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Evaluation of quality assurance for school health services in primary health care centers at Al-Numaniyah District. Iraq

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Abstract:

BACKGROUND: School Health Services (SHS) is commonly considered to be one of the more crucial parts of the health program in schools, and they are responsible for the students' overall health. Active school health services aid in the early detection and prevention of illnesses among students. SHS are those that are worried with the health and educational attainment of students at an appropriate age by providing direct services of health care to students in coordination with the administration and staff of the school.

AIMS: To evaluate the quality assurance for school health services in all essential components as structure, process, and outcome and identify the correlation between them.

MATERIALS AND METHODS: A descriptive study consists of (171) respondent selected by convenient sample distributed on (6) main primary health care centers, (32) health and nursing staff, and (133) consumers (school principals) at Al-Numaniya district from July 5, 2022 to January 25, 2023. Questionnaire comprised of three forms distributed on structure, process, and outcome data, which were collected by interview and researcher observation with directors of main primary health care centers, health and nursing staff, and school principals and through the use of a descriptive statistical (frequencies, percentages, statistical mean) and inferential (Pearson correlation coefficient) and the data were analyzed.

RESULTS: Showed overall evaluation of the quality assurance related to structure standards of primary health care centers PHCs was fair (66.7%). Regarding process standards showed that 50.0% of the nurses' staff expressed a fair activity and duties. On the other hand, regarding outcome showed that 64.7% of the school principals expressed somehow satisfied toward elementary school health care services.

CONCLUSIONS: Overall evaluation of quality assurance regarding school health services in PHCs was fair as described by moderate average in all essential components as structure, process, and outcome. It also showed a significant positive correlation between outcomes of quality assurance for school health services and regard structure of PHCs.

RECOMMENDATIONS: Ministry of Education and Health can benefit from the study to identify the strengths and weaknesses in the structure of PHCs. Equipping health centers with essential supplies such as computers, vaccines, eye glasses, and laboratory materials PHCs to provide integrated services for students.

Keywords:

Evaluation, quality assurance, school health services

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Introduction

School health services (SHS) are services that are offered by a health professional to children who are enrolled in elementary education. These services can be delivered to pupils either on the school grounds or at a health service that is located outside of the school. SHS exists in some form in almost all nations, but many of the programs designed to provide it are not founded on evidence, are not effectively executed, do not receive sufficient funding, or have restricted reach and scope.^[1] The delivery of school health services (SHS) is commonly considered to be one of the more crucial parts of the health program in schools, and they are responsible for the students' overall health. Active school health services aid in the early detection and prevention of illnesses among students. School health services are those that are worried with the health and educational attainment of students at an appropriate age by providing direct services of health care to students in coordination with the administration and staff of the school.^[2] School student spends a significant portion of their period as a human cluster in a constrained combined setting at school. In the least escalation in the environment of school elements might have both a temporary effect with high rates of illness occurrences and a lasting good outcome; as a result, during the school years, it is critical to build appropriate knowledge, experience, and a favorable attitude toward school health services. Therefore, fundamental facts, the use of a number of different school health measures is one of the features that is considered to be among the most crucial components of an entire school health program.^[3] SHS serves as a large segment of society approximately 51% of the population in Iraq under 15 years; SHS deals with the age group from 4 years to the age of graduation from the university and even for those who are enrolled in postgraduate studies (that is, it is responsible for a period of time exceeding 20 years) and therefore, nearly 1/3 of the population are provided with school health services.^[4] Air quality in school buildings is very important for staff, teachers, and students. More than 53 million children and 6 million adults spend up to six to eight hours in school each day. In particular, children are at increased risk for a variety of reasons. Young children are more likely to spend time on or near the floor where toxins are likely to settle and use more hand-to-mouth behavior, and they take in more air per size than adults. While exposures can be the same as in the home, those who attend or work in schools are in the same air environment for six to eight hours or more where they are exposed to the toxins for long periods of time. Nurses who work in the school setting can access information through the environment protection agency (EPA) website to aid in assessments and interventions to improve air quality in schools.^[5] Because school pupil may not have regular health care official visit throughout this time of life range, preventative and counseling services are important to be

included into visits of healthcare or provided through the surveys of the school during this period. Among the issues that necessary to be monitored are the following: growth and development should be assessing, screening for any other anomalies, and reinforcement of healthy behaviors in terms of exercise, sleep, and diet.^[6]

Materials and Methods

Study design and setting

A descriptive study throughout the use of nonprobability sampling approach has been selected from July 5, 2022 to August 25, 2023 in primary health care centers and elementary schools at Al-Numaniya District. Iraq.

Study participants and sampling

The sample of the study consisted 171 respondents selected by convenient sample; the respondent is divided into three groups, which include: **The first: Structure standard of organization** which involved six directors of primary health care centers at Al-Numaniya District, in which the questionnaire for this group includes 15 items about building, rooms, material, medication, medical supplies, and laboratory supplies. **The second: Process standard** involved 32 health and nursing staff, who are working in school health services unit at primary health care centers, in which the questionnaire for this group includes 11 items concerning activities and duties of the nursing staff. **Thirdly: Outcome standard** involved 133 consumers (school principals) satisfaction toward the provided school health services. The School principals were involved instead of pupils due to the lack of pupils' awareness regarding school health services, in which the questionnaire for this group is comprised of ten items concerning principals' satisfactions and acceptance for school health care services.

Data collection tool and technique

The whole questionnaires were developed and constructed for each group after a rigorous review of literature and related studies to use for the purpose of the study, and it is comprised of three questionnaires' forms distrusted on (structure, process, and outcome) to evaluation of quality assurance for school's health services. Questionnaires sent to 20 experts from diverse fields, and institutions will assess the questionnaire's contents, most of them agreed that the questionnaire was clear, adequate, and relevant. Calculating Cronbach's alpha, which equals 0.89, 0.93, and 0.76 for each questionnaire, respectively, was used to determine the dependability of the items based on the checklist's internal consistency. Then data were collected by interview and researcher observation with directors of main primary health care centers, health and nursing staff, and school principals.

Statistical analysis

Through the use of a descriptive statistical data analysis technique, data are examined by frequencies, percentages, and statistical mean and are calculated by using bilateral Likert’s scale, which included (1) score for item (no) and (2) score for item (yes). And using tripartite Likert’s scale, which included (1) score to refuse of item (never), (2) score to neutral scale of item (sometime), and (3) score to accept of item (always). Cutoff point is 0.33 for bilateral Likert’s scale and 0.66 for tripartite Likert’s scale. On the contrary, an inferential statistical approach uses Kolmogorov-Smirnova (K.S) to decide if a sample comes from a population with a normal distribution. Also the Pearson correlation coefficient is used to identify the correlation between outcomes of quality assurance for school health services and regard structure of primary health care centers.

Ethical consideration

An ethical approval was obtained from the Ethical Research Committee at the Faculty of Nursing/Babylon University and obtained official permission and facilities from the Ministry of Education/Directorates of Educational at Al-Numaniya district. Health Department in the District. Finally, a voluntary verbal agreement was gained from the participants after explaining the purpose of the study.

Results

Table 1 demonstrated the fair primary health care center structure as indicated by moderate mean of scores (M.s. 1.34–1.66) at all studied items of the scale except, the poor primary health care centers structure in terms of (*availability of computer, availability of vaccines, availability of medical supplies, and laboratory materials and waste management supplies*) as indicated by low mean of scores (M.s = 1–1.33), as well as the good primary health care center structure in terms of the *number of rooms in the health center is sufficient, there is a special room for the school health unit, availability of lecture room, availability of length measure, and availability of medications* as indicated by high mean of scores (M.s = 1.67–2).

This figure showed that 66.7% of the primary health care centers structures were fair availability of supplies and resources as described by moderate average, while 16.7% were poor evaluation and 16.7% were good evaluation.

Table 2 demonstrated that the nurses staff expressed a fair activity and duties as indicated by moderate mean of scores (M.s. 1.67–2.33) at all studied items of the scale except, the nurses staff expressed a poor responses at items number (10) as indicated by low mean of scores (M.s ≤1.66) and good responses at items number (1, 2) as indicated by high mean of scores (M.s. ≥2.34).

Table 1: Primary health care centers structure availability of supplies and resources (n=6)

Items	Responses	No.	%	M.s	Ass.
Is the health center far from the nearest hospital	No	3	50.0	1.50	Fair
	Yes	3	50.0		
Are the health center services in the field of school health sufficient to cover the population density	No	3	50.0	1.50	Fair
	Yes	3	50.0		
The building is originally designed as a health center	No	3	50.0	1.50	Fair
	Yes	3	50.0		
Number of rooms in the health center is sufficient	No	2	33.3	1.67	Good
	Yes	4	66.7		
There is a special room for the school health unit	No	2	33.3	1.67	Good
	Yes	4	66.7		
Availability of lecture room	No	2	33.3	1.67	Good
	Yes	4	66.7		
Availability of computer	No	5	83.3	1.17	Poor
	Yes	1	16.7		
Availability of optometry supplies	No	3	50.0	1.50	Fair
	Yes	3	50.0		
Availability of Ambulance	No	3	50.0	1.50	Fair
	Yes	3	50.0		
Availability of weight measure	No	3	50.0	1.50	Fair
	Yes	3	50.0		
Availability of length measure	No	1	16.7	1.83	Good
	Yes	5	83.3		
Availability of medications	No	1	16.7	1.83	Good
	Yes	5	83.3		
Availability of vaccines	No	4	66.7	1.33	Poor
	Yes	2	33.3		
Availability of medical supplies and laboratory materials	No	4	66.7	1.33	Poor
	Yes	2	33.3		
Waste management supplies	No	4	66.7	1.33	Poor
	Yes	2	33.3		

Level of assessment (Poor=1–1.33; Fair=1.34–1.66; Good=1.67–2)

This figure showed that 50.0% of the nurses’ staff expressed a fair activity and duties as described by moderate average, while 25.0% were inadequate, and 25.0% were adequate evaluation.

Table 3 demonstrated that the school teachers expressed a fair satisfaction toward primary school health services as indicated by moderate mean of scores (M.s = 1.67–2.33) at items of the *hearing examination, Don’t need to visit another clinic for treating your health problem, school environment screening, determine appropriate solutions, and checking school canteen*. The school teacher expressed poor responses in terms of *provide medical glasses, provide hearing devices* as indicated by low mean of scores (M.s ≤1.66), and the good responses in terms of *school health teams are cooperative, provide vaccines, optometry, and school canteen with healthy conditions* as indicated by high mean of scores (M.s ≥2.34).

This figure showed that 64.7% of the school principals expressed a somehow satisfied toward elementary school health care services as described by moderate average,

Table 2: Evaluation of activity and duties for Nursing staff (n=32)

Items	Responses	No.	%	M.s	Ass.
Measuring student weight	Never	5	15.6	2.53	Good
	Sometime	5	15.6		
	Always	22	68.8		
Measuring student height	Never	5	15.6	2.46	Good
	Sometime	7	21.9		
	Always	20	62.5		
Optometry	Never	5	15.6	2.31	Fair
	Sometime	12	37.5		
	Always	15	46.9		
Vaccines given periodically	Never	8	25.0	1.93	Fair
	Sometime	18	56.3		
	Always	6	18.8		
Documenting all events, medical examinations and school visit reports in special records	Never	8	25.0	2.12	Fair
	Sometime	12	37.5		
	Always	12	37.5		
Participation in seminars and meetings which concerning to school health services	Never	14	43.8	1.75	Fair
	Sometime	12	37.5		
	Always	6	18.8		
Health education for students	Never	8	25.0	2.00	Fair
	Sometime	16	50.0		
	Always	8	25.0		
	Always	8	25.0		
Environment Assessment	Always	14	43.8	1.78	Fair
	Sometime	11	34.4		
	Never	7	21.9		
Coordination with school management to name a health coordinator and assign him responsibility for monitoring all health activities in the school	Never	14	43.8	1.81	Fair
	Sometime	10	31.3		
	Always	8	25.0		
Follow-up of students who drop out of school health care	Never	19	59.4	1.50	Poor
	Sometime	10	31.3		
	Always	3	9.4		
School Canteen Follow-up	Never	10	31.3	1.96	Fair
	Sometime	13	40.6		
	Always	9	28.1		

Level of assessment (Poor=1–1.66; Fair=1.67–2.33; Good=2.34–3)

while 26.3% were satisfied and 9.0% were unsatisfied regarding school health services in primary health care centers.

The Pearson’s r showed Table 4 that there was a statistically significant positive correlation between outcome of quality assurance for school health services with regard structure of primary health care centers (R = 0.499; P = 0.000).

Discussion

Part 1: Quality Assurance related to Structure of Primary health care centers

In this domain, the result of present study [Table 1] showed the fair primary health care center structure as indicated by moderate mean of scores at all studied items of the scale except the items of *availability of computer*,

Table 3: Evaluation satisfaction and acceptance of school principals for school health services (n=133)

Items	Responses	No.	%	M.s	Ass.
School health teams are cooperative	Never	0	0.0	2.67	Good
	Sometime	48	36.1		
	Always	85	63.9		
Provide Vaccines	Never	41	30.8	2.78	Good
	Sometime	33	24.8		
	Always	59	44.4		
Optometry	Never	38	28.6	2.62	Good
	Sometime	36	27.1		
	Always	59	44.4		
Provide Medical glasses	Never	105	78.9	1.23	Poor
	Sometime	26	19.5		
	Always	2	1.5		
Hearing Examination	Never	46	34.6	1.94	Fair
	Sometime	59	44.4		
	Always	28	21.1		
Provide hearing devices	Never	108	81.2	1.24	Poor
	Sometime	23	17.3		
	Always	2	1.5		
Don't needs to visit another clinic for treatment your health problem	Never	17	12.8	2.14	Fair
	Sometime	82	61.7		
	Always	34	25.6		
School environment screening and determine appropriate solutions	Always	69	51.9	1.92	Fair
	Sometime	46	34.6		
	Never	18	13.5		
Checking school canteen	Never	44	33.1	2.27	Fair
	Sometime	29	21.8		
	Always	60	45.1		
School canteen with healthy conditions	Never	26	19.5	2.35	Good
	Sometime	32	24.1		
	Always	75	56.4		

Level of Assessment (Poor=1–1.66; Fair=1.67–2.33; Good=2.34–3)

availability of vaccines, availability of medical supplies and laboratory materials, and waste management supplies appear poor evaluation. This result agrees with the finding of Khalifa and Sa’adoun (2010), who indicates that the medical supplies and laboratory materials, medications, and vaccines are available at most (>85%) of primary health-care centers.^[7] Whereas, this result disagrees with the same findings of the study, which is done by AL-Khudhairi (2005) in Baghdad Governorate, who presents that the basic medical supplies are poor available in some health care systems (17%).^[8] This is probably a consequence of time study difference.

Figure 1 Present study indicates that 66.7% of the main primary health care center structure was with fair availability of supplies and resources as described by moderate average; these results are supported by the study of Juma and Abdulwahid, 2022 in that they indicated the quality assurance of the primary healthcare services at the main primary healthcare centers and their findings demonstrated that 70% of primary health care centers is within a high level.^[9] And, a cross-sectional

study in Al Ramadi City, West Iraq showed that the overall adequacy rates for the availability of structure for main and sub-centers are 71.3% and 72.5%, respectively.^[10]

Part 2: Quality Assurance related Process (activity and duties for nursing staff)

Table 2 demonstrated that the nurse staff expressed a fair activity and duties at all studied items of the scale except, and they expressed a poor response at items such as *follow-up of students who drop out of school health care*, while good responses at items such as *measuring student weight and height*). This result is consistent with the study in Babylon Governorate, who evaluated activity to the nursing staff and indicated that fair evaluation regarding the item (weight measure and height measure) with mean of score 1.90 for both items^[11] while the study conducted by Mohaisen, 2020 in Hilla city showed 45.4% of health care workers measure the child’s weight and 46.2% of them are checking the child immunization status.^[12]

Overall evaluation of nursing staff activity and duties appear in the Figure 2, which showed that 50.0% of the nurses’ staff expressed a fair activity and duties as described by moderate average. This result is agreed with the study of Manthour, 2014, which indicates that the quality assurance for the nursing staff is fair (49%) services.^[11] Furthermore, Khalifa and Sa’adoun (2010) have found that the quality is determined as fair for more than one third of the nursing services (40%),^[7] while findings of Abdulwahid, 2022 demonstrated that 60% of quality assurance related to services provided by sub-primary health care centers within a fair level.^[13] These results lack school health services, which emerged may be due to the inefficiency of school health staff and also the staff work in more than one area at the health centers.

Part 3: Quality Assurance related Outcome (satisfaction and acceptance of school principals for school health services)

Table 3 demonstrated that highest M.S appeared at item *provide vaccines*, while lowest M.S appeared at item *provide medical glasses and provide hearing devices*. These

Table 4: Statistical correlation between outcome and structure of primary health care centers

	Value	Asymptotic standard error ^a	Approximate T ^b	Approximate significance
Interval by Interval				
Pearson’s r	0.499	0.069	6.583	0.000
N of valid cases	133			

results agree with the study in Missan governorate, Iraq (2018) to assessment of school health programmers, which showed that only 6.3% of primary health care centers do hearing examination,^[14] while in Babylon governorate, Iraq, which showed that there is high significant regarding documentation and providing vaccinations.^[11]

Overall evaluation of school principal’s satisfaction regarding school health services appears in Figure 3, which shows that 64.7% of the school principals

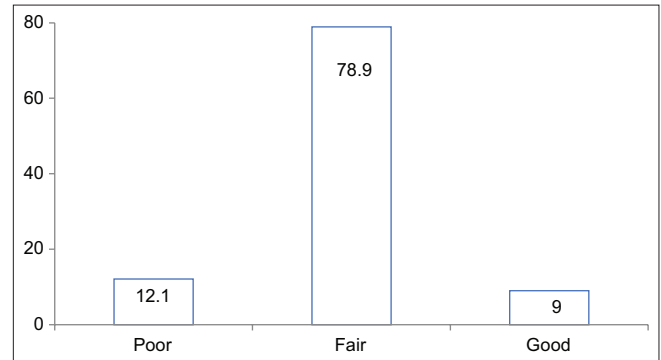


Figure 1: Overall evaluation of primary health care centers structure

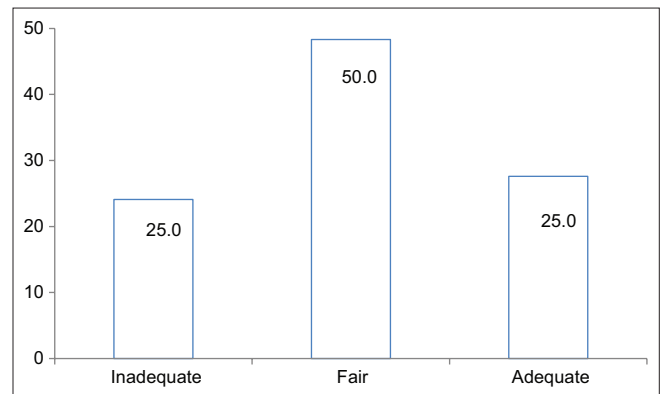


Figure 2: Overall evaluation of nurse staff activity and duties

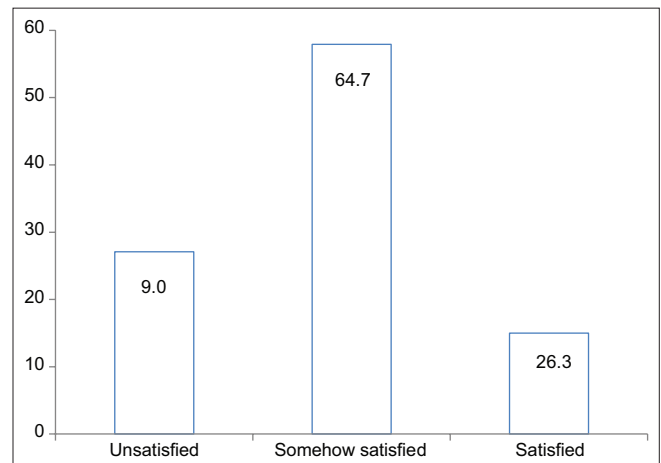


Figure 3: Overall evaluation of elementary school principals' satisfaction

expressed somehow satisfied toward elementary school health care services by the primary health care as described by moderate average, and this result is consistent with Al-Sarairah and Al-Rashidi, 2012, who showed that the level of school health from the point of view of female teachers was moderate.^[15] Additionally, our results were corresponding to Elywy, 2016, which showed that the schools principals' overall responses about availability of the school health services were partially satisfied at all domains of school health services.^[16] Al-kerety, 2011 in Holy Karbala Governorate conducted the study to determine the quality assurance for primary health care services, which shows that more than half 59% of consumers were dissatisfied,^[17] while Raddam, 2017 study to identify quality assurance of essential primary health care services at primary health care centers indicated that 40% of consumers surveyed said they were satisfied about services provided.^[18]

Part 4: Correlation between Outcome and Structure of PHCs

Table 3 showed there were statistically significant positive correlations between outcomes of quality assurance for school health services with regarding structure of primary health care centers. This result agrees with the study conducted by Ameh, 2017 in a rural South African, which showed that structure (equipment, critical drugs, accessibility) correlated with outcome (competence, confidence, and coherence).^[19] Moreover, a recent review on outcomes stemming from multidisciplinary collaboration in primary health care found that the relationship between processes and outcomes was difficult to determine and, contrary to investigations on structures, processes were often poorly described in studies.^[20]

Limitation and recommendation

The study recommended that the Directorates of Education/Ministry of Education can benefit from the results of the current study to identify the strengths and weaknesses in the structure of primary health care centers and to adopt the necessary measures to enhance the quality of the structure of primary health care centers. In addition, equipping health centers with essential supplies, such as computers, vaccines, waste management supplies, medical supplies, and laboratory materials in primary health care centers, provides integrated services for students and provision of supplies such as eye glasses to the students in order to overcome vision problems. Further studies can be conducted on large sample size and nationwide oriented.

Conclusions

The study concluded that overall evaluation of the quality assurance related to the structure of primary

health care centers were fair availability of supplies and resources, and there is lack of computer, vaccines, waste management supplies, medical supplies, and laboratory materials at the PHCs. Overall evaluation of quality assurance related to process (Nursing and health staff's activity and duties) was fair in PHCs regarding school health services, and there is lack of follow-up of students who drop out of school health care by nurses and health staff in PHCs. Overall evaluation of quality assurance related to outcome (satisfaction and acceptance of school principals) expressed a somehow satisfied toward elementary school health care services, and there is lack of provide medical glasses to students at the primary health care centers. There was a significant positive correlation between outcomes of quality assurance for school health services with regard structure of PHCs. This indicated the better structure of the buildings in PHCs that produce better outcomes (consumer satisfaction).

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Ethical considerations

This essay considers all ethical concepts. The participants were made aware of the study's goals and the progression of its execution. They also received assurance. The research findings were made available to them if they so choose, and they were allowed to exit the study whenever they pleased. The subjects have provided their written consent.

Declaration of patient consent

The authors certify that they have obtained all appropriate participants consent forms. The participants understand that their names and initials will not be published and due efforts will be made to conceal their identity.

Contributions of the authors

Washi GA (first author), introduction writer, methodologist, main researcher, statistical analyst, and discussion writer (80%); Saadoon N J (second author), introduction writer, methodologist, and assistant researcher (20%).

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Nil.

Conflicts of interest

There are no conflicts of interest.

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