

Case Study 1: An Evidence-Based Practice Review Report

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

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 focu

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(u)-3(tistic in)6(c

Figure 1

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 (Hebron, 2018). This is likely to be associated with the aforementioned social theories of autism (Hebron, 2018). This is likely to be associated with the aforementioned social theories of autism (Hebron, 2018).

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. B

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

studies which were selected for the current review can be seen in Table 3

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	

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.

Roberts (2003) and Eliopoulos et al. (2005) to appraise WoE B, and criteria

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

acknowledge these constraints and highlight the importance of justifying the quasi-experimental design and clearly outlining potential limitations, so that

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

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

m fom

eff

esn

metdoicl dniffnsbreenste studi

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 (<i>p</i> value)	Effect Size (<i>d</i>)	Effect Size (Descriptor) <i>r</i> 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)
<i>Spring Social Skills Curriculum</i>	28	Multidimensional Scale of Perceived						

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)	d	Effect Size (Descriptor) r	²	WoE D Rating
<i>Fall Self-Advocacy Curriculum</i>	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)		

Study	N	Outcome Measure	Pre-Intervention Mean (SD)	Post-Intervention Mean (SD)
-------	---	-----------------	----------------------------	-----------------------------

Study	N	Outcome Measure	Pre-Intervention Mean (SD)	Post-Intervention Mean (SD)	Significance (<i>p</i> value)	<i>d</i>	Effect Size (Descriptor) <i>r</i>	²	WoE D Rating
Siew (2017)	10	Adult Manifest Anxiety Scale-College Version (AMAS-C) _b	56.70 (9.26)						
		Social Provisions Scale (SPS)	72.50 (21.67)						
		Personal Report of Communication Apprehension (PRCA-24)							

Study	N	Outcome Measure	Pre-Intervention Mean (SD)	Post-Intervention Mean (SD)	Significance (<i>p</i> value)	<i>d</i>	Effect Size (Descriptor) <i>r</i>	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)			
		Personal Report of Communication Apprehension (PRCA-24)	71.37 (4.60)	73.25 (9.29)	.53				
		Social Provisions Scale (SPS)	70.22 (15.68)	69.38 (13.27)	.69				
		Generalised Self-Efficacy Scale (GSE) ^b	27.50 (5.11)	29.05 (4.34)	.25				

Table 6.

Effect Size Descriptors (Cohen, 1988)

Effect Size	Small	Medium	Large
<i>d</i>	0.2	0.5	0.8
<i>r</i>	0.1	0.3	0.5
r^2	0.01	0.06	0.14

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

betas8H(r)13(o)6(f)(r, o)-4(sn)-to-3(r stu)8w7(lat)(r, o-3(d)-3(.)] TJETQq0.000008871 0 595

was additional qualitative measures. One particular study (Siew et al., 2017) explicitly demonstrated

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

References and Appendices

References

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders*. 5th ed. Arlington, VA: American Psychiatric Association.

Anti-Bullying Alliance (2007) *Audit Questionnaire for Pupils*.

Coleman, N., Sykes, W., & Groom, C. (2017). Peer support and children and young people's mental health. *Independent Social Research*. London, UK: Department of Education.

Eliopoulos, G. M., Harris, A. D., Lautenbach, E., & Perencevich, E. (2005). A Systematic Review of Quasi-Experimental Study Designs in the Fields of Infection Control and Antibiotic Resistance. *Clinical Infectious Diseases*, 41(1), 77-82.

Fletcher-Watson, S., & Happé, F. (2019). *Autism: A New Introduction to Psychological Theory and Current Debate*. Routledge, London UK.

Frith, U. (1989). *Autism: Explaining the Enigma*. Blackwell, Oxford.

Frost, K. M., Bailey, K. M., & Ingersoll, B. R. (2019). "I Just Want Them to

Gumbert, H. (2020) "Creating a Sense of Belonging for College Students with Autism Spectrum Disorder: A Case Study Analysis". *Master of Arts in Higher Education (MAHE) Theses*. 165.

<https://pillars.taylor.edu/mahe/165>

Harter, S. (1985) *Self-Perception Profile for Children Age 8-13*. Denver, CO: University of Colorado.

Hebron, J. S. (2018). School Connectedness and the Primary to Secondary School Transition for Young People with Autism Spectrum Conditions. *British Journal of Educational Psychology*, 88(3), 396-409.

Jerusalem, M., & Schwarzer, R. (1979). *The general self-efficacy scale*.

LeGoff, D. (2004). Use of LEGO as a Therapeutic Medium for Improving Social Competence. *Journal of Autism and Developmental Disorders*, 34(5), 557-571.

Levy, A., & Perry, A. (2011). Outcomes in Adolescents and Adults with Autism: A Review of the Literature. *Research in Autism Spectrum Disorders*, 5(4), 1271-1282.

Lowe, P. A., Papanastasiou, E. C., DeRuyck, K. A., & Reynolds, C. R. (2005). Test Score Stability and Construct Validity of the Adult Manifest Anxiety Scale-College Version Scores Among College Students: A Brief Report. *Measurement and Evaluation in Counselling and Development*, 37(4), 220-227.

Maslow, A. H. (1943). A Theory of Human Motivation. *Psychological Review*, 50(4), 370-396.

Pennington, B. F., Rogers, S. J., Bennetto, L., Griffith, E. M., Reed, D. T., & Shyu, V. (1997). Validity Tests of the Executive Dysfunction Hypothesis of Autism. *Autism as an Executive Disorder*, 143–178.

Perera, H. N. (2016). Construct V

Appendix B: Mapping the Field

Table 8.ing the Field

Study	Location and Setting	Participants	Mentors	Intervention Details	Outcome Measures	Qualitative Findings
Ncube et al. (2018)	Canadian University		weekly log describing sessions, which facilitator provided feedback on.		<u>Self-advocacy</u> (Self-Advocacy Inventory: close- and open-ended) (fall curriculum only). Qualitative written evaluations of the programme.	and uncomfortable.

Study	Location and Setting	Participants	Mentors	Intervention Details	Outcome Measures	Qualitative Findings
			educational specialist and psychologist.		<u>Student satisfaction</u> (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: <u>Autism symptomology</u> (Social Responsiveness scale) <u>Anxiety</u> (Adult Manifest Anxiety Scale-College) <u>Communication apprehension</u> (Personal Report of Communication Apprehension) (Situational Communication Apprehension Measure)	Thematic analysis revealed main themes related to psychological support.

Study

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*

any documentation of the nature of

instruction or series TQq008871 0 5442 550.75 oF4 1 aod1 0 0c1 120 inc od(tio)8(n)-3(? l

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
-------	--	--	----------------------

Table 12.

WoE B Ratings

Study

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
	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
	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
	2	Aged 17-18
	1	Aged 19-25

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.

The current review is interested in young people with Autism Spectrum Disorder/Condition, thus a confirmed clinical diagnosis is preferable.

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.

Criteria	Weighting	Rationale
D. Intervention	3	The peer mentoring intervention is delivered in isolation of any additional interventions
	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
	2	The outcome measures
	1	

/F4 12 Tf1 0 0 1 236.45 496.

