Case Study 1: An Evidence-Based Practice Review Report

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

How Effective are Peer Mentoring Interventions at Supporting the Mental Health and Wellbeing of Autistic Students in Secondary and Post-Secondary Education?

Summary

The current review evaluates the effectiveness of peer mentoring interventions at supporting the mental health and wellbeing of autistic students in secondary and post-secondary education. Peer mentoring is described as a 'peer support' intervention in which a peer or small group of peers regularly meet with a target student to support their specific mental health or wellbeing needs (Coleman et al., 2017). Research has found that more than 80% of autistic young people experience difficulties with their mental health and wellbeing, which often surface at transition to secondary school and develop further into adolescents and early adulthood (Crane et al., 2017; Hebron, 2018; Levy & Perry, 2011).

The current systematic literature review identified and evaluated five studies in relation to the review question. Mixed evidence was found for the effectiveness of peer mentoring interventions across a range of mental health and wellbeing outcomes, and limitations were highlighted with reference to study methodology and design. Suggestions were made pertaining to specific features of the interventions which demonstrated preliminary support and avenues for future research were discussed.

Introduction

Autism Spectrum Disorder/Condition and Mental Health and Wellbeing

Autism Spectrum Disorder/Condition (hereby referred to as ‘autism’) is a neurodevelopmental disorder, characterised diagnostically by persistent difficulties in social communication and interaction, alongside restricted and repetitive behaviours, which cause clinically significant impairments across different areas of functioning (American Psychiatric Association, 2013).

Many interventions have been developed to support specific needs associated with autism; primarily focused on areas of social understanding, e.g. Social Stories and Comic Strip Conversations (Gray, 1994; 2002), social interaction, e.g. LEGO® Therapy (LeGoff, 2004), and communication, e.g. PECS (Bondy & Frost, 1994). However, there is a growing need for interventions to support mental health and wellbeing. Although mental health difficulties are not featured in the diagnostic criteria for autism, research has found that more than 80% of autistic young people experience difficulties with their mental health and wellbeing (Crane et al., 2017). Autistic young people have identified a range of barriers to them seeking and accessing support for their mental health (Crane et al., 2019), and research has suggested that mental health needs increase in autistic individuals from childhood and adolescents to early adulthood (Levy & Perry, 2011).

Many psychological theories of autism seek to explain the cognitive and social difficulties that autistic young people often present with, and it is likely that these contribute towards some of the mental health difficulties reported. Regarding the cognitive theories, Central Coherence Theory (Frith, 1989) suggests that autistic individuals tend to focus their attention on small details,

though struggle to integrate information and generalise it across contexts. This theory aligns with the Executive Dysfunction Hypothesis (Pennington et al., 1997), which suggests that autistic individuals often exhibit difficulties with executive functions, such as attention, planning and working memory. These difficulties can make it very challenging for autistic students to organise their work, navigate the educational environment and access whole-class teaching, which are likely to influence attainment and impact on mental health and wellbeing.

In addition, regarding the social theories of autism, research suggests that autistic individuals often struggle with Theory of Mind (Baron-Cohen, 2000); which refers to the ability to attribute mental states to others and can lead to anxiety around not being able to understand other people's thoughts or predict their behaviour (Fletcher-Watson and Happé, 2019). However, recent debate in the autism literature has begun to address this more systemically, through a social model named the Double Empathy Problem (Milton, 2012). This model proposes that individuals who experience the world differently will struggle to empathise with each other. Thus, refuting the notion that autistic individuals experience a unique 'empathy deficit' and suggesting that neurotypical individuals demonstrate a similar lack of empathy for the autistic community. Together, these models suggest that autistic students may experience social difficulties due to their challenges in understanding and empathising with their peers whilst simultaneously receiving a similar lack of understanding and empathy from their peers. The complex dynamics of the adolescent social world are likely to exaggerate these misunderstandings and also contribute towards mental health difficulties.

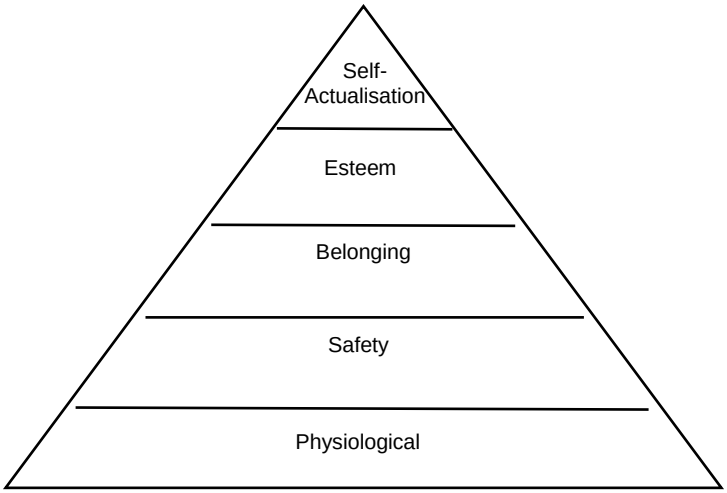
Peer Mentoring

Peer mentoring is described by the Department for Education as a setting-based ‘peer support’ intervention that involves a peer or small group of peers regularly meeting with a target student and supporting them towards specific mental health or wellbeing outcomes (Coleman et al., 2017). Research has suggested that effective peer mentoring programmes match peers appropriately and foster supportive mentor-mentee relationships (Podmore et al., 2018). The interventions are facilitated by a trained coordinator, who can identify needs, organise student pairings/groups and provide structured training and supervision for mentors. ‘Staff contact’ has been identified as a factor that contributes towards effective peer mentoring interventions, alongside clear boundaries, mentee openness, mentor relationship building skills and a shared experience of the education system (Powell, 2015).

Peer mentoring interventions have a basis in various social and behaviourist approaches; however, one particular psychological theory that is relevant to understanding how peer mentoring can support autistic students’ mental health and wellbeing is Maslow’s hierarchy of needs (Maslow, 1943). Maslow’s hierarchy of needs categorises basic human needs into five levels, which are organised hierarchically (see Figure 1). The model suggests that needs at the top of the pyramid cannot be satisfied before those underneath have been met.

Figure 1

Maslow's Hierarchy of Needs (1943)



Research has identified a negative shift in autistic students' feelings of connectedness to their peers and the school community upon the transition to secondary school (Hebron, 2018). This is likely to be associated with the aforementioned social theories of autism, namely the Double Empathy Problem, and seems to continue into post-secondary education and impact on their wider sense of belonging (Frost et al., 2019; Gumbert, 2020). Maslow's hierarchy of needs suggests that a sense of belonging is a necessary foundation to support individuals to fulfil their "esteem" needs and reach their potential through "self-actualisation". A lack of sense of connectedness and belonging could therefore provide an explanation for the mental health difficulties that many autistic young people experience. However, the positive relationships developed through peer mentoring interventions, may help to promote 'double empathy' and a sense of belonging, which support a solid foundation for self-actualisation.

In addition, the relationships developed through peer mentoring could also address some of the cognitive difficulties discussed to target esteem needs, with reference to the Central Coherence Theory and Executive Dysfunction Hypothesis. Building relationships with peers is likely to increase the quality of peer support around academic work; regarding scaffolding, planning and organisation. According to Vygotsky (1930-1934/1978), appropriate peer support can aid the learning process by supporting students to work through their Zone of Proximal Development and reach their potential. Thus, peer mentoring also has the potential to address esteem needs through academic support, which further strengthens the foundation for self-actualisation.

Rationale

The Department for Education has identified autism as the most prevalent need among students with Education Health Care Plans (EHCPs) and found that the number of autistic students attending mainstream provision is rising (DfE, 2020). On top of the aforementioned research demonstrating the high prevalence of mental health needs, a recent review found that 85% of autistic young people reported their mental health to have deteriorated further through the Covid-19 lockdown (National Autistic Society, 2020). Given the mental health risk factors associated with Covid-19, it is likely that resources from Child and Adolescent Mental Health Services (CAMHS) will be increasingly stretched and many autistic young people will be placed on waitlists. EPs will therefore need to support settings to manage mental health needs internally and recommend evidence-based interventions which can be implemented by staff.

In addition, the current review is focused on students aged between 11 and 25, following the previously mentioned research suggesting that mental health and wellbeing needs often surface at transition to secondary school and develop further into adolescents and early adulthood (Crane, et al., 2017; Hebron, 2018; Levy & Perry, 2011). The Children and Families Act (2014) extended the role of the EP to support students up to the age of 25 (Department for Education, 2014). Research has highlighted the valuable contribution that EPs could make at post-16 transition and through higher education; where university staff report a lack of knowledge around autism and autistic students have demonstrated distinctly poor academic attainment (Morris & Atkinson, 2018; Zeedyk et al., 2019; Blandford et al., 2011). Yet, the opportunities for EPs to work with students in post-16 settings are often reduced on account of barriers associated with commissioning (Morris & Atkinson, 2018), and are impacted further in higher education, as EHCPs are ceased. However, it seems probable that this may change, given the Green Paper (Department for Education, 2017) recommendation for partnerships to be made between universities, colleges and local authority teams. Thus, although research with 16-25-year olds may seem less relevant to EP practice at the moment, there is likely to be a need for this in the near future and it is important for EPs to evaluate evidence for interventions in post-secondary as well as secondary education.

Review Question

How effective are peer mentoring interventions at supporting the mental health and wellbeing of autistic students in secondary and post-secondary education?

Critical Review of the Evidence Base

Systematic Literature Search

A systematic literature search was carried out in December 2020 and January 2021 using the search terms presented in Table 1, on the electronic databases: Web of Science, ERIC and PsychInfo.

Table 1.

Search Terms

1		2
"Peer mentor*"		Autis*
OR		**OR**
Befriend*		ASD
OR	**AND**	**OR**
"Peer support"		Asperger*
OR		
"Peer counsel?ing"		

*Note. *Denotes truncation and ? Denotes wildcard*

The search identified 292 initial articles; 124 from Web of Science, 68 from ERIC and 100 from PsychInfo. 86 duplicates were removed. The titles and abstracts of the remaining articles were screened, in accordance with the inclusion and exclusion criteria, and a further 138 and 47 articles were removed, respectively. The remaining 21 articles were read in full and a further 16 were removed, with reasons codes detailed in Appendix A. The PRISMA flow chart (Figure 2) illustrates this process, and details of the 5

studies which were selected for the current review can be seen in Table 3 and in the mapping table in Appendix B.

Table 2.

Inclusion and Exclusion Criteria

Criteria	Inclusion Criteria	Exclusion Criteria	Rationale
1. Type of Publication	The study is peer reviewed.	The study is not peer reviewed.	To ensure that the research methodology is high quality.
2. Language	The study is published in English.	The study is published in a language other than English.	To ensure that the reviewer is able to understand the research.
3. Participants	a) The mentees are aged between 11 and 25. b) The mentees are described as having autism.	a) The mentees are not aged between 11 and 25. b) The mentee is not described as having autism.	The current review is evaluating the effectiveness of peer mentoring interventions for autistic students in secondary and post-secondary education.
4. Setting	a) The intervention takes place in an education setting. b) The study takes place in the UK, or in a country with a similar education system to the UK.	a) The intervention takes place outside of an education setting. b) The study takes place in a country that does not have a similar education system to the UK.	To increase the relevance and generalisability of the findings to education and EP practice in the UK.

5.	Study Design	The study has an experimental or quasi-experimental design.	The study has a qualitative or non-experimental design.	Petticrew and Roberts (2003) describe experimental and quasi-experimental designs as the best for typology of evidence for 'effectiveness' questions.
6.	Intervention	The study describes a peer mentoring intervention.	The study does not describe a peer mentoring intervention.	The purpose of the current review is to evaluate the effectiveness of peer mentoring interventions.
7.	Outcome Measure	The study measures at least one mental health or wellbeing outcome.	The study does not measure any mental health or wellbeing outcomes.	The current review is evaluating intervention effectiveness for mental health and wellbeing.

Figure 2.

PRISMA Flow Chart of Systematic Search

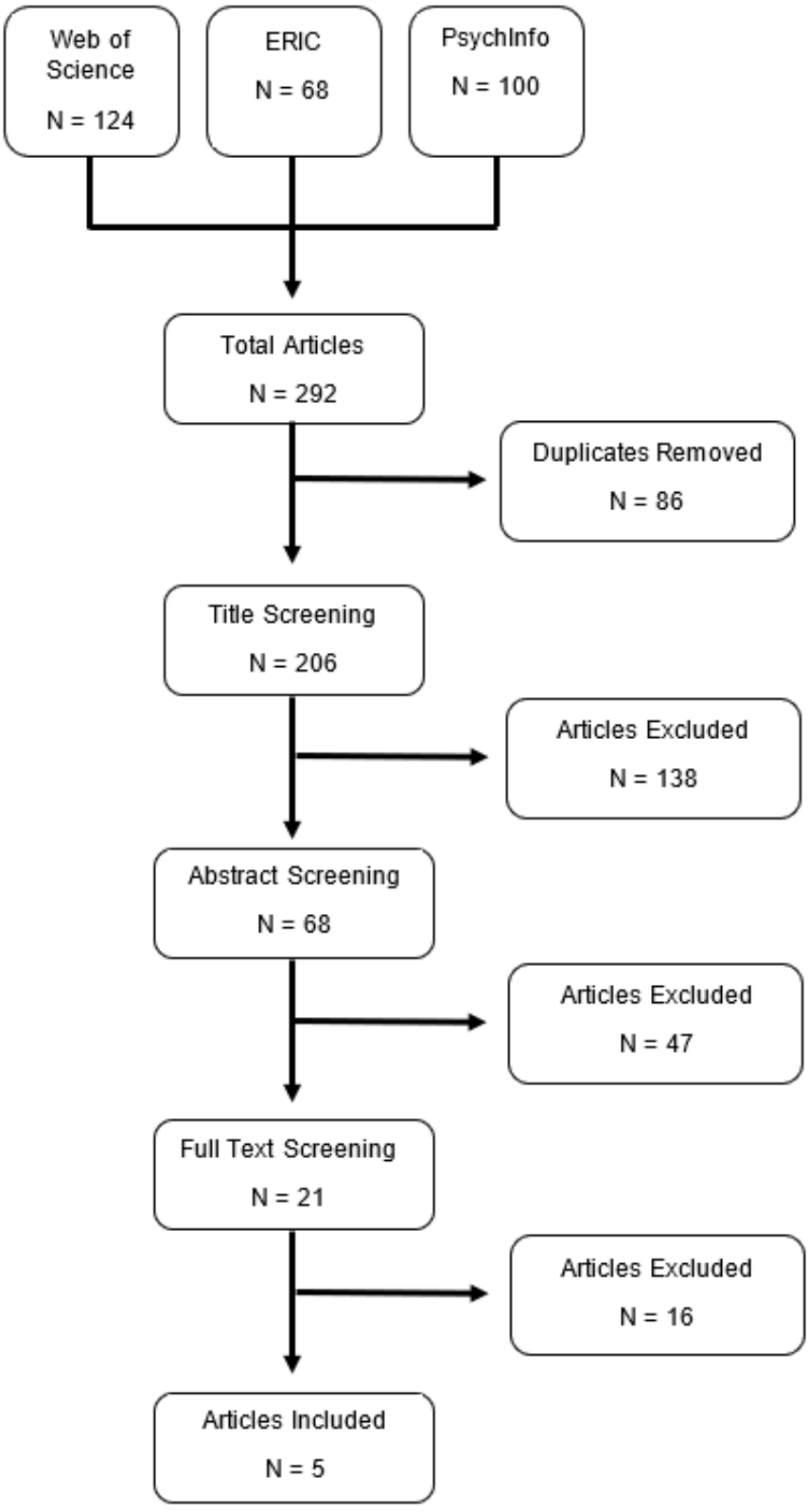


Table 3.

References for the Studies Included in Review

Included studies
Bradley, R. (2016). `Why single me out?' Peer mentoring, autism and inclusion in mainstream secondary schools. *British Journal of Special Education*, *43*(3), 272–288. https://doi.org/10.1111/1467-8578.12136
Gillespie-Lynch, K., Bublitz, D., Donachie, A., Wong, V., Brooks, P. J., & D'Onofrio, J. (2017). "For a Long Time Our Voices have been Hushed": Using Student Perspectives to Develop Supports for Neurodiverse College Students. *Frontiers in Psychology*, *8*. https://doi.org/10.3389/fpsyg.2017.00544
Ncube, B. L., Shaikh, K. T., Ames, M. E., McMorris, C. A., & Bebko, J. M. (2018). Social Support in Postsecondary Students with Autism Spectrum Disorder. *International Journal of Mental Health and Addiction*, *17*(3, SI), No-Specified. https://doi.org/10.1007/s11469-018-9972-y
Thompson, C., McDonald, J., Kidd, T., Falkmer, T., Bolte, S., & Girdler, S. (2020). "I don't want to be a patient": Peer mentoring partnership fosters communication for autistic university students. *Scandinavian Journal of Occupational Therapy*, *27*(8), 625–640. https://doi.org/10.1080/11038128.2020.1738545
Siew, C. T., Mazzucchelli, T. G., Rooney, R., & Girdler, S. (2017). A specialist peer mentoring program for university students on the autism spectrum: A pilot study. *PLoS ONE*, *12*(7). https://doi.org/10.1371/journal.pone.0180854

Critical Appraisal of the Studies

Weight of Evidence

Gough's (2007) Weight of Evidence (WoE) framework was used to critically appraise the studies for quality and relevance. The framework outlines three independent dimensions for weighting studies: methodological quality (WoE A), appropriateness of design (WoE B), and topic relevance (WoE C); which combine to produce an overall WoE score (WoE D). Table 4 outlines the WoE scores for each study.

The current review utilised an adapted version of the Gersten et al. (2005) coding protocol to appraise WoE A, recommendations from Petticrew and

Roberts (2003) and Eliopoulos et al. (2005) to appraise WoE B, and criteria developed by the reviewer to appraise WoE C. WoE D was calculated as a mean of the WoE A, WoE B and WoE C ratings. Detailed descriptions of the criteria and rationale for each WoE dimension can be found in Appendix C.

Table 4.

WoE scores for each study

Study	Methodological Quality (WoE A)	Appropriateness of Design (WoE B)	Topic Relevance (WoE C)	Overall Weight of Evidence (WoE D)
Bradley (2016)	1 (low)	1.3 (low)	3 (high)	1.8 (medium)
Gillespie-Lynch et al. (2017)	2 (medium)	2 (medium)	1.8 (medium)	1.9 (medium)
Ncube et al. (2018)	2 (medium)	1.3 (low)	1.6 (low)	1.6 (low)
Siew et al. (2017)	3 (high)	2 (medium)	2.2 (medium)	2.4 (high)
Thompson et al. (2020)	2 (medium)	2 (medium)	2 (medium)	2 (medium)

Note. 1-1.6 (low), 1.7-2.3 (medium), 2.4-3 (high)

Participants

Only one of the studies (Bradley, 2016) was based in the UK and received a high rating for the 'Setting' criterion within WoE C. The other studies (Gillespie-Lynch et al., 2017; Ncube et al., 2018; Siew et al., 2017; Thompson et al., 2020) were based in the USA, Canada and Australia, respectively, resulting in them receiving a medium rating for the criterion. While it is appreciated that the USA, Canada and Australia have similar education systems to the UK, the findings may not be as relevant and generalisable to the UK context as those carried out in the UK.

There was a total of 133 participants across the 5 studies, with sample sizes ranging from 10 to 30 students (see Appendix B). All of the participants were between the ages of 11 and 25, however, the age group of the participants was thought to be an important distinction between the studies, with only one study (Bradley, 2016) using school-aged participants and the others recruiting university students. Though it is appreciated that the contributions that EPs could make to higher education settings are potentially extremely valuable, in the current UK context, there are currently limited opportunities for work with this age range (Morris & Atkinson, 2018), therefore the WoE C ratings for the criterion 'Age of Participants' were developed in accordance with the ages of students that EPs typically work with. Bradley (2016) was the only study to receive a high rating for this criterion, with students aged 11 and 12 years old. Siew et al. (2017) received a medium rating, as the mean age of their participants was 18 years old, however the remaining three studies (Gillespie-Lynch et al., 2017; Thompson et al., 2020; Ncube et al., 2018) all received low ratings, as the mean ages of their participants were 22, 22 and 23 years, respectively.

There were also differences between the studies regarding the participants' diagnostic status; all of the studies identified their participants as 'autistic', though the majority of studies did not confirm this diagnosis with relevant paperwork or assessments. Bradley (2016) was the only study to report that participants all had a confirmed diagnosis of autism, which led to a high rating for the 'Autism Diagnosis' WoE C criterion. Three of the studies (Ncube et al., 2018; Siew et al., 2017; Thompson et al., 2020) stated that all of their participants had self-reported an official diagnosis of autism, leading to a

medium rating, and one study (Gillespie-Lynch et al., 2017) explained that while some of their participants had a confirmed autism diagnosis, others self-identified as being autistic, despite not having formal diagnoses, resulting in a low rating. A possible explanation for the differences may lie in the study setting; all of the studies that received medium and low ratings were university-based, whilst the study that received a high rating was school-based. The practical feasibility of confirming a diagnosis is likely to reduce when a student transitions to university, due to the need for students to register with support services.

Study Design

All of the studies followed quasi-experimental designs, so received medium WoE B ratings for the 'Study Design' criterion, based on Petticrew and Roberts' (2003) recommendations around the best evidence for "effectiveness" questions. Despite this, Eliopoulos et al. (2005) suggested that there are differences between quasi-experimental designs which influence their quality, such as the presence of control groups. All of the studies followed one-group pre-test-post-test designs, which made it more difficult to infer causality and rule out confounding variables, such as Hawthorne or maturation effects. Gillespie-Lynch et al. (2017) was the only study to describe two independent groups of participants; however, comparisons were not made between the groups, thus all of the studies received low ratings for the quasi-experimental design criterion. However, the practical limitations around recruiting enough participants to have a control group without compromising power, and the ethical issues around denying access to an intervention, are understood. Eliopoulos et al. (2005)

acknowledge these constraints and highlight the importance of justifying the quasi-experimental design and clearly outlining potential limitations, so that readers can interpret the findings with appropriate caution. Bradley (2016) and Ncube et al. (2018) received low ratings for this criterion within WoE C. However, the other three studies (Gillespie-Lynch et al., 2017; Siew et al., 2017; Thompson et al., 2020) clearly justified the design choice and described the limitation that pre-test-post-test designs do not allow for causal attributions to be made, resulting in high ratings. Siew et al. (2017) justified their use of design by referring to the supplementary interview data they gathered, as similar themes arose, which they described as convergent support.

Intervention

The peer mentoring interventions used in the studies varied in terms of: duration, delivery and mentor characteristics (see Appendix B). All interventions involved either weekly or fortnightly mentoring sessions, though the way these were delivered varied. The university-based studies (Gillespie-Lynch et al., 2017; Siew et al., 2017; Ncube et al., 2018; Thompson et al., 2020) involved 1:1 mentoring sessions, which were augmented by group meetings. These meetings varied in nature, from providing social opportunities (Ncube et al., 2018; Thompson et al., 2020), to incorporating educational sessions (Siew et al., 2017) and following standardised social skills and self-advocacy curricula (Gillespie-Lynch et al., 2017). The intervention described by Bradley (2016) followed a different approach, where the autistic student was part of a ‘mentoring group’ made up of 3 other students, where all members mentored each other. These differences

influenced the ratings assigned for the ‘Intervention’ criterion within WoE C, as inferring the causal influence of peer mentoring is made more challenging when confounding variables, like the group sessions, are simultaneously occurring. Therefore, the university-based studies all received medium, rather than high ratings for this criterion.

Another key difference between the interventions relates to the mentor characteristics. The mentors in the university-based studies all received specific training on autism and were supported with regular supervision or feedback sessions throughout. However, the mentors in Bradley’s (2016) study did not receive any specific training on autism or formal supervision. These factors did not directly affect the WoE C ratings, as they were not seen to impact on the topic relevance of the study. However, mentor training and supervision were often referenced as tools for monitoring intervention quality and fidelity, thus influenced WoE A ratings (see Appendix D).

Measures

All of the studies clearly reported the measures they used to evaluate intervention outcomes. Four of the studies (Bradley, 2016; Gillespie-Lynch et al., 2017; Siew et al., 2017; Thompson et al., 2020) included at least one outcome which was a direct measure of mental health or wellbeing with established reliability and validity, thus received high ratings for the ‘Outcome Measure’ criterion in WoE C. The direct measures included in these studies evaluated anxiety, self-efficacy and self-esteem. To measure anxiety, Gillespie-Lynch et al. (2017) used the Spielberger State-Trait Anxiety Inventory (Spielberger et al., 1983), and Siew et al. (2017) and Thompson et

al. (2020) used the Adult Manifest Anxiety Scale - College Version (Reynolds et al., 2003a). Both measures demonstrated high stability and construct validity (Spielberger, 1989; Lowe et al., 2005), though the Adult Manifest Anxiety Scale - College Version incorporates college-specific items and scales, which may make it a more appropriate measure for students. Thompson et al. (2020) measured self-efficacy with the Generalised Self-Efficacy Scale, which has been shown to have high reliability and negative predictive validity with constructs such as anxiety (Jerusalem & Schwarzer, 1979), and Bradley (2016) measured self-esteem with the Harter Self Esteem Questionnaire, which has demonstrated high internal consistency (Harter, 1985).

The studies also investigated various indirect measures of mental health and wellbeing. The review classified indirect measures as those which measure concepts which are likely to impact on mental health or wellbeing without directly assessing the outcome. The indirect measures investigated by the studies relevant to the review question were; communication apprehension, loneliness, bullying and social support. To measure communication apprehension, Siew et al. (2017) and Thompson et al. (2020) used the Personal Report of Communication Apprehension (McCroskey, 1982) and to measure loneliness, Bradley (2016) used the Loneliness and Social Dissatisfaction Scale (Asher et al., 1984). For bullying, Bradley (2016) used the Anti-Bullying Alliance Survey (Anti-Bullying Alliance, 2007), which was developed with the Department for Education to assess the frequency and type of bullying experienced by students. To measure social support, Gillespie-Lynch et al. (2017) used the Multidimensional Scale of Perceived

Social Support (Zimet et al., 1988), and Ncube et al. (2018), Siew et al. (2017) and Thompson et al. (2020) used the Social Provisions Scale (Cutrona & Russell, 1987). In one of the studies (Ncube et al., 2018), all of the measures reported were indirect, which resulted in a low rating for the WoE C 'outcome measure' criterion. Though, despite this, the measure they used to investigate social support, the Social Provisions Scale, has received empirical support demonstrating significant positive predictive validity for psychological wellbeing (Perera, 2016), which supports the relevance of the findings to the current review question.

All of the studies also included a form of qualitative analysis of student views of the programme. Qualitative findings can be seen in Appendix B, alongside the full list of outcome measures each study investigated, including those which the current review did not perceive to be associated with mental health and wellbeing.

Outcomes

Table 5 demonstrates the descriptive statistics, *p* values and effect sizes associated with the direct and indirect outcome measures, and Table 6 demonstrates the descriptors for the effect sizes as reported by Cohen (1998). Two of the studies did not report effect sizes for their outcomes (Bradley, 2016; Ncube et al., 2018), which influenced their overall ratings for WoE A. Effect sizes for these studies were calculated with the pre and post means and significance values.

For measures of anxiety, Gillespie-Lynch et al. (2017) found a significant decrease in trait anxiety with a large effect size for the social skills group,

though small and non-significant effects for the self-advocacy group. Moreover, the effect sizes for anxiety were smaller and did not reach significance levels in the studies by Siew et al. (2017) or Thompson et al. (2020). It is possible that some of the variance observed here may result from the inconsistency in the anxiety measures used.

Further inconsistencies were noted between studies investigating communication apprehension. Siew et al. (2017) found a significant reduction with large effects, however Thompson et al. (2020) found small effects demonstrating an increase in apprehension. This disparity may reflect individual differences between the interventions. Both studies provided a weekly social group, however the group in Siew et al.'s (2017) study explicitly taught social skills, whereas the group in Thompson et al. (2020) provided opportunities for unstructured social interaction.

In addition, Thompson et al. (2020) found a small effect demonstrating a reduction in self-efficacy, which did not reach significance, though Bradley (2016) found large and significant effect suggesting an improvement in self-esteem. Bradley (2016) also found large significant effects demonstrating reductions in loneliness and bullying. These findings should be interpreted with caution due to the small sample size and methodological shortcomings reflected in their low WoE A rating and medium WoE D rating, however they were supported with qualitative reports of increased feelings of inclusion within the school community.

Moreover, for perceived social support, all effects observed in Gillespie-Lynch et al.'s (2017) study were non-significant, other than the medium effect

seen in the self-advocacy group for support from friends. The studies which used the Social Provision Scale also found mixed results. A significant medium effect was reported by Siew et al. (2017), yet, Thompson et al. (2020) and Ncube et al. (2018) reported non-significant medium and small effects, respectively. These inconsistencies may again stem from the methodological differences between the studies, and it should be noted that Siew et al. (2017) was the only study to score high WoE A and D ratings.

Table 5.

Descriptive statistics, significance and effect sizes for study outcome measures

Study	N	Outcome Measure	Pre-Intervention Mean (*SD*)	Post-Intervention Mean (*SD*)	Significance (*p* value)	Effect Size (Descriptor) *d*	*r*	η^2	WoE D Rating
Bradley (2016)	12	Harter Self-Esteem Questionnaire (global) [b]	2.49 (0.47)	3.06 (0.53)	<.05	1.14[a] (large)			1.8 (medium)
		Loneliness and Social Dissatisfaction Scale	1.82 (0.74)	2.77 (0.99)	<.01	-1.09[a] (large)			
		Anti-Bullying Alliance Survey	3.08 (1.35)	0.41 (0.99)	<.001	-2.26[a] (large)			
Gillespie – Lynch (2017)									1.9 (medium)
Spring Social Skills Curriculum	28	Multidimensional Scale of Perceived							

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Descriptive statistics, significance and effect sizes for study outcome measures

Study	N	Outcome Measure	Pre-Intervention Mean (*SD*)	Post-Intervention Mean (*SD*)	Significance (*p* value)	Effect Size (Descriptor) *d*	Effect Size (Descriptor) *r*	Effect Size (Descriptor) η^2	WoE D Rating
Fall Self-Advocacy Curriculum	30	Social Support: (Overall)	not reported	not reported	.78		.04 (medium)		
		"(Friends)	not reported	not reported	.06		.27 (small)		
		Spielberger State-Trait Anxiety Inventory: (State Anxiety) [b]	not reported	not reported	.22			.06 (medium)	
		"(Trait Anxiety) [b]	38.68 (9.14)	35.56 (9.92)	.01			0.24 (large)	
		Multidimensional Scale of Perceived Social Support: (Overall)	not reported	not reported	.42		.11 (small)		

Table 5.

Descriptive statistics, significance and effect sizes for study outcome measures

Study	N	Outcome Measure	Pre-Intervention Mean (*SD*)	Post-Intervention Mean (*SD*)	Significance (*p* value)	Effect Size (Descriptor) *d*	Effect Size (Descriptor) *r*	Effect Size (Descriptor) η^2	WoE D Rating
		"(Friends) Spielberger State-Trait Anxiety Inventory: (State Anxiety) [b]	20.92 (6.80)	22.38 (5.33)	.02		.32 (medium)		
			not reported	not reported	.44			.002 (small)	
		"(Trait Anxiety) [b]	8.79 (1.89)	9.75 (2.03)	.24			.05 (small)	
Ncube (2019)	23	Social Provisions Scale (SPS)	123.50 (47.4)	129.0 (45.8)	.40	.36[a] (small)			1.6 (small)
		Cambridge Friendship Questionnaire	50.10 (22.3)	52.30 (15.6)	.53	.28[a] (small)			

Table 5.

Descriptive statistics, significance and effect sizes for study outcome measures

Study	N	Outcome Measure	Pre-Intervention Mean (*SD*)	Post-Intervention Mean (*SD*)	Significance (*p* value)	Effect Size (Descriptor) *d*	*r*	η^2	WoE D Rating
Siew (2017)	10	Adult Manifest Anxiety Scale-College Version (AMAS-C) [b]	56.70 (9.26)	54.10 (13.49)	.084	.58 (medium)			2.4 (large)
		Social Provisions Scale (SPS)	72.50 (21.67)	75.70 (11.31)	.045	.68 (medium)			
		Personal Report of Communication Apprehension (PRCA-24)	86.80 (10.63)	80.80 (14.99)	.013	.88 (large)			

Table 5.

Descriptive statistics, significance and effect sizes for study outcome measures

Study	N	Outcome Measure	Pre-Intervention Mean (*SD*)	Post-Intervention Mean (*SD*)	Significance (*p* value)	Effect Size (Descriptor) *d*	*r*	η^2	WoE D Rating
Thompson (2020)	30	Adult Manifest Anxiety Scale-College (AMAS-C) [b]	24.33 (8.30)	21.88 (8.77)	.12	.28 (small)			2.3 (medium)
		Personal Report of Communication Apprehension (PRCA-24)	71.37 (4.60)	73.25 (9.29)	.53	-.25 (small)			
		Social Provisions Scale (SPS)	70.22 (15.68)	69.38 (13.27)	.69	.05 (medium)			
		Generalised Self-Efficacy Scale (GSE) [b]	27.50 (5.11)	29.05 (4.34)	.25	-.33 (small)			

[a]Effect sizes calculated using Campbell Collaboration Effect Size Calculator (Wilson, n.d.).
[b]Direct measures of mental health and wellbeing with established reliability and validity.

Table 6.

Effect Size Descriptors (Cohen, 1988)

Effect Size	Small	Medium	Large
d	0.2	0.5	0.8
r	0.1	0.3	0.5
η^2	0.01	0.06	0.14

Conclusion and Recommendations

Summary of Findings

The aim of the current review was to evaluate the effectiveness of peer mentoring interventions at supporting the mental health and wellbeing of autistic students in secondary and post-secondary education. The selected studies investigated a variety of direct and indirect mental health and wellbeing outcomes and reported a range of results.

Mixed evidence was found for the effectiveness of peer mentoring on reducing anxiety. One study reported a significant large effect for one group and a non-significant medium effect for another (Gillespie-Lynch et al., 2017), and two other studies reported non-significant medium and small effects (Siew et al. 2017; Thompson et al., 2020). Similar inconsistencies were found for communication apprehension, with one study (Siew et al., 2017) reporting large significant effects suggesting a reduction in apprehension and another study (Thompson et al., 2020) reporting small effects demonstrating a slight increase.

Contrasting evidence was also found for outcomes related to self-efficacy and self-esteem. One study (Thompson et al., 2020) found no significant difference in self-efficacy following the intervention, however another study (Bradley, 2016) found a significant increase in self-esteem with a large effect. Further inconsistencies were found for social support. One study (Bradley, 2016) found significant reductions in loneliness and bullying with large effects and another (Siew et al., 2017) found a significant medium effect for perceived social support. Another study (Gillespie-Lynch et al., 2017) found a

similar effect for perceived social support in one of their groups, however no significant difference in the other group, and two other studies (Thompson et al., 2020; Ncube et al., 2018) also reported no significant difference.

Differences in methodology, design and outcome measures have all been explored, with reference to WoE ratings, as potential reasons for the inconsistencies observed. However, one of the most salient differences between the studies relates to the intervention design. Two studies (Gillespie-Lynch et al., 2017; Siew et al., 2017) provided weekly sessions in which students were taught skills around a specific area of need and one found preliminary support for an increase in perceived social support (Siew et al., 2017). In addition, another study (Bradley, 2016), evaluated an intervention where the autistic young people were part of a group in which all students mentored each other. The rationale for this design came from research highlighting the positive effect that being a mentor can have on wellbeing (Mentoring and Befriending Foundation, 2010) and this was the only study to find large effect sizes across all wellbeing measures they investigated. Both of these suggestions remain speculative and should be interpreted with caution on account of the methodological shortcomings identified, though they remain promising areas for future research.

Strengths and Limitations

One particular strength of the studies is that almost all of the outcome measures reported were recognised with established reliability and validity. Limitations around inferring causality from the measures using pre-test-post-test designs with no control groups have been discussed, with reference to WoE B. However, a design feature that abridged some of these limitations

was additional qualitative measures. One particular study (Siew et al., 2017) explicitly demonstrated how the interview data supported the outcome measures, through mapping participants' qualitative reviews of the programme onto the associated quantitative measure.

Various potential explanations for the inconsistencies observed between study findings have been explored, however, one limitation common to all of the studies which has not been addressed thus far, is the reliance on self-report. Research suggests that up to 55% of autistic young people experience 'alexithymia' (Milosavljevic et al., 2016); a term which describes a range of difficulties with identifying, comprehending and explaining internal bodily responses and feelings (Sifneos, 1973; Taylor, 2000). These individuals would struggle to accurately answer questions pertaining to their mental health and wellbeing, which the questionnaires and qualitative measures used by all of the studies required the participants to do. Although this critique remains speculative, it could be a significant methodological shortcoming and explain the variance observed between findings. Future research should aim to utilise a range of different tools, including measures of externalising behaviour and input from key stakeholders, as well as the self-reports, to triangulate evidence and build a more accurate understanding of mental health and wellbeing.

Recommendations

A range of interesting preliminary suggestions have been made around the specific features of peer mentoring programmes that may support mental health and wellbeing outcomes. Particular reference has been made to designs in which the autistic student acts as a mentor as well as a mentee

and those which provide supplementary teaching around a specific area of need. However, due to the small evidence base and lack of consistent findings, it is recommended that these interventions are implemented cautiously. EPs should support settings to carefully tailor the interventions to address the individual needs of the student and regularly evaluate their impact, using a range of different measures to triangulate evidence from varied sources. However, it is clear that large gaps in the literature remain, which require attention before peer mentoring for autistic students becomes a recognised SEMH intervention in schools.

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Appendix A: Excluded Studies

Table 7.

Studies Excluded at Full Article Screening with Reason Codes

Full Study Reference	Exclusion Criteria Code
Ames, M. E., McMorris, C. A., Alli, L. N., & Bebko, J. M. (2016). Overview and Evaluation of a Mentorship Program for University Students with ASD. *Focus on Autism and Other Developmental Disabilities*, *31*(1), 27–36. https://doi.org/10.1177/1088357615583465	7. No mental health or wellbeing outcome
Carter, E. W., Gustafson, J. R., Sreckovic, M. A., Steinbrenner, J. R. D., Pierce, N. P., Bord, A., Stabel, A., Rogers, S., Czerw, A., & Mullins, T. (2017). Efficacy of Peer Support Interventions in General Education Classrooms for High School Students with Autism Spectrum Disorder. *Remedial and Special Education*, *38*(4), 207–221. https://doi.org/10.1177/0741932516672067	7. No mental health or wellbeing outcome
Chung, K.-M., Reavis, S., Mosconi, M., Drewry, J., Matthews, T., & Tasse, M. J. (2007). Peer-mediated social skills training program for young children with high-functioning autism. *Research in Developmental Disabilities*, *28*(4), 423–436. https://doi.org/http://dx.doi.org/10.1016/j.ridd.2006.05.002	3a. Participants are too young 6. Not a peer mentoring intervention
Fairchild, L. A., Powell, M. B., Gadke, D. L., Spencer, J. C., & Stratton, K. K. (2020). Increasing social engagement among college students with autism. *Advances in Autism*, *6*(2), 83–93. https://doi.org/10.1108/AIA-09-2019-0030	7. No mental health or wellbeing outcome
Hillier, A., Goldstein, J., Tornatore, L., Byrne, E., & Johnson, H. M. (2019). Outcomes of a peer mentoring program for university students with disabilities. *Mentoring and Tutoring*, *27*(5), 487–508. https://doi.org/10.1080/13611267.2019.1675850	7. No mental health or wellbeing outcome
Karoff, M., Tucker, A. R., Alvarez, T., & Kovacs, P. (2017). Infusing a Peer-to-Peer Support Program with Adventure Therapy for Adolescent Students	7. No mental health or wellbeing outcome

with Autism Spectrum Disorder. *Journal of Experiential Education*, *40*(4), 394–408. https://doi.org/http://dx.doi.org/10.1177/1053825917727551	
Laghi, F., Mancusi, M., Russo, D., & Tonchei, V. (2017). Peer Mediated Intervention for adolescents with autism: A pilot study. *L'intervento Mediato Dai Pari per Adolescenti Con Autismo: Uno Studio Pilota.*, *34*(2), 71–88. http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc14&NEWS=N&AN=2018-16933-006	2. Study was not published in English 7. No mental health or wellbeing outcome
Mavropoulou, S. (2007). Developing pilot befriending schemes for people with autism spectrum disorders in a region of Greece: Lessons from practice. *Child and Adolescent Mental Health*, *12*(3), 138–142. https://doi.org/http://dx.doi.org/10.1111/j.1475-3588.2007.00457.x	6. Not a peer mentoring intervention 7. No mental health or wellbeing outcome
McCarville, E. (2013). Peer Mentoring Intervention Teaching Adaptive Skills to Individuals with High Functioning Autism Spectrum Disorders. *ProQuest LLC*, *75*(2-B(E)), No-Specified. http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc11&NEWS=N&AN=2014-99160-350	4a. Intervention took place outside of an education setting 7. No mental health or wellbeing outcome
Ness, B. M. (2013). Supporting Self-Regulated Learning for College Students with Asperger Syndrome: Exploring the "Strategies for College Learning" Model. *Mentoring & Tutoring: Partnership in Learning*, *21*(4), 356–377. https://doi.org/http://dx.doi.org/10.1080/13611267.2013.855865	7. No mental health or wellbeing outcome
Rando, H., Huber, M. J., & Oswald, G. R. (2016). An Academic Coaching Model Intervention for College Students on the Autism Spectrum. *Journal of Postsecondary Education and Disability*, *29*(3, SI), 257–262.	7. No mental health or wellbeing outcome
Scheef, A. R., Hollingshead, A., & Voss, C. S. (2019). Peer Support Arrangements to Promote Positive Postschool Outcomes. *Intervention in School and Clinic 54*(4), 219–224.	5. Non-experimental study design

https://doi.org/10.1177/1053451218782430	
Shalev, R. A. (2017). Peer support and peer network interventions for high school students with autism: Application, evaluation, and predictability. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, *78*(2-A(E)), No-Specified. http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc14&NEWS=N&AN=2017-01058-237	7. No mental health or wellbeing outcome
Smith, A., Prendeville, P., & Kinsella, W. (2018). Using preferred interests to model social skills in a peer-mentored environment for students with special educational needs. *International Journal of Inclusive Education*, *22*(8), 921–935. https://doi.org/10.1080/13603116.2017.1412516	3b. Students did not have autism 7. No mental health or wellbeing outcome
Tobajas, F., De Armas, V., Dolores Cabello, M., & Grijalvo, F. (2014). Supporting Students with Special Needs at University through Peer Mentoring. *2014 IEEE Global Engineering Education Conference (EDUCON)*, 701–705.	7. No mental health or wellbeing outcome
Todd, T., Miodrag, N., Caris, M., Endinjok, B., & Perez, E. (2018). Experiences of peers and peer-mentors during a peer-mentor physical activity program for college students with autism spectrum disorder. *Journal of Sport and Exercise Psychology*, *40*(S), S121.	6. Not a peer mentoring intervention

Appendix B: Mapping the Field

Table 8.

Summaries of Included Studies

All of the studies followed quasi-experimental designs and the quantitative findings related to the current review topic are summarised in Table 5. However, each study also employed additional qualitative measures to gather participant's views on the intervention more generally and these are included in the mapping table, for reference.

Study	Location and Setting	Participants	Mentors	Intervention Details	Outcome Measures	Qualitative Findings
Bradley (2016)	UK Secondary School	12 students (4 male, 8 female) 11-12 years Confirmed autism diagnoses.	3 students in the same class as the autistic mentee.	Mentoring groups contained 4 students from the same class (1 with autism, 3 without autism). Group met once per fortnight from January-July 2013. Group coordinator supported the students to develop the content	Quantitative measures of: Self-esteem (Harter Self-Esteem Questionnaire), Social satisfaction (Loneliness and Social Dissatisfaction Scale) and Bullying (Anti-Bullying Alliance Survey).	Main themes from interviews related to increased feelings of inclusion within the school community and reductions in incidents of bullying, alongside increased awareness of support systems.

Study	Location and Setting	Participants	Mentors	Intervention Details	Outcome Measures	Qualitative Findings
				of each session, based on their needs.	Qualitative semi-structured interviews to gather students' views on the programme, analysed with thematic analysis.	
Gillespie-Lynch et al. (2017)	USA University	28 (18 male, 10 female) (Spring) and 30 (19 male, 11 female) (Fall) students Average age 22 years Either self-identified as autistic or had confirmed diagnoses.	Undergraduate Masters and Ph.D. students. 1:1 mentors completed online training on autism and 1 hour of in-person training on goals. Group mentors had additional 3 hours. Provided with a script to support 1:1 sessions and completed a	"Project REACH": 14 weeks of weekly 1 hour long 1:1 individualised mentoring sessions and/or up to 10 weeks of weekly 1 hour long mentor-led group meetings, with 2-9 mentees. Group meetings followed a standardised curriculum: <u>Spring</u> – social skills curriculum, based on an adapted PEERS model. <u>Fall</u> – self-advocacy curriculum adapted from the Integrated Self Advocacy Curriculum.	Quantitative measures of: <u>Perceived social support</u> (Multidimensional Scale of Perceived Social Support: (overall and from friends), <u>Autism symptomology</u> (Social Responsiveness Scale-A), <u>State and trait anxiety</u> (Spielberger State-Trait Anxiety Inventory), <u>Academic self-efficacy</u> (Spielberger Self-Report of Academic Self-Efficacy) and	<u>Spring Curriculum</u> Some students reported they felt their social skills had improved, whilst others felt they did not need the social skills support. <u>Fall Curriculum</u> Some students reported they enjoyed interacting socially with peers, others reported that this was anxiety-provoking

Study	Location and Setting	Participants	Mentors	Intervention Details	Outcome Measures	Qualitative Findings
			weekly log describing sessions, which facilitator provided feedback on.		Self-advocacy (Self-Advocacy Inventory: close- and open-ended) (fall curriculum only). Qualitative written evaluations of the programme.	and uncomfortable.
Ncube et al. (2018)	Canadian University	23 students (18 male, 5 female) Average age 21 Self-reported autism diagnoses.	Clinical Psychology graduate students. Full day of training on supporting the typical autism needs. Supervision meetings with senior mentor twice a month.	The Autism Mentorship Program: 1:1 meetings once every 2 weeks for 1 academic year. Student-centred approach, no manualised sessions. Group social events were arranged by mentors for mentees to meet and socialise.	Quantitative measures of: Social Support (Social Provisions Scale), Friendships (Cambridge Friendship Questionnaire), Goal achievement (asked whether they felt their goals had been achieved) and Student satisfaction (overall satisfaction and satisfaction with individual meetings).	General satisfaction with the programme and 78% were interested in continuing the following year.

Study	Location and Setting	Participants	Mentors	Intervention Details	Outcome Measures	Qualitative Findings
				Structured workshops focusing on specific topics.		
Siew et al. (2017)	Australian University	10 students (7 male, 3 female). Average age 18. Self-reported an autism diagnoses.	Postgraduate students from School of Psychology, Speech Pathology, School of Occupational Therapy and Social Work. Training through specialist workshops on generic and autism-specific topics. Weekly supervision led by programme coordinators,	Curtin Specialist Peer Mentoring Programme: 1:1 meetings once per week for 1 hour across 1 semester, led by the mentee. Weekly 'Curtin' Social Group, for learning social skills (90 minutes per week) and off-campus activities.	Quantitative measures: Anxiety (Adult Manifest Anxiety Scale-College Version) Social support (Social Provisions Scale) Communication apprehension (Situational Communication Apprehension Measure) (Personal Report of Communication Apprehension) Communication competence (Self-Perceived Communication Competence Scale	Thematic analysis revealed subthemes related range of positive outcomes, including helping the transition to university and managing negative emotions).

Study	Location and Setting	Participants	Mentors	Intervention Details	Outcome Measures	Qualitative Findings
			educational specialist and psychologist.		Student satisfaction (Student Satisfaction Survey) Qualitative semi-structured interview to gather student views on the programme.	
Thompson et al. (2020)	Australian University	30 students (22 male, 8 female). Average age 22 years. Self-reported autism diagnoses.	Graduate Health Science, Occupational Therapy, Speech Pathology and Psychology students. Training on autism and communication. Weekly group supervision with	'Curtin' Specialist Peer Mentoring Programme: 1:1 meetings once or twice per week for 1 academic year. Each meeting lasted for 1-2 hours. A weekly social group facilitated by mentors, sometimes presentations from external speakers.	Quantitative measures: Autism symptomology (Social Responsiveness scale) Anxiety (Adult Manifest Anxiety Scale-College) Communication apprehension (Personal Report of Communication Apprehension) (Situational Communication Apprehension Measure)	Thematic analysis revealed main themes related to psychological support.

Study	Location and Setting	Participants	Mentors	Intervention Details	Outcome Measures	Qualitative Findings
			programme coordinators.		Perceived communication competence (Self-Perceived Communication Competence Scale) Social support (Social Provisions Scale) Self-Efficacy (Generalised Self-Efficacy Scale) Qualitative semi-structured interview to gather views on programme.	

Appendix C: Weight of Evidence Criteria

C.1: WoE A (Methodological Quality)

An adapted version of the Gersten et al. (2005) coding protocol was used to appraise the methodological quality of the studies. All articles in the present review followed quasi-experimental designs with no control groups, thus questions which were not relevant to this type of study design were removed.

(Items removed: "*Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?", "Was the nature of services provided in comparison conditions described?", "Was any documentation of the nature of instruction or series provided in comparison conditions?*")

Overall quality was assessed in line with the criteria set out by Gersten et al. (2005), with adaptations made to allow for a 1-3 rating scale to be used. For WoE A, studies with an overall rating of 3 satisfy at least 7 of the essential criteria and at least 4 of the desirable criteria, studies with an overall rating of 2 satisfy at least 7 of the essential criteria and at least 2 of the desirable criteria and studies with an overall rating of 1 satisfy less than 7 of the essential criteria and/or less than 2 of the desirable criteria (see Table 9).

Table 9.

WoE A Criteria with Rationale

WoE A Rating	Criteria	Rationale
3 (high)	≥ 7 essential criteria and ≥ 4 desirable criteria	Based on the Gersten et al. (2005) coding protocol for group experimental and quasi-experimental research in special education.
2 (medium)	≥ 7 essential criteria and ≥ 2 desirable criteria	
1 (low)	< 7 essential criteria and/or < 2 desirable criteria	

Table 10.

WoE A Ratings

Study	Number of Essential Criteria Satisfied	Number of desirable criteria satisfied	Overall WoE A Rating
Bradley (2016)	6	2	1 (low)
Gillespie-Lynch et al. (2017)	7	2	2 (medium)
Ncube et al. (2018)	7	2	2 (medium)
Thompson et al. (2020)	7	3	2 (medium)
Siew et al. (2017)	8	4	3 (high)

Note. 1-1.6 (low), 1.7-2.3 (medium), 2.4-3 (high)

C.2: WoE B (Appropriateness of the Design)

Table 11.

WoE B Criteria with Rationale

Criteria		Weighting	Rationale
A. Study Design	3	Randomised Control Trials	Petticrew and Roberts (2003) identify these as the best study designs for addressing "effectiveness" research questions.
	2	Cohort Studies, Quasi-Experimental Studies	
	1	Qualitative Research, Surveys, Non-Experimental Evaluations	
B. Quasi-Experimental Study Design	3	Designs that use a control group	Eliopoulos et al. (2005) suggest that these are the highest quality quasi-experimental designs.
	2	1-group removed-treatment and repeated-treatment designs	
	1	1-group pre-test-post-test designs	
C. Justification of the Use of Quasi-Experimental Study Design	3	Justification of the use of the design is made and the potential limitations are acknowledged	Eliopoulos et al. (2005) suggest that researchers should communicate constraints and design limitations transparently, so that readers can interpret findings cautiously.
	2	Justification of the use of the design is made	
	1	Limited to no justification to the use of the design is made	

Table 12.

WoE B Ratings

Study	Criteria A Rating	Criteria B Rating	Criteria C Rating	Overall WoE B Rating
Bradley (2016)	2	1	1	1.3 (low)
Gillespie-Lynch et al. (2017)	2	1	3	2 (medium)
Ncube et al. (2018)	2	1	1	1.3 (low)
Siew et al. (2017)	2	1	3	2 (medium)
Thompson et al. (2020)	2	1	3	2 (medium)

Note. 1-1.6 (low), 1.7-2.3 (medium), 2.4-3 (high)

C.3: WoE C (Topic Relevance)

Table 13.

WoE C Criteria with Rationale

Criteria	Weighting		Rationale
A. Setting	3	The intervention took place in an education setting in the UK	It is likely that studies carried out in the UK will be more relevant and generalisable to education settings and EP practice in the UK.
	2	The intervention took place in an education setting in a country with a similar education system to the UK	
	1	The intervention took place in an education setting in a country that does not have a similar education system to the UK	
B. Autism Diagnosis	3	Participants had a confirmed clinical diagnosis of Autism Spectrum Disorder/Condition	The current review is interested in young people with Autism Spectrum Disorder/Condition, thus a confirmed clinical diagnosis is preferable.
	2	Participants had a self-reported diagnosis of Autism Spectrum Disorder/Condition	
	1	Participants self-identified as being autistic	
C. Age of Participants	3	Aged 11-16	Although Educational Psychologists in the UK can work with young people up to 25 years old, the majority of the work is carried out with those under the age of 16. Therefore, findings from studies with younger samples may be more relevant and generalisable to UK EP practice.
	2	Aged 17-18	
	1	Aged 19-25	

Criteria	Weighting		Rationale
D. Intervention	3	The peer mentoring intervention is delivered in isolation of any additional interventions	The current review is investigating the effectiveness of peer mentoring interventions; thus, the internal validity of the study will be compromised if the participants are receiving additional support alongside the peer mentoring.
	2	The peer mentoring intervention is supplemented with events or activities associated with the programme	
	1	The peer mentoring intervention is delivered alongside another SEMH intervention	
E. Outcome Measure	3	The outcome measures include a direct measure of mental health or wellbeing with established reliability and validity	The current review is interested in outcomes related to mental health and wellbeing, thus direct measures related to mental health or wellbeing, with established reliability and validity are preferable.
	2	The outcome measures include a direct measure of mental health or wellbeing with no reported reliability or validity data	
	1	The outcome measures include an indirect measure of mental health or wellbeing	

Table 14.

WoE C Ratings

Study	Criteria A Rating	Criteria B Rating	Criteria C Rating	Criteria D Rating	Criteria E Rating	Overall WoE C Rating
Bradley (2016)	3	3	3	3	3	3 (high)
Gillespie-Lynch et al. (2017)	2	1	1	2	3	1.8 (medium)
Ncube et al. (2018)	2	2	1	2	1	1.6 (low)
Siew et al. (2017)	2	2	2	2	3	2.2 (medium)
Thompson et al. (2020)	2	2	1	2	3	2 (medium)

Note. 1-1.6 (low), 1.7-2.3 (medium), 2.4-3 (high)

Appendix D: Example Coding Protocol

Date: 01.02.2021

Full Study Reference:

Bradley, R. (2016). `Why single me out?' Peer mentoring, autism and inclusion in mainstream secondary schools. *British Journal of Special Education*, *43*(3), 272–288. https://doi.org/10.1111/1467-8578.12136

Essential Criteria

Quality Indicators for Describing Participants

1. Was sufficient information provided to determine/confirm whether the participants demonstrated the disability(ies) or difficulties presented?
   ☒ Yes
   ☐ No
2. Was sufficient information given characterizing the interventionists or teachers provided?
   ☒ Yes
   ☐ No

Quality Indicators for Implementation of the Intervention

3. Was the intervention clearly described and specified?
   ☒ Yes
   ☐ No
4. Was the fidelity of implementation described and assessed?
   ☐ Yes
   ☒ No

Quality Indicators for Outcome Measures

5. Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
   ☒ Yes
   ☐ No
6. Were outcomes for capturing the interventions effect measured at the appropriate times?
   ☒ Yes
   ☐ No

Quality Indicators for Data Analysis

7. Were the data analysis techniques appropriately linked to key research questions, hypotheses and unit of analysis in the study?
   ☒ Yes
   ☐ No
8. Did the research report include not only inferential statistics but also effect size calculations?
   ☐ Yes
   ☒ No

Desirable Criteria

1. Was data available on attrition rates among intervention samples? Where severe overall attrition was documented, it was less than 30%?
   ☐ Yes
   ☒ No
2. Did the study provide not only internal consistency reliability but also test-retest reliability and interrater reliability (when appropriate) for outcome measures?
   ☐ Yes
   ☒ No
3. Were outcomes for capturing the intervention's effect measured beyond an immediate post-test?
   ☐ Yes
   ☒ No
4. Was evidence of the criterion-related validity and construct validity of the measures provided?
   ☐ Yes
   ☒ No
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 examined quality of implementation?
   ☒ Yes
   ☐ No
6. Did the research report include actual audio or videotape excerpts that capture the nature of the intervention?
   ☐ Yes
   ☒ No
7. Were the results presented in a clear, coherent fashion?
   ☒ Yes
   ☐ No

Summary of Evidence

Number of essential criteria satisfied	Number of desirable criteria satisfied	Overall WoE A Rating
6	2	1 (low)