

# Guardians of health: School nurses and their leadership roles in the fight against the COVID-19 pandemic in education

## Sağlık koruyucuları: Eğitimde COVID-19 pandemisiyle mücadelede okul hemşireleri ve liderlik rolleri

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### Abstract

This study investigated school health nurses' critical role and importance in managing infectious diseases during the COVID-19 pandemic. The pandemic has had negative impacts on schools and educational institutions. In light of these impacts, the assistance of school health nurses in overcoming difficulties in accessing health services for students and their families was examined globally. The study aimed to explore the status of school nursing practices in various countries in response to the challenges posed by the COVID-19 pandemic, assess the situation in Turkey, and examine how these nurses contribute to health management in educational settings. To identify pertinent literature, relevant publications were reviewed using key terms such as 'school nursing,' 'infectious disease management,' 'COVID-19,' 'safe school,' and 'public health'. The search focused on studies analysing the role of school health nurses during the pandemic. Sources included academic databases, public health reports, and public health organisation publications. Due to the lack of precise data on the employment of school health nurses in Turkey, specific information on their role during the pandemic could not be found. However, the relevant literature was comprehensively reviewed, and the study analysed global publications highlighting the critical role of school nurses in managing infectious diseases in educational settings. The study highlights that school health nurses play significant roles in preventing and controlling communicable diseases and contribute notably to health education for students and staff during the pandemic. School health nurses protect children and adolescents' physical, psychological, and spiritual well-being. Findings suggest that structural changes in health and education systems are needed to enhance the effectiveness of school nurses. This study underscores the critical importance of school health nurses in pandemic management and public health protection. Strengthening their role is vital for preventing the spread of infectious diseases in schools and ensuring the well-being of students. Recommendations include increasing the employment of school health nurses, improving their professional development, and integrating their expertise into pandemic management strategies.

**Keywords:** Communicable Disease Management, COVID-19, Public Health, Safe School, School Nursing

**Jel Codes:** I10, I18, I28

### Öz

Bu çalışmada, COVID-19 salgını sırasında okul sağlığı hemşirelerinin, bulaşıcı hastalıkların yönetimindeki kritik rolü ve önemi araştırılmıştır. Pandemi okullar ve eğitim kurumları üzerinde olumsuz etkiler oluşturmuştur. Bu etkilerinin altında, okul sağlığı hemşirelerinin, öğrencilerin ve ailelerinin sağlık hizmetlerine erişimindeki zorlukları aşmadaki yardımları küresel anlamda incelenmiştir. COVID-19 pandemisinin yarattığı zorluklara yanıt olarak okul hemşireliği uygulamalarının farklı ülkelerde durumu, Türkiye'deki durumu ve bu hemşirelerin eğitim ortamlarında sağlık yönetimine nasıl katkıda bulunduğu keşfetmeyi amaçlamıştır. İlgili literatürü belirlemek için "okul hemşireliği", "bulaşıcı hastalık yönetimi", "COVID-19", "güvenli okul", ve "halk sağlığı" gibi anahtar terimler kullanılarak ilgili yayınların sistematik bir incelemesi yapılmıştır. Tarama, pandemi sırasında okul sağlığı hemşirelerinin rolünü analiz eden tüm çalışmalara odaklanmıştır. Kaynaklar arasında akademik veri tabanları, halk sağlığı raporları ve devlet sağlık örgütü yayınları yer verilmiştir. Türkiye'de okul sağlığı hemşirelerinin istihdamının henüz net sağlanamaması sebebi ile, pandemi sırasındaki rollerine ilişkin spesifik verilere ulaşılamamıştır. Bununla birlikte, konuya katkıda bulunan ilgili literatür kapsamlı bir şekilde gözden geçirilmiş ve çalışmada, eğitim ortamlarında bulaşıcı hastalıkların yönetiminde okul hemşirelerinin kritik rolünü vurgulayan küresel yayınlar analiz edilmiştir. Çalışma, okul sağlığı hemşirelerinin yalnızca bulaşıcı hastalıkların önlenmesi ve kontrolünde önemli roller oynamakla kalmayıp, aynı zamanda pandemi sırasında öğrencilere ve personele yönelik sağlık eğitimine de önemli ölçüde katkıda bulunduğunu vurgulamaktadır. Okul sağlığı hemşireleri, çocukların ve ergenlerin fiziksel, psikolojik ve ruhsal refahının korunmasında çok önemli bir rol oynamıştır. Bulgular, okul hemşirelerinin etkinliğini artırmak için sağlık ve eğitim sistemlerinde yapısal değişikliklere ihtiyaç olduğunu göstermektedir. Bu çalışma, pandemi yönetimi ve halk sağlığının korunmasında okul sağlığı hemşirelerinin kritik öneminin altını çizmektedir. Rollerinin güçlendirilmesi, okullarda bulaşıcı hastalıkların yayılmasının önlenmesi ve öğrencilerin refahının sağlanması için hayati önem taşımaktadır. Öneriler arasında okul sağlığı hemşirelerinin istihdamının artırılması, mesleki gelişimlerinin iyileştirilmesi ve uzmanlıklarının salgın yönetim stratejilerine entegre edilmesi yer almaktadır.

**Anahtar Kelimeler:** Bulaşıcı Hastalık Yönetimi, COVID-19, Güvenli Okul, Halk Sağlığı, Okul Hemşireliği

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## Introduction

On December 31st, 2019, cases of an unknown aetiology lung infection were reported in Wuhan, Hubei Province, China. Following this event, the World Health Organization identified a new and distinct type of Coronavirus in early January 2020, a pathogen previously unencountered in human history. The first case of COVID-19 in Turkey was diagnosed on March 11th, 2020. Rapidly spreading internationally, this COVID-19 infection was declared a global pandemic by the World Health Organization as of March 2020 (Budak and Korkmaz, 2020).

The pandemic has highlighted the importance of diagnosing, monitoring, and treating epidemic diseases and the critical need for managing these diseases outside hospital settings. During the academic term, schools faced significant challenges in directing and monitoring health services related to the disease for students and their families. School nursing emerged in the early 20th century to protect public health, mainly when infectious diseases were widespread. The first school nursing program was initiated in New York in 1902, aimed at monitoring students' health in schools to prevent the spread of diseases. During pandemics such as the influenza outbreaks and measles and diphtheria epidemics, school nurses played a crucial role in early detection and isolation efforts to control the spread of infections. Additionally, they provided guidance on health education and hygiene practices for students, contributing significantly to public health. By being on the front lines during past epidemics, school nurses helped prevent the spread of infectious diseases and made school environments safer.

Globally, school nursing positions, previously noted for their scarcity in other healthcare services, were considered an effective solution for such a crisis. The re-emergence of this shortage during the COVID-19 pandemic underscores the importance of effective out-of-hospital epidemic management in case of a potential recurrence in Turkey. Comprehensive management algorithms should be established in all institutions against the epidemic, and the roles of implementers of these algorithms must be clearly defined. This study proposes that school nursing can play an influential role in epidemic control and management.

## Methodology

In the methodology, a systematic review of publications was conducted using key terms such as "school nursing", "pandemic", "epidemic management", "pandemic management", "safe school", "infectious disease management", "COVID-19" and "public health" to identify relevant literature. The search focused on studies both globally and in Turkey, analysing the role of school health nurses during pandemics. Sources included academic databases, public health reports, and government health organisation publications. The approach was designed to analyse how school nursing practices have developed in response to the challenges introduced by the COVID-19 pandemic across different countries, particularly in Turkey, and to evaluate the contributions of school nurses to health management in schools. Due to the ongoing challenges in the employment of school health nurses in Turkey, specific data regarding their roles during the pandemic was unavailable. However, relevant literature contributing to the subject was thoroughly reviewed. The study analysed global publications highlighting school nurses' critical role in managing infectious diseases within educational settings.

## Pandemic and child healthcare

The role of healthcare professionals during pandemic periods is undeniably crucial. Throughout the COVID-19 pandemic, healthcare workers have been tirelessly battling the outbreak around the clock. The nursing profession is defined as a discipline that takes a holistic perspective of the patient, aiming for the continuity of well-being and providing professional care. The epidemic has varied effects across all segments of the society. Among the groups requiring special care are children. Following the detection of the first COVID-19 case in a 17-day-old infant in China, as of June 23rd, 2022, according to the American Academy of Pediatrics, the number of children aged 0-17 contracting COVID-19 in the USA exceeded 13.6 million (American Academy of Pediatrics, 2023).

Measures under COVID-19 precautions, such as lockdowns, have adversely impacted human life in many ways. These restrictions have affected millions of children and adolescents in Turkey and worldwide. Studies on the course of the disease have found that children generally experience milder symptoms than adults and have a lower death rate (Deville, Song, and Ouellette, 2021). A study on 2143 children showed that asymptomatic cases or those with mild to moderate symptoms constituted 94.1%, while those with severe symptoms comprised 5.8%. The majority of severe cases were in infants under one year of age. Compared to adults, the rate of severe and critical cases in children is

5.8%, while it is approximately 18.5% in adults. However, there is no clear evidence that children are more contagious (Turan and Hacimustafaoğlu, 2019).

Children spend a significant portion of their lives in schools, making them susceptible to the spread of diseases due to prolonged exposure to this environment. Children aged 0-6 years are at higher risk of infection due to their tendencies to touch surrounding objects, close contact with other children, putting their hands in their mouths, incomplete vaccinations, and developing immune systems.

Considering the high risk of children being carriers, especially respiratory diseases, it is necessary to encourage simple preventive behaviours such as social distancing, handwashing, and mask usage. These measures are essential for protecting the health of both children and those around them. The American Academy of Pediatrics and the Centers for Disease Control and Prevention emphasised in November 2021 that children aged five and above should be vaccinated. According to US data, 59.8% of children aged 12-17 and 29.5% of children aged 5-11 had been vaccinated (American Academy of Pediatrics, 2023; Deville et al., 2021). As per the latest data, the percentage of the population reporting receiving the Updated 2023-24 COVID-19 vaccine is 12.4% for children (95% confidence interval: 11.8-13.0) (CDC, 2024).

During the pandemic, the importance of healthcare professionals working outside healthcare institutions should not be overlooked. Studies on the employment of continuous healthcare staff in educational institutions are ongoing in Turkey. Civil society organisations, educators, and healthcare professionals have recently agreed on the concept of “A Nurse in Every School” (Kadioğlu, Edisan, and Kadioğlu, 2012). The “Regulation on Amendment of Nursing Regulation” (Resmi Gazete, 2011) and the Secondary Education Institutions Regulation (Resmi Gazete, 2013) envisage the appointment of nurses for the provision of health services in schools. These regulations highlight the functionality and importance of the concept of school nursing. Especially during pandemics, school nurses are critical in providing comprehensive health services to children and adolescents and implementing school health programs.

Several steps regarding school health policies have been taken in light of recent changes. In the Regulation on Private Accommodation Services in Secondary and Secondary Education Institutions published by the Ministry of National Education in 2020, it was decided to assign nurses or nurse assistants or emergency medical technicians or technicians in schools with an institution quota of 250 or more (Resmi Gazete, 2020). Subsequently, a commission was formed, and a workshop was held with the MoNE and public health nursing academics to plan the work of school health nurses in all schools. After the commission studies, the Directive on the Working Procedures and Principles of School Health Nurses of the Ministry of National Education was published in 2022 (Milli Eğitim Bakanlığı, 2022).

## Safe school

A safe school is an educational institution where health services are effectively provided. In the School Health Service Model, **Preventive Health Services:**

- **Individual Preventive Health Services** include initial examinations and periodic check-ups of students and staff before starting work, additional routine health screenings (dental health, hearing and vision), implementation of vaccinations included in the ministry-approved vaccination schedule, and first aid services.

- **Sanitation and Environmental Health Services** involve risk assessments of educational institutions' activity areas, supervision of canteens, dining halls, and tea rooms, routine health checks of the staff in these areas, collection and analysis of water samples at certain time intervals (approximately every two months), and appropriate pest control around the school premises.

- **Health Promotion Services**, particularly health education, fall under this category. The School Health Nurse can conduct health education activities in both active and passive ways. Acquiring healthy and safe living habits is possible through health education. In this regard, the School Health Nurse should offer health and safety education with a proactive and knowledge-based approach and share good practice examples and experiences.

- **Curative Health Services**, a school (health) nurse and a school physician are considered necessary for all educational institutions based on the population size and the defined services. Achieving this goal requires more comprehensive efforts. A suggestion by the World School Health Committee is that a school physician should be able to attend to 4200 students per day and a school nurse to 1500 students in the same time frame. Due to not yet fully implemented employment reasons in Turkey,

Community Health Centres generally conduct school health services. However, during the pandemic, the Ministry of Health transferred school vaccination programs from Community Health Centers to Family Health Centers. In some private schools, while it is possible to have a nurse during school hours, the implementation of a physician has not been achieved. The curative health services include treatments received by staff and students in case of illness or disability during educational activities.

- **Emergency Health Services** in environments with children can cause health situations requiring immediate intervention (injury, fall, burn, etc.) to arise at any time. In severe situations affecting many people, the school (health) nurse needs to perform initial interventions within their capabilities alongside the services of the 112 emergency services.

- **Rehabilitation Services** involve evaluating students with problems by specialists working in the school (health) nurse and guidance units and providing services related to additional psychological support when necessary. The mental effects of COVID-19 on individuals have begun to be observed along with pandemic measures. This impact is notably evident among children. Research has shown that children who cannot attend school for an extended period have decreased physical activities, spend more time in front of screens, and have disrupted sleep and dietary patterns, which can negatively affect their mental, physical, psychological, and spiritual health. Additionally, the mandatory quarantine rules applied during the pandemic may increase unhealthy dependencies of children on family members, leading to attention and sleep problems. The services here are practical, primarily covering health delivery recommended for post-epidemic morbidities or psychological and dependence treatments (Türk Tabipler Birliği, 2020).

Troop and Tyson, observing past experiences, stated that contagious diseases reduce other student absences by spreading among healthy students (Troop and Tyson, 2008). The literature indicates that the school (health) nurse supports the increased attendance of students in schools, especially during epidemic periods (Maughan, 2003; Koçoğlu & Emiroğlu, 2011).

## School nursing

School (health) nursing is a speciality area of nursing. School health nursing is a professional branch that maintains and improves students' health (Kesgin and Çağlar, 2019). The duties of school health nurses include managing acute and chronic diseases, emergencies, injuries, control of infectious diseases, nutrition, obesity, mental health, substance use, adolescent pregnancies, sexually transmitted diseases, oral and dental diseases, violence, poverty, and related issues (Altuntaş and Baykal, 2012).

Another definition describes school health nursing as a speciality that ensures students are healthy, successful, and happy in their school lives. In this regard, school health nurses support students' development, promote health, create a safe and healthy environment, intervene within their authority in acute, chronic, and potential health problems, establish a case management centre, facilitate family and student harmony, and advocate self-management and defence for children (Akçay, 2016; Bahar, 2010).

In another context, school (health) nurses perform tasks such as protecting the health of the community within the educational institution as primary prevention, effectively using resources needed for preventive services, ensuring adherence to the mandatory immunisation program set by the state, monitoring immunisation status, implementing tuberculosis screening programs in suspected cases, providing mental health services, and offering psychosocial support. Secondary prevention includes early diagnosis of health problems in this population, evaluating health issues like obesity, following up with children with positive Purified Protein Derivative (PPD) tests, and conducting effective treatment interventions and activities aimed at preventing complications in case of sporadic or epidemic diseases (Altuntaş and Baykal, 2012; National Association of School Nurses, 2016; Pianalto & Wall, 2016; Ceylan & Turan, 2009).

Due to the importance of their primary role in epidemic situations, School Health Nurses effectively inform and take necessary precautions in early suspicion cases of COVID-19 positive or probable cases and manage safe referral processes. The concept of tertiary protection includes rehabilitation practices needed for an individual to return to their former life as best as possible after recovery. In this context, they monitor and keep records of control and follow-up, especially for children with special needs (immunosuppression or disabilities) during and after the illness process (Altuntaş ve Baykal, 2012; Pianalto and Wall, 2016; Ulutaşdemir, Balsak, Çopur, and Demiroğlu, 2016). Children with health and social problems and the institution's staff should be followed up. Children who are more sensitive to infectious diseases, such as those receiving high-dose steroid treatment or having immunosuppressive cancer types, should be given special attention. For instance, children with suppressed immune

systems are susceptible to certain viral diseases like measles, chickenpox, parvovirus B19, and COVID-19 pneumonia. When such contagious diseases are detected, it is necessary to provide information to the child and family to obtain medical protection, treatment, and recommendations. Pneumonia or flu vaccines may be suggested for these children based on the recommendations of the monitoring doctor. Similarly, pregnant staff members are susceptible to COVID-19, measles, parvovirus B19, chickenpox, and rubella (Bentley, Rouse, and Pinfield, 2014).

One of the most essential duties of the school nurse is health education (Modrcin-Talbott, 2002). Many studies have found that health education positively affects students' health levels. The school nurse must educate children, families, and staff about what to do when general signs and symptoms of a contagious disease are observed. The School Health Nurse should monitor issues such as hand hygiene, waste, food hygiene, ventilation, and environmental cleanliness and regularly report this information to the management of the educational institution. The health standards and epidemic measures of the educational institution's canteen and dining hall must be effectively supervised. Therefore, regular training for the personnel in this area is essential. These measures play a critical role in protecting the health of both students and staff (Altuntaş ve Baykal, 2012; Akçay, 2016; Modrcin-Talbott, 2002).

## Discussion

In Turkey, public health nursing departments of universities have carried out school health nursing practices, and different projects and research have been carried out. With the school health nurse project initiated by İnci Erefe in 1985, nurse academicians tried to make their voices heard to take concrete steps for school health nursing (Kesgin and Çağlar, 2019). 'School Health Nursing Development' project was carried out by Marmara University School of Nursing Public Health Nursing lecturers and students in Istanbul between 2002 and 2005 (Gür, Yıldız, Erol, Yurt, Ergün, Kadioğlu, and Kolaç, 2008). A scientific meeting on school nursing was held in our country. The 1st National School Health Symposium was organised in 2010 with the slogan 'A nurse for every school' (Kadioğlu et al., 2012), and it is thought that these meetings should be continued.

A study describes the importance of school nursing in continuing the current regulations (Akgül, Ergün, and Gür, 2024). A study draws attention to the need for schools to follow standardised pandemic programs and utilise health management guidelines during the pandemic. It emphasises the necessity of having clear protocols to ensure the effective management of health services within schools during such crises (Yıldızdal, Önder, and Demir, 2021).

Each country has decided on the opening and closing schools in epidemics based on the number of cases. Sometimes, the number of cases increased with the reopening of schools after the closure of schools, and this was attributed to the fact that more students brought the virus from outside (France 24, 2020). Since there may be disadvantages of opening and closing schools with many different parameters, it is thought that there are public health specialists in epidemics, and school health nurses can benefit in epidemic management by giving a significant key role to school health nurses (Kayı and Sakarya, 2020).

In many studies, it is evident that the COVID-19 pandemic has caused the need for personnel in various fields, and it is emphasised that school administrators should have nurses or health personnel in school health. This issue should be addressed quickly regardless of public or private schools, and the Ministry of National Education should appoint permanent nurses or health officers in schools (Kurt, Korkutan, and Yetiz, 2020; Filiz and Yıldız, 2023).

The study recommends appointing a dedicated school health nurse for each school, developing a COVID-19 action plan that includes school health nurses, having a nurse representative on the national scientific committee, implementing ongoing education and certification programs, creating professional associations and societies, promoting scientific research, organising meetings and workshops, and establishing comprehensive policies and guidelines (Aydın, and Ekici, 2021).

A study evaluated the knowledge, attitudes, and practices of school teams in Beni-Suef City regarding the prevention of COVID-19. The findings showed that 69% of the school team had satisfactory knowledge, 72% had a positive attitude, and 81% had satisfactory practices. The results indicate that school staff were well-prepared for COVID-19 prevention (Badawy, Mahmod, and Abd Elaziem, 2024).

A study examined the experiences of expert school nurses (n:24) regarding the reopening of schools during the COVID-19 pandemic. Data from semi-structured interviews revealed that nurses struggled

alone with an unprepared system and redefined their roles. They collaborated with school staff to respond collectively to the pandemic, expanding the role of school nurses (Kim, Seo, and Yoon, 2024).

In a study conducted in the UK, the roles of school nurses from the past to the present were discussed, and their effectiveness in providing health services to individuals aged 5-19 years was emphasised. This study shows that the school nursing system is now a well-functioning and standardised service in some countries (Sutton and White, 2024). Looking at the USA, it is seen that although the system is settled, there are still some deficiencies in terms of employment. National School Nurse Workforce Study 2.0 examines the demographic characteristics, distribution, practice patterns, and work environments of nurses working in public schools in the USA. The survey was conducted in 2,827 randomly selected schools stratified by region, school level, and urban/rural location, yielding a response rate of 38.1%. With these data, 78,869 full-time equivalent school nurses were estimated, of which 65,052 were registered nurses (RN) and 13,817 were licensed practical/vocational nurses (LPN/LVN). Findings indicate differences in the distribution of school nurses by region, residence and income status (Willgerodt, Tanner, McCabe, Jameson, and Brock, 2024; Lowe, Ravi, Gerald, and Wilson, 2023).

During the pandemic periods, it was tried to increase the well-being of school nurses by receiving sociopsychological support. Schwartz Rounds virtual application stands out as an effective method to protect and improve the mental health of school nurses. This practice enables them to continue their essential tasks by meeting the needs of both nurses and school communities. In addition, this approach strengthens bonds by creating a community among school nursing professionals and offers mutual support to cope with isolation (Gavin and Pleus, 2024).

In a review study conducted in 2023, 554 articles were scanned, and 38 articles were included in the full-text review. The review revealed that school nurses adapted their practice and worked closely with multidisciplinary teams to maintain health services during COVID-19. It was also determined that COVID-19 expanded the public health roles of school nurses and added to their routine workload. The study drew attention because school nurses showed resilience and creativity during the pandemic (Cook, Appleton, Bekaert, Harrold, Taylor, and Sammut, 2023).

As observed, globally and in Turkey, there are significant issues regarding the employment, job responsibilities, authority, salary, and psychosocial support of school nursing. Turkey has taken steps to address these issues, and their importance for future pandemic scenarios cannot be underestimated. Efforts led by countries such as the United States, the United Kingdom, Canada, and Sweden suggest that similar employment challenges exist in other countries. In this context, if the roles and responsibilities of school nurses are standardised through a health service policy, it will enhance our ability to support children globally and strengthen our response to pandemic situations.

## Conclusion

Educational institutions are significant places where children and adolescents spend much of their lives, and large segments of the population gather together. In these areas, the frequency of infectious diseases increases, and the spread of diseases can occur more quickly. Therefore, strict monitoring and supervision of schools are essential, along with meticulous implementation of preventive health measures. The school (health) nurse is one of the primary health professionals directly involved in dealing with infectious diseases, which are increasingly recognised as a significant threat to students' health. Preventing and controlling infectious diseases are among the most essential duties of a school health nurse. In Turkey and worldwide, an influential organisation of school health services and nurses is needed to combat infectious diseases in schools. Employing school health nurses in all schools is critical in controlling epidemics and infectious diseases. This approach is deemed vital, especially in countries with a young population. This way, a phased protection and triage program conducted through students can be expanded to include the community and significantly contribute to controlling infectious diseases.

The fact that educational institutions are densely populated areas where diseases can spread quickly increases the importance of school health services. In this context, the Safe School concept, which ensures the maintenance of health standards, prevention of epidemics, and safety of students in schools, is vital, and school (health) nurses must assume critical roles in health education, disease prevention, and early intervention. To increase health awareness among students, teachers, and parents and prevent the spread of infectious diseases, the practical work of school health nurses is a vital factor in managing the pandemic process. This necessitates school health nurses playing a central role in implementing the epidemic management algorithm, thus ensuring that schools are more resilient and prepared against infectious diseases as safe schools.

Like all other institutions, schools must develop a comprehensive epidemic management algorithm during pandemic periods and clearly define their implementers' duties. The support of a school health nurse, who will play a critical role in implementing the epidemic management algorithm while educators continue their educational activities, is crucial. Developing policies for infectious diseases in schools, forming teams for this purpose, and including school health nurses in these teams are fundamental components of an effective epidemic management strategy. School health nurses' active participation and leadership in this process are crucial for rapid and effective interventions in epidemic situations.

In this context, strengthening school health services and clearly defining the authority and responsibilities of school health nurses emerge as a fundamental strategy for preventing and controlling epidemic diseases. Overall, this study underscores the critical importance of school health nurses in pandemic management and public health protection. Strengthening their roles is vital for preventing the spread of infectious diseases in schools and ensuring the well-being of students. Recommendations include increasing the employment of school health nurses, improving their professional development, and integrating their expertise into epidemic management strategies. This study has also developed several recommendations within this scope. These recommendations include:

- Education systems, in collaboration with school health nurses, should strengthen and expand health education programs.
- Public health policies should be designed to recognise and support the roles of school health nurses, encouraging work in this field.
- Researchers should conduct more studies on the effectiveness of school nursing and its role in epidemic management and publish their findings.
- Ministries of Health and Education should develop and implement national standards and protocols for school nursing.
- Schools should prepare emergency response plans under the leadership of school health nurses for rapid intervention in epidemic situations.
- Health education curricula should be updated and enriched to provide students with basic hygiene and disease prevention knowledge.
- Continuous education programs and resources should be provided to support the professional development of school health nurses.

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