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

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Dedication

To my great father, May Allah bless him,

To my sincere mother to whom I owe my life and success,

To my beautiful wife who has been supportive all the way,

To my brothers (Osama, Khalil, Youssef, Mahmoud) and my sisters (Shaimaa, Hadeel) May Allah keep love and harmony between us,

To my dear uncles who supported me in all forms, especially Abdel Qader and Ibrahim Abu Nasser,

To my friends and colleagues everywhere,

I deeply appreciate that you were always with me, gave me the support I needed to realize this accomplishment and inspired me with your love and warm feelings

Heartfelt thanks and appreciations to all those who contributed to the completion of this thesis… without their support, this work would not see the light.

Mohanad AlZatma

Declaration

I certify that this thesis submitted for the degree of Master, is the result of my own research, except where otherwise acknowledged, and this study (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed:

Mohanad Zeyad AlZatma

…./…./….

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First of all, praise to Allah, the lord of the world, and peace and blessings of Allah be upon our prophet Muhammad, all thanks for Allah who granted me the capability to accomplish this thesis.

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Abstract

Challenges that face school health in Gaza Strip are numerous especially for children with CHCs like asthma, diabetes or epilepsy who need extra attention at school to stay safe and healthy. 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. 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 KhanYounis, 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 was tested by a pilot study and Crobache 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. 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. 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.

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List of Abbreviations

ASCD	Association for Supervision and Curriculum Development
CDC	Centers for Diseases Control and Prevention
CKD	Chronic Kidney Disease
CHCs	Chronic Health Conditions
CRF	Chronic Renal Failure
DM	Diabetes Mellitus
DSH	Directorate of School Health
GS	Gaza Strip
HCS	Health Care System
IFG	Impaired Fasting Glucose
MoH	Ministry of Health
NASN	National Association of School Nurses
NGOs	Non-Governmental Organizations
PCBS	Palestinian Central Bureau of Statistics
PNA	Palestinian National Authority
SBHC	School-based Health Centers
SH	School Health
SHCPs	School Healthcare Providers
SHP	School Health Program
SHTs	School Health Teachers
SPSS	Statistical Package for Social Sciences
UK	United Kingdom
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNRWA	United Nations Relief and Works Agency for the Palestinian Refugees in the Near East
USA	United States of America
WB	West Bank
WHO	World Health Organization

Chapter One
Introduction

Over the past decades, the prevalence of chronic health conditions (CHCs) of children has increased over time (Perrin and Gortmaker, 2007). 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 (van der Lee et al., 2007).

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 (Leroy et al., 2017; McClanahan and Weismuller, 2015; National Association of School Nurses (NASN), 2015; Zirkel et al., 2012).

Children with CHCs are at risk for high absentism rates, low student engagement, dropping- out of school, exposure to bullying, disruptive behaviors, poor grades, and below- average performance on standardized achievement tests (Bethell et al., 2012; Forrest et al., 2011).

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 (Centers for Diseases Control and Prevention - CDC, 2017a). 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) (Michael et al., 2015; NASN, 2015; Wang et al., 2014; Forbes, 2014).

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, and hospitalizations; and increase quality of care (Wang et al., 2014).

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 (van der Lee et al., 2007). 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 (Association for Supervision and Curriculum Development [ASCD] & CDC, 2014).

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 (MoH, 2016).

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.

1.1 Problem statement

School health services include educational programs, screening, and referral of students who have health disturbances that need further medical treatment. Screening programs focus mainly on students in the first class, seventh class, and tenth class. According to records of the Directorate of School Health (DSH), SHCPs detected many health problems through screening; 3722 students accounted for about 8% of students were discovered as having different health problems such as undescended testis, heart problems, underweight, overweight, and skin disease. In addition, 6739 students accounted for 10% of students were discovered as having ophthalmic problems and vision disturbances, 1052 students accounted for 9.4% of students were discovered as having hearing disturbances, and 8201 students accounted for about 13% of total students had dental problems (DSH, 2018).

Through the researcher's observation during his clinical rotation at schools, he noticed that there are no medical records for students who suffer from CHCs such as diabetes, hypertension, epilepsy, and asthma. The SHCPs visit the school periodically with long time interval between visits. In addition, written plans of treatment are not available for students with CHCs, which put the students at risk of complications and threaten their lives. In addition, by talking to the assigned school health teacher (SHT), he said that there are no accurate number and documents of students who have CHCs. These work conditions affect the efficiency of SHS as many cases are missed or not treated properly, which would increase the challenges that face the SHSs in caring for students with CHCs.

Therefore, this study will highlight the challenges that face SH in caring of schoolchildren who have CHCs in Gaza Strip (GS), and in the light of the results, the researcher will suggest recommendations to address those challenges.

1.2 Justification of the study

Within governmental schools, each school assign one teacher to carry out the responsibility as a SHT. The SHCPs visits the school periodically and when they are called by the school director for a special event such as outbreaks of some disease such as meningitis, mumps, respiratory tract infections, and gastrointestinal problems (diarrhea). The majority of the assigned SHT are not specialized in health issues. Some of the SHTs attended seminars and short courses in first aid and general health. Therefore, they may not have adequate

knowledge and skills to detect and treat CHCs. According to reports from DSH (2018), there are about 413 schoolchildren have Diabetes mellitus (DM), 300 have epilepsy and seizures, 40 have chronic renal failure (CRF). There are no accurate records of blood disorders and Asthma.

1.3 Purpose of the study

To assess the challenges of school health services for caring of children with chronic diseases at governmental schools in southern area of Gaza Strip, that may contribute to improving health services provided to children with chronic diseases at schools.

1.4 Objectives of the study

- To identify the current school health services that are provided to children with chronic diseases at governmental schools in Gaza Strip.
- To assess the readiness of school health providers and school health teachers to provide care to children with chronic diseases at schools at governmental schools in Gaza Strip.
- To identify the relationship between readiness to provide care for children with chronic diseases and sociodemographic factors (gender, age, experience, income, specialty, and u training).
- To suggest recommendations that may help in improving school health services for children with chronic diseases at schools.

1.5 Research questions

- What are the current school health services that provided to student children with chronic diseases, by healthcare providers at governmental schools in Gaza Strip?
- What is the level of readiness of school health providers and school health teachers to provide care for children with chronic diseases at governmental schools in Gaza Strip?
- What are the challenges that facing the providers of school health services in caring for child students with chronic conditions at governmental schools in Gaza Strip?
- Is there a relationship between readiness to provide care for children with chronic diseases and sociodemographic factors (gender, age, experience, income, specialty, and u training)?

1.6 Definition of terms

- **School Health**

School health is defined as the schools, which apply a structural and systematic plan to improve the health and welfare of all students, teachers and administrators (Buijs, 2009).

School health teacher

The researcher defines school health teacher operationally as a teacher who is assigned for school health, and received training to provide health services to schoolchildren, and coordinate school health activities with directorate of school health at Ministry of Health.

- **School health services**

School health services is defined as the health care delivery system that operates within a school, aiming to promote and maintain the health of schoolchildren. School health services deal with health appraisals, control of communicable diseases, record keeping and supervision of the health of schoolchildren and personnel. School health services are both preventive and curative services and it helps in providing information to parents and school personnel on the health status of schoolchildren (Maurer and Smith, 2013).

The researcher defines school health services operationally as the health services provided to schoolchildren by the directorate of school health team and the school health teacher. These services include heath care for schoolchildren with CHCs, health education sessions, referral to appropriate health facility, and follow up of health status of children.

- **Children with chronic disease**

The researcher defines children with chronic disease as any schoolchild aged 6 – 18 years, enrolled at governmental schools in Gaza Strip in the scholastic year 2019, and diagnosed as having chronic health condition such as DM, asthma, CRF, and epilepsy.

- **Challenges of school health**

The researcher defines challenges of school health operationally as those factors that interrelate with SHSs for the purpose of promoting good health status for schoolchildren

with CHCs (DM, asthma, CRF, epilepsy). These factors include adequacy of SHCPs and SHTs, in addition to supplies and logistics, coordination between school administration and directorate of school health, and administrative support.

- **Readiness of school healthcare providers and school health teachers**

The researcher defines readiness of healthcare providers and school health teachers as having adequate knowledge and skills gained through training and experience, which is reflected in their ability to response to assessment questions of their knowledge regarding the targeted chronic disease of children (DM, Asthma, CRF, and Epilepsy).

1.7 Context of the study

1.7.1 Sociodemographic context

Palestine lies within an area of 27,000 square kilometers (Km^2), expanding from Ras Al-Nakoura in the north to Rafah in the south. Due to the Israeli occupation, the Palestinian territory is divided into three areas separated geographically; the West Bank (WB) 5.655 Km^2, GS 365 Km^2 and East Jerusalem, with estimated population about 4,95 million, of them 3,008 in WB and over 2 million in GS with male to female ration 103.4. The population density (capita/km^2) is 778 in Palestine (506 in WB and 4,986 in GS). The Palestinian population is characterized by high percentage of young age as the percentage of people younger than 5 years was 15% (13.8% in WB and 17% in GS, and those aged between 0 – 14 years accounted for 39.4% (37.2% in WB and 43% in GS) (Palestinian Central Bureau of Statistics - PCBS, 2018).

1.7.2 Economic context

The Palestinian economy is under high pressure to create decent and productive jobs, reduce poverty and provide economic security on an equal basis for all social groups in a rapidly growing and urbanizing population. Economic status in the Palestinian territories is very low. Gross Domestic Product is estimated about 9.3%, and the workforce participation 43.6, unemployment is very high and reached a rate of 26.9% for males (15.5% in WB and 34.4% in GS) and for females unemployment rate is 44.7% (29.8% in WB and 65.2% in GS) (PCBS, 2018). Due to blockade of the strip, a significant increase in poverty rates occurred in GS from 38.8% in 2011 to 53% by the end of 2017 (United Nations Office for the Coordination of Humanitarian Affairs – UNOCHA, 2018).

1.7.3 Health care system

The HCS in Palestine is complex, unique and strongly influenced by the Israeli occupation. The consequences of the closures and separation imposed a great challenge for the MoH by creating obstacles regarding the accessibility to health care services and affected the unity of the health care system in all Palestinian governorates (United Nations for Relief and Work Agency for the Refugees of Palestine in the Near East - UNRWA, 2017).

There are four main health care providers; MoH, UNRWA, Non-Governmental Organization (NGOs), and the private sector. With such multitude of service providers, there are numerous challenges in providing a well-coordinated, standardized health service provision during normal times and frictions are deemed to exacerbate during emergencies (World Health Organization -WHO, 2018). UNRWA provides health-care services to the vast majority of the over 1.3 million Palestine refugees in GS through 22 medical centers, providing Primary health care (PHC), secondary and tertiary health care services (UNRWA, 2017).

MoH is the main health care provider in the governorates; it provides PHC, secondary and tertiary services for the whole population. The number of hospitals owned by MoH in GS is 13 hospitals with capacity 1664 beds (MoH, 2018). It provides advanced medical services through referring patients to the neighboring countries and other private and NGO healthcare facilities. MoH has seriously affected by the financial crisis experienced by the Palestinian National Authority (PNA). In fact, there have been reductions in the numbers of patients referred outside the occupied Palestinian territory for specialized treatment and there have been growing and substantial shortages of medicines and disposables (WHO, 2018).

1.7.4 School health services in Palestine

School students, - being large, and important sector of our population, – are the priority in the agenda of MoH in receiving comprehensive health care, and being in active state of growth and development, they constitute a vulnerable group in need of continuous health supervision, promotion, and protection. They are sensitive and responsive to any intervention and can spread the benefit to their present and future community (DSH, 2018).

The Palestinian society is characterized by being a young and rapidly increasing population with 41.8% under the age of 15, and about 40.6 % of the Palestinian population are enrolled in schools (MoH, 2018). The SHP has been established in August 1994. In the scholastic year 1995/1996 there were 126,000 students at 141 schools in GS, increased to more than 561,812 in the scholastic year 2017/2018 (Ministry of Education – MoE, 2018). Therefore, MoH gave special consideration to develop national capacity in the area of school health. Subsequently, the school health program was one of the major institutional units established after the transfer of the health sector to the PNA.

However, the implementation process was confronted with a number of constraints, including lack of coordination among the involved institutions, inadequate referral system (e.g. follow- up and health insurance for schoolchildren) and problems associated with the rational use of resources, especially staffing needed for school health services. At the operational level, there are eight teams in GS. Their duties include medical and dental screening of first, seventh and tenth grade students in the governmental schools, health promotion and education activities targeting all school communities, including teachers, students and parents, school environmental care covering all aspects of environmental related issues, such as buildings, facilities, services, regulations and safety measures. In addition, duties include vaccination for school students in cooperation with the national vaccination program (Director of DSH, March 2019, personal interview).

In GS, School health operates under pressure to accomplish its tasks and meets its objectives. The team of the DSH consists of 47 employees (9 physicians, 9 dentists, 19 nurses, 2 opticians, 2 speech specialists, and 6 administrative staff). This team serves more than 250,000 students distributed on about 450 governmental schools in GS. This huge number of students is a big challenge for SHCPs, and they need huge efforts to meet the health needs of the students, which include screening programs, treatments, referrals, and health education (DSH, 2019).

Chapter Two

Conceptual framework and literature review

2.1 Conceptual framework

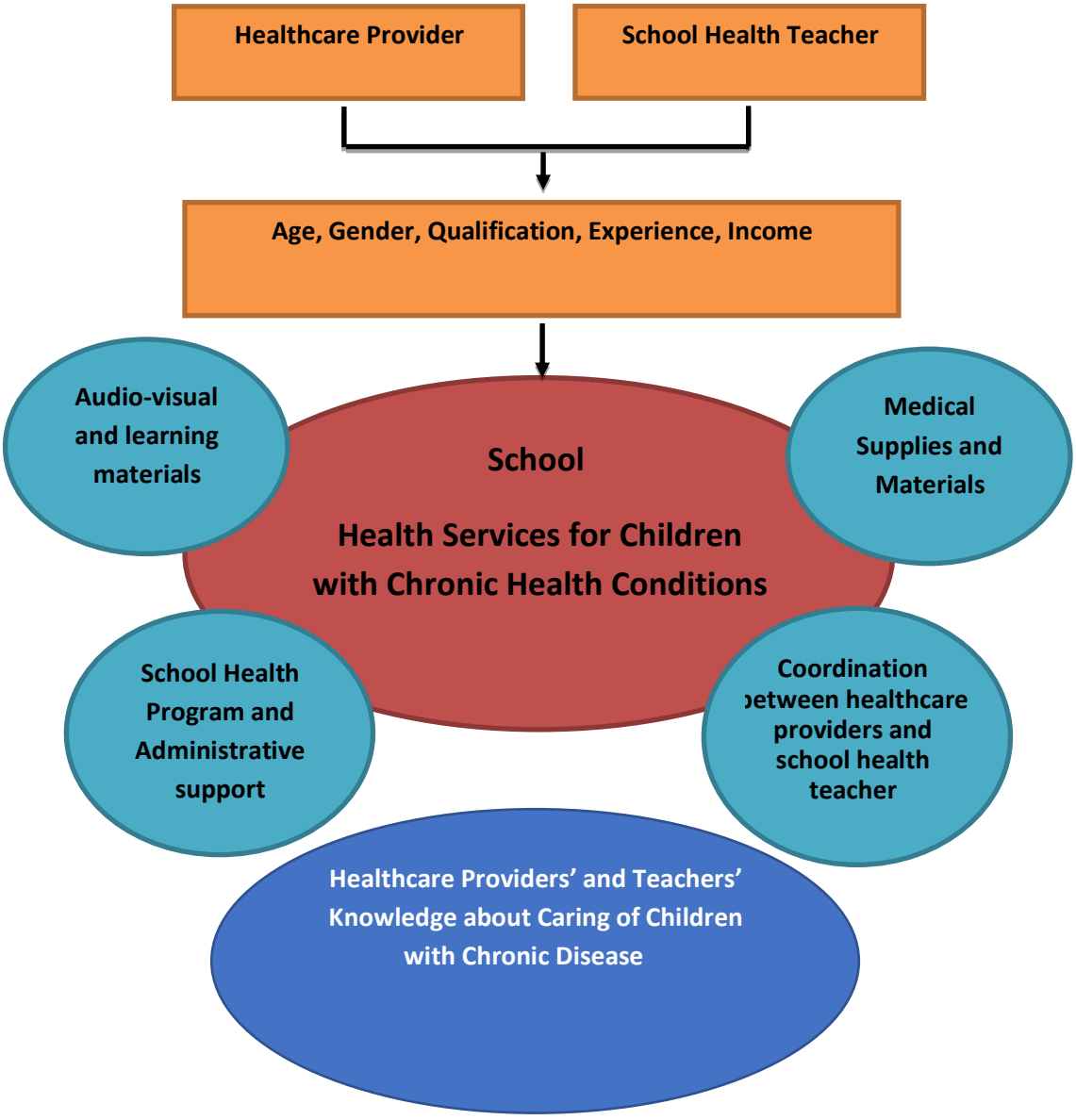

Figure (2.1): Diagram of conceptual framework (Self-developed)

The conceptual framework is the map that guides the design and the implementation of the study and its effect mechanism for illustration and summarizing the study variables.

The above diagram denotes that SH activities are under the responsibility of SHCPs and the SHT. Their ability to offer effective health services is determined by some factors such as their age and experience. The researcher suggests that SHTs and SHCPs with longer years of experience may give better services. Qualification is another factor as it is supposed that those who have higher qualification will have higher knowledge and skills, and will be able to offer higher quality health service.

The diagram also indicates that several challenges are facing the SHS, including availability of medical supplies and materials appropriate for the care of children with chronic health conditions, availability of audio-visual and learning materials for the purpose of health education (projectors, computers, and educational videos).

In addition, availability of SHP with timetable for specific activities is very important. Having a written health program will help in coordinating the activities, and enable the SHCPs in evaluating the effectiveness of their activities. In addition, the need for administrative support is needed from the school director and DSH. The administration will play an important role in accessibility of health services, offer place and materials for different activities, and keep accurate records and documents of the achieved activities.

Moreover, coordination and cooperation between the HCPs and the assigned teacher for school health is necessary for the organization of different activities relative to CHCs such as prevention measures, treatment plans, and health education sessions.

2.2 literature Review

2.2.1 Background

The SHS is an important aspect of health delivery systems necessary to monitor the health of schoolchildren to keep them healthy and optimize their learning. The primary use of the SHS is to support students' health in order to achieve educational successes and to provide comprehensive health services in schools for students (WHO, 2015).

The turn of the nineteenth century saw for the first time collaboration in health and education, when hospital staff was recruited by schools for examination of schoolchildren and identification of potentially contagious diseases. In the beginning, SHS focused

towards the treatment rather than the prevention of diseases. Though the concept was clear from the beginning that the SHS has a role in improving the health of children, especially those who cannot afford better health facilities, yet its full impact was not visible until the mid-twentieth century when the Astoria plan placed more responsibilities on the schools regarding the health of the students. Subsequent refinement in the SHS led to school-based clinics and the emergence of coordinated SHP with focused areas developed for nutrition, mental well-being, dental and adolescent health (Ahmad and Danish, 2013).

2.2.2 Epidemiology and burden of chronic diseases among school age children

Over the past 30 years, the prevalence of CHCs in children and adolescents has increased (Perrin et al., 2007). It is estimated that approximately 10 - 30% of the children will be affected by some type of chronic illness or physical health problem at some point in their lives (Canter and Roberts, 2012). A prospective study carried out in USA aimed at evaluating prevalence of childhood chronic health conditions over different periods of time. The study included three cohorts of children. The results showed that the prevalence of any chronic health condition was 12.8% for cohort one in 1994, 25.1% for cohort two in 2000, and 26.6% for cohort three in 2006. There was substantial turnover in chronic conditions: 7.4% of participants in all cohorts had a chronic condition at the beginning of the study that persisted to the end, 9.3% reported conditions at the beginning that resolved within 6 years, and 13.4% had new conditions that arose during the 6-year study period (Cleave et al., 2010).

2.2.2.1 Asthma

Asthma is the most common chronic disease in childhood. Due to the various different phenotypes of childhood asthma, it has been difficult to agree on a clear definition of the condition and instead an operational description is used: Asthma is a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role. The chronic inflammation is associated with airway hyperresponsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness, and coughing, particularly at night or in the early morning. These episodes are usually associated with widespread, airflow obstruction within the lung that is often reversible either spontaneously or with treatment (Global Initiative for Asthma, 2012). However, in children <5 years of age, clinical symptoms of asthma are variable and nonspecific, and a symptoms-only approach that defines various wheezing phenotypes has been recommended.

Previous studies that examined the prevalence rates of asthma estimated that it affects 7.3% to 9.5% of all children and as many as 18% of children living in poverty. Asthma is often complicated by socioeconomic status and environmental factors that limit the ability to control symptoms and exacerbations (Akinbami et al., 2012). Another study carried out in USA found that the prevalence of asthma among the study participants was 8.5% and the highest prevalence was in children aged 6 to 11 years (Miller et al., 2016).

A cross-sectional study was carried out in two primary schools in rural areas in the United States to compare the prevalence of asthma, one is in an environment with a large number of concentrated animal feeding, and the other is far from any agricultural operations, the results indicated significant increase in the incidence of asthma in children nearby environment with a large number of concentrated animal feeding, which reflected that environmental factors play an important role in prevalence of asthma (Klein and Sigurdarson, 2006).

In the second half of the 20th century, the prevalence of asthma in Europe increased significantly, and this had been proven by some published studies on the increasing prevalence of asthma in children's schools in Norway, the prevalence was 4% in 1948 then rose to 12.3% in the 1990s then increased to 20% in 2004. In the International Study of Asthma and Allergy in Childhood showed that the highest prevalence of asthma in Europe was found in the British Isles, the prevalence of asthma among children aged 13-14 in Albania was 1.6% and in the United Kingdom (UK) 20.7%. The prevalence of asthma was among children aged between 6-7 years in Estonia 1.4% and in the UK 22.9%, with a marked increasing in the prevalence of asthma throughout Europe from east to west (Global Initiative for Asthma, 2012).

2.2.2.2 Epilepsy and seizures

Epilepsy and seizures are among the most common neurological disorders affecting children. Epilepsy increases the risk for a number of psychosocial problems, including learning disabilities, academic underachievement, emotional problems, and difficulties with social interactions (Mott et al., 2013). Recent survey found a prevalence rate of approximately 0.7% for epilepsy among children and adolescents (Boyle et al., 2011). A study conducted in USA reported that the prevalence of epilepsy among study participants was 0.69%, and children aged 12 to 18 years had lower rates of having epilepsy than children aged 0 to 5 years (Miller et al., 2016). In another study conducted in Turkey in an

urban area in central Anatolia aimed at investigating the prevalence of epilepsy in school children aged 7-17 years in Kayseri province with associated risk factors. Samples were collected by stratified cluster method, 10,000 children from school children were selected from within the boundaries of the city of Kayseri, which has a population of 259,428 students. The sample of the study showed that 83 students were or were under observation during the diagnosis of epilepsy, and also showed that the prevalence of crude epilepsy in females 6/1000, in males 9/1000 and the rate of disease in both groups was 8/1000, and the prevalence of the disease for active epilepsy in females 4/1000, in males 7/1000, and in both groups 6/1000 (Canpolat et al., 2014).

A cross-sectional survey conducted in Egypt in the Gharbia governorate aimed at identifying the prevalence of idiopathic epilepsy among rural and urban primary school children. Students with suspected epilepsy were subjected to clinical assessment, EEG and neuroimaging. The study sample consisted of 9545 students who completed the questionnaire, 69 of whom were diagnosed with idiopathic epilepsy, and the prevalence of idiopathic epilepsy among school children Between the ages of 6-14 years is 7.2 / 1000 children, the highest prevalence of epilepsy was in urban children 8.25 / 1000 and in males 7.7 / 1000 (Alshahawy et al., 2018).

2.2.2.3 Diabetes mellitus

Diagnoses of type 1 and type 2 diabetes in youths present a substantial clinical and public health burden owing to the challenges of disease management and the risks of acute and chronic complications (Hamman et al., 2014).

Although DM is not the most prevalent chronic condition among children and adolescents, the possible complications of DM make it vitally important to address (Hamman et al., 2014). A study carried out in the United States of America (USA) found that the prevalence of DM (types 1 and 2 combined) among the entire sample was 0.35%, and male children had a higher prevalence of DM versus females (0.46% vs. 0.25%) (Miller et al., 2016).

Another study carried out in Menoufia governorate, Egypt, aimed at determining the prevalence of DM among school-age children aging between 6-15 years. The results showed that the prevalence rate of juvenile DM among school-age children was 3.75 per 1000 (Hassan et al., 2019). There has been an increase in the incidence of type 1 and type 2

diabetes, especially among young people of racial and ethnic minorities, between 2002-2012. A total of 1145 young people with type 1 diabetes were observed in the age group (0-19) years. Also, a total of 2846 young people with type 2 diabetes were observed in the 10-19 age group. (Mayer‐Davis et al., 2012).

In another descriptive, cross-sectional survey in the Abidjan region of Côte d'Ivoire for diabetes among children and adolescents, a multistage data collection method was used for 1,572 children and adolescents aged 2-19 years, from 687 randomly selected households between March and April/ 2013, a fasting glucose test was performed for all children and adolescents participating in the study, and then an oral glucose tolerance test was conducted for participants who had abnormal results in the first test. Definitions of Impaired Fasting Glucose (IFG) and DM were according to International Society for Pediatric and Adolescent Diabetes Guidelines. The prevalence of DM and IFG were 0.4 % and 14.5 % respectively. The prevalence of DM was identical (0.4 %) in the two age groups (2 - 9 years and 10 - 19 years) (Agbre-Yace et al., 2016).

In 2017, the USA National Institutes of Health reported that 208,000 children and adolescents under the age of 20 were diagnosed with type 1 or type 2 diabetes. The rate of type 1 diabetes increases by 1.8% each year and type 2 increases by 4.8%. Between 2011-2012, 17,900 people were diagnosed with type 1 diabetes, and 5,300 children aged 10-19 years were diagnosed with type 2 diabetes (Whiteman, 2017).

2.2.2.4 Chronic renal failure

Chronic kidney disease (CKD) with subsequent renal failure is a major health problem worldwide with increasing incidence and prevalence that is threatening the life of many children (Bruck et al., 2015). According to Kidney Disease: Improving Global Outcomes (KDIGO) work group (2013), CKD is a clinical syndrome, characterized by a gradual loss of kidney function over time. Childhood CKD presents clinical features that are specific to the pediatric age, such as the impact of the disease on growth. In addition, some of the typical characteristics of pediatric CKD, such as the etiology or cardiovascular complications, represent variables, not only influencing the health of the patient during childhood, but also having an impact on the life of the adult that this child will become (Becherucci et al., 2016).

There has been a significant rise in the prevalence of pediatric kidney disease worldwide over the past few years (Baum, 2010). This may be due to early detection of cases during childhood and longer survival of patients due to widespread availability of dialysis and transplantation. The prevalence of children diagnosed of end stage renal disease (ESRD) ranges from 65 to 85 per million age related population (Harambat et al., 2012).

The etiology of CKD varies within the pediatric group. Congenital anomaly of kidney and urinary tract is the most common cause in children followed by chronic glomerulonephritis and inherited nephropathies. Common complications of CKD includes anemia, hypertension, cardiovascular disease, growth retardation and maldevelopment of neurocognitive skills (Nayak and Khare, 2017).

A cross-sectional study carried out in Iran aimed at investigating the frequency of CKD stages 3-5 among schoolchildren. The results showed that the frequency of CKD was 1.3% and 1.7%, with an annual incidence of 14.5 per million age-related population (pmarp), and a prevalence of 118.8 pmarp (Gheissari et al., 2013).

In a study aimed to identifying asymptomatic kidney disease in school children aged 6-18 years in Chennai, India, 1000 children were screened by urine analysis. The results indicated that 10.9% of the children were examined they have a positive result of asymptomatic kidney disease. Systolic or diastolic hypertension was observed among 0.3% of participants. The prevalence of proteinuria, pyuria, and hematuria were found to be 4.3%, 5.2%, and 2.5%, respectively (Vinoth et al., 2015).

2.2.3 School health services for children with chronic health problems

School health is an important component of total HCS aiming to address the health needs of children, and provide for nutritional interventions, and counseling. The major services of SH include general health examination, anthropometry, treating minor ailments, referral and health education (Kulkarni et al., 2016). The WHO has recently indicated that SHSs are a viable strategy to address the health needs of youth and promote healthy behaviors (Baltag et al., 2015).

Moreover, SHS play a key role in managing the daily needs of students with CHCs. Although these health conditions can vary widely in concept and definition, CHCs are typically accepted as having potential for functional limitations, including dependency on medication, assistive devices, or routine medical care (Van der Lee et al., 2007).

The importance of school health nursing cannot be overemphasized. The health of students at all levels of education is very important if they are to excel in their academic pursuit and develop a good attitude towards a healthy living in the future. Although parents have a great responsibility towards the health of their children, the schools, being the second home of the children also need to take their health seriously.

Researchers have found that having a school nurse present in the school is of great importance, and led to improving management of CHCs, and promote health (Bohnenkemp et al., & 2015, Morrica et al., 2013). The school nurse or a designated provider 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 health-care providers together to promote the health care of students in a healthy and safe school environment (Association for Supervision and Curriculum Development [ASCD] and CDC, 2014).

A study carried out in USA aimed at assessing the SHSs for schoolchildren with asthma. The results showed that in more than 50% of secondary schools and 75% of elementary schools, nurses were present <40 hours per week. 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. Approximately 50% of the schools were equipped with peak flow meters and nebulizers, and spacers were available in 30% of schools (Hillemeier et al., 2006).

An observational study aimed at identifying the special needs of children with Type 1 diabetes in schools from the parents' point of view. The results 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 (Amillatequi et al., 2007).

Moreover, a study aimed to assess health services offered to schoolchildren with epilepsy found that there was little information about antiepileptic drugs, their effects, or the actual

manifestation of students' seizures appeared in special services school documents. The study recommended that additional empirical information regarding services for children with CHCs, such as epilepsy, is necessary to improve school psychologists' practice (Wodrich et al., 2006).

2.2.3.1 School health services in foreign countries

A descriptive, cross-sectional study carried out in Nigeria aimed at assessing the status of the SHS in 56 randomly selected schools using the School Health Program Evaluation Scale. The results showed that SHS is existent but its implementation is suboptimal in both private and public schools. Overall, private schools had a significantly higher mean score in criteria assessing SHS compared to public schools (Osuorah et al., 2016).

Another study carried out aimed to identify challenges to the implementation of the school health policy in Botswana schools. The study included 27 schools, and the results identified several challenges to implementing the school health policy, such as lack of human resources, lack of equipment and supplies, lack of health knowledge among teachers, as well as organizational problems. In addition, commitment of all stakeholders would also improve the implementation of SHS (Shaibu & Phaladze, 2010).

Furthermore, Akpabio, (2010) carried out a descriptive study aimed at evaluating the problems and challenges associated with school nursing in Nigeria in terms of coverage, services rendered, adequacy of equipment and supplies, and involvement of other relevant professionals in SHPs. The sample of the study included 60 schools. The results showed low coverage of SHP. The scopes of the practice were limited to treatment of minor ailments, referral services, health education, and first aid. Only 18.3% of the respondents were satisfied with equipment available for SHP. Furthermore, health services provided by the nurses were positively and significantly related to their knowledge of roles, but not on availability of material resources.

Another study aimed at assessing the impact of school-based health centers (SBHC) on hospitalization and emergency department visits for children with asthma. The results showed that asthma was one of the major diseases for SBHC encounters. Major prescription drugs that SBHC staff managed for children with asthma included albuterol, montelukast, fluticasone, budesonide, and triamcinolone. After the opening of the SBHC, relative risks of hospitalization and ED visits in the SBHC group decreased 2.4-fold and

33.5%, respectively. The cost of hospitalization per child decreased significantly over time for children in SBHC. The study concluded that the risk of hospitalization and emergency department visits for children with asthma decreased significantly with SBHC programs (Guo et al., 2004). In addition, Kouba et al., (2013) reported that education of schoolchildren about asthma led to an improvement in the percentage of students who were in control of their asthma from baseline to second test (56% to 76%) at 14 weeks. Moreover, Horner and Brown, (2014) found that a teaching program about self-management of asthma led to improved inhaler skills for students with asthma and significantly decreased hospital stays over time.

A cohort study evaluated SHS for schoolchildren with asthma found that providing medications and a combination of directly observed therapy and motivational interviewing led to an overall reduction in asthma symptoms, an increase in symptom-free days, fewer days of slowing down or stopping usual activities, decreased rescue inhaler use, and decreased exhaled nitric oxide levels at a 2-month assessment compared to baseline assessment (Halterman et al., 2011). In another study, a comprehensive educational program that included asthma education for students with asthma, case management, and asthma training for staff showed that the odds of asthma being well controlled was 55% higher among intervention students than among comparison students. The results also showed that pulmonary function tests improved at follow-up among poorly controlled asthma students, and 44.3% of students moved from the poorly controlled to well controlled classification (Rasberry et al., 2014).

Appropriate diabetes care in the school is necessary for the child's immediate safety, long-term well-being, and optimal academic performance. There is a significant link between blood glucose control and later development of diabetes complications. To achieve glycemic control, a child must check blood glucose frequently, monitor food intake, take medications, and engage in regular physical activity. To facilitate the appropriate care of the student with diabetes, the school nurse must have an understanding of diabetes and must be trained in its management and in the treatment of diabetes emergencies (National Institute of Health - NIH, 2010). Studies have shown that the majority of school personnel have an inadequate understanding of diabetes, and consequently, diabetes education must be targeted toward school nurses, teachers, and other school personnel who interact with the child, including school administrators, coaches, health aides, bus drivers, and secretaries (NIH, 2010).

A study carried out in India to identify school children with asymptomatic renal disease. A total of 1000 schoolchildren between the ages of 6 and 18 years were screened for asymptomatic renal disease by performing urinalysis. The results showed that about 10.9% of schoolchildren were positive for asymptomatic renal disease. Hypertension was observed among 0.3% of participants, 4.3% had proteinuria, 5.2% had pyuria, and 2.5% had hematuria. The urinary abnormality was significantly more common in males compared to females (Vinoth et al., 2015).

Another study aimed at assessing special education and regular education teachers' perceptions of their knowledge in meeting the academic and social needs of children with chronic medical conditions. The study included 247 elementary schools completed a survey rating their knowledge about 13 chronic medical conditions. The results indicated that special education teachers reported being more knowledgeable than regular education teachers about cerebral palsy, epilepsy, renal failure, and allergies (Nabors et al., 2008).

2.2.3.2 School health services in Arab countries

A descriptive study carried out in Syria aimed at assessing the level of implementing of the SHP in 20 primary schools in Latakia city. The study included 140 principals, and 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 (Salih et al., 2016).

Another study carried out in Jordan, aimed at identifying the degree of male and female principals of public schools in providing health services to schools of Jerash. The study sample consisted of 63 male and female principals. The results showed that the degree of providing SHSs at schools was moderate. The study recommended providing adequate financial allocations for schools to provide health needs (Bani, 2013).

Another study carried out in Kuwait, aimed at identifying the level of SH from female principals and teachers' point of view. The study included 104 female principals and 670 female teachers. The findings of the study indicated that the level of the SH in the primary schools in the state of Kuwait was medium, from the female principals and teachers'point of view. There were no significant differences in the level of SH attributed to the academic qualification, practical experience, and supervised authority variables (Al-Sarairah and Al-Rashidi, 2012).

A study carried out in Sudan aimed at assessing school teachers' knowledge, attitude and practice when dealing with schoolchildren with epilepsy. The study included 200 teachers. The results found that the majority of respondents had never been informed about epilepsy. Few of the respondents considered epilepsy as contagious. None of participants objected to having epileptic children in their classes. Only 47% teachers in the primary schools and 64% teachers in secondary schools had knowledge of the initial procedures to help a child in seizure. The study recommended that all school teachers should be given training in health services especially for children with epilepsy (Babikar & Abbas, 2011).

Another study carried out in Jordan, aimed to assess the reality of the health services programs presented to the students of Zarqa Governorate schools. The study included 316 schools principals in Zarqa Governorate. The results indicated that the level of implementation of SHP was moderate. The researcher emphasized the need to increase in the training of the medical and associated medical staff by the supervisors of the school health services, and increase the teachers and officials in medical school health services (Badh, 2007).

2.2.3.3 School health services in Palestine

The school health program started in 1994 as part of the HCS. The program covers all the governmental schools in WB and GS. The MoH and Ministry of Education (MoE) have common main goals in preparing, promoting and supporting the individuals to pursue an active and reproductive life and to be able to cope with the challenges and demands of future life. Therefore, the MoH and MoE have developed close cooperation and coordination in pursuing active school health programs (Directorate of School Health, 2018).

A descriptive study carried out in Gaza, aimed at assessing the quality of SHS in governmental schools at Khan Younis and Rafah Governorates in GS. The results indicated that, the level of implementing health services in governmental schools was very good (85.6%). The level of implementing school health education was very good (82.1%). The level of the school health environment was very good (84.4%), and the level of food services and school canteens was very good (80.6%). The study recommended the need to support the school health team with modern equipment, increase number of health seminars and improve the environmental health services of the schools (Abu Luli, 2017).

Another study carried out in Gaza, aimed at assessing the reality of services rendered to the students in schools and the factors that affect its development in GS. The results revealed good interest for SHS 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 (Ismail, 2013).

Another study carried out in GS aimed at exploring the status of health education in governmental schools of Gaza City. The results indicated that 91.46% of study participants stated that schools 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 (Al Jerjawy and Agha, 2011).

2.2.4 Challenges of school health

The World Health Organization (WHO) launched the Global School Health Initiative in 1995 with the goal to improve child, adolescent and community health through health promotion and programming in schools. This initiative is dedicated to promoting development of school health programs and increasing the number of health-promoting schools, characterized by WHO as a school constantly strengthening its capacity as a healthy setting for living, learning and working (WHO, 2018).

Health of students is very important for their success and academic achievement and develop a good attitude towards a healthy living in the future. The schools as being the second home of the children need to take their health seriously. Therefore, any school health program should be focusing on the promotion of well-adjusted, physically vibrant children that are without preventable defects, but who could adopt health practices, attitudes and knowledge that will enable them to have a high level of well-being and the ability to make the necessary decision that will affect their families' health positively (Akpabio, 2010).

The 2017 Global Accelerated Action for the Health of Adolescents implementation guidance calls for the prioritization of school health programs as an important step towards universal health coverage and urges that “Every school should be a health promoting school (WHO, 2017).

Chapter Three
Methodology

This chapter addresses issues related to methodology procedures used to answer the research questions. The chapter commences with study design, study population, sample and sampling method, study setting, and period of the study and eligibility criteria of the selection of study participants. In addition, this chapter presents the construction of the questionnaire, ethical consideration and procedures of data collection and data analysis.

3.1 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). K2

3.2 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).

3.3 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%.

3.4 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.

3.5 Period of the study

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

3.6 Eligibility criteria

3.6.1 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.

3.7 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 (Annex 4 & 5). The questionnaire designed to assess school health services for children with chronic diseases. 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:

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

3.8 Face and content validity:

The researcher distributed the questionnaire to a group of experts in the field of child health and research methodology (Annex 2) in order to evaluate adequacy of the questionnaire items to measure the study variables, which will give the questionnaire confidence in its results.

3.9 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.

3.9.1 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 (Polit and *Beck*, 2012). To test reliability, the researcher used Cronbache alpha method as presented below.

Table (3.1): reliability of the school healthcare providers' questionnaire

(Cronbache alpha method)

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 epilepsy	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 (3.2): Reliability of the school health teachers' questionnaire

(Cronbache alpha method)

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	0.710
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.

3.10 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.

3.11 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..

3.12 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.

3.13 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.

Chapter Four

Results and discussion

This chapter presents the results of data analysis. The results were categorized as descriptive and inferential results. The results have been presented in figures and tables to make it easy for the reader to understand and interpret data. Also, the results have been discussed in connection with available literature.

4.1 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.

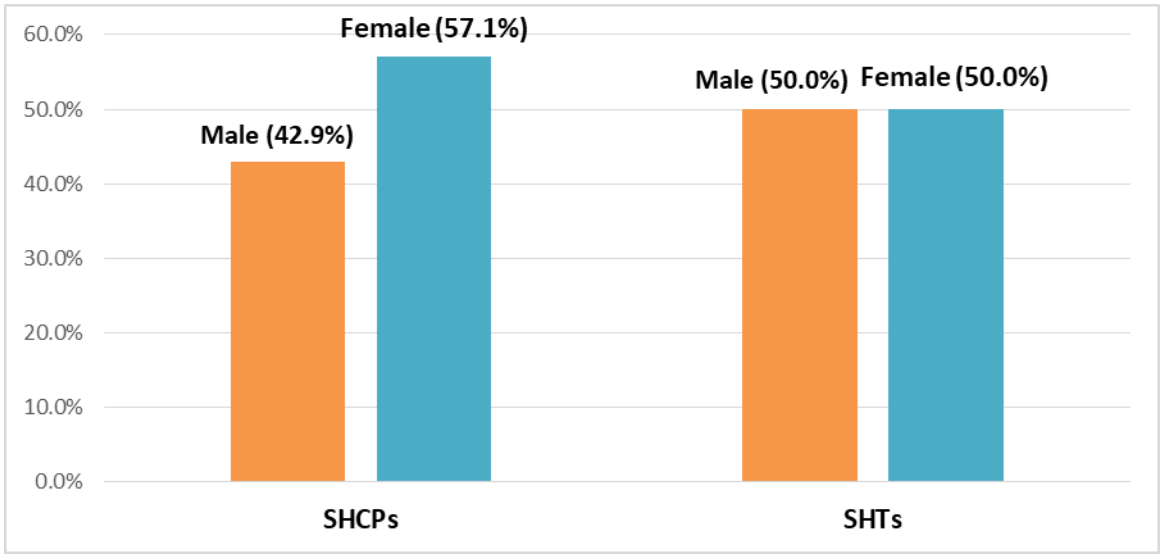

Figure (4.1): Distvribution of study participants by category and gender

Figure (4.1) shows that 28 SHCPs participated in the study (42.9% males and 57.1% females), and 120 SHTs (50% males and 50% females).

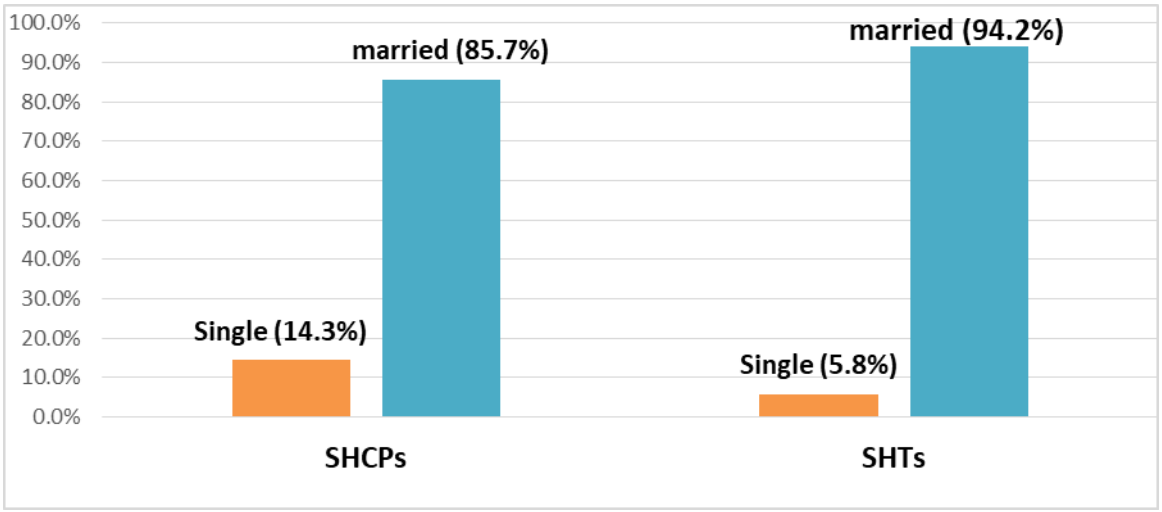

Figure (4.2): Distribution of study participants by marital status

Figure (4.2) 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,.

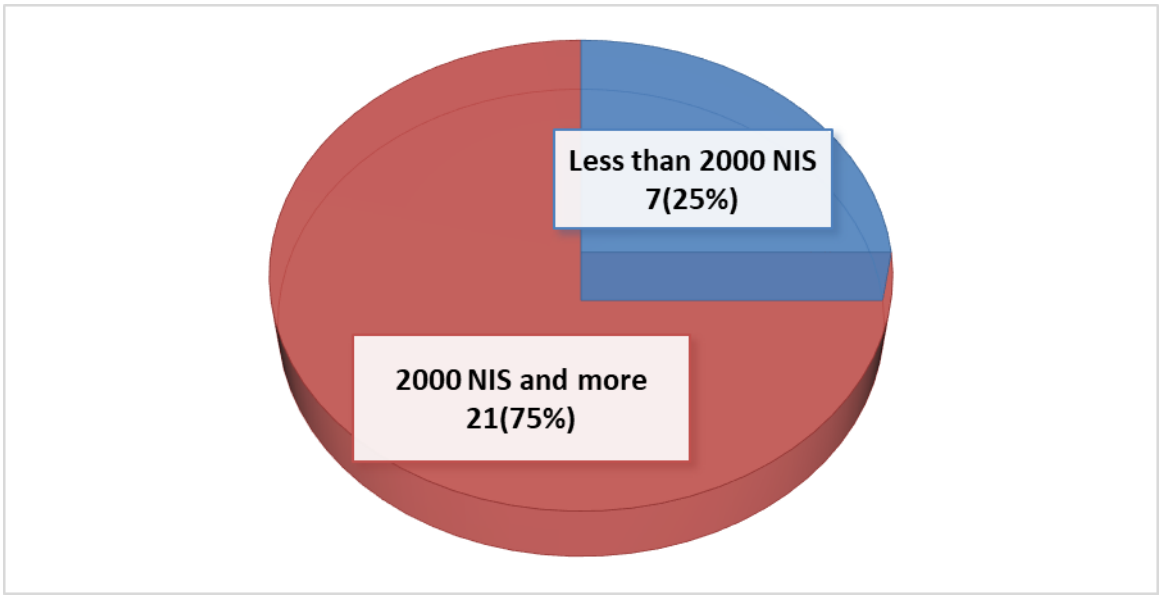

Figure (4.3): Distribution of SHCPs by income

Figure (4.3) 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.

Table (4.1): 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	100.0
	Mean = 43.642 SD = 7.548 years		
Specialty	Doctor	8	28.6
	Nurse	20	71.4
	Total	28	100.0
Level of education	Diploma	4	14.3
	Bachelor	22	78.6
	Master degree	2	7.1
	Total	28	100.0
Experience in school health	3 – 13 years	6	21.4
	14 – 24 years	17	60.7
	25 – 36 years	5	17.9
	Total	28	100.0
	Mean = 18.607 SD = 6.784 years		
Received training about chronic disease	Yes	7	25.0
	No	21	75.0
	Total	28	100.0

*NIS= New Israeli Shekel

Table (4.1) 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 (4.2): 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	100.0
	Mean = 39.716 SD = 7.986 years		
Level of education	Bachelor	117	97.5
	Master degree	3	2.5
	Total	120	100.0
Experience in education	1 – 5 years	13	10.8
	6 – 10 years	34	28.4
	11 – 15 years	42	35.0
	16 years and more	31	25.8
	Total	120	100.0
	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	100.0
	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	100.0
	Mean = 1578.583 SD = 468.950 NIS		
Received training about chronic disease	Yes	22	18.3
	No	98	81.7
	Total	120	100.0

*NIS= New Israeli Shekel

Table (4.2) 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.

4.2 Current school health services for children with chronic disease as perceived by SHPs and SHTs

Table (4.3): 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	35.0
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 (4.3) 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 (4.4): 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	50.0	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			**47.0**		**45.3**

Table (4.4) 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 (4.5): 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	25.0	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 (4.5), 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 (4.6): 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	25.0	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	50.0	57	45.7
5	I monitor the behavior of children with epilepsy.	10	35.7	93	77.5
6	I provide a healthy school environment free of irritants / triggers for seizures for children with epilepsy.	13	46.4	71	59.2
7	I have an emergency treatment plan (protocol) to deal with seizure attacks.	7	25.0	28	23.3
Overall average			**43.8**		**50.9**

As shown in table (4.6), 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.

4.3 Readiness to provide care for children with chronic disease

Table (4.7): 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	75.0	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 range: poor concentration.	24	85.7	95	79.2
12	Symptoms of low blood glucose below normal range: dizziness / loss of consciousness.	24	85.7	105	87.5
13	High blood glucose is more dangerous than low blood glucose.	25	89.3	55	45.8
14	Children with DM need regular monitoring of kidney function and eye examination.	24	85.7	100	83.3
Overall average			**81.6**		**71.6**

Table (4.7) shows that 89.3% of SHCPs and 45.8% of SHTs knew that low blood sugar is more dangerous that 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 (4.8): 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	75.0
Overall average			**88.5**		**75.5**

As shown in table (4.8), 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 (4.9): Knowledge of study participants about CRF

No	Items for knowledge about CRF	SHCPs (n= 28) Correct answer n (%)		SHTs (n= 120) 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	50.0	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 (4.9) 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-veinous 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 (4.10): 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	70.0
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 of the child until the seizure ends within a short time (1-3) minutes.	21	75.0	87	72.5
7	After the epileptic seizure solved, it should be placed in a lying position with the feet above the head level (shock position).	14	50.0	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 (4.10) 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 (4.11): 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	30.0	14.3	28.3
Moderate (60 – 80%)	21.4	40.0	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

Table (4.11) 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.

4.4 Challenges that face school health services

Table (4.12): Availability of personnel and supplies at schools

No	Personnel and supplies	SHCPs (n= 28)		SHTs (n= 120)	
		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	15.0
4	Insulin (for DM children)	2	7.1	12	10.0
5	Inhaler for asthma	1	3.6	12	10.0
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 (4.12) 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 (4.13): Availability of logistics at schools

No	Logistics	SHCPs (n= 28)		SHTs (n= 120)	
		Available n (%)		Available n (%)	
1	Lecture room for health education	20	71.4	82	68.3
2	Screen	22	78.6	96	80.0
3	Projector	22	78.6	80	66.7
4	LCD screen	18	64.3	78	65.0
5	Educational videos	16	57.1	54	45.0
6	Wall posters and simulations	16	57.1	64	53.3

Table (4.13) 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 (4.14): Coordination between SHCPs and SHTs

No	Items of coordination	SHCPs (n= 28)		SHTs (n= 120)	
		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	100.0	95	79.2
3	A schedule of school visits is agreed upon with the school	28	100.0	84	70.0
4	School is communicated by the Internet (Facebook, Messenger).	17	60.7	89	74.2
5	Information and messages are exchanged with the school by the Internet	18	64.3	82	68.3
6	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	50.0	69	57.5
10	The school provides you with updated names and addresses of children with chronic diseases	17	60.7	107	89.2
11	Coordinate with the school to visit children with chronic diseases at home.	5	17.9	58	48.3
12	There is a computerized program for the development of the health status of children with chronic diseases in the school health department of the Ministry of Health	4	14.3	64	53.3
Overall average			**63.7**		**72.2**

Table (4.14) 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 (4.15): Administrative support as perceived by study participants

No	Items of administrative support	SHCPs (n= 28)		SHTs (n= 120)	
		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	25.0	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**

As shown in table (4.15), 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.

4.5 4.5 Relationship between readiness to provide care for children with chronic disease and selected sociodemographic variables

Table (4.16): 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[a]
High	6 (50.0)	7 (43.8)		
Total	12 (100.0)	16 (100.0)		

† Fisher's exact test [a] Statistical testing using chi-square test

Table (4.16) 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 (4.17): Differences in knowledge of SHTs about chronic disease related to gender

Variable	Gender		χ^2	P value [a]
	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	0.550
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)		

[a] Statistical testing using chi-square test

Table (4.17) 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 (4.18): Differences in knowledge of SHCPs 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[a]
High	5 (45.5)	8 (47.1)		
Total	11 (100.0)	17 (100.0)		

† Fisher's exact test [a] Statistical testing using chi-square test

Table (4.18) shows that there were no statistical significant differences in levels of knowledge about chronic diseases related to age SHPs (P value > 0.05).

Table (4.19): 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[a]
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)		

[a] Statistical testing using chi-square test † Fisher's exact test * Difference is significant at the 0.05 level (2-tailed)

Table (4.19) 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 (4.20): 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)	

† Fisher's exact test

Table (4.20) 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 (4.21): 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)	2.405	0.662 †
Moderate	33 (54.1)	22 (59.5)	16 (72.7)		
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)	4.095	0.379 †
Moderate	36 (59.0)	22 (59.5)	12 (54.5)		
High	11 (18.0)	4 (10.8)	1 (4.5)		
Total	61 (100.0)	37 (100.0)	22 (100.0)		

† Fisher's exact test

Table (4.21) 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 (4.22): 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)	

† Fisher's exact test

Table (4.22) 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 (4.23): Differences in knowledge of SHTs about chronic disease related to previous training

Variable	Received training		χ^2	P value[a]
	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)		

[a] Statistical testing using chi-square test

Table (4.23) 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.

4.6 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.

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. (2016) who found that SHSs is existent, but its implementation is suboptimal in both private and public schools. In contrast, the results of Abu Luli, (2017) 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 (2018), 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.

Kulkarni et al. (2016) 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, (2010) found that the scopes of the practice were limited to treatment of minor ailments, referral services, health education, and first aid, and Badh (2007) 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 (2006) 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 (Amillatequi et al., 2007). 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 (NIH, 2010 & Jameson, 2004).

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. (2015) 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.

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. (2006), 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, (2010) 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. (2006) 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. (2013) 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 (2014) 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 (Halterman et al., 2011).

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 (Hillemeier et al., 2006). In addition, Badh (2007) 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.

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 (Bohnenkemp et al., 2015; Morrica et al., 2013). According to ASCD and CDC (2014), 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. (2006) 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.

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. (2016) 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, (2013) recommended providing adequate financial allocations for schools to provide health needs.

A study carried out by Shaibu and Phaladze, (2010) 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, (2010) showed low coverage of SHCPs, and only 18.3% of the respondents were satisfied with equipment available for SHCP. Furthermore, Abu Luli, (2017) 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, (2013) 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 (Al Jerjawy and Agha, 2011).

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, (2012) 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, (2011) 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.

Chapter Five

Conclusion and Recommendations

5.1 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.

5.2 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.

5.3 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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Annexes

Annex (1): Map of Palestine

Annex (2): List of experts

Name	**Place of work**
Dr. Khalil Shuaib	Palestine College of Nursing
Dr. Ahmad Nijm	Al Azhar University
Dr. Yousef Fahajan	Al Najjar Hospital
Dr. Abdel Rahman al Hams	Palestine College of Nursing
Dr. Mohammad Al Jerjawy	Palestine College of Nursing
Dr. Arefa Alkaseeh	The Islamic University – Gaza
Dr. Abdelmajeed Thabet	Palestine College of Nursing

Annex (3): Consent form

بسم الله الرحمن الرحيم

السيد الفاضل / السيدة الفاضلة:

السلام عليكم ورحمة الله وبركاته

بين أيديكم استبانة خاصة برسالة الماجستير التي أقوم بإجرائها وهي تهدف إلى التعرف على حالة خدمات الصحة المدرسية المقدمة للأطفال الذين يعانون من أمراض مزمنة (السكري، الربو، الفشل الكلوي المزمن، والصرع).

يرجى الاستجابة على جميع فقرات الاستبانات بشكل صادق، مع العلم أنه لا توجد إجابات خاطئة ولكن إجابتك تعبر عن رأيك الشخصي، كما أن المعلومات التي سيتم جمعها سوف تستخدم لأغراض البحث العلمي فقط، ونلفت انتباهك بأنه لا داعي لكتابة اسمك الشخصي.

إقرار موافقة على المشاركة في الدراسة: ..... التوقيع

الباحث

مهند زياد الزطمة

Annex (4): Questionnaire for Healthcare providers (Directorate of Health - Ministry of Health)

Part 1: Sociodemographic information:

1. Gender	□female □ male
2. Age	..... year
3. Marital status	□ widowed □ divorced □ marrid □ single
4. Speciality	Physician □ Nurse □
5. Qualification	□ Doctorate □ Master □ Bachelor □ Diploma
6. Years of experience	..... years
7. Monthly income	..... NIS
8. Have you received training courses about caring for children with chronic diseases? □ Yes □ No	

Part 2: Status of school health services for children with chronic diseases

No.	Item	Yes	No
School health services for children with DM			
1	I give prescribed medicines to children with DM, such as insulin, in an emergency situations medicines to children as insulin, in a		
2	I check the blood glucose level in emergency situations for children with DM.		
3	I follow a diet to regulate blood glucose and rich in nutrients which necessary for growth of children with DM.		
4	I promote physical exercises for children with DM.		
5	I provide educational and awareness programs for children with DM about the nature of their disease.		
6	I provide educational programs about importance of oral hygiene as well as feet for children with DM.		
7	I provide educational and awareness programs for teachers about dealing with children with DM.		
8	I provide educational and awareness programs for parents about dealing with their children with DM.		
9	I have an emergency treatment plan (protocol) to treat low or high		

	blood glucose in children with DM.		
School health services for children with asthma			
1	I give prescribed medications to children with asthma, such as nebulizers / sprays in an emergency situations.		
2	I work to provide a safe and healthy school environment free of irritants that negatively affect children with asthma.		
3	I provide educational and awareness programs for children with asthma.		
4	I provide educational and awareness programs for teachers about dealing with children with asthma.		
5	I provide educational and awareness programs for parents about dealing with their children with asthma.		
6	I have an emergency treatment plan (protocol) to deal with aggressive asthma attacks in children with asthma.		
School health services for children with chronic renak failure			
1	I give prescribed medications to children with chronic kidney failure such as blood pressure medications in emergency situations.		
2	Ensure that the dialysis procedure is carried out on time by the hospital for children with chronic renal failure.		
3	I follow a healthy diet with proper protein intake and correct calories to maintain body weight for children with chronic kidney failure.		
4	I provide educational and awareness programs for children with chronic renal failure.		
5	I provide educational and awareness programs for teachers about dealing with children with chronic kidney failure.		
6	I provide educational and awareness programs for parents about dealing with their children with chronic kidney failure.		
7	I have an emergency treatment plan (protocol) to deal with hypertension in children with chronic kidney failure.		
School health services for children with epilepsy			
1	I give prescribed medications to children with epilepsy such as antiepileptic in emergency situations.		
2	School health ensures that classrooms for children with epilepsy are on the ground floor.		
3	I provide education and awareness sessions for teachers on how to identify and deal with seizures associated with children with epilepsy.		
4	I provide education and awareness sessions for parents on how to identify and deal with seizures associated with their children with epilepsy.		
5	I monitor the behavior of children with epilepsy.		
6	I provide a healthy school environment free of irritants / triggers for seizures for children with epilepsy.		
7	I have an emergency treatment plan (protocol) to deal with aggressive seizures.		

Part 3: Readiness to provide health services for children with chronic diseases

No.	Item	Yes	No
Knowledge about caring for children with DM			
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.		
2	DM may be caused by the presence of the disease in family history.		
3	DM may be caused by a viral infection of the pancreas and digestive system.		
4	DM may be caused by the body's immune cells attacking the beta cells of the pancreas.		
5	Symptoms of DM in children polydipsia.		
6	Symptoms of DM in children polyphagia.		
7	Symptoms of DM in children polyuria.		
8	Children with DM are diagnosed only by random blood glucose analysis.		
9	The normal level of blood glucose is maintained by giving only insulin.		
10	Symptoms of a lower blood glucose than normal: sweating.		
11	Symptoms of low blood glucose below normal range: poor concentration.		
12	Symptoms of low blood glucose below normal range: dizziness / loss of consciousness.		
13	High blood glucose is more dangerous than low blood glucose.		
14	Children with DM need regular monitoring of kidney function and eye examination.		
Knowledge about caring for children with asthma			
1	Chest crisis Asthma is a chronic recurrent case of airway inflammation due to repeated exposure of the child to irritants leading to an excessive immune response.		
2	Thoracic crisis leads to shortness of breath.		
3	The asthma crisis leads to mucous secretions.		
4	Causes of an asthma attack in children with thoracic crisis (asthma) excessive immune response to the vaccine plants.		
5	Causes of an asthma attack in children with asthma are an excessive immune response to perfume / severe odors.		
6	Signs and symptoms of asthma in children with asthma such as wheezing caused by airway tightness.		
7	Signs and symptoms of asthma in children with asthma such as irritability and sneezing.		
8	Asthma is treated in children with asthma by avoiding irritants only.		
9	Complications of asthma in children with asthma such as aggressive asthma attack.		
Knowledge about caring for children with chronic renal failure			
1	Chronic kidney failure in children is a condition in which the		

	kidneys suddenly lose their functional capacity.		
3	Chronic kidney failure is life-threatening due to the accumulation of harmful fluids in the body with the body's inability to excrete of them.		
4	Signs and symptoms of chronic kidney failure in children: low urine output.		
5	Signs and symptoms of chronic kidney failure in children: presence of protein in the urine.		
6	Signs and symptoms of chronic kidney failure in children: swelling of the feet and hands.		
7	Kidney failure is diagnosed by kidney / CT imaging.		
8	The health status of a child with chronic kidney failure is maintained by dialysis.		
9	The health status of a child with chronic kidney failure is maintained by a diet suitable for protein, salts and calories.		
10	The health of a child with chronic kidney failure is maintained by treating blood pressure.		
11	An arterial venous junction can be used to administer medications and draw blood samples.		
12	A child with chronic renal failure can carry heavy weights naturally by hand with an arterial vein.		
13	Complications of chronic kidney failure in children: anemia.		
Knowledge about caring for children with epilepsy			
1	Epilepsy in children is a disease of the nervous system, which leads to two or more episodes of unexplained convulsions during the day.		
2	One of the causes of epilepsy is presence of the disease in family history.		
3	Causes of epilepsy severe head injury.		
4	Causes of epilepsy brain disease.		
5	Epilepsy in children is diagnosed by tests that give direct results of presence of the disease.		
6	When a seizure associated with epilepsy occurs, leave the child (not shaking the child or trying to awaken) with the observation of the child until the seizure ends within a short time (1-3) minutes.		
7	After the epileptic seizure solved, it should be placed in a lying position with the feet above the head level (shock position).		
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.		

Part 4: Challenges that face school health services

No.	Item	yes	no
Availability of personnel and supplies			
1	There is a full-time doctor / nurse in the school to follow up and treat health conditions related to children with chronic diseases.		
2	There is a private school health services room with examination bed, oxygen source, cannulas, intravenous solutions, emergency medicines.		
3	Syringes and needles of different sizes.		
4	Insulin types for DM patients.		
5	Sprays for asthmatic patients.		
6	Antiepileptic drugs.		
7	Sphygmomanometer + Stethoscope.		
8	Glucometer.		
9	Scale for measuring the weight of children.		
10	Emergency and first aid kit equipped with medicines and tools to deal with chronic diseases in emergency situations.		
Availability of logistics in the school			
1	There is a private hall or room for health education lectures.		
2	Availability of a Display screen.		
3	Availability of a projector.		
4	Availability of a TV.		
5	Availability of an educational videos.		
6	Provides legends about chronic diseases.		

Coordination between the school and the school health team.

No.	Item	yes	no
1	There is a direct telephone connection between the school and the school health department		
2	The school is informed of the school health team's visit dates earlier		
3	A schedule of school visits is agreed upon with the school		
4	The school is communicated by the Internet (Facebook, Messenger, Whatsapp).		
5	Information and messages are exchanged with the school by the Internet		
6	The school health team is informed by the school when the symptoms of chronic disease appear on children known to have chronic diseases		
7	The school health team is informed by the school when a child with a chronic disease is referred to hospital		
8	Regular meetings are helding with school health teachers about care of children with chronic diseases		

9	Health education activities for children with chronic diseases are carried out in coordination with school health teachers		
10	The school provides you with updated names and addresses of children with chronic diseases		
11	Coordinate with the school to visit children with chronic diseases at home.		
12	There is a computerized program for the development of the health status of children with chronic diseases in the school health department of the Ministry of Health		

Administrative support

No.	**Item**	**yes**	**no**
1	I receive full support for my work within the School Health Team from the Director of School Health		
2	I receive constructive guidance from a Director of the School Health Department to increase my professional competence in the care of children with chronic diseases		
3	I received training programs for school health team tasks on caring for children with chronic diseases		
4	I receive encouragement and reward from my principals when I do an special activity in school health for children with chronic diseases		
5	The School Health Department Service provides me with the tools to provide care for children with chronic diseases		
6	The School Health Department Service provides me with a vehicle to travel between schools to visit		
7	The School Health Department provides me with transportation allowance if there is no government vehicle to travel between schools		

Thank you for your cooperation,,,

Annex (5): Questionnaire for school health teachers (Directorate of Education - Ministry of Education)

Part 1: Sociodemographic information:

1. Gender	□ female □ male
2. Age	..... year
3. Marital status	□ widowed □ divorced □ marrid □ single
4. Qualification	□ Doctorate □ Master □ Bachelor □ Diploma
5. Years of teaching experience	..... years
6. Years of work as a health teacher	..... years
7. Monthly income	..... NIS
8. Have you received training courses about caring for children with chronic diseases? □ Yes □ No If yes, mention	

Part 2: Current status of school health services for children with chronic diseases

No.	Paragraph	yes	no
School health services for children with DM			
1	I give prescribed medications to children with DM, such as insulin, in an emergency situations. e		
2	I check the blood glucose level in emergency situations for children with DM.		
3	I follow a diet to regulate blood glucose and rich in nutrients which necessary for growth of children with DM.		
4	I promote physical exercises for children with DM.		
5	I provide educational and awareness programs for children with DM about the nature of their disease.		
6	I provide educational programs about importance of oral hygiene as well as feet for children with DM.		
7	I provide educational and awareness programs for teachers about dealing with children with DM.		
8	I provide educational and awareness programs for parents about dealing with their children with DM.		
9	I have an emergency treatment plan (protocol) to treat low or high blood glucose in children with DM.		
School health services for children with asthma			
1	I give prescribed medications to children with asthma, such as nebulizers / sprays in an emergency situations.		
2	I work to provide a safe and healthy school environment free of irritants that negatively affect children with asthma.		

3	I provide educational and awareness programs for children with asthma.		
4	I provide educational and awareness programs for teachers about dealing with children with asthma.		
5	I provide educational and awareness programs for parents about dealing with their children with asthma.		
6	I have an emergency treatment plan (protocol) to deal with aggressive asthma attacks in children with asthma.		
School health services for children with chronic renal failure			
1	I give prescribed medications to children with chronic kidney failure such as blood pressure medications in emergency situations.		
2	Ensure that the dialysis procedure is carried out on time by the hospital for children with chronic renal failure.		
3	I follow a healthy diet with proper protein intake and correct calories to maintain body weight for children with chronic kidney failure.		
4	I provide educational and awareness programs for children with chronic renal failure.		
5	I provide educational and awareness programs for teachers about dealing with children with chronic kidney failure.		
6	I provide educational and awareness programs for parents about dealing with their children with chronic kidney failure.		
7	I have an emergency treatment plan (protocol) to deal with hypertension in children with chronic kidney failure.		
School health services for children with epilepsy			
1	I give prescribed medications to children with epilepsy such as antiepileptic in emergency situations.		
2	School health ensures that classrooms for children with epilepsy are on the ground floor.		
3	I provide education and awareness sessions for teachers on how to identify and deal with seizures associated with children with epilepsy.		
4	I provide education and awareness sessions for parents on how to identify and deal with seizures associated with their children with epilepsy.		
5	I monitor the behavior of children with epilepsy.		
6	I provide a healthy school environment free of irritants / triggers for seizures for children with epilepsy.		
7	I have an emergency treatment plan (protocol) to deal with aggressive seizures.		

Part 3: Readiness to provide healthcare for children with chronic diseases

No.	Item	yes	no
Knowledge about caring for children with DM			
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.		
2	DM may be caused by presence of the disease in family history.		
3	DM may be caused by a viral infection of the pancreas and digestive system.		
4	DM may be caused by the body's immune cells attacking the beta cells of the pancreas.		
5	Symptoms of DM in children frequent thirst.		
6	Symptoms of DM in children frequent hunger.		
7	Symptoms of DM in children frequent urination.		
8	Children with DM are diagnosed only by random blood glucose analysis.		
9	The normal level of blood glucose is maintained by giving only insulin.		
10	Symptoms of a lower blood glucose than normal: sweating.		
11	Symptoms of low blood glucose below normal range: poor concentration.		
12	Symptoms of low blood glucose below normal range: dizziness / loss of consciousness.		
13	High blood glucose is more dangerous than low blood glucose.		
14	Children with DM need regular monitoring of kidney function and eye examination.		
Knowledge about care for children with asthma			
1	Chest crisis Asthma is a chronic recurrent case of airway inflammation due to repeated exposure of the child to irritants leading to an excessive immune response.		
2	Thoracic crisis leads to shortness of breath.		
3	The asthma crisis leads to mucous secretions.		
4	Causes of an asthma attack in children with thoracic crisis (asthma) excessive immune response to the vaccine plants.		
5	Causes of an asthma attack in children with asthma are an excessive immune response to perfume / severe odors.		
6	Signs and symptoms of asthma in children with asthma such as wheezing caused by airway tightness.		
7	Signs and symptoms of asthma in children with asthma such as irritability and sneezing.		
8	Asthma is treated in children with asthma by avoiding irritants only.		
9	Complications of asthma in children with asthma such as violent asthma attack.		
Knowledge about care for children with chronic renal failure			
1	Chronic kidney failure in children is a condition in which the kidneys suddenly lose their functional capacity.		
2	Chronic kidney failure disease can be cured by medications.		

3	Chronic kidney failure is life-threatening due to the accumulation of harmful fluids in the body with the body's inability to exsrete them.		
4	Signs and symptoms of chronic kidney failure in children: low urine output.		
5	Signs and symptoms of chronic kidney failure in children: presence of protein in the urine.		
6	Signs and symptoms of chronic kidney failure in children: swelling of the feet and hands.		
7	Chronic Kidney failure is diagnosed by kidney / CT imaging.		
8	The health status of a child with chronic kidney failure is maintained by dialysis.		
9	The health status of a child with chronic kidney failure is maintained by a diet suitable for protein, salts and calories.		
10	The health of a child with chronic kidney failure is maintained by treating blood pressure.		
11	An arterial venous junction can be used to administer medications and draw blood samples.		
12	A child with chronic renal failure can carry heavy weights naturally by hand with an arterial vein.		
13	Complications of chronic kidney failure in children: anemia.		
Knowledge about care for children with epilepsy			
1	Epilepsy in children is a disease of the nervous system, which leads to two or more episodes of unexplained convulsions during the day.		
2	One of the causes of epilepsy is presence of the disease in family history.		
3	Causes of epilepsy severe head injury.		
4	Causes of epilepsy brain disease.		
5	Epilepsy in children is diagnosed by tests that give direct results of presence of the disease.		
6	When a seizure associated with epilepsy occurs, leave the child (not shaking the child or trying to awaken) with the observation of the child until the seizure ends within a short time (1-3) minutes.		
7	After the epileptic seizure solved, it should be placed in a lying position with the feet above the head level (shock position).		
8	Complications of epilepsy in children with epilepsy, such as an aggressive epileptic seizure that lasts more than 30 minutes leading to a loss of consciousness that needs to be hospitalized.		

Part 4: Challenges that face school health services

No.	Item	yes	no
Availability of personnel and supplies			
1	There is a full-time doctor / nurse in the school to follow up and treat health conditions related to children with chronic diseases.		
2	There is a private school health services room with examination bed, oxygen source, cannulas, intravenous solutions, emergency medicines.		
3	Syringes and needles of different sizes.		
4	Insulin types for DM patients.		
5	Sprays for asthmatic patients.		
6	Antiepileptic drugs.		
7	Sphygmomanometer + Stethoscope.		
8	Glucometer.		
9	Scale for measuring the weight of children.		
10	Emergency and first aid kit equipped with medicines and tools to deal with chronic diseases in emergency situations.		
Availability of logistics in the school			
1	There is a private hall or room for health education lectures.		
2	Availability of a Display screen.		
3	Availability of a projector.		
4	Availability of a TV.		
5	Availability of an educational videos.		
6	Provides legends about chronic diseases.		

Coordination between the school and the school health team.

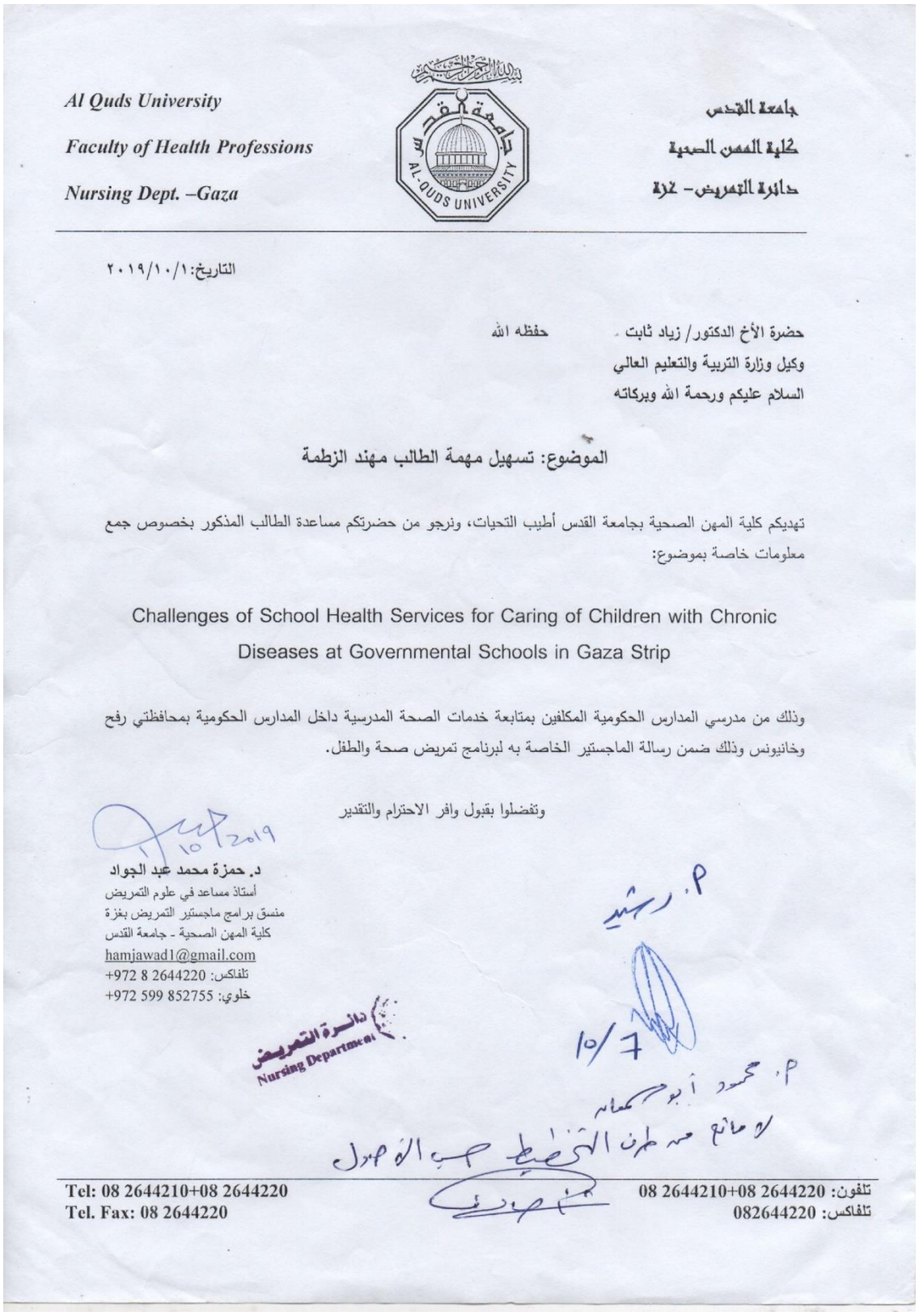
NO.	Item	yes	no
1	There is a direct telephone connection between the school and the school health team.		
2	The school is informed in advance of the school health team's visit times.		
3	There is a schedule of school visits agreed with the school.		
4	The school health team communicates with the school online (Facebook, Messenger, Whatsapp).		
5	Information and messages are exchanged with the school health team by the Internet.		
6	The school informs the school health team when symptoms of the disease appear to children known to have chronic diseases.		
7	The school informs the school health team when a child with chronic disease is referred to hospital.		
8	Regular meetings are held at school with the school health team on the care of children with chronic diseases.		
9	The school conducts health education activities for children with chronic diseases in coordination with the school health team.		
10	The school provides the school health team with updated statements of names and addresses of children with chronic diseases.		
11	Coordinate between school and school health team to visit children with chronic diseases at home.		
12	There is a computerized program for the development of the health status of children with chronic diseases in the School Health Department of the Ministry of Health.		

Administrative support

No.	Item	yes	no
1	I receive full support for my work and activities in the care of children with chronic diseases from the principal.		
2	I hold regular meetings with the principal to brief him on the health activities in the school to care for children with chronic diseases.		
3	I received training programs for the tasks required of me as a school health teacher to care for children with chronic diseases.		
4	I receive encouragement and reward from the headmaster when I do an outstanding activity in school health to care for children with chronic diseases.		
5	The school provides me with the tools to provide care for children with chronic diseases.		
6	The manager allows me to attend school health-related workshops to care for children with chronic diseases.		
7	The manager of the school relieves me of some classes / lessons to devote himself to school health activities to care for children with chronic diseases.		

Thank you for your cooperation,,,

Annex (6): Approval from Al Quds university



Al Quds University
Faculty of Health Professions
Nursing Dept. –Gaza

جامعة القدس
كلية المهن الصحية
دائرة التمريض – غزة

التاريخ: ١/١٠/٢٠١٩

حضرة الأخ الدكتور/ زياد ثابت حفظه الله
وكيل وزارة التربية والتعليم العالي
السلام عليكم ورحمة الله وبركاته

الموضوع: تسهيل مهمة الطالب مهند الزطمة

تهديكم كلية المهن الصحية بجامعة القدس أطيب التحيات، ونرجو من حضرتكم مساعدة الطالب المذكور بخصوص جمع معلومات خاصة بموضوع:

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

وذلك من مدرسي المدارس الحكومية المكلفين بمتابعة خدمات الصحة المدرسية داخل المدارس الحكومية بمحافظتي رفح وخانيونس وذلك ضمن رسالة الماجستير الخاصة به لبرنامج تمريض صحة والطفل.

وتفضلوا بقبول وافر الاحترام والتقدير

10/2019

د. حمزة محمد عبد الجواد
أستاذ مساعد في علوم التمريض
منسق برامج ماجستير التمريض بغزة
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دائرة التمريض
Nursing Department

د. رشيد

10/7

د. محمود أبو حمامة

Tel: 08 2644210+08 2644220
Tel. Fax: 08 2644220

تلفون: 08 2644210+08 2644220
تلفاكس: 082644220

Annex (7): Approval from Helsinki Committee

المجلس الفلسطيني للبحث الصحي

Palestinian Health Research Council

تعزيز النظام الصحي الفلسطيني من خلال مأسسة استخدام المعلومات البحثية في صنع القرار

Developing the Palestinian health system through institutionalizing the use of information in decision making

Helsinki Committee

For Ethical Approval

Date: 2019/10/7 **Number:** PHRC/HC/624/19

Name: Mohanad Zeyad Alzatma الاسم:

We would like to inform you that the committee had discussed the proposal of your study about: نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:

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

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/624/19 in its meeting on 2019/10/7 و قد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه

Signature

Member **Member**

Chairman

Dr. Yehia Abed

Genral Conditions:-

1. Valid for 2 years from the date of approval.
2. It is necessary to notify the committee of any change in the approved study protocol.
3. The committee appreciates receiving a copy of your final research when completed.

Specific Conditions:-

E-Mail:pal.phrc@gmail.com

Gaza - Palestine غزة - فلسطين

شارع النصر - مفترق العيون

Annex (8): Approval from MOH

State of Palestine
Ministry of health

دولة فلسطين
وزارة الصحة

التاريخ:13/10/2019
رقم المراسلة 378776

السيد : رامي عيد سليمان العبادله المحترم

مدير عام بالوزارة /الإدارة العامة لتنمية القوى البشرية ـ /وزارة الصحة

السلام عليكم ,,,

الموضوع/ تسهيل مهمة الباحث// مهند الزطمة

التفاصيل //
بخصوص الموضوع أعلاه، يرجي تسهيل مهمة الباحث/ مهند زياد الزطمة
الملتحق ببرنامج ماجستير التمريض – تخصص صحة الأم والطفل – جامعة القدس أبوديس في إجراء بحث بعنوان:ـ
"Challenges of School Health Services for Caring of Children with Chronic Diseases at Governmental Schools in Gaza Strip"
حيث الباحث بحاجة لتعبئة استبانة من العاملين في دائرة الصحة المدرسية في الإدارة العامة للرعاية الصحية الأولية، بما لا يتعارض مع مصلحة العمل وضمن أخلاقيات البحث العلمي، ودون تحمل الوزارة أي أعباء أو مسئولية.
وتفضلوا بقبول التحية والتقدير،،،
ملاحظة /
1. البحث المذكور حصل على موافقة لجنه اخلاقيات البحث الصحي (لجنة هلسنكي)
2. تسهيل المهمة الخاص بالدراسة أعلاه صالح لمدة 3 أشهر من تاريخه.

محمد ابراهيم محمد السرساوي
مدير دائرة/الإدارة العامة لتنمية القوى البشرية ـ

التحويلات

■ محمد ابراهيم محمد السرساوي(مدير دائرة)	← رامي عيد سليمان العبادله(مدير عام بالوزارة)	إجراءاتكم بالخصوص(13/10/2019)
■ رامي عيد سليمان العبادله(مدير عام بالوزارة)	← مدحت عباس خضر حسن(مدير عام بالوزارة)	إجراءاتكم بالخصوص(13/10/2019)
■ مدحت عباس خضر حسن(مدير عام بالوزارة)	← كامل عبد المنعم كامل صايمه(طبيب مقيم)	لعمل اللازم(13/10/2019)

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Annex (9): Approval from MOE

State Of Palestine
Ministry Of Education & Higher Education
Directorate of Education East Khan -Younis

دولـــة فلســـطين
وزارة التربيـة والتعليـم العالي
مديرية التربية والتعليـم – شرق خان يونس

قسم التخطيط والمعلومات
التاريخ: 2019/10/09م

السادة/ مديرو المدارس المعنية ومديراتها المحترمون،،،

تحية طيبة وبعد،،،

الموضوع/ تسهيل مهمة بحث

نهديكم في قسم التخطيط والمعلومات أطيب التحيات ونتمنى لكم موفور الصحة والعافية، وبالإشارة للموضوع أعلاه يرجى العلم بأن الطالب/ مهند زياد الزطمة من جامعة القدس كلية المهن الصحية (دائرة التمريض) يقوم بعمل بحث ضمن رسالة الماجستير الخاصة به لبرنامج تمريض الصحة والطفل تحت عنوان:

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

حيث سيتم تنفيذ استبانة لمنسقي الصحة المدرسية في المدارس وعليه يرجى من تسهيل مهمة الباحث، وذلك حسب الأصول.

واقبلوا فائق الاحترام والتقدير،،،

رئيس قسم التخطيط
أ. عدلي حماد أبو رضوان

مدير التربية والتعليم
أ. سليمان عبد الكريم شعت

نسخة:
الملـــــــــــــــف

شرق خان يونس(تلفون: 2072722 - فاكس: 2072775)(Fax: 2072775 - Tel. 2072722)East-Khan-Younis
الموقع الالكتروني www.ekhan.net

العنوان: التحديات التي تواجه خدمات الصحة المدرسية للعناية بالأطفال ذوي الأمراض المزمنة في المدارس الحكومية في قطاع غزة.

إعداد: مهند زياد الزطمة

إشراف: د. حمزة عبد الجواد

ملخص الدراسة

يحتاج الأطفال ذوي الأمراض المزمنة إلى اهتمام ورعاية خاصة في المدرسة للحفاظ على سلامتهم وصحتهم. هدفت هذه الدراسة إلى التعرف على واقع الصحة المدرسية والتحديات التي تواجه خدمات الصحة المدرسية المقدمة للأطفال ذوي الأمراض المزمنة في المدارس الحكومية في جنوب قطاع غزة، وتم استخدام المنهج الوصفي في هذه الدراسة. تكونت عينة الدراسة من 120 معلم ومعلمة من معلمي الصحة المدرسية في المدارس الحكومية في مديرية رفح التعليمية، مديرية شرق خانيونس، ومديرية غرب خانيونس، كما تكونت عينة الدراسة من 28 (8 أطباء و20 ممرض) من دائرة الصحة المدرسية في وزارة الصحة الفلسطينية. لجمع البيانات، قام الباحث بإعداد استبانتين لمعرفة واقع الصحة المدرسية، وقد تم إجراء دراسة استطلاعية بهدف التأكد من ثبات الاستبانتين، حيث بلغ معامل كرونباخ ألفا لأبعاد استبانة مقدمي الرعاية الصحية المدرسية بين 0.721 – 0.959، ولاستبانة المعلمين 0.710 – 0.856. لتحليل البيانات استخدم الباحث برنامج الرزم الإحصائية SPSS (22)، وتم استخدام التكرارات، النسب المئوية، اختبار مربع كاي، واختبار فيشر.

أظهرت نتائج الدراسة أن 57.1% من مقدمي الرعاية الصحية و50% من المعلمين كانوا من الإناث، غالبية المشاركين في الدراسة متزوجين، بلغ متوسط العمر لمقدمي الرعاية الصحية المدرسية 43.642 سنة ومتوسط العمر للمعلمين 39.716 سنة، كما أن غالبية المشاركين في الدراسة حاصلين على درجة البكالوريوس، كما أن غالبيتهم لم يتلقوا تدريب خاص بالأمراض المزمنة (السكري، الربو، الفشل الكلوي المزمن، والصرع). وأظهرت نتائج الدراسة أن مستوى الرعاية الصحية المدرسية المقدمة للأطفال ذوي الأمراض المزمنة كان منخفضاً. وبينت النتائج أن درجة الاستعداد والمعلومات حول الأمراض المزمنة كانت عالية لدى مقدمي الرعاية الصحية المدرسية وكانت متوسطة لدى المعلمين. كما تبين عدم وجود فروق ذات دلالة إحصائية في مستوى المعرفة بالأمراض المزمنة تعزى للجنس، العمر، سنوات الخبرة، المؤهل العلمي، وتلقي تدريب مسبق.

تمثلت أهم التحديات التي تواجه الرعاية الصحية المدرسية في النقص في أعداد مقدمي الرعاية الصحية المدرسية مقارنة بعدد المدارس وأعداد الطلبة، النقص الحاد في الأدوات والمستلزمات اللازمة لتقديم الرعاية الصحية، وتدني الدعم من المدراء خاصة في جوانب الحوافز المادية وعدم توفير

الأدوات اللازمة لتقديم الرعاية الصحية. وأظهرت النتائج وجود درجة متوسطة من التنسيق بين مقدمي الرعاية الصحية المدرسية وإدارات المدارس. في الإجمال أظهرت الدراسة الحاجة إلى زيادة أعداد مقدمي الرعاية الصحية المدرسية الأكفاء في فريق الصحة المدرسية، وإلحاقهم بدورات متخصصة لرفع كفاءتهم وقدرتهم على تقديم الرعاية الصحية المدرسية بجودة عالية.