



RESEARCH ARTICLE

A Systematic Literature Review of Teachers' Knowledge of Stuttering

Reham Shaker Bukhari*

Al Baha University, Saudi Arabia

ARTICLE INFO	ABSTRACT
Received: Apr 24, 2024 Accepted: Aug 12, 2024	Teachers' perceptions of stuttering are vital in the management of stuttering in people who stutter (PWS). The aim of this paper is to review the studies on teachers' knowledge and attitudes towards stuttering. A systematic review of the literature was undertaken. The search was limited to peer-reviewed studies, published in English between 2010 and 2023. Notably, omitting Arabic publications was made due to the lack of Arabic language research that received peer-review. The findings were analysed using a qualitative deductive content analysis approach. Eight studies were included in the review. The findings indicated that although some teachers tend to have positive attitudes, their lack of knowledge about stuttering affects the way they interact with students who stutter. Therefore, educating teachers about stuttering can enhance their attitudes toward stuttering and PWS.
Keywords	
Stuttering	
People who stutter (PWS)	
Teachers' perceptions	
Teachers' knowledge	
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*Corresponding Author: rbukhari@bu.edu.sa	

INTRODUCTION

The term stuttering is commonly defined as a many-faceted discourse issue, which includes an automatic inability to create discourses without introducing uncontrolled or random breaks in coherence, across talking situations and for a consistently extended stretch of time (Blomgren, 2013; Bloodstein, 1995). "Stuttering" itself is described as an irregular and atypically high repetition and/or period of stoppages which prevent discourse from moving forward. These stoppages often consist of repetitions of sounds, syllables or single-word syllables, the drawing out of sounds or pieces of wind stream or vocal discourse (Guitar, 2014). Certain individuals also exhibit secondary behaviours concurrently with stuttering, namely: flickering of the eyes, twitching of the jaw and uncontrolled head movements. These, and other features of stuttering, can create barriers for children, in relation to talking, since they fear being embarrassed. The reason why individuals stutter has yet to be clearly established, but Prasse and Kikano (2008) note that a range of factors, including psychological capacity, hereditary elements, the child's sex and natural impacts may all contribute to the condition. Some children stutter when they are first learning to talk, but the majority - ~75 per cent (Yairi & Ambrose, 2013) - will grow out of it between the ages of three and six, without any interventions. Tiling (2012) found that only one per cent of children continue stuttering as adults. Thus, while the vast majority of people who stutter in their childhood outgrow the condition, this is not a justification for overlooking and disregarding the minority who continue to stutter.

Schools play a key role in shaping and influencing children, second only to home, and as Carter et al. (2019) pointed out, teachers' attitudes to stuttering have a major impact on male and female stutterers. Studies which examined teachers' attitudes to stuttering concluded that they often have little understanding of stuttering and its causes, and frequently have a negative view of stuttering students. This conclusion was reached by examining attitudes as well as pictures (Abrahams et al., 2016; Abdalla & St. Louis, 2012). The fact teachers have a stereotypical and negative view of stuttering, and little knowledge of the condition, is an important factor, and one which can colour the personal and academic experiences of students who stutter (Abdalla & St. Louis, 2012; Struyf & Adriaensens, 2014). In addition, teachers' attitudes to stuttering impact on how nonstuttering students respond to their stuttering peers (Jenkins, 2010). As a result, it is vital to examine teachers' knowledge and awareness of stuttering, and this is the aim of the current systematic literature review.

This research study sets out to review the literature published between 2010 and 2023 on the attitudes and knowledge of teachers towards stuttering, in order to answer the following research questions:

- What are the research findings on how teachers perceive stuttering?
- How do teachers from different cultures and countries respond to stuttering, what do they know and believe, and how do they respond to students who stutter?
- Which are the major factors that influence teachers' attitudes to stuttering?
- What gaps can be found in the current literature, and where should future research studies on the subject now focus?

METHOD

The aim of this review paper is to amalgamate the findings of the research studies which investigate teachers' awareness and knowledge of stuttering. The systematic review was carried out in line with the Preferred Reporting Items for Systematic Reviews, and its meta-analysis (PRISMA) statement, where relevant (Moher, Liberati, Tetzlaff, & Altman, 2010), and adhered to the guidelines laid out by Pickering and Byrne (2014).

The search strategy was carried out by using peer-reviewed journals which were published in Google Scholar, Ovid and ProQuest between 2010 and 2023, and pieces published in English across a range of databases, including Science Direct, CINAHL, Medline, PsycInfo, Pro Quest Central and Ebsco Metafile Ultimate. The searches used single and combined terms, for example (teachers OR educators) AND (stuttering or stammering) AND attitudes OR perceptions AND reactions OR knowledge OR views. The reference lists of the relevant studies and textbooks were then combed for any papers which had not been found via the databases, resulting in an initial total of 14,200 studies.

The next step was to sort through the studies by screening the titles and assessing certain abstracts, in order to exclude those which did not focus on teachers' knowledge, attitudes and perceptions of stuttering. This systematic review went on to exclude studies which compared teachers' beliefs and reactions to those of non-teachers and parents, in order to ensure the focus was simply on the teachers and not on comparing groups.

Applying the exclusion criteria removed 14,148 papers, leaving another 52 studies for careful evaluation. Finally, eight studies were chosen for inclusion in this systematic review. Each paper was then analysed by the researcher and a range of data was extracted and entered into a spreadsheet, namely: the author's name, date of publication, journal, country, data collection tools, main findings, the study's strengths and limitations -see table 1

Table 1: the research studies included in the systematic literature review

Author's Name	Date of Publication	Country	Data Collection Tools	Main Findings	Strengths	Limitations
Hearne et al.	2021	New Zealand primary	Survey Educational package	Positive attitudes. And limited knowledge about stuttering	The age of participants ranges from 23 to 62 years	Demographic information includes 100% woman
Grigoropoulos	2020	Greek	questionnaires	positive correlation between educators' attitudes towards stuttering and knowledge of stuttering	Range of ages (20-61) and educational level	All the educators (73) who completed questionnaires were female.
Abrahams et al.,	2016	South Africa	POSHA-S	Teachers have positive attitudes towards stuttering	There were a total of 469 participants, with a mean age of 45 years with a range of 22-66.6 years Males and females	The validity and reliability of the added questions and options were not formally tested.
Adriaensens & Struyf	2016	Belgium	Semi-structured interviews	Teachers felt confident in how to deal with students who stutter	Participants were teachers in secondary education in Flanders (Belgium), Currently teaching an adolescent who stutters.	The use of the qualitative method limits generalization to the wider population of teachers.
Plexico et al	2013	United States	survey	General understanding of the cause of stuttering.	The participants were recruited from five states, which represent diverse geographic regions.	The size of the sample was relatively small (84). Therefore, it might be difficult to generalise the results to represent

						the united stats.
Abdalla and St. Louis	2012	Kuwait	POSHA-S	Teachers lacked knowledge and embraced negative stereotypes in regard to stuttering	Large sample (471)	The need to include Arab participants from diverse nations
Irani, Abdalla and Gabel	2012	Kuwait and United states	14-item semantic differential (SD) scale	Positive attitudes toward stuttering were found in Arab and American teachers, yet American teachers show more positive attitudes in some items.	A comparative study to explore how Arab and American teachers may differ in their attitudes toward stuttering	More details were needed to explain the differences between the attitudes of Arab and American teachers.
Pachigar et al	2011	India	questionnaires and semi-structured interviews	Positive attitudes toward stuttering but limited experience of dealing with students who stutter	The use of mixed methods	The sample was small 58 teachers completed the questionnaire And 4 teachers participated in the interview

The next step was to use deductive content analysis methodology (Elo & Kyngas, 2008) to code the main findings of each paper, with respect to the categories of teachers' attitudes towards stuttering. The coding was based on the studies' results, which presented either positive or negative attitudes and lack of knowledge. Finally, a colleague* carried out a peer review of the coding.

RESULTS

Teachers' Knowledge about Stuttering

The body of literature has established that, overall, teachers have little knowledge of stuttering, and this can lead to negative perceptions of students who stutter, which in turn has a negative impact on how children who stutter experience school. The literature review showed that the main focus of studies which examine teachers' knowledge tends to be teachers' views on what causes people to stutter. Abrahams et al.'s (2016) study concluded that teachers held erroneous ideas about personality stereotypes and what causes stuttering. Similarly, Adriaensens and Struyf (2016) noted that every participant in their study asserted that stuttering is the result of emotional and social issues, including anxiety, feeling stressed and not having self-confidence.

Plexico et al. (2013) conducted a study with 84 teachers and found that they believed stuttering was the result of emotional trauma, direct imitation of parents or lack of emotional stability- none of

which is true. What is striking about this study is the fact that the majority of participants had a master's degree (71%; n=60), and yet they did not have accurate knowledge about stuttering. In a similar vein, in Adriaensens and Struyf's (2016) study, participants reported having students who stutter in their class, but not knowing anything about stuttering.

A number of studies emphasised that teachers knew very little about stuttering. For example, Abdalla and St. Louis (2012), who analysed Arab schoolteachers' knowledge, attitudes and beliefs about stuttering, found that while teachers were familiar with stuttering, their views were not based on fact. These teachers held a number of misconceptions about what caused stuttering, personality stereotypes, role entrapment (they cannot do any job they might like to do) and methods for tackling stuttering - such as repeating a word until a child could copy them and say it, filling in with words etc. The majority of the 471 teachers who took part lacked knowledge and embraced negative stereotypes in regard to stuttering.

Multiple regression analysis established that factors such as age, years of experience and level of education were not accurate predictors of how teachers reacted to children who stuttered. This study recommended awareness and educational campaigns to minimise negative attitudes towards very young children who stutter (Grigoropoulos, 2020). In a similar vein, Abdalla and St. Louis (2014) expanded earlier research by examining the knowledge and beliefs of teachers, using the Public Opinion Survey of Human Attitudes - Stuttering (POSHA-S). These studies demonstrated the need to educate teachers about stuttering and showed the close link between knowledge of stuttering and the attitudes teachers have towards stuttering.

The online educational package used in Hearne et al.'s (2021) study met with a positive reception, and was seen as useful and valuable for improving understanding of stuttering. The teachers who took part in this study had obvious knowledge gaps in regard to what caused stuttering, and often stated they were "unsure" when it came to considering statements about classroom strategies. Once they had undertaken the online education package, both their attitudes and their knowledge changed, and they had a clearer and more accurate view of stuttering, and higher levels of certainty about the value of using classroom strategies.

Teachers' Attitudes towards Stuttering

School-aged children who spend a great deal of time at school in their early years view teachers as major influences and figures of authority. If teachers have uncorroborated and unproven attitudes to stuttering, this can have a negative effect on how they view and interact with children who stutter (CWS; Abdalla & St.Louis, 2012). In addition, the degree to which teachers show children who stutter empathy and understanding can influence how these children are seen and treated by their peers (Abrahams et al., 2016).

Certain studies (Lee, 2013) pointed out that teachers had negative attitudes to PWS. Heite (2000) found that Icelandic teachers had limited knowledge of stuttering and were influenced by their own cultural myths and stress reactions when it came to shaping their judgement as listeners. Lee (2013) investigated how teachers in the Daegu area viewed stuttering, and discovered that their perceptions were both negative and stereotypical.

Plexico et al. (2013) found that teachers were not at ease or confident in their ability to cope with a child who stuttered in their class, while Hearne et al. (2021), and Abdalla and St. Louis (2012) noted that teachers did not believe that children who stuttered were less capable than their non-stuttering peers. In contrast, Adriaensens and Struyf's (2016) study reported that teachers worried that stuttering pupils could negatively affect the progression of their lessons, as a result of how peers reacted to stuttering. These teachers added that students who stutter can have issues when expressing themselves to listeners, and make it more difficult for the latter to understand what is being said in classroom activities.

However, other studies reported that teachers had a positive view of PWS (Irani and Gabel, 2008), and that this stemmed from familiarity with stuttering and education on the subject -both of which encouraged positive attitudes to PWS. The Greek Translation of Teacher Attitudes Towards Stuttering (TATS) Inventory and the Alabama Stuttering Knowledge Test (ASK) were used to determine teachers' attitudes towards young children who stutter, and both produced positive responses from participants (Grigoropoulos, 2020; Abrahams et al., 2016). The attitudes of the South African sample were marginally more positive than the samples in the current POSHA-S database (Abrahams et al., 2016). In general, many respondents demonstrated positive attitudes towards stuttering, and in particular the potential of people who stutter, but this conclusion has to be interpreted cautiously, since the sample was not homogeneously positive.

Pachigar et al. (2011) carried out a mixed-method study in Mumbai and found mainly positive attitudes towards PWS. In addition, Irani, Abdalla and Gabel (2012) designed a study to examine Kuwaiti Arab teachers' attitudes to people who stutter, and then compare their results with those of American teachers, to determine whether or not cultural differences could be pinpointed. The results showed that while the Kuwaiti teachers had neutral or positive attitudes to PSW, nevertheless, the American teachers were significantly more positive in their views of stuttering ($p \leq 0.003$). This is due to the fact that approximately 33 per cent of the Arab teachers voiced negative attitudes when questioned about employment and social skills. In addition, the differences in culture and social norms between the two sets of participants can impact on their attitudes. Stuttering, according to Hearne et al. (2021), may be linked to negative attitudes and stereotyping, so improving teachers' awareness of stuttering can only have a positive effect on students' lives.

In conclusion, the reviewed research noted a general lack of understanding about stuttering, occasionally linked to negative attitudes to people who stutter. The studies all agree that upgrading and improving teachers' knowledge and attitudes to stuttering will concurrently greatly improve how students view and experience their stuttering. As a result, understanding teachers' perceptions and ideas about PWS will produce better outcomes for PWS, on the emotional, educational, psychological and social levels.

DISCUSSION AND CONCLUSION

Overall, the research studies maintain that researching teachers' knowledge and attitudes towards stuttering is important, since they play a part in determining how people who stutter experience their school lives (for example, Hearne et al., 2021). This systematic review found that most of the literature on the subject of stuttering focusses on measuring teachers' knowledge, attitudes and awareness. Certain studies note that teachers have very limited knowledge about stuttering and individuals who stutter (Grigoropoulos, 2020). However, there are relatively few studies of the connection between teachers' attitudes to cultural and social factors, which can be important when analysing the results of the teachers' attitudes. According to Heite (2000), educators have limited knowledge of stuttering, and their judgements and opinions are based on mythologies and their personal stress responses. Teachers may well respond to and view stuttering and people who stutter quite differently, if they take into account differences in social norms between cultures. Consequently, it may be useful to include these elements when assessing the research results.

In addition, some studies implied that it was the teachers' fault that they lacked knowledge of stuttering and people who stutter, and held negative attitudes towards the condition and individuals who stutter. It is possible, however, that the teachers had not received support and guidance on how to approach stuttering and stutterers. Lee (2013) points out that studies have found upgrading teachers' awareness and knowledge can lead to positive attitudes towards people who stutter. Hearne et al. (2021) offered a way to improve teachers' awareness and attitudes which went beyond merely measuring their knowledge and attitudes. In the process, they provided a starting point for future researchers to build upon, and make a positive contribution through their studies.

Future research studies should include concrete recommendations which will help teachers to improve their knowledge of, and their attitude towards, stuttering. It is likely that the lack of knowledge and the negative attitudes towards stuttering shown by teachers stems from inadequate education and training about stuttering and people who stutter. Jenkins (2010) points out that it has been established that teachers want to receive education about stuttering, while other studies have demonstrated that teacher education can change perceptions and raise levels of knowledge (Abdalla and St. Louis, 2014; Gottwald, Fraas, Hawever, Hartley, & St. Louis, 2011; Hobbs, 2012). It is vital to improve teachers' attitudes, since these negative perceptions, attitudes, stereotypes and poor knowledge about stuttering have a negative impact on children, particularly on adolescents who are trying to create a personal identity (Hearne, Packman, Onslow, & Quine, 2008).

As a result, teachers must be provided with educational resources which will enhance their knowledge of stuttering, and these resources must be more than simply academic books, but should also include giving people who stutter a voice, which they can share with teachers. Further research is needed to make sure that the voices of people who stutter are heard in society. This could include providing people who stutter with the opportunity to participate in research and share information about the experience of stuttering, and suggestions on how teachers can best support them. This initiative would fill the research gap between what is viewed as positive or negative attitudes in research, and how people who stutter assess these attitudes from a personal point of view.

Many studies of knowledge of, and attitudes towards, stuttering have excluded individuals who stutter, and the time has now come to ensure that they are involved in research projects - whether, for example, by designing the questionnaires or casting a critical eye over the results. This will lead to future research empowering people who stutter, and change the way in which the attitudes of others are analysed and evaluated.

REFERENCES

- Abrahams, K., Harty, M., St. Louis, K. O., Thabane, L., & Kathard, H. (2016). Primary school teachers' opinions and attitudes towards stuttering in two South African urban education districts. *South African Journal of Communication Disorders*, 63(1), 1–10. <https://doi.org/10.4102/sajcd.v63i1.157>
- Adriaenssens, S., & Struyf, E. (2016). Secondary school teachers' beliefs, attitudes, and reactions to stuttering. *Language, Speech, and Hearing Services in Schools*, 47(2), 135–147. https://doi.org/10.1044/2016_LSHSS-15-0019
- Arnold, H. S., Li, J., & Goltl, K. (2015). Beliefs of teachers versus non-teachers about people who stutter. *Journal of Fluency Disorders*, 43, 28–39. <https://doi.org/10.1016/j.jfludis.2014.12.001>
- Gabel, R. (2012). *Arab and American Teachers' Attitudes Toward People Who Stutter: 39*(Spring), 12–20.
- Grigoropoulos, I. (n.d.). Early childhood educators' knowledge and attitudes toward young children who stutter. In 352 *PSYCHIATRIKI* (Vol. 31, Issue 4).
- Hearne, A., Miles, A., Douglas, J., Carr, B., Nicholls, J. R., Bullock, M. S., Pang, V., & Southwood, H. (2021). Exploring teachers' attitudes: knowledge and classroom strategies for children who stutter in New Zealand. *Speech, Language and Hearing*, 24(1), 28–37. <https://doi.org/10.1080/2050571X.2020.1750756>
- Jenkins, H. (2010). Attitudes of teachers towards dysfluency training and resources. *International Journal of Speech-Language Pathology*, 12(3), 253–258. <https://doi.org/10.3109/17549500903266071>
- Lee, K. (2013). Perception toward Stuttering by Teachers in Daegu Area. *Communication Sciences and Disorders*, 18(4), 447–458. <https://doi.org/10.12963/csd.13063>

- Li, J., & Arnold, H. S. (2015). Reactions of teachers versus non-teachers toward people who stutter. *Journal of Communication Disorders*, 56, 8–18. <https://doi.org/10.1016/j.jcomdis.2015.05.003>
- Pachigar, V., Stansfield, J., & Goldbart, J. (2011). Beliefs and attitudes of primary school teachers in mumbai, india towards children who stutter. *International Journal of Disability, Development and Education*, 58(3), 287–302. <https://doi.org/10.1080/1034912X.2011.598664>
- Plexico, L. W., Plumb, A. M., & Beacham, J. (2013). Teacher Knowledge and Perceptions of Stuttering and Bullying in School-Age Children. *Perspectives on Fluency and Fluency Disorders*, 23(2), 39–53. <https://doi.org/10.1044/ffd23.2.39>
- Hearne, A., Miles, A., Douglas, J., Carr, B., Nicholls, J. R., Bullock, M. S., Pang, V., & Southwood, H. (2021). Exploring teachers' attitudes: knowledge and classroom strategies for children who stutter in New Zealand. *Speech, Language and Hearing*, 24(1), 28–37. <https://doi.org/10.1080/2050571X.2020.1750756>
- Hearne, A., Packman, A., Onslow, M., & Quine, S. (2008). Stuttering and its treatment in adolescence: The perceptions of people who stutter. *Journal of Fluency Disorders*, 33(2), 81–98. <https://doi.org/10.1016/j.jfludis.2008.01.001>
- Jenkins, H. (2010). Attitudes of teachers towards dysfluency training and resources. *International Journal of Speech-Language Pathology*, 12(3), 253–258. <https://doi.org/10.3109/17549500903266071>
- Abdalla, F. A., & St. Louis, K. O. (2012). Arab school teachers' knowledge, beliefs and reactions regarding stuttering. *Journal of Fluency Disorders*, 37(1), 54–69. <https://doi.org/10.1016/j.jfludis.2011.11.007>
- Abdalla, F., & St. Louis, K. O. (2014). Modifying Attitudes of Arab School Teachers Toward Stuttering. *Language, Speech, and Hearing Services in Schools*, 45(1), 14–25. https://doi.org/10.1044/2013_lshss-13-0012
- Blomgren, M. (2013). Behavioral treatments for children and adults who stutter: a review. *Psychology research and behavior management*, 9-19.
- Bloodstein, O. (1995). A handbook on stuttering (5th ed.). San Diego, California: Singular.
- Carter, A. K., Breen, L. J., & Beilby, J. M. (2019). Self-efficacy beliefs: Experiences of adults who stutter. *Journal of Fluency Disorders*, 60(January), 11–25. <https://doi.org/10.1016/j.jfludis.2019.03.002>
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of advanced nursing*, 62(1), 107-115.
- Gottwald, S. L., Warner, R., Hartley, J., Fraas, M., Hawver, K., & St. Louis, K. O. (2011, November). Altering attitudes towards stuttering through the use of oral histories. Poster presented at the Annual Convention of the American Speech-Language-Hearing Association, San Diego, CA.
- Guitar, B. (2014). *Stuttering: An integrated approach to its nature and treatment*. Philadelphia, PA: Lippincott, Williams & Wilkins.
- Heite, L. B. (2000, October). Icelandic teachers' attitudes towards stuttering and classroom decision making. In *International Stuttering Awareness Day Online Conference*. Retrieved from <http://www.mnsu.edu/comdis/ISAD3/papers/heite/heite3.html>.
- Hobbs, M. L. (2012). *Teacher perceptions and knowledge about stuttering before and after an in-service training* (Doctoral dissertation, Eastern Kentucky University).
- Irani, F., Abdalla, F., & Gabel, R. (2012). *Arab and American Teachers' Attitudes Toward People Who Stutter*: 39, 12–20.

- Lass, N. J., Ruscello, D. M., Schmitt, J. F., Pannbacker, M. D., Orlando, M. B., Dean, K. A., ... & Bradshaw, K. H. (1992). Teachers' perceptions of stutterers. *Language, Speech, and Hearing Services in Schools, 23*(1), 78-81.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Prisma Group. (2010). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *International journal of surgery, 8*(5), 336-341.
- Panico, J., Healey, E. C., Brouwer, K., & Susca, M. (2005). Listener perceptions of stuttering across two presentation modes: A quantitative and qualitative approach. *Journal of Fluency Disorders, 30*(1), 65-85. <https://doi.org/10.1016/j.jfludis.2005.01.003>
- Pickering, C., & Byrne, J. (2014). The benefits of publishing systematic quantitative literature reviews for PhD candidates and other early-career researchers. *Higher Education Research & Development, 33*(3), 534-548.
- Prasse, J. E., & Kikano, G. E. (2008). Stuttering: an overview. *American family physician, 77*(9), 1271-1276.
- Yairi, E., & Ambrose, N. (2013). Epidemiology of stuttering: 21st century advances. *Journal of Fluency Disorders, 38*(2), 66-87. <https://doi.org/10.1016/j.jfludis.2012.11.002>