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A scoping review of the school-aged stuttering intervention literature

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Abstract
We explore school-aged (6–14 years old) stuttering interventions for children who stutter (CWS) using a scoping review. Database searches were conducted (EBSCO host, PubMed, PsycINFO, Academic Search Premier, MEDLINE, Education Resources Information Center (ERIC), Health Source (consumer edition), Africa-wide Information, Cumulative Index to Nursing and Allied Health (CINAHL), Dissertation abstracts International, the Cochrane Library (Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials (CENTRAL), 15 Cochrane Methodology Register, Education Resource Information Center, Google Scholar, manual searching using reference lists and gray literature) from the inception of the databases until June 2018. Ten school-aged stuttering intervention studies met the inclusion criteria of this study, which were conducted between 1982 and 2016. The 10 studies used quantitative pretest posttest designs with low to moderate quality, according to GRADE. ICF showed a dominance of interventions targeted and measured within the domain of body structures and function with treatment effects focused predominantly on traditional individualized speech fluency measures. Studies were conducted in Australia (n = 3), United States of America (n = 3), Canada (n = 2), Islamic Republic of Iran (n = 1) and South Africa (n = 1). The findings lead to the authors questioning knowledge production and its influence on evidence-based literature and practices.

Keywords: *stuttering; interventions; Speech therapy; Knowledge production; paradigms.*

The focus of this scoping review is on the evidence base for stuttering interventions for school-aged (6–14 years old) children who stutter (CWS). As researchers located in the Global South, we approached this review with the intention of understanding how the evidence-base for stuttering interventions in school-aged children has developed over time, focus of interventions, context the knowledge was produced in, and the quality of the studies. The intention is both to appreciate, appraise and critique the progress we have made as a professional community toward growing the evidence base for stuttering interventions with children. Knowledge producers in the Global South have a responsibility to critically appraise knowledge to assess the quality of the studies as well as its relevance to context as an important pre-step in the process of developing interventions. The scoping review presented here was conducted prior to a cluster randomized controlled trial (RCT) pertaining to stuttering intervention (Mallick et al., 2018) with the intention to appraise and critique the knowledge base.

Within the profession of speech-language pathology, stuttering has historically been defined as an idiopathic disorder with a focus on the disruption of speech fluency and its classification as a speech fluency and

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behavioral disorder (Bothe et al., 2006, Guitar, 2013) since the 1950s (Adams, 1984; G. Andrews et al., 1980; Baxter et al., 2016; Bothe et al., 2006; Herder et al., 2006; Nye et al., 2013). The studies on stuttering have focused mainly on its nature and consequences (Blood & Blood, 2004, Blood et al., 2010; Carter & Spencer, 2006, Guitar, 2013; Langevin et al., 2009). Through many years of study stuttering has since been defined as complex and multifaceted (Guitar, 2013) which typically emerges during childhood (±2–5 years) and can persist into adult years (Guitar, 2013). Different manifestations and variations of stuttering is determined by an individual's personality, temperament, and learning patterns (Guitar, 2013). The observable and non-observable challenges of stuttering (Baxter et al., 2016; Guitar, 2013) affect quality of life and daily functioning (Beilby, 2014; Kathard et al., 2014; Messenger et al., 2004; Murphy et al., 2007). The cause of stuttering also remains complex and unknown, while several theories exist including hereditary links and environmental factors (Guitar, 2013; St Louis, 2015) through understanding brain differences, genetic factors, documentation of several conditions that coexist with stuttering and models to explain stuttering differences (St Louis, 2015). The onset of stuttering is also thought to be a result of stressors, typical in childhood (e.g., sudden increase in language skills), changes (e.g., moving, birth of a sibling) and neurological predisposition (Guitar, 2013). The cumulative understanding of stuttering is important because the understanding of stuttering typically underpins how intervention is approached. As interventions with school age children typically make up a substantial part of the speech-language therapists' caseload, the need to develop an evidence- informed intervention is critical. The appraisal of this scoping review was guided by the following questions and conceptual foci:

HOW MANY INTERVENTION STUDIES HAVE THERE BEEN FOR SCHOOL-AGE CHILDREN?

This review would allow an understanding of the scope of knowledge produced over a period (since the inception of databases until 2017) given the emphasis in professional practices to aspire toward evidence-based practice.

What were the focus of interventions?

For the purposes of this review, we choose the International Classification of Functioning and Disability (ICF) framework (World Health Organisation, 2013a; Yaruss, 2007). The ICF (Threats, 2006; World Health Organisation, 2013a; Yaruss, 2007) is one of the most robust available frameworks used in the profession to explore the CWS holistically through classification into domains. Given the complexity of stuttering interventions, the ICF framework was used to identify where the intervention was focused, i.e., within the domains of body structure and function, activity, and participation, as well as contextual factors (personal and environmental) (World Health Organisation, 2013a; Yaruss, 2007)

What context was the study done?

Given that the profession of Speech-Language Pathology was founded in the West, the knowledge base as well as its practices have been primarily from America and Europe and only now emerging in the Global South (Pillay & Kathard, 2018). While these practices are embedded in Western Cultural traditions, they are not overtly acknowledged in this way and so knowledge from the West assumes

a universality, which must be challenged. The application of such knowledge in the contexts of the Global South is questionable. Therefore, consideration of the geographical context in which the intervention study takes place is an important one. This study reports on the geographical context while understanding that contexts are linked with political contexts – as such this paper considers context of the Global South vs Global North.

Were the interventions effective?

The scoping review aimed to understand if the interventions were effective or not relative to the stated intervention outcomes. This understanding will guide both researchers and practitioners in understanding how the evidence-base for interventions is developing.

What were the quality of the intervention studies?

For this study, we choose GRADE – Grading of Recommendations, Assessment, Development and Evaluations (Brozek et al., 2011) was also used to analyze the quality of the intervention study. Acknowledging that there are several ways to assess the quality of studies, we choose GRADE because it provides a systematic approach to assessing the quality of assessment and strength of recommendations (Botma et al., 2016; Brozek et al., 2011). According to Brozek et al. (2011) the GRADE framework is highly praised and used at various institutions, such as McMaster due to its in-depth and comprehensive nature. This paper considers the methodology of a study in detail from the choice of overall design and each component thereof from sampling, use of control group, data collection, and analysis.

AIM

What is the status of knowledge of stuttering interventions for school-aged children ?

OBJECTIVES

(1) How many stuttering intervention studies have been conducted since the inception of databases?
(2) Quality of studies using GRADE
(3) What has the focus /type of intervention been?
(4) Were the interventions effective?
(5) What context were the studies done?

METHOD

Study design

A scoping review was conducted given its ability to collate available interventions using literature and add to the body of the literature (Kastner et al., 2011, 2012; Khalil et al., 2016; Peters et al., 2015) that contributes to clinical and research practices. A school-aged stuttering intervention for CWS scoping review has not previously been conducted while a scoping review for all ages for stuttering and cluttering (Baxter et al., 2016) and systematic reviews and meta-analysis studies have been published (Adams, 1984 ; G. Andrews et al., 1980; Baxter et al., 2016; Bothe et al., 2006; Herder et al., 2006; Nye et al., 2013; Thomas & Howell, 2001). All study designs were considered.

Databases

Databases searches included: EBSCO host, PubMed, PsycINFO, Academic Search Premier, MEDLINE, Education Resources Information Center (ERIC), Health Source (consumer edition), Africa-wide Information, Cumulative Index to Nursing and Allied

Health (CINAHL), Dissertation Abstracts International, the Cochrane Library (Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials (CENTRAL), Cochrane Methodology Register and the Education Resource Information Center. In addition to database searches, Google Scholar and gray literature (e.g. policy papers, conference proceedings, etc.) were also searched. Reference lists were also used to guide manual searching to broaden the search for this paper. The University of Cape Town Faculty of Health Science's library was contacted to request a copy to the literature that the authors could not access. However, a paper by Northrup (213) titled "Self-modeling as an intervention for stuttering in elementary students" could not be accessed due to a lack of permission even with library assistance.

Timeframe

The timeframe for the literature search was from the inception of the databases until June 2018, while the published interventions spanned from 1982 to 2016. This timeframe was selected because it was felt that a robust picture of available literature was required, given that stuttering interventions are a growing field that has undergone shifts in theoretical conceptualizations (fluency and behavioral and social communication disorder) and models (medical to psychosocial).

Inclusion criteria

Stuttering intervention studies investigating the effects of school-aged (6–14 years) conducted using RCTs and non-RCTs quantitative and qualitative studies. Studies required treatment outcomes to evaluate the impact on outcomes data. Both individual and group stuttering interventions that targeted CWS, parents, teachers and peers were included. The following search terms were used: (Behavioral, Behavioral, Attitud*, Parent, Individual, Group, Child, Teacher, classroom, peer, home, school, social, speech therap*, speech patholog*, speech language patholog*, bullying, teasing) **AND** Interventions **AND** Child* **AND** Stuttering stuttering **AND** interventions **AND** child*.

Exclusion criteria

Stuttering intervention studies that were not targeted for school-aged CWS within the 6-to-14-year age category and those that did not include the effects of stuttering interventions, were excluded. This study wishes to acknowledge that definitions of "school-age" children are going to differ based on culture and how researchers define school-age. Sometimes, the ages of 11 and 12 are used, as individuals 13 and older could also be younger adolescents and be included as a "adolescent who stutters." It is for this reason that this study acknowledges this fact and provides a rationale for the definition used of school-age to frame the study.

Data captured

The data captured consisted of both included and excluded studies with reasons for exclusion. The data captured were in accordance with the research questions of this study using the three frameworks.

Analysis

Descriptive and narrative analysis was completed using ICF to classify interventions into domains. GRADE assessed the quality of the evidence by providing a quality rating influenced by specific factors such as probability of reporting bias (Atkins et al., 2004), blinding (e.g. single or double), randomization,

type of design (e.g. RCT) and control groups etc. (Brozek et al., 2011). It is worth noting that different levels of evidence are used to classify research and GRADE was recommended by McMaster University as suitable for this study.

RESULTS

A total of 677 search titles were retrieved, while 310 titles were excluded for duplicate titles retrieving 367 abstracts. Thereafter, 253 were excluded due to abstract, 115 based on full-text and 103 for not including the target population and one due to an inability to access full papers. See Figure 1: Flow diagram for study selection.

Number of stuttering intervention studies conducted since the inception of databases?

Ten school-aged stuttering intervention studies met the inclusion criteria since the inception of databases spanning from 1982 – 2016. All studies used quantitative pretest posttest designs and were conducted in Australia (n = 3), United States of America (n = 3), Canada (n = 2), Islamic republic of Iran (n = 1) and South Africa (n = 1). Interventions predominantly focused on the domain of body structures and functions (n = 8) through targeting speech fluency in CWS.

Quality of studies using the GRADE framework

As seen in Table 2 below where outcomes are also described, the GRADE rating tool found the quality of evidence to be generally poor from a methodological perspective with ratings of moderate to low-quality evidence due to a lack of control groups, blinding and randomization. Only 1 out of the 10 reported studies made use of control groups (Kathard et al., 2014). Two studies (C. Andrews et al., 2016; Koushik et al., 2009) were titled as clinical trials but made no mention of a trial registry number, use of control groups or methodological requirements of a trial (e.g. randomization) as per the Consolidated Standards of Reporting Trials (CONSORT) statement.

Focus/type of intervention

As seen in Table 1, an overview of ICF domains yielded the following:

Majority of the interventions focused on body structures and functions (n = 8) which were administered by SLTs using stuttering modification techniques including prolonged speech, continuous phonation, controlled speech rate, light contacts, easy onsets, syllable-timed speech (STS), delayed auditory feedback modified regulated breathing, as well as awareness and competing response training (included within the Lidcombe program). While the Lidcombe program is typically used by parents to manage stuttering at home for preschool-aged CWS, two studies used the Lidcombe program for school-aged CWS as an established home-based intervention. Of the eight studies that targeted body structures and function, two facilitated environmental factors by including communication partners at home, school and in social environments (Budd et al., 1986; Harasym & Langevin, 2012). Of the remaining studies (n = 2), environmental factors were targeted using classroom-based intervention to address peer attitudes toward CWS (Kathard et al., 2014; Langevin & Prasad, 2012). Activity and participation were not directly targeted or measured as treatment outcomes within any of the studies.

Were the interventions effective?

The treatment effect, i.e. effects on treatment outcomes, was evaluated on how and when each study measured outcomes/judged

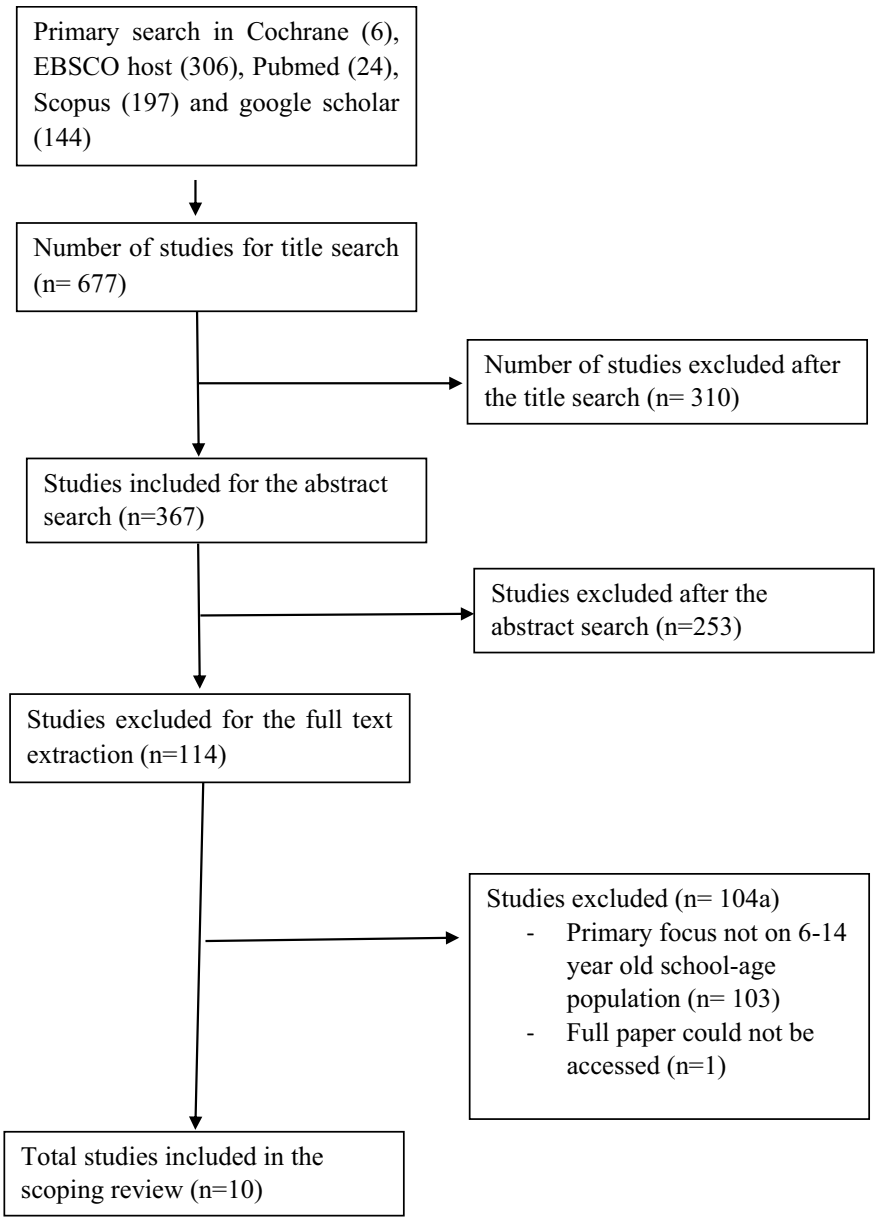


Figure 1. Flow diagram for study selection

effectiveness. Majority of studies (n = 8) measured body structures and function using outcomes of speech fluency including stuttering syllable percentages (%SS), stuttering word percentages (%SW), Syllables per minute (SPM), and severity ratings using audio-recordings (C. Andrews et al., 2016; Bakhtiar & Packman, 2009; Budd et al., 1986; Craig &

Table 1. Focus on interventions for school-aged children who stutter

Author details	Country	Target population	Focus of intervention: ICF domains
(1) Craig and Cleary (1982)	Australia	CWS	*Body structures and function* using electromyograph (EMG).
(1) Budd et al. (1986)	America	CWS (and parents in a supportive role).	*Body structures and function* using controlled speech rate, continuous phonation and delayed auditory feedback. *Environmental factors* were facilitated by encouraging carryover of SLT stuttering modification techniques facilitated by parents through home-based therapy activities and CWS who practiced techniques in social settings
(1) Gagnon and Ladouceur (1992)	Canada	CWS	*Body structures and function* using awareness training, modified regulated breathing and easy speech
(1) Wagaman et al. (1993)	America	CWS and parents in a supportive role	*Body structures and function* using awareness training, and competing response training
(1) Koushik et al. (2009)	Australia	CWS and parents in a supportive role	*Body structures and function* using Lidcombe program in SLT and through parental feedback on speech fluency
(1) Bakhtiar and Packman (2009)	Iran	CWS and parents in a supportive role	*Body structures and function* using Lidcombe program in SLT and through parental feedback on speech fluency
(1) Harasym and Langevin (2012)	America	CWS and parents and peers who stutter in supportive roles	*Body structures and function* using prolonged speech, easy onsets, light contacts, breathing patterns *Environmental factors* facilitated through training of support staff and discussions with peers who stutter and parents around teasing and bullying

Cleary, 1982; Gagnon & Ladouceur, 1992; Harasym & Langevin, 2012; Koushik et al., 2009; Wagaman et al., 1993). The other two studies included psychosocial outcomes measures related to attitude, which could be classified within the ICF domain of environmental factors. These two studies made use of questionnaires (Kathard et al., 2014; Langevin & Prasad, 2012) to measure the attitude change of peers in CWS. Outcomes were measured from as early as 10 days up until 17 months while majority (n = 7) measured outcomes from 6 months onwards.

In what context were the studies done?

Geographical context relates to the country and setting of the studies. As illustrated in Table 1, the studies were conducted in Australia (n = 3), the United States of America (n = 3), Canada (n = 2), Islamic Republic of Iran (n = 1) and South Africa (n = 1). This means that 8 out of the 10 studies were conducted in the global North with only two conducted in the Global South. The following contextual information was reported in the studies:

Bakhtiar and Packman (2009) were the only study to report and describe its context – the country of Iran as linguistically and culturally diverse. Koushik et al. (2009) reported that the study took place in Canada at a fluency center. Budd et al. (1986) reported that the study was conducted in America where participants resided, while the intervention itself took place with a school SLT.

Table 2. The time frame and effects on outcome using GRADE ratings of the included studies

Author details	Time frame	Effects on outcome	GRADE Rating
Craig and Cleary (1982)	9 months	Reduction in stuttering 60–80%	Low
Budd et al. (1986)	6 months	Systematic reductions in stuttering	Low
Gagnon and Ladouceur (1992)	1 and 6 months	Statistically significant result	Low
Wagaman et al. (1993)	10–13 months	• %SS decreased below 3% • Stuttering reduced by 89% • No change in SPM • Parents found intervention credible and acceptable	Low
Koushik et al. (2009)	10 days	• %SS: 9.2 to 1.9 • SPM: 145.8 to 179.3	Low
Bakhtiar and Packman (2009)	(1) Months	• Less than 1 %SS • No presence of stuttering post-intervention	Low
Harasym and Langevin (2012)	(1) Months	• %SS: 59.25 to 6.35 at SLT; 28.9 to 1.3 at home • SPM of 33.4 to 149.75 • CWS gained confidence	Low
C. Andrews et al. (2016)	(1) Months	• Group mean of stuttering reduction was 77% • 18 CWS were more satisfied with their speech, 11 reported a reduction in avoidance of speaking situations, rhythmicity of speech reduced to 1.3, CWS sounded less rhythmic after intervention	Low
Langevin and Prasad (2012)	3–4 weeks	Practical and statistically significant improvements in peer attitudes	Low
Kathard et al. (2014)	1 month	Positive shift in peer attitudes	Moderate

Langevin and Prasad (2012) reported that their study took place in a Western Canadian province in schools and, Kathard et al. (2014) reported that their study took place in South African schools. Three studies did not report on the country but reported on the intervention context: Andrews et al. (2016) reported that a university research clinic referred its study participants, Wagaman et al. (1993) reported that a school SLT referred its participants and finally, Gagnon and Ladouceur (1992) reported SLTs referred its study participants. Harasym and Langevin (2012) and Craig and Cleary (1982), the remaining two studies, did not report or describe their country or intervention context.

DISCUSSION

A key strength was that extensive database searches were conducted using different search strategies including manual searches of gray literature. While gray literature and other sources were not yielded in the search, they were not excluded which could be viewed as a limitation since non-educational interventions and sources were not found. The authors wish to acknowledge that only electronic searches were conducted and not hand searches due to accessibility issues. Furthermore, only English papers were accessed which could be seen as a limitation to this study. An additional limitation would be access to journal articles in the search engines and

additional database searches directly from organizations that would appear in a search engine. For example, going directly to the source (searching through an online journal that is not registered through Google Scholar), you may find information that the search protocol failed to obtain. Having said this, a qualified librarian assisted with the searches to ensure a robust search procedure.

Since the inception of databases, limited intervention studies (n = 10) for school-aged (6–14 years) CWS have been available from 1982 to 2016 showing that few studies exist as evidence within a population that is commonly served within the profession. The limited number of intervention studies are more noteworthy when considering that wealth of literature that exists within the nature and cause of stuttering (Blood et al., 2010; Carter & Spencer, 2006, Guitar, 2013; Langevin et al., 2009). The limited number of intervention studies could be due to the limited research that clinicians are typically able to conduct. This could be strengthened by enhancing the capacity of clinicians to do research and by strengthening the partnership between clinicians and researchers. For a profession which has an intervention focus, it is imperative that new avenues for strengthening evidence bases are explored.

Of the available literature, the methodological quality was reported to be generally low as per the GRADE framework leading to questions around the validity, rigor and strength of the already limited evidence-base that exists. The research on intervention studies is still growing in the field. The researcher noted the trend in observational studies, single subject design and acknowledges these are of value particularly where there may be small sample sizes and limited resources for research. While these are considered as poor quality by the GRADE criteria, they also indicate that the field is progressing albeit at a slow pace. The professional field is still working its way toward larger scale studies and RCTs in particular. It also contests the applicability of RCT given the complexity of communication interventions (Pillay & Kathard, 2018).

Overall, the focus/type of intervention noted was predominantly on the domain of body structures and function was the focus of the intervention and outcomes measures directly linked to the speech fluency of CWS. Despite acknowledging the complexity of stuttering interventions for children who stutter, the professional literature shows that changes in fluency and the focus on symptomatic treatment remains a valued outcome. It is also acknowledged that due to the complexity and multi-faceted nature of stuttering, it may be challenging to target more than one domain in ICF at a time.

The studies showed a shift in domain toward investigation of environmental factors despite the dominance of body structures and functions of the interventions. The concern noted in this paper is that stuttering is complex, yet the science used to study stuttering interventionist may be considered reductionist by focusing on only one aspect of a multi-faceted communication disorder. This is important as there are implications for how we view stuttering, intervention, test interventions and practice using evidence-based literature.

Context was another key factor explored in this paper. A dominance of the literature is being conducted and published in the Global North while little research available to the Global South. Many of the studies in the global north did not describe and discuss contextual considerations which are reported to decontextualize a study and its intervention (Tomoaia-Cotisel et al., 2013). The importance of discussing the contextual considerations and specifics is important as it may allow a better understanding of how

to apply interventions to another context and country. Decontextualisation of research, hinders future research and practices as it does not detail internal and external validity, applicability from one context to another or consider that context is vital to guiding and supplementing generated knowledge and literature (Botma et al., 2016; Tomoaia-Cotisel et al., 2013). For example, information around context-specific attributes in terms of service delivery, policy, economic, social and political climates, culture and language are essential as communication will be influenced by the context (Pascoe & Norman, 2011; Pascoe et al., 2013) and influence lived experiences. Stuttering is a condition with cultural interpretation and against other communication problems may not be prioritized for intervention (Ogundare, 2012; Pascoe et al., 2010; Pascoe & Norman, 2011; Pascoe et al., 2013; Robinson & Crowe, 1998) and so context is required. This also brings about the discussion around the dominant evidence-based practice literature originates from.

The roots of knowledge production are additionally important as it necessitates a deeper look into what is informing our evidence-based practices and subsequently how practice has been molded and is influenced by Western, European and American-centric ways of knowing and producing knowledge. For example, if we base our evidence-based practices on one source of knowledge, it is questioned what we leave out and what bias we could be creating. This comes back to contextual considerations – and decontextualization of research can imply that one fits all when each context is vastly different. This paper argues that CWS should be viewed within a diversity continuum using frameworks, contextual information and assumptions related to available interventions.

Knowledge production should acknowledge the importance of identity and how knowledge is contextualized to understand how public health can be approached in African countries for example Airhihenbuwa, 2007. For example, how many studies consider and describe the political and cultural context in which a study is conducted, or an intervention is designed for? And what are the implications of studies being devoid of social, political and identity? While Airhihenbuwa (2007) poses many of these questions, it is noted that it is not applicable to only African countries – this study wishes to make the same claim.

In many of the studies it could be noted that the Western knowledge production (and coloniality of practice) has removed itself from contextual, political, social, racial, etc. factors to operate as universal knowledge. There is danger in this as it becomes difficult to critically challenge and consider assumptions of models, frameworks, theories and paradigms (Pillay & Kathard, 2018) – also referred to as epistemological vigilance (Airhihenbuwa, 2007). While there may be several ways to interrogate studies, epistemological vigilance may be favorable as one may embark on research and its findings of identity and health through another's identity (Airhihenbuwa, 2007) – a colonial and Western identity – influencing how knowledge is produced, replicated, understood in different contexts and countries especially when considering the use of English studies in this paper. An example is made within the South African population whereby

The idea of "access" to evidence-based practice and obtaining literature is also a factor to consider when thinking about how knowledge is shared. For example, how can practicing clinicians locate these studies? Or how can people who are seeking services for stuttering find this information? If a person does not have access to a university library database, where can they obtain this information? These questions add to how and where knowledge is

produced and shared and is therefore helpful in providing additional context to the study.

This scoping reviews shows the slowly emerging growth in the field of stuttering interventions, specifically with a focus to extend beyond the symptomatic and particularly to consider environment. Furthermore, it is noted that both the context and quality of the study designs require more focus. However, the authors wish to acknowledge that we are a young disciple which can grow from critique and extending knowledge production to the Global South.

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The authors report no potential conflicts of interest and are solely responsible for the content and writing of this manuscript.

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REFERENCES

Adams, M. R. (1984). Stuttering theory, research, and therapy: A five-year retrospective and look ahead. *Journal of Fluency Disorders*, *9*(2), 103–113. https://doi.org/10.1016/0094-730X(84)90028-7

Airhihenbuwa, C. O. (2007). On being comfortable with being uncomfortable: Centering an Africanist vision in our gateway to global health. *Health Education Behaviour*, *34*(1), 31–42. https://doi.org/10.1177/1090198106291377

Andrews, C., O'Brian, S., Onslow, M., Packman, A., Menzies, R., & Lowe, R. (2016). Phase II trial of a syllable-timed speech treatment for school-age children who stutter. *Journal of Fluency Disorders*, *48*, 44–55. https://doi.org/10.1016/j.jfludis.2016.06.001

Andrews, G., Guitar, B., & Howie, P. (1980). Meta-analysis of the effects of stuttering treatment. *Journal of Speech and Hearing Disorders*, *45*(3), 287–307. https://doi.org/10.1044/jshd.4503.287

Atkins, D., Eccles, M., Flottorp, S., Guyatt, G. H., Henry, D., Hill, S., Liberati, A., O'Connell, D., Oxman, A. D., Phillips, B., Schünemann, H., Edejer, T. T-T., Vist, G. E., Williams, J. W., GRADE Working Group. (2004). Systems for grading the quality of evidence and the strength of recommendations I: Critical appraisal of existing approaches The GRADE Working Group. *BMC Health Serv Res*, 4(1), 38. https://doi.org/10.1186/1472-6963-4-38

Bakhtiar, M., & Packman, A. (2009). Intervention with the Lidcombe program for a bilingual school-age child who stutters in Iran. *Folia Phoniatrica Et Logopaedica*, *61*(5), 300–304. https://doi.org/10.1159/000241880

Baxter, S., Johnson, M., Blank, L., Cantrell, A., Brumfitt, S., Enderby, P., & Goyder, E. (2016). Non-pharmacological treatments for stuttering in children and adults: A systematic review and evaluation of clinical effectiveness, and exploration of barriers to successful outcomes. *Health Technology Assessment*, *20*(2), 1–302. https://doi.org/10.3310/hta20020

Beilby, J. (2014). Psychosocial impact of living with a stuttering disorder: Knowing is not enough. *Seminars in Speech and Language*, *35*(2), 132–143. https://doi.org/10.1055/s-0034-1371756.

Blood, G., & Blood, I. (2004). Bullying in adolescents who stutter: Communicative competence and self-esteem. *Contemporary Issues in Communication Science and Disorders*, 31, 69–79.

Blood, G. W., Boyle, M. P., Blood, I. M., & Nalesnik, G. R. (2010). Bullying in children who stutter: Speech-language pathologists' perceptions and intervention strategies. *Journal of Fluency Disorders*, *35*(2), 92–109. https://doi.org/10.1016/j.jfludis.2010.03.003

Bothe, A. K., Davidow, J. H., Bramlett, R. E., & Ingham, R. J. (2006). Stuttering treatment research 1970–2005: I. Systematic review incorporating trial quality assessment of behavioral, cognitive, and related approaches. *American Journal of Speech-Language Pathology*, *15*(4), 321–341. https://doi.org/10.1044/1058-0360

Botma, Y., Greef, M., Malaudzi, F. M., & Wright, S. C. D. (2016). *Research in health sciences*. Pearson South Africa. 9781928226215.

Brozek, J. L., Akl, E. A., Compalati, E., Kreis, J., Terracciano, L., Fiocchi, A., Ueffing, E., Andrews, J., Alonso-coello, P., Meerpohl, J. J., Lang, D. M., Jaeschke, R., Williams, J. W., Phillips, B., Lethaby, A., Bossuyt, P., Glasziou, P., Helfand, M., Watine, J., Afilalo, M., … Schunemann, H. J. (2011). Grading quality of evidence and strength of recommendations in clinical practice guidelines: Part 3 of 3, the GRADE approach to developing recommendations. *Allergy*, *66*(5), 588–595. https://doi.org/10.1111/j.1398-9995.2010.02530.x

Budd, K. S., Madison, L. S., Itzkowitz, J. S., George, C. H., & Price, H. A. (1986). Parents and therapists as allies in behavioral treatment of children's stuttering. *Behaviour Therapy*, *17*(5), 538–553. https://doi.org/10.1016/S0005-7894(86)80093-4

Carter, B. B., & Spencer, V. G. (2006). The fear factor: Bullying and students with disabilities. *International Journal of Special Education*, *21*, 11–23. https://doi.org/10.1111/j.1365-2923.2009.03611.x.

Craig, A. R., & Cleary, P. J. (1982). Reduction of stuttering by young male stutterers using EMG Feedback. *Biofeedback and Self-Regulation*, *7*(3), 241–255. https://doi.org/10.1007/BF00998918

Gagnon, M. P., & Ladouceur, R. (1992). Behavioral treatment of child stutterers: Replication and extension. *Journal of Behaviour Therapy*, *23*(1), 113–129. https://doi.org/10.1016/0094-730X(93)90003–M

Guitar, B. (2013). *Stuttering: An integrated approach to its nature and treatment*. Lippincot Williams & Wilkins.

Harasym, J., & Langevin, M. (2012). Stuttering treatment for a school-age child with down syndrome: A descriptive case report. *Journal of Fluency Disorders*, *37*(4), 253–262. https://doi.org/10.1016/j.jfludis.2012.05.002

Herder, C., Howard, C., Nye, C., & Vanryckeghem, M. (2006). Effectiveness of behavioral stuttering treatment: A systematic review and meta-analysis. *Contemporary Issues in Communication Sciences and Disorders*, *33*(Spring), 61–73. https://doi.org/10.1044/cicsd_33_S_61

Kastner, M., Estey, E., Perrier, L., Graham, I. D., Grimshaw, J., & Straus, S. E. (2011). Understanding the relationship between the perceived characteristics of clinical practice guidelines and their uptake: A realist review. *Implementation Science*, *6*. https://doi.org/10.1186/1748-5908-6-69

Kastner, M., TriccO, A. C., Soobiah, C., Lillie, E., Perrier, L., Horsley, T., Welch, V., Cogo, E., Antony, J., & Straus, S. E. (2012). What is the most appropriate knowledge synthesis method to conduct a review? Protocol for a scoping review. *BMC Medical Research Methodology*, *12*(1), 114. https://doi.org/10.1186/1471-2288-12-114

Kathard, H., Walters, F., Frieslaar, K., Mhlongo, T., Rhoode, M., Shaboodien, R., Weidmann, J., Zimmerman, N., Zoetmulder, A., & Camroodien-surve, F. (2014). Classroom intervention to change peers' attitudes towards children who stutter: A feasibility study. *South African Journal of Communication Disorders*, *61*(1), 11. https://doi.org/10.4102/sajcd.v61i1.80

Khalil, H., Peters, M., Godfrey, C. M., Mcinerney, P., Soares, C. B., & Parker, D. (2016). An evidence-based approach to scoping reviews. *Worldviews on Evidence-Based Nursing*, *13*(2), 118–123. https://doi.org/10.1111/wvn.12144

Koushik, S., Shenker, R., & Onslow, M. (2009). Follow-up of 6-10-year-old stuttering children after Lidcombe program treatment: A phase I trial. *Journal of Fluency Disorders*, *34*(4), 279–290. https://doi.org/10.1016/j.jfludis.2009.11.001

Langevin, M., Kleitman, S., Packman, A., & Onslow, M. (2009). The peer attitudes toward children who stutter (PATCS) scale: An evaluation of validity, reliability and the negativity of attitudes. *International Journal of Language and Communication Disorders*, *44*(3), 352–368. https://doi.org/10.1080/13682820802130533

Langevin, M., & Prasad, N. G. N. (2012). A stuttering education and bullying awareness and prevention resource: A feasibility study. *Language Speech and Hearing Services in Schools*, *43*(3), 344–358. https://doi.org/10.1044/0161-1461

Mallick, R., Kathard, H., Borhan, A. S. M., Pillay, M., & Thabane, L. (2018). A cluster randomised trial of a classroom communication resource program to change peer attitudes towards children who stutter among grade 7 students. *Trials*, *19*(1), 664. https://doi.org/10.1186/s13063-018-3043-3

Messenger, M., Onslow, M., Packman, A., & Menzies, R. (2004). Social anxiety in stuttering: Measuring negative social expectancies. *Journal of Fluency Disorders*, *29*(3), 201–212. https://doi.org/10.1016/j.jfludis.2004.06.002

Murphy, W. P., Yaruss, J. S., & Quesal, R. W. (2007). Enhancing treatment for school-age children who stutter II. Reducing bullying through role-playing and self-disclosure. *Journal of Fluency Disorders*, *32*(2), 139–162. https://doi.org/10.1016/j.jfludis.2007.02.001

Nye, C., Vanryckeghem, M., Schwartz, J. B., Herder, C., Turner, H. M., & Howard, C. (2013). Behavioral stuttering interventions for children and adolescents: A systematic review and

meta-analysis. *Journal of Speech Language and Hearing Research*, *56*(3), 921–932. https://doi.org/10.1044/1092-4388

Ogundare, A. A. (2012). *Multicultural stuttering and treatment: A cross-cultural analysis*. Research Paper. http://opensiuc.lib.siu.edu/gs_rp/301

Pascoe, M., Maphalala, Z., Ebrahim, A., Hime, D., Mdladla, B., Mohamed, N., & Skinner, M. (2010). Children with speech difficulties: An exploratory survey of clinical practice in the Western Cape. *South African Journal of Communication Disorders*, *57*(1), 66–75. https://doi.org/10.4102/sajcd.v57i1.51

Pascoe, M., & Norman, V. (2011). Contextually-relevant resources in speech-language therapy and audiology in South Africa: Are there any? *South African Journal of Communication Disorders*, *58*(1), 2–5. *https://doi.org/10.4102/sajcd.v58i1.35*

Pascoe, M., Rogers, C., & Norman, V. (2013). Are we there yet? On a journey towards more contextually relevant resources in speech-language therapy and audiology. *South African Journal of Communication Disorders*, *60*(1), 2–9. https://doi.org/10.4102/sajcd.v60i1.3

Peters, M. D. J., Godfrey, C. M., Khalil, H., MCinerney, P., Parker, D., & Soares, C. B. (2015). Guidance for conducting systematic scoping reviews. *International Journal of Evidence-Based Healthcare*, *13*(3), 141–146. https://doi.org/10.1097/XEB.0000000000000050

Pillay, M., & Kathard, H. (2018). Renewing Our Cultural Borderlands. *Topics in Language Disorders*, *38* (2), 143–160. *I SSN-0271-8294*. https://doi.org/10.1097/TLD.0000000000000151

Robinson, J. T. L., & Crowe, T. A. (1998). Culture-based considerations in programming for stuttering intervention with African American clients and their families. *Language, Speech, and Hearing Services in Schools*, *29*(3), 172–179. https://doi.org/10.1044/0161-1461.2903.172

St Louis, K. O. (2015). *Epidemiology of public attitudes towards stuttering*. West Virginia University Press.

Thomas, C., & Howell, P. (2001). Assessing efficacy of stuttering treatments. *Journal of Fluency Disorders*, *26*(4), 311–333. https://doi.org/10.1016/s0094-730x(01)00103-6

Threats, T. T. (2006). Towards an international framework for communication disorders: Use of the ICF. *Journal of Communication Disorders*, *39*(4), 251–265. https://doi.org/10.1016/j.jcomdis.2006.02.002

Tomoaia-Cotisel, A., Scammon, D. L., Waitzman, N. J., Cronholm, P. F., Halladay, J. R., Driscoll, D. L., Solberg, L. I., Hsu, C., Tai-seale, M., Hiratsuka, V., Shih, S. C., Fetters, M. D., Wise, C. G., Alexander, J. A., Hauser, D., Mcmullen, C. K., Scholle, S. H., Tirodkar, M. A., Schmidt, L., Donahue, K. E., … Stange, K. C. (2013). Context matters: The experience of 14 research teams in systematically reporting contextual factors important for practice change. *The Annals of Family Medicine*, *11*(Suppl 1), S115–23. https://doi.org/10.1370/afm.1549

Wagaman, J. R., Miltenberger, R. G., & Arnndorfer, R. E. (1993). Analysis of a simplified treatment for stuttering in children. *Journal of Applied Behaviour Analysis*, *26*(1), 53–61. https://doi.org/10.1901/jaba.1993.26-53

World Health Organisation. (2013a). *How to use the ICF: A practical manual for using the International Classification of Functioning, Disability and Health (ICF)*.

Yaruss, J. S. (2007). Application of the ICF in Fluency Disorders. *Seminars in Speech and Language*, *28*(4), 312–322. https://doi.org/10.1055/s-2007-986528

ABBREVIATIONS

%SSStuttering syllable percentages
%SWStuttering word percentages
CCRClassroom Communication Resource
CWSChildren who stutter
GRADEGrading of Recommendations, Assessment, Development and Evaluations
ICFInternational Classification of Functioning and Disability
RCTRandomized Controlled Trial
SPMSyllables per minute
STSSyllable-timed speech
TABTeasing and bullying behavior program