Evaluating the impact of an Autogenic Training relaxation intervention on levels of anxiety amongst adolescents in school.

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Both authors confirm that they have approved this submission. This paper is the authors' own original work and is not under consideration elsewhere.

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Abstract

Aim: This study aimed to investigate the impact of a group-based Autogenic Training (AT) relaxation intervention on levels of anxiety in adolescents in mainstream school settings.

Method: A mixed-methods design was used to measure differences in levels of anxiety and explore a range of perceived changes between groups over time. 66 young people aged between 14 and 15 years old from 4 mainstream schools in the UK were randomly assigned within each school to a treatment or wait-list control group. Quantitative data was analysed using a mixed between-within subjects ANOVA. Qualitative information from 12 volunteer participants was analysed using Thematic Analysis.

Findings: Results showed a main effect of time for both the treatment group and the wait-list group however no significant main interaction was found. Qualitative results showed perceived improvements in social relationships and connectivity; reflectiveness; self-awareness; physiological symptoms; and a sense of control.

Limitations: Measures were reliant on self-reported data. Schools were recruited through self-referral and expression of interest excluding participants who may not have the opportunity to take part. There were no opportunities to collect follow up data.

Conclusions: Results suggest that a structured AT relaxation intervention delivered in a familiar school environment may significantly reduce levels of anxiety amongst adolescents. However, significant improvements for the wait-list group also raises questions around the potential of other supportive variables such as acknowledgement and validation of feelings;

the promise and availability of forthcoming support; and the potential impact of raised awareness and interest in pupil wellbeing amongst school staff.

Introduction

Mental health difficulties in young people are a serious cause for concern across the world. The World Health Organisation (WHO) reports that in half of all cases of mental health conditions, onset has occurred by the age of 14 years old; suicide is the third leading cause of death in 15-19 year olds; and the second leading cause of death in girls (WHO, 2018). It is estimated that one in ten children and young people aged 5-16 years old have a diagnosable mental health disorder in the United Kingdom alone; and at least one in 12 children and young people deliberately self-harm (Young Minds, 2018).

In 2009, the government identified mental health as everyone's business (DofE, 2009) and was specific about prevention and the transition time between adolescence and early adulthood. Suggestions for schools include promoting student's mental health as part of their curriculum (DfE, 2016); highlighting the desire of young people themselves to be more involved with the development, delivery and evaluation of interventions (National Institute of Health and Clinical Excellence (NICE), (2014); making use of group work to teach specific skills and empower young people; and identifying the expertise and role of Educational Psychologists (EPs) (Weare & Gray, 2003). The mental health of the nation has been viewed by the Prime Minister as one of the 'greatest social challenges of our time' (Gov.uk, 2017). A government Green Paper now aims to transform services by training new mental health workers including Educational Mental Health Practitioners to work in schools and in collaboration with the National Health Service (NHS) professionals (DoH, DfE, 2017).

Adolescence and brain development

Adolescence is recognised as a period of social and psychological change and neurobiological development that can either enhance vulnerability or provide a window of opportunity for growth and learning (Dahl et al, 2018). Research into cognitive and affective

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development in adolescence shows that on the one hand cognitive development appears to progress regardless of pubertal changes (Dahl, 2004) but on the other, although development during this period takes place in regions of the brain associated with regulation of behaviour and emotion; and the evaluation of risk and reward; these are impeded by increases in arousal, motivation, and sensation seeking behaviour. Consequently, while there are advances in reasoning and decision-making skills, and the ability to comprehend the consequences of impulsivity, these can be easily over-ridden not only by a natural propensity to experience intense feelings but also a keen desire to seek these intense feelings out, occasionally at a serious or fatal cost (Dahl, 2004).

Adolescence and Mental Health

Adolescents are particularly at risk of experiencing emotional distress as their brains mature (Blakemore & Frith, 2011). It is a period of life where many experience their first episode of mental health difficulties (Kessler et al, 2005). Literature suggests an increase in stress hormones compared to adults (Romeo, 2009); and a clear association between exposure to chronic stress and significant changes in emotion and cognition, such as anxiety and depression (Romeo, 2017). Sensitivity to the effects of stress also inhibits typical brain development and maturation (Sinclair et al, 2014). The impact of exposure to stress is associated with risk-taking and aggression (Byrne & Mazanov, 2002) but despite the cognitive capabilities to do so (Dahl, 2004) adolescents are less able to apply effective problem solving strategies to cope (Llorca et al, 2017). Changes in social acceptance, negative relationships, experience of bullying, and fear of peer rejection are all strong predictors of anxiety disorders (Carr, 2002; Horwitz et al, 2011; Morris & Kratochwill, 1991; Roza et al, 2003) and yet, adolescents are far less likely than other young people with psychiatric disorders to be in contact with supportive services or receive any treatment (Chavira et al, 2004; Neil & Christensen, 2009).

Relaxation interventions in schools

Relaxation training, in its many forms can be used exclusively as an intervention or in conjunction with other cognitive or psychotherapeutic programmes (Ashton, 2015). Purposeful muscle-relaxation and controlled breathing techniques have been used to treat a range of psychological problems (Kobayashi-Suzuki et al, 2014) and educational stress (Manjushyambika et al, 2017). Progressive Muscle Relaxation (PMR) has been found to raise self-esteem, particularly amongst females with moderate levels of depression (Reynolds & Coats, 1986; Larson et al, 2015); reduce aggression, and improve levels of aspiration, vitality, mental health and social functioning (Nickel et al, 2005). Interventions such as Mindfulness and AT have had a positive impact on quality of sleep (Bootzin & Stevens, 2005); attention skills (Jha et al, 2007); emotional regulation (Metz et al, 2013); and self-reported wellbeing (Sanger et al, 2018). More recently, findings for Meditation in schools have been linked to improvements in coping skills, social relationships, and eating disorders (Wisner et al, 2010).

Autogenic Training (AT)

Based on research into sleep and hypnosis, AT was developed as a relaxation technique by Schultz and Luthe in 1959. AT focuses on an observant and passive attitude towards one's own cognitive, emotional and physical state, and through a series of taught exercises over a period of five to ten weeks, a deep state of relaxation can be achieved. Once learned, AT can be used regularly without the need for any external human or material support. It is considered to be one of a range of mind-body interventions recognised by the American Psychological Association (APA) (Kotecki et al, 2014), and consistent with treatments recommended to treat anxiety disorders (Carr, 2002) such as 'self-instructional training focusing on control and competence' and 'relaxation skills' (pp.199).

Research into the effects of AT shows reductions in anxiety amongst adults (Ernst & Kanji, 2000; Manzoni et al, 2008; Garvin et al, 2001) and improvements in externalising emotional and behavioural symptoms (Goldbeck & Schmidt, 2003) amongst young people. However, there is a distinct gap in the literature for AT from an educational perspective. Previous research has mainly focused on adults in health settings with small sample sizes and what research there is for young people lacks transparency. Given the similarities between AT and other relaxation-based interventions, it is surprising that there is no empirical evidence for the use of AT to address anxiety and wellbeing amongst young people in the UK at all.

The role of the Educational Psychologist in delivering relaxation interventions

There are professional and ethical reasons why EPs should be involved in the development and delivery of innovative interventions to promote mental health in schools. Although still in its infancy, the evidence base for mind-body relaxation interventions is growing and the concept is now widely recommended to address the psychological well-being of young people and their educators (Kotecki et al, 2014; Weare, 2015). Interventions vary dramatically in content and it is not clear which particular elements of programme design distinctively contribute to its overall effectiveness (Khoury et al, 2013). However, EPs are uniquely placed to apply psychological research and theory and deliver evidence-based programmes to support young people experiencing emotional problems in school (Macleod et al, 2015; Perfect & Morris, 2011). In the light of government concerns (DfE, 2016; Weare, 2015) this includes personal health and wellbeing as well as academic achievement (Cameron, 2006; Rydzkowski et al, 2015). EPs want to engage in more high quality case work (Boyle & Lauchlan, 2009) and are open to expanding their repertoire of skills to include more therapeutic approaches (Jimerson & Oakland, 2007). These skills could fill the gaps in outreach services and contribute to work typically offered by other agencies (Truong & Ellam, 2014).

It is entirely appropriate for schools to call upon EPs to work in therapeutic ways alongside resident pastoral support staff, especially where a more targeted and individual approach is necessary (Weare, 2015). In such cases, EPs provide a service that follows strict ethical guidelines and draws on the principles of competence, responsibility and integrity. They continuously further their professional development and expertise; apply knowledge of the advantages and limitations of different types of interventions, especially in terms of universal availability and potential harm; and recognise the proper protocols for consent, privacy and information sharing. In addition, their awareness of group dynamics and therapeutic alliance can greatly enhance the outcomes of an intervention whether they train others or take part directly with young people (MacKay, 2007).

The present study

Given the potential for improving wellbeing through the delivery of a range of relaxation-based interventions in schools, this study aimed to investigate the impact of a group-based AT relaxation intervention on levels of anxiety amongst adolescents in schools; and to gather the perceptions about the intervention from the young people taking part in it.

Method

The study employed a partially mixed, concurrent, equal status mixed methods design (Leech & Onwuegbuzie, 2009). Quantitative and qualitative data were collected independently of each other using nested samples for the qualitative components of the study. Data was then analysed separately before drawing the two strands together for integration at the overall interpretation stage at the end of the study (Creswell & Plano Clark, 2011).

Sample sizes

Using 'G*Power', an average effect size of $d = 0.68$ (Cohen, 1998) chosen from research reflecting the use of AT with as close a sample population as possible to the present study (Stetter & Kupper, 2002), and a proposed alpha level of 0.05 was used to calculate a sample size of between 56 (one-tailed) and 70 (two tailed) participants in order for the study to provide a statistical power in excess of 80%.

Quantitative and qualitative measures

Pre and post quantitative information was gathered using the Spence Children's Anxiety Scale (SCAS) (Spence, 1997). This self-report measure is widely used around the world for both clinical and community purposes. 44 items are rated on a three-point Likert scale ranging from 0=Never, to 3=Always. Example questions include "I worry about things" and "I can't seem to get bad or silly thoughts out of my head". Sub-scales include Obsessive Compulsive Disorder; Separation Anxiety; Social Phobia; Panic Agoraphobia; Physical Injury Fears; and Generalised Anxiety. Cronbach's alpha for the total SCAS score was reported consistently between 0.9 and 0.92; and between 0.54 to 0.83 for the 6 subscales (Spence, 1997; Spence et al, 2003; Muris et al, 2000; Muris et al, 2002). Post intervention qualitative information was gathered by 3 participants from each school (total $n=12$). Each participant was interviewed on a 1:1 basis for up to 15 minutes a session. Responses were then analysed using the Thematic Analysis procedure (Braun & Clarke, 2006) outlined in Table 1.

Table 1 goes here….

Sampling methods and procedure

For the quantitative phase of the study and for practical and geographical reasons, convenience sampling (Onwuegbuzie & Collins, 2007) was initially used whereby schools in

an area of the South East of England were approached to express interest.   Identifying a specific geographical area counteracted some of the issues around matching groups from different schools within a large local authority although it was recognised that generalisability across a wider population would be limited.   Once schools were identified, volunteer sampling was employed to recruit individuals from each school who were then provided with written information about AT from The British Autogenic Society (BAS) and consent forms to complete. After completing the SCAS pre-measure questionnaire individuals were randomised to either the treatment or wait-list group.   At the post intervention stage, individual semi-structured interviews with 3 participants from each mainstream setting were held approximately one week after post-intervention quantitative data collection.   The interview schedule is outlined in Table 2.

Table 2 goes here…

Participants

66 adolescents aged 14 and 15 years old took part in the study. An independent samples *t*-test was used to assess possible differences in anxiety scores (SCAS) between treatment and wait-list groups at the pre-intervention assessment stage. No significant between-group differences were found. however, initial scores for the SCAS prior to treatment showed that the mean score for males fell within the average range of anxiety level ($M = 29.4$, SD = 14.94); and the mean score for females within the elevated range of anxiety level ($M = 43.41$, SD = 17.77). Further details on participant characteristics are outlined in Table 3.

Table 3 goes here…

Intervention details

The AT intervention consisted of six weekly sessions lasting approximately 30 minutes each. Each session followed the same structure as outlined in Table 4. Examples of the AT

exercises included encouraging a seated position with eyes closed followed by auto-suggestions of heaviness and warmth to isolated parts of the body. The participant repeats formulas in their minds such as: "*My arms and legs are heavy and warm", "My neck and shoulders are heavy", "My forehead is cool and clear".* A new exercise formula is taught each week which builds on the previous one to eventually achieve physiological and psychological feelings of relaxation through classical conditioning. This technique is intended to be self-sufficient and transferrable across contexts so that no props or additional resources are needed. Each session was delivered by the same qualified Autogenic Therapist (the first author) and a manualised programme of training was delivered to all groups meaning that direct replication was possible (Wolery, 2011).

Table 4 goes here…

Results

Quantitative analysis

Scores for the SCAS were analysed using a mixed between-within subjects analysis of variance (ANOVA). Output showed no significant interaction between group and time, Wilk's Lambda = 0.96, $F(1, 64) = 2.87$, $p = 0.095$, partial eta squared = 0.04. There was a significant main effect for time, Wilk's Lambda = 0.64, $F(1, 64) = 36$, $p < 0.0005$, partial eta squared = 0.36, suggesting that anxiety scores for both groups did change between pre and post-intervention time points (see Table 5). The main effect comparing groups was not significant, $F(1, 64) = 0.41$, $p = 0.52$, partial eta squared = 0.006, suggesting no difference in the effectiveness of the intervention compared to the wait-list control group (see Table 6).

Table 5 goes here…

Table 6 goes here…

Qualitative analysis

Transcripts of qualitative information were checked for accuracy by the researcher and a peer before Thematic Analysis and interpretation began. Inter-rater reliability percentage agreement scores were established at 93% and were calculated by dividing the number of times a code was identified and agreed by both coders by the number of times it was possible for a code to occur (Boyatzis, 1998). The thematic map (Figure 1) highlights five over-arching themes and contributing sub-themes that indicate the perceived changes that took place as a result of the AT intervention.

Figure 1 goes here…

Relationships

A number of participants made reference to changes in the way they thought about and related to others. Subthemes included better friendships; increased feeling of connectivity to others; a desire to share their new knowledge; and the benefits of group participation. One participant said she had '*definitely*' noticed changes in her friendships. She felt that her feelings about herself had prompted her to think differently about her friends' intentions and that her mood had impacted positively on the reciprocity and quality of her friendships.

Others commented on the sessions being a bonding experience where everyone had been on a journey and learning together; and for someone who had '*suffered from anxiety for a while*'*,* he noticed an increase in his ability to join in with activities he previously found difficult.

Many participants revealed an ability to think of others besides themselves, demonstrate a desire to help them, and not be '*bothered by the tiny things anymore'.*

One young man with an Autism Spectrum Condition commented that it was easier to learn in a group as it took the focus away from him and gave him more freedom to engage.

Emotional awareness and control

Participants also reported changes in emotional reactivity and emotional awareness. Three participants talked about how they usually reacted aggressively towards pressure. They were more able to take a step back in the face of antagonism in class and social situations, or simply to ignore it.

Others talked about how the scheduled time in the week was something they looked forward to as a *'relief'* or *'break'* from the stress of school inferring that AT exercises were a sort of respite from a frantic world and a '*break from reality'*.

Physical change

Many participants reported an improvement in the somatic symptoms of stress, such as less panic attacks in crowded corridors or attacks that were less intense than before. Less headaches and increased energy also increase pro-activity and motivation for activities: '*more up for the (like) lessons…'*. There were numerous comments about being able to fall asleep quicker and, once asleep, sleep better feeling more feeling motivated in the morning, along with noticing a reduction in aching muscles, sports injuries and quicker recuperation after glandular fever.

Increased self-awareness

Some participants felt their new knowledge of how the body works had helped them to understand the principles behind the exercises and how they could play an important part in maintaining his wellbeing. Subthemes reflected feelings of increased control and self-confidence through recognising the warning signs that they were becoming stressed, what form their state of stress took, increased understanding of what was happening to the body, and experiencing feelings that they could now cope.

Participants reported increased self-confidence in a variety of ways, talking about their ability to let go of small things that used to occupy their minds and hold them back. They implied that a certain trust and confidence in the future had also grown enabling them to get on with life and live in the moment. Some talked of having the confidence to express how they were feeling to others more, relieving the burden of worry and without feeling self-conscious.

One participant felt that the process of alleviating her anxiety started from the very first time she brought the introductory letter home to her parents.

There was a sense of empowerment and an ability to make choices and decisions about which exercise to use and how they could fit it into their practice. AT was recognised as a 'self-help' skill that was practical, versatile, and *'portable'*; and a tool for people to take responsibility for themselves.

Cognitive change

Participants found that they could concentrate better and this had been helpful in school; even to the point that one participant had noticed that she was sitting up straighter in class and felt that this small change was also helping her to engage more in class.

Participants reported more clarity, noticing that less stress meant that work seemed to be easier to do. Many started to notice that they were thinking differently and seeing life more positively and from other perspectives, with some specifically commented on how they were now more able to discern what they could reasonably take responsibility for and what they could not, putting everyday situations into perspective.

Two participants were able to re-evaluate situations in terms of how significant they were in the grand scheme of things. For instance, one felt more relaxed about exams, firstly because

he was secure in the knowledge that he could relax himself; but also because he had done his revision and reasoned that if this was so, there was no need to get stressed.

On the other hand, one male participant reported that he continued to feel stressed throughout the programme and that this had prevented him from finding the time to practice the exercises at home.

Some examples of participant responses can be found in Table 7.

Table 7 goes here…

Discussion

Although there was a main effect of time for both groups, no significant main interaction effect was found between time and group indicating that the AT intervention was no more effective in reducing overall anxiety levels in adolescents compared to the wait-list group. Although the results are promising there is no way to rule out that there may have been other factors that supported participants with their anxiety in both groups, aside from the intervention. Interestingly, similar results were found in studies by Goldbeck and Schmidt (2003); Reed and Meyer (1974) and Garvin et al, (2001) for AT; and for other school-based early intervention programmes for anxiety (Neil & Christensen, 2009).

One explanation may be that both the wait-list group and the treatment group experienced a Hawthorne Effect (Barker et al, 2012) whereby the research itself heightened expectancy to produce beneficial changes. Reactivity of measurement effects (Barker et al, 2012) have been known to produce psychological benefits.

The qualitative results suggest that this part of the research was just as important as the intervention itself in providing an opportunity to share and talk about feelings. It also revealed that the information and consent letter provided one participant with the opportunity

to talk about her anxiety to her family and to discover that she was not alone.   Psychological Coherence can be understood as the experience of emotional comfort when views of the self are matched or validated (Wright et al, 2014).   The benefits of identifying with a group and feelings of belonging and commonality are also documented by Sani et al (2015).   This may have been the case for the wait-list groups since there was no way of knowing whether their opportunities to express their feelings or mix within a supportive group had increased.

Equally, participation in the research may have raised awareness amongst school staff. Schools who had opted into the study indicated that they recognised pupil anxiety which could have made them more predisposed to provide a nurturing environment, especially to those who they knew were waiting for their treatment.   Previous research findings show that increased teacher interest in the emotional wellbeing of students is highly valued and improves subjective wellbeing (Suldo et al, 2009) as well as the importance of increased school identification as a predictor of better mental health outcomes (Miller et al, 2018); and the benefits of talking to an attuned adult who can offer unconditional positive regard (Reichardt, 2016).

Qualitative analysis from the study indicates perceived changes in some participants in a range of physiological and psychological areas.   Participants perceived an increased ability to take a step back from situations with less emotional reaction to provocation; better connectivity and analytic thought into other people's social behaviour and needs; and improvements in self-monitoring and planning behaviours.   Participants also reported not only a reduction in somatic symptoms but a faster recovery rate from illness; better sleep; and an increase in motivation to look after one's health overall.   Such reports reflect current attention towards a wider perspective on what it means to be mentally healthy with the importance of sleep and practical relaxation techniques specifically highlighted in the

government's advice for mental health and behaviour in schools (DfE, 2016, pp.13). Results also comply with the findings of Llorca et al (2017) who recommend that besides the acquisition of coping skills, all adolescent anxiety interventions or preventative programmes should include specific teaching in the development of emotional self-regulation and the recognition and acceptance of feelings.

This study adds to the evidence available about AT and addresses a gap in the research field for the adolescent population in UK mainstream schools. Despite no main interaction effect, the perceived impact of the intervention seen in the qualitative data is promising. Furthermore, the study provides illuminating information from the wait-list groups who also showed significant reductions in anxiety levels; and may have opened a door for further research and investigation to take place.

Limitations

Several factors were found to account for potential limitations of the study. It must be recognised that representation of the population was compromised as some of the data from one of the schools was not normally distributed at the outset. Demographic details also showed a lack of cultural diversity; and, although ethical reasons dictated sampling strategy, convenience and volunteer bias meant that it would be impossible to be able to infer generalisability of the sample (Cohen et al, 2013). The type of participants who volunteer may not be representative of the target population for a number of reasons. They may be more obedient, more motivated to take part in studies or their own motives may clash with those of the researcher (Borg & Gall, 1989). Similarly, those who did not come forward for involvement may have done so to avoid criticism and stigmatization but equally be in need of support (Cohen et al, 2013, Kaushik et al, 2016).

There was also a lack of information on other supporting strategies and interventions that may have been provided at the same time as the treatment group. In schools where a commitment to developing the social and emotional wellbeing of young people is woven into the curriculum, it is likely that these strategies will also have a positive effect on development (Fabiano et al, 2014). Future studies or replications would benefit from including detailed information on concurrent types of support for wellbeing in each school, especially where school settings differ.

Although randomisation was intended to minimise as many confounding variables as possible, and maximise equivalency; the possibility that information and strategies were leaked between members of the intervention group to members of the wait-list group within each educational setting prior to post-intervention data collection cannot be ruled out. Similarly, the absence of qualitative information sought from the wait-list group makes it difficult to attribute effects to AT.

Another limitation of the study was that only one self-report questionnaire was used to measure overall anxiety levels which poses a question over the validity of the data. For whatever reason, there was no way to check that information, particularly in the form of ratings scales, was reliable or the truth (Barker, et. al. 2012). Future research could include the use other subjective measures from other sources (such as parents and teachers) for a more reliable indicator of symptoms. Qualitative results suggesting perceived improvements in social skills, relationships, and ability to cope, also highlight the potential usefulness of additional measures in the future such as the Strengths and Difficulties Questionnaire; Beck Youth Inventories; Resiliency Scales, as well as non-standardised rating scales to measure personal and specific anxiety provoking situations.

Implications for practice

The current study contributes to a better understanding of researcher effects, awareness raising and the impact that interventions such as AT in schools might have.

This study specifically explored an EP facilitated, group based relaxation intervention within a school setting. School based interventions have the advantage of bringing mental health support directly to the young people at school, avoiding common barriers such as costs and transport to attend alternative settings (Swan et al, 2014); and may provide the opportunity to alleviate anxiety levels in the very places where learning is taking place. Since there may be no evidence for any significant difference between delivering interventions to groups or individuals (Flannery-Schroeder et al, 2005); it is suggested that group based interventions could increase the reach for mental health and wellbeing in schools, (Weare & Gray, 2003). Working in this way allows EP to extend support by working with parents, teachers, and young people, to provide greater consistency, reliability, and adherence to programme protocols (Langley, et. al., 2010).

The study was only able to provide the interviewed sub-sample (n=12) with the opportunity to talk about their experiences. Many of the comments indicated that the debriefing process was an important element of intervention delivery and an opportunity to gather pupil voice and pupil collaboration. Future delivery of the intervention could include discussions with all group members to set goals and suggest ways forward not only to meet their individual needs but to implement change at a systemic level. Forman et al (2009), suggest fitting programmes seamlessly into school settings by considering the curriculum, teaching styles, school ethos and resources available; and nurturing strong and ongoing relationships. Involving pupils in decision making around how their mental health will be promoted is vital at secondary school level where teachers find it more difficult to identify internalised symptoms (Auger, 2004).

The findings that many participants found the psychoeducation aspect of the intervention helpful is also something for EPs to consider. Participants felt this had a positive effect on their ability to recognise the early warning signs of stress and feel in control of their anxiety. It would, therefore, be useful for EPs to raise awareness of the key changes that take place in adolescent brain development amongst all adolescents to promote adaptive behaviours that reduce risk and increase positive outcomes for youth (Dahl, 2004).

The qualitative results indicate other aspects of the intervention that might be supportive. Critical elements were working in a group; acknowledging anxiety; and sharing and expressing feelings within a supportive environment. Self-compassion has been found to be a protective factor in relation to mental health issues (Marshall et al, 2015); and the acknowledgement and acceptance of symptoms to be facilitators of increased perceived control (Arch & Craske, 2008). Young people experiencing problems with anxiety and depression may be reluctant to request help due to concern about burdening others or the stigma they may face (Kaushik et. al, 2016). It would be therefore also be useful for EPs to work with schools to develop nurturing environments where there are safe areas to talk, opportunities to bond and connect with like-minded others, and increase positive supportive relationships between peers and peers; peers and members of staff; and members of staff themselves.

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References

Arch, J. J. & Craske, M. G. (2008). Acceptance and commitment therapy and cognitive behavioral therapy for anxiety disorders: Different treatments, similar mechanisms? *Clinical Psychology: Science and Practice, 15*(4), 263-279.

Ashton, R. (2015). Relaxation as an intervention to improve emotional and behavioural outcomes for children. *Open Journal of Educational Psychology,* 1.

Auger, R. W. (2004). The accuracy of teacher reports in the identification of middle school students with depressive symptomatology. Psychology in the Schools, 41(3), 379-389.

Barker, C., Pistrang, N., & Elliott, R. (2012). *Research Methods in Clinical Psychology: An Introduction for Students and Practitioners.* John Wiley & Sons, Ltd.

Blakemore, S. J. & Frith, U. (2011). *The learning brain: Lessons for education.* Blackwell Publishing.

Bootzin, R. R., & Stevens, S. J. (2005). Adolescents, substance abuse, and the treatment of insomnia and daytime sleepiness. Clinical psychology review, 25(5), 629-644.

Borg, W. B. & Gall, M. D. (1989). *Educational Research. An Introduction* (5th edn)*.* New York, USA: Longman

Boyatzis, R. E. (1998) *Transforming Qualitative Information: Thematic Analysis and Code Development.* London: SAGE

Boyle, C., & Lauchlan, F. (2009). Applied psychology and the case for individual casework: some reflections on the role of the educational psychologist. Educational Psychology in Practice, 25(1), 71-84.

Braun, V. & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative research in psychology. 3*(2): 77-101

Byrne, D. G., & Mazanov, J. (2002). Sources of stress in Australian adolescents: Factor structure and stability over time. Stress and Health: Journal of the International Society for the Investigation of Stress, 18(4), 185-192.

Cameron, R. J. (2006). Educational psychology: The distinctive contribution. Educational Psychology in Practice, 22(4), 289-304.

Carr, A. (2002). *What works with children and adolescents?: a critical review of psychological interventions with children, adolescents and their families.* Routledge.

Chavira, D. A., Stein, M. B., Bailey, K., & Stein, M. T. (2004). Child anxiety in primary care: prevalent but untreated. *Depression and anxiety, 20*(4), 155-164.

Cohen, J. (1988). Statistical power analysis for the behavioural sciences (2nd edn). New Jersey: Lawrence Erlbaum.

Cohen, L., Manion, L., & Morrison, K. (2013). *Research Methods in Education.* Routledge.

Creswell, J. W. & Plano Clark, V. L. P. (2011). *Designing and Conducting Mixed Methods Research.* Sage Publications.

Dahl, R. E. (2004). Adolescent brain development: A period of vulnerabilities and opportunities. Keynote address. *Annals of the New York Academy of Sciences, 1021,* 1-22.

Dahl, R. E., Allen, N. B., Wilbrecht, L., & Suleiman, A. B. (2018). Importance of investing in adolescence from a developmental science perspective. Nature, 554(7693), 441.Department for Education (2016) retrieved on

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/508847/Mental_Health_and_Behaviour_-_advice_for_Schools_160316.pdf

DfE, DoH, Social Care, The Charity Commission, Prime Minister's Office, 10 Downing Street & The Rt Hon Theresa May PM. (2017). *The shared society.* Prime Minister's speech at the Charity Commission annual meeting, 9 January 2017. Retrieved on 5 November 2018 from https://www.gov.uk/government/speeches/the-shared-society-prime-ministers-speech-at-the-charity-commission-annual-meeting

DfE (2016). *Mental Health and Behaviour in Schools. Departmental Advice for School Staff.* Retrieved 8 November 2018 from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/508847/Mental_Health_and_Behaviour_-_advice_for_Schools_160316.pdf

DofE (2009). *New Horizons: towards a shared vision for mental health – consultation.* Retrieved on 8 November 2018 from http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_103175.pdf

DoH, DfE (2017). *Transforming Children and Young People's Mental Health Provision: a Green Paper.* Retrieved on 5 November 2018 from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664855/Transforming_children_and_young_people_s_mental_health_provision.pdf

Ernst, E. & Kanji, N. (2000). AT for stress and anxiety: a systematic review. *Complementary Therapies in Medicine, 8*(2), 106-110.

Fabiano, G. A., Chafouleas, S. M., Weist, M. D., Sumi, W. C., & Humphrey, N. (2014). Methodology considerations in school mental health research. *School Mental Health, 6*(2), 68-83.

Flannery-Schroeder, E., Choudhury, M. S., & Kendall, P. C. (2005). Group and individual cognitive-behavioral treatments for youth with anxiety disorders: 1-year follow-up. Cognitive Therapy and Research, 29(2), 253-259.

Forman, S. G., Olin, S. S., Hoagwood, K. E., Crowe, M., & Saka, N. (2009). Evidence-based interventions in schools: Developers' views of implementation barriers and facilitators. School Mental Health, 1(1), 26.

Garvin, A. W., Trine, M. R. & Morgan, W. P. (2001). Affective and metabolic responses to hypnosis, autogenic relaxation and quiet rest in the supine and seated positions. *International Journal of Clinical and Experimental Hypnosis, 49*(1), 5-18.

Goldbeck, L. & Schmid, K. (2003). Effectiveness of autogenic relaxation training on children and adolescents with behavioral and emotional problems. *Journal of the American Academy of Child & Adolescent Psychiatry, 42*(9), 1046-1054.

Horwitz, A. G., Hill, R. M. & King, C. A. (2011). Specific coping behaviors in relation to adolescent depression and suicidal ideation. *Journal of Adolescence, 34*(5), 1077-1085.

Jha, A. P., Krompinger, J., & Baime, M. J. (2007). Mindfulness training modifies subsystems of attention. Cognitive, Affective, & Behavioral Neuroscience, 7(2), 109-119.

Jimerson, S. R. & Oakland, T. D. (2007). School psychology internationally: A retrospective view and influential conditions. *The Handbook of International School Psychology,* 453-462.

Kaushik, A., Kostaki, E., & Kyriakopoulos, M. (2016). The stigma of mental illness in children and adolescents: A systematic review. Psychiatry Research, 243, 469-494.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Archives of general psychiatry, 62(6), 593-602.

Khoury, B., Lecomte, T., Fortin, G., Masse, M., Therien, P., Bouchard, V. ... & Hofmann, S. G. (2013). Mindfulness-based therapy: a comprehensive meta-analysis. *Clinical psychology review, 33(6),* 763-771.

Kobayashi-Suzuki, E., Tachibana, Y., Okuyama, M. & Igarashi, T. (2014). Breathing focused mind-body approach for treatment of posttraumatic stress disorder among children and adolescents: a systematic review. *Journal of Psychology Psychotherapy, 4(3),* 2161-0487.

Kotecki, J., Khubchandani, J., Simmons, R. & Sharma, M. (2014). Mind–Body Interventions Applications and Potential Opportunities for Health Education Practice. *Health Promotion Practice, 1524839914563747*.

Langley, A. K., Nadeem, E., Kataoka, S. H., Stein, B. D., & Jaycox, L. H. (2010). Evidence-based mental health programs in schools: Barriers and facilitators of successful implementation. School mental health, 2(3), 105-113.

Larson, H. A., Kim, S. Y., McKinney, R., Swan, A., Moody, A., Offenstein, K. L., ... & Puchalski, S. (2014). This Is Just A Test: Overcoming High-Stakes Test Anxiety through Relaxation and Gum Chewing When Preparing for the ACT. Eastern Education Journal, 42.

Leech, N. L. & Onwuegbuzie, A. J. (2009). A typology of mixed methods research designs. *Quality & Quantity, 43*(2), 265-275.

Llorca, A., Malonda, E. & Samper, P. (2017). Anxiety in adolescence. Can we prevent it? *Medicina oral, patologia oral y cirugia bucal*, *22*(1), e70.

MacKay, T. A. W. N. (2007). Educational psychology: The fall and rise of therapy. Educational and Child Psychology, 24(1), 7.

Macleod, S., Sharp, C., Bernardinelli, D., Skipp, A., & Higgins, S. (2015). Supporting the attainment of disadvantaged pupils: articulating success and good practice: Research report November 2015 (No. DFE-RR411, pp. DFE-RR411). Department for Education..

Manjushambika, R., Prasanna, B., Vijayaraghavan, R. & Sushama, B. (2017). Effectiveness of Jacobson's Progressive Muscle Relaxation (JPMR) on Educational Stress among School Going Adolescents. *International Journal of Nursing Education*, *9*(4).

Manzoni, G. M., Pagnini, F., Castelnuovo, G. & Molinari, E. (2008). Relaxation training for anxiety: a ten-years systematic review with meta-analysis. *Bio Med Central Psychiatry, 8*(1), 1.

Marshall, S. L., Parker, P. D., Ciarrochi, J., Sahdra, B., Jackson, C. J. & Heaven, P. C. (2015). Self-compassion protects against the negative effects of low self-esteem: A longitudinal study in a large adolescent sample. *Personality and Individual Differences, 74*, 116-121.

Metz, S. M., Frank, J. L., Reibel, D., Cantrell, T., Sanders, R., & Broderick, P. C. (2013). The effectiveness of the learning to BREATHE program on adolescent emotion regulation. Research in Human Development, 10(3), 252-272.

Miller, K., Wakefield, J. & Sani, F. (2018). Identification with the school predicts better mental health amongst high school students over time. *Educational and Child Psychology*, *Special Issue,* 21-29.

Morris, R. J. & Kratochwill, T. R. (1991). Fears and phobias. *The Practice of Child Therapy,* 76-114.

Muris, P., Merckelbach, H., Ollendick, T., King, N. & Bogie, N. (2002). Three traditional and three new childhood anxiety questionnaires: Their reliability and validity in a normal adolescent sample. *Behaviour research and therapy, 40*(7), 753-772.

Muris, P., Schmidt, H. & Merckelbach, H. (2000). Correlations among two self-report questionnaires for measuring DSM-defined anxiety disorder symptoms in children: The Screen for Child Anxiety Related Emotional Disorders and the Spence Children's Anxiety Scale. *Personality and Individual Differences, 28*(2), 333-346.

Neil, A. L. & Christensen, H. (2009). Efficacy and effectiveness of school-based prevention and early intervention programs for anxiety. *Clinical Psychology Review, 29*(3), 208-215.

NICE (2014). *Social and emotional wellbeing for children and young people overview.* Retrieved 8 November 2018 from http://pathways.nice.org.uk/pathways/social-and-emotional-wellbeing-for-children-and-young-people

Nickel, C., Lahmann, C., Tritt, K., Loew, T. H., Rother, W. K., & Nickel, M. K. (2005). Short Communication: Stressed aggressive adolescents benefit from progressive muscle relaxation: A random, prospective, controlled trial. *Stress and Health: Journal of the International Society for the Investigation of Stress, 21*, 169-175.

Onwuegbuzie, A. J. & Collins, K. M. (2007). A typology of mixed methods sampling designs in social science research. *The Qualitative Report, 12*(2), 281-316.

Perfect, M. M., & Morris, R. J. (2011). Delivering school-based mental health services by school psychologists: Education, training, and ethical issues. Psychology in the Schools, 48(10), 1049-1063.

Reed, R. & Meyer, R. G. (1974). Reduction of test anxiety via autogenic therapy. *Psychological Reports, 35,* 649-650.

Reichardt, J. (2016). Exploring school experiences of young people who have self-harmed: How can schools help. *Educational and Child Psychology*, *33*(4), 28-29.

Reynolds, W. M., & Coats, K. I. (1986). A comparison of cognitive-behavioral therapy and relaxation training for the treatment of depression in adolescents. Journal of Consulting and Clinical Psychology, 54(5), 653.

Romeo, R. D. (2009). Adolescence: a central event in shaping stress reactivity. *Developmental psychobiology, 52*(3), 244-253.

Romeo, R. (2017). The impact of stress on the structure of the adolescent brain: implications for adolescent mental health. *Brain research*, *1654*, 185-191.

Roza, S. J., Hofstra, M. B., van der Ende, J. & Verhulst, F. C. (2003). Stable prediction of mood and anxiety disorders based on behavioral and emotional problems in childhood: a 14-year follow-up during childhood, adolescence, and young adulthood. *American Journal of Psychiatry, 160*(12), 2116-2121.

Rydzkowski, W., Canale, N., & Reynolds, L. (2016). A review of interventions for adolescents with insomnia and the role of the educational and child psychologist: when sleep does not come easily. Educational Psychology in Practice, 32(1), 24-37.

Sanger, K. L., Thierry, G. & Dorjee, D. (2018). Effects of school-based mindfulness training on emotion processing and well-being in adolescents: evidence from event-related potentials. *Developmental science*, e12646.

Sani, F., Madhok, V., Norbury, M., Dugard, P. & Wakefield, J. R. (2015). Greater number of group identifications is associated with healthier behaviour: evidence from a Scottish community sample. *British Journal of Health Psychology, 20*(3), 466-481.

Schultz, J. H. & Luthe, W. (1959). *AT: A psychophysiologic approach to psychotherapy.*

Sinclair, D., Purves-Tyson, T. D., Allen, K. M., & Weickert, C. S. (2014). Impacts of stress and sex hormones on dopamine neurotransmission in the adolescent brain. Psychopharmacology, 231(8), 1581-1599.

Spence, S. H. (1997). *The Spence Children's Anxiety Scale (SCAS).* In I. Sclare (ed.). *Child Psychology Portfolio*. Windsor, UK: NFER-Nelson.

Spence, S. H., Barrett, P. M. & Turner, C.M. (2003). Psychometric properties of the Spence Children's Anxeity Scale with young adolescents. *Journal of Anxiety Disorders, 17,* 605-625.

Stetter, F. & Kupper, S. (2002). AT: A Meta-Analysis of Clinical Outcome Studies. *Applied Psychophysiology and Biofeedback, 27*, (1).

Suldo, S. M., Friedrich, A. A., White, T., Farmer, J., Minch, D. & Michalowski, J. (2009). Teacher support and adolescents' subjective wellbeing: A mixed-methods investigation. *School Psychology Review, 38*(1), 67.

Swan, A. J., Cummings, C. M., Caporino, N. E. & Kendall, P. C. (2014). *Evidence-Based Intervention Approaches for Students with Anxiety and Related Disorders.* In Walker, H. M. & Gresham, F. M. (Eds), *Handbook of Evidence-Based Practices for Emotional and Behavioural Disorders: Applications in Schools.* New York: Guildford Publications.

Truong, Y., & Ellam, H. (2014). Educational psychology workforce survey 2013. Retrieved from https://dera.ioe.ac.uk/19840/1/RR338_-_Educational_Psychology_Workforce_Survey_April_2013.pdf

Weare, K. (2015). *What works in promoting social and emotional wellbeing and responding to mental health problems in schools?* Retrieved on 6 November 2018 from https://www.mentalhealth.org.nz/assets/ResourceFinder/What-works-in-promoting-social-and-emotional-wellbeing-in-schools-2015.pdf

Weare, K. & Gray, G. (2003). *What works in developing children's emotional and social competence and wellbeing?* London: Department for Education and Skills. Retrieved on 6 November 2018 from http://learning.gov.wales/docs/learningwales/publications/121129emotionalandsocialcompetenceen.pdf

Wisner, B. L., Jones, B., & Gwin, D. (2010). School-based meditation practices for adolescents: A resource for strengthening self-regulation, emotional coping, and self-esteem. Children & Schools, 32(3), 150-159.

Wolery, M. (2011). Intervention research: The importance of fidelity measurement. *Topics in Early Childhood Special Education*, 0271121411408621.

World Health Organisation (2018). *Adolescent mental health.* Retrieved 1 November 2018 from http://www.who.int/mental_health/maternal-child/adolescent/en/

Wright, K. B., King, S. & Rosenberg, J. (2014). Functions of social support and self-verification in association with loneliness, depression, and stress. *Journal of Health Communication, 19*(1), 82-99.

Young Minds. (2018). *Mental Health Statistics.* Retrieved 1 November 2018 from

https://youngminds.org.uk/about-us/media-centre/mental-health-stats/

Table 1: Phases of Thematic Analysis (Braun & Clarke, 2006)

Phase	Description of the process
1. **Familiarising yourself with your data.**	The data was transcribed by the researcher and re-read three times. Initial notes were made at this time
2. **Generating initial codes**	Interesting features of the data were coded in a systematic fashion across the entire data set again by summarising quotes and extracts for meaning.
3. **Searching for themes**	Codes were then collated and linked together into potential themes.
4. **Reviewing themes**	Themes were then checked for congruence with phases 1 and 2 to generate a 'Thematic Map'.
5. **Defining and naming themes**	Data was then revisited again to refine themes and generate clear definitions and titles. At this point, coded transcripts and definitions were viewed and analysed by a peer before being discussed for inter-rater reliability.
6. **Producing the report**	The researcher then selected the most vivid, compelling extract examples to illustrate an overall picture of the results.

Table 2: Semi-structured interview schedule

Questions	Rationale
1. What has the AT group meant to you? (Don't be afraid to say negatives as well as positives…)	Open question to prompt initial thoughts about their experience of AT.
2. Have you noticed any changes in yourself – or not?	Open question for recipient to explore what they perceive to be "changes".
3. What was it like for you?	Open question for recipient to think about emotional responses to the intervention.
4. Was it what you expected it to be?	Direct question to prompt for differences in initial perceptions of the intervention and for participants to compare what they actually experienced.
5. Is it something you are likely to keep practicing or not?	Direct question with prompt for responding either way: 'or not?' Designed to assess the extent to which the intervention has been incorporated into lifestyles.
6. What will you remember the most about learning AT?	Open question to prompt further understanding of experiences relating to AT.
7. Is there anything else you would like to say about your experience of AT?	Open question to give further opportunity to express thoughts in case previous questions have not included information.

Table 3: Summary of participant and school characteristics

	School 1		School 2		School 3		School 4	
	T	W	T	W	T	W	T	W
N=	11	10	7	6	7	5	10	10
Gender								
Male	1				5	3	10	10
Female	10	10	7	6	2	2		
Mean Age	15	15.8	15	14.8	15	15	15.3	14.7
Ethnicity								
White British	11	9	7	6	6	5	10	9
Irish		1						
White Other					1			
Kurdish								1
EAL								
SEN								
C&L	2	2	1	1		2	1	
SEMH			3					
C&I						1	1	
Sensory Impairment					1			
Physical Disability						1		
Socio-economic status								
Type of school	Community		Grammar		Grammar		Grammar	
Gender	Mixed		Girls		Mixed		Boys	
Ethnic minorities	>national average		<national average		<national average		<national average	
SEN	<national average		<national average		<national average		<national average	
FSM	>national average		<national average		<national average		<national average	

T=Treatment Group; W=Waitlist Group; C&L=Cognition & Learning; SEMH=Social Emotional & Mental Health; C&I=Communication & Interaction; SEN=Special Educational Needs; FSM=Free School Meals.

Table 4: Structure of AT sessions

	Activity
1	Participants were asked for feedback on how the exercise practice from the previous session had gone, along with the opportunity to for further questions and clarification. Keeping a diary was encouraged but was for the participants' own reflection and reference.
2	The old exercise was practiced once again, feedback was sought, and questions answered.
3	The new exercise for the week was introduced. The researcher provided the rationale along with modelling and psychoeducational information.
4	The new exercise was practiced together.
5	Participants were asked for feedback on their experience.
6	Additional short exercises were introduced and explained but not practiced.
7	The researcher talked through the home practice and information was provided in the form of a hand-out.
8	Home practice was recommended 3 times a day, every day.

Table 5: SCAS anxiety scores for treatment and wait-list groups across pre and post time points.

		Treatment Group			Wait-list Group	
Time Period	*N*	*M*	SD	*N*	*M*	SD
Time 1	35	39.22	17.10	31	34.58	18.65
Time 2	35	30.45	16.91	31	29.7	18.64

Table 6: SCAS anxiety scores for treatment compared to wait-list group using mixed between-within ANOVA.

	F value	Sig.	Effect Size
Main Effect of Time	$F(1,64) = 36$	$p<0.0005$	$\eta\rho^2 =0.36$
Main Effect of Group	$F(1,64) = .41$	$p=0.52$	$\eta\rho^2=0.006$
Interaction	$F(1,64) = 2.87$	$p=0.095$	$\eta\rho^2=0.04$

Table 7: Overarching themes and examples of dialogue

Overarching Theme	Sub-theme	Examples of dialogue
Relationships	Better friendships	*I think that my friendships have got better…. Yeah, I just been a lot happier and better…Um – I feel my friendships have got, become a lot nicer to me but I think they've always been nice to me but before I was just curious so maybe she wasn't sitting next to me because of that or she's not doing that but now I've just become (pause) and opened up and just been aware of just (pause) my friendships and become a lot less stressed – haven't broken down in a while.* *…it's more to do with for me it's like socialising I find quite difficult I've just been able to … I've been more easy going with other people as well… so – that's been interesting.*
	Recognising difficulties in others	*I just see the world in a more positive light now… Yeah I just, I just, like I would always feel judged or like as if everything going around me was about like someone was doing it to me. I f someone was like sad, I would think, oh gosh, I've done something to them… But now I don't view it as me I just view it as them. I really like that – and I think everyone around me likes that.*
	Increase in bonding and connectivity	*… it's kind of … we have done the whole journey… we've all been able to help each other, I think it's been quite good to connect us individually as well and not just develop our own things…*
	Group participation	*Normally I wouldn't have wanted to leave my parents at all. Other trips that I have done, I have not wanted to leave my parents so I won't have eaten anything. I wouldn't have really done much*

		either but with this I got stuck in and did everything.
		There was less pressure on me specifically and that made it significantly easier to understand.
	Desire to share and help others	*It was fun, it was good, it was like, I thought it would be rubbish but it was actually really really good – I told my mum and my mum done it…*
		Yeah, I'll show them cos I think some of my friends, they get really stressed and if I just read it out to them they can get calm.
		… it's definitely helped me to relay my feelings to other people… uh kind of with the being able to express how I'm feeling I've actually started writing a blog.
Emotional awareness and control	Slower emotional reactions	*If somebody upsets me or anything I can move away from them and use the meditation and stuff to calm myself down before going back to like speak with people…Normally, something violent may have happened.*
	Feelings of safety and reassurance	*Coming in on Mondays was kind of like a safe, a safe kind of like a retreat, so I'm quite visual so I usually think um this is a line between being anxious and not being anxious… and then my day consists of you know, going out of the zone at different lengths and then it's kind of like a retreat back, it's like a reassurance, a um yeah it's kind of like a safe zone for me.*
Physical change	Reduced somatic symptoms of stress	*… I don't really dream as vividly any more so it's kind of like helping me to actually sleep and not, and not like waste all that energy you like imagine you would do… I think I feel more like it sounds really like what can I say, I feel like I can get up like I can do things.*
		…it would have been longer to get better because obviously the more you worry the more stressed you get and the 'iller' you get so it's definitely, it's definitely been helpful for my health especially so…I just get so tired during the day, usually, and it's quite good to, it kind of like reboots yourself – if that makes sense?
Increased self-awareness	Psycho-educational understanding	*…it just helps - it helps, you can feel it in the muscles in the shoulders and your arms it's kind of – being more relaxed afterwards.*
		… I'm using it even if I'm not stressed cos it's kind of like in a roof - you don't get rid of the drainpipes when it's not raining you know, you keep those as a safeguard so like a sort of a maintenance thing, a maintenance of wellbeing.
		… I often think I'm like choking on air and then I think, like Oh!...and then I'll get panicked about that and that I can't breathe and yeah then it all kind of snowballs… it's a lot more relaxed. If I'm (in) somewhere that's like crowded and I do feel claustrophobic and I'm kind - like step back and can free myself and actually take time to breathe.
	Empowerment	*I liked that instead of like having to rely on someone else to help us – it was like you telling us how we could help ourselves.*
		Well actually, as I've got an injury at the moment and like when it's

		really hurting I sit there and I think about other parts of the body and then it doesn't hurt…cos I do sport quite a lot I always get like aches and pains and its quite good to use to relax muscles then … yeah yeah because whenever I come out I feel like I'm floating (laughs).
	Confidence	*…and I'm much more calm and relaxed and I feel that this has given me a positive effect in lessons because I can concentrate more rather than think – oh my gosh, I've got to remember this and then I've got to do this, and then I've got to do this… and it just builds up and now I'm just cool about it.* *Because before, like before I was doing it I didn't really tell anyone how I was feeling… a lot of the time I feel quite queezy and a lot of butterflies in my stomach all the time and then when I brought home the letter like Oh Yeah! I'm doing a relaxing thing I was able to tell my mum that I was feeling like that … yeah and it's definitely helped me to be able to relay my feelings to other people.*
Cognitive change	Improved concentration	*…cos I think all over the place way like a very busy kind of mind map but um maybe autogenics helps to kind of take a few moments to help my brain just to put things in order so it's more kind of like a linear process…*
	Increase in positive thinking	*I just see the world in a better more positive light now … before when I did tests I usually get all worried about and then like on the way home oh I'm all worried…but when I was walking home I thought I'm not nervous about this so and then um I'm going to do well so I find out today, but I think I'm not thinking all the negative stuff – just the positive stuff.*
	Clarity of thought	*So it's just easier to get through um I think it's, it's changed the way I kind of think about things quite a lot, cos I used to, like when things happen and you just can't really do anything about it you just got like, you know you just have to like worry about it but now I just, I'm more like I just let things happen and I can just…well you can only control what you can control I think that's what I've learned.*
	Increased problem solving skills	*Um I think it's just because I am able to like really think about it and then I just kind of realise that it is just not that important.*
	Increased self-monitoring	*Well, I know that this autogenics is supposed to relax you and everything yeah, you done those sheets to take home and try to practice – I can't find a time cos I've got loads of work to do at home, it's really stressful … Yeah, I managed a bit but too stressful at time…* *I just concentrated a bit more that's all … I realise how good my work is so … I've concentrated more before I done autogenics but…*

Figure 1: Thematic Analysis Map

Better friendships
Increase in bonding and connectivity
Recognise difficulties in others
Aware AT is a personal experience
Desire to share with and help others
Validates feelings - I am not alone
Less pressure when experience shared
Camaraderie
Group Participation
Relationships

Improved concentration
Increased problem solving skills
Increased self-monitoring
Ability to plan ahead
Think clearly
Increase in positive thinking
Cognitive Change

What are the perceived changes associated with learning group-based AT?

Slower emotional reactions
Patience
Feelings of safety and reassurance
AT is Respite
Emotional awareness and control

Headaches
Panic Attacks
Painful and aching muscles
Reduced somatic symptoms
Desire to do more exercise
Enjoys physical sensation and wants to repeat
Surprised how quickly body responds to trigger phrase
Increased motivation
Physical change

How the body learns
AT as a self-help technique
Connection between somatic symptoms and anger
Psycho-educational understanding
Making choices and decisions
Fitting practice in
Empowerment
Confidence
Self-worth
Trust
Increased self awareness