiveness (P4: safety personnel gives necessary information to workers) is in quadrant 2 (low expectation-high perception) which shows that in this item the company has a satisfactory performance. The gap in females was larger than males. What was more, university education caused a larger gap than school education? The largest gap in job history was observed in those with 5-10 years' job history, followed by less than five years and more than ten years. Accordingly, the

expectation was higher than perception in females, university graduates, and workers with 5-10 years' job history.

Reliability had the least negative gap of SERVQUAL dimensions in our study. Reliability means the ability to perform the service accurately and dependably or fair and equitable treatment [9-11]. The average negative gap in this dimension means that perceived quality in reliability dimension is lower than workers' expectation. The quadrant analysis of reliability items showed that 3 of 4 items (R2: hygiene manager can provide appropriate instrument, R3: workers have adequate ability and authority, R4: workers have adequate executive authority) were in quadrant 3 (low expectation-low perception) and the last (R1: workers have adequate knowledge on risk controlling) was in quadrant 1 (high expectation-high perception). This analysis indicates that negative gap in reliability and most of its dimensions are more frequently due to low perceived quality of services than high-expected quality. In the other words, although in three dimensions of reliability, subjects have a low expectation, the company is unable to meet this low expectation. Nevertheless, due to low expectation of workers from this dimension, it takes the lower priority in the overall priority setting of the company to improve the quality of its services. However, from the viewpoint of only the reliability of SRVQUAL, the company should have focused first on R1 (workers have adequate knowledge on risk controlling) and then on other items. Other analysis of research in reliability indicated that the gap in was larger males than females. As with the other dimensions, the gap was directly related to the level of education. The largest gap in job history was observed in those with 5-10 years' job history, followed by those with less than five years and more than ten years. Therefore, the expectation was higher than perception in females, university graduates and those with 5-10 years' job history.

Analysis of research results based on the demographic features of respondents shows that in all dimensions of SERVQUAL, the respondents with higher education reported higher P-E gap. This might be due to this fact that workers with university degrees have a higher expectation because of their knowledge and sensitivity about quality and its dimensions. In addition, the respondents with 5-10 yr of job history reported wider gap in all dimensions and the male gender in 3 dimensions reported higher gap, but we cannot discuss these results because the majority of our sample (about 96%) were males and also a high percentage of them had 5-10 years of job history.

To sum up, this study confirmed that in SERVQUAL and its all dimensions, a negative gap exists in studied company. Therefore, to improve the quality of occupational health services some

actions need to be taken. Based on our knowledge, this was the first study of this kind in Iran about occupational health services quality. For the first time, we used SERVQUAL approach in occupational health services. But, previously some other researchers have used this instrument in other settings (9, 21, 22, 26-29) who have reported a negative gap of SERVQUAL in their studies same as our results in occupational health services. As noted previously in the introduction section, the foundation of SERVQUAL instrument is the gap model (30). Based on the comparisons which form the basis of gap model if perceived performance < expected performance then it will lead to dissatisfaction (4). Therefore, our results can implicitly show a range of employees' dissatisfaction from occupational health services provided by studied company. Some other researchers in their studies have studied the satisfaction level of employees from occupational health services. Bulterys indicated in their study of different companies in Belgium that the mean score of overall satisfaction of employees from OHS is 8.3 from a maximum of 10 (26). Also, Kujala et al. have reported 76% high degree of satisfaction (31), and Mitchel et al. have reported average satisfaction of 3.8-4.1 from a maximum score of 5 (32). However, Plomp have indicated only 38-76% satisfaction from OHS (33) and Wood et al. have reported that in the studied setting employees are less satisfied from OHS than managers (34). Dyck in another research, same as ours, has investigated the quality gap between expectations and perceptions in a gas and oil company of Canada. This study has reported a high SERVQUAL and no gaps between clients' expectation and perceptions (14). But, our results confirmed a negative quality gap in studied company. Therefore, the urgent improvements are needed.

CONCLUSION

To sum up, our study indicated a negative gap quality in the studied setting. It means customers' expectations are not met, and customers are dissatisfied. The results revealed the areas in which the studied company falls far from meeting employees' expectations. Therefore, they establish the areas in which prompt quality improvements are needed. Therefore, our findings can be used as a basis for quality planning and designing of organizational initiatives to strengthen the quality of OHS. Nevertheless, our study had some limitations, which should be noted. First, the results that presented in this study are cross-sectional. Therefore, they cannot capture the effects of ongoing efforts, and their generalization should be made with caution. Also, it is notable that some authors have had some criticisms to SERVQUAL approach from its origin. The same criticisms might be attributable to our study.

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