



Understanding adolescent mental health and well-being: a qualitative study of school stakeholders' perspectives to inform intervention development

Ruth D. Neill¹  · Katrina Lloyd² · Paul Best² · Mark. A. Tully³

Received: 30 July 2021 / Accepted: 22 July 2022
© The Author(s) 2022

Abstract

There has been an increasing prevalence of mental health issues among adolescents. Early interventions in the school setting have been identified as a way to help reduce and prevent these issues. However, the input of key school stakeholders is largely neglected within the intervention development process. This study aims to address this deficit by exploring student and teacher perspectives on adolescent mental health and the barriers and facilitators to intervention development. Data were collected through six focus groups with 32 students and seven semi-structured interviews with teachers were conducted in one secondary school in Northern Ireland, alongside observations across the whole school. The data were analysed using thematic analysis. The main themes identified were Test anxiety as a detrimental factor to adolescent mental health particularly within the school setting, and the use of a multi-component intervention involving communication, education and physical activity could help reduce anxiety and improve well-being. Perceived facilitators for intervention development were co-production, pupil ownership and target age while barriers included the school's role in mental health prevention, mixed interests of adolescents, and time constraints. Issues such as test anxiety are important factors to consider in designing a school-based intervention. A school-based intervention should be multi-dimensional to allow the programme to be tailored and sustainable for the school setting. Future research with a larger representative sample is required to obtain information on the acceptance of the intervention developed from this research.

Keywords Adolescents · School research · Intervention development · Mental health · Test anxiety

✉ Ruth D. Neill
r.neill@ulster.ac.uk

Extended author information available on the last page of the article

Introduction

A growing concern worldwide, is the increasing prevalence of mental health related difficulties affecting around 1 in 5 adolescents before the age of 18 (Schulte-Körne 2016; Werner-Seidler et al. 2017; World Health Organization 2019, 2018a). Adolescence is defined as the period between the ages of 10–19 years and is categorised as an at-risk period for developing serious mental health issues which is why research has suggested that it may be vital to intervene during this transitional life phase (McGorry et al. 2013; Weeks et al. 2017; World Health Organization 2018a).

Research suggests that worldwide, approximately 70 per cent of adolescents with a mental health issue will not receive appropriate support, services or treatment pathways (Mental Health Foundation 2020; World Health Organization 2019). Therefore, early interventions have been acknowledged as a way to prevent and reduce the prevalence of adolescent mental health issues (Eiland and Romeo 2013; Weeks et al. 2017). Many interventions within this population are often designed around psychosocial approaches (psychotherapy or cognitive behaviour therapy) or pharmacological (medication) which can be costly to sustain on a long-term basis (Lam 2016; Weeks et al. 2017). Due to these unsustainable costs, interventions incorporating education on mental health and physical activity components in the school setting are being considered as less stigmatising, more feasible and ultimately more cost-effective alternatives to use as a catalyst in creating change and reducing anxiety in adolescents (Arnold et al. 2016; Breslin et al. 2016; Das et al. 2016; Fazel et al. 2014; Halliday et al. 2019). Furthermore, the school has been recommended as a setting for early intervention in the hope that it can prevent the emergence of poor mental health and low PWB (Fazel et al. 2014; Holt et al. 2018; O' Connor et al. 2018; Pulimeno et al. 2020; World Health Organization 2018b).

Evidence suggests that the school may be an important institution within the community setting for helping promote positive mental health behaviours (Arnold et al. 2016; Holt et al. 2018; O' Connor et al. 2018; Pugh and Statham 2006; Pulimeno et al. 2020). This is because they offer a greater likelihood of programme adherence due to increased social support, programme structures and a more open environment to facilitate change in comparison to clinical or community-based interventions (Betts and Thompson 2017; Hoover and Mayworm 2017). Schools are acceptable intervention settings as the programme can be applied to individuals regardless of gender or background and provides a continuous structured environment for introducing interventions to children and young people (Holt et al. 2018).

Many of these school-based interventions have not set an emphasis on mental health and well-being outcomes; instead, the programmes focussed on improvements to academic outcomes, cognitive functioning or increasing the level of physical activity undertaken (Sullivan et al. 2017; Ribeiro et al. 2010; Van Sluijs et al. 2007). The reasoning behind this lack of emphasis is that adolescents often have to rely on schools and teachers for their mental health education and

unfortunately schools and teachers are not often provided with adequate training and resources to facilitate this (O'Reilly et al. 2018). This was highlighted in the Time to Change report (2012) which illustrated that many teachers within the United Kingdom do not receive appropriate support or guidance to tackle mental health and well-being in schools. Similar to this report, NICCY (2017) acknowledged that the I-Matter programme, which was implemented in NI to promote resilience, health and well-being, demonstrated that many schools did not feel equipped to deal with the mental health and well-being of their students. So therefore, despite the use of school-based interventions, researchers have acknowledged that there is sporadic evidence on the success effectiveness of these programmes in addressing mental health issues among young people. Researchers have acknowledged, that is primarily due to difficulties faced in achieving high quality collaboration, sufficient input from key stakeholders, limited resources, education and responsibility as well as limited guidelines or tools to facilitate this engagement (Borg and Pålshaugen 2019; Davies and Matley 2017; Fazel et al. 2014; Morgan et al. 2019).

Evidence suggests that for successful school-based interventions, the use of stakeholders in the development process brings expertise in from a range of different disciplines and backgrounds which, in turn, contributes greatly to the research process (Arnold et al. 2016; Daly-Smith et al. 2020; National Institute of Health Research 2018; Schulte-Körne 2016; Reed et al. 2020; World Health Organization 2012). Indeed, the limited evidence that is available supports this contention; the involvement of stakeholders in the development of interventions can help to ensure effective implementation (Arnold et al. 2016; Daly-Smith et al. 2020; Majid et al. 2018; McGorry et al. 2013; Reed et al. 2020; World Health Organisation 2012). Therefore this study will consider the perspectives of both students and teachers as part of a larger co-production study to aid the development of a school-based mental health intervention. This study serves to highlight the key issues that need to be addressed by researchers when developing school-based interventions and is important to consider in co-production models within school-based research.

Aims and objectives

The overall aim of the current study is to involve students and teachers in the development of an intervention to help reduce mental health problems among adolescents. Specifically, this study sought to:

- Develop an understanding of the participants' perceptions of what mental health is and the key mental health issues young people face;
- Identify potential intervention components and outcome measures; and
- Develop an understanding of the school environment and the factors in the school environment that may help or hinder intervention implementation.

Methods

This study is part a larger doctoral research project which involves a two-fold approach. Firstly to design a school-based mental health and mental well-being intervention through a co-produced model with a co-research school. Secondly, to co-develop and test the feasibility of the intervention to determine if it can improve mental health outcomes and well-being among young people and is acceptable for delivery in the school setting. The overall study was primarily based on stages one and two of the Medical Research Council (MRC) framework for developing complex interventions, with a pragmatic mixed methods approach used to identify intervention components and outcomes. This current study formed the second phase of the overall research project by conducting a qualitative study with key school stakeholders to identify possible outcomes for the intervention focus and explore barriers to intervention development/implementation.

Study design

Morgan et al. (2019) recommended the use of multiple qualitative methods in the early stages of designing interventions. Therefore, this paper follows an qualitative research design with a semi-ethnographic approach. This dynamic method follows a path of inquiry which offers a more comprehensive understanding of the research problem as it was deemed a more rigorous approach than traditional cross-sectional interviews. Research suggested that ethnographic research often makes significant use of observations which are then triangulated with interviews and/or informal discussions increasing the validity of the research findings (Creswell and Plano Clark, 2018). Data collection began on 13th March 2018 and ended on 22nd June 2018.

Study setting and participants

An independent, all-boys, grammar school (one with many pupils aged 12–18 years old who have undertaken academic selection examinations and met specific admission criteria) in Belfast, Northern Ireland was invited to be involved in the qualitative research This school was used within this current study as they were the as an educational co-research partner in the wider project. A convenience sample of students and teachers was used in this study. A total of 32 students participated in six focus group interviews and seven teachers (three females, four males) participated in the individual semi-structured interviews.

Procedure and data collection

Ethical approval was gained from the School of Social Sciences, Education and Social Work at Queens University Belfast (12th March 2018; Ref no: 005_1920). Observations were conducted over two months across the whole school (i.e. in the classroom during curriculum subjects or pupil development sessions, during class examinations and during lunch breaks). Observations were conducted to gain an understanding of

how the school operates and how students interact with their peers and teachers, and, importantly, how an intervention would best fit into this environment. This approach was used to add additional depth to the findings from the interview and focus group data while enabling triangulation (Bryman 2016; Creswell and Plano Clark 2018). The observations were conducted in three phases and recorded as field notes in a notebook and on an observation template. Firstly, a descriptive phase was conducted to provide a broad overview of the setting followed by a focussing phase which recognised patterns in behaviour being observed. Next, the observations became more focussed to establish and clarify elements of the school setting and how an intervention could be developed and tailored to this environment. Green et al. (2015) suggested that this would allow the researcher to identify and understand any barriers that could impact intervention implementation. Finally, once the saturation point was reached, i.e. the new research findings replicated previous material, the observation phase of the research was concluded.

The MRC guidelines for the development of complex interventions recommends interviews and focus group with key stakeholders prior to development (Craig et al. 2008). To this end, individual semi-structured interviews were conducted in June 2018, with seven teachers from across a range of areas (e.g. heads of department, form tutors and subject teachers). The interviews were held at a location of their choice within the school setting and lasted between 9 and 25 min. The inclusion of teachers from different subject areas was to provide an in-depth understanding of the school environment and how the teachers felt an intervention could be developed within this setting. Conducting the interviews in the school setting and face-to-face provided the opportunity to gain further clarification to observation findings.

Focus group interviews were conducted between May and June 2018 to generate an organised discussion with selected students to gain collective and rich detailed information about the research topic (Arthur et al. 2012; Green et al. 2015; Morse and Niehaus, 2009). A total of six focus groups took place; three with key stage three students (aged 12–14), two with key stage four students (aged 15–16) and one with key stage five students (aged 17–18). Approximately four to seven students took part in each focus group. The focus group sessions were conducted on the school premises in available classrooms and lasted around 10–25 min depending on the availability of the students during the normal school day. Interview and focus group protocols were developed with open ended questions including questions on the main mental health issues affecting young people, the potential use of physical activity to relieve these and how an intervention could fit into the school environment. This left flexibility for additional questions to be added as required during the interview (Supplementary File 1). This format was vital for gaining an understanding of the perspectives of the key stakeholders to identify key intervention components and outcome measures. Permission was sought to record the interview from all participants.

Data analysis

The interviews and focus groups were audio-recorded and transcribed verbatim. Data were anonymised and stored within a secure university computer. Thematic analysis was conducted using Braun and Clarke's (2006) six step process to identify

emerging themes from the transcripts. A main strength of thematic analysis is that it is a flexible and rigorous process which can provide rich and detailed information (Bryman 2016; Vaismoradi et al. 2013). An inductive approach was used to prevent over defining the analysis process while also allowing new concepts and themes to be established (Braun and Clarke 2006).

To thematically analyse the data, initial familiarisation of the data was conducted by reading and re-reading the observation field notes and transcriptions of the interviews and focus groups. During the process, free-form notes were made and keywords and statements of interest noted. The data were then coded for key themes which were reviewed and refined. This refinement phase involved a processing technique of spreading excerpts of the transcripts into groups and using the NVivo software version 12 (QSR International Pty Ltd, 2018) to help winnow the themes into a manageable number. Finally, the data were reviewed to ensure they represented the data within the transcripts. During the analysis process, the authors' reviewed the data independently and then discussed the key themes uncovered, any disagreements were resolved through discussion.

Results

Seven teachers (3 females, 4 males) participated in semi-structured interviews while 32 students (all male) aged 12–18 years ($M = 14.69$, $SD \pm 2.04$) were involved in six focus groups. Table 1 displays the characteristics of the participants. In the presentation of these results, the teachers will be identified as (T) and students as (S). Initially 121 codes were retrieved from the dataset covering a broad area. Subsequently through the thematic analysis process, the initial general codes were refined and re-defined with five core themes identified; (1) perceptions of mental health, (2)

Table 1 Characteristics of participants

Characteristics of interview participants		Characteristics of focus group participants	
No. of participants	7	Number recruited	39
Gender	4 (male);	Number participated	32
	3 (female)	Gender	All male
Average years taught	14 years	Mean age (SD)	14.69 (± 2.04)
Subject area		No. per focus group (m)	6
	Science	2	No. participants per year groups
Languages	1	Year 14	4
Mathematics	1	Year 13	3
Physical education	3	Year 12	4
Position in School		Year 11	5
	House Master	2	Year 10
Form Teacher	4	Year 9	6
Head of Department	1	Year 8	5

Table 2 Themes and sub-themes

Themes	Sub themes
Mental health	Ability to cope Mental health perspectives Relationships
Test anxiety	Constant examinations Physiological and psychological symptoms Pressure and expectations
Ways to reduce anxiety and stress	Communication Education Physical activity
Facilitators for intervention development	Best time Pupil ownership Research co-production Target age
Barriers to intervention implementation	Issue of time Lack of resources Mixed interests of programme participants School's role in mental health prevention

test anxiety, (3) ways to reduce anxiety and stress, (4) facilitators for intervention development, and (5) barriers to intervention implementation (Table 2).

Theme 1: perceptions of mental health

Findings suggested that teachers and students had different understandings of mental health and well-being. For example, many teachers focussed on the positive aspects of mental health.

I suppose, I am probably thinking quality of life and you know having a positive outlook, I suppose it touches every aspect of mental health, it doesn't just affect, it isn't just a small compartment... you can have positive mental health (T).

General well-being, feeling good, physically good, emm, that could be either physical or mental (T).

In contrast, several students saw mental health in a negative light perhaps due to a lack of understanding and stigmatisation with one noting '*Kind of like a mental asylum, kinda what mental is*'. The negativity associated with mental health was highlighted by the students as something that is personal and embarrassing to discuss, demonstrating that adolescents, particularly young males, do not like to discuss mental health.

I think a majority of young people don't want to say anything, because they feel weak and vulnerable (S).

I feel like people are embarrassed to talk about it (S).
It's like private, in your head (S).

Both students and teachers agreed that relationships and home-life were a huge factor on how anxious young people became during exam time and how these issues could affect their ability to cope.

Kids under stress, under pressure, kids not coping with the dealings of everyday of life (T).

The increased anxiety in kids that they can't [slight pause] find the resilience to get around the problems, and I do find that things overwhelm them (T).

Sometimes the odd family issue could come up as well and it's quite stressful (S).

How people judge you, it can kinda hurt you inside a lot and you don't really want to show that much, so it hurts you mentally, rather than physically (S).

Although students and teachers had different perspectives on what mental health could be defined as, both acknowledged the importance of mental health issues, highlighting that increased anxiety and stress can be overwhelming. These constant pressures may impact adolescent resilience, therefore resulting in a reduced ability to cope with adverse life events.

Theme 2: academic stress

While students and teachers mentioned several different mental health issues the key issue emerging from the data was the detrimental effect of academic stress, particularly test anxiety, on adolescent mental health.

More in today's society it seems to be a bigger and bigger issue, its academic stress (T).

Stressed, like sometimes you just want to get on with it....maybe like the results of exams (S).

With mental health you start to notice boys start to struggle and that's when a lot of things come out and a lot of things actually come out around exams (T).

A possible reason for this focus on test anxiety is that adolescents are now faced with an increasing number of examinations and assessments with both teachers and students noting that this endless cycle does not provide students with an opportunity to get a break and clear their mind.

Now every three weeks they have a controlled assessment that goes towards their exams, they have pressure of that, they have revision and a chance to re-sit and all off a sudden, kids come June could be sitting like 27 exams because they are repeating and because they have to push up and because of the exam system the way it is (T).

I think there is just more and more pressure where the kids don't get a break and don't get their head showered and therefore can't cope with the stress (T).

Quite a lot of pressure to do well and revise (S).

As the Year 9 group complete a standardised test, it is clear to see that even at the ages of 12 and 13 years old, pupils seem stressed and anxious during examinations. Several different signs of anxiety are evident; biting nails; fidgeting; and heavier breathing (Observation note).

However, it was clear that it was not just the examinations themselves that were creating high levels of anxiety for students but the fact that the results could determine their futures.

Exams decide what you're going to do with the rest of your life, if you're going to be successful or not (S).

The findings highlight that test anxiety should perhaps be included as an outcome to focus on for developing the intervention as part of the larger research project. By addressing this factor it may foster a greater understanding and allow for the creation of coping strategies for adolescents during times of examination stress and anxiety.

Theme 3: ways to reduce anxiety and stress

Teachers and students discussed a range of solutions that they felt could help reduce anxiety and stress. Firstly, several students and teachers expressed the importance of how schools communicated mental health issues with students, indicating that it is imperative to maintain a safe and positive space for their students to help foster personal development and be open to discuss any issues.

I think being more open to letting people talk about it in school (S).

Just try to encourage them and yes we are wanting you to do well, but we aren't viewing you as a failure, if you don't and that yes for your own personal development and your grasping of the subject, you are wanting to do well, but there are more important things than exams (T).

You should always like speak to someone you trust (S).

I think making it as we do as much as possible a normal thing, well, it's a normal occurrence it's not a shameful thing, it's not a disgrace to suffer it (T).

Education was the second suggested factor that participants believed could be useful within a developed intervention. This was discussed as a need for education around mental health and strategies to help overcome any challenges. One student acknowledged that 'getting advice' would help educate students on how to cope with their stresses and anxiety by having extra information and strategies to use. Furthermore, several participants highlighted that educating young people about mental health and helping them to develop coping strategies could be potential solutions to reduce anxiety and stress.

Suppose it starts where we are in here doesn't it, with education and to try and educate people that it is a real issue and at the end of the day anyone of us could be affected by it (T).

The final factor discussed was the use of physical activity as a catalyst for change. Aside from the distraction and mental release physical activity offers young people,

teachers felt that physical activity could play an important role in the adolescents' personal and professional development. One teacher reflected that '*extracurricular activity builds their resilience and builds their positivity.*' Participants' suggested that physical activity could help the learning process and result in changes in behaviour and emotional reactions to situations like examinations.

For a lot of them it is very good, as a lot of boys who perform academically are also the boys who play competitive sport, so you do find that the two of those go hand in hand (T).

Two teachers in the maths classroom were overheard discussing how they felt that physical activity was really important, and schools can be used to help encourage young people into activity from first year so that they will socially, mentally and physically benefit which will in turn help their school work (Observation note).

I think it is just kinda easier to learn by using sport (S).

Additionally, both students and teachers highlighted that physical activity can be used as a relaxation tool to reduce stress around examination periods.

Definitely during exam time, just letting them go out and get some fresh air and play... Emm, just gives them free time, emm, and again they are not thinking about exams and stuff that stresses them (S).

You are released from having to work all the time, and it lets you do something you love (S).

There is no doubt that physical activity, well it releases endorphins and gives you that natural high, it does, it sets you up for the day, emm and it does help you release stress (T).

The participants believed that physical activity may benefit physiological and psychological health. They thought that participating in physical activity helped alleviate anxiety and stress connected with exams and school pressure. The findings suggested that students prefer to engage in fun physical activities with some level of competition as this allows them a chance to relax and be free from any stressors that may be affecting them. Taken together, the data emerging from this theme suggests that a multi-component intervention, encompassing communication, education and physical activity, could be an effective approach in helping to reduce stress and anxiety in this population.

Theme 4: facilitators for intervention development

One of the key issues identified in previous research has been the time availability for delivery of interventions in the school setting (van Nassau et al. 2016; Tyler 2013). Therefore, participants were asked for their views on how an intervention might be facilitated within the busy school day. The data highlighted various views discussing the best time for intervention delivery.

If I was picking a time that would be best, it would be during the exam time that May and June slot, or just before it (T).

Could be like somewhere over lunch time, like a mid-day sort of thing (S).
If it can be built into the curriculum that's the way to do it (T)

Based on discussions with students and teachers, and further confirmation through observations, the best intervention would be a brief programme that would easily fit into the school day and be delivered in the weeks before the examination periods begin. Another finding that emerged was the necessity of allowing pupils to be involved in sessions and giving them a voice. This should foster positive engagement in activities which may be beneficial for effective programme implementation and acceptability.

They could choose where to go because if you tell them where to go, then they think I have to do this and they think about it. If you do that then they can just lose themselves and do it (S).

I would like a programme, where the people taking part could choose the activities (S).

You need, here is what works best and then still allow them to tweak it and allow them to add their own stamp on how it fits into the school (T).

When asked about the value of schools working with researchers to design an intervention for young people, teachers highlighted the importance of working together in the school setting to co-produce a mental health programme.

Yeah, otherwise you can't get it absolutely right, I mean all schools function quite differently (T).

Gotta get academic involvement and then we going to have to educate down this is why we are doing it and if we can do that there then we have a chance (T).

One teacher felt that '*...you would really need to work hard to really integrate with that school*', acknowledging the importance of co-design with the school and how essential it could be to ensure it fits right into that school's environment. Participants highlighted that it is important for researchers to work with the school, to achieve a sustainable intervention. Another suggestion from the participants, (both teachers and students) was that in the intervention design, finding the appropriate target group is vital. Participants thought that the younger age groups in the post primary setting (i.e. when they enter the school at the age of 11–12) or in the early years of secondary education (ages 11–15) may benefit the most from an intervention.

First year as that's when you're coming into the school (S).

Hopefully by the time, they get to Year 11, they have had sufficient practice at Years 8, 9 and 10, to allow them to do that... (T).

Observational data indicated that a number of students across each year group had a noticeable change in behaviour around the examination periods. First year students (11–12 years) did not appear as stressed with the mention of examinations, however from Year 9 (12–13 years) onwards, students became more anxious. These findings suggest that the intervention designed for this project should target Key Stage 3 students (ages 11–14 years) as this would allow students a chance to develop coping

mechanisms by the time they reach the more stressful examination periods such as GCSEs.

Theme 5: barriers to intervention implementation

Several barriers were identified by participants that could influence intervention implementation (time, resources, mixed interests of potential programme participants and the school's role in helping reduce mental health issues). Findings indicated that the issue of time and limited resources were perhaps the biggest barriers in implementing any new programme in the school setting.

I think your biggest problem, is their curricular time as we are already pressured with the amount of subjects you have to cover in those periods, you have to cover the specifications and get them done in time (T).

How you fit that into the day, into timetables that are already difficult to manage (T).

This is going to take money, there are schools that don't have money for this sort of thing (T).

The creation of a variety of activities in sessions was reported as an important factor to consider especially if the programme was to use physical activity components. Participants acknowledged that not all students enjoy taking part in sporting activities and will vary in athletic and skill ability.

Trying to get everybody involved without saying this is the weaker group or without having somebody overpowered in a game (T).

I think your difficulty will be finding something that everybody will engage into...(T).

There was also the suggestion that due to the ever-increasing demands on academics and extra-curricular activities in schools, teachers were under severe pressure and therefore would struggle to implement a complicated programme that would involve a lot of input from them.

Teachers are more and more stressed because of the deadlines they have to hit and the paperwork they have to do and adding to that would be your issue.... (T).

It's got to the point, where the grace or the goodwill of staff has nearly been eradicated because they have been stressed.... (T).

Discussion

This study set out to identify factors that should be taken into consideration when designing a mental health intervention for adolescents in the school setting. In addition, the study sought to explore teachers' and students' understandings of the concept of mental health. Results indicated that while teachers tended to focus on positive aspects of mental health, students were more likely to have negative views.

Although no previous studies have compared student and teacher perceptions directly, there is evidence, based on a systematic review by Goodwin et al. (2016), to suggest that adolescents perceive mental health as a weakness. In contrast, the evidence from studies with adults is mixed; some studies found a positive view of mental health (Evans-Lacko et al. 2013; Mackenzie et al. 2008) while others report that adults possess negative beliefs (Gale 2007; Henderson et al. 2013; Knight and Winterbotham 2019; Salaheddin and Mason 2016). It would appear from these findings that the intervention should address the negative views held by students, particularly around the stigma that might be associated with having a mental illness.

One of the key findings to emerge from the study is the detrimental effect that academic stress, in particular test anxiety, has on adolescents' mental health, something that echoes previous research (Putwain and Pescod, 2018; Thomas et al. 2018; von der Embse et al. 2018). Gregor (2005) suggested that the increasing demand for academic success and increased formal testing leads to the development of test anxiety. Given the continued focus of schools on examinations and assessments, it is imperative that the intervention provides students with potential strategies to reduce their level of anxiety around exam time.

When asked about possible strategies that might help with this, teachers and students suggested a range of components that can be generally grouped under the headings of communication, education and physical activity. In line with previous research (Casbarro 2005; Ergene 2003; Putwain and Daley 2014), the findings highlight the need for a multi-component intervention given the complexities associated with addressing academic stress in adolescence. Furthermore, research by Gregor (2005), Liu et al. (2019) and Melnyk et al. (2013) suggests that multi-component interventions increase the likelihood of programme effectiveness.

To shed light on what factors might help or hinder the implementation of intervention programmes in schools, participants were asked about potential facilitators and barriers. The findings suggest that co-producing an intervention with schools is important, pupil ownership and an appropriate target age could be important facilitators impacting programme success. Participants highlighted the importance of researchers working to design a programme that can be sustainable in the school setting. This fits well with previous research which has suggested that the best approach for intervention development is to work with key stakeholders (Hawkins et al. 2017; National Institute of Health Research 2018). The target age for the intervention was also discussed by participants, with a majority of teachers and students suggesting that early intervention may help young people gain the appropriate training and skills to deal effectively with mental health issues later in life. Evidence has previously suggested that mental health issues often begin to manifest by the age of 14 (Weeks et al. 2017; World Health Organization 2018b). This suggests that adolescents under the age of 14 should be targeted to receive the intervention.

Participants identified several barriers that could influence intervention implementation; time, resources, mixed interests of potential programme participants and the school's role in helping reduce mental health issues. The Time to Change report (2012) highlighted that schools do not have the appropriate resources to tackle mental health. This sentiment was echoed by participants who noted that financial resources were a major barrier, therefore it will be imperative to design an

intervention which is cost-effective and uses limited resources to ensure cost does not impact the effectiveness of the programme.

Participants noted that one of the biggest challenges to school-based interventions is the limited time available in schools due to the pressures of the ever-expanding academic curriculum. This coincides with previous research which reports that schools now have little time for anything outside the ‘normal’ curriculum (Tyler 2013; van Nassau et al. 2016). Given that interventions lasting at least 10 min have been shown to be effective in improving well-being, test anxiety and reducing emotional and behavioural symptoms (Krispenz and Dickhauser 2018; Lamb and Guliford 2011) this suggests that interventions developed for the school setting should maybe utilise as few resources as possible and require little training, preparation or delivery time. The valuable input from the key stakeholders during this study combined with co-researcher data analysis phase (Anonymised for peer review) led to the co-production of the R.E.A.C.T (Reducing Exam-Anxiety through Activity and Coping Techniques) intervention, a 6 week multi-component school-based 25 min programme for adolescents aged 12–14 years old based on psychoeducation and physical activity components (Paper Under review).

Limitations

The primary limitation of this study was that the semi-structured interviews and focus groups were carried out in only one school with a small sample. The school was an all-male grammar school which means that there is little diversity in the student population. This limits the potential for generalisability and may reduce the validity of the research finding. The limitation also means restrictions on the generalisability of the findings to other schools. To overcome this limitation, two other schools were included during the wider study. They were different to the co-researcher school (an all-female school and an integrated co-educational school). The involvement of two additional schools allowed for further perceptions of adolescent mental health and factors related to intervention development to be identified and explored. Secondly, only seven teachers were able to be interviewed due to time constraints and academic demands during the last term of school. Thirdly, the recruited students were selected by the school, which could have led to selection bias impacting the findings. Finally, whilst an inductive coding approach was applied during the thematic analysis of the data, it is acknowledged that it is unrealistic to completely remove the researcher’s prior knowledge and epistemological position in identifying and redefining codes (Braun and Clarke 2006). However, participation elicitation was carried out in another study (Neill et al. 2021) to use key stakeholders to analyse the qualitative data to improve the validity of the results.

Notwithstanding these limitations, a major strength of the study is that it has incorporated the views and opinions of key school stakeholders—teachers and students—as well as observational notes in the school setting, into the development of an intervention aimed at young people in schools. These multiple methods of data collection provided rich detail to allow the identification of key themes, enabling a more in-depth understanding of the area to provide the basis for intervention

development. This triangulation of data used helps ensure validity of research findings. The results will enable the intervention to be tailored specifically to the population of young people in the school setting. Thus it is hoped that this will ensure the usability and feasibility of the intervention in the future.

Conclusion

This qualitative study provided a valuable insight into school stakeholders' (i.e. students and teachers) perspectives on mental health and ways to reduce the pervasive issue of academic stress in the form of test anxiety. The data confirmed the importance of providing adolescents with strategies to help them cope with anxiety which should, in turn, improve their mental health outcomes. The findings suggest that a multi-component intervention using education, communication and physical activity strategies could be the best way to help tackle test anxiety in this population. The study findings have implications for intervention development for school-based mental health programmes in general and highlight the advantages of incorporating the views of key stakeholders. Future research is required with a larger representative sample to obtain more generalisable information of intervention components and barriers.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s43545-022-00465-x>.

Acknowledgements The authors would like to thank the students and teachers for participating in the interviews and focus groups. The authors would like to thank the Centre for Evidence and Social Innovation, Queen's University Belfast and the Department for Economy for funding the PhD studentship associated with this research.

Author contributions All authors contributed towards the writing of the paper. All authors read and approved the final manuscript.

Funding No external funding was made available for this research.

Data availability Not applicable.

Code availability Not applicable.

Declarations

Conflict of interest The authors declare that they have no competing interests.

Ethical approval This study was approved by School of Social Sciences, Education and Social Work at Queens University Belfast (12th March 2018; Ref no: 005_1920).

Consent to participate Informed consent was obtained from all participants included in the study.

Consent for publication Not applicable.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Arnold J, Bruce-Low S, Henderson S, Davies J (2016) Mapping and evaluation of physical activity interventions for school-aged children. *Public Health* 136:75–79. <https://doi.org/10.1016/j.puhe.2016.02.025>
- Arthur J, Waring M, Coe R, Hedges VL (2012) *Research methods and methodologies in education*. SAGE Publications Inc, Thousand Oaks, CA
- Betts J, Thompson J (2017) *Mental Health in Northern Ireland: Overview, Strategies, Policies, Care Pathways, CAMHS and Barriers to Accessing Services*. Available via DERA. <http://dera.ioe.ac.uk/29218/1/0817.pdf> Accessed 17 July 2020
- Borg E, Pålshaugen Ø (2019) Promoting students' mental health: a study of inter-professional team collaboration functioning in Norwegian schools. *Sch Ment Heal* 11:476–488. <https://doi.org/10.1007/s12310-018-9289-9>
- Braun V, Clarke V (2006) Using thematic analysis in psychology. *Qual Res Psychol* 3(2):77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Breslin G, Cunningham C, Murphy M (2016) Physical Activity to improve Children Health (PATCH): implementing a school-based intervention for children. In: Cotterill S, Weston N, Breslin G (eds) *Sport and exercise psychology: practitioner case studies*, 1st edn. Wiley, Hoboken, pp 395–416
- Bryman A (2016) *Social research methods*, 5th edn. Oxford University Press, Oxford
- Casbarro J (2005) *Test anxiety & what you can do about it: a practical guide for teachers, parents, and kids*. Dude Publishing, New York
- Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M (2008) Developing and evaluating complex interventions: the new Medical Research Council guidance. *BMJ*. <https://doi.org/10.1136/bmj.a1655>
- Creswell J, Plano Clark V (2018) *Designing and conducting mixed methods research*. SAGE Publications Inc, Los Angeles
- Daly-Smith A, Quarmby T, Archbold VS, Corrigan N, Wilson D et al (2020) Using a multi-stakeholder experience-based design process to co-develop the creating active schools framework. *Int J Behav Nutr Phys maiActivity*. <https://doi.org/10.1186/s12966-020-0917-z>
- Das JK, Salam RA, Lassi ZS, Khan MN, Bhutta ZA (2016) Interventions for adolescent mental health: an overview of systematic reviews. *J Adolesc Health* 59(4):S49–S60. <https://doi.org/10.1016/j.jadohealth.2016.06.020>
- Davies EL, Matley F (2020) Teachers and pupils under pressure. UK teachers views on the content and format of personal social health and economic education. *Pastor Care Educ* pp 1–19
- Eiland L, Romeo RD (2013) Stress and the developing adolescent brain. *Neuroscience* 249:162–171. <https://doi.org/10.1016/j.neuroscience.2012.10.048>
- Ergene T (2003) Effective interventions on test anxiety reduction: a meta-analysis. *Sch Psychol Int* 24(3):313–328. <https://doi.org/10.1177/01430343030243004>
- Evans-Lacko S, Henderson C, Thornicroft G (2013) Public knowledge, attitudes and behaviour regarding people with mental illness in England 2009–2012. *Br J Psychiatry* 202(s55):s51–s57. <https://doi.org/10.1192/bjp.bp.112.112979>
- Fazel M, Hoagwood K, Stephan S, Ford T (2014) Mental health interventions in schools in high-income countries. *Lancet Psychiatry* 1(5):377–387. [https://doi.org/10.1016/s2215-0366\(14\)70312-8](https://doi.org/10.1016/s2215-0366(14)70312-8)

- Gale F (2007) Tackling the stigma of mental health in vulnerable children and young people. In: Vostanis P (ed) *Mental health interventions and services for vulnerable children and young people*. Jessica Kingsley Publishers, London, pp 58–82
- Goodwin J, Savage E, Horgan A (2016) Adolescents' and young Adults' beliefs about mental health services and care: a systematic review. *Arch Psychiatr Nurs* 30(5):636–644. <https://doi.org/10.1016/j.apnu.2016.04.004>
- Green CA, Duan N, Gibbons RD, Hoagwood KE, Palinkas LA, Wisdom JP (2015) Approaches to mixed methods dissemination and implementation research: methods, strengths, caveats, and opportunities. *Adm Policy Ment Health Ment Health Serv Res* 42(5):508–523. <https://doi.org/10.1007/s10488-014-0552-6>
- Gregor A (2005) Examination anxiety: live with it, control it or make it work for you? *School Psychol Int* 26(5):617–635. <https://doi.org/10.1177/0143034305060802>
- Halliday AJ, Kern ML, Turnbull DA (2019) Can physical activity help explain the gender gap in adolescent mental health? a cross-sectional exploration. *Ment Health Phys Act* 16:8–18. <https://doi.org/10.1016/j.mhpa.2019.02.003>
- Hawkins J, Madden K, Fletcher A, Midgley L, Grant A et al (2017) Development of a framework for the co-production and prototyping of public health interventions. *BMC Public Health* 17(1):689. <https://doi.org/10.1186/s12889-017-4695-8>
- Henderson C, Evans-Lacko S, Thornicroft G (2013) Mental illness stigma, help seeking, and public health programs. *Am J Public Health* 103(5):777–780. <https://doi.org/10.2105/AJPH.2012.301056>
- Holt MK, Greif Green J, Guzman J (2018) School Settings. In: Ollendick PH, White SW, White BA (eds) *The Oxford handbook of clinical child and adolescent psychology*. Oxford University Press, New York, pp 611–622
- Hoover SA, Mayworm AM (2017) The benefits of school mental health. In: Michael KD, Jameson JP (eds) *Handbook of rural school mental health*. Springer, Cham, pp 3–16
- Knight BG, Winterbotham S (2019) Rural and urban older adults' perceptions of mental health services accessibility. *Aging Ment Health* 14:1–7. <https://doi.org/10.1080/13607863.2019.1576159>
- Krispenz A, Dickhäuser O (2018) Effects of an inquiry-based short intervention on state test anxiety in comparison to alternative coping strategies. *Front Psychol* 9:1–11. <https://doi.org/10.3389/fpsyg.2018.00201>
- Lam LCW (2016) Recent developments of physical activity interventions as an adjuvant therapy in mental disorders. In: Lam LCW, Riba M (eds) *Physical exercise interventions for mental health*. Cambridge University Press, New York, pp 1–8
- Lamb D, Gulliford A (2011) Physical exercise and children's self-concept of emotional and behavioural well-being: a randomised controlled trial. *Educ Child Psychol* 28(4):66–74
- Liu Z, Xu HM, Wen LM, Peng YZ, Lin LZ, Zhou S, Li WH, Wang HJ (2019) A systematic review and meta-analysis of the overall effects of school-based obesity prevention interventions and effect differences by intervention components. *Int J Behav Nutr Phys Act* 16(1):1–2. <https://doi.org/10.1186/s12966-019-0848-8>
- Mackenzie CS, Scott T, Mather A, Sareen J (2008) Older adults' help-seeking attitudes and treatment beliefs concerning mental health problems. *Am J Geriatr Psychiatry* 16(12):1010–1019. <https://doi.org/10.1097/JGP.0b013e31818cd3be>
- Majid U, Kim C, Cako A, Gagliardi AR (2018) Engaging stakeholders in the co-development of programs or interventions using intervention mapping: a scoping review. *PLoS ONE* 13(12):e0209826. <https://doi.org/10.1371/journal.pone.0209826>
- Melnyk BM, Jacobson D, Kelly S, Belyea M, Shaibi G, Small L, O'Haver J, Marsiglia FF (2013) Promoting healthy lifestyles in high school adolescents: a randomized controlled trial. *Am J Prev Med* 45(4):407–415. <https://doi.org/10.1016/j.amepre.2013.05.013>
- McGorry Patrick, Bates Tony, Birchwood Max (2013) Designing youth mental health services for the 21st century: examples from Australia, Ireland and the UK. *Br J Psychiatry* 202(54):30–35. <https://doi.org/10.1192/bjp.bp.112.119214>
- Mental Health Foundation (2020) Children and young people. Available via [MentalHealth.org](https://www.mentalhealth.org.uk/a-to-z/c/children-and-young-people). <https://www.mentalhealth.org.uk/a-to-z/c/children-and-young-people> Accessed 17 July 2021
- Morgan K, Van Godwin J, Darwent K et al (2019) Formative research to develop a school-based, community-linked physical activity role model programme for girls: choosing active role models to inspire girls (CHARMING). *BMC Public Health* 19:437. <https://doi.org/10.1186/s12889-019-6741-1>
- Morse J, Niehaus L (2009) *Mixed method design*. Left Coast Press Inc, Walnut Creek, CA

- National Institute for Health Research (2018) Guidance on Co-producing a Research Project. https://gallery.mailchimp.com/4c399c13e060c71d465546294/files/6a5fd04b-919d-43d1-9ee8-d6bde4e3c828/Copro_Guidance_Mar18.pdf Accessed 17 July 2021
- Neill RD, Best P, Lloyd K, Williamson J, Allen J, Badham J, Tully MA (2021) Engaging teachers and school leaders in participatory data analysis for the development of a school-based mental health intervention. *Sch Ment Health* 13(2):312–324. <https://doi.org/10.1007/s12310-021-09418-w>
- NICCY (2017). Child and Adolescent Mental Health in NI. Belfast: NICCY. <http://www.niccy.org/media/2810/niccy-scoping-paper-mental-health-review-apr-2017.pdf> Accessed 17 July 2021
- O'Reilly M, Adams S, Whiteman N, Hughes J, Reilly P, Dogra N (2018) Whose responsibility is adolescent's mental health in the UK? perspectives of key stakeholders. *Sch Ment Heal* 10(4):450–461. <https://doi.org/10.1007/s12310-018-9263-6>
- O'Connor CA, Dyson J, Cowdell F, Watson R (2018) Do universal school-based mental health promotion programmes improve the mental health and emotional wellbeing of young people? a literature review. *J Clin Nurs* 27(3–4):e412–e426. <https://doi.org/10.1111/jocn.14078>
- Pugh G, Statham J (2006) Interventions in schools in UK. In: Pecora P, Rose W (eds) *Enhancing the well-being of children and families through effective interventions*. Jessica Kingsley Publishers, London, pp 276–288
- Pulimeno M, Piscitelli P, Colazzo S, Colao A, Miani A (2020) School as ideal setting to promote health and wellbeing among young people. *Health Promot Perspect* 10(4):316–324. <https://doi.org/10.34172/hpp.2020.50>
- Putwain D, Daly AL (2014) Test anxiety prevalence and gender differences in a sample of English secondary school students. *Educ Stud* 40(5):554–570. <https://doi.org/10.1080/03055698.2014.953914>
- Putwain DW, Pescod M (2018) Is reducing uncertain control the key to successful test anxiety intervention for secondary school students? findings from a randomized control trial. *Sch Psychol Q* 33(2):283. <https://doi.org/10.1037/spq0000228>
- Reed H, Couturiaux D, Davis M, Edwards A, James E, Kim HS et al (2020) Co-production as an emerging methodology for developing school-based health interventions with students aged 11–16: systematic review of intervention types, theories and processes and thematic synthesis of stakeholders' experiences. *Prev Sci* 22(4):475–491. <https://doi.org/10.1007/s1121-020-01182-8>
- Ribeiro IC, Parra DC, Hoehner CM, Soares J, Torres A, Pratt M et al (2010) School-based physical education programs: evidence-based physical activity interventions for youth in Latin America. *Global Health Promot* 17(2):05–15. <https://doi.org/10.1177/1757975910365231>
- Salaheddin K, Mason B (2016) Identifying barriers to mental health help-seeking among young adults in the UK: a cross-sectional survey. *Br J Gen Pract* 66(651):e686–e692. <https://doi.org/10.3399/bjgp16X687313>
- Schulte-Körne G (2016) Mental health problems in a school setting in children and adolescents. *Deutsches Ärzteblatt Int* 113(11):183. <https://doi.org/10.3238/arztebl.2016.0183>
- Sullivan RA, Kuzel AH, Vaandering ME, Chen W (2017) The association of physical activity and academic behavior: a systematic review. *J School Health* 87(5):388–398. <https://doi.org/10.1111/josh.12502>
- Thomas CL, Cassady JC, Finch WH (2018) Identifying severity standards on the cognitive test anxiety scale: cut score determination using latent class and cluster analysis. *J Psychoeduc Assess* 36(5):492–508
- Time to Change (2012) *Children and young people's programme development. Summary of research and insights*. London. http://www.time-to-change.org.uk/sites/default/files/TTC_CYP_Report_FINAL.pdf Accessed 8 Jan 2018
- Tyler RW (2013) Basic principles of curriculum and instruction'. In: Flinders DJ, Thornton SJ (eds) *Curriculum studies reader E2, 2nd edn*. Routledge, New York, pp 60–68
- Vaismoradi M, Turunen H, Bondas T (2013) Content analysis and thematic analysis: implications for conducting a qualitative descriptive study. *Nurs Health Sci* 15(3):398–405. <https://doi.org/10.1111/nhs.12048>
- Van Nassau F, Singh AS, Broekhuizen D, Van Mechelen W, Brug J, Chinapaw MJ (2016) Barriers and facilitators to the nationwide dissemination of the Dutch school-based obesity prevention programme DOI-T. *Eur J Public Health* 26(4):611–616. <https://doi.org/10.1093/eurpub/ckv251>
- Van Sluijs EM, McMinn AM, Griffin SJ (2007) Effectiveness of interventions to promote physical activity in children and adolescents: systematic review of controlled trials. *BMJ* 335(7622):703. <https://doi.org/10.1136/bmj.39320.843947.BE>

- von der Embse N, Jester D, Roy D, Post J (2018) Test anxiety effects, predictors, and correlates: a 30-year meta-analytic review. *J Affect Disord* 227:483–493. <https://doi.org/10.1016/j.jad.2017.11.048>
- Weeks C, Hill V, Owen C (2017) Changing thoughts, changing practice: examining the delivery of a group CBT-based intervention in a school setting. *Educ Psychol Pract* 33(1):1–5. <https://doi.org/10.1080/02667363.2016.1217400>
- Werner-Seidler A, Perry Y, Calear AL, Newby JM, Christensen H (2017) School-based depression and anxiety prevention programs for young people: a systematic review and meta-analysis. *Clin Psychol Rev* 51:30–47. <https://doi.org/10.1016/j.cpr.2016.10.005>
- World Health Organization (2012) Young and Physically Active: a blueprint for making physical activity appealing to youth. http://www.euro.who.int/__data/assets/pdf_file/0005/175325/e96697.pdf Accessed 21 July 2021
- World Health Organization (2018a) Mental Health: Strengthening our Response. Retrieved from <https://www.who.int/en/news-room/fact-sheets/detail/mental-health-strengthening-our-response> Accessed 21 July 2021
- World Health Organization (2018b) Child and Adolescent Mental Health. Retrieved from http://www.who.int/mental_health/maternal-child/child_adolescent/en/ Accessed 21 July 2021.
- World Health Organization (2019) Adolescent mental health. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health> Accessed 21 July 2021

Authors and Affiliations

Ruth D. Neill¹  · Katrina Lloyd² · Paul Best² · Mark. A. Tully³

- ¹ School of Applied Social and Policy Sciences, Ulster University, Magee Campus, Londonderry, Northern Ireland, UK
- ² School of Social Sciences, Education and Social Work, Queen's University Belfast, Belfast, Northern Ireland, UK
- ³ School of Medicine, Institute of Nursing and Health Research, Ulster University, Belfast, Northern Ireland, UK