Original Article

Chronic diseases and illness in schools: Teachers' confidence in helping students with intellectual disabilities

Mohammed Alhammad

Department of Special Education, Education Collage, Imam Mohammad Ibn Saud Islamic University (IMSIU), Riyadh, Saudi Arabia

Abstract

Background: With movement to educate students with intellectual disabilities in special and mainstream schools, a considerable number of students with intellectual disabilities have common chronic diseases such as epilepsy and diabetes. In addition, these students may also face common illnesses, which occur in all students, such as fevers and headaches. Teachers are responsible for their students and provide first aid when needed. Therefore, this study aimed to determine whether teachers are confident in their ability to provide help when symptoms related to chronic diseases and illnesses occur. **Methods:** In this cross-sectional study, questionnaires were sent to 300 male and female teachers of students with intellectual disabilities in Riyadh, Saudi Arabia. **Results:** The findings illustrate that, in general, teachers have little confidence in helping students with chronic diseases and illnesses. Although the teachers felt that they were less confident in dealing with some symptoms of illnesses and chronic diseases, there were some symptoms that they showed either strong or low confidence in dealing with. **Conclusion:** The recommendations include increasing teachers' confidence in providing first aid.

Keywords: Chronic diseases, first aid, students with intellectual disabilities, teachers

Introduction

Given the movement to educate students with intellectual disabilities in mainstream and special schools, both internationally and in Saudi Arabia, students with intellectual disabilities spend considerable time in schools. One issue that has arisen is the need for professional help in schools because students with intellectual disabilities have various common physical health issues, including epilepsy, cardiac diseases, diabetes, thyroid disease, endocrine system diseases, gastrointestinal problems, dermatomycosis, eye and ear disorders, osteoporosis, and obesity.[1-5] In general, people with intellectual disabilities have more health problems than those without intellectual disabilities,[3] including epilepsy, diabetes, asthma, and skin diseases.[6-9]

Teachers can address these illnesses in school, thereby reducing the burden of such conditions until emergency services arrive. They can do so by not burdening general primary care providers and family physicians with minor illnesses. This requires teachers to have the knowledge and confidence to assist their students.[10,11] Although previous studies have focused on general education teachers, few studies have explored special education teachers' confidence in helping their students with disabilities in addressing physical health problems.

Address for correspondence: Dr. Mohammed Alhammad, Department of Special Education, Education College, Imam Mohammad Ibn Saud Islamic University, Riyadh - 11318, Saudi Arabia.
E-mail: mahammad@imamu.edu.sa

Received: 14-08-2023 **Revised:** 29-09-2023
Accepted: 03-10-2023 **Published:** 06-03-2024

Access this article online

Quick Response Code:

Website: http://journals.lww.com/JFMPC

DOI: 10.4103/jfmpc.jfmpc_1328_23

How to cite this article: Alhammad M. Chronic diseases and illness in schools: Teachers' confidence in helping students with intellectual disabilities. J Family Med Prim Care 2024;13:660-6.

Literature Review

Previous studies have explored the assistance that teachers provide their students with chronic diseases and illnesses in schools. Ballard and Dymond conducted a study in the United States on the health needs of students with severe disabilities in mainstream schools with special education teachers.[12] The teachers expressed their challenges in dealing with the medical needs of their students, especially their unpredictable and declining health. Similarly, in their narrative review of studies on teachers supporting students with long-term health conditions, Hinton and Kirk found that teachers associate students with chronic diseases with more work and responsibility.[13] This concern about dealing with students' illnesses may correlate with their knowledge about illness and how to manage it. Plisková and Snopek concluded, based on interviews with teachers, that their knowledge of chronic diseases was low.[14] The teachers were concerned about their ability to provide help and first aid quickly when symptoms appeared. Similarly, Nabors *et al.* found that special education teachers had more knowledge of a number of medical conditions, including asthma, epilepsy, diabetes, and allergies, compared to general education teachers.[15]

Teachers' knowledge and management of epileptic seizures vary. Jones *et al.* conducted a systemic review and found that teachers had little knowledge about the management of epileptic seizures and low knowledge about emergency procedures.[16] Kanjo *et al.* found that teachers' knowledge about how to deal with epileptic seizures was good; however, their responses were based on their theoretical perspectives and not their view of their abilities.[17]

Surprisingly, the majority of teachers in Saudi Arabia do not attend training courses in first aid; therefore, their knowledge about epilepsy varies. Alzhrani *et al.* found that teachers in Taif City possessed good knowledge but showed low ability to provide help in the event of a student having a seizure.[18] Similarly, Al-Harbi *et al.* conducted a study of female teachers in a primary school in Riyadh and found that teachers' ability to provide first aid to their students was low.[19] Similar results were obtained by Almalki *et al.*[20] in Saudi Arabia and Adal and Abebe[21] in Ethiopia. Moreover, another study conducted in Saudi Arabia by Almuslim *et al.* found that nearly half of their sample theoretically knew how to deal with epileptic seizures, although the majority had not attended training courses on first aid.[22]

Diabetes is another common illness affecting students with intellectual disabilities. Oyetoro *et al.* argued that these students face high risk in their management of diabetes because of their lifestyle and genetic issues.[7] Teachers' abilities and knowledge of diabetes are important. In their qualitative research in the United Kingdom, Boden *et al.* found that teachers worried about dealing with students with diabetes.[23] Regarding the knowledge of teachers in providing aid to diabetics, Al-Qurain and Alslman found that more than half of their sample of teachers in Saudi Arabia had knowledge about providing first aid for hypoglycemia.[24] Aljefree *et al.* reported similar findings in Saudi Arabia.[25]

Asthma is another illness that affects students with intellectual disabilities. Govender and Gray found that teachers' knowledge about asthma was low in South Africa.[26] In Saudi Arabia, Al-Qurain and Alslman found that more than half of their sample in Saudi Arabia had no knowledge of providing first aid for asthma,[24] a finding similar to that ofBrosso *et al.*[27] in Brazil.

Moreover, there are some medical conditions that many students face in school that require first aid to avoid serious complications, such as anaphylaxis and heat stroke. In Saudi Arabia, Alsuhaibani *et al.* found that teachers' knowledge of anaphylactic shock was poor.[28] Ercan *et al.* reported that teachers lacked confidence in providing first aid to students suffering from anaphylaxis.[29] Raptis *et al.* indicated that nearly half the teachers in their study showed that their ability to help students with anaphylaxis or heat stroke was low.[30-32]

Some illnesses that occur in school do not require professional help, so help can be provided by the teachers. These common illnesses in children and adults include fever, stomachache, toothache, and earache. Qureshi *et al.* found that in Pakistan, stomachaches are the most common illness among schoolchildren.[33] Joseph *et al.* found that teachers have poor knowledge about dealing with stomach pain.[31] Regarding fever management, Park and Kim found that teachers in daycare centers in Korea have a high level of concern about fever and how to deal with it.[34]

Based on the poor knowledge and practical ability of teachers in dealing with the illness discussed above, Al-Harbi *et al.* highlighted the importance of providing interventions for teachers to increase their knowledge, practical ability, and attitudes.[21] In Saudi Arabia, teachers are not required to attend first-aid training.[35] Alsulami has pointed out that there is a lack of healthcare nurses in schools in Saudi Arabia, which indicates the importance of providing teachers with the knowledge and practice of providing first aid until medical help arrives.[35] Kanjo *et al.*, Almuslim *et al.*, and Alkhotani also supported this view.[17,22,36]

As discussed, this study aimed to ascertain the confidence of teachers in helping students with intellectual disabilities, as no study has focused on teachers of students with intellectual disabilities. This study may be the first step in helping policymakers determine which illnesses they need to focus on to provide teachers with more training. The study's main research question is as follows: Are teachers of students with intellectual disabilities confident in their ability to help their students when chronic diseases and illnesses arise during school?

Material and Methods

Study design and setting

The study was conducted in Saudi Arabia during the 2022 school year. A purposive sampling approach was used for

this cross-sectional study.[37] In Saudi Arabia, students with intellectual disabilities study in mainstream and special schools depending on the degree of their disabilities. Students with mild intellectual disabilities study in special classrooms in mainstream schools with teachers who are specialists in teaching students with intellectual disabilities, whereas students with moderate intellectual disabilities study in special schools.[38]

Sampling: Among the 1108 teachers who work in primary, intermediate, and high schools where students with intellectual disabilities are enrolled, 300 teachers participated in the current study.

Ethical Issues

This study was approved by the Ethics Committee of the Imam Mohammad Ibn Saud Islamic University (No. 4/1443/64708). The procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2000. Subsequently, the General Administration of Education in Riyadh was contacted to obtain permission to distribute the questionnaire to the head teachers at schools that enroll students with intellectual disabilities. After obtaining permission, the researcher sent an electronic version of the questionnaire to schools in Riyadh and asked each head teacher to distribute it to the teachers of students with intellectual disabilities in their school. Furthermore, the teachers were informed that their participation would remain anonymous and confidential. A consent form was obtained from the teachers who agreed to participate in the study. The teachers were informed that their participation in the current study signified their informed consent. In addition, the phone number and email address of the researcher were provided to the participants if they had any further questions.

Questionnaire: The questionnaire distributed to the teachers consisted of three sections. The first section was an introductory letter explaining the aim of the current study, an overview of the study, and the researchers' contact information. The second section collected the participants' demographic information, including their gender, teaching experience, the level at which the teachers taught, and the training courses attended by the teachers. The third section examined the teachers' confidence in providing help to students with intellectual disabilities when illnesses occur in schools. Sixteen illnesses were provided and categorized into two groups. The first group consisted of five illnesses that are common in students with intellectual disabilities, while the second group consisted of 11 general illnesses. These illnesses were chosen based on discussions with general practitioners.[1-5] The scale was based on a Likert-type scale.[39] The response options were high confidence (weight: 3 on the scale; mean range: 2.34-3.00), low confidence (weight: 2 on the scale; mean range: 1.68-2.33), and no confidence (weight: 1 on the scale; mean range: 1.00-1.67).

Data analysis

For the data analysis, the current study employed frequencies, percentages, means, and standard deviations using SPSS 24.

To increase the reliability and validity of the questionnaire, Cronbach's alpha was set at 0.8605. This result indicates high reliability.[37] The scale's face validity was assessed. A number of academic staff members assessed the design and language. General practitioners assessed the content of the questionnaire, and their opinions were included in the final version of the questionnaire.

Results

The current study aimed to determine whether teachers are confident in their ability to provide help when symptoms of chronic diseases and illness occur at school. The following section examines the participants' demographic characteristics in terms of gender, experience of teaching, the level at which the teachers teach, and training courses attended related to first aid. In the next section, we present the results of the analysis of the teachers' confidence in providing medical assistance.

Gender

Among the 300 teacher participants in the current study, more than half were men, whereas the rest were women [Figure 1].

Teaching experience

Figure 2 shows that more than half of the participants in the current study were teachers with between 10 and 20 years of experience, while 30.3% of the participants had more than 20 years of experience. The rest of the teachers had less than 10 years of teaching experience.

Level at which teachers teach

Among the teachers who participated in the current study, the largest number were taught in primary schools, followed

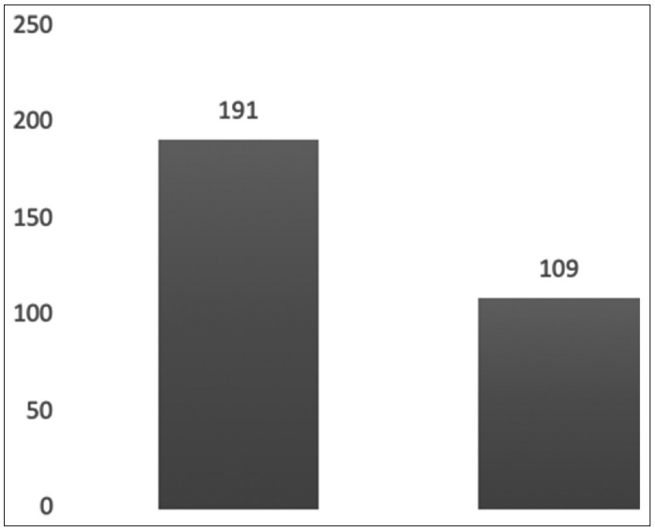

Figure 1: Number of participants based on gender

by intermediate schools and high schools. Figure 3 shows the number of teachers at each school level.

Attendance of training courses in first aid

Figure 4 shows that more than half of the participants had not attended training courses related to first aid. Among those who had attended training courses in first aid, most had only attended one training course (28%), while the rest of the teachers had attended two training courses, and 7.4% had attended three or more training courses. Figure 4 shows the number of teachers who attended training courses.

Confidence of teachers to provide help to their students

A number of chronic diseases and illnesses that may arise during a school day were provided to the teachers of students with intellectual disabilities to examine their confidence in providing help to their students when an illness occurs.

In general, the results of the analysis of the questionnaire showed that teachers' confidence levels were low. More specifically, Table 1 shows that the mean values for general common illnesses and common illnesses among students with intellectual disabilities were 1.727 and 1.785, respectively.

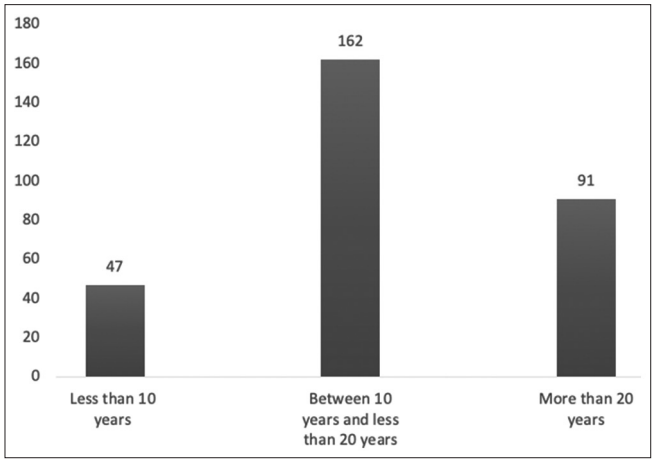

Figure 2: Participants' teaching experience

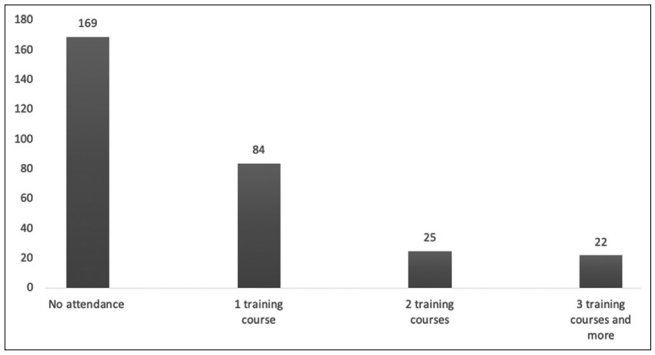

Figure 4: Number of training courses in first aid

Table 1 and Figures 5 and 6 show that the teachers' confidence in their ability to deal with each item varied from high to low to no confidence based on the means of each item and the total number of teachers who expressed their levels of confidence. There was one item in which teachers expressed high levels of confidence in providing first aid to their students with intellectual disabilities, namely, providing help when a student has a high body temperature, teachers expressed their high and low confidence in providing help for this illness. This is a common general illness. Table 1 shows that none of the teachers expressed high levels of confidence in providing first aid for any of the common illnesses among students with intellectual disabilities.

In contrast, there were five illnesses that demonstrated teachers' lack of confidence in providing first aid. One illness was a common illness among students with intellectual disabilities, namely skin rashes. Figure 5 shows that 60.67% of teachers expressed no confidence in providing first aid for illnesses related to skin rashes. The remaining four illnesses were general common illnesses: anaphylaxis, fainting, ear pain, and constant diarrhea. In other words, the teachers expressed no confidence in four general common illnesses and one common illness among students with intellectual disabilities.

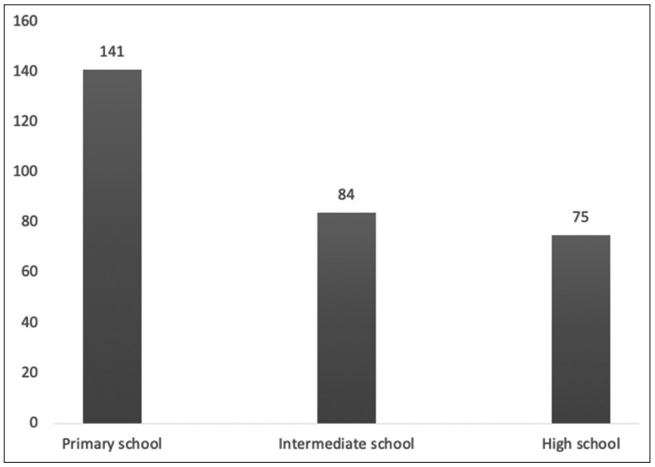

Figure 3: Teachers' teaching level

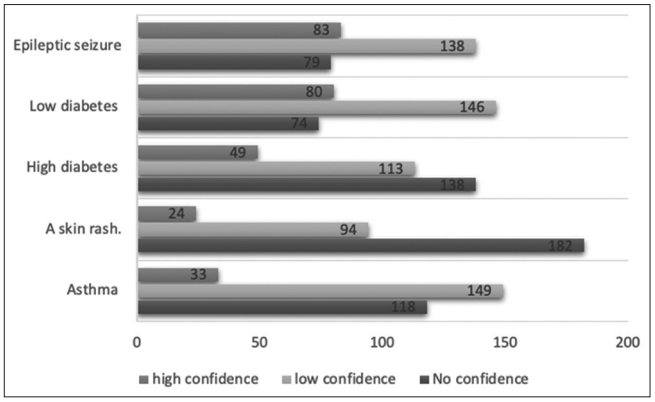

Figure 5: Number of responses to each general common illness

Table 1: The mean scores of teachers' confidence in providing first aid

Category	Item	Mean	Std. deviation	Result
Common illness among students with intellectual disabilities	I have the ability to provide first aid when a student has an asthma attack.	1.717	0.6515	Low confidence
	I have the ability to provide first aid when a student has a skin rash.	1.473	0.6408	No confidence
	I have the ability to provide first aid when a diabetic student has hyperglycemia.	1.703	0.7329	Low confidence
	I have the ability to provide first aid when a diabetic student has hypoglycemia.	2.020	0.7174	Low confidence
	I have the ability to provide first aid for an epileptic seizure.	2.013	0.7360	Low confidence
		1.785	0.5273	Low confidence
General common illness	I have the ability to provide first aid for high body temperature.	2.363	0.6266	High confidence
	I have the ability to provide first aid for hypothermia.	1.687	0.7001	Low confidence
	I have the ability to provide first aid when heat stroke occurs.	1.757	0.6625	Low confidence
	I have the ability to provide first aid when anaphylaxis occurs.	1.373	0.5730	No confidence
	I have the ability to provide first aid when a student faints.	1.650	0.6342	No confidence
	I have the ability to provide first aid when a student has a vomiting episode	1.797	0.6298	Low confidence
	I have the ability to provide first aid when a student has abdominal pain.	1.710	0.6537	Low confidence
	I have the ability to provide first aid when a student has toothache.	1.813	0.6683	Low confidence
	I have the ability to provide first aid when a student has earache.	1.493	0.6093	No confidence
	I have the ability to provide first aid when a student has a headache.	1.840	0.6551	Low confidence
	I have the ability to provide first aid when a student has constant diarrhea.	1.523	0.6088	No confidence
		1.727	0.4609	Low confidence

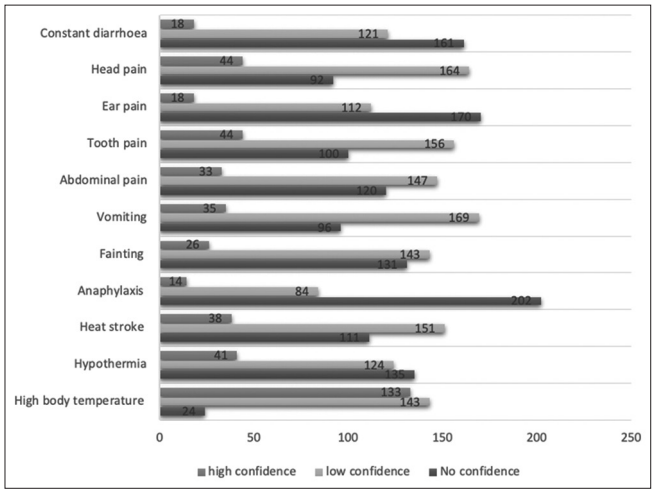

Figure 6: Number of responses to each common illness among students with intellectual disabilities

The rest of the illnesses presented to the teachers also reflected their low levels of confidence in their ability to provide help. The common illnesses among students with intellectual disabilities were asthma, high diabetes, low diabetes, and epileptic seizures, whereas general common illnesses included hypothermia, heat stroke, vomiting, abdominal pain, toothache, and headache.

Discussion

Teacher confidence in providing help to students

The findings of the current study indicate that the participants had low confidence in providing help to their students when necessary or while waiting for medical professionals to arrive. This finding is in line with a study conducted by Plisková and Snopek, which showed that teachers have little knowledge about chronic diseases.[14] This may be attributed to the finding that few teachers have adequate training in providing first aid, as more than half of the participants in the current study had not attended any training courses. The importance of increasing teachers' knowledge of first aid was asserted by Al-Harbi *et al.*,[19] Kanjo *et al.*,[17] Almuslim *et al.*,[22] and Alkhotani,[36] especially as mainstream schools in Saudi Arabia do not have nurses and teachers are not required to attend training courses on first aid.[35]

Teacher confidence according to type of illness

This study examined teachers' confidence by providing information on several illnesses and asking teachers to provide their views about their confidence levels. The results showed that teachers had high levels of confidence in their ability to provide help when students had fever. This finding contrasts with the findings of Park and Kim, who found that in Korea, teachers were concerned about dealing with fever.[34] The strong confidence of teachers in dealing with fever may refer to the fact that fever is a common illness, and therefore teachers are more familiar with treating fevers.

However, there were five symptoms for which teachers showed no confidence in providing help to their students; one was skin rashes, a common illness among students with intellectual disabilities. Other symptoms associated with common illnesses include anaphylaxis, fainting, earache, and persistent diarrhea. This finding is consistent with those of Alsuhaibani *et al.*, who found that teachers have little knowledge in dealing with anaphylaxis.[28] However, the current study's findings contrast with the results of a study conducted by Raptis *et al.* in the United Kingdom, which indicated that nearly half of the teachers in their study showed their ability to help students with anaphylaxis.[30]

The remainder of the illnesses for which teachers showed low confidence were asthma, diabetes, and epilepsy among the common illnesses among students with intellectual disabilities, and hypothermia, heat stroke, vomiting, abdominal pain,

toothache, and headache among common general illnesses. These results are similar to those of several studies showing that teachers have low knowledge of asthma,[26] diabetes,[24] and epilepsy.[21] However, the findings of the current study regarding epilepsy differ from those of Kanjo *et al*.[17] and Alzhrani *et al*.[20]

In general, these findings suggest that teachers' low knowledge and confidence regarding how to assist students in need may overburden family physicians and emergency services. However, these illnesses could be addressed in school if teachers had the appropriate knowledge and confidence to provide such help to their students.[10,11]

Conclusion

The current study illustrates that teachers lack confidence in their ability to provide help to their students with intellectual disabilities who have chronic diseases and illnesses. Teachers need to become more confident in their ability to provide first aid for chronic diseases and illnesses such as skin rashes, anaphylaxis, fainting, ear pain, and constant diarrhea.

The current study is the first in Saudi Arabia and the Arab world to explore teachers' confidence in providing help to their students with intellectual disabilities when illnesses arise in schools. This study contributes to research on special education teachers' professional development in the Saudi context in terms of improving teachers' confidence in providing first aid to their students with intellectual disabilities. Policymakers should consider improving teachers' confidence and providing them with practical training. In addition, teachers should be encouraged to attend practical training courses related to first aid in dealing with chronic diseases and common illnesses that may positively reflect teachers' confidence, especially as there are no nurses present in mainstream Saudi schools, indicating the importance of teachers' help.

The current study has some limitations. It is difficult to generalize the results as the sample is purposive. In addition, the current study focuses on one category of disability and does not include other disabilities that may have common illnesses that differ from those of students with intellectual disabilities. More samples and other illnesses should be investigated to explore which illnesses need to be addressed. A qualitative approach is recommended to obtain in-depth information from teachers regarding their confidence in providing first aid.

Author contributions

Mohammed Alhammad is responsible for all aspects of the study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Higgins S, O'Toole M. Meeting the health needs of people with intellectual impairment. In: Clark LL, Griffiths P, editors. Learning disability and other intellectual impairments: meeting needs throughout health services. Chichester: John Wiley & Sons Ltd.; 2008. p. 15-40.
2. Melrose S, Dusome D, Simpson J, Crocker C, Athens E. Supporting individuals with intellectual disabilities & mental illness: what caregivers need to know. Victoria, Canada: BCcampus; 2015.
3. Straetmans JM, Van Schrojenstein Lantman-de Valk HM, Schellevis FG, Dinant GJ. Health problems of people with intellectual disabilities: the impact for general practice. Br J Gen Pract 2007;57:64-6.
4. Liao P, Vajdic C, Trollor J, Reppermund S. Prevalence and incidence of physical health conditions in people with intellectual disability—a systematic review. PloS One 2021;16:e0256294.
5. Cooper SA, McLean G, Guthrie B, McConnachie A, Mercer S, Sullivan F, *et al*. Multiple physical and mental health comorbidity in adults with intellectual disabilities: population-based cross-sectional analysis. BMC Fam Pract 2015;16:1-11.
6. Tidman L, Saravanan K, Gibbs J. Epilepsy in mainstream and special educational primary school settings. Seizure 2003;12:47-51.
7. Oyetoro R, Wiemer L, Bardhi O, Louis M, Jacob R. Special considerations for management of diabetes in adult patients with intellectual and developmental disabilities. Adv Med 2023;2023:2955772.
8. Xie L, Gelfand A, Delclos GL, Atem FD, Kohl HW, Messiah SE. Estimated prevalence of asthma in US children with developmental disabilities. JAMA Netw Open 2020;3:e207728.
9. Fathy H, El Mongy S, Baker NI, Abdel Azim Z, El Gilany A. Prevalence of skin diseases among students with disabilities in Mansoura, Egypt. East Mediterr Health J 2004;10:416-24.
10. de Lima Rodrigues K, Ferreira de Lima Antão JY, Silveira Sobreira GL, Nobre de Brito R, Saraiva Freitas GL, Caeira Serafim S, *et al*. Teacher´s knowledge about first aid in the school environment: Strategies to develop skills. Int Arch Med 2015;8:1-9. https://doi.org/10.3823/1808.
11. Trabelsi K, Shephard RJ, Zlitni S, Boukhris O, Ammar A, Khacharem A, *et al*. Dental trauma first-aid knowledge and attitudes of physical education teachers: A systematic review and meta-analysis of the literature with meta-regressions. Educ Scie 2019;9:1-27. https://doi.org/10.3390/educsci9040251.
12. Ballard SL, Dymond SK. Inclusive education for secondary age students with severe disabilities and complex health care needs. J Intellect Dev Disabil 2018;56:427-41.
13. Hinton D, Kirk S. Teachers' perspectives of supporting pupils with long-term health conditions in mainstream schools: a narrative review of the literature. Health Soc Care Community 2015;23:107-20.
14. Plisková B, Snopek P. Primary school teachers' awareness of chronic diseases of children. Acta Educ. Gen 2017;7:111-21.
15. Nabors LA, Little SG, Akin-Little A, Iobst EA. Teacher knowledge of and confidence in meeting the needs of children with chronic medical conditions: pediatric psychology's contribution to education. Psychol Sch 2008;45:217-26.

16. Jones C, Atkinson P, Cross JH, Reilly C. Knowledge of and attitudes towards epilepsy among teachers: a systematic review. Epilepsy Behav 2018;87:59-68.
17. Kanjo M, Najjar A, Bokhari AY, Alqarni GA, Darwesh EA, Alqarni GS. Knowledge of epilepsy and seizure first aid among teachers in Jeddah, Saudi Arabia. Epilepsy Behav Reports 2021;16:100475.
18. Alzhrani SH, AlSufyani MH, Abdullah RI, Almalki S. Schoolteacher's knowledge, attitudes, and practice toward student with epilepsy in Taif, Saudi Arabia: cross-sectional study. J Family Med Prim Care 2021;10:2668-78.
19. Al-Harbi AF, Alsaid LA, Parameaswari PJ. Primary school female teachers' knowledge, attitude, and practice toward students with epilepsy in Riyadh, Saudi Arabia. J Family Med Prim Care 2018;7:331.
20. Almalki DM, Kotb MA, Saqyan TMB, Alkahtani SM, Alshaikhi AM, Alanazi LF. Knowledge and attitude toward epilepsy and seizure first aid among school teachers in Al-Kharj City, Saudi Arabia. World Fam. Med 2023;21:80-7.
21. Adal O, Abebe A. First aid knowledge and practice toward students with epileptic seizure among governmental high school teachers in Addis Ababa, Ethiopia: cross-sectional study. Epilepsy Behav 2022;134:108767.
22. AlMuslim N, Aldawood M, Almulhim I, Alhaddad R, AlQahtani A, Almubarak A. Knowledge of epilepsy and seizure first aid among teachers in Eastern Province, Saudi Arabia. Cureus 2023;15(1).
23. Boden SK, Lloyd CE, Gosden C, MacDougall C, Brown N, Matyka KA. The risk management of childhood diabetes by primary school teachers. Health Risk Soc 2012;14:551-64.
24. Al-Qurain H, Alsalman E. School teachers' knowledge and attitudes about firstaid in Qatif city, Eastern Province, Saudi Arabia. Int J Sci Res 2017;6:23-8.
25. Aljefree NM, Almoraie NM, Althaiban MA, Hanbazaza MA, Wazzan HA, Shatwan IM. Gender differences in knowledge, attitudes, and practices with respect to type 1 diabetes among Saudi public-school teachers. BMC Public Health 2023;23:1-11.
26. Govender D, Gray A. Knowledge of primary school teachers about asthma: a cross-sectional survey in the Umdoni sub-district, KwaZulu-Natal. S Afr Fam Pract 2012;54:347-51.
27. Brosso L, Zonta JB, Levada AF, Barbosa NG, Lima RAG, Okido ACC. Knowledge and experience of primary education teachers regarding childhood asthma: mixed study. Rev Esc Enferm USP. 2023;57:e20220329. https://doi.org/10.1590/1980-220X-REEUSP-2022-0329en.
28. Alsuhaibani MA, Alharbi S, Alonazy S, Almozeri M, Almutairi M, Alaqeel A. Saudi teachers' confidence and attitude about their role in anaphylaxis management. J Family Med Prim Care 2019;8(9):2975.
29. Ercan H, Ozen A, Karatepe H, Berber M, Cengizlier R. Primary school teachers' knowledge about and attitudes toward anaphylaxis. Pediatr Allergy Immunol 2012;23:428-32.
30. Raptis G, Perez-Botella M, Totterdell R, Gerasimidis K, Michaelis LJ. A survey of school's preparedness for managing anaphylaxis in pupils with food allergy. Eur J Pediatr 2020;179:1537-45.
31. Joseph N, Narayanan T, bin Zakaria S, Nair AV, Belayutham L, Subramanian AM, *et al.* Awareness, attitudes and practices of first aid among school teachers in Mangalore, south India. J Prim Health Care 2015;7:274-81.
32. AlYahya IA, Almohsen HA, AlSaleem IA, Al-Hamid MM, Arafah AM, Al Turki YA, *et al.* Assessment of knowledge, attitude, and practice about first aid among male school teachers and administrators in Riyadh, Saudi Arabia. J Family Med Prim Care 2019;8:684.
33. Qureshi FM, Khalid N, Nigah-e-Mumtaz S, Assad T, Noreen K. First aid facilities in the school settings: Are schools able to manage adequately? Pak J Med Sci 2018;34:272-76.
34. Park SI, Kim JS. Factors affecting daycare center teachers' management of childhood fever. Child Health Nurs Res 2016;22:289-98.
35. Alsulami M. First-aid knowledge and attitudes of schoolteachers in Saudi Arabia: a systematic review. Risk Manag Health Policy 2023;769-77.
36. Alkhotani AM. Teachers and epilepsy in Saudi Arabia: gaps in knowledge and potential roles. Int J Gen Med 2022;795-801.
37. Bryman A. Social research methods. Oxford: Oxford University Press; 2008.
38. Almosa N. Special education journey in Saudi Arabia, from isolation to integration. Dubai: Dar Al-Galm; 2008.
39. Oppenheim AN. Questionnaire design, interviewing and attitude measurement. Continuum: London; 1992.