Gaps Between Users Expectations and their Perceptions on Service Quality of College Libraries of Shahid Beheshti University of Medical Sciences: A Case Study

Rezvan Ghaedi[#], Saeideh Valizadeh-Haghi[#,*], Elaheh Ahmadi[#],
Zahra Zeraatkar[$] and Ahmad Reza Baghestani[#]

[#]*Shahid Beheshti University of Medical Sciences, Tehran, Iran.*
[$]*Shiraz University of Medical Sciences, Shiraz, Iran*
[*]*E-mail: saeideh.valizadeh@gmail.com*

ABSTRACT

The purpose of the present research is to evaluate the service quality of medical college libraries of Shahid Beheshti University of Medical Sciences from the users' perspective based on the LibQUAL+ model. Furthermore, is to make a comparison between perceived quality in terms of users' different education level. The data were collected from 119 questionnaires which were responded by 13 college libraries' clients by administering the LibQUAL+ questionnaire in a printed format. The findings revealed that college libraries have been failed in satisfying even the minimum expectations of their users as well as could not meet the customers' desired expectations that make them fully satisfied with the service quality. This study also revealed a wide gap between users' perceptions and expectations of service quality. The effect of services dimension is the most satisfying dimension. Furthermore, findings showed that the relationship between education level and satisfying with the service quality is statistically significant (P<0.001). It is necessary for the university managers to pay more attention to the quality of library services equally in all the colleges included. This will lead to help libraries to meet the user's expectations of service quality in all colleges which will lead to academic improvements.

Keywords: Medical library; Library performance; College library; Library assessment; Quality assessment; LibQUAL+; Service quality.

1. INTRODUCTION

One of the important factors in the growth and development of a country is the existence of rich and high-quality libraries based on clients' demand. The libraries of medical sciences universities are of importance due to the collection and dissemination of accurate and up-to-date information for the medical community. Furthermore, they have an important role in the growth and training of medical specialists and the achievement of health programs. Improving the service quality of these libraries can play a significant role in public health. The efficiency and effectiveness of the service quality of the medical sciences academic libraries based on the users' expectations and the extent to which they meet their needs, have always been the subject of attention. The satisfaction of users depends on the quality of the library service, and Ranganathan, the great philosopher of library and information science, has always had a special attention to the library users, and he believed that librarians should always "give correct information to the right users at the right time"[1]. All libraries, including academic libraries, need to evaluate the quality of their services in order to be aware of their quality and their users' satisfaction with existing services.

The evaluation of the quality of library services has been around since 1995. There are different tools for assessing the quality of library services, one of which is the LibQUAL model. The LibQUAL Model, in collaboration with the Research Libraries Association and the Texas A&M University in 1999, has been created in line with users' expectations, and is a way to address their demands[2]. According to the definition given on the LibQUAL website, it is an evaluation model, and a set of actions that are performed in order to ask, track, and understand users' viewpoints about the service quality of libraries, and this model helps to understand the gaps in quality and to improve services[3]. It tries to identify and analyse the gap between expectations and clients' perceptions. The tool consists of 22 core items that examine the quality of the library services, in three dimensions of the effect of services, information control, and library as a place[4,5] and measure the quality of library services in each of these dimensions at three levels of minimum, maximum and perceived.

The "minimum level" is a level of services, which if a library provides to users, they will not be dissatisfied but their full satisfaction will not be met. The "maximum level" is the expected level as well as a level, which if a library provides to users, they will be completely satisfied. The "perceived level" is the amount of services that a library currently provides to users[4].

2. LITERATURE REVIEW

Numerous researches have considered the university

libraries evaluation, and LibQUAL is broadly used by libraries to understand the quality of services. In some studies, the minimum level of user expectations has been met in all three dimensions. In this regard, Nasibi and Lau research can be noted[6-7]. Lau in 2018 conducted a LibQUAL study to Evaluate library service quality of Georgia Southern University. The research findings showed that the library has met the minimum expectations of users in all dimensions of LibQUAL; however, the service quality could not meet the maximum expectations of the users. In 2019, a study was performed to assess students' perceptions and expectations of library services at Hospital Libraries by LibQUAL tool. The results showed that the level of library services in all dimensions of LibQUAL has been met the minimum expectations of users; however, none of the dimensions could meet the maximum expectations of users[7]. Nevertheless, in some other researches, even the minimum expectations have not been met. In this regard, Jyothi Mallya and Valsaraj Payini conducted a research to evaluate the satisfaction of hospitality students towards library services in Karnataka, India. The findings showed that the affect of service was the most and the library as a place was the least satisfying dimensions. In this regard, even the minimum expectations of users have not been met[8]. Some other reveals that users' minimum expectations were not met only in one or two dimensions. In this regards, in few studies, the minimum expects has not been met in effect of services dimension [9–11] and in few studies, the Information Control dimension was not fulfilling the expects[9,12–14] and in few studies the minimum expects has not been met in the library as a place dimension[10,15].

In very limited studies the maximum expectation of users has been met. In this regards, Leonila Cuevas Reyes in 2019, conducted a LibQUAL study to evaluate the service quality of Saint Louis University libraries in Philippines. The findings revealed that the surveyed libraries have not only met the minimum expectations of users, but also have met the maximum expectation of users in all three dimensions of LibQUAL[16].

3. OBJECTIVES OF THE STUDY

The libraries of the colleges affiliated to the Shahid Beheshti University of Medical Sciences(SBMU) have many customers at different levels of education, and it is felt that librarians and library managers need to be aware of the quality of services provided to meet the needs and expectations of their clients, using a standard model. By measuring the service quality, one can identify the strengths and weaknesses of the provision of services of a library and provide strategic planning to elevate and improve the quality of the services. No research has been carried out in this regard so far. The literature review showed that very limited studies have been carried out to evaluate academic medical libraries using LibQUAL standard in developing countries including Iran. Thus, the aim of the present study is to study the service quality of the college libraries affiliated to the SBMU with the LibQUAL model. The specific research objectives are as follows:

- To determine the minimum, maximum and perceived levels of the service quality in each of three dimensions of LibQUAL by users at college libraries of Shahid Beheshti University of Medical Sciences
- To determine the relationship between the educational level of the users and their satisfaction with the service quality in three dimensions of the LibQUAL
- To determine the extent of the existing gap between users' expectations and their understanding of the service quality of the libraries of the SBMU overall and in each of the dimensions of the LibQUAL

4. METHODOLOGY

The present study is a descriptive-analytical cross-sectional study. SBMU has thirteen college libraries. The statistical population of this study includes all users of these libraries. The total number of customers of these libraries is 10,303. The sample size with confidence level of 95 percent and accuracy of 0.4 is 119, which was calculated according to Cochran formula. Then, the number of samples was also considered appropriate with the number of users, in each of the libraries.

Table 1. Total number of students and the selected sample at each college

School	Setting (N)	Sample (N)
School of Public Health & Safety	1000	11
School of Medicine	1778	20
School of Allied Medical Sciences	900	10
School of Nursing & Midwifery	2500	29
School of Dentistry	1175	14
School of Pharmacology	700	8
School of Traditional Medicine	120	2
School of Nutrition Sciences & Food Technology	930	11
School of Rehabilitation Sciences	600	7
School of Health, Safety and Environment	600	7
Total	10303	119

Table 2. Frequency distribution of respondents by gender, age, occupational status, and educational level

Demographics		Frequency N (Per cent)
Gender	Female	78 (65.5)
	Male	41 (34.5)
Age Group	<18	68 (57.1)
	22-18	40 (33.6)
	23-30	10 (8.4)
	31-45	1 (0.8)
	>45	0
Job Status	Staff	8 (6.7)
	Staff-Student	1 (0.8)
	Student	109 (91.6)
	Member of Faculty	1 (0.8)
Education Level	Bachelor's Degree	45 (37.8)
	Master's Degree	32 (26.9)
	Ph.D.	40 (33.6)
	Postdoctoral	2 (1.7)

$$N = \frac{\left(Z_1 - \dfrac{a}{2}\right)^2 \times d^2}{d^2}$$

$$N = \frac{(1.96)^2 \times (2.22)^2}{(0.4)^2} = 119$$

The tool for data collection is the international and standard LibQUAL+ questionnaire which were distributed in and collected from the studied libraries between 1st of March 2019 and 30th May 2019.

The data were analysed using SPSS version 18 software. In this study, it was assumed that there is a relationship between the educational level of the users and their satisfaction with the library services. One-way analysis of variance (one-way ANOVA test) was used to measure this hypothesis.

5. RESULTS

The demographic profile of the respondents is presented in Table 2. Out of 119 participants, 78 (65.5 %) were female and 41 (34.5 %) were male. Regarding the job status, most of the respondents (91.6 %) were students. In terms of the educational level, most of the participants in this study (37.8 %) were bachelor students.

The average level of current services at the college of Pharmacology (8.08) is higher than the average of the maximum level of services expected by users (7.73). Thus, in the effect of services dimension, has the best situation in terms of meeting
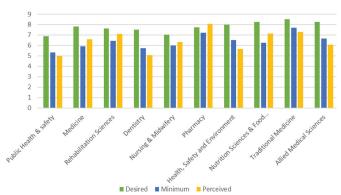

Figure 1 . The average of "the effect of services" dimension by the colleges.
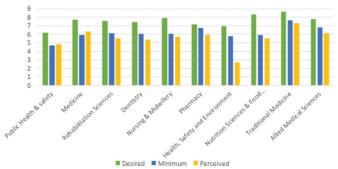

Figure 2. The average of "information control" dimension by college.
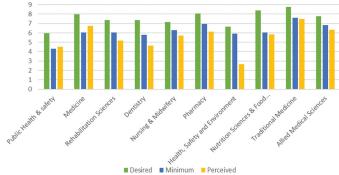

Figure 3. The average of "library as a place" dimension by college.

users' expectations. The rest of studied libraries have not been able to provide even the minimum service quality expected by users (Fig. 1).

The average level of current services in all the studied libraries is lower than the average of the minimum level of service quality expected by users (Fig. 2). In the Information Control dimension, at the college of Medicine (6.7) and the college of Health (4.5), the average level of current services is higher than the average of the minimum level of services expected by users.

In the studied libraries except library of the college of Medicine (6.3) and college of Health (4.6), the minimum expectations of users have not been met (Fig. 3).

The results showed that in the dimension of the effect of services, respectively, the bachelor students (6.81) have the highest satisfaction, and the master students (5.72) have the least satisfaction with the perceived quality of library services (Table 3).

Table 3.   Relationship between the students' educational level and their satisfaction with the perceived quality of library services, in three dimensions of the LibQUAL

Dimensions	Affect of Service		Information Control		Library as Place	
Education Level	Mean	SD	Mean	SD	Mean	SD
Bachelor's Degree	6.1	1.56	5.41	1.75	5.59	1.84
Master's Degree	5.72	1.73	5.44	1.97	5.28	2.36
Ph.D. & Postdoctoral	6.19	1.76	5.76	1.68	5.73	1.96
Total	6.30	1.72	5.55	1.78	5.55	2.02

In the information control dimension, respectively, the PhD and postdoctoral students (5.76) have the highest satisfaction, and the master (5.44) and the bachelor students (5.41) have the least satisfaction with the perceived quality of library services. In the library as a place dimension, respectively, the PhD and postdoctoral students (5.73) have the highest satisfaction, and the bachelor (5.59) and the master students (5.28) have the least satisfaction with the perceived quality of library services.

The average of the level of service quality of libraries is negative in all the three dimensions in terms of adequacy gap

Table 4. Mean and standard deviation indexes of total services of the studied libraries

Services level	Minimum service level		Desired service level		Perceived service quality		Adequacy gap		Superiority gap	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Total services	6.076	1.747	7.465	1.577	5.796	1.573	-0.289	1.839	-1.641	1.873

Table 5. Mean and standard deviation indexes of the services of the studied libraries, in terms of each of the dimensions of the LibQUAL

Services Level	Minimum		Desired		Perceived		Adequacy gap		Superiority gap	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Affect of service	6.140	1.778	7.602	1.510	6.306	1.724	0.171	1.702	-1.292	1.924
Information control	6.036	1.842	7.372	1.772	5.550	1.780	-0.499	2.068	-1.798	2.141
Library as place	6.067	2.050	7.469	1.913	5.558	2.029	-0.441	2.507	-1.860	2.329

Table 6. The relationship between users' education level and their satisfaction with the library services in terms of each of the dimensions of the LibQUAL

LibQUAL Dimensions	Educational Level	P-value	Mean
Affect of Service	Bachelor's Degree	0.006	6.81
	Master's Degree	0.006	5.72
	Ph.D. & Postdoctoral	0.093	6.19
Information Control	Bachelor's degree	0.942	5.41
	Master's Degree	0.942	5.44
	Ph.D. & Postdoctoral	0.368	5.76
Library as Place	Bachelor's Degree	0.512	5.59
	Master's Degree	0.512	5.28
	Ph.D. & Postdoctoral	0.749	5.73

(-0.289), which means that the libraries are not able to meet their users' minimum expectations. Also, superiority gap of services is negative for all the dimensions (-1,641), and the libraries are far from meeting the expectations of users regarding the most desirable (maximum) level of services (Table 4).

The adequacy gap in the dimension of the effect of services is positive (0.171), which indicates the satisfaction of users with the perceived level of the studied libraries services compared to the two dimensions of information control (-0.499) and library as a place (-0.441). The superiority gap is also negative in all the three dimensions. the largest gap is related to the library as a place dimension (-1.860), which indicates that the difference between the maximum of users' expectations with library services, in this dimension, and the perceived service quality level is more than two other dimensions (Table 5).

One-way ANOVA test showed that there is a significant relationship between the education level of the users and their satisfaction with library services (p = .006), just in the dimension of "the effect of services", and only the bachelor and master students (Table 6).

6. DISCUSSION

The findings of the present study showed that the libraries of the colleges affiliated to the SBMU have not provide their users' minimum expectations, and the quality of the libraries services is below the minimum acceptable level by users (Table 4). This indicates that the medical academic libraries have not been successful in fulfilling their users' satisfaction.

The studied libraries have been able to meet the minimum expectations of their users just in the effect of services dimension (Table 5). These findings indicate that librarians of the studied libraries have been able to interact well with users. However, this interaction is still far from the most desirable level expected by library users. In some researches such as the libraries of University of Kebangsaan Malaysia[17], and the library of a hospitality institute in Karnataka, India [15] and the Central Library of Tabriz [18] , such as the present study, the libraries have met their users' minimum expectations in the dimension of the effect of services. Just in few studies, the maximum expectations of library users have also been met in only some of the dimensions. In Thompson's research on health libraries in the United States, Canada and the United Kingdom [10], in the "Information Control" dimension, not only the minimum, but also the maximum of users' expectations has been met. The Saint Louis University College Library [19] also has met not only the minimum but also the maximum expectations of its users in the dimension of the effect of services. But in a research conducted on Medical Sciences Libraries [20], in the library as a place dimension, the average for perceived services was above the average of the minimum expectations of users. It means that, the mentioned libraries have been able to provide services beyond the minimum level of users' expectations, in the library as a place dimension.

The present study showed that the studied libraries have not been able to meet the maximum expectations of their users in none of the dimensions of the LibQUAL, and there is a gap between the perceived level of services and the maximum demands of the users. These findings indicate that the service quality of the studied libraries is much lower than the most

desirable level expected by users (Table 4), demonstrating the failure of these libraries to bring the quality to the most desirable level expected by users. The findings of this study are consistent with some other studies carried out on university libraries[21,22]. In all the three dimensions of the LibQUAL in the mentioned researches, as in the present study, there were a negative superiority gap, indicating the failure of those libraries to bring the quality of their services to the most desirable level expected by users. The highest superiority gap in the present study relates to the library as a place dimension (Table 4). This shows that the physical space of the libraries has not been able to attract the maximum satisfaction and expectations of the users as a useful place for research and study. This can lead to users' high dissatisfaction.

In the affect of services dimension, the average level of current services in the six college libraries is lower than the minimum level of services expected by users, and the libraries have not even been able to meet the minimum services expected by their users, but in the five college libraries, the level of current services is higher than the minimum level of services expected by users. The level of current services just is higher than the maximum expectation of users at the college library of Pharmacology (Fig. 1).

In the information control dimension, the perceived level of services quality in the all of studied libraries except libraries of medical and healthcare colleges, is below the minimum level of services expected by users, which means that these libraries have not been successful in satisfying the minimum expectations of their users, and they are poor in this dimension (Fig. 2). In this regard, it can be suggested that equal attention must be paid to those libraries' facilities.

In the library as a place dimension, the perceived level of service quality in all the studied libraries, with the exception of the two libraries, is lower than the minimum level of services expected by users (Fig. 3). In this regard, it is necessary for the studied colleges to pay more attention to the library space, and design it in such a way that users can do their research activities in a quiet space, and in group or individual way.

The present study revealed that there is a significant relationship between the education level of the users and their satisfaction level with library services. In this regard, in the effect of services, and the library as a place dimensions, bachelor users have more satisfaction with the current services than the master, Ph.D. and postdoctoral students (Table 6). Therefore, it seems that interaction with librarians is of great importance for higher education students but they are not enough satisfied with it. Since, these groups of users have more research needs than bachelor students, it is necessary for them to use librarians' help to solve their research problems. Thus, it is recommended that, in colleges with master, Ph.D. and postdoctoral students, more attention be paid to the teaching of effective communication methods to librarians. Furthermore, it seems that the studied libraries are not able to provide higher education students with a pleasant environment. This might be due to the postgraduate students' special requirements of more quiet space for their study activities rather than the public space. Therefore, the colleges are recommended to pay special attention to their clients' needs based on their education level.

In this regard, in the information control dimension, Ph.D. and postdoctoral students have more satisfaction with the current services of the studied libraries than bachelor and master students (Table 6). This suggests that master students have more need and desire to use up-to-date equipment and technologies to effectively search and use their needed information. It is therefore recommended that more attention be paid to equipping the library with the use of up-to-date equipment and technologies in colleges with users in different education level.

7. CONCLUSIONS

In the present study, overall, the medical college libraries of SBMU failed to meet the minimum expectations of users. Merely few of the college libraries were successful in providing the users with minimum expected quality. Therefore, it is necessary for the university managers and strategic planning authorities to pay more attention to the quality of library services equally in all the colleges. This will lead to the training of expert students in various medical sciences fields as the college libraries have a vital role in the education of the academic community. In addition, the library managers are suggested to consider their users' education level due to the different requirements and needs and to provide their users with their different needs. This way, college libraries can meet the minimum requirements of their users and would be able to focus on reaching the quality of the library to a maximum desirable level.

Finally, it is recommended to librarians and library managers of academic libraries to address the needs and expectations of clients, staffs and the academic community in their policies.

REFERENCES

1. Das, S. & Patra, S. Ranganathan's five laws in the light of ICT. *In* 6th International CALIBER-2008, Allahabad.; 2008, 399-401.
2. Cook, C. & Heath, F. & Thompson, B. "Zones of tolerance" in perceptions of library service quality: A LibQUAL+TM Study. *Libr. Acad.,* 2003, **3**(1), 113-123.
3. About LibQUAL+.
4. Roszkowski, M.J.; Baky, J.S. & Jones, D.B. So which score on the LibQual+™ tells me if library users are satisfied? *Libr. Inf. Sci. Res.,* 2005, **27**(4), 424-439. doi: 10.1016/j.lisr.2005.08.002.
5. Natesan, P. & Aerts, X. Can library users distinguish between minimum, perceived, and desired levels of service quality? Validating LibQUAL+® using multitrait multimethod analysis. *Libr. Inf. Sci. Res.,* 2016, **38**, 30-38.
6. Lau CCS. Assessing and improving library services at Georgia Southern University. *Libr. Philos. Pract.,* 2018, **1**.
7. Nasibi-Sis, H.; Valizadeh-Haghi, S.; Zare, S. & Orazi A. Service quality assessment of hospital libraries: A LibQUAL+ Survey. *Libr. Philos. Pract.,* 2019.
8. Mallya, J. & Patwardhan, V. Hospitality students' perception of college library service quality: Importance-

performance analysis. *J. Libr. Inf. Technol.,* 2018, **38**(2), 125-131.

9. Greenwood, J.T.; Watson, A.P. & Dennis, M. Ten years of LibQual: A study of qualitative and quantitative survey results at the University of Mississippi 2001-2010. *J. Acad. Libr.*, 2011, **37**(4), 312-318.
   doi: 10.1016/j.acalib.2011.04.005.

10. Thompson, B.; Kyrillidou, M. & Cook, C. User library service expectations in health science vs. other settings: A LibQUAL+® Study. *Health Info. Libr. J.,* 2007, **24**(s1), 38-45.
    doi: 10.1111/j.1471-1842.2007.00744.x.

11. Ur Rehman S. Understanding the expectations of Pakistani libraries users: A lingual study. *Libr. Philos. Pract.,* 2012, **4**(732).

12. Zabed Ahmed, S.M. & Hossain, Shoeb Z. Measuring service quality of a public university library in Bangladesh using SERVQUAL. *Perform. Meas. Metrics.*, 2009, **10**(1), 17-32.
    doi: 10.1108/14678040910949666.

13. Hossain, Shoeb Z. Identifying service superiority, zone of tolerance and underlying dimensions. *Libr. Rev.,* 2011, **60**(4), 293-311.
    doi: 10.1108/00242531111127857.

14. Lock, S. & Town, J.S. LibQUAL+ in the UK and Ireland: Three years' findings and experience. *Sconul. Focus.* 2005.

15. Mallya, Jyothi & Payini, Valsaraj. An empirical study of the overall satisfaction of hospitality students towards library services. *Libr. Philos. Pract.,* 2018.

16. Reyes, L.C. Complaining behavior of library users of Saint Louis University libraries, Baguio City, Philippines. *Libr. Philos. Pract.,* 2019.

17. Choshaly, S.H. & Mirabolghasemi, M. Using SEM-PLS to assess users satisfaction of library service quality: Evidence from Malaysia. *Libr. Manag.,* 2019, **40**(3/4), 240-250.
    doi: 10.1108/LM-03-2018-0023.

18. Ziaei, S. & Korjan, F.R. Assessment of services quality in Tabriz central library from the users point of view based on LibQual model. *Libr. Philos. Pract.,* 2018.

19. Selga-Cristobal, A. Expectations on library services, Library Quality (LibQual) Dimension and library customer satisfaction: Relationship to customer loyalty. *Libr. Philos. Pract.,* 2018, **1706**.

20. Mohammadimehr, M.; Hashemi, S.M.; Zargar Balaye, Jame S. & Shayesteh Moghanlou, M.A. Quality assessment of the library services at the AJA University of medical sciences libraries using LibQUAL model. *Interdiscip. J. Virtual Learn Med. Sci.,* 2016, **7**(3).
    doi: 10.5812/ijvlms.12169.

21. Jankowska, M.A.; Hertel, K. & Young, N.J. Improving library service quality to graduate students: LibQual+™ Survey results in a practical setting. *Libr. Acad.* 2006; **6**(1), 59-77.

22. Libqual+ 2013 survey university of Ulster. Univ Ulster Assoc Res Libr / Texas A&M Univ www.libqual.org. 2013.

CONTRIBUTORS

Ms. Rezvan Ghaedi has got her Master Degree in Medical Library and Information Science from Shahid Beheshti University of Medical Sciences, Tehran, Iran. Her areas of interest are medical library evaluation, and ehealth literacy. She contributed to this study by carrying out literature review, and data collection and writing the initial version of paper jointly with co-authors.

Dr Saeideh Valizadeh-Haghi works as assistant professor in the Department of Medical Library and Information Sciences, School of Allied Medical Sciences, Shahid Beheshti University of Medical Sciences, Tehran, Iran. Her research interests include library performance evaluation, information seeking behavior, website quality assessment, mHealth and eHealth literacy. She has published several research papers in international journals. She contributed to this study by leading the research team, framing research objectives, and revising the manuscript.

Ms Elaheh Ahmadi has got her Master Degree in Medical Library and Information Science from Shahid Beheshti University of Medical Sciences, Tehran, Iran. Her areas of interest are medical library evaluation, and bibliotherapy. She contributed to this study by carrying out literature review, and data collection jointly with co-authors.

Ms Zahra Zeraatkar has got her Master Degree in Medical Library and Information Science from Shahid Beheshti University of Medical Sciences, Tehran, Iran. Currently, she works at Scientometrics office of Shiraz University of Medical sciences, Shiraz, Iran. Her areas of interest are medical library evaluation, altmetrics, and Scientometrics. She contributed to this study by carrying out data collection and checking the references.

Dr Ahmad Reza Baghestani works as associate professor in the Department of biostatistics, School of Allied Medical Sciences, Shahid Beheshti University of Medical Sciences, Tehran, Iran. He contributed in this work as statistician and data analyst.