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RESEARCH ARTICLE

COMPARISON OF QUALITY OF CARE AND WELFARE SERVICES FOR MIDDLE-AGED AND OLDER DISABLED INDIVIDUALS IN IRAN AND LEBANON USING SERVQUAL MODEL

Sedighe Sadat Tabatabaei Far[1], Negar Paydar Jahromi[2], Suhail Mahmoud Al-Zoubi[3], Abdulrazzak Abyad[4], Abdolrahim Asadollahi[5]*

1. PhD Candidate of Healthcare Services Management, Student Research Committee, School of Health Management and Information Sciences, Shiraz University of Medical Sciences, Shiraz, Iran
2. MSc. in Gerontology, Student Research Committee, Shiraz University of Medical Sciences, Razi Ave., Shiraz, Iran
3. PhD in Special Education, Dept. of Psychology, Sultan Qaboos University, Masqat, Oman
4. MPH & MD in Geraitrics, the Middle East Academy for Medicine of Aging, Lebanon
5. PhD in Gerontology, Dept. of Gerontology, School of Health, Shiraz University of Medical Sciences, Razi Ave., Shiraz, Iran

Correspondence: a.asadollahi@hotmail.co.uk & a_asadollahi@sums.ac.ir

ABSTRACT

OBJECTIVES:

The present study was conducted with the aim of investigating and comparing the quality of care and welfare services for middle-aged and older disabled individuals in Iran and Lebanon.

METHODS:

This analytical and cross-sectional study was conducted from July 2023 to April 2024. The samples included 84 middle-aged and older disable clients receiving welfare services in Iran and Lebanon, who were selected by simple random sampling. In order to measure the quality of services and the level of satisfaction, a questionnaire ServQual scale was used to determine the performance gap. The study data were interpreted using SPSS version 28 and JAMOVI version 2.3.21.

RESULTS:

The years of receiving services (YS) for Iranians and Lebanese was 18.49 (SD = 6.36), 15.7 (SD = 4.81), 20.59 (SD = 6.61) respectively. The YS and weighted ServQual (wServQual) have statistically significant deference between disabled citizens of each country ($P < 0.001$), wServQual has statistically significant deference between Lebanese men and women ($P < 0.001$), additionally wServQual has statistically significant deference between Iranian and Lebanese women ($P < 0.001$). In the comparison between two countries, there was no significant difference in the mean scores of wServQual between Iranian and Lebanese men ($P > 0.05$). But this index was significantly different between women of two nations ($P < 0.05$). In the inter-gender comparison, the mean scores of the wServQual were significantly different between Lebanese men and women, but has no significant difference in the population of Iranian men and women ($P > 0.05$). The gender in Lebanese population, and years of age and nationality among Iranian and Lebanese women have the most predictive variables on wServQual score.

DISCUSSION AND CONCLUSION:

It is recommended that by concentrating on the dimensions of the ServQual index, the effectiveness of care services for these individuals can be enhanced.

KEYWORDS
disability, middle and older adults, servqual, consumer satisfaction, Iran, Lebanon

INTRODUCTION

Population aging is a global phenomenon that is expected to affect all countries. Projections indicate that the aging population worldwide will increase from 13% to 21% by 2050, and to 28% by the end of the 21st century [1]. According to the United Nations, countries are classified into three categories based on their population structure: young, middle-aged, and older people. This classification is determined by the proportion of the population aged 60 and older. Countries with a young population have less than four percent of older individuals, while those with a middle-aged population have between four and six percent. Finally, countries with an elderly population have more than seven percent of older individuals [2].

According to the above classification, starting in 2015, Iran is classified as one of the countries with an older population [3]. Based on Iran's 1390 census, there are 3.4 million older people aged 65 and over in the country, which is equivalent to 5.7% of the total population. Demographic forecasts predict that by 1430, the number of older people aged 65 and over in Iran will increase to 18 million, with their population share reaching about 20% [4].

Preparations for programs for the older adults in Iran have been established for a long time, with various institutions taking on the task of planning for this group. The Ministry of Health, the Ministry of Welfare and Social Affairs, universities of medical sciences and research centers, pension organizations, municipalities, as well as non-governmental and charitable organizations such as Kahrizak, the relief committee, are among the institutions responsible for providing services and care to the older persons in the country [5].

Providing quality healthcare services is one of the most important elements for patient satisfaction. Only institutions with a comprehensive view of the customer and a deep commitment to meeting patient expectations can sustainably provide this type of service. Creating client satisfaction is crucial for the success of any institution, as failure to do so can result in loss of profit, growth, employment, and ultimately the business. The slogans "customer first" and "customer is our boss" are now seen as ways to achieve a competitive advantage. Quality can be a strategic differentiator that creates a unique advantage that competitors find difficult to imitate [6].

Service management is a new topic in management that has gained attention in the past decade. As competition between institutions increases, they are exploring various ways to revitalize their organizations and implement innovations to attract patients (6). Today, many health systems in countries are focusing on creating a management system to deliver quality and cost-effective services for the aging citizens [7].

For example, in Lebanon, the "Ain WaZein Center for the Aging Care" offers the most comprehensive services for the older persons. Initially, the center catered to 75 older individuals, with two-thirds being women. Currently, there is a waiting list of 150 people, prompting efforts to reorganize the center in terms of manpower and structure. The center's program includes community-oriented services and hospital services for the older adults, all connected under one system. This program could potentially be implemented at the regional or national level in Lebanon [8].

It appears that conducting studies on the quality of care services and the well-being of disabled and older individuals, as well as meeting the expectations of these service recipients, is crucial. This research aimed to investigate and compare the quality of care and welfare services for middle-aged and disabled older individuals in Iran and Lebanon in the second half of 2023.

MATERIALS AND METHODS

PARTICIPANTS AND PROCEDURES

The present descriptive-analytical study has been conducted in the second half of 2023 with the participation of 84 middle and older adults who are disables and were served during the past year in the two countries of Lebanon and Iran. The mean ServQqual difference formula obtained from a study by Ulucayli et al. (2023) was used to determine the sample size required. The sample size required was determined using software PASS (Version 15) with Power=0.95 e qual to n=84. In this study, the researcher completed questionnaires using convenience sampling method in the cities of Shiraz and Tehran of Iran and Beirut of Lebanon. All 84 questionnaires were completed since July 15 to September 20, 2023, and were fully returned to the researchers. In order to collect the data, the samples filled the questionnaires by attending in their settlements in the cities of Lebanon and Iran and using the available sampling method. Additionally, 3 experts in Arbic and Persian languages, and native in the region were employed in order to gain the trust of disables middle and older adults. At first, the questioners were given the necessary training on how to ask questions. The information is completed in the form of individual interviews with their home visits and comprehensive health service centers in the same areas. After expressing the desire of the participants with the inclusion criteria, first the informed consent form was completed and during the completion of the scales. These steps were performed for all sample in both countries during the study.

INSTRUMENTS OF STUDY

1.Demographic Information

The first part aims to gather demographic information about individuals through seven questions. These questions cover age, gender, marital status, level of education, employment status, work experience, type of disability, dependency level, and place of residence.

2.The ServQual Instrument

The second part of this questionnaire measures the perceptions and expectations of the service recipients through 22 questions across five dimensions: tangible factors (4 questions), reliability (5 questions), responsiveness (4 questions), assurance (4 questions), and empathy (5 questions). Responses are scored on a five-point Likert scale (1 = very low, 2 = low, 3 = medium, 4 = high, 5 = very high). To interpret the questionnaire, the following steps are taken:

1) After collecting the questionnaires and specifying the scores of the level of expectations and the perceived quality scores for each item, the difference of scores is obtained according to the following formula:
2) *Score difference = Perception score - Expectation score.*
3) The average score difference for each service quality dimension is obtained by evaluating the score difference of all the items that make up the dimension. This means that first, the difference in scores is added up and then divided by the number of items in that dimension. At this juncture, an evaluation of service quality can be performed. If the average value of the desired dimension is negative, it indicates that customers are not satisfied with the service. A positive value indicates their satisfaction. Utilizing these average scores allows for a comparative analysis across all five dimensions, facilitating the identification of the dimension with the highest level of customer dissatisfaction. Further analysis can be conducted in subsequent steps.
4) In the next step, researcher team calculate the sum of the averages and divide by 5 to get the average of the total ServQual score. This score is a non-weighted measurement of service quality for the assessed area.
5) To obtain a weighted score, researcher team determine the importance of the weights for all five dimensions of service quality from the ServQual scale. The sum of the weights assigned to all dimensions should total one hundred.
6) Researcher team calculate the average weighted ServQual scores for all five dimensions of service quality. The averages calculated in the second step are multiplied by the weighted scores determined in the fourth step.
7) The sum of these scores provides a weighted ServQual score for service quality in the measured area.

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DATA RELIABILITY AND VALIDITY

The reliability of this questionnaire was investigated by Rizaida et al. (2016) [9]. In their study, a reliability test was conducted to determine if the respondents' scores on each statement were related to their scores on other items. All dimensions had a Cronbach's alpha value of more than 0.6 [10], indicating the reliability of the questionnaire used [11]. Additionally, the reliability and validity of this questionnaire have been confirmed by Parasurama et al. (1993). Confirmatory factor analysis was used to check the construct validity and apparent validity of the opinions of professors and managers within the organization. The construct validity of the questionnaire and its dimensions were evaluated using confirmatory factor analysis. Reliability was assessed using the Cronbach's alpha coefficient. An alpha coefficient higher than 0.7 is considered acceptable, and all values obtained in this research were higher than 0.7, indicating that the tool has the necessary reliability [12]. In the current study, the reliability of ServQual was $\alpha = 0.671$ and McDonald's $\omega = 0.678$ for perceptions, and Cronbach's 743 and McDonald's $\omega = 0.767$ for expectations, demonstrating high reliability and acceptability of the results ($P < 0.05$).

DATA COLLECTION

After receiving the list of eligible participants in the study from social workers affiliated with both organizations in Iran and Lebanon, individuals were invited to a face-to-face meeting. They completed the necessary forms in a private and serene environment while being mindful of important details. Psychological interviews were conducted upon completion of the forms. If at any point during the interview an individual chose not to continue or participate in the study, they were replaced by the next person. The time frame for completing the questionnaires was 3 months, from May 10, 2023 to August 15, 2023, following the code of ethics schedule. It is important to note that data collection was also conducted by a Lebanese colleague in Beirut simultaneously, under the same conditions.

ETHICAL CONSIDERATION

Following approval of the project implementation permit from the Research Ethics Committee of Shiraz University of Medical Sciences on Feb. 21, 2023 (ethics committee of Shiraz University of Medical Sciences has approved the research with ethical N0: IR.SUMS.SCHEANUT.REC.1402.031), the researchers in Iran and Lebanon visited all the Social Security and Welfare Organization in Iran and Beirut for sampling and data collection and in the samples' homes. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee. The current study was carried out in accordance with the 2013 version of the Helsinki Convention (and its 2020 extentions), and the STROBE guideline (2009).

All the participants received verbal explanation about the study objectives and procedures and then signed written informed consents for taking part in the study. The participants were also reassured about the anonymity and confidentiality of their information. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments including informed consent and confidentiality of all personal information.

DATA ANALYSIS

IBM SPSS Statistics for Windows, version 28 (2021, IBM Corp., Armonk, N.Y., USA) and JAMOVI, version 2.4.8 (2023) was used to analyze descriptive statistics (mean and SD), ANOVA, mediation and moderation analsysis using Sobel test, and Regression. The significance level in all statistical tests was determined to be less than 0.05, indicating evidence against the null hypothesis.

RESULTS

Of the 86 middle-aged and older disabled in this study, 43 per cent of samples were Iranians (37) and 57% (49) were Lebanese, 59.3% (51) were women, 45.3% (39) of their literacy was less than high school, 70.9% have mobility disability and impairment, and disability ratio of 52.3% was high and the highest. About 75.7% of Iranian samples (28) married with adult children. The mean years of age for all samples, Iranians and Lebanese 66.9 (SD = 8.92), 65.46 (SD = 8.98), 68.02 (SD = 8.83) respectively and years of receiving services (YS) for all samples, Iranians and Lebanese was 18.49 (SD = 6.36), 15.7 (SD =

4.81), 20.59 (SD = 6.61) respectively. The ServQual reliability statistics were Cronbach's α = 0.671 and McDonald's ω = 0.678 for ServQual index (perceptions format) and Cronbach's α = 743 and McDonald's ω = 0.767 for ServQual index (expectations format) which means that the results of index are the high reliable and acceptable ($P < 0.05$).

According to the supplemental table, the YS, dM3, ServQual, and wServQual have statistically significant deference between disabled citizens of each country ($P < 0.001$), it means that years of receiving services (YS), for example, has significant deference between Iranians and Lebanese. Also, wServQual has statistically significant deference between Lebanese men and women ($P < 0.001$), additionally wServQual has statistically significant deference between Iranian and Lebanese women ($P < 0.001$).

Table 1 shows the mean score of weighted ServQual among disabled Iranian and Lebanese men and women. In the comparison between two countries, there was no significant difference in the mean scores of Iranian and Lebanese men ($P > 0.05$). But this index was significantly different between women of two nations ($P < 0.05$).

TABLE 1. THE T-TEST RESULTS FOR COMPARING WSERVQUAL SCORE BETWEEN IRANIAN AND LEBANESE MEN AND WOMEN

wServQual	Iranians (37)		Lebanese (49)		Student's *t*-test[1]	Effect Size Measures			
	Mean	*SD*	*Mean*	*SD*		*Cohen's d*	*Glass's Delta*	*Hedges' G*	*Cohen's U3*
Women	-44.18	16.3	28.27	7.8	t (86) = 4.185***	-1.705	-1.905	-1.665	4.8%
Men	-11.36	11.3	38.5	6.8	t (86) = 0.442 n.s.	-0.124	-0.219	-0.122	45.1%
Student's t-test[2]	t (37) = 0.879 n.s.		t (49) = -3.662 ***						
Effect Size Measures									
Cohen's *d*	0.251		-1.047						
Glass's Delta [a]	0.416		-1.030						
Hedges' G [b]	0.245		-1.102						
Cohen's U3[c]	59.9%		14.8%						

1. Independent samples t-test between Iranians and the Lebanese. 2. Independent samples t-test between Iranian & Lebanese men and women.

a. Each group has a different standard deviation.

b. Each group has a different sample sizes.

c. % of the efficacy of services to customers.

*** Statistically significant at the 1% level (p-value ≤ 0.001). n.s. = not statistically significant.

In the inter-gender comparison using t-test, the mean scores of the wServQual were significantly different between Lebanese men and women and the Cohen's d (-1.047) as effect size coefficient was found at a significance level ($P < 0.001$). This result shows that care and health services in Lebanon are gender biased. This mean score has no significant difference in the population of Iranian men and women ($P > 0.05$). Other effect size coefficients i.e. Glass's Delta and Hedges' G also show similar results for the group of Iranian and Lebanese men and women. Additionally, the coefficient of efficiency (Cohen's U3) from the point of view of Lebanese women indicates that the effectiveness of care services for the middle-aged and older disabled is 4.8% and is far from the desired services. This index was only 14.8% in Lebanese's attitude as a whole. The Cohen's U3 is between 0 and 1 and is represented as a percentage. The number 1 means 100% service efficiency from the perspective of organization's customers [13].

The results of multiple regression analysis to predict weighted ServQual score were tabulated in table 2. In three times multiple regression analysis (baseline measures F, K, & O), the coefficients that statistically was significant, were performed on the data of the total population of the two countries (86 samples), Lebanese (49 citizens), women of both countries (35 persons) with Backward method ($P < 0.05$). The most predictive model (5) in the first baseline (F), Nationality scores predicted weighted ServQual score, Adjusted $R^2 = .16$, $F (1, 84) = 6.51$, Beta = 0.268, $P = .013$. The effect size of this model with Cohen's F square was 0.451 which is highly effective. For the 4th baseline (K), four models were extracted which in fourth model with Adjusted $R^2 = .215$, $F (1, 47) = 13.412$, $P = .001$, and effect size Cohen's $F^2 = 0.524$. In this model Gender

as predictive variable has the highest predictive role with Beta = 0.471 on wServQual among Lebanese citizens. In the 3rd baseline analysis on data of all women samples, the model number 3 has the most predictive role with Adjusted R^2 = .459, F (2, 32) = 14.861, Cohen's F^2 = 1.223, $P < 0.05$. In this model, years of age and nationality 29% and 67% predict wServQual score with Beta measures -0.29 and 0.67 ($P < 0.05$). In short, it can say that nationality among total population, gender among Lebanese, and YO and nationality among Iranian and Lebanese women have the most predictive power on wServQual scores (see Table 2).

TABLE 2. THE MULTIPLE REGRESSION ANALYSIS PREDICTING WSERVQUAL SCORE

Predictive Variables	model 1 [a]	Model 2 [b]	Model 3 [c]	model 4 [d]	model 5 [e]
1- Baseline Measures [f]					
Nationality	.221*	.223*	.227*	.243**	.268**
Gender	.128*	.128*	.127*	.129	
Years Old	.014				
Years of receiving services (YS)	.044*	.045*	.044		
Disability Ratio	-.031*	-.028			
Observations	78539.194	78381.641	77708.179	76302.405	62469.445
Adjusted R^2	0.133	0.145	0.156	0.166	0.161
Effect size measure of F^2 for Models	0.329	0.402	0.436	0.479	0.451
Predictive Variables	**model 1 [g]**	**Model 2 [h]**	**Model 3 [i]**	**model 4 [j]**	
2- Baseline Measures [k]					
Gender	.477*	.476*	.481*	.471**	
Years Old	-.048*	-.049			
Years of receiving services (YS)	-.009				
Disability Ratio	-.095*	-.094*	-.115		
Observations	52368.456	52352.021	51916.478	49018.755	
Adjusted R^2	.168	.186	.202	.215	
Effect size measure of F^2 for Models	0.288	0.341	0.459	0.524	
Predictive Variables	**model 1 [l]**	**Model 2 [m]**	**Model 3 [n]**		
3- Baseline Measures [o]					
Years Old	-.278*	-.285*	-.290**		
Years of receiving services (YS)	.170	.172			
Disability Ratio	-.036				
Nationality	.597*	.598**	.670**		
Observations	114652.857	114366.313	108854.711		
Adjusted R^2	.441	.448	.459		
Effect size measure of F^2 for Models	1.192	1.202	1.223		

*p < 0.05, **p < 0.01. Method: Backward (criterion: Probability of F-to-remove >= .100).

a. Predictors: (Constant), Disability Ratio, Gender, YS, Years Old, Nationality. Method: Enter.

b. Predictors: (Constant), Disability Ratio, Gender, YS, Nationality.

c. Predictors: (Constant), Gender, YS, Nationality.

d. Predictors: (Constant), Gender, Nationality.

e. Predictors: (Constant), Nationality.

f. Dependent Variable: wServQual for all samples in both countries.

g. Predictors: (Constant), Disability Ratio, YS, Gender, YO.

h. Predictors: (Constant), Disability Ratio, Gender, YO

i. Predictors: (Constant), Disability Ratio, Gender.

j. Predictors: (Constant), Gender.

k. Dependent Variable: wServQual, Selecting only cases for which Nationality = Lebanese.

l. Predictors: (Constant), Nationality, Disability Ratio, Years Old, YS.

m. Predictors: (Constant), Nationality, Years Old, YS.

n. Predictors: (Constant), Nationality, Years Old.

o. Dependent Variable: wServQual Selecting only cases for which Gender = Female in both countries.

The results of mediation analysis have been assigned according to Table 3. Here, YS was the predictor, Nationality the mediation factor, and wServQual the dependent variable. The path c describes the direct effect of YS on wServQual, paths a × b indicates the indirect or mediated effect (Path Estimates Part of Table 3). The partial mediation occurs when both an indirect and direct effect exist simultaneously. But if there is only an indirect effect, it is called full moderation. Significant of Sobel & Aroian tests as mediation statistic coefficients confirm this indirect effectiveness [14].

TABLE 3. THE RESULTS OF MEDIATION ANALYSIS ON WSERVQUAL SCORE

Mediation Estimates

Effect	Label	Estimate	SE	95% Confidence Interval		Z	P	% Mediation	Sobel Test	Aroian Test
				Lower	*Upper*					
Indirect	a × b	1.518	0.79	-0.0304	3.07	1.921	0.001*	79	2.11	2.06
Direct	c	0.782	1.787	-2.7195	4.28	0.438	0.662	21	-	-
Total	c + a × b	2.3	1.697	-1.0264	5.63	1.355	0.175	100	-	-

Path Estimates

			Label	Estimate	SE	95% Confidence Interval		Z	P
						Lower	*Upper*		
YS	→	Nationality	a	0.03	0.0078	0.0147	0.0453	3.844	< .001**
Nationality	→	wServQual	b	50.6127	22.81267	5.9007	95.3247	2.219	0.027**
YS	→	wServQual	c	0.7819	1.78651	-2.7195	4.2834	0.438	0.002**

*p < 0.05, **p < 0.01. Sobel & Aroian tests as mediation statistic coefficients.

According to Table 3, the YS indirectly effects on wServQual about 79 per cent in mediation role [Indirect t-test = 1.52 (95% CI: -0.03, 3.07), Z = 1.92, Sobel test = 2.11, Aroian test = 2.06, $P < 0.05$]. The results show a full moderation model with a significant ($P = 0.051$) because direct effect has significant value = 0.662 ($P > 0.05$).

DISCUSION

The purpose of this study was to compare the quality of care and welfare services for middle-aged and disabled older individuals in Iran and Lebanon in the second half of 2023. The results of the current research showed the quality of care and welfare services in Lebanon and Iran across 5 dimensions: reliability, trust, tangible factors, empathy, and responsiveness.

The findings indicated significant differences in the years of receiving services (YS) between Iranians and Lebanese, with gender affecting healthcare services in Lebanon. Lebanese women rated the effectiveness of care services for middle-aged and older disabled individuals at 4.8%, falling short of optimal services. Nationality, gender among Lebanese, and YO and nationality among Iranian and Lebanese women were found to have the highest predictive power in wServQual scores. Additionally, YS indirectly impacted wSevQual by about 79% in a mediating role. This aligns with a study by Rahmani et al. (2022) where all quality dimensions were negative based on ServQual, indicating unsatisfactory primary healthcare services [15].

The ServQual scores demonstrated that Shiraz, while having a higher overall service quality score for both expectations (90.68) and perceptions (95.62) compared to Beirut (expectations: 84.79, perceptions: 80.69), still exhibited a gap between expectations and actual service delivery. This gap signifies unmet needs for disabled individuals in both cities, reflecting systemic inefficiencies and resource limitations. These findings align with Parasuraman et al. (1988) [16], who emphasized

that gaps between expectations and perceptions are common in healthcare and welfare services, particularly for vulnerable populations.

The results underline the importance of addressing service delivery gaps through targeted interventions, particularly for individuals with specific challenges, such as high dependency levels, longer years of service, and limited educational attainment.

In both Shiraz and Beirut, women face huge barriers to receiving care, especially those who have speech and mental disabilities. Public health services should be able to institute specific programs for women with disabilities, including mental health support, speech therapy, and vocational education. Evidence shows that women with disabilities often experience intersecting social and economic challenges [17]. Programs for outreach aimed at women with disabilities tend to reduce stigma and increase seeking and utilizing services. On the other hand, Policies should aim at increasing the possibilities for men with loco-motor disabilities to participate in work life to increase their level of independence and social integration. Speech and mental disabilities were slightly more prevalent in Beirut than in Shiraz, particularly among women. Public health services should expand access to speech therapy, counseling, and psychiatric care in community-based settings. Early diagnosis and intervention programs should also be established to address these disabilities proactively.

In a study by Rumi et al. (2021) on "Patients' satisfaction with the quality of services of upazila health centers in Bangladesh," results showed overall service quality at UHC was not very satisfactory, leading to significant mistrust and poor patient satisfaction. Male patients were relatively more satisfied than female patients, suggesting gender inequality and discriminatory attitudes towards women in healthcare services [18].

A study in Sibenik, Croatia by Muje et al. (2015) evaluating primary healthcare services found public institutions did not meet patient quality service expectations. While primary health services need improvement in all dimensions, demographic variables like age and gender did not significantly impact perceptions of service quality [19].

Fan et al. (2017) found in their study on "Patients' perception of service quality in China: a survey using the ServQual model" a significant gap between expected and perceived service quality before and after medical services. The service quality gap was negative across all service dimensions [20].

Abdullah's study in Saudi Arabia in 2022 revealed a gap between perceived service quality and expected services in comprehensive rehabilitation centers for individuals with mental disabilities across all dimensions [21].

In Sharifirad et al.'s (2012) study titled "Quality Gap in Primary Health Services in Isfahan: Women's Perspective," findings showed disagreement among women in all 5 dimensions, with tangible factors having the largest quality gap. This indicates that customers' expectations exceed their current understanding, leaving ample room for service improvement and enhanced customer satisfaction [22].

In the study by Sharifi et al. (2021), conducted in Mashhad, the average scores of expectations and perceptions of health service users were 4.97 and 3.26, respectively. Additionally, the total service quality gap was (-1.707), indicating that the services provided do not meet the expectations of service users [23].

The results of Hosseini et al.'s study (2018) titled "Correlation of work ethics and the service quality gap in the rehabilitation centers of Isfahan City Welfare Organization" regarding the service quality gap showed a negative gap in all dimensions of service quality. This means that the expectations of clients regarding the services received were higher than their perception of the services received. The biggest gap was related to the dimension of tangibility, while the smallest gap was related to the guarantee of services, indicating that clients' expectations from the services provided were not met [24].

In Kim's (2006) study titled "Measuring citizens' satisfaction with the quality of contracted public services," a significant difference in satisfaction between women and men was observed. All estimated coefficients were insignificant in the male group, while the coefficients of concrete factors and reliability were significant predictors of overall satisfaction in the female group. A possible interpretation of this result is that female users pay attention to the details of the service delivery process, while male users apply a more comprehensive mechanism to evaluate satisfaction with the service provided [25].

The findings of the study by Li et al. (2015) showed that in all aspects of service quality, it exceeded the expectations of its customers, which contrasts with the results of the present study [26]. This difference may be attributed to the type of service, customers, location, and society. Additionally, China's health and treatment system has made extensive improvements in the disease care system, leading to increased quality of services for service recipients.

The findings of Fathi et al.'s study (2019) revealed that the dimension of immediate attention was the most important in most studies related to health and treatment services. However, in rehabilitation centers, clients placed greater importance on aspects such as participation in decisions and the right to choose. This could indicate a difference in the nature of healthcare services and rehabilitation services [27].

Previous studies indicate that the lack of specialized treatment facilities in hospitals can cause widespread dissatisfaction among the elderly [28]. Mojeh et al.'s study demonstrated that physical appearance is the second most important factor for service delivery and can significantly impact the level of patient satisfaction (17).

Individuals with longer years of service often require more comprehensive care plans, including regular reassessments of their needs and improved long-term care support. Health managers should establish periodic care evaluations to ensure that services remain aligned with the evolving needs of these individuals. Additionally, introducing respite care services for caregivers can alleviate the burden on families also early interventions, such as skill development programs and access to assistive technologies, can help reduce long-term dependency.

Service providers should invest in community-based rehabilitation programs and in-home care services. These programs can reduce the burden on families and improve the quality of life for individuals with high dependency. Individuals with lower dependency levels should be integrated into vocational training programs and independent living initiatives. For instance, job training programs for individuals with locomotor disabilities can enable them to contribute economically and socially.

CONCLUSION

This study provides a comprehensive analysis of the quality of care and welfare services for middle-aged and older disabled individuals in Shiraz, Iran, and Beirut, Lebanon, using the ServQual model. The findings reveal significant disparities in service quality perceptions between the two cities, as well as within demographic subsets such as gender, years of service, dependency levels, and educational attainment. Despite Shiraz demonstrating higher overall ServQual scores compared to Beirut, both cities exhibit notable gaps between individuals' expectations and the actual quality of services received, reflecting unmet needs and systemic inefficiencies in disability care.

A key insight from this research is the influence of socioeconomic and cultural factors on service quality. For example, the higher prevalence of loco-motor disabilities in Shiraz underscores the need for greater investment in assistive technologies and mobility-related services, while the higher prevalence of speech and mental disabilities in Beirut highlights the necessity of expanding mental health and speech therapy programs. Furthermore, gender-specific disparities in access to care, particularly the vulnerabilities faced by women with disabilities, emphasize the importance of designing gender-sensitive policies and programs. The education gap in Shiraz, where the majority of participants had less than a diploma, also points to the critical role of education in improving self-advocacy and access to care among disabled individuals.

LIMITATIONS AND SUGGESTIONS

From the limitations of this study, it can be said that the subjects were Arabic-speaking, so Arabic-speaking assistants were utilized. Additionally, some participants did not cooperate with the research team, making access to them challenging. It is recommended that in order to enhance the quality of care and welfare services for middle-aged and disabled older persons in Iran and Lebanon, suitable policies and plans should be developed at the Ministry of Health and welfare organizations' level. Furthermore, by concentrating on the dimensions of the ServQual tool, the efficacy of care services for these individuals can be enhanced.

DECLARATIONS

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Authors' Contribution

NPJ has collected the data and interviewed the samples, SST has written the introduction and discussion, AAs analyzed the data and wrote the method and results. SMA and AAb have made comments and corrections in final analysis and preparing the final format of manuscript. All authors read and approved the final manuscript.

Patient Consent

Written and verbal consent of samples was obtained before participating in the study.

Supplementary Material

Supplementary material for this article is available online.

Availability of Data & Materials

The datasets generated and/or analysed during the current study are available from the authors upon reasonable request and with the permission of SUMS.

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Conflict of Interest

The author declares no conflict of interest, financial or otherwise.

Human & Animal Rights

No animals were used for studies that are the basis of this research. This research was conducted on humans are in accordance with the Helsinki Declaration of 1975, as revised in 2013 (http://ethics.iit.edu/ecodes/node/3931).

Consent for Publication

Not applicable.

The Standard for Reporting

The STROBE guidelines and methodology were followed during this study.

Ethical Considerations

Ethical matters e.g. plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been totally observed by the authors. All the participants received verbal explanation about the study objectives and procedures and then signed written informed consents for taking part in the study. The participants were also reassured about the anonymity and confidentiality of their information. Also, the ethics committee of Shiraz University of Medical Sciences has approved the research with ethical N°: IR.SUMS.SCHEANUT.REC.1402.031 on February 21, 2023. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments including informed consent and confidentiality of all personal information.

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APPENDIX

SUPPLEMENTAL TABLE 1. DESCRIPTIVES CHARACTERISTICS OF SERVQUAL AND ITS DOMAINS

	Nationality	Gender	N	Mean	Median	SD	Variance	IQR [j]	Minimum	Maximum	P [k]	P [l]	P [m]
Years old	Iranians	Male	26	65.61	66.5	9.67	93.5	17.25	50	80	0.267	0.190	0.235
		Female	11	65.09	64	7.52	56.6	11	51	76			0.247
	Lebanese	Male	25	68.56	71	9.01	81.1	17	51	80	0.447		
		Female	24	67.45	67	8.81	77.6	14.2	53	81			
YS [a]	Iranians	Male	26	16.07	16	4.21	17.7	6.25	11	28	0.422	**<.001***	0.587
		Female	11	14.81	13	6.14	37.7	6.5	8	27			0.577
	Lebanese	Male	25	19.8	22	6.03	36.4	11	10	28	0.266		
		Female	24	21.41	22.5	7.20	51.9	13	10	30			
Mean [b]	Iranians	Male	26	-0.042	0.022	0.62	0.39	0.79	-1.523	1.091	0.045	0.009	0.439
		Female	11	-0.617	-0.409	1.04	1.09	1.06	-2.545	0.932			0.002
	Lebanese	Male	25	0.085	0.136	0.53	0.28	0.68	-1.273	1.091	0.732		
		Female	24	0.246	0.159	0.47	0.22	0.61	-0.5	1.045			
dM1 [c]	Iranians	Male	26	-0.153	-0.25	1.22	1.49	1.75	-2.5	2	0.548	0.541	0.991
		Female	11	-0.340	-0.25	2.05	4.22	1.87	-5.75	1.75			0.399
	Lebanese	Male	25	-0.15	-0.25	1.32	1.76	1	-3	3	0.405		
		Female	24	0.083	0	0.91	0.83	1	-1.5	2.25			
dM2 [d]	Iranians	Male	26	0.023	-0.4	1.41	1.99	2.8	-1.8	2.2	0.517	0.105	0.435
		Female	11	-0.327	-0.2	2.01	4.04	2.4	-5	2.2			0.136
	Lebanese	Male	25	0.304	0.6	1.10	1.23	1.6	-1.8	2.2	0.759		
		Female	24	0.508	0.7	1.21	1.47	1.65	-1.6	2.6			
dM3 [e]	Iranians	Male	26	-0.230	-0.125	1.54	2.39	2.37	-3	2	0.537	**<.001****	0.004
		Female	11	-0.727	-0.75	1.84	3.39	2	-5	1.75			0.069
	Lebanese	Male	25	0.97	1.25	1.31	1.73	1.25	-2.5	2.75	0.490		
		Female	24	0.25	0.5	1.20	1.45	1.25	-2.5	2.75			
dM4 [f]	Iranians	Male	26	0.173	0	1.57	2.48	1.75	-2.75	2.75	0.272	0.498	0.358
		Female	11	-0.204	0	1.66	2.77	1.12	-4.5	1.5			0.882
	Lebanese	Male	25	-0.23	-0.25	1.52	2.32	2.25	-3	4	0.479		
		Female	24	-0.114	0.375	1.65	2.72	2.56	-2.5	3.25			

SUPPLEMENTAL TABLE 1. DESCRIPTIVES CHARACTERISTICS OF SERVQUAL AND ITS DOMAINS

	Nationality	Gender	N	Mean	Median	SD	Variance	IQR [j]	Minimum	Maximum	P [k]	P [l]	P [m]
dM5 [g]	Iranians	Male	26	-0.530	-0.7	1.39	1.93	1.95	-3.2	2	0.542	0.092	0.117
		Female	11	-0.381	-0.8	1.20	1.44	1.8	-1.6	1.8			0.329
	Lebanese	Male	25	0.104	0	1.44	2.09	2	-3.2	2.8	0.052		
		Female	24	0.075	0	1.29	1.66	1.45	-2.2	2.8			
ServQual [h]	Iranians	Male	26	-0.143	-0.34	0.96	0.92	1.51	-1.75	1.51	0.801	**<.001***	0.137
		Female	11	-0.396	-0.34	1.45	2.12	1.15	-4.29	1.07			0.115
	Lebanese	Male	25	0.199	0.16	0.61	0.37	0.89	-1.39	1.42	0.822		
		Female	24	0.160	0.285	0.59	0.35	1	-1.02	1.26			
wServQual [i]	Iranians	Male	26	-11.11	-9.5	11.3	12177.38	160.8	-192.5	181.5	0.491	**<.001****	0.661
		Female	11	-44.18	-18	16.3	27331.21	127.5	-464.5	142.5			**<.001*****
	Lebanese	Male	25	38.5	37.5	6.8	4331.47	98	-113.5	152	**0.001*****		
		Female	24	28.27	39	7.8	5024.36	77.1	-137	155			
	Total Population	--	86	10.1	11.5	10.1	10229	134	-465	182			0.385[n]

*a. Years of receiving services, b. mean score of differences between customers' perceptions and expectations. c. mean score of differences of domain 1's items, d. mean score of differences of domain 2's items, e. mean score of differences of domain 3's items, f. mean score of differences of domain 4's items, g. mean score of differences of domain 5's items, h. mean score dM1 to dM5, i. weighted ServQual = (dM1*10) + (dM2*40) + (dM3*30) + (dM4*10) + (dM5*10), j. IQR = interquartile rate, k. P<0.05 between men & women of each country, l. P < 0.05 between Iranian and Lebanese citizens, m. P < 0.05 between Iranian and Lebanese men & women separately. n. Using One-sample t-test, P > 0.05.*

** Cohen's d as effect size measure = -0.46 (-0.91 to -0.02), ** Cohen's d as effect size measure = -0.55 (-0.99 to -0.11), *** Cohen's d as effect size measure = -1.71 (-2.518 to -.872), ****Cohen's d as effect size measure = -1.047 (-1.64 to -0.44).*

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