Case Study 1: An Evidence-Based Practice Review Report

Theme: School/Setting Based Interventions for Social, Emotional and Mental Health.

How effective are group social skills interventions in improving the social competence of pupils with hearing impairment?

1. Summary

Social competence is an essential life skill needed to manage the social world and is linked to many positive outcomes (Prusnek et al., 2019; Spence, 2003). Research has shown that those with hearing impairment (HI) are more likely to have communication and speech difficulties leading to lower social competence (Hoffman et al., 2015). Lower social competence in those with HI is linked with poor mental health difficulties and peer issues (DeLuzio & Girolametto, 2011; Prusnek et al., 2019). One method of improving social competence is through group social skills training, which focuses on learning, practising and improving social skills with others. The current review included six studies which all implemented a group social skills intervention for pupils with HI. The overall findings show large effect sizes for all of these interventions, indicating that social skills training is an effective method of improving social competence in pupils with HI. The results should be taken with caution however, as the studies did have major methodological limitations which are discussed in detail in this paper. Recommendations for future research and for early intervention are also discussed as there is a concerning lack of research in this area, despite its importance.

2. Introduction

Social Competence

Children and young people need to be socially competent enough to be able to

observation and imitation of others around them. Other people act as models and can provide examples of how to behave in different situations. This is relevant for some of the methods of teaching seen in social skills training, such as modelling of appropriate behaviours and when practising imitation in role-play. Opportunities to practise appropriate social behaviours through role-play are particularly useful as they promote skill acquisition and development, especially if the situations role-played are relevant and meaningful to the individual's experiences in real-life (Spence, 2003). Furthermore, the feedback given and received in social skills training is likely to provide reinforcement to continue socially appropriate behaviours (Spence, 2003).

Both Vygotsky (1978) and Piaget's (1926) theories of child development also lend themselves to social skills training as both emphasise the importance of social interaction in cognitive development and learning. In social skills training, participation in group discussion and other cooperative activities is likely to result in learning through social interaction with peers and lead to better outcomes (Glynn et al., 2006; Randi & Carvalho, 2013). Peer-assisted learning can encourage pupils to make links to existing knowledge, cooperate and solve problems together, and support each other when understanding different social concepts (Glynn et al., 2006; Randi & Carvalho, 2013). Additionally, the variety of teaching methods in many social skills interventions promotes active participation and learning from pupils, allowing new knowledge to be consolidated in different ways (Randi & Carvalho, 2013).

Rationale and relevance

Pupils with

Social OR Social Skills OR Social Competence OR Social Support	Hearing Impair* OR HI OR Deaf* OR Deaf Community OR Cochlear OR implant	Intervention OR Program* OR Strategy OR Training OR Group OR Treatment OR Therapy	Pupils OR Students Or Child* OR Young Person OR Adolescent OR Juvenile	School OR Educat* OR Class* OR Teach

Inclusion and Exclusion Criteria

Searching on the databases generated 93 studies. The ancestral searches, which were done to ensure all possible relevant studies were found, generated two articles. In total, the searches returned 95 results. 28 of these were removed due to duplication and a further 34 were removed when screened through the titles and abstracts. This left 33 studies which were screened through the full-text against the inclusion and exclusion criteria. The inclusion and exclusion criteria can be seen in Table 2. Twenty-seven studies were then removed due to the criteria which left six studies to be reviewed in this paper. Figure 1 shows a flow diagram of the systematic searching process explained above. Table 3 lists the references of the six chosen studies, and Appendix 1 provides the key features of each of them in a 'Mapping the Field' table. Appendix 2 provides a list of the 27 studies that were removed at full test screening.

Table 2
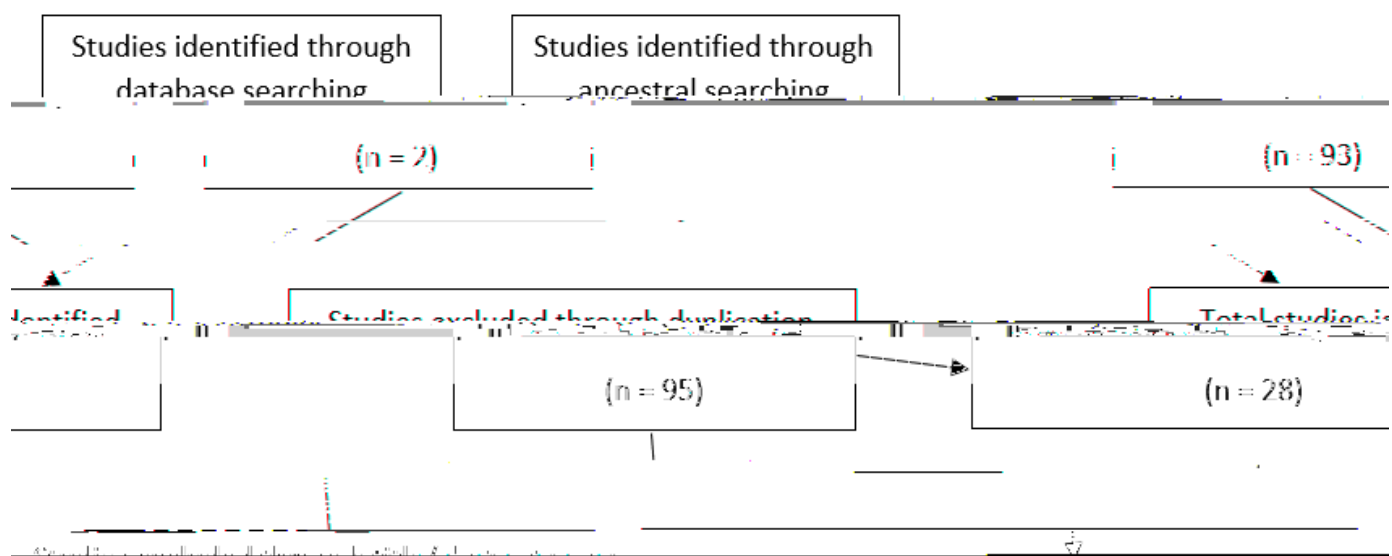
Inclusion and exclusion criteria

Criteria	Inclusion Criteria	Exclusion Criteria	Rationale

1. Population	At least one group in the study are pupils with a hearing impairment (this includes any kind of hearing impairment or deafness) Pupils enrolled in school (special or mainstream provisions)	No pupils with hearing impairments Pupils not enrolled in school.	The review question is focused on interventions that can be done in school settings with pupils with hearing impairments.
2. Outcome			

			impairments is done before 2000. Research before 2000 was not included to ensure the studies are not outdated.
7. Language	Published in English	Published in a language that is not English.	The author's only language is English and therefore this ensures the author understands the content.

Figure 1

Flow diagram of study selection process

Studies identified through database searching

Studies identified through ancestral searching

(n = 2)

(n = 93)

Studies excluded through duplication

(n = 95)

Total studies is

(n = 28)

Studies in this review

Gough's (2007) 'Weight of Evidence (WoE) Framework' was used in order to evaluate the extent to which each study contributed to answering the review question. The framework outlines three dimensions for which studies can be weighed against; WoE A, B and C. These three dimensions come together to produce WoE D, which rates the overall WoE of the study.

WoE A focuses on the methodological quality of each study. Gersten et al.'s (2005) coding protocol can be applied to group study designs and was therefore used in this review to assess WoE A of the four studies with that study design. An adapted version of the Gersten et al. protocol was used for the remaining two studies without a control group. See Appendix 3 and 4 for the protocols completed for each of the six studies. See Appendix 5 for the WoE A scoring.

WoE B focuses on the methodological relevance of each study, that is how relevant the study design is for answering the research question. Petticrew and Roberts' (2003) typology was used as it allows each study type to be assessed in relation to the review question. See Appendix 6 for the WoE B criteria.

WoE C focuses on topic relevance to the review question. Criterion was constructed for this review by the author and can be seen in Appendix 7.

Scores from WoE A, B and C were then averaged together to provide an overall weighting of the contribution and appropriateness of each study to the research question, known as WoE D. A breakdown of each WoE score and the overall WoE can be seen in table 4.

Table 4
WoE table

Participants

The total number of participants across the six studies in this review was 211, with 188 of those being described as having HI. Sample size of HI participants ranged from six (Prusnek et al., 2019) to 69 (Naeini et al., 2013). Degree of HI and details of the treatment of HI varied across the studies, covering all levels of HI. For example, Prusnek et al. (2019) described the use of hearing aids and cochlear implants. Details of the participants' HI given went towards the study's WoE A rating.

Four of the six studies reviewed took place in Iran, one took place in Spain and one in the USA. This review aims to be applicable to the UK education system and therefore WoE C ratings were scored according to the studies generalisability to the UK. With Iran being a non-OECD county, these studies were scored lower as Iran is likely to be an economically and socially dissimilar country to the UK. No study was scored the highest rating as none took place in the UK.

Ages of participants in this review ranged from five to 21 years. There were no age specific inclusion and exclusion criteria but all participants met the inclusion criteria through attending school, those over 18 were still attending a special school. Of the six studies, two recruited from mainstream (state) schools, two recruited from special schools, one recruited from those referred to speech therapy, and one recruited from 'exceptional' schools. All studies lacked in demographic information about participants, including socioeconomic status, ethnicity, or languages spoken.

Lastly, the setting of the intervention also varied and this was also measured in the WoE rating process due to the focus of this review question being on school-based interventions. Four studies were carried out in schools and therefore were given the highest mark for that WoE C criteria. Two studies were unclear in where the intervention was carried out and were therefore marked lower.

Measures

The review question was focused on measures of social competence. All of the studies in this review used different measures of social competence but they were all relevant to the review's focus. Every study conducted pre and post intervention data with their measure.

In four of the studies, self-report measures were used by the participants

used effect size in psychological research (Ladkens, 2013). Table 5 and 6 shows the effect size descriptors and the effect sizes of the reviewed studies. Effect sizes allow us to see the magnitude of an interventions impact and allow us to compare across studies where different measures have been used (Ladkens, 2013). In the four studies that were between-participant designs, effect sizes were produced using post-test data only comparing the intervention group to the control group. In the two within-participant designs, an effect size was produced through comparing the same groups pre-test data with post-test data. Five out of the six studies carried out a form of ANOVA, with four conducting an ANCOVA and one conducting a MANOVA. The remaining study reported mean point differences (Prusnek et al., 2019).

Only measures relevant to the outcome of social competence were included in the effect sizes which resulted in nine measures overall. Eight out of nine of these effect sizes came out as above 0.8 and were considered large, indicating that these interventions had a positive impact on measures of social competence or pupils with HI. One effect size for the Meadow/Kendall Social-Emotional Assessment Inventory for Deaf Students in Suárez' (2000) study came out at 0.3 and is therefore small. This was completed by teachers and measured three subscales; social adjustment, self-image, and emotional adjustment.

The largest effect size (-7.59, Vernosfaderani & Movallali, 2013) was negative due to the measure of social phobia, whereby a higher score relates to lower social competence. The other studies used measures of social skill ability whereby higher scores indicate higher social competence. Adibsereshki et al's (2015) study also produced a very strong effect size. Both of these studies also did follow up testing one month after the intervention ended, and both studies also reported continued positive impacts from their interventions.

Table 5

Effect size descriptors

Effect Size	Descriptor
.8 or above	Large

meaningful comparisons cannot be drawn. Without information about the control

group, it is unclear what specific factors led to the positive results in the intervention

research is needed assess the longer-term impact of social skills interventions as it is unclear how long the positive effects lasted.

The results of this review are important to EP practise as they highlight the vulnerability of HI pupil in terms of social skills and emphasise the need for early intervention. Early intervention for pupils with HI has been shown to result in significantly greater outcomes in language, speech and social-emotional development (Yoshinage-Itano, 2003).-3(t61 1902 12 Tf1 0 0 1 72.024 758.76 Tm7lne)-5(rab)-4(il)4

systems framework. *Journal of deaf studies and deaf education*, *20*(2), 115-124.

McIlroy, G., & Storbeck, C. (2011). Development of deaf identity: An ethnographic study. *The Journal of Deaf Studies and Deaf Education*, *16*(4), 494-511.

Middleton, A., Turner, G. H., Bitner Glindzicz, M., Lewis, P., Richards, M., Clarke, A., & Stephens, D. (2010). Preferences for communication in clinic from deaf people: A cross sectional study. *Journal of Evaluation in Clinical Practice*, *16*(4), 811-817.

National Deaf Children's Society (2021). Childhood deafness. Retrieved from: https://www.ndcs.org.uk/information-and-support/childhood-deafness/

Petticrew, M. & Roberts. H. (2003). Evidence, hierarchies, and typologies: horses for courses. J Epidemiol Community Health, 57, 527–529.

Piaget, J. (1926). Language and thought in the child. London: Kegan and Paul.

Punch, R., & Hyde, M. (2011). Social participation of children and adolescents with cochlear implants: A qualitative analysis of parent, teacher, and child interviews. *Journal of deaf studies and deaf education*, *16*(4), 474-493.

Randi, M. A. F., & Carvalho, H. F. D. (2013). Learning through role-playing games: an approach for active learning and teaching. *Revista Brasileira de Educação Médica*, *37*(1)

Seema, G. B., & Kumar, G. V. (2018). Impact of social skills training on self-esteem among male and female adolescent students. *Indian Journal of Positive Psychology*, *9*(1), 147-151. 14.

Spence, S. H. (2003). Social skills training with children and young people: Theory, evidence and practice. *Child and adolescent mental health*, *8*(2), 84-96.

Stevenson, J., Kreppner, J., Pimperton, H., Worsfold, S., & Kennedy, C. (2015). Emotional and behavioural difficulties in children and adolescents with hearing impairment: a systematic review and meta-analysis. *European child & adolescent psychiatry*, *24*(5), 477-496.

Sugai, G., & Lewis, T. J. (1996). Preferred and promising practices for social skills

			Delivered by an instructor who had been trained to teach pupils with HI. . Unclear in which setting the intervention was done.	
Azizi, Saeidmanesh, Kazemi & Radaie (2019) Yazd City, Iran	Quasi-experimental Pre and post data Use of control group	30 adolescents (who rated high for aggression and low for social adjustment). 15 in experimental, 15 in control. 14-18 years old. All male. All with moderate or mild hearing impairments and used hearing aids.	Social problem-solving training sessions occurred once a week for two hours by a psychologist and speech therapist. 7 weeks. Topics included social problem-solving and generalisation to other situations. Methods of training included role play and PowerPoint presentations. Delivered by a Psychologist and a Speech Therapist. Unclear in which setting the intervention was done.	California Social Behaviour Inventory (Clark et al., 1953). Measures social adjustment – social skills, relationships. Aggression questionnaire (Buss and Perry, 1992)

Naeini, Arshadi, Hatamizadeh & Bakhshi (2013)

Tehran, Iran | Quasi-experimental

Pre and post data

Use of control group | 69 females with severe or profound deafness. Across 4 specialist secondary schools. 2 schools were the experiment (33 students) and 2 schools were control (26). In grades 6-8 but age ranged from 11-21. | 12 60 minute bi-weekly sessions.

Topics included friendships, managing emotions, and self-awareness.

Methods of training included teaching input, roleplay and discussions.

It was unclear who delivered the intervention.

Training was carried out in the school environment. | The Hearing-Impaired Children Self-Image Test. Measured feelings around their own socio-emotional competence (and cognitive, physical and communication) |
| Vernosfaderani & Movallli (2013)

Arak, Iran | Semi-experimental

Pre and post data

Use of control group | Moderate hearing impairment, 8-18. 22 pupils who received high scores on a social phobia inventory. Randomly assigned experimental or control. | Social skills training twice a week. Sessions l 193.73 Tmek. | |

Delivered by a researcher at the school.

Training was carried out in the school environment.

Appendix 2

List of studies excluded at full text review and the related exclusion criteria.

Excluded Study Reference	Exclusion Criteria
Ademokoya, J. A., & Olujide, M. G. (2007). Typology and interventions for some social problems affecting the learning of the hearing-impaired child. *International Journal of Rehabilitation Research, 30*(1), 75. Retrieved from https://search-proquest-com.libproxy.ucl.ac.uk/scholarly-journals/typology-interventions-some-social-problems/docview/205851733/se-2?accountid=14511	5. Study Design
Antia, S. D., & Kreimeyer, K. H. (1987). The effect of social skill training on the peer interaction of preschool hearing-impaired children. *Journal of the Division for Early Childhood, 11*(3), 206-216. doi:http://dx.doi.org.libproxy.ucl.ac.uk/10.1177/105381518701100302	6. Publication Date
Antia, S. D., & Kreimeyer, K. H. (1996). Social interaction and acceptance of deaf or hard-of-hearing children and their peers: A comparison of social-skills and familiarity-based interventions. *Volta Review, 98*(4), 157-80. Retrieved from https://search-proquest-com.libproxy.ucl.ac.uk/scholarly-journals/social-interaction-acceptance-deaf-hard-hearing/docview/62503158/se-2?accountid=14511	6. Publication Date
Avcioglu, H. (2007). Examining the effectiveness of a program developed for teaching social skills to hearing impaired students based on cooperative learning. *Kuram Ve Uygulamada Egitim Bilimleri, 7*(1), 340-347. Retrieved from https://search-proquest-com.libproxy.ucl.ac.uk/scholarly-journals/examining-effectiveness-program-developed/docview/236993877/se-2?accountid=14511	5. Study Design
Barimani, S., Asadi, J., & Khajevand, A. (2018). A comparison between the effectiveness of game therapy and emotional intelligence training on social compatibility and communicative skills of exceptional primary school hyperactive and deaf children. *International Journal of Pediatrics, 6*(5), 7653-7666.	3. Intervention

Calderon, Rosemary & Greenberg, Mark T. (2003). Social and
emotional development of deaf children: Family, school,
and program effects. Marschark, Marc [Ed], Spencer,
Patricia Elizabeth [Ed]. Oxford handbook of deaf studies,
language, and education. New York, NY, US: Oxford
University Press, US; pp. 177-189. R█████ved from
http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=referen
ce&D=psyc4&NEWS=N&AN=2003-00548-013

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Rationale: No mention of what control condition involved.

Quality Indicators for Outcome Measures

1. Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalised performance?

   Yes   No   N/A   Unknown/Unable to Code

Rationale: Only used SSRI Teacher form

2. Were outcomes for capturing the intervention's effect measured at the appropriate times?

   Yes   No   N/A   Unknown/Unable to Code

Rationale: Measured pre, immediate post and 1-month post.

Quality Indicators for Data Analysis

2. Did the research report include not only inferential statistics but also effect size calculations?

Yes　No　N/A　Unknown/Unable to Code

Rationale: Eta squared is reported.

Desirable Qual is reported.

2. Did the research report include not only inferential statistics but also effect size calculations?

Yes   No   N/A

3. Was the nature of services provided in comparison conditions described?

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Yes   No   N/A   Unknown/Unable to Code

Quality Indicators for Outcome Measures

1. Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalised performance?

Rationale: Means and SDs were gathered for the pre and post quantitative test. Qualitative analysis was done for the survey given to research assistants.

2. Did the research report include not only inferential statistics but also effect size calculations?

   Yes   No   N/A   Unknown/Unable to Code

Desirable Quality Indicators

1. Was data available on attrition rates among intervention samples? Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?

   Yes   No   N/A   Unknown/Unable to Code

Rationale: 1 participant from each condition were excluded due to attendance.

2. Did the study provide not only internal consistency reliability but also test-retest reliability and interrater reliability (when appropriate) for outcome measures? Were data collectors and/or scores blind to study conditions and equally (un)familiar to examinees across study conditions?

   Yes   No   N/A   Unknown/Unable to Code

3. Were outcomes for capturing the intervention's effect measured beyond an immediate post-test?

   Yes   No   N/A   Unknown/Unable to Code

4. Was evidence of the criterion-related validity and construct validity of the measures provided?

   Yes   No   N/A   Unknown/Unable to Code

Rationale: Construct validity is discussed but not criterion-related.

5. Did the research team assess not only surface features of fidelity implementation (e.g. number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?

   Yes   No   N/A   Unknown/Unable to Code

6. Was any documentation of the nature of instruction or series provided in comparison conditions?

   Yes   No   N/A   Unknown/Unable to Code

7. Did the research report include actual audio or videotape excerpts that capture the nature of the intervention?

   Yes   No   N/A   Unknown/Unable to Code

8. Were results presented in a clear, coherent fashion?

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  Yes   No   N/A   Unknown/Unable to Code

Overall Rating of Evidence:

	Total	Score
Essential Quality Indicators (out of 8)	7	1
Desirable Quality Indicators (out of 7)	2	1
Total Score: (3 = High Quality; 2 = acceptable Quality; <2 = Poor Quality)		2

Table 2

	Study	Essential Quality Indicators	Desirable Quality Indicators	Overall WoE A
Original Protocol	Adibsereshki & Movallali (2015)	6/10	3/8	1
	Azizi et al. (2019)	7/10	1/8	1

Appendix 6

WoE B

WoE B is a review-specific judgement about the appropriateness of the study design for answering the current review question. It is therefore focused on the fitness for purpose of each study and how appropriate each study is in concluding that group social skills training is effective for improving social competence for pupils with HI. WoE B was calculated based on Petticrew and Roberts' (2003) typology of evidence for research questions of effectiveness and is shown in table 1. The rationale behind this typology is that the appropriateness of different study designs depends on the research question asked. For effectiveness questions, RCTs have a high level of experimental control and therefore are able to measure an interventions impact. Table 2 provides the scores for each study in this review for WoE B.

Table 1

	Poor – 1	Acceptable – 2	High – 3
Study design	Qualitative research Survey Case-control studies Non-experimental evaluations No control group	Quasi-experimental studies Cohort studies	

Table 2

Study	WoE B Score
Adibsereshki & Movallali (2015)	3
Azizi et al. (2019)	2
Naeini et al. (2013)	2
Vernosfaderani & Movallali (2013)	2
Prusnek et al. (2019)	1
Suárez (2000)	1

Intervention setting	3 – based in a school 2 – based in the community/clinic or assumed other professional setting 1 – based at home	This review question is concerned with a school-based intervention.

Table 2

Study	Location	Number of sessions	Intervention focus	Outcome measure variety	Intervention setting	Overall WoE C score
Adibsereshki & Movallali (2015)	1	3	3	2	2	2.2
Azizi et al. (2019)	1	2	2	2	2	1.8