



Challenges of School Health Services for Caring of Children with Chronic Diseases at Governmental Schools in Gaza Strip

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ABSTRACT

Objective: The purpose of the study was to assess the challenges facing school health services provided to children with chronic diseases at governmental schools in southern area of Gaza Strip.

Methods: The study utilized descriptive, cross-sectional design. The sample of the study is census sample, consisted of two groups: First group included 127 school health teachers from Rafah and Khan Younis, 120 teachers agreed to participate in the study with response rate 94.4%. Second group included 28 school health providers from directorate of school health at ministry of health. For data collection, the researcher developed two self-administered questionnaires (one for health care providers and one for school health teachers). The reliability of the questionnaires were tested by a pilot study and cronbach alpha of the domains ranged between 0.721 to 0.959 for school health providers and 0.710 to 0.856 for school health teachers. The researcher used SPSS (22) for data analysis, and statistical analysis included frequencies, percentage, cross-tabulation, *Chi square* and Fisher's exact test.

Results: The results showed that 57.1% of school health providers and 50% of school health teachers were females, majority of them were married, mean age of SHPs was 43.642 years and mean age for SHTs was 39.716 years, the majority of them have Bachelor Degree, and most of them did not receive special training about care of chronic diseases. The results found low school health services for children with chronic diseases (diabetes, asthma, chronic renal failure and epilepsy). The results also indicated that SHPs have high knowledge about chronic diseases and SHTs have above moderate knowledge. There were no statistical significant differences in level of knowledge related to gender, age, educational level, experience and previous training. Challenges that face school health included inadequate healthcare providers, shortage of supplies and logistics and low administrative support especially in aspects of incentives and availability of supplies and materials. The results also indicated moderate coordination between school health providers and school administration.

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Conclusion: The study concluded that there was a need to increase the number of qualified healthcare providers in the school health team and to provide adequate training to school health team to improve their skills and abilities to offer quality school health services.

Keywords: Health teachers; Diabetes; Health services; Childrens; Chronic diseases

INTRODUCTION

Over the past decades, the prevalence of Chronic Health Conditions (CHCs) of children has increased over time. Students with CHCs are a unique but integral part of the school community. Although students with CHCs have many individual requirements, they share the need for equal access to the same educational outcomes, academically and socially, as their healthy peers.

The special needs of students with CHCs are complex and continuous. The School Healthcare Providers (SHCPs) has a pivotal role. Their roles include interpreting a student's health status, explaining the health impairment to the school team, translating the healthcare provider orders into the school setting by developing individualized healthcare plans, providing assessment, direct care, coordination and evaluation of care, providing nursing delegation that aligns with rules and regulations, and advocating for appropriate accommodations in the educational setting.

Children with CHCs are at risk for high absenteeism rates, low student engagement, dropping-out of school, exposure to bullying, disruptive behaviors, poor grades and below-average performance on standardized achievement tests [1]. The SHCP works to support the constructs of the whole school, whole community, whole child model by coordinating intervention and evaluation services, identifying previously unrecognized symptom patterns and student responses to those patterns, and referring students to the appropriate resources. By assisting students with the management of their CHCs, the School Health Program (SHP) contributes to risk reduction, increased classroom seat time, decreased student absenteeism, improved academic success and cost savings to families and educational and Health Care Systems (HCS).

Children with CHCs like asthma, diabetes or epilepsy need extra attention at school to stay safe and healthy. With the right treatment plan and support, children with these conditions can attend school without putting their health at risk. Moreover, HCPs can utilize the power of SHCP to maintain the health of students who have CHCs at the highest level; decrease healthcare costs, unnecessary use of emergency rooms, hospitalizations and increase quality of care.

School health services play a key role in managing the daily needs of students with CHCs. Although these health conditions can vary, but they have the potential for functional limitations, including dependency on medication, assistive devices or routine medical care. The school nurse is often responsible for coordinating and conducting health assessments, as well as planning and implementing individualized health-care plans for safe and effective management of CHCs, often for those who may have limited

access to health care. These health services are designed to help with access or referrals by linking school staff, students, families, community and HCPs together to promote the health care of students in a healthy and safe school environment.

In Palestine, the school health began in 1994, after the establishment of the Palestinian National Authority (PNA). The ministry of education initiated a special department for school health in each directorate of education. A teacher has been assigned at each school to take responsibility of health services in every school in addition to his work as a teacher and called school health coordinator. The school health services are offered to students in the first, seventh and tenth grades in the governmental schools in the Gaza Strip (GS) which totaling more than 400 schools. The coverage rate for a medical examination was 96%, the number of students who were examined was 63295 students out of 65996 students.

From the researcher's opinion, school health is a part of the HCS in Palestine and the SHCP play an important role in assessing health conditions of the students, identify health problems and refer to appropriate health facility. In addition, SHP offer health education and ensure safety of school environment to maintain good health of students and prevent hazards that may threaten the health status of students [2].

MATERIALS AND METHODS

Study Design

The researcher used a descriptive, cross-sectional design. This design is appropriate for describing the status of phenomena (challenges of school health services for caring of children with chronic diseases).

Study Population

The study population included all the school health teachers at governmental schools in southern governorates of GS (127 teachers) and the SHCPs at MoH in GS (20 nurses and 8 doctors).

Sample Size and Sampling Method

The sample of the study was census sample. It consisted of two groups: First group included SHCPs at directorate of school health-MoH; their total number is 28 (20 nurses and 8 doctors). The second group consisted of 127 SHTs from MoE directorate of Rafah, directorate of East Khanyounis and directorate of West Khanyounis. Among SHTs, 120 agreed to participate in the study with response rate 94.4% [3].

Setting of the Study

The study had been carried out at governmental schools in southern governorates of GS (37 schools in Rafah, 43 schools in East Khanyounis and 47 schools in West Khanyounis) and Directorate of School Health at MoH.

Period of the Study

The study conducted during the period from May 2019 to November 2019. Data collection was carried out during September 2019.

Eligibility Criteria

Inclusion criteria:

- Healthcare providers who are currently work at the directorate of school health in gaza strip.
- Teachers who are assigned for school health activities at governmental schools in Gaza strip and willing to participate in the study.

Instruments of the Study

After review of available literature, the researcher developed two self-administered questionnaires: One for health care providers and one for school health teachers. The questionnaire designed to assess school health services for children with chronic diseases ([Table 1](#)). The questionnaire was divided into parts as the following:

Part one: Sociodemographic factors.

Part two: Current status of school health services for children with chronic disease.

- School health services for children with DM: 9 items
- School health services for children with asthma: 6 items
- School health services for children with CRF: 7 items
- School health services for children with epilepsy: 7 items

Part three: Readiness to provide care for children with chronic disease.

- Knowledge about DM: 14 items
- Knowledge about asthma: 9 items
- Knowledge about CRF: 13 items
- Knowledge about epilepsy: 8 items

Part four: Challenges that face school health services.

- Availability of personnel and supplies at schools: 10 items
- Availability of logistics at schools: 6 items
- Coordination between school healthcare providers and school health teachers: 12 items

Administrative support: 7 items.

Response on questionnaire items was (Yes) and (No). Level of knowledge was categorized as low, moderate, and high as the following:

Table 1: Level of knowledge.

Low knowledge	Moderate knowledge	High knowledge
Less than 60%	60%-80%	More than 80%

Face and Content Validity

The researcher distributed the questionnaire to a group of experts in the field of child health and research methodology in order to evaluate adequacy of the questionnaire items to measure the study variables, which will give the questionnaire confidence in its results.

Pilot Study

The researcher carried out a pilot study on 30 participants from school health teachers and 11 participants from school healthcare providers before starting the actual data collection

in order to test reliability of the questionnaire and to identify the clarity or ambiguity of questionnaire statements.

Reliability: Reliability is concerned with how consistently the measurement technique measures the concept of interest, a measure is considered reliable if it gives the same results each time the situation is measured. To test reliability, the researcher used Cronbache alpha method as presented ([Tables 2 and 3](#)).

Table 2: Reliability of the school healthcare providers' questionnaire.

Domain	Number of items	Alpha coefficient value
Status of school health in caring for children with DM	9	0.935
Status of school health in caring for children with asthma	6	0.934
Status of school health in caring for children with CRF	7	0.946

Status of school health in caring for children with pilepsy	7	0.945
Knowledge about caring of children with DM	14	0.959
Knowledge about caring of children with asthma	9	0.938
Knowledge about caring of children with CRF	13	0.911
Knowledge about caring of children with epilepsy	8	0.839
Coordination between the school and school health team	12	0.794
Administration support	7	0.721

Table 3: Reliability of the school health teachers' questionnaire.

Domain	Number of items	Alpha coefficient value
Status of school health in caring for children with DM	9	0.856
Status of school health in caring for children with asthma	6	0.796
Status of school health in caring for children with CRF	6	0.838
Status of school health in caring for children with epilepsy	7	0.71
Knowledge about caring of children with DM	13	0.708
Knowledge about caring of children with asthma	9	0.713
Knowledge about caring of children with CRF	13	0.703
Knowledge about caring of children with epilepsy	7	0.717
Coordination between the school and school health team	12	0.767
Administration support	7	0.737

The researcher calculated the reliability of the two questionnaires by using the Cronbache alpha method, as the value of alpha for all the domains was above 0.70, which means that the questionnaire has good reliability.

Data Collection

The researcher distributed the questionnaires to the study participants. The researcher explained the purpose of the study and gave appropriate instructions to study participants before filling the questionnaires. Estimated time allocated for filling each questionnaire is about 20 minutes.

Data Entry and Statistical Analysis

The data were analyzed by using the SPSS program version 22 by help of a statistician. The stages of data analysis included: Coding the questionnaires, data entry, and data cleaning. Statistical analysis included descriptive results including frequencies, percentage, and inferential results including *Chi square* test and Fisher's exact test.

RESULTS

Sociodemographic Characteristics of Study Participants

The sample of the study consisted of two groups; School Healthcare Providers (SHCPs) who are working in the directorate of school health-MoH at southern governorates of GS (28 SHCPs) and School Health Teachers (SHTs) who are working in schools-MoE at southern governorates of GS (120 SHTs). Their sociodemographic characteristics are presented in the following figures and tables.

Figure 1 shows that 28 SHCPs participated in the study (42.9% males and 57.1% females), and 120 SHTs (50% males and 50% females) (Figure 1).

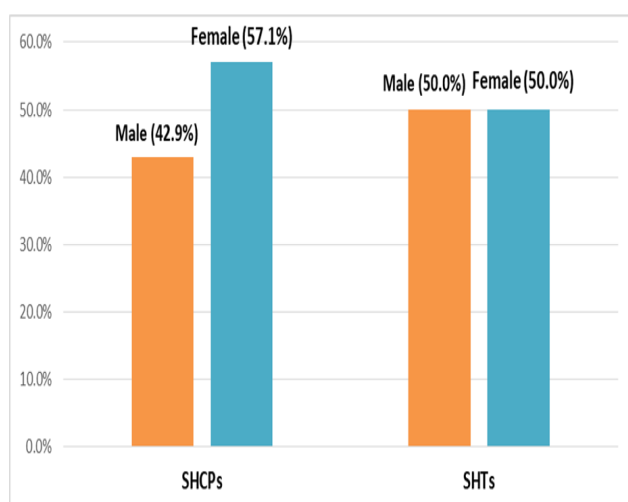


Figure 1: Distribution of study participants by category and gender.

Figure 2 shows that 85.7% of SHCPs and 94.2% of SHTs were married, while 14.3% of the SHCPs and 5.8% of SHTs were single (Figure 2).

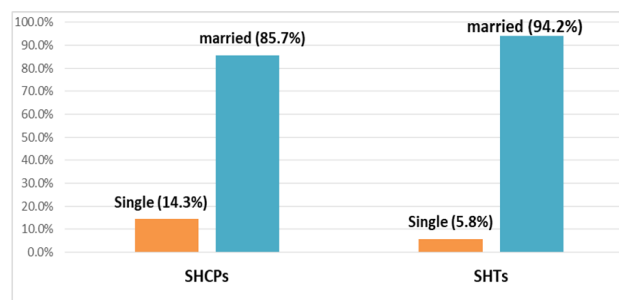


Figure 2: Distribution of study participants by marital status.

Figure 3 shows that 21 (75%) of the SHCPs have a monthly income of 2000 NIS and more, while 7 (25%) have a monthly income of less than 2000 NIS (Figure 3).

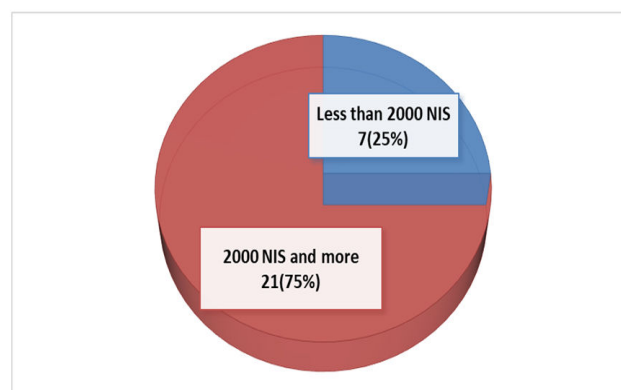


Figure 3: Distribution of SHCPs by income.

Table 4 shows that about two-thirds 17 (60.7%) of SHCPs aged 41 years and more, 20 (71.4%) are nurses, 22 (78.6%) have bachelor degree. In addition, 17 (60.7%) have an experience of 14-24 years, and only 7 (25%) received training about chronic disease (Table 4).

Table 4: Sociodemographic characteristics of school healthcare providers (n=28).

Variables		n	Percent
Age	40 years and less	11	39.3
	41 years and more	17	60.7
	Total	28	100
Mean=43.642 SD=7.548 years			
Specialty	Doctor	8	28.6
	Nurse	20	71.4
	Total	28	100
Level of education	Diploma	4	14.3
	Bachelor	22	78.6
	Master degree	2	7.1

	Total	28	100
Experience in school health	3-13 years	6	21.4
	14-24 years	17	60.7
	25-36 years	5	17.9
	Total	28	100
Mean=18.607 SD=6.784 years			
Received training about chronic disease	Yes	7	25
	No	21	75
	Total	28	100

Table 5 shows that 45 (37.5%) of SHTs aged between 40-49 years old and 39 (32.5%) aged between 31-39 years. In addition, 117 (97.5%) have bachelor degree, 42 (35%) have an experience of 11-15 years in education, 61 (50.8%) have an experience of 1-5 years as school health teacher, 85 (70.8%)

have monthly income of less than 1800 NIS, and only 22 (18.3%) attended training programs about chronic diseases (Table 5).

Table 5: Sociodemographic characteristics of school health teachers (n=120).

Variables		n	Percent
Age	30 years and less	20	16.7
	31-39 years	39	32.5
	40-49 years	45	37.5
	50 years and more	16	13.3
	Total	120	100
Mean=39.716 SD=7.986 years			
Level of education	Bachelor	117	97.5
	Master degree	3	2.5
	Total	120	100
Experience in education	1-5 years	13	10.8
	6-10 years	34	28.4
	11-15 years	42	35
	16 years and more	31	25.8
	Total	120	100
Mean=13.041 SD=5.951 years			
Experience in school health	1-5 years	61	50.8
	6-10 years	37	30.8
	11 years and more	22	18.3

	Total	120	100
		Mean=6.708 SD=4.765 years	
Monthly income	Less than 1800 NIS*	85	70.8
	1800 NIS and more	35	29.2
	Total	120	100
		Mean=1578.583 SD=468.950 NIS	
Received training about chronic disease	Yes	22	18.3
	No	98	81.7
	Total	120	100

Current School Health Services for Children With Chronic Disease as Perceived by SHCPs and SHTs

Table 6 presents the current school health services for children with diabetes mellitus (DM) as perceived by SHCPs and SHTs. The results showed that the highest score obtained in provision of educational and awareness programs for children with DM about the nature of their disease (67.9% SHCPs and 68.3% SHTs), followed by provision of educational and awareness programs for other teachers about dealing

with children with DM (67.9% SHCPs and 64.2% SHTs). While the lowest score obtained in checking the blood glucose level in emergency situations for children with DM was (21.4% SHCPs and 17.5% SHTs). The overall average score was 49.6% as reported by SHCPs and 46.7% as reported by SHTs, which indicated low school health services for children with DM (Table 6).

Table 6: Current school health services for children with diabetes mellitus.

No.	Items for DM	SHCPs (n=28)		SHTs (n=120)	
		Availability of service n (%)		Availability of service n (%)	
1	I give prescribed medicines to children with DM, such as insulin, in emergency situations	9	32.1	42	35
2	I check the blood glucose level in emergency situations for children with DM	6	21.4	21	17.5
3	I follow a diet to regulate blood glucose and rich in nutrients which necessary for growth of children with DM	9	32.1	45	37.5
4	I promote physical exercises for children with DM	17	60.7	73	60.8
5	I provide educational and awareness programs for children with DM about the nature of their disease	19	67.9	82	68.3

6	I provide educational programs about importance of oral hygiene as well as feet for children with DM	18	64.3	88	73.3
7	I provide educational and awareness programs for other teachers about dealing with children with DM	19	67.9	77	64.2
8	I provide educational and awareness programs for parents about dealing with their children with DM	18	64.3	52	43.3
9	I have an emergency treatment plan (protocol) to treat low or high blood glucose in children with DM	10	35.7	25	20.8
Overall average		-	49.6	-	46.7

Table 7 shows that the highest score obtained in providing educational and awareness programs for children with asthma (71.4% SHCPs) and higher score obtained in working to provide a safe and healthy school environment free of irritants for children with asthma (72.5% SHTs). The lowest score obtained in availability of an emergency treatment plan or protocol to deal with aggressive asthma attacks in children

with asthma (28.6% SHCPs and 19.2% SHTs). The overall average score was 47% as reported by SHCPs and 45.3% as reported by SHTs, which indicated low school health services for children with asthma ([Table 7](#)).

Table 7: Current school health services for children with Asthma.

No.	Items for asthma	SHCPs (n=28)		SHTs (n=120)	
		Availability of service n (%)		Availability of service n (%)	
1	I give prescribed medications to children with asthma, such as nebulizers/ sprays in emergency situations	9	32.1	35	29.2
2	I work to provide a safe and healthy school environment free of irritants that negatively affect children with asthma	9	32.1	87	72.5

3	I provide educational and awareness programs for children with asthma	20	71.4	75	62.5
4	I provide educational and awareness programs for teachers about dealing with children with asthma	19	67.9	63	52.5
5	I provide educational and awareness programs for parents about dealing with their children with asthma	14	50	43	35.8
6	I have an emergency treatment plan (protocol) to deal with aggressive asthma attacks in children with asthma	8	28.6	23	19.2
Overall average		-	47	-	45.3

As shown in Table 8 the highest score obtained in providing educational and awareness programs for school teachers about dealing with children with chronic kidney failure (53.6% SHCPs and 49.2% SHTs), followed by providing educational and awareness programs for children with chronic renal failure (46.4% SHCPs and 48.3% SHTs). The lowest score obtained in availability of emergency treatment plan or protocol to deal with hypertension in children with chronic

kidney failure (17.9% SHCPs and 11.7% SHTs). The overall average score was 32.6% as reported by SHCPs and 31.5% as reported by SHTs, which indicated very low school health services for children with chronic renal failure (Table 8) [4].

Table 8: Current school health services for children with chronic renal failure.

No.	Items for CRF	SHCPs (n=28)		SHTs (n=120)	
		Availability of service n (%)		Availability of service n (%)	
1	I give prescribed medications to children with chronic kidney failure such as blood pressure medications in emergency situations	5	17.9	17	14.2
2	Ensure that the dialysis procedure is carried out on time by the hospital for children with chronic renal failure	6	21.4	44	36.7

3	I follow a healthy diet with proper protein intake and correct calories to maintain body weight for children with chronic kidney failure	7	25	33	27.5
4	I provide educational and awareness programs for children with chronic renal failure	13	46.4	58	48.3
5	I provide educational and awareness programs for school teachers about dealing with children with chronic kidney failure	15	53.6	59	49.2
6	I provide educational and awareness programs for parents about dealing with their children with chronic kidney failure	13	46.4	40	33.3
7	I have an emergency treatment plan (protocol) to deal with hypertension in children with chronic kidney failure	5	17.9	14	11.7
Overall average		-	32.6	-	31.5

As shown in Table 9 the highest score obtained in provide education and awareness sessions for teachers on how to identify and deal with seizures associated with children with epilepsy (67.9% SHCPs and 65.8% SHTs), followed by ensuring that classrooms for children with epilepsy are on the ground floor (57.1% SHCPs and 58.3% SHTs). The lowest score obtained in having an emergency treatment plan or protocol

to deal with seizure attacks (25% SHCPs and 23.3% SHTs). The overall average score was 43.8% as reported by SHCPs and 50.9% as reported by SHTs, which indicated low school health services for children with epilepsy (Table 9).

Table 9: Current school health services for children with epilepsy/seizures.

No.	Items for epilepsy	SHCPs (n=28)		SHTs (n=120)	
		Availability of service n (%)		Availability of service n (%)	
1	I give prescribed medications to children with epilepsy such as antiepileptic in emergency situations	7	25	32	26.7

2	School health ensures that classrooms for children with epilepsy are on the ground floor	16	57.1	70	58.3
3	I provide education and awareness sessions for school teachers on how to identify and deal with seizures associated with children with epilepsy	19	67.9	79	65.8
4	I provide education and awareness sessions for parents on how to identify and deal with seizures associated with their children with epilepsy	14	50	57	45.7
5	I provide a healthy school environment free of irritants/ triggers for seizures for children with epilepsy	10	35.7	93	77.5
6	I monitor the behavior of children with epilepsy	13	46.4	71	59.2
7	I have an emergency treatment plan (protocol) to deal with seizure attacks	7	25	28	23.3
Overall average		-	43.8	-	50.9

Readiness to Provide Care for Children with Chronic Disease

Table 10 shows that 89.3% of SHCPs and 45.8% of SHTs knew that low blood sugar is more dangerous than high blood sugar and the Majority of them knew the symptoms of low blood sugar. Also, 90.8% of SHTs knew that DM may be caused by

the presence of the disease in family history. The overall average score was 81.6% for SHCPs and 71.6% for SHTs, which indicated that SHCPs have high knowledge about DM and SHTs have above moderate knowledge about DM (Table 10).

Table 10: Knowledge of study participants about diabetes mellitus.

No.	Items for knowledge about DM	SHCPs (n=28)		SHTs (n=120)	
		Correct answer n	(%)	Correct answer n	(%)
1	DM is a result of the inability of beta cells to produce insulin or even insufficient insulin secreted by pancreas, so that the blood glucose remains high	23	82.1	99	82.5

2	DM may be caused by the presence of the disease in family history	24	85.7	109	90.8
3	DM may be caused by a viral infection of the pancreas and digestive system	22	78.6	57	47.5
4	DM may be caused by the body's immune cells attacking the beta cells of the pancreas	21	75	63	52.5
5	Symptoms of DM in children polydipsia	22	78.6	94	78.3
6	Symptoms of DM in children polyphagia	22	78.6	89	74.2
7	Symptoms of DM in children polyuria	22	78.6	99	82.5
8	Children with DM are diagnosed only by random blood glucose analysis	24	85.7	75	62.5
9	The normal level of blood glucose is maintained by giving only insulin.	20	71.4	83	69.2
10	Symptoms of a lower blood glucose than normal: Sweating	23	82.1	80	66.7
11	Symptoms of low blood glucose below normal	24	85.7	95	79.2
12	Symptoms of low blood glucose below normal range: Poor concentration	24	85.7	105	87.5
13	High blood glucose is more dangerous than low range: Dizziness/loss of consciousness.	25	89.3	55	45.8
14	Children with DM need regular monitoring of blood glucose. Kidney function and eye examination	24	85.7	100	83.3
	Overall average	-	81.6	-	71.6

As shown in Table 11 the majority of SHCPs (92.9%) know that asthma resulted from recurrent infection of airway, it can cause narrowing of airway, and asthmatic attacks are resulted from immune response. The overall average score was 88.5% for SHCPs and 75.5% for SHTs, which indicated that SHCPs

have high knowledge and SHTs have above moderate knowledge about asthma (Table 11).

Table 11: Knowledge of study participants about asthma.

No.	Items for knowledge about asthma	SHCPs (n=28)		SHTs (n=120)	
		Correct answer n	(%)	Correct answer n	(%)
1	Asthma is a chronic recurrent of airway inflammation due to repeated exposure of the child to irritants leading to an excessive immune response	26	92.9	111	92.5
2	Asthma leads to narrowing of airway	26	92.9	105	87.5
3	The asthma leads to mucous secretions	25	89.3	88	73.3
4	Causes of an asthma attack in children with asthma excessive immune response to the vaccine plants	26	92.9	88	73.3
5	Causes of an asthma attack in children with asthma are an excessive immune response to perfume/severe odors	26	92.9	88	73.3
6	Signs and symptoms of asthma in children with asthma such as wheezing caused by airway tightness	25	89.3	89	74.2
7	Signs and symptoms of asthma in children with asthma such as irritability and sneezing	20	71.4	20	71.4
8	Asthma is treated in children with asthma by avoiding irritants only	24	85.7	71	59.2
9	Complications of asthma in children with asthma such as aggressive asthma attack	25	89.3	90	75
Overall average		88.5	-	75.5	-

Table 12 shows that high scores obtained in knowing that CRF is life threatening disease, improving by controlling blood pressure (92.9% SHCPs). SHTs shows low scores in carrying heavy weights naturally by hand with an artero-venous fistula (30.8%) and artero-venous fistula can be used to administer medications and draw blood samples the overall average

score was 81.3% for SHCPs and 68.8 for SHTs, which indicated high knowledge about CRF among SHCP and moderate knowledge among SHTs ([Table 12](#)).

Table 12: Knowledge of study participants about CRF.

No.	Items for knowledge about CRF	SHCPs (n=28)		SHTs (n=120)	
		Correct answer n	(%)	Correct answer n	(%)
1	Chronic kidney failure in children is a condition in which the kidneys suddenly lose their functional capacity	15	53.6	103	85.8
2	Chronic kidney failure is life threatening due to the accumulation of harmful fluids in the body with the body's inability to excrete them	26	92.9	91	75.8
3	Signs and symptoms of chronic kidney failure in children: Low urine output	24	85.7	107	89.2
4	Signs and symptoms of chronic kidney failure in children: Presence of protein in the urine	26	92.9	93	77.5
5	Signs and symptoms of chronic kidney failure in children: Swelling of the feet and hands	25	89.3	87	72.5
6	Kidney failure is diagnosed by kidney/CT imaging.	26	92.9	107	89.2
7	The health status of a child with chronic kidney failure is maintained by dialysis	14	50	41	34.2
8	The health status of a child with chronic kidney failure is maintained by a diet suitable for protein, salts and calories	24	85.7	101	84.2
9	The health of a child with chronic kidney failure is maintained by treating blood pressure	26	92.9	83	69.2
10	An arterial venous fistula can be used to administer medications and draw blood samples	25	89.3	50	41.7

11	A child with chronic renal failure can carry heavy weights naturally by hand with an arterial vein	17	60.7	37	30.8
12	Complications of chronic kidney failure in children: Anemia	23	82.1	87	72.5
13	Chronic kidney failure in children is a condition in which the kidneys suddenly lose their functional capacity	25	89.3	86	71.7
Overall average		-	81.3	-	68.8

Table 13 shows that highest score obtained in knowing that brain injury can cause epilepsy (92.9% SHCPs) and 89.3 of SHCPs knew the common complication of epilepsy. In addition, 83.3% of SHTs knew that epilepsy is a disease of nervous system accompanied by convulsions. The overall score was 76.3% as reported by SHCPs and 63.3% as reported

by SHTs, which indicated above moderate to moderate knowledge about epilepsy (Table 13).

Table 13: Knowledge of study participants about epilepsy/seizures.

No.	Items for knowledge about epilepsy	SHCPs (n=28)		SHTs (n=120)	
		Correct answer n	(%)	Correct answer n	(%)
1	Epilepsy in children is a disease of the nervous system, which leads to two or more episodes of unexplained convulsions during the day	22	78.6	100	83.3
2	One of the causes of epilepsy is presence of the disease in family history	24	85.7	87	72.5
3	Causes of epilepsy severe head injury	24	85.7	84	70
4	Causes of epilepsy brain disease	26	92.9	79	65.8
5	Epilepsy in children is diagnosed by tests that give direct results of presence of the disease	15	53.6	52	43.3
6	When a seizure associated with epilepsy occurs, leave the child (not shaking the child or trying to awaken) with the observation	21	75	87	72.5

	of the child until the seizure ends within a minutes. short time (1-3)				
7	After the epileptic seizure solved, it should be placed in a lying position with the feet above the head level (shock position)	14	50	27	22.5
8	Complications of epilepsy in children with epilepsy, such as a aggressive epileptic seizure that lasts more than 30 minutes leading to a loss of consciousness that needs to be hospitalized	25	89.3	92	76.7
Overall average		-	76.3	-	63.3

Table 14 shows that 64.3% of SHCPs and 34.2% of SHTs have high knowledge about DM, 89.3% of SHCPs and 44.2% of SHTs have high knowledge about asthma, 60.7% of SHCPs and 10.8% of SHTs have high knowledge about CRF and 46.4 of SHCPs and 13.4% of SHTs have high knowledge about

epilepsy, which indicates that SHCPs have higher knowledge about chronic disease compared to SHTs (Table 14).

Table 14: Level of knowledge of study participants about chronic disease.

Level of knowledge	DM (%)		Asthma (%)		CRF (%)		Epilepsy (%)	
	SHCP	SHT	SHCP	SHT	SHCP	SHT	SHCP	SHT
Low (Less than 60%)	14.3	25.8	7.1	22.5	7.1	30	14.3	28.3
Moderate (60%-80%)	21.4	40	3.6	33.3	32.2	59.2	39.3	58.3
High (More than 80%)	64.3	34.2	89.3	44.2	60.7	10.8	46.4	13.4

Challenges that Face School Health Services

Table 15 shows that very low percentage (7.1%) of SHCPs said that a physician or a nurse is present in the school, and having examination/treatment room in the school, insulin, and glucometer. In addition, 10% of SHTs reported that insulin,

inhalers for asthma, and antiepileptic drugs are present in the school. These results reflect very low supplies in the schools (Table 15).

Table 15: Availability of personnel and supplies at schools.

No.	Personnel and supplies	SHCPs (n=28)		SHTs (n=120)	
		Available n (%)	Available n (%)	Available n (%)	Available n (%)
1	Physician/nurse	2	7.1	17	14.2
2	Examination/treatment room	2	7.1	26	21.7

3	Syringes and needles	6	21.4	18	15
4	Insulin (for DM children)	2	7.1	12	10
5	Inhaler for asthma	1	3.6	12	10
6	Anti-epileptic drugs	1	3.6	13	10.8
7	Sphygmomanometer and stethoscope	10	35.7	52	43.3
8	Glucometer and strips	2	7.1	20	16.7
9	Weighing scale	9	32.1	40	33.3
10	First aid/emergency bag	10	35.7	55	45.8

Table 16 shows that 78.6% of SHCPs and 80% of SHTs mentioned that a screen is available at school, 78.6% of SHCPs and 66.7% of SHTs mentioned that a projector is available at school. In addition, 71.4% of SHCPs and 68.3% of SHTs stated

that a lecture room for health education is available at school (Table 16).

Table 16: Availability of logistics at schools.

No.	Logistics	SHCPs (n=28)		SHTs (n=120)	
		Available n (%)	Available n (%)	Available n (%)	Available n (%)
1	Lecture room for health education	20	71.4	82	68.3
2	Screen	22	78.6	96	80
3	Projector	22	78.6	80	66.7
4	LCD screen	18	64.3	78	65
5	Educational videos	16	57.1	54	45
6	Wall posters and simulations	16	57.1	64	53.3

Table 17 shows that all the SHCPs and 79.2% of SHTs agreed that the school is informed of the school health team's visit beforehand, and all the SHCPs and 70% of SHTs agreed that there is a schedule of school visits is agreed upon with the school. Moreover, 92.9% of SHCPs and 88.3% of SHTs mentioned that there is a direct telephone connection

between the school and the school health department. The overall average score was 63.7% for SHCPs and 72.2% for SHTs, which indicated above moderate level of coordination between SHCPs and SHTs (Table 17).

Table 17: Coordination between SHCPs and SHTs.

No.	Items of coordination	SHCPs (n=28)		SHTs (n=120)	
		Yes n (%)	Yes n (%)	Yes n (%)	Yes n (%)
1	There is a direct telephone connection between school and the school health department	26	92.9	106	88.3

2	School is informed of the school health team's visit dates earlier	28	100	95	79.2
3	A schedule of school visits is agreed upon with the school	28	100	84	70
4	School is communicated by the Internet	17	60.7	89	74.2
5	Information and messages are exchanged with (Facebook, Messenger)	18	64.3	82	68.3
6	the school by the Internet The school health team is informed by the school when the symptoms of chronic disease appear on children known to have chronic diseases	22	78.6	110	91.7
7	The school health team is informed by the school when a child with a chronic disease is referred to hospital	20	71.4	101	84.2
8	Regular meetings with school health teachers about care of children with chronic diseases	15	53.6	75	62.5
9	Health education activities for children with chronic diseases are carried out in coordination with school health teachers	14	50	69	57.5
10	The school provides you with updated names	17	60.7	107	89.2
11	Coordinate with the school to visit children with and addresses of children with chronic diseases chronic diseases at home	5	17.9	58	48.3
12	There is a computerized program for the development of the health status of	4	14.3	64	53.3

children with chronic diseases in the school health department of the ministry of health

Overall average - 63.7 - 72.2

As shown in Table 18, 78.6% of SHCPs and 75.8% of SHTs agreed that they receive full support from their director, 67.9% of SHCPs and 74.2% of SHTs agreed that their administration provides them with a vehicle to travel between schools to visit. In contrast, 21.4% of SHCPs agreed that their administration provides them with transportation allowance if there is no government vehicle to travel between schools,

and 27.5% of SHTs agreed that their director provides them with the tools and supplies to provide care for children with chronic diseases. The overall average score was 48.4% for SHCPs and 58.9%, which indicated low support from the administration (Table 18) [6].

Table 18: Administrative support as perceived by study participants.

No.	Items of administrative support	SHCPs (n=28)		SHTs (n=120)	
		Yes n (%)	Yes n (%)	Yes n (%)	Yes n (%)
1	I receive full support for my work from my director	22	78.6	91	75.8
2	I receive constructive guidance from my director to increase my professional competence in the care of children with chronic diseases	17	60.7	81	67.5
3	I received training programs for school health tasks on caring for children with chronic diseases	11	39.3	45	37.5
4	I receive encouragement and reward from my director when I do a special activity in school health for children with chronic diseases	13	46.4	82	68.3
5	My director provides me with the tools and supplies to provide care for children with chronic diseases	7	25	33	27.5
6	My administration provides me with a vehicle to travel between schools to visit	19	67.9	89	74.2

7	The school health administration provides me with transportation allowance if there is no government vehicle to travel between schools	6	21.4	74	61.7
Overall average		-	48.4	-	58.9

Relationship between readiness to provide care for children with chronic disease and selected sociodemographic variables. Table 18 shows that there were no statistical

significant differences in levels of knowledge about chronic diseases between male and female SHCPs (P value>0.05) (Table 19) [7].

Table 19: Differences in knowledge of SHCPs about chronic disease related to gender.

Variable	Gender		Statistics value	P value
	Male n (%)	Female n (%)		
Diabetes mellitus				
Low-moderate	5 (41.7)	5 (31.3)	-	0.698
High	7 (58.3)	11 (68.8)		
Total	12 (100.0)	16 (100.0)		
Asthma				
Low-moderate	1 (8.3)	2 (12.5)	-	1.000
High	11 (91.7)	14 (87.5)		
Total	12 (100.0)	16 (100.0)		
Chronic renal failure				
Low-moderate	3 (25.0)	8 (50.0)	-	0.253
High	9 (75.0)	8 (50.0)		
Total	12 (100.0)	16 (100.0)		
Epilepsy				
Low-moderate	6 (50.0)	9 (56.3)	0.108	0.743
High	6 (50.0)	7 (43.8)		
Total	12 (100.0)	16 (100.0)		

Table 20 shows that there were no statistical significant differences in levels of knowledge about chronic diseases between male and female SHTs (P value>0.05) (Table 20).

Table 20: Differences in knowledge of SHTs about chronic disease related to gender.

Variable	Gender		χ^2	P value
	Male n (%)	Female n (%)		
Diabetes mellitus				
Low	12 (20.0)	19 (31.7)	2.355	0.308

Moderate	27 (45.0)	21 (35.0)		
High	21 (35.0)	20 (33.3)		
Total	60 (100.0)	60 (100.0)		
Asthma				
Low	16 (26.7)	11 (18.3)	1.196	0.55
Moderate	19 (31.7)	21 (35.0)		
High	25 (41.7)	28 (46.7)		
Total	60 (100.0)	60 (100.0)		
Chronic renal failure				
Low	19 (31.7)	17 (28.3)	0.202	0.904
Moderate	35 (58.3)	36 (60.0)		
High	6 (10.0)	7 (11.7)		
Total	60 (100.0)	60 (100.0)		
Epilepsy				
Low	20 (33.3)	14 (23.3)	5.116	0.077
Moderate	36 (60.0)	34 (56.7)		
High	4 (6.7)	12 (20.0)		
Total	60 (100.0)	60 (100.0)		

Table 21 shows that there were no statistical significant differences in levels of knowledge about chronic diseases related to age SHPs (P value>0.05) (Table 21).

Table 21: Differences in knowledge of SHTs about chronic disease related to age.

Variable	Age (years)		Statistics value	P value
	≤ 40 n (%)	>40 n (%)		
Diabetes mellitus				
Low-moderate	6 (54.5)	4 (23.5)	-	0.125
High	5 (45.5)	13 (76.5)		
Total	11 (100.0)	17 (100.0)		
Asthma				
Low-moderate	2 (18.2)	1 (5.9)	-	0.543
High	9 (81.8)	16 (94.1)		
Total	11 (100.0)	17 (100.0)		
Chronic renal failure				
Low-moderate	7 (63.6)	4 (23.5)	-	0.053

High	4 (36.4)	13 (76.5)		
Total	11 (100.0)	17 (100.0)		
Epilepsy				
Low-moderate	6 (54.5)	9 (52.9)	0.007	0.934
High	5 (45.5)	8 (47.1)		
Total	11 (100.0)	17 (100.0)		

Table 22 shows that there were no statistical significant differences in levels of knowledge about DM, asthma and epilepsy related to age of SHTs (P value>0.05). However, there were statistically significant differences at 0.05 in levels of knowledge about DM related to age and SHTs who are ≥ 50

years had higher knowledge about DM compared to younger teachers (**Table 22**).

Table 22: Differences in knowledge of SHTs about chronic disease related to age.

Variable	Age (years)				χ^2	P value
	≤ 30 n (%)	31-39 n (%)	40-49 n (%)	≥ 50 n (%)		
Diabetes mellitus						
Low	5 (25.0)	9 (23.1)	16 (35.6)	1 (6.3)	16.135	0.013
Moderate	6 (30.0)	12 (30.8)	23 (51.1)	7 (43.8)		
High	9 (45.0)	18 (46.2)	6 (13.3)	8 (50.0)		
Total	20 (100.0)	39 (100.0)	45 (100.0)	16 (100.0)		
Asthma						
Low	3 (15.0)	8 (20.5)	13 (28.9)	3 (18.8)	5.069	0.535
Moderate	9 (45.0)	13 (33.3)	15 (33.3)	3 (18.8)		
High	8 (40.0)	18 (46.2)	17 (37.8)	10 (62.5)		
Total	20 (100.0)	39 (100.0)	45 (100.0)	16 (100.0)		
Chronic renal failure						
Low	6 (30.0)	11 (28.2)	16 (35.6)	3 (18.8)	4.791	0.574
Moderate	11 (55.0)	23 (59.0)	24 (53.3)	13 (81.3)		
High	3 (15.0)	5 (12.8)	5 (11.1)	0		
Total	20 (100.0)	39 (100.0)	45 (100.0)	16 (100.0)		
Epilepsy						
Low	2 (10.0)	12 (30.8)	16 (35.6)	4 (25.0)	6.637	0.348
Moderate	13 (65.0)	22 (56.4)	24 (53.3)	11 (68.8)		
High	5 (25.0)	5 (12.8)	5 (11.1)	1 (6.3)		
Total	20 (100.0)	39 (100.0)	45 (100.0)	16 (100.0)		

Table 23 shows that there were no statistical significant differences in levels of knowledge about chronic diseases

related to experience of SHCPs (P value>0.05) (**Table 23**).

Table 23: Differences in knowledge of SHCPs about chronic disease related to experience.

Variable	Experience (years)		P value
	<20 n (%)	≥ 20 n (%)	
Diabetes mellitus			
Low	8 (50.0)	2 (16.7)	0.114
High	8 (50.0)	10 (83.3)	
Total	16 (100.0)	12 (100.0)	
Asthma			
Low	2 (12.50)	1 (8.3)	1.000
High	14 (87.5)	11 (91.7)	
Total	16 (100.0)	12 (100.0)	
Chronic renal failure			
Low	7 (43.8)	4 (33.3)	0.705
High	9 (56.3)	8 (66.7)	
Total	16 (100.0)	12 (100.0)	
Epilepsy			
Low	8 (50.0)	7 (58.3)	0.718
High	8 (50.0)	5 (41.7)	
Total	16 (100.0)	12 (100.0)	

Table 24 shows that there were no statistical significant differences in levels of knowledge about chronic diseases related to experience of SHTs (P value>0.05) (**Table 24**).

Table 24: Differences in knowledge of SHTs about chronic disease related to experience in school health.

Variable	Experience (years)			χ^2	P value
	1-5 n (%)	6-10 n (%)	≥ 11 n (%)		
Diabetes mellitus					
Low	17 (27.9)	10 (27.0)	4 (18.2)	2.819	0.589
Moderate	21 (34.4)	15 (40.5)	12 (54.5)		
High	23 (37.7)	12 (32.4)	6 (27.3)		
Total	61 (100.0)	37 (100.0)	22 (100.0)		
Asthma					
Low	14 (23.0)	10 (27.0)	3 (13.6)	4.322	0.364
Moderate	19 (31.1)	15 (40.5)	6 (27.3)		
High	28 (45.9)	12 (32.4)	13 (59.1)		
Total	61 (100.0)	37 (100.0)	22 (100.0)		
Chronic renal failure					

Low	21 (34.4)	11 (29.7)	4 (18.2)		
Moderate	33 (54.1)	22 (59.5)	16 (72.7)	2.405	0.662
High	7 (11.5)	4 (3.3)	2 (9.1)		
Total	61 (100.0)	37 (100.0)	22 (100.0)		
Epilepsy					
Low	14 (23.0)	11 (29.7)	9 (40.9)		
Moderate	36 (59.0)	22 (59.5)	12 (54.5)	4.095	0.379
High	11 (18.0)	4 (10.8)	1 (4.5)		
Total	61 (100.0)	37 (100.0)	22 (100.0)		

Table 25 shows that there were no statistical significant differences in levels of knowledge about chronic diseases between SHCPs who received training and those who did not receive training (P value>0.05) (Table 25).

Table 25: Differences in knowledge of SHCPs about chronic disease related to previous training.

Variable	Received training		P value
	No n (%)	Yes n (%)	
Diabetes mellitus			
Low-moderate	8 (38.1)	2 (28.6)	1.000
High	13 (61.9)	5 (71.4)	
Total	21 (100.0)	7 (100.0)	
Asthma			
Low-moderate	3 (14.3)	0	0.551
High	18 (85.7)	7 (100.0)	
Total	21 (100.0)	7 (100.0)	
Chronic renal failure			
Low-moderate	8 (38.1)	3 (42.9)	1.000
High	13 (61.9)	4 (57.1)	
Total	21 (100.0)	7 (100.0)	
Epilepsy			
Low-moderate	10 (47.6)	5 (71.4)	0.396
High	11 (52.4)	2 (28.6)	
Total	21 (100.0)	7 (100.0)	

Table 26 shows that there were no statistical significant differences in levels of knowledge about DM, CRF, and epilepsy between SHTs who received training and those who did not receive training (P value>0.05). However, there were statistically significant differences in knowledge about asthma (P=0.015). Post hoc adjusted residual indicated that higher

percentage of SHTs who received training had low knowledge about asthma compared to those who did not receive training (Table 26) [8].

Table 26: Differences in knowledge of SHTs about chronic disease related to previous training.

Variable	Received training		χ^2	P value
	No n (%)	Yes n (%)		
Diabetes mellitus				
Low	26 (26.5)	5 (22.7)	0.344	0.842
Moderate	38 (38.8)	10 (45.5)		
High	34 (34.7)	7 (31.8)		
Total	98 (100.0)	22 (100.0)		
Asthma				
Low	17 (17.3)	10 (45.5)	8.346	0.015
Moderate	34 (34.7)	6 (27.3)		
High	47 (48.0)	6 (27.3)		
Total	98 (100.0)	22 (100.0)		
Chronic Renal Failure				
Low	30 (30.6)	6 (27.3)	3.822	0.148
Moderate	55 (56.1)	16 (72.7)		
High	13 (13.3)	0		
Total	98 (100.0)	22 (100.0)		
Epilepsy				
Low	27 (27.6)	7 (31.8)	1.806	0.405
Moderate	56 (57.1)	14 (63.6)		
High	15 (15.3)	1 (4.5)		
Total	98 (100.0)	22 (100.0)		

Discussion

School health services play a key role in managing the daily needs of children with chronic health diseases. Therefore, assessing school health services for children with chronic disease is essential to evaluate adequacy and effectiveness of these services and identify areas that need improvement.

In this study, two groups participated in the study (28 school healthcare providers and 120 school health teachers) from Rafah and KhanYounis. Less than half of study participants were males, the majority of them were married, about two-thirds aged 40 years old and above, the majority have bachelor degree, and only one-fourth of SHCPs received training about care of patients with chronic disease. For SHTs, more than one-third aged 40-49 years with mean age 39.716, the majority of them have bachelor degree, half of them have an experience of 1-5 years in school health, and the majority of them did not receive training about chronic disease [9].

Status of School Health Services for Children with Chronic Disease

The results showed that there was low SHSs for children with DM, asthma, CRF, and epilepsy. Similar results obtained by Osuorah, et al. who found that SHSs is existent, but its implementation is suboptimal in both private and public schools. In contrast, the results of Abu Luli, indicated that the level of implementing health services in governmental schools was very good (85.6%), and the level of implementing school health education was very good (82.1%).

The school health is part of the Palestinian health care system, but the actual implementation of school health program is low, and that could be due to the fact that the number of schools and students is increasing. According to reports of MoE the school Health program was established in 1994. There were 126,000 students at 141 schools in GS and this number increased to more than 253,000 students in 447 schools.

In our study, the highest scores focused on educational activities and raising awareness about chronic disease, while lower score obtained in availability of plans and protocols to manage emergency situations, giving prescribed medication for children with chronic disease, and checking blood sugar level for children with DM [10].

Kulkarni, et al. stated that school health is an important component of total HCS, aiming at addressing the health needs of children, and provide for nutritional interventions, and counseling. The major SHSs include general health examination, anthropometry, treating minor ailments, referral and health education. The results of Akpabio, found that the scopes of the practice were limited to treatment of minor ailments, referral services, health education, and first aid, and Badh reported that the level of implementation of SHSs was moderate, and emphasized the need to increase in the training of the medical and associated medical staff.

This result could be attributed to the shortage of supplies and unavailability of stock medication for common chronic health conditions. Moreover, there is periodic visits to schools by SHCPs focusing on screening, visual examination, oral and dental exams. There are no special programs designed for chronic diseases and most of the school health activities focusing on education by lectures and videos.

In our study, 72.5% of SHTs said that they work to provide a safe and healthy school environment free of irritants that negatively affect children with asthma. It is obvious that irritants stimulate allergic response for asthmatic children, and this result agreed with the study of Klein which found higher incidence of asthma in schoolchildren nearby environment with a large number of concentrated animal feeding, which reflected that environmental factors play an important role in prevalence of asthma. Another study identified parents' point of view, found that 34% of parents believed that teachers could recognize the symptoms of a mild hypoglycemic episode, 17% of parents experienced problems at their schools when they informed staff about their children's disease, 5% were finally not accepted and 8% were forced to change school. In addition, 9% of cases had to modify glucose monitoring, and 16% had to modify treatment administration because of a lack of cooperation from the school. Other studies showed that the majority of school personnel have an inadequate understanding of DM, and consequently, diabetes education must be targeted toward school nurses, teachers, and other school personnel who interact with the child.

It is worth to say that SHSs are very important for the wellbeing of children, early detection and management, including referral to appropriate health facility. Baltag, et al. emphasized the importance of SHSs and mentioned that WHO has recently indicated that SHSs are a viable strategy to address the health needs of youth and promote healthy behaviors.

The school health services should be comprehensive and include a mix of activities of education and interventional

activities of physical exams, offering counseling, treatments, and referral to appropriate health facilities.

Readiness to Provide School Health Services to Children with Chronic Disease

Readiness to provide school health services was measured by the level of knowledge about chronic diseases. The results indicated that SHCPs have high knowledge about DM and SHTs have above moderate knowledge about DM, asthma, CRF and epilepsy. Most of the high scores obtained in knowledge about causes of these diseases, signs and symptoms [11].

The results also indicated that SHCPs expressed higher knowledge about chronic diseases than SHTs, which means that SHCPs have higher readiness to provide school health services to children with chronic disease compared to SHTs. In a study carried out by Hillemeier, et al. the results showed that nearly 20% of schools reported that staff who know what to do for a severe asthma attack were not always available, asthma management plans were on file for only 25% of children with asthma, and important information often was omitted. In addition, the results of Akpabio, showed that health services provided by the nurses were positively and significantly related to their knowledge of roles, but not on availability of material and resources. Moreover, Wodrich, et al. assessed health services offered to schoolchildren with epilepsy found that there was little information about antiepileptic drugs, their effects, or the actual manifestations of seizures.

In my opinion, it is essential to have knowledgeable, skillful, and well-prepared staff who are able to detect and manage abnormal symptoms that may occur with children with chronic disease. Moreover, knowledge and readiness of SHCPs play an important role in control of symptoms of chronic disease.

Kouba, et al. found that education of schoolchildren about asthma led to an improvement in the percentage of students who were in control of their asthma. Moreover, Horner and Brown found that a teaching program about self-management of asthma led to improved inhaler skills for children with asthma.

Another study found that providing medications and a combination of directly observed therapy and motivational interviewing led to reduction in asthma symptoms, decreased inhaler use, and decreased exhaled nitric oxide levels.

Challenges that Face School Health Services

The results showed that the highest challenges that face school health services included unavailability of healthcare professionals in each school. Consistent results reported in a study carried out in USA found that in more than 50% of secondary schools and 75% of elementary schools, nurses were present <40 hours per week. In addition, Badh emphasized the need to increase the number of teachers and officials in school health services.

This result could be attributed to inadequate staff at DSH compared to the high number of schools. Therefore, stakeholders at MoH should pay more attention to school health, and employ more nurses and doctors comparable to the number of schools and students to enable the SHCPs to provide quality health services to children with chronic health conditions, which is important for their safety and wellbeing [12].

Researchers found that having a school nurse present in the school is of great importance, and led to improving management of CHCs, and promote health. According to ASCD and CDC the school nurse is often responsible for coordinating and conducting health assessments, as well as planning and implementing individualized health-care plans for safe and effective management of CHCs and help with referrals. Other challenges included unavailability of special room for examination and treatment of children, unavailability of drugs for chronic disease such as insulin, inhalers, and antiepileptic drugs. In addition, glucometers were not available in schools and less than one-third stated that they have a lecture room with screen and projector for health education. Shortage of supplies and equipment is common in many schools. In this regard, Hillemeier, et al. found that only about 50% of the schools were equipped with peak flow meters and nebulizers, and spacers were available in 30% of schools.

In my opinion, children with chronic disease may suffer from exacerbation of the disease, such as elevated or lowered blood sugar levels for diabetic children, episodes of shortness of breath for asthmatic children, or seizures for children with epilepsy. Those children need appropriate intervention. Therefore, when designing school structure, a special room should be allocated for school health to be used for examination and provide treatment to sick children. In addition, adequate supplies, materials and medication should be available and stored appropriately. The results also indicated presence of moderate level of coordination between SHCPs and SHTs. There is a schedule of school visits and the schools are informed before visits. In addition, there was direct telephone contact to a high degree between SHPs and SHTs.

Coordination between SHCPs and SHTs is important for organizing the school health activities. Planned visits will enable the SHT to prepare for the visit, prepare the students and the place. In addition, coordination of campaigns such as vaccination campaigns, screening campaigns for chronic disease is needed for better results [13].

The results also showed that the overall administrative support to both SHCPs and SHTs. Even though most of study participants said that they receive support from their directors, but very few of them receive adequate tools and supplies necessary for their work and very few of them receive financial support for transportation. For evaluation of administrative support, a study conducted by Salih, et al. the results revealed that level of implementing school health program was good in 28.37% of schools, moderate in 56.74% of schools and weak in 14.89% of schools, while Bani Omar,

recommended providing adequate financial allocations for schools to provide health needs.

A study carried out by Shaibu and Phaladze, identified several challenges to implementing the school health policy. These challenges included lack of human resources, lack of equipment and supplies, lack of health knowledge among teachers, as well as organizational problems. In addition, the results indicated that commitment of stakeholders would improve the implementation of SHS. Furthermore, the results of Akpabio, showed low coverage of SHCPs and only 18.3% of the respondents were satisfied with equipment available for SHCP. Furthermore, Abu Luli, recommended the need to support the SHCPs with modern equipment, increase number of health seminars and improve the environmental health services of the schools. Moreover, Ismail, found good interest for SHCSs provided to students, existence of administrative development, but there is weakness in the system of incentives. The researcher recommended the need to improve the performance of employees through training program, and incentives. Another study found that 91.4% of study participants stated that school administrators monitor health education carefully, 87.51% said that schools have a role in offering health services to teachers and students. In addition, 83.45% stated that schools have a role in offering health education. The study raised the need to activate the teachers' role in the area of school health by attending specialized seminars, and training programs [14].

Administrative support is needed for better functioning and coverage of school health services for children with chronic disease. School administrators should support the school health services, allocate qualified teacher and free him from classes, coordinate for supplies and materials with MoH and MoE. Also, support some activities as attending lectures and workshops, campaigns of special health events and exchange visits to health facilities.

Relationship between readiness to provide care for children with chronic disease and selected sociodemographic variables. The results of the study showed that in general, there were no statistical significant differences in readiness (as measured by knowledge) related to demographic factors. Consistent results obtained by Al-Sarairah and Al-Rashidi, who found that there were no statistical significant differences in the level of SHSs attributed to the academic qualification, practical experience, and supervision. In addition, Babikar and Abbas, recommended that all school teachers should be given training in health services especially for children with epilepsy as the majority of respondents had never been informed about epilepsy.

This result could be attributed to the fact that the majority of SHCPs and SHTs did not receive training and adequate preparation to provide SHSs, as most of them are selected randomly or according to their request. They rely on their own experience and knowledge without having written protocols [15].

CONCLUSION

The study conducted in governmental schools in Rafah, East Khanyounis, and West Khanyounis, in addition to directorate of school health at MoH. The study utilized descriptive, cross sectional design, and the sample of the study consisted of 120 school health teachers from governmental schools in southern of GS and 28 healthcare providers from school health providers at the MoH.

The results of the study showed that there were low school health services for children with DM, asthma, CRF and epilepsy. Readiness to provide school health services was measured by the level of knowledge about chronic diseases. The results indicated that school health providers have high readiness as expressed by their knowledge about chronic diseases and school health teachers have moderate readiness to provide care to children with chronic diseases.

The results indicated several challenges that face school health services including inadequate healthcare providers, severe shortage of supplies and materials, unavailability of special rooms for examination and treatment of sick children. The results also reflected moderate coordination between school health providers at MoH and school health teachers. Finally, the results indicated low administrative support especially in part of incentives, supplies and materials that are necessary to provide proper health services. The study highlighted the need to increase the number of qualified healthcare providers and to offer adequate training to school health teachers to improve their skills and ability to provide quality school health services.

ETHICAL AND ADMINISTRATIVE CONSIDERATIONS

Ethical and administrative considerations are very important conditions in applying scientific research. Before conducting the study, the researcher obtained agreement to carry out the study from Al- Quds University (Annex 6). An official letter of approval was obtained from Helsinki Committee in Gaza Strip (Annex 7). An official letter was obtained from MOH to conduct this study (Annex 8). An official letter was obtained from MOE to conduct this study (Annex 9). In addition, consent form (Annex 3) and every participant was provided with an explanatory form about the study including the purpose of the study, confidentiality of information and some instructions.

LIMITATIONS OF THE STUDY

The study was limited to school health services for children with chronic diseases (diabetes mellitus, asthma, chronic renal failure, and epilepsy) at governmental schools in Rafah and Khanyounis governorates only, excluding UNRWA and private schools.

RECOMMENDATIONS

In the light of the study results, the researcher recommends the following:

For school health care providers:

- The need to have written protocols for monitoring and follow up of children with chronic diseases.
- Improve the quality of school health services through appropriate training programs to upgrade the knowledge and skills of school health providers about care of children with chronic diseases.

For school health teachers:

- The need to improve their skills in caring of children with chronic diseases by attending workshops and study days.
- To coordinate with directorate of school health for training programs for school health teachers to improve their abilities to monitor and evaluate the health condition of children with chronic diseases.

For ministry of health:

- Employ adequate qualified healthcare providers in the school health directorate to meet the increasing number of schools and students.
- Provide adequate supplies and materials necessary to offer safe and quality health services to children with chronic diseases.

For ministry of education:

- Allocate special room for school health equipped with adequate materials that is needed for examination of children and provide treatments.
- Allocate special hall for educational activities, equipped with audio-visual aids such as TV screen and videos.

Suggestions for further research:

- Carry out a study aiming to identify the prevalence of chronic diseases among schoolchildren.
- Carry out a study aiming to assess children knowledge, attitudes and practices about chronic diseases.

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