What are the current experiences and perceptions of adults towards treatment for stammering?

An updated review of the literature

C3535343

Submitted in fulfilment of the requirements of the BSc (Hons) Speech and Language Therapy

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June 2021

Abstract:

The key aim of this study was to understand the experiences and perspectives of adults who stammer (AWS) towards the various treatment options currently available for stammering. The value of such an aim lies in improving the knowledge and confidence of speech and language therapists/pathologists (SLT/Ps) in providing evidence-based and client-centred information to adults seeking therapy for stammering, without imposing the clinician's own biases for or against such treatments. An updated systematic review of qualitative and mixed-methods literature, carried out between 2015-2021, provided some current views on fluency shaping methods, stuttering modification techniques, and cognitive restructuring interventions. Following a simplified thematic analysis, six themes emerged from the ten identified studies: **fluency shaping**: (1) "unsustainability", (2) "shame & failure", **stuttering modification**: (3) "discomfort followed by confidence", **cognitive restructuring**: (4) "shared experience", (5) "paradigm shift" and (6) "self-therapy".

Key takeaways from the findings include: a need for psychological support regardless of the intervention type chosen, the potential use of bibliotherapy or cinematherapy to support behaviour change and facilitate sustainable self-therapy, and support for the current evidence base which identifies the value AWS place in having a "pick and choose" individualised therapeutic approach to support communication and wellbeing. There is a need for further research examining how psychological input may be integrated as an adjunct to speech therapy, and a need to understand how SLT/Ps working with AWS perceive their own skills and confidence in providing psychological support.

C3535343

Acknowledgements:

I would like to thank my supervisor, Sarah James, for her reassurance and guidance throughout my dissertation and for pointing me in the direction of some interesting and relevant reading. I would also like to thank my family for all their continued support and encouragement.

Contents:

C3535343

List of Tables & Figures:

Glossary of Terms:

Bibliotherapy: a cognitive restructuring technique involving the reading of disability or illness narratives, followed by reflective writing or discussion. The aim is to facilitate cognitive and affective shifts towards perceptions of disability/illness. (Gerlach & Subramanian, 2016)

Blocking (of speech sounds): an involuntary, temporary closure at the respiratory, laryngeal or articulatory levels, preventing release of the speech sound.

Camperdown programme: An Australian behaviour modification programme using fluency shaping techniques for adults who stammer (O'Brian et al, 2003)

Cinematherapy: an extension of bibliotherapy, the clinician recommends a film/documentary with a disability/illness narrative. This is followed by structured, reflective discussion or writing with the aim of promoting cognitive and affective change. (Sharp et al, 2002)

Data saturation: The point at which no further literature is found following systematic searching and no further themes emerge following thematic analysis of the data (Aveyard, 2019)

Paradigm shift: a theory originating with American philosopher of science, Thomas Kuhn, to describe the replacement of one scientific paradigm (or theory) with another (Grimes, 2011). The term is also now widely used in psychology to describe a shift in the mind set of an individual or group, including people who stammer (Douglass et al, 2018)

Phenomenological: a qualitative research approach whereby an individual's or group's "lived experiences" are investigated (Aveyard, 2019)

Prolonged speech: alternative term for fluency shaping**.** Techniques are used in behavioural modification programmes for stuttering in which individuals are set specific speech rate targets and techniques with the aim of eliminating dysfluent speech (O'Brian et al, 2003)

Prolongations: a feature of overt stammering in which the speech sound is prolonged or "stretched"

Rich data: in-depth and richly detailed qualitative data, best gathered via focus groups and interviews

Themes: data gathered using qualitative methods (i.e., questionnaires, focus groups) containing similar narratives which may then be grouped together into "themes" (Greenhalgh, 2014)

Transcranial direct currency stimulation (tDCS): used as an adjunct to speech therapy, electrodes provide a low-level electrical current to neurological regions associated with stammering with the aim of facilitating fluency (Brignell et al, 2020)

Chapter 1: Introduction

Stammering is a neurological condition causing interruptions to fluent speech production, with 3% of adults in the UK self-identifying as having a stammer (Stamma, 2018). Overt stammering features are those which are readily observed by the listener and may include, prolongations, repetitions and/or blocking of single speech sounds, syllables, or monosyllabic words. These overt features are often accompanied by covert aspects, unseen by the listener, representing the underlying affective, behavioural, and cognitive responses towards a stammer (Turnbull & Stewart, 2017). In some individuals, overt features may be suppressed or avoided entirely, although the person who stammers covertly will also experience internal, underlying emotional responses with varying degrees of severity and harm to their well-being (Douglass et al, 2018). Whilst some AWS may not identify as having a disability, stammering is nevertheless legally classed as a disability under the Equality Act (2010). Despite this lawful protection, AWS often face stigmatising and prejudiced attitudes from members of society today (Campbell, 2019).

In the 1970s, the creation of the social model introduced the concept that it is the attitudes of society and aspects of the environment that disable the individual, and not the impairment itself (St Pierre, 2019). This model can easily be applied to stammering when considering the extent of social prejudice that PWS face throughout their lifespan, with examples including workplace discrimination (Butler, 2014), automated phone systems which do not recognise stammered voices (Campbell, 2019), and the negative, unfounded perceptions of AWS as being shy or incompetent (Boyle, 2017).

In contrast to the social model, the medical model views the stammer as a pathology requiring a cure (St Pierre, 2019) and as a result there are a host of fluency shaping techniques offering increased fluency as an outcome. Fluency shaping works towards altering speech output to eliminate dysfluencies and may include, technology and feedback interventions, speech motor interventions (i.e., prolonged speech), behaviour modification programmes (i.e., the Camperdown programme), cognitive interventions (Baxter et al, 2015) and transcranial direct currency stimulation (tDCS) (Brignell et al, 2020). Cognitive interventions may be used from either a medical model perspective, i.e., to promote fluency through reduced anxiety and improved wellbeing, or from a social model perspective, i.e., to

learn how to live well with a stammer through self-acceptance and self-advocacy (Baxter et al, 2015).

As an alternative to fluency shaping techniques, stammering modification techniques aim to promote easier, less effortful stammering. This technique is based on the premise that stammering has its origins in *"…tiny lags and disruptions in the timing of the complicated movements required for speech"* (Van Riper, 1990, p.317) and that whilst these occurrences cannot ever be truly eliminated from speech output, the accompanying tension, struggle, and avoidance behaviours can be, via implementation of stuttering modification techniques (Van Riper, 1990).

In the UK, there is current and passionate debate amongst members of the stammering community and professionals working with AWS, including SLTs, as to what place therapy for stammering has within our society (Simpson, 2019). This debate is steered by the neurodiversity model which may be understood as an empowering and alternative way in which to view disability, whereby therapy focuses on living well with naturally occurring neurodivergent features and not on their suppression to "neurotypical" standards (Constantino, 2018). The neurodiversity model may be applied to the neurodivergent feature of stammering where this difference in speech output is accepted, normalised, and valued by society. Therefore, it is argued by some members of the stammering community, that the suppression of stammering aimed for in techniques such as fluency shaping, has no place in this hoped for society and may even be viewed as a harmful intrusion against AWS (Richter, 2019).

The author continues to feel somewhat conflicted about the role of SLTs in the treatment of stammering but experienced an enlightening moment during conversation with a dysfluency specialist placement educator, who shared a professional opinion that to fully commit to one model (i.e., medical, social, neurodiversity) could be to the detriment of clients requiring individualised therapy plans. In line with this expert opinion, recent stammering literature concludes that tailor made therapy plans are highly valued by AWS (Johnson et al, 2016). A web-based survey questioned AWS on their preference for fluency or freedom to stammer. Whilst the small, self-selected sample and exploratory nature of this study means results should be considered with caution, the key findings nevertheless revealed an interesting theme. That is, the ambivalence of 57% of the sample when choosing fluency or

freedom, suggesting that some AWS may prefer to pick and choose when to use fluency techniques and when to stammer more freely in their daily lives (Venkatagiri, 2009). This finding adds some depth to the idea that stammering is complex and varied in nature and a one-size-fits-all approach will likely be ineffective for the needs of AWS. Furthermore, Tichenor & Yaruss (2018) identified via a demographic questionnaire as part of their phenomenological analysis of the experience of stammering, that therapies including acceptance of stammering were valued more so than therapies with a sole focus on fluency.

With the many possible directions an AWS may choose to take on their stammering journey, it is important for SLTs working in this area to have the confidence to guide their client and raise awareness of the many options available to them in learning how to live well with a stammer, regardless of the choice to speak more fluently or stammer more freely. Having an SLT who is knowledgeable and responsive to the needs of the individual is likely to contribute to a strong therapeutic alliance, a concept highly valued by AWS when engaging in therapy (Sonsterud et al, 2019;2020).

A 2016 study by Johnson et al provides a systematic review of the views and experiences of people who stammer (PWS) across the lifespan, who received non-pharmacological interventions between 1990 and 2014. Strengths of this systematic review include the selection of peer-reviewed, rich data studies only, a sound quality-appraisal strategy whereby quality assessment and data extraction tools were tested on two pilot papers for effectiveness and verified by a second reviewer, and an analysis of the risk of bias for all included studies. The authors acknowledge that a limitation of this review was the retrospective nature of the rich data and suggest that future qualitative research could be improved by collecting the views of PWS at the point of receiving treatment.

In agreement with the current evidence base, the review concluded that PWS value person-centred and tailor-made therapy. Further, the study established that the impact of the stammer and feelings towards the stammer will alter throughout the lifespan, which has implications for the type of intervention best suited to the needs of PWS at different life stages.

The current literature review aims to provide an updated review of the literature between 2015-2021, reporting on the experiences and perceptions of AWS towards the variety of

therapy/intervention types for stammering. By understanding the perceptions of AWS who have experienced stammering therapies, SLTs may be better informed to provide evidence-based guidance to clients seeking support and information about stammering therapies.

Chapter 2: Methods

2.1 Search Strategy

A systematic search strategy was employed, including recording of the search results and an appropriate critique and appraisal strategy of all final, identified studies. Electronic database searches were conducted using MEDLINE, PsychInfo, and Cumulative Index to Nursing and Allied Health Literature (Cinahl). Key search terms included "stammering", "stuttering", "perceptions", "experiences", "treatment", "therapy", "management", and "intervention". Search limiters applied included studies published between 2015-2021, full text articles, and peer-reviewed articles. This specific time range was applied to gather updated literature following on from a synthesis of the literature on the current topic (Johnson et al, 2016). To supplement the electronic database search, electronic searches of the following journals were completed, *Journal of Fluency Disorders, International Journal of Speech & Language Pathology, Journal of Speech, Language and Hearing Research, International Journal of Language and Communication Disorders,* and *Journal of Communication Disorders.* A further reference list search of the preliminary studies identified was also conducted to identify any further relevant studies. A full record of the systematic search can be viewed in appendix 1 (search log). Figure 1 further outlines the search strategy via a flow chart.

2.2 Selection Strategy

An initial screening of titles and abstracts against the inclusion and exclusion criteria was employed. The 22 studies identified were further read in full against the inclusion and exclusion criteria. Due to this review's focus on gathering the subjective experiences and perceptions of adults who stammer, only those studies using qualitative or integrated methods were included, with a focus on participants over the age of 18. Further, only those studies with a focus on experiences or perceptions towards stammering related treatment or intervention were included. Those studies using only quantitative methods and those with a sole focus on the perceptions of children who stammer, parents, or professionals were excluded. Studies were further excluded if there was a single focus on the experiences or perceptions of AWS towards a non-treatment context, i.e., quality of life, goal setting, therapeutic alliance.

Following full text screening, twelve studies were excluded. Two studies were excluded due to a single focus on perceptions towards the therapeutic context of telepractice. Four studies were excluded due to the use of quantitative methods and collection of quantitative data only. One study was excluded due to a focus on the description of strategies used to facilitate fluency, rather than perceptions towards described interventions. Two studies were excluded due to a focus on the disclosure practices of people who stammer, rather than a specific intervention for stammering. One study was excluded due to a focus on motivational factors and goal setting. One study was excluded due to a focus on the experiences of stammering, rather than the experiences of interventions for stammering. One final study was excluded due to a focus on therapeutic alliance. Table 1 outlines the full inclusion and exclusion criteria used to identify the literature which would specifically answer the research question.

Table 1: Inclusion & Exclusion Criteria

Inclusion Criteria
- published between 2015-2021
- qualitative or mixed methods studies
- peer reviewed articles from academic journals
- articles focusing on adults who stammer (AWS) (18+)
- articles including a focus on experiences/perceptions of AWS towards a treatment/intervention for stammering

Exclusion Criteria
- published before 2015
- quantitative methods only studies
- articles focusing on the experiences/perceptions of children who stammer (-18)
- articles with a sole focus on the perceptions/experiences of professionals/SLTs, family/carers, or members of the public
- articles with a sole focus on the perceptions/experiences of AWS which are not based on a treatment/intervention for stammering
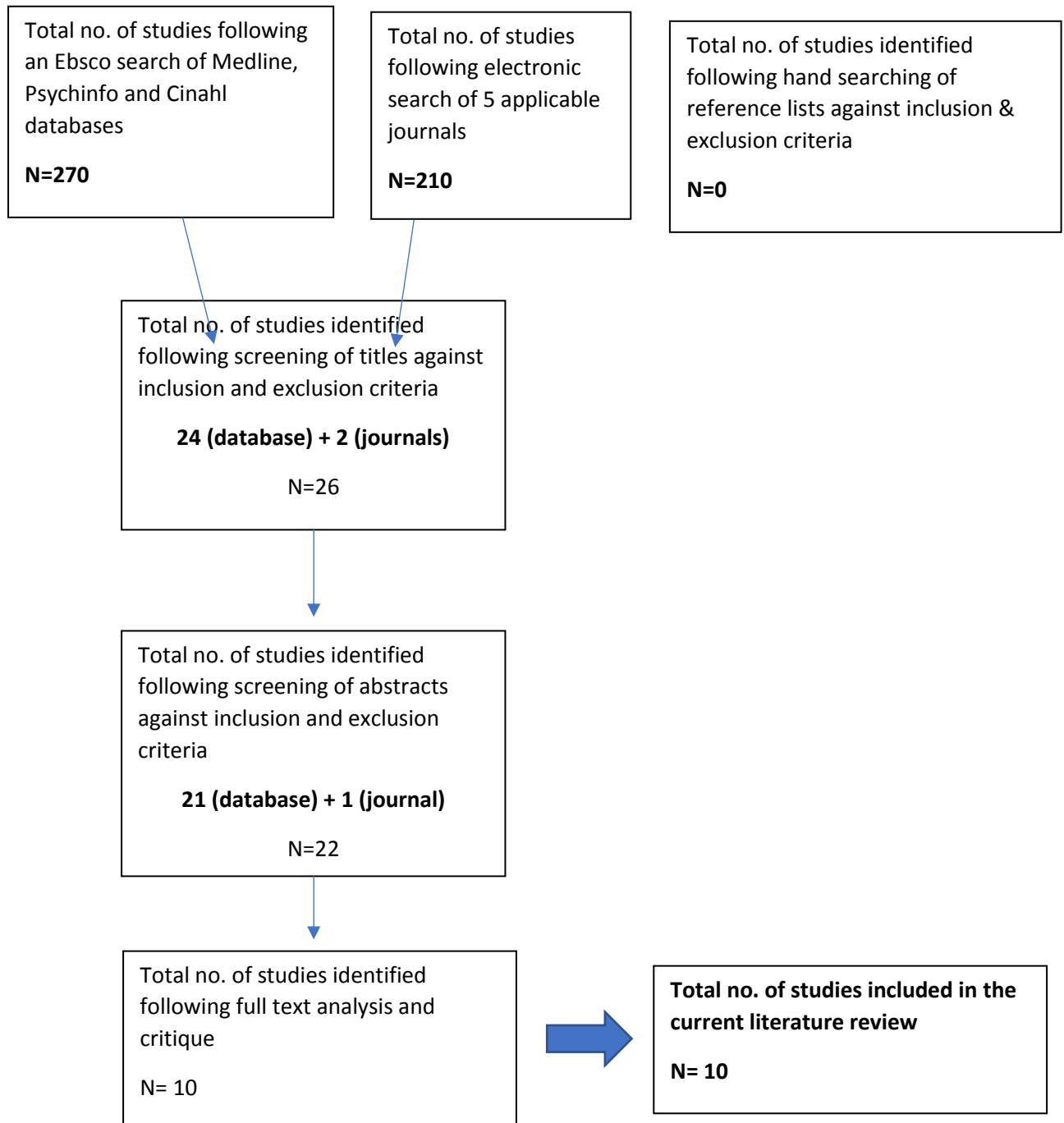
2.3 Appraisal Strategy

Appendix 2 (data summary table) provides a descriptive outline of the final studies included in the current literature review, including the strengths and limitations of each study. The Critical Appraisal Skills Programme (CASP) Qualitative Checklist (2018) was utilised as a suitable tool to appraise the quality of the included studies, including the credibility of the findings of each study. This analysis is outlined in Appendix 3 (CASP evaluation table). Of the final ten studies, five used mixed methods approaches and five used purely qualitative methods. Of the mixed methods studies, two provided rich data via the use of semi-structured interviews and a focus group. The remaining three studies provide a poorer quality of rich data due to a focus on quantitative, efficacy data, although these have been included in the final review to be inclusive of all qualitative data which may contribute information to the research question (Aveyard, 2019). The five qualitative studies identified are of good quality and use semi-structured interviews and focus groups as appropriate methods to gather rich, qualitative data. It should be noted that one of the final studies included in the review (Lindsay & Langevin, 2017) has one participant under the age of 18 in the sample. However, the study was not excluded due to the remaining sample consisting of AWS over the age of 18 and the rich data this study gathered.

2.4 Analysis of Included Studies

10 final studies were identified from the 480 results following electronic database searches, electronic journal searches and reference list searching. A simplified thematic analysis was employed by reading and re-reading the results and discussion sections of each study. Themes were highlighted and placed into tables with their corresponding authors to identify common and conflicting themes between the studies (Aveyard, 2019). A cut and paste method was further employed to group extracts from the studies under overarching themes (Aveyard, 2019). Themes are discussed in the synthesis chapter, under the headings of the main stammering interventions; fluency shaping, stuttering modification, and cognitive restructuring. A total of six themes emerged following thematic analysis of the studies. The two themes relating to fluency shaping were, "unsustainability" and "shame and failure". One theme emerged relating to stuttering modification; "discomfort followed by

confidence". Three themes emerged relating to cognitive restructuring, "shared experiences", "paradigm shift", and "self-therapy".

Figure 1: search strategy flow chart

| Total no. of studies following an Ebsco search of Medline, Psychinfo and Cinahl databases **N=270** | Total no. of studies following electronic search of 5 applicable journals **N=210** | Total no. of studies identified following hand searching of reference lists against inclusion & exclusion criteria **N=0** |

Total no. of studies identified following screening of titles against inclusion and exclusion criteria

24 (database) + 2 (journals)

N=26

Total no. of studies identified following screening of abstracts against inclusion and exclusion criteria

21 (database) + 1 (journal)

N=22

Total no. of studies identified following full text analysis and critique

N= 10

Total no. of studies included in the current literature review

N= 10

Chapter 3: Synthesis

Fluency Shaping Interventions

Theme 1: Unsustainability

A predominantly qualitative study explored the experiences of nine women who stutter via semi-structured, individual interviews. With a greater prevalence of male AWS in the worldwide population, the study sought to provide an insight into the current views and perceptions of women who stutter, including their experiences of receiving SLT interventions (Nang et al, 2018). Key findings in relation to the women's experiences of fluency shaping techniques were perceptions of unusual sounding speech and an inability to align fluency techniques with self-identity. This is illustrated by a participant who described not feeling like her *"…bubbly self"* (Nang et al, 2018 p.1252) due to the influence of fluency shaping techniques on her speech rate. Furthermore, there was felt to be an impact on how others perceived the women when using fluency techniques. One participant described how her partner regarded her with alarm when she used her fluency techniques, while another participant felt that fluency techniques caused her to sound less intelligent. Fluency techniques were therefore felt to be unsustainable for use and incongruent with the women's lives and personalities.

The small sample used in this study was appropriate for collecting rich data to understand the experiences of the women (Aveyard, 2019). Whilst the sample was naturally generated via a stuttering support group, improving the ecological validity of the study, they were reasonably homogenous with regards to age (over 30), high education levels, high employment status, and non-severe impact on quality-of-life scores via the Overall Assessment of the Speaker's Experience of Stuttering (OASES) (Yaruss & Quesal, 2010). A more diverse sample of ages, educational and employment statuses, and impact on quality of life, will provide additional insights into the stuttering therapy experiences of women.

A qualitative analysis of the SLT experiences of adults who covertly stutter was undertaken via phenomenological open-ended interviews with six participants (Douglass et al, 2019). Interventions with a singular focus on fluency shaping were discussed by two participants, although it should be noted that these reflections were historical and based upon childhood experiences of therapy. One participant discussed his feeling that a singular goal of fluency as the main therapy outcome was *"short sighted"* (Douglass et al, 2019 p.8) and he felt

unprepared to manage the covert aspects of his stutter once discharged from therapy. He identified that whilst the techniques provided in therapy did appear to work, he lacked an in depth understanding of the underlying affective, behavioural, and cognitive aspects of his stutter. Once therapy was complete, he described his avoidant behaviours and struggles returning once again. Another participant mirrored the feeling that fluency goals alone were not sufficient to sustain management of his stutter during everyday life. He describes how, once discharged from therapy, his parents questioned why his dysfluencies continued at home. There is potential for bias amongst the researchers and participants, with the first two authors being qualified SLPs and knowing participants personally through the stuttering community. Four of the six participants were also qualified or student SLPs and all were involved in stuttering support groups. To reduce the impact of this bias, the first and second authors journaled their own experiences of stuttering treatments and discussed their feelings towards participant's narratives to separate their own perspectives from those of the sample and be more analytical in their approach.

In Monteagudo et al's (2017) mixed methods, treatment efficacy study, examining the use of actor's vocal exercises to facilitate fluent speech for AWS, a program completion questionnaire was used to gather the perceptions of participants towards the intervention and its impact on their fluency. The techniques consisted of breathing and relaxation exercises and a focus on self-awareness, with a view to preparing actors for performance. The qualitative data provided in this study is limited, with a focus on the collection of quantitative data to inform the efficacy of this intervention for AWS. However, there is some participant narrative which adds to the theme of unsustainability where fluency is the main goal, whereby participants indicated that they would have preferred a greater focus on sustainability of the techniques in their everyday lives. One participant identified that she would have liked to practice application of the techniques in a wider variety of contexts, whilst another participant indicated a preference for use of the techniques during conversational speech. The small (N=4) and relatively homogenous sample (all under 25) of this study warrants caution when interpreting the results. A wider variety of ages and more in-depth qualitative methods focusing on the perceptions of this treatment for fluency would add to the evidence base for this intervention.

A further mixed methods efficacy study examined the use of video self-modelling (VSM) as a sustainability technique to recover fluency following fluency shaping intervention (Harasym et al, 2015). A small sample of three participants self-referred to the study following completion of a fluency shaping programme. Participants were instructed to view videos of themselves using the speech restructuring techniques learnt during the programme. The qualitative aspect of this study involved a post-treatment exit interview conducted by the first author. There is no discussion of how the interview questions were formulated by the authors, nor any discussion of how qualitative data was analysed. However, participant narratives contribute to the theme of unsustainability for the maintenance of fluency techniques. Participants indicated that whilst they found VSM motivating and useful for recall of fluency techniques, they found it difficult to apply these techniques to all situations. One participant identified increased fluency when talking with friends and less fluency when talking in a work-related context, whilst another participant acknowledged that using fluency techniques in less stressful situations felt easier compared with more stressful contexts.

A single case study provided a thematic analysis of an individual's SLT experiences as a person who stutters covertly, identifying a further addition to the theme of unsustainability for fluency shaping techniques (Douglass et al, 2020). Convergent with Douglass et al's (2019) study of individuals who stutter covertly, the participant described the inability to sustain her fluency shaping techniques outside of the clinic room. It should be noted that whilst the phenomenological interview was appropriate for collecting rich data regarding the experiences of the participant, the single case design of this study reduces generalisability to the population of AWS covertly, and overtly, and should therefore be regarded as an exploratory insight into one individual's experiences. Further, the single case participant experienced fluency shaping intervention during young adulthood, providing a more adult-focused insight than Douglass et al's (2019) participant's reflections on their childhood experiences.

In conclusion, findings for this theme identify a pattern of unsustainability where treatment focuses solely on fluency. This unsustainability was due to some participant's lack of self-awareness with regards to the underlying emotional aspects of their stutter and a lack of support provided by clinicians to discuss and explore these emotional aspects with clients.

Indeed, Nang et al (2018) conclude the importance of integrating emotional support with fluency shaping therapy. A proportion of reflections are based on childhood accounts of fluency therapy (Douglass et al, 2019) which should be kept in mind when considering these narratives. Furthermore, the two remaining studies included in this theme (Harasym et al, 2015; Monteagudo et al, 2017) do not provide rich data via their qualitative methods and so can only be considered a small part of the overall picture of client's experiences of fluency shaping techniques.

Theme 2: Shame & Failure

A theme of shame and failure arose from the accounts of participants receiving fluency focused therapy during childhood, adolescence, and young adulthood (Douglass et al, 2019;2020). Shame arose from the reactions and tones of those within the individual's family and the SLPs leading fluency shaping groups or individual therapy (Douglass et al, 2019;2020). It should be noted that the aforementioned studies focus on the experiences of people with a covert stutter, that is, the ability to "pass" as fluent using self-created tricks such as word switching, avoidances, and choosing silence (Douglass et al, 2019). Passing as fluent was already something that individuals felt they could achieve via their own, albeit emotionally unhelpful, coping methods. Rather, it was the underlying feelings towards their stutter that individuals required support with, although this was not always realised until alternative therapies, such as stuttering modification, were used later in adulthood (Douglass et al, 2019;2020). This failure to address the cognitive and emotional aspects of stuttering, resulted in breakdowns of fluent speech outside of the clinic room, leaving individuals with a sense of failure and shame (Douglass et al, 2019;2020)

A participant of Douglass et al's (2019) study described the reaction he received from a friend whilst using fluency shaping techniques, in which a peer mimicked and questioned his use of easy onsets. The participant went on to describe how, at the time of this event, he felt he could not discuss these issues with his SLP and this resulted in feelings of guilt. This account mirrors the thoughts of Nang et al's (2018) participants whereby the effect of fluency shaping on a person's speech may outweigh the anxiety around stuttering freely.

Douglass et al's (2020) single-case participant goes further, by describing her adulthood experience of the failure and shame she felt in the disappointment of others when she could

not sustain her fluency techniques. During young adulthood, the participant attended a two-week fluency shaping programme where she described a culture amongst the SLPs in which fluency techniques were held up as, "*perfect*" (Douglass et al, 2020 p.14) and a guaranteed "cure" for stuttering. The participant recalled how fluent speech demonstrated during assessment was "failed" if the fluency shaping techniques were not observed to be used. In addition, SLPs advised the participant that breakdowns in fluency outside of the clinic would be due to the participant's lack of skill or effort in implementation of the technique. The participant goes further to describe the detached nature of the SLPs, whereby feelings of shame were not discussed, and a counselling aspect was not present as part of the course. Instead, the focus was solely on intensive practice of fluency techniques, resulting in the participant feeling reprimanded and unable to speak freely. This experience resulted in internalised shame and a decision to return to covert behaviours and "hide" her stutter.

This theme of failure continues, albeit viewed in a different manner, by a participant of Harasym et al's (2015) video self-modelling study. One participant describes having varying feelings following the viewing of his video, in which he uses fluency shaping techniques. In one regard, the participant found the viewings motivating but at other times he described feeling frustrated at his varied replication of the techniques and questioned, *"why can't I do it again?"* (Harasym et al, 2015 p. 41). Whilst this participant channelled this frustration as motivation to keep practicing fluency techniques, there is nevertheless a sense of failure within this narrative.

In conclusion, participants within this literature review appeared to blame themselves when fluency techniques broke down, this was re-enforced by the attitudes of clinicians and the disappointment of family. However, to provide a more balanced view of the use of fluency techniques, one participant discussed positive adulthood experiences of an integrated therapy approach, whereby fluency shaping techniques and stuttering modification were used flexibly. He described how allowing himself to stutter on some occasions and using some fluency shaping techniques for other occasions felt like a *"good fit"* for him (Douglass et al, 2019. P.10).

Stuttering Modification

Theme: Discomfort followed by confidence

A recurring theme related to stuttering modification was the participant's initial discomfort towards stuttering freely, followed by acceptance and increased confidence to stutter (Douglass et al, 2019; Everard & Howell, 2018). This appeared to be especially pertinent to those participants with ingrained patterns of covert stuttering (Douglass et al, 2019;2020). In addition, a further narrative of one participant described experiencing peer pressure to openly stutter, generated by group therapy dynamics (Douglass et al, 2020).

A mixed methods study explored the experiences of AWS who had received stuttering modification therapy (Everard & Howell, 2018). Eight participants attended a stuttering modification course within a group therapy context. A key strength of this study was the focus group which participants attended immediately following therapy. The gathering of client's perspectives at the point of intervention, rather than a retrograde method of qualitative data collection, was a recommendation of Johnson et al's (2016) literature review of the therapy experiences of AWS. Furthermore, a semi-structured interview was conducted six months post-intervention to allow for participants thoughts on carry over of the techniques. One of the authors acknowledged her biases as both an AWS and an SLT, employed by the centre where the stuttering modification techniques are developed and delivered. Participants identified feelings of discomfort at the aspect of the course which involved stammering freely to members of the public, although this was later identified as *"beneficial"* (Everard & Howell, 2018 p.1279) in increasing confidence to speak to unknown people. Further, one participant identified the personal challenge he faced in disclosing his stammer to those known to him, highlighting how it cannot be assumed that stuttering in front of loved ones will be easy compared to stuttering in front of strangers.

This discomfort, followed by a paradigm shift, was mirrored by Douglass et al's (2019) participants with covert stutters. Participants initially experienced a long, slow process of confronting and accepting their stutter. One participant described a year-long avoidance of using voluntary stuttering techniques and described the novelty of openly stuttering as being, *"like trying to walk on one foot all of a sudden"* (Douglass et al, 2019 p.10). Another

participant described openly stuttering as feeling *"dangerous"* (Douglass et al, 2019 p.10) due to the uncertainty and fear of how he would sound. Much as Nang et al's (2018) participants described fluency shaping as feeling unnatural, stuttering modification techniques were also, initially, described as feeling strange after the long, habitual concealment of a stutter. However, once participants began to understand the purpose of stuttering modification, they experienced a paradigm shift in the way they viewed their stutter (Douglass et al, 2019;2020). This is illustrated by one participant's descriptions of a stuttering modification course as being, "*a lot of awful experiences wrapped up into one"* (Douglass et al, 2019, p.10) due to the challenge of confronting the covert stutter, followed by the realisation that this was, in fact, congruent with her needs.

In conclusion of this theme, there is some evidence to illustrate how challenging and confronting stuttering modification techniques may initially be for clients, especially for those who stammer covertly. However, for some individuals, this period of discomfort may be followed by a breakthrough in how the stammer is viewed and understood, resulting in acceptance and confidence. It is vital that SLTs take the time to sensitively discuss and understand an individual's stammering experiences and consider the client's level of readiness to make changes. Even amongst Everard & Howell's (2018) participants with overt stammers, there were indications of discomfort at the confrontational element of the therapy. It was acknowledged that those individuals with highly covert stammers would likely find intensive stuttering modification too unsettling (Everard & Howell, 2018). The approach taken to stuttering modification techniques may therefore depend on the covert or overt nature of a stammer.

Cognitive Restructuring

Cognitive restructuring techniques included, bibliotherapy (Gerlach & Subramanian, 2016), relaxation and breathing techniques via yoga (Kauffman, 2016), counselling (Lindsay & Langevin, 2017) and cinematherapy (Azios et al, 2020).

Theme: Shared Experience

A qualitative analysis sought to examine the impact of bibliotherapy on the learning experiences of SLP students and its use as a therapeutic intervention for AWS (Gerlach & Subramanian, 2016). For the purposes of the current literature review, the author has

considered the perceptions of AWS only and therefore the term "participants" will refer to the participants who stutter and not the SLP students. Five AWS and six SLP students engaged in the joint reading and discussion of a stuttering memoir. Semi-structured interviews were conducted immediately following the final bibliotherapy session and questionnaires were provided for reporting of thoughts occurring post-intervention. It should be noted that one variable within this study was the fact that all participants were receiving their usual therapy for stuttering alongside the bibliotherapy intervention. This "therapy as usual" variable may have influenced participant's perceptions of bibliotherapy. Further, it should be noted that participants received the intervention within their usual therapeutic contexts, therefore three participants received bibliotherapy within 1-1 sessions and two participants received bibliotherapy in group therapy. The group context may have influenced participant's responses during post-intervention discussion, although the inclusion of the post-interview questionnaire may have alleviated this effect.

A strong theme to emerge from this study was that of "shared experiences". Participants described relating to the author of the memoir and their experiences, resulting in a sense of reduced isolation and aloneness. Specifically, participants strongly related to the author's experiences of being advised to slow down and having her sentences finished by others (p.8). Another participant valued a shared experience with the author, whereby she described refusing to accept her stutter. He discussed having a similar unrealistic expectation of himself and valued the realisation that he had not been alone in feeling this way. Another participant was able to relate to the author's coping strategies, both beneficial and harmful, and link these with his own experiences. These shared experiences resulted in feelings of empowerment and motivation for the participants, illustrated by one participant's decision to cease concealment of his stutter with thanks to the author's memoir.

In a similar vein to bibliotherapy, cinematherapy has also been explored as an intervention for stuttering (Azios et al, 2020). A preliminary, mixed methods study was employed to understand the perceptions of four AWS towards cinematherapy and what impact this had on their cognitive and affective responses towards stuttering. The four-week cinematherapy programme consisted of each participant viewing one film per week relating to stuttering, followed by individual discussions with an SLP student trained in the use of counselling

techniques. Semi-structured interviews were carried out to gather qualitative data on completion of the programme. The sample was homogenous with regards to age and education demographics, with all participants being under the age of 25 and enrolled in university degree programmes. In contrast to Gerlach & Subramanian's (2016) bibliotherapy study, cinematherapy was carried out without the addition of any other stuttering therapy. This strengthens the credibility of participant's perceptions with regards to how cinematherapy impacted on their cognitive and affective responses to stuttering.

Mirroring the experiences of Gerlach & Subramanian's (2016) participants, individuals identified with the characters and felt less alone in their experiences. One participant identified so strongly with a character that she felt she could have "…*narrated that part of the movie myself, it was my life."* (Azios et al, 2020 p407). Specifically, it was the character's realisation that he was not alone in his stuttering experiences that helped the participant form the same realisation. The same participant also identified that it was not the films themselves which she perceived to be helpful, but the cathartic discussions the films prompted.

Another participant discussed identifying with a documentary character who described not talking openly about stuttering. The participant related this to experiences within his own family, whereby stuttering was not discussed, resulting in feelings of isolation. As a result of this shared experience with the documentary character, the participant was motivated to raise this issue with family members, resulting in a positive and open discussion about stuttering. In addition, Douglass et al's (2019) participant described group cognitive restructuring therapy as promoting feelings of belonging, community, and being supported.

In conclusion, the above studies have highlighted the variety of ways in which cognitive restructuring methods can result in a sense of togetherness, shared experience, and empowerment for people who stammer. Where individuals do not feel inclined to join a group therapy context, bibliotherapy or cinematherapy may potentially be utilised to reduce feelings of isolation and loneliness. Further studies utilising more diverse samples and quantitative efficacy methods will strengthen the preliminary evidence base for cinematherapy and bibliotherapy.

Theme: Paradigm Shifts

Paradigm shifts refer to the altered perceptions of AWS towards their stutter following cognitive restructuring interventions. Within the included cognitive restructuring studies, paradigm shifts encompassed, making peace with stuttering (Douglass et al, 2020), reduced anxiety (Kauffman, 2016; Lindsay & Langevin, 2017), confronting stuttering (Gerlach & Subramanian, 2016) and increased self-efficacy and empowerment (Azios et al, 2020).

Kauffman (2016) carried out a small-scale, preliminary study using mixed methods, to explore the use of yoga as a complementary therapy for stuttering. Qualitative data were collected via open-ended questionnaires, followed by a thematic analysis of responses. It is worth noting that the author did not employ an additional analyst to form a consensus around the codes and themes, reducing the rigour of the data analysis. However, all data were collected at baseline, post-intervention and at a four-month review, allowing outcomes to be thoroughly measured and evidence the longevity of intervention effects.

Yoga has been included within the cognitive restructuring section, due to its use of relaxation techniques to reduce the anxiety felt by people who stutter. Breathing techniques were used as a component of the intervention which participants utilised in their everyday speech. It is not clear as to whether breathing techniques were used by participants to facilitate fluency or to improve feelings of relaxation whilst openly stuttering. Nevertheless, the four participants identified cognitive and affective shifts towards their speech following the yoga intervention. One participant described using the breathing techniques in her workplace to gain control of her speech and reduce physical tension, she also identified a reduced sense of hopelessness with regards to her speech. Another participant identified feeling an increased sense of presence in the moment when speaking, rather than feeling anxious about difficult, upcoming words. He also reported a paradigm shift in the way he felt after speaking to others, reporting reduced feelings of frustration and worry (p.122). This participant had maintained these gains at a four-month follow-up.

Two of Gerlach & Subramanian's (2016) participants described the cathartic effect of bibliotherapy, with a paradigm shift in how they felt about confronting their stutters. Their previous fears of reliving negative stuttering experiences were replaced with the realisation that talking openly about stuttering was, *ultimately good for the soul"* (Gerlach & Subramanian, 2016 p.9) and enhanced feelings of confidence. Other participants described a newfound understanding of previously used coping mechanisms as being detrimental to

their wellbeing. One participant described his re-evaluation of the way he suppressed his emotions as a safeguarding strategy and how this had prevented him from fully experiencing relationships. A newfound hope for the future was also identified, along with improved self-efficacy by reading about the successes of other AWS. This hope is illustrated in one participant's decision to challenge his future self to not allow his stutter to prevent him from achieving his goals, including having everyday conversations with others.

Cinematherapy was also shown to boost the self-efficacy of participants by helping them to shift their perspectives to a more solution-focused outlook (Azios et al, 2020). Two of the cinematherapy participants demonstrated this perspective shift by actively seeking out disability support services at their university following cinematherapy. Participants also described increased self-reflection, with one participant reporting an influx of memories relating to the impact of his stutter on his whole life. Another participant described how cinematherapy had caused a paradigm shift by helping him to differentiate his own views on stuttering from those of society, *"people think this [stuttering] is a problem. I am not sure if I think that way now."* (Azios et al, 2020 p.408).

Douglass et al's (2020) single participant also identified a shift in her perceptions towards her stutter, through the cognitive-behavioural aspects of therapy. Through identification and exploration of her underlying feelings towards her stutter, she experienced a powerful realisation that hiding her stutter made her feel worse than openly stuttering. A new goal of being more accepting of her stutter was central to her paradigm shift.

As a final addition to this theme, Lindsay & Langevin (2017) used semi-structured interviews and grounded theory analysis to explore the perceptions of AWS receiving psychological counselling as a co-occurring intervention with stuttering therapy. A further aim of the study was to examine the help-seeking behaviours of AWS in comparison to the help-seeking behaviours of other populations explored in the literature. To understand a variety of help-seeking behaviours, the nine participants included those who did, and those who did not, access the psychological intervention offered as part of the study. It should be noted that the psychologist who provided the counselling intervention had a high knowledge level regarding stammering. This reduces the ecological validity of the study due to the variable knowledge of stammering amongst counsellors in general, i.e., a counsellor with limited knowledge of stammering would not be able to provide the same quality of individualised

support as a counsellor well versed in the effects of stammering on emotional wellbeing. Aside from the main aims of this study, participants were also asked to share their life stories and experiences of treatment for stuttering. Mirroring the experiences of those within the bibliotherapy (Gerlach & Subramanian, 2016), cinematherapy (Azios et al, 2020) and single case (Douglass et al, 2020) studies, one participant identified that the cognitive restructuring aspects of previous treatment had encouraged him to reflect upon and accept his stutter.

Further, three of the six participants accessing the counselling intervention indicated that counselling had reduced emotional distress and a further three participants perceived that counselling had supported their speech progress, although the study does not discuss how or why this may be so, i.e., improved fluency or improved freedom to stutter. Within the non-participating group, participants discussed their perceptions of how counselling may support AWS. Two participants felt that counselling would help to improve the self-esteem and self-confidence of AWS and recognised that counselling could support altered perceptions of stuttering by enabling the confrontation of underlying feelings and emotions. It should be taken into consideration that it is unclear as to what model was used for the counselling (i.e., Cognitive Behavioural Therapy, Acceptance and Commitment Therapy etc.) nor what type of stuttering intervention was running concurrently with the counselling (i.e., fluency shaping or stuttering modification). As such, qualitative data on the topic of perceptions towards psychological counselling is not fully clear and a salient conclusion is not easy to draw from this data.

In conclusion, there is some current and compelling qualitative evidence to support the fact that cognitive-behavioural interventions, in their many forms, can result in a paradigm shift within the mindset of an AWS. Qualitative exploration of perceptions towards specific counselling techniques used alongside specific stuttering therapy interventions, will provide a clearer picture of the use of integrated professional services and how these may support paradigm shifts for AWS.

Theme: Self-Therapy

A final theme to emerge from the data around cognitive restructuring techniques was that of self-therapy. Self-therapy appeared to occur as an ongoing result of cognitive-behavioural

aspects of stuttering intervention or spontaneously evolved as a self-managed cognitive-behavioural therapy. Participants engaged in self-bibliotherapy and self-cinematherapy through the independent reading and watching of relevant literature and films. This is illustrated by one participant of Azios et al's (2020) cinematherapy study who began to carry out internet searches of inspirational speeches about stammering following viewing of the allocated cinematherapy films. One participant of Douglass et al's (2019) study described engaging in self-bibliotherapy to self-manage his stutter. He read the stories of celebrities who stuttered and perceived a shared experience and connection with the authors. This is mirrored by the thoughts of Azios et al's (2020) cinematherapy participant who strongly identified with the film she viewed, seeing parallels to her own life.

In addition, a stuttering support group appeared to elicit self-therapy and self-management in one participant (Douglass et al, 2019). The participant was so motivated by his experiences of his stuttering support group that he began to set his own voluntary stuttering challenges.

In conclusion, self-therapy appears to be broad and consists of attending support groups, stuttering conferences, learning how to critique stuttering research, reading stuttering memoirs (Douglass et al, 2019) and watching inspirational speeches online (Azios et al, 2020). Whilst perceptions towards therapeutic contexts, such as group therapy, are not the aim of the current literature review, the author felt that the "self-therapy" aspect of this narrative was worth mentioning as a form of self-administered cognitive-behavioral intervention that appears to be of value to the participants of these studies.

Chapter 4: Conclusions

4.1 Conclusion & Recommendations for Practice:

Findings present some key considerations for clinical practice. Whilst themes for fluency shaping were negative, several accounts were historical and not reflective of current adulthood experiences of fluency shaping. A key concern with fluency shaping techniques was the neglect of individual's psychological wellbeing during therapy and participants described feeling like they had failed when they could not sustain or re-create fluency techniques. With regards to stuttering modification, participants described initially feeling challenged and confronted, particularly for those with a covert stammer, by being asked to explore and accept their stammer. Once this initial discomfort had passed, some participants described feeling more at peace with their stammer. Cognitive restructuring techniques, in all forms, were valued by participants and altered perceptions towards stammering.

In conclusion, SLTs should be aware that clients who express a preference for fluency shaping techniques may benefit from understanding that fluency shaping may not be fully sustainable or easily replicated in all situations and that this is no reflection on their effort or skills. Clients may benefit from being asked to consider the contexts in which they wish to use fluency shaping and explore some cognitive restructuring options to support wellbeing and confidence in those moments when fluency shaping may be unrealistic. This is in line with the "pick and choose" approach concluded in Ventakagiri's (2009) survey of the preferences of AWS for fluency or freedom to stutter. SLTs should be aware that stuttering modification techniques may not be instantly embraced by clients, especially those with habitual covert stammers, and should therefore be implemented with sensitivity. SLTs may benefit from engaging in additional training around counselling techniques and/or working collaboratively with psychology colleagues to best support the psychological wellbeing of

clients. SLTs may also be well advised to understand the use of biblio- or cinematherapy to promote a sense of connection to other AWS, especially for those clients who are feeling isolated, have a limited support network, or are reluctant to join stammering support groups.

4.2 Strengths & Limitations:

The author firstly acknowledges her own limitations as a novice researcher, compared with the skills and methods of a more experienced researcher. Data saturation of literature and themes cannot be fully guaranteed due to a lack of additional analysts. Furthermore, where mixed methods studies were included in the final literature set, only the qualitative aspects of the studies were critiqued and analysed for themes. The implication of this is the potential loss of holistic findings from the studies (Aveyard, 2019), although quantitative aspects of the studies would not have contributed to the overall research question. It should also be noted that two of the key papers included in this review, which provided large amounts of qualitative data to address the research question, included the same lead author (Douglass et al;2019;2020). Due to the subjectivity of qualitative analysis, including more than one paper with the same author somewhat limits the variety of interpretations of the data. However, both papers had good credibility by using several analysts to discuss and agree upon key themes.

The author has endeavoured to demonstrate rigour and transparency through thorough documentation of the systematic search strategy and appraisal of the included studies. The studies identified provided sufficient data to answer the aims of the literature review. The author considered her own biases against fluency shaping methods and endeavoured to remain cognisant of this during analysis of fluency shaping studies. In addition to this acknowledgement of bias, the author also acknowledges her limited experience of delivering stammering therapies and in working with AWS as a student SLT.

4.3 Recommendations for Future Research:

Of note is the lack of UK based studies, further qualitative studies exploring the experiences of AWS receiving therapy within a UK context will be of benefit for the evidence-based practice of UK based clinicians. Considering the limited quantity of rich data regarding adult experiences of fluency shaping gained from this review, it will also be worthwhile to undertake phenomenological research into the current experiences of fluency shaping. Further, a study combining fluency shaping methods with a form of psychological support may provide an interesting insight into how these two therapies combined could support AWS in a more holistic, non-judgemental manner. Considering the value that AWS place upon therapy incorporating psychological support, it would also be beneficial to understand how confident and knowledgeable SLTs feel about being able to provide this support and the perceived facilitators and barriers to providing this input for AWS.

Personal Development Plan

Strengths & Areas for Development:

- Before undertaking my dissertation, I regarded myself as having little to no experience in conducting a search of the literature, identifying gaps in the evidence base, synthesising the evidence base, and extracting themes from the literature (see appendices 4 & 5). Following completion of my dissertation, I now feel that I have developed my confidence and skills in using databases to create a focused search of the literature, i.e., using search terms and limiters. Further, I have developed my understanding of how to approach identifying and grouping themes from qualitative data. I have also developed my understanding of qualitative research design terminology, i.e., ethnographic, phenomenological. However, I feel less confident in my understanding of qualitative data analysis approaches beyond thematic analysis, i.e., grounded theory.

- A continuing area for development will also be to improve my skills in reading and understanding quantitative research designs and identifying the validity and reliability of these designs. As noted in my EBP self-audit (see appendices 4 & 5), I feel that I have a need to develop my understanding of quantitative study designs, sampling strategies and methods of analysis.

- With regards to my academic writing, I feel that this has improved over the course of my degree. Specifically, I feel that I have developed skills in summarising research, drawing out commonalities between different studies, and identifying areas of disagreement or gaps within the evidence base, which will support me to form appropriate rationales in my clinical decision making. However, I do identify that my

skills in forming a cohesive academic discussion will require development, as I continue to increase my understanding of the credibility of research designs and findings.

Developing & Maintaining Skills:

- I will maintain the reflective skills I have developed during my studies. This will help me to identify gaps in my skills and knowledge and seek support.
- I will make use of my lecture notes and published guides on how to read, understand and apply the evidence base to my practice i.e., looking up terminology pertaining to study designs, sampling methods, data analysis.
- Making use of the expertise, skills and knowledge of more experienced colleagues and supervisors through informal discussion and formal supervision.
- Maintaining and updating my RCSLT membership to make use of RCSLT member online resources and receipt of the Bulletin for current research articles.
- Attending training opportunities and conferences to maintain awareness and understanding of current issues and EBP, e.g., NAPLIC conference.

Strategies for Implementing Evidence-Based Practice (EBP):

- Discussing and trouble-shooting plans for implementing interventions with experienced colleagues/management.
- Tracking change and progression via the use of outcome measures to monitor the effectiveness of interventions.
- Working collaboratively with clients, families, and other professionals within the multi-disciplinary team (MDT) to discuss and explain the evidence base and its importance for goal setting and choosing interventions/therapeutic techniques.
- Reviewing progress with clients and remaining flexible in application of the evidence base, i.e., to ensure interventions are meeting the needs of the individual.

Facilitators & Barriers to EBP:

Barriers-

- Limited time to attend training opportunities and conferences, research the evidence base, attend journal clubs, or read/critique research articles.

- A culture of using the same interventions and techniques within services, where funding for new resources is limited and/or experienced SLTs have become highly efficient at using the same interventions and may be reluctant to spend time trialling new ones.

Facilitators-

- Use of diaries/online calendars and making use of NQP protected time for searching, reading and appraisal of literature
- Making use of informal time, i.e., break times/administrative time, to discuss current issues and the evidence base with colleagues and to keep up to date with relevant Twitter discussions and research

Opportunities for Development & Maintenance of Skills:

- Attendance of journal clubs
- Continuing use of professional SLT Twitter account to monitor and remain informed of any current research, new interventions, conference/CEN/training opportunities
- Use of RCSLT resources and RCSLT online training opportunities i.e., You Tube videos with RCSLT expert advisers
- Use of open access research articles, NHS evidence website, NICE research articles and the What Works database

Word Count: 8,234

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Appendices

Appendix 1: Search Log

- **What are the current experiences and perspectives of adults receiving treatment for stammering?**

date of search	Database/Journal/Abstract Search	search terms	limiters	No. of results	duplicates from previous searches	relevant studies identified (excl. duplicates)
21.4.21 Search no.1	Databases: Cinahl, Medline, Psychinfo	Stammering AND experiences AND treatment	Peer reviewed Full text 2015-2021 Boolean/Phrase Exact duplicates removed	78		18
21.4.21 Search no.2	Databases: Cinahl, Medline, Psychinfo	Stammering AND perceptions AND therapy	Peer reviewed Full text 2015-2021 Boolean/phrase Exact duplicates removed	53	6	4
21.4.21 Search no.3	Databases: Cinahl, Medline, Psychinfo	Stuttering AND perceptions AND intervention	Peer reviewed Full text 2015-2021 Boolean/Phrase Exact duplicates removed	23	5	0

21.4.21 Search no.4	Databases: Cinahl, Medline, Psychinfo	Stuttering AND experiences AND management	Peer reviewed Full text 2015-2021 Boolean/Phrase Exact duplicates removed	18	2	0
21.4.21 Search no.5	Databases: Cinahl, Medline, Psychinfo	Stuttering AND experiences AND therapy	Peer reviewed Full text 2015-2021 Boolean/Phrase Exact duplicates removed	98	14	2
21.4.21 hand search	Journal of Fluency Disorders	Stuttering AND perception AND treatment	2015-2021 Peer reviewed Exact duplicates removed	50	3	2
21.4.21 hand search	International Journal of Speech & Language Pathology	Stuttering AND perception AND treatment	2015-2021 Peer reviewed Exact duplicates removed	39	0	0
21.4.21 hand search	Journal of Speech, Language and Hearing Research	Stuttering AND perception AND treatment	2015-2021 Peer reviewed Exact duplicates removed	84	1	0

21.4.21	International Journal of Language and Communication Disorders	Stuttering AND perception AND treatment	2015-2021 Peer reviewed Exact duplicates removed	28	1	0
23.4.21	Journal of Communication Disorders	Stuttering AND perception AND treatment	2015-2021 Peer reviewed Exact duplicates removed	9	1	0
23.4.21 Reference list search	All included literature N=21		2015-2021 Adult only 18 + Qualitative data of experiences/perceptions of treatment for stammering		5	0

Appendix 2: Data Summary Table (adapted from Aveyard, 2019)

	Author/Date/Title/Geographical Area	Study Aims	Study Type/Methods	Key Findings	Strengths & Limitations
1.	Monteagudo, Sawyer & Sivek-Eskra (2017) *The effects of actor's vocal exercises for relaxation on fluency: a preliminary study* USA	To investigate the efficacy of Kristin Linklater's vocal relaxation techniques on improving the fluency of AWS	Mixed methods: qualitative methods included a self-report log and program completion questionnaire	Qualitative findings: participants reported a realisation of the impact physical tension can have on dysfluency, how breathing techniques can help recall of fluency shaping techniques, an improved focus on breathing & relaxation, and the opportunity to focus on what tension feels like.	very small sample N=4 2 participants did not return completed logs 1 author had previous experience of the Linklater techniques through a theatre degree-potential for bias towards intervention
2.	Nang, Hersh, Milton & Re Lau (2018) *The Impact of Stuttering on Development of Self-Identity, Relationships, and Quality of Life in Women Who Stutter* Australia	To explore the experiences of women who stammer and how gender may have impacted on women's experiences of stammering	Qualitative: semi-structured interviews	7 participants spoke about experiences of speech restructuring techniques, 5 reported feeling that this technique resulted in unnatural speech with impacts on their sense of self.	Rich data Small sample N=9 No women under 30 included in sample No representation of women with lower levels of education
3.	Lindsay and Langevin (2017) *Psychological counselling as an adjunct to stuttering treatment: client's experiences and perceptions* Canada	To understand client's perceptions and experiences of psychological therapies offered alongside treatment for stammering	Qualitative- semi-structured interviews & grounded theory analysis	PWS value psychological therapies being offered alongside stammering treatment and provide insights into	Rich data Variation of participant's demographic information considered to maximise generalisability Minimal representation of women

				how the two interventions may be integrated	Psychologist providing therapy in this study had a high level of knowledge re-stammering. May not be applicable to all psychology services offered
4.	Gerlach & Subramanian (2016) *Qualitative analysis of bibliotherapy as a tool for adults who stutter and graduate students* USA	To explore the use of bibliotherapy as a therapeutic intervention for AWS (and as an educational experience for SLP students)	Qualitative- questionnaires and interviews and inductive qualitative analysis	AWS reported an impact on the cognitive and affective aspects of their stammer.	No representation of female AWS 2 participants engaged in bibliotherapy in a group, questionnaire responses may have been influenced by this context Potential for biased answers from clients and students due to the second author being a clinical supervisor
5.	Douglass, Constantino, Alvarado, Verrastro (2019) *Qualitative investigation of the speech-language therapy experiences of individuals who covertly stutter* USA	To understand the speech therapy experiences of people who covertly stammer to inform treatment planning and best practice	Qualitative- real time video interviews with phenomenological interview questions	Explicit goals, personalised therapy plans, strategies to address other aspects of stammering beyond fluency, self-education and education of others, are all valued aspects of therapy by AWS	Small sample N=6, all were members of support groups and 4 were studying or practicing SLPs- not generalisable to all adults who overtly or covertly stammer. Rich data from knowledgeable participants, most participants also led support groups for AWS
6.	Douglass, Kennedy & Smith (2020) *Speech-Language Therapy Experiences Across the Life Span of an Individual Who Covertly Stutters: A Thematic Analysis* USA	To explore the SLT experiences of an individual who covertly stammers throughout her lifespan (age at time of study-mid 40s)	Qualitative single case design- open ended, ethnographic interview and thematic analysis	5 themes: non-individualised therapy plans and goals, blaming and shaming associated with speech therapy and stammering, positive self-regard during speech therapy, use of avoidance strategies and relation to speech therapy, the evolution of therapy goals	Single case design N=1- cannot be generalised to the population of interest. Rich data collection across an individual's lifespan provides some insight into how experiences may change at different life stages. Participant also had an additional diagnosis impacting on daily function, omitted to protect identity. May have added implications for experiences of SLT for covert stammering

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7.	Azios, Irani, Bellon-Harn, Swartz & Benson (2020) *The Utility of Cinematherapy for Stuttering Intervention: An Exploratory Study* USA	To explore the use of cinematherapy as an intervention for AWS to address underlying emotional and cognitive aspects of stammering and the impact on quality of life.	Mixed methods: qualitative aspect: semi structured interviews on completion of the intervention	5 themes: promoted vulnerability, nurtured empowerment, instigated self-reflection, incited feelings of belonging, reduced self stigma	Pilot study/small sample N=4, cannot be generalised to the overall stammering population All participants under 25, further studies using cinematherapy for clients at later life stages is warranted Rich data Cinematherapy carried out alone, rather than in conjunction with another stammering treatment.
8.	Harasym, Langevin & Kully (2015) *Video self-modeling as a post-treatment fluency recovery strategy for adults* Canada	To investigate the use of video self-modelling as a fluency enhancing strategy	Mixed methods: Qualitative aspect: exit interview	VSM intervention increased fluency in less stressful over more stressful situations, viewing VSM improved access to fluency techniques, motivation, and self-efficacy	Small sample N=3, cannot generalise results to wider stammering population No representation of women who stammer 1 participant stated that he did not pay attention to the modelled fluency techniques as instructed during watching
9.	Everard & Howell (2018) *We Have a Voice: Exploring Participants' Experiences of Stuttering Modification Therapy* UK	To explore the experiences of AWS towards stuttering modification therapy and perceived changes to stammering following this intervention	Mixed methods: Qualitative aspect: focus group post-treatment and semi-structured interview 6 months post treatment	4 main themes: affective, behavioural, and cognitive factors before therapy and motivation to start therapy, direct experience of the intervention, barriers and solutions to sustaining changes, ways that intervention had	Small sample N=8, cannot generalise results to wider stammering population Rich data Bias potential- 1 researcher is an AWS, an SLT, works at the centre where the intervention is developing and delivering the intervention used in the study

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				bought about changes	
10.	Kauffman (2016) *Yoga: potential benefits for persons who stutter* USA	To investigate the use of yoga as an intervention for reducing anxiety/physiological arousal associated with moments of stammering	Mixed methods: Qualitative aspect: open ended questionnaire to report perceived changes to communication	2 themes: increased self-awareness and reduced anxiety	Pilot study/small sample N=4, cannot generalise results to wider stammering population. Equal representation of women who stutter

Appendix 3: CASP Evaluation Table (CASP, 2018)

Author/Date	Aims clearly stated?	Qualitative methodology appropriate?	Research design addresses aims of research?	Recruitment strategy appropriate?	Data collection appropriate to research question?	Relationship between researcher and participants considered?	Ethical issues considered?	Rigorous data analysis?	Clear findings?	Valuable research?
Monteagudo, Swayer & Sivek-Eskra (2017)	No-goal of investigation of efficacy stated for an intervention, but not clear what aims are for participants i.e., improved fluency, reduced anxiety	Mixed methods approach used. Qualitative aspect involved practice logs and exit questionnaire. Main goal seems to be efficacy of treatment rather than client experiences	The quantitative aspects of the design are justified and discussed. The qualitative aspects of the design are briefly outlined and justified as a way to gather additional subjective data	Can't tell: no discussion of how or why participants were recruited to this study	Can't tell: qualitative data collection is described both as a "survey" and a "post treatment questionnaire" a copy of the questionnaire and responses is not provided	Yes: one author acknowledged potential for bias due to previous experience of the technique used. It was made clear how participants were split between two of the researchers	Protocol approved by Institutional Review Board of a University Can't tell if the aims of the research were discussed clearly with participants. It is not stated if consent was gained by participants for recordings	Can't tell: qualitative analysis is not discussed in depth beyond stating that the survey was completed in private. No thematic analysis or other methods of analysing the results has been mentioned. Low compliance for completion of practice logs stated	Qualitative findings are unclear due to lack of themes. A brief discussion of findings from the questionnaire, with some examples of respondent's answers, are presented	Value of qualitative findings is limited as main focus is on efficacy of the intervention. No discussion of further qualitative investigation. Discussion of how technique links to other evidence regarding release of tension as an integral component of stammering therapy.
Nang, Hersh, Milton & Re	Yes, explicit aims stated	Yes, the aim was to gather the	Yes, the researchers	Yes, recruitment	Yes, data collection	Yes, it is acknowledged	Yes, ethics committee	Yes, analysis procedure	Yes, findings are explicit	The authors conclude that

Lau (2018)	and the relevance and importance of the topic discussed	experiences and views of women who stammer regarding quality of life, specific management of stammering, and any specific gender related experiences of stammering	address their method (semi-structured interviews) as being suitable to explore the quality of life/management strategies of women who stutter.	strategy is clearly discussed. It is explained how and why participants were chosen (convenience sampling through a stuttering support group)	explicitly stated. A broad topic guide was used to facilitate the semi-structured interviews. Case history forms were completed pre-interview and field notes were completed during interviews by the researchers to support later analysis of themes	that one of the researchers had involvement with the stuttering support group through which participants were recruited	approved, consent gained by participants, pseudonyms used for all participants	described in detail. Interviews transcribed verbatim, qualitative analysis software used to support thematic analysis, initial collaborative coding between researchers	and discussed in relation to the research question. Respondent validation-synopsis of findings sent to participants	their research adds to the literature by identifying important findings with regards to how women experience stammering, specifically how it relates to their identity and relationships with others. The authors suggest that their research acts as a platform for future research into how clinicians can support women who stammer
Lindsay & Langevin (2017)	Yes, explicit aims stated and justified as to why these aims are important	Yes, qualitative methods appropriate to understand the experiences and views of AWS towards intervention	Yes, methods suitable for gathering perceptions and views of AWS. Suitability of methods not discussed by researchers	Yes, purposive sampling used to find participants who could address the research question. Inclusion criteria for participants discussed.	Yes, data collection explicitly stated. Semi-structured interviews, setting was discussed (in person and video conferencing) interviews were recorded and field notes taken	Can't tell-it is not discussed how participants are recruited or if there were any links between the researchers and participants	Approval gained from Human Research Ethics Board. Consent was confirmed and re-confirmed to share participant's information in the study	Yes, data analysis and rigor described in detail. Recorded data was analysed using a grounded theory approach.	Yes, findings are discussed explicitly and in relation to the research Q Description of investigator triangulation to improve validity of findings	The authors conclude that their research adds to the current literature around help seeking behaviours, specifically for AWS and summarise/discuss participant's

				Participants split into those with experience of counselling and those without						recommendations for how counselling may be integrated into stuttering treatment programmes
Gerlach & Subramanian (2016)	Yes, aims are explicitly addressed and rationalised	Yes, inductive and deductive qualitative approaches used to understand the experiences of clients receiving bibliotherapy intervention for stammering	Yes, methods suitable for exploring perceptions/experiences of bibliotherapy from AWS. Deductive methods justified to measure if client data met the 5 outcome model of bibliotherapy identified in psychology literature	Yes, recruitment strategy discussed. Participants recruited through a university SLT clinic. Inclusion criteria outlined to describe participant characteristics	Yes, data collection explicitly stated and justified. Semi-structured interviews (with a topic guide) were carried out following the final bibliotherapy session. Questionnaires were offered following the interviews to give participants the chance to express opinions separately to the interview	Can't tell, any links between participants and researchers is not addressed	Pseudonyms applied to all participants. Recruitment procedures approved by the University where the SLT clinic for the study was held.	Yes, data analysis and rigor described in detail. Thematic analysis was thoroughly outlined	Yes, findings were presented clearly. A 4 step credibility check was outlined including, participant validation, interview transcripts, discussion of personal and professional biases, and triangulation	The authors conclude that bibliotherapy may cause changes to the affective and behavioural components of stammering. Further directions are discussed, including quantitative studies to examine the efficacy of bibliotherapy.
Douglass, Constantino, Alvarado, Verrastro & Smith (2019)	Yes, aims are explicitly stated and the importance of the aims are discussed	Yes, qualitative methods are appropriate to explore perceptions/experiences of AWS covertly towards SLT.	Yes, the authors discuss and justify why they chose the methods utilised. The authors identify that qualitative methods can identify authentic	Yes, inclusion criteria for the participants is outlined. Participants were recruited via word-of-mouth through the stuttering	Yes, data collection is explicit and the methods are justified. Ethnographic semi-structured interviewing via Skype was	Yes, relationships between the participants and researchers have been explicitly discussed. 1st author knew	Participants were made aware of the study's aims and methods and signed informed consent forms to participate.	Yes, data analysis is explicitly described. Video interviews were used to gather data with open	Yes, findings are explicitly discussed in relation to the research Q. More than one analyst is used to code the data and	The authors acknowledge the current study's findings corroborate with other stammering literature in that individualised,

			and detailed narratives to begin to understand covert stuttering. Ethnographic interview questions were used in order to be sensitive to sociocultural differences.	community	conducted, with broad open questions to elicit rich data and use of "funnelling" techniques to focus in on the research topics.	the participants personally through the stuttering community, 1st and 2nd authors involved in stuttering support community. Potential biases were discussed with the remaining authors.	Pseudonyms were used to protect identities.	ended, phenomenological questions. Interviews were transcribed orthographically and reviewed using interpretive phonological analysis. Biases were noted and discussed throughout	discuss biases/agreement of themes	personalised therapy planning is essential in the treatment of stammering. The suggest further larger scale studies to understand covert stammering and the profiles of people who stammer covertly
Douglass, Kennedy & Smith (2020)	Yes, the aims and purpose are explicitly stated and justified	Yes, qualitative method appropriate for gathering the experiences of an individual	Yes, the research design is explicitly justified and discussed. Researchers wanted to document the social and emotional aspects of having a covert stammer to inform future practice and research	Yes, the researcher explains how the single participant was identified through links with a stuttering support group. Discussion of the participant's features were discussed as being appropriate for the research aims (i.e., an	Yes, methods are explicitly stated and justified. An open-ended ethnographic interview was conducted over 2 sessions via Skype. Phenomenological interview was used to allow the participant to reflect upon a lived experience. A broad topic guide and "funnelling"	Yes, the researcher explicitly discusses her own potential biases through her experiences within the stammering community. She reflected on these biases pre-interview to remain as objective and open as possible. The researcher	A pseudonym and omission of the participant's primary physical diagnosis were used to protect her identity. University Institutional Review Board approval was gained before the study began	Yes, a full description of data analysis is given. Themes were discussed and agreed upon by analysts following a multi-layered analysis of the transcript.	Yes, the findings are explicitly discussed and outlined. It is acknowledged that the study has low replicability due to how personalised the interview process with the participant was, including use of funnelling	Yes, the study acknowledges limitations to the evidence base for treatment of covert stammering and suggests this study provides valuable insight into the experiences of a person with a lifelong covert stammer. The authors outline the clinical implications of

48

				adult with a covert stammer who wished to discuss her lifelong experiences with SLT)	questions were used to facilitate the participant's narrative. Audio files were orthographically transcribed	acknowledges a "5 year professional friendship" with the participant.			questions.	the study and offer practical advice to SLTs working with people who covertly stammer
Azios, Irani, Bellon-Harn, Swartz & Benson (2020)	Yes, aims are explicitly stated and described	Mixed methods. Qualitative aspect is appropriate to gather experiences and perceptions of a treatment for stammering and its impact on the underlying affective and cognitive aspects of stammering	Yes, the research design is discussed and justified. The authors chose a mixed methods design to provide preliminary data on the efficacy of the intervention and helpful aspects of the intervention to AWS. The authors aimed to provide preliminary data for further studies into this intervention.	Can't tell, the authors describe where the participants were recruited from (a university speech and hearing clinic, seeking support with stuttering) but do not describe how the participants were recruited (i.e., word of mouth, adverts etc)	Yes, the qualitative methods are described and justified explicitly. Semi-structured interviews were conducted post-treatment in the university clinic. Interviews were recorded and transcribed verbatim. Inability to reach data saturation was discussed.	Can't tell, any link/ relationship between the researchers and participants is not addressed. It is not clear if the participants are attending the university clinic where some of the graduate research assistants and authors of the study work	Can't tell, participants consented to be interviewed but there is no mention of ethics board approval	Yes, data analysis methods are made explicit and fully described. Analysis was conducted across 5 stages by more than one analyst	Yes, findings are explicit. The authors provide a full description of how credibility of the study was managed, including respondent validation and external analysts being employed to account for the fact that 2 of the authors were involved in the treatment (clarifies potential biases)	The authors acknowledge the limited evidence base for cinematherapy and suggest the preliminary findings for use of cinematherapy for stammering is encouraging and warrants further research. The authors suggest further examination of cinematherapy used alongside a traditional treatment for stammering and also the impact of long term use of cinematherapy
Harasym, Langevin & Kully (2015)	Yes, the aims and purpose are	Mixed methods design. Qualitative aspect is	Can't tell. Quantitative methods are	Yes, discussion of how and why participants	No, the exit interview process and methods are	Yes, participants were recruited from a previous	No, there is no discussion of ethics board	No, there is description of quant. data	No, findings of the quant. data are	There appears to be no discussion of the value the

	explicitly stated	appropriate for the purpose of gathering participant's perceptions of the use of the intervention for reducing stammering	discussed and justified but there is no discussion of how the authors decided to use an exit interview for their qualitative method.	were recruited is explicit. Participants self-referred following information sent out to a purposive sample of clients with previous success at speech restructuring.	not discussed explicitly by the authors. It is also not made explicit how data was recorded during the interviews.	Comprehensive Stuttering Program, which 2 of the authors were involved in. This is not explicitly stated in the study, information gathered from a reference.	approval or informed consent. There is no discussion of the study being explained to participants.	analysis only. There is no description of qual. data analysis, only brief description of questions asked and some example responses from participants.	discussed but there is no clear statement of findings for qual. aspects of the design taken from the exit interview process.	qual. data has bought to this study. The authors conclude that the quant. data suggests the intervention as an economical and valuable tool for long term maintenance of speech restructuring techniques.
Everard & Howell (2018)	Yes, a statement of the study aims is provided	Mixed methods. Qualitative aspect is suitable for understanding the experiences and perceived changes to speech following an intervention for stuttering	Yes, the researchers discuss how they chose the qualitative methods for their study design (focus group and interview) The focus group was chosen to give participants opportunity to discuss therapy whilst it was current in their minds, the interview was chosen to allow post treatment	Yes, participant recruitment is discussed. Participants were invited to join the study following their involvement in 2 therapy groups for stuttering modification. It is not clear how participants were recruited.	Yes, it is clear how data was collected using the qual. measures. (focus group and semi-structured interview) Protocol and guides for focus groups and interviews were developed using survey results from 8 UK SLTs specialising in stammering	Can't tell, it is not clear if there is a link between the participants and researchers as this is not explicitly discussed. It is stated that focus groups and interviews were conducted with SLTs not known to the participants. It is stated that that the first author works at the centre	Yes, explicitly stated that approval gained form ethics board at University College London Dept. of Experimental Psychology. All participants gave informed consent.	Yes, data analysis procedures are explicitly discussed. Thematic analysis was carried out across 4 stages which are outlined by the authors. The first author reflected on her own bias as a person who stutters and SLT employed at	Yes, findings are discussed explicitly and in relation to the research Q. Credibility was discussed by addressing the potential bias of one of the researchers, this was addressed by bringing in external SLTs to support analysis and to lead the focus groups	The authors identify that the qualitative findings corroborate with the findings of other similar qualitative studies examining perceptions of therapy. The authors recommend a future larger scale study with a control group and both qual. and quant. measures to add

			reflection			where the stuttering intervention was curried out for this study.		the centre where the intervention was carried out, before engaging in analysis	and interviews	to the evidence base for the effectiveness of this intervention.
Kauffman (2016)	Yes, study aims are explicitly stated and justified	Mixed methods. Qualitative aspect of the design is appropriate to gather perceptions of the intervention and its use in the management of covert aspects of stammering	No, there is no explicit discussion of how the qualitative aspects of the study were chosen	Yes, participants were recruited through local stuttering support groups and volunteered to take part in the study. It is not stated how participants were recruited	Yes, it is clear how the qualitative data was collected. A 6 question open-ended questionnaire was used to gather perspectives of participants towards the intervention. No justification for this method is discussed. It is not clear how the questions were formulated	Can't tell, it is not explicitly stated or discussed whether there is a relationship/link between the researcher and the participants	No, it is not explicitly stated whether ethics board approval was gained. It is not discussed whether the participants provided informed consent.	Yes, a thematic analysis was outlined to gather codes and subsequent themes from the qualitative data. It is not made explicit how these themes were generated.	Yes, the findings are explicitly discussed. The researcher discusses the limitations of this preliminary study and acknowledges that the link between the intervention and stammering variables is still unknown and complex. The researcher was the only analyst, further credibility factors are not discussed.	The author identifies the potential positive aspects that the intervention could have on the covert aspects of stammering (i.e., anxiety and tension). The author acknowledges the limited evidence base relating to this intervention and its effect on stammering and suggests further larger scale studies that may be generalised to the overall population of AWS

Appendix 4: Evidence Based Practice Self-Audit Tool #1

Please rate your own research and evidence-based practice skills using the form below. Put a tick in the column that describes your rating.

   A. I have little or no experience of this
   B. I have experience of this but it is an area of weakness
   C. I feel reasonably confident in this area but would still like to develop further
   D. I feel happy with my skills in this area

Research Activity	A	B	C	D
Literature Reviewing				
Conducting a systematic literature search using a database	X			
Identifying a gap in the current knowledge	X			
Reading and understanding academic papers		X		

		X		
Critically appraising research		X		
Synthesising research findings	X			
Developing themes	X			
Research Project Planning				
Writing a research question		X		
Writing a hypothesis		X		
Writing aims and objectives		X		
Identifying an appropriate design		X		
Identifying an appropriate sampling strategy		X		
Identifying appropriate outcome measures		X		
Planning the study procedure	X			
Identifying an appropriate method of analysis	X			
Identifying ethical issues	X			

Writing				
Organising and structuring an assignment			X	
Referencing			X	
Writing in an academic style			X	
Introducing a topic and providing a rationale for research		x		
Describing and summarising own and others' research	X			
Evaluating outcomes, drawing implications and writing a discussion	X			
Evidence-Based Practice				
Using research evidence to inform clinical decisions			X	
Using clinical expertise (including that of your educators) to inform clinical decisions			X	
Using patient values and preferences to inform clinical decisions				X
Making use of a range of sources to support			X	

EBP development (e.g. RCSLT, Bulletin, Twitter, societies, CENs, conferences)				

Appendix 5: Evidence Based Practice Self-Audit Tool #2

Please rate your own research and evidence-based practice skills using the form below. Put a tick in the column that describes your rating.

- A. I have little or no experience of this
- B. I have experience of this but it is an area of weakness
- C. I feel reasonably confident in this area but would still like to develop further
- D. I feel happy with my skills in this area

Research Activity	A	B	C	D
Literature Reviewing				
Conducting a systematic literature search using a database			X	
Identifying a gap in the current knowledge				X
Reading and understanding academic papers			X	

Critically appraising research			X	
Synthesising research findings			X	
Developing themes			X	
Research Project Planning				
Writing a research question			X	
Writing a hypothesis			X	
Writing aims and objectives			X	
Identifying an appropriate design		X		
Identifying an appropriate sampling strategy		X		
Identifying appropriate outcome measures		X		
Planning the study procedure	X			
Identifying an appropriate method of analysis		X		
Identifying ethical issues	X			

Writing				
Organising and structuring an assignment				X
Referencing				X
Writing in an academic style			X	
Introducing a topic and providing a rationale for research			X	
Describing and summarising own and others' research				X
Evaluating outcomes, drawing implications and writing a discussion			X	
Evidence-Based Practice				
Using research evidence to inform clinical decisions				X
Using clinical expertise (including that of your educators) to inform clinical decisions				X
Using patient values and preferences to inform clinical decisions				X
Making use of a range of sources to support				X

EBP development (e.g. RCSLT, Bulletin, Twitter, societies, CENs, conferences)				