

Quality of Services at A Primary Health Care Unit (Adolescents Perspective)

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Summary

Background: Primary health care is the entry point to the health-care system and considered as an essential step to achieve universal health coverage.

Objective: The present study aimed at evaluating the quality of health-care services provided in a primary health unit in Dakahlia, Egypt.

Methodology: This was a cross-sectional study carried out on 100 health service users aging (10- 18) years and visiting the unit during a 3 months period. The quality of services was evaluated using the SERVQUAL and HEALTHQUAL models. Data was analyzed by using SPSS version 12 software. The Levene test was used for examining the equality of variance (homogeneity). Significance level of all the tests was considered when p value ≤ 0.05 .

Results: According to the results of SERVQUAL questionnaire, the average scores of health service users' expectations and perceptions were 4.54 and 3.78, respectively, and the quality gap in the provided services was equal to (-0.76). Based on HEALTHQUAL questionnaire, the average scores of health service users' expectations and perceptions were 4.54 and 3.78, respectively, and the quality gap in the provided services was equal to -0.76. Tangible was the highest quality gap (-0.96) based on SERVQUAL model, and environment gap was the highest based on HEALTHQUAL model (-0.90).

Conclusions: The findings of the current study showed a negative gap between the service users' expectations and perceptions in both models which means low quality since the gap between expectations and perceptions is defined as services quality, the negative gap means low quality and the positive one indicates high quality. So, the results of this study helps the health managers and policymakers to plan effective interventions to improve the provided services emphasizing the dimensions with the wider gaps.

Keywords: Primary health care, quality of health, care services, SERVQUAL, HEALTHQUAL.

جودة الخدمات الصحية المقدمة باحدى الوحدات الصحية: من منظور المراهقين

الخلفية: الرعاية الصحية الأولية هي نقطة الدخول إلى نظام الرعاية الصحية وتعتبر خطوة أساسية لتحقيق التغطية الصحية الشاملة.

الهدف: تهدف هذه الدراسة إلى تقييم جودة خدمات الرعاية الصحية المقدمة في إحدى وحدات الصحة الأولية في الدقهلية، مصر.

المنهجية: أجريت هذه الدراسة المستقطعة على 100 من مستخدمي الخدمات الصحية الذين تتراوح أعمارهم بين (10- 18) سنة وقاموا بزيارة الوحدة خلال فترة 3 أشهر. تم تقييم جودة الخدمات باستخدام نموذجي جودة الخدمة SERVQUAL وجودة الصحة HEALTHQUAL. تم تحليل البيانات باستخدام برنامج SPSS الإصدار 12. تم استخدام اختبار ليفين لفحص المساواة في التباين (التجانس). وقد أخذ في الاعتبار مستوى الاعتدال في جميع الاختبارات عندما تكون قيمة $p \leq 0.05$.

النتائج: وفقاً لنتائج الاستبيان SERVQUAL، كان متوسط درجات توقعات وإدراك مستخدمي الخدمات الصحية 4.54 و 3.78 على التوالي، وكانت فجوة الجودة في الخدمات المقدمة تساوي -0.76، واستناداً إلى استبيان HEALTHQUAL، كان متوسط درجات توقعات مستخدمي الخدمات الصحية وإدراكهم 4.54 و 3.78 على التوالي، وكانت فجوة الجودة في الخدمات المقدمة تساوي -0.76، وكانت الفجوة (الملموسة) هي أعلى فجوة -0.96 بناءً على نموذج SERVQUAL، وكانت الفجوة (البيئية) هي الأعلى بناءً على نموذج HEALTHQUAL -0.90.

الاستنتاجات: أظهرت نتائج الدراسة الحالية وجود فجوة سلبية بين توقعات وإدراك مستخدمي الخدمة في كلا النموذجين مما يعني جودة منخفضة حيث أن الفجوة بين التوقعات والإدراك تعرف بجودة الخدمات، والفجوة السلبية تعني الجودة المنخفضة والفجوة الإيجابية تشير إلى جودة عالية. لذا فإن نتائج هذه الدراسة تساعد مديري الصحة وواضعي السياسات على تخطيط تدخلات فعالة لتحسين الخدمات المقدمة مع التركيز على الأبعاد ذات الفجوات الأوسع.

الكلمات المفتاحية: الرعاية الصحية الأولية، جودة خدمات الرعاية الصحية، SERVQUAL، HEALTHQUAL.

Introduction:

Primary health care (PHC) is a very important strategy which provides universal health care for increasing health equity and promoting health. It was introduced in Alma-Ata declaration (1978) as the key element to achieve "Health for all by the year 2000". PHC is known by the World Health Organization (WHO) as the essential health care based on scientifically sound and socially acceptable methods and technology, that makes universal health care accessible to all individuals and families in a community through the full participation and with a cost that the community and the country can afford.⁽³⁰⁾

Some studies make a suggestion that health systems with better financial and clinical results are those with a major focus on PHC, thus enhancing the sustainability of the entire health system.⁽¹¹⁾⁽²⁴⁾⁽²⁵⁾ Quality assessment (QA) in primary care is the process of planning activities whose ultimate goal is achieving a continuous improvement of medical care through evaluating the structure, process, and outcome measures.⁽³⁾⁽⁵⁾⁽⁷⁾ There are three levels that are provided in health services: primary, secondary, and tertiary.

Health units are responsible for providing primary health care services such as promotional, preventive and curative services. Referral is done only for cases that require more specialized services, which includes secondary and tertiary care.⁽⁶⁾

Health care units are the first point of contact between the health system and society.⁽²⁰⁾ So, providing appropriate health-care services of good quality in those centers will prevent unnecessary referrals and consequently additional costs. Also, high quality PHC services will lead to increase satisfaction, trust and confidence, speed of delivery of services and cost-effectiveness of health-care services and decrease waiting time as well.⁽¹⁶⁾⁽²¹⁾⁽²⁶⁾⁽²⁹⁾

The World Health Organization (WHO) emphasized the importance of quality in providing health-care services and stated the access to health care of good quality for all as the way to achieve sustainable development.⁽²⁹⁾

Aim of the Study:

The present study aimed at evaluating the quality of health services provided in a primary health care unit in Dakahlia, Egypt using both questionnaires, SERVQUAL and HEALTHQUAL. The findings of this study have granted evidences regarding the quality gaps in primary health care. These evidences help researchers in health field, and also policymakers to develop effective interventions for decreasing the recognized gaps.

Methodology:

This study is a cross-sectional study carried out among health service users visiting the primary health care unit in Mit Ghamr, Dakahlia Governorate. The study was carried out on all health service users who fulfill the inclusion criteria; newly coming adolescent users of health care services aging between (10- 18) years visiting the unit over a period of 3 months (from 1st November 2023 to end of January 2024). Users who

don't accept to participate in the study were excluded. The final number of valid forms after excluding those with missed data was 100.

SERVQUAL and HEALTHQUAL tools were used to assess the quality of services in primary health care units by detecting the gaps between customers' expectations and perceptions of service quality.

SERVQUAL model was proposed by Parasuraman, et.al. based on the gap theory of service quality.⁽¹⁸⁾ In this tool, health-care service quality is evaluated by comparing the customers' expectations and perceptions from different aspects (physical and tangible dimensions of service, assurance, responsiveness, service reliability, and empathy).⁽¹⁷⁾⁽¹⁸⁾

HEALTHQUAL model was designed to give a better image about the quality of health-care services.⁽¹⁰⁾⁽¹⁴⁾ It is introduced beside the general questionnaire SERVQUAL to ensure more realistic results of the comparison. This questionnaire includes 4 domains and 30 questions: 1. Environment (embraces 11 questions about physical facilities, buildings, equipment) 2. Empathy (with 12 questions about interactions between healthcare providers and service users). 3. Efficiency (composed of 3 questions about factors such as waiting time, speed of service delivery and cost-effectiveness of healthcare services) 4. Effectiveness (encompasses 4 questions about expected goals of service users).⁽¹⁴⁾

Before applying the tools, the 2 questionnaires were translated into Arabic, validity and reliability were done through pilot study by the researcher.

Participants completed questionnaires before (expectations) and just immediately after (perception) receiving the desired service. The gap between expectations and perceptions is defined as services quality, as the negative gap means low quality and the positive one indicates high quality.⁽¹⁵⁾ Both questionnaires were on a five-point Likert scale that ranges from: 1= strongly disagree, 2= disagree, 3= uncertain, 4= agree, to 5= strongly agree. Data were analyzed using SPSS version 12 by applying descriptive (frequency, percentage, mean and standard deviation) and analytical (paired t-test and independent t-test) statistics. Paired t-test was used to compare the mean scores of expectations and perceptions in each model. Independent t-test was used to compare the mean scores of quality gap according to the gender (male or female), age (10- 18) years old, and marital status (single or married) and education level (non-university & university). Also, the Levene test was employed for examination of the equality of variance (homogeneity).

Ethical Consideration:

Ethical considerations approved by the ethical committee, faculty of postgraduate childhood studies, Ain-Shams University was considered in the study. All participants parents signed the written informed consent form for the various aspects of data collection and oral consent was taken from the child. Confidentiality and privacy were assured for all study participants. All methods were carried out in accordance with relevant guidelines and regulations under Ethics approval and consent to participate.

Results:

Table (1) shows that among the 100 participants surveyed, the vast majority of participants were below 15 years old (n= 63, 90%), male (n= 51, 51%), single (n= 98, 98%) and non- university education (n= 77, 77%).

Table (1) Sociodemographic characteristics of service users (N= 100)

Variables		No	%
Age	10- 15 Years	63	63.0
	15- 18 Years	37	37.0
Sex	Male	51	51.0
	Female	49	49.0
Marital Status	Single	98	98.0
	Married	2	2
Education Level	Non- University	77	77.0
	University	23	23.0

As exhibited in Table 2, there was a significant negative quality gap in all 5 SERVQUAL dimensions (p< 0.001). The highest gap in services quality was related to the dimension of "Tangibles" (-0.96± 0.68) followed by "Reliability" (-0.90± 0.64), (Responsiveness) (-0.83± 0.59), and "Assurance" (-0.79± 0.56). The lowest gap in services quality was related to the dimension of "Empathy" (-0.71± 0.50). Moreover, the total services quality gap was (-0.76± 0.54), indicating that the provided services did not meet the expectations of service users.

Table (2) The mean value and standard deviation of the service user perceptions, expectations, and service gaps in SERVQUAL model

Dimensions	Expectation	Perception	Quality Gap	T-Test	P Value
	(Mean± SD)	(Mean± SD)	(Mean± SD)		
Tangibles	4.57± 0.35	3.61± 0.79	-0.96± 0.68	10.010	0.000**
Reliability	4.58± 0.29	3.68± 0.80	-0.90± 0.64	10.011	0.000**
Responsiveness	4.55± 0.27	3.71± 0.75	-0.83± 0.59	10.521	0.000**
Assurance	4.55± 0.30	3.77± 0.78	-0.79± 0.56	9.201	0.000**
Empathy	4.51± 0.36	3.80± 0.82	-0.71± 0.50	7.708	0.000**
Total Service Quality	4.54± 0.20	3.78± 0.70	-0.76± 0.54	10.198	0.000**

**High statistically significance< 0.0001

Table (3) indicates that the expectation score was higher than the perception score in all HEALTHQUAL dimensions. The highest gaps in services quality were associated with dimensions of "Environment" (-0.90± 0.54), followed by "Efficiency" (-0.79± 0.54) and "Effectiveness" (-0.76± 0.54).

The lowest gaps in services quality demonstrated in "Empathy" dimension (-0.71± 0.53). Moreover, the total health quality gap was (-0.76± 0.54), indicating that the provided services did not meet the expectations of service users.

Table (3) The mean value and standard deviation of the service user perceptions, expectations, and service gaps in HEALTHQUAL model

Dimensions	Expectation	Perception	Quality Gap	T- Test	P Value
	(Mean± SD)	(Mean± SD)	(Mean± SD)		
Effectiveness	4.54± 0.25	3.78± 0.68	-0.76± 0.54	10.017	0.000**
Environment	4.54± 0.23	3.78± 0.74	-0.90± 0.54	9.575	0.000**
Efficiency	4.58± 0.32	3.81± 0.77	-0.79± 0.54	9.463	0.000**
Empathy	4.56± 0.36	3.81± 0.82	-0.71± 0.53	8.237	0.000**
Total Service Healthqual	4.54± 0.20	3.78± 0.70	-0.76± 0.54	10.202	0.000**

**High statistically significance< 0.0001

Discussion:

Quality definition in health sector is totally different in the point of view of healthcare service providers and users. For medical professionals,

quality healthcare means providing care which increases the probability of the desired health outcomes. To the consumer, quality of care does not just come from treatment plans. Consumers have no way of knowing whether their outcomes would have been better or worse if they'd gone to other medical service providers, so they use a whole different set of criteria to define quality.⁽²⁸⁾

Health care is one of the most complex services and because of information asymmetry between service users and healthcare providers, the service users cannot evaluate the quality service itself, accordingly, they focus more on tangible items such as the physical environment and equipment.⁽²⁸⁾

Results of the present study showed that among the 100 participants surveyed, the majority (90%) were between 10 and 15 years old (n= 63), males represented 51% (n= 51), single participants were 98% (n= 98) and non- university educated represented 77% (n= 77).

There was a highly statistically significant negative quality gap in all 5 SERVQUAL dimensions: tangibility, reliability, responsiveness, assurance and empathy (p< 0.001). The highest gap in services quality was related to the dimension of "Tangibles" (-0.96± 0.68) followed by "Reliability" (-0.90± 0.64), (Responsiveness) (-0.83± 0.59), and "Assurance" (-0.79± 0.56). The lowest gap in services quality was related to the dimension of "Empathy" (-0.71± 0.50).

The total services quality gap was (-0.76± 0.54) which indicates that the provided services in the primary health care units were lower than what the service users expected. That gap may be explained as a result of low educational level of the participants which affects their health literacy as in this study only 23 out of 100 participants were in the university stage.

In agreement with this study, Several studies had shown that increasing of the health literacy will lead to decrease the gap between perception and expectations, identify weaknesses and improve the quality of health care provided.⁽²⁾

This result is consistent with most of the previous studies on quality assessment of health care in many countries. This is consistent with the study conducted by Gorji in hospitals in Tehran, Iran. Also in another study, the quality gap of the provided health- care services in urban primary health care centers in Kermanshah province of Iran was reported about (-1.4) based on SERVQUAL model.⁽¹²⁾ Evaluation of health- care service quality via SERVQUAL scale in a hospital in Turkey displayed that the quality gap in the provided health- care services was (-2.24).⁽¹⁹⁾ Also, quality of healthcare services provided in public and private hospitals was compared in a study done in Peshawar, Pakistan. In that study, the quality gap based on SERVQUAL model was (-1.85) for public hospitals and (-0.86) for private hospitals.⁽²³⁾

In the present study, SERVQUAL results clarified that service users' expectations have been at a high level in all dimensions (environment, human interaction, efficiency, and effectiveness), and the highest score has been reported in "Reliability" dimension.

This is in disagreement with a previous study conducted on primary health centers in Mashhad, Iran⁽²²⁾ and a study conducted by Pekmaya et.al. which showed that the highest expectation score was also related to "Tangibility".⁽¹⁹⁾ This difference is explained on the basis of age difference of the participants on both studies, the present study was conducted on adolescent while those other studies were conducted on adults.

The results of SERVQUAL model in present study in terms of perceptions indicated that the highest score was related to "Empathy" dimension (3.80). The results reported in many studies showed that the "Assurance" was the highest- performing dimension.⁽⁸⁾⁽¹²⁾⁽¹⁹⁾⁽²²⁾⁽²³⁾ Another study clarified that the highest perception score was associated with "Reliability" dimension.⁽⁹⁾ Interestingly, none of those studies was consistent with the present study, as such, the reasonable explanation of this difference in results can be due to the heterogeneous study setting and the diverse array of health- care services provided. Also, the present study participants were adolescents who are easily satisfied by good verbal contact more than adults whose interest is usually more focused on the service itself.

Concerning HEALTHQUAL, the expectation score was higher than the perception score in all dimensions, i.e.: Empathy, Environment, Efficacy and Efficiency. The highest gaps in services quality were associated with dimensions of "Environment" (-0.90 ± 0.54), followed by "Efficiency" (-0.79 ± 0.54) and "Effectiveness" (-0.76 ± 0.54). The lowest gaps in services quality demonstrated in "Empathy" dimension (-0.71 ± 0.53). Moreover, the total health quality gap was (-0.76 ± 0.54), indicating that the provided services did not meet the expectations of service users.

Since the Environment dimension in HEALTHQUAL refers to physical and observable services same as Tangible dimension in SERVQUAL, it can be approved that the two questionnaires had almost similar results in terms of the highest and lowest gaps. This result is consistent with most of the previous studies on quality assessment of health care in many countries.

Mosadeghrad and Sokhanvar stated that the quality gaps in the provided health- care services were (-0.57) and (-0.58), respectively in two previous studies conducted based on HEALTHQUAL model.⁽¹³⁾ Also, Nematy et.al. in a previous study aimed at comparing the Iranian university and non- university hospitals service quality based on the HEALTHQUAL model, found that the quality gap was -0.42 and -0.64 for university and non university hospitals respectively.⁽¹⁵⁾ The total quality gap mentioned in these studies was different from the value mentioned in the present study, and this can be attributed to the difference between the population and study setting (hospital vs. health centers). Also, the type of provided services in hospitals is different from that in health units.

In the present study, HEALTHQUAL results clarified that service users' expectations have been at a high level in all dimensions (environment, human interaction, efficiency, and effectiveness), and the highest score has been reported in "Efficiency" dimension. This is inconsistent with previous studies as in the study conducted by Sharifi,

et.al.⁽²²⁾ and the study conducted by Nematy, et.al,⁽¹⁵⁾ the highest average score of expectations was related to "Environment".

As efficiency in HEALTHQUAL refers to waiting time and cost of service, it got the highest expectations in the present study in contrary to those other studies in other countries. This is attributed to the economic status and income difference between these countries. For the same cause, the highest score of service users' perception in HEALTHQUAL has been reported in "Efficiency". The customer receives all the services at a very low price compared to other private clinics and hospitals but, of course he still needs more. Also, "Empathy" dimension score was equal to "Efficiency" for the same cause mentioned in SERVQUAL, i.e.: the present study participants were adolescents who are easily satisfied by good verbal contact more than adults whose interest is usually more focused on the service itself. This is consistent with the study done by Sharifi, et.al.⁽²²⁾ which showed the highest perception score in "Efficiency" dimension.

Limitations of the study:

1. The researcher faced some obstacles during the study such as:
 - a. The very young adolescents needed more effort to well understand the study.
 - b. Ignorance of some questionnaire items during filling them so, they were excluded.
 - c. Refusal of some users to participate in the study from the start.
 - d. Some users refused to refill the questionnaires after receiving their targeted service so, they were also excluded.
2. Points of weakness of the study: One of the research weaknesses was lack of investigation of staff viewpoints. Hence, it is suggested to survey their viewpoints in future studies.
3. Points of strength of the study:
 - a. Up to the researcher knowledge, it is the first study to evaluate quality of services provided in healthcare units in Egypt.
 - b. Using both HEALTHQUAL and SERVQUAL models ensured more realistic information in contrary to using only one model.

Conclusion:

The service quality is at a lower level than customer's expectations. In this way, improving the quality of services in primary health care level can result in more effective prevention services and ultimately improve the level of community health status. In the present study, the highest quality gaps were noticed in "Tangibility" dimension according to SERVQUAL and "Environment" dimension according to HEALTHQUAL model, and this draws the attention of policymakers to set a reform plan which might include improvement of "Environment" dimension, paying attention to infrastructure of health care units including up- to- date devices and instruments.

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