Delivery of a Mental Health First Aid training package and staff peer support service in secondary schools: A mixed-methods implementation study of the WISE intervention

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Abstract

Background: Improving children and young people's provision for mental health is a current health priority in England. Secondary school teachers have worse mental health outcomes than the general working population, which the Wellbeing in Secondary Education (WISE) cluster randomised controlled trial aimed to improve. The intervention tested delivery of a Mental Health First Aid (MHFA) training package to at least 16 percent of staff, a short mental health awareness session to all teachers, and development of a staff peer-support service. Twenty-five schools were randomised to intervention or control arms. This paper reports findings from an embedded process evaluation to assess the extent of successful intervention implementation.

Methods: Mixed methods data collection comprised researcher observations of training delivery, training participant evaluation forms, trainer and peer supporter interviews, peer supporter feedback meetings, logs of support provided, and teacher questionnaires. Quantitative data were summarised descriptively, while thematic analysis was applied to the qualitative data.

Results: In the 12 schools assigned to the intervention arm, 113 (8.6%) staff completed the two-day standard MHFA training course, and a further 146 (11.1%) staff completed the one-day MHFA for Schools and Colleges training. In seven (58.3%) schools the required eight percent of staff completed the MHFA training packages. A one-hour mental health awareness raising session was attended by 666 (54.5%) staff. Delivery of the MHFA training package was achieved with high levels of fidelity and quality across schools. All schools set up the peer-support service following training, with a majority adhering to most of the operational guidelines developed from the pilot study. Teachers reported limited use of the peer support service during follow-up. At the second peer-supporter feedback meeting, only three (25.0%) schools indicated they had re-advertised the service and there was evidence of a reduction in support from senior leadership.

Conclusion: The MHFA training package was delivered with reasonably high fidelity, and a staff peer support service was established with general, but not complete, adherence to guidelines. In some schools insufficient staff received MHFA training and levels of delivery of the peer support service compromised intervention dose and reach.

Background

Secondary school teachers have poorer emotional wellbeing, higher prevalence of depressive symptoms, and increased levels of stress and anxiety related disorders compared to the general population [1, 2]. Interventions to improve the mental health of secondary school teachers are important to reduce the risk of them developing more serious, longer term mental health conditions [3], and negate the adverse impact on teacher-student relationships and learning outcomes of students that may accompany poor mental health in their teachers [4, 5]. Improvements to public mental health literacy may lead to better mental
health outcomes, by facilitating early help-seeking behaviours, by equipping others to identify signs of mental health difficulties earlier [6] and by reducing the stigma associated with mental illness.

With the aim of improving provision for children and young people’s mental health, the UK government have recently pledged Mental Health First Aid (MHFA) training for a single staff member at each secondary school in England [7]. MHFA is an internationally recognised training course designed to teach lay people first-aid skills to support others with mental health problems [8]. The training aims to teach individuals practical skills that can be used to identify signs and symptoms of mental health difficulties, and provide confidence in guiding people towards appropriate support [9]. Youth Mental Health First Aid training has been designed specifically to support young people in secondary education settings and MHFA England Workplace to support colleagues in workplaces [10]. Despite major policy action there is currently a lack of evidence-based interventions to improve school staff wellbeing. Therefore, evaluations to establish effectiveness are required.

The Wellbeing in Secondary Education (WISE) intervention is a cluster randomised controlled trial (RCT) that aims to improve teacher and student wellbeing, in addition to teacher performance and attendance at work, and student attendance and attainment. The intervention comprised teacher training in MHFA, a teacher mental health awareness raising session, and delivery of a staff peer support service [11].

Alongside the main trial, an integrated process evaluation was undertaken to support the interpretation of the main study outcomes and refine the intervention theory [12]. Process evaluations aim to explain how complex interventions work, by examining the processes through which an intervention generated outcomes. This can help explore barriers and facilitators to delivery and uptake that could improve future implementation and scalability [13]. The protocol for the process evaluation which will report: mechanisms of change and relevant contextual influences; reach; contamination; intervention fidelity; unintended harms; acceptability; and sustainability [12].

The overall aim of the present study was to report process outcomes and measures related to the delivery of the MHFA training package and the teacher mental health awareness raising session, and implementation of the staff peer support service within secondary schools in England and Wales.

In order to document implementation of the WISE intervention, the specific objectives of this study were to assess the following:
1. Reach of the WISE intervention training, mental health awareness raising session and the peer support service
2. Completion of the WISE intervention training (dosage)
3. Fidelity to the planned intervention during delivery of the WISE intervention training
4. Quality of delivery of the MHFA training
5. Fidelity to the planned intervention during the peer support service set up and ongoing delivery
6. Reach of the peer support service

**Methods**

The manuscript was prepared using the Standards for Reporting Implementation Studies (StaRI) Statement [14] (Supplementary material 1).

**Sample**

Recruitment of schools from the South West of England and South East and Central Wales was conducted between April and June 2016. Twenty-five schools, organised into strata by geographical area and socioeconomic background of students measured by free school meal entitlement, were randomly allocated to the intervention or control arm. Further description of the recruitment and randomisation procedures are available [11]. As part of the process evaluation, more detailed data collection was undertaken in four intervention case study schools purposively selected so the sample included a range of geographical areas, student free school meal entitlement, and school inspectorate review rating (Ofsted and Estyn for English and Welsh schools, respectively).

**The WISE intervention package**

A selection of teaching and non-teaching staff at each intervention school were invited to take on the role of peer supporter and, in preparation for this, attended the two-day standard MHFA training course. To ensure the intervention was delivered with sufficient dose, a minimum eight percent of the whole staff body (maximum 16 participants in a group) was required to attend the two-day standard MHFA training course. Selection of peer supporters was based on nominations by colleagues at the end of the baseline questionnaire; teachers were invited to suggest colleagues that would be well suited to the role of peer supporter. Those with the most nominations were invited to become peer supporters. Where those nominated did not include a range of gender and seniority, other staff with fewer nominations were selected.

Following completion of training, attendees were given a short presentation delivered either by the research team of MHFA trainers and written guidance on setting up a staff peer support service in their
school. The guidance was developed based on pilot study findings regarding factors likely to maximise service usage (see Supplementary material 2).

A shortened version of the youth MHFA course (the one-day MHFA for Schools and Colleges) was delivered to a further group of teachers to improve their skills in supporting students in distress. Senior leaders were advised to select mainstream teachers who had some pastoral responsibility and who were therefore likely to be in a position to identify students experiencing mental health difficulties (e.g. tutors). A minimum of eight percent of all teachers (maximum 16 participants in a group) was required to attend the one-day MHFA for Schools and Colleges training course.

Finally, all teachers at the intervention schools were invited to attend a one-hour mental health awareness raising session, with schools able to choose whether they also made this available to non-teaching staff. There was no target in terms of intervention dose. However, schools were encouraged to schedule the session during staff meetings to ensure the majority of teachers attended. The session covered the importance of teacher and student mental health, tips on how to improve wellbeing and provide initial support to others, information about local help sources, and aspects of the intervention delivered as part of the research study.

All MHFA courses were delivered by MHFA accredited trainers (three in England and six in Wales). Further details of the intervention are available [11].

Data collection methods

A summary of the data collection methods to assess implementation is provided (Table 1. Data collection methods to assess implementation of the WISE intervention).

Research objectives one & two: Reach and dose of the training

To measure the reach and dosage of the MHFA training, the numbers of teachers and other school staff attending and completing the MHFA training courses were recorded. Reach of the one-hour awareness raising course was measured by recording the number of staff that attended each one; however it was not possible to know how many of these were teachers and how many were other staff.

Research objectives three & four: Fidelity and quality of the training

Fidelity to the training delivery plan and quality of the training was measured in four different ways:

1. Observations of the training

Observations of the one-hour mental health awareness raising session, the two-day standard MHFA, and the one-day MHFA for Schools and Colleges training course, were undertaken in the four intervention case
study schools. Two members of the research team independently observed all sessions; data related to the second observation in one case study school is missing. Standardised observation schedules were completed to assess coverage of materials, quality of delivery, and participant engagement for each section of the training. Scales were constructed by the study team based on discussion with MHFA England as to what the key content of the training is, and how the trainers themselves are assessed when becoming accredited. Items were measured using a five-point Likert scale, except coverage of key topics which was assessed through a binary measure (‘yes’ or ‘no’).

2. Training checklists

Following completion of both MHFA training courses, attendees were asked to complete a study-specific checklist devised by the research team, recording the content delivery (each item assessed as covered or not), and quality of the training in terms of trainer knowledge and skills, and modes of learning utilised (e.g. group work, presentation of slides). Each quality measure was assessed using a five-point Likert scale.

3. Trainer interviews

Semi-structured interviews (n = 6) were conducted with a subgroup of the trainers to assess fidelity to and their perceptions of quality of delivery. Trainers were purposively sampled to ensure that a representative from each of the six intervention schools were interviewed. Interviews explored experiences of delivery, fidelity and motivations for any adaptations undertaken.

Research objective five: Fidelity of the peer support service

In all intervention schools, a convenience sample of peer supporters were invited to attend a feedback meeting with the study team approximately six and again 18 months after training. A member of the research team went through a structured list of questions that assessed adherence to each item of the peer support service guidance. Additionally, in case study schools a convenience sample (based on their availability to attend) of peer supporters took part in focus groups (n = 8) held at their school. These took part approximately six and 12 months post-intervention delivery. The focus groups explored their experiences, and the associated barriers and facilitators to implementation of the peer support service.

Research objective six: Reach of the peer support service

This was assessed in two ways:

1. Teacher questionnaires
All teachers in intervention schools were asked to complete anonymised questionnaires regarding their use of the peer support service and their perceptions of its usefulness at the 12- and 24-month follow-up time-points.

2. Peer supporter logs

Peer supporters were also asked to complete an electronic log three times a year documenting delivery of support to colleagues in the previous two weeks. To mitigate against the risk of seasonal bias (e.g. stress associated with end of term examinations), peer support logs were issued at different times during the academic term. The log assessed reach (number of staff supported), the broad demographic and professional characteristics of the staff members supported, type of problem addressed (e.g. work or personal), and outcome of the interaction. The log was also used to record when peer supporters had left the school.

Analysis

MHFA evaluation forms, checklists, teacher questionnaires, and observation schedules were analysed descriptively using counts, percentages, means, standard deviations, and ranges (Table 1. Data collection methods to assess implementation of the WISE intervention). Paired t-tests were used to compare responses related to ‘knowledge’ and ‘confidence in helping others’ before and after attending the course. Quantitative analyses were undertaken using the STATA statistical package, release 14 (STATA Corp, College Station, TX).

Interviews with trainers and peer supporters were audio recorded and transcribed verbatim. Any potentially identifying information was removed. Interview data were analysed using thematic analysis [15]. Briefly, separate coding frameworks were developed through an iterative process for each dataset. Independent coding of two transcripts for each dataset was undertaken. A priori codes that map onto the process evaluation domains were included in the initial coding frameworks, along with novel codes that emerged from the data. Qualitative analyses were assisted with the QSR NVivo11 software.

Results

Mental Health First Aid training findings

Research objectives one & two: Reach and dosage

Across the 12 schools assigned to the intervention arm, 113 (8.6%) teachers and support staff attended and completed the two-day standard MHFA training, and 146 (11.1%) teachers and support staff completed the one-day MHFA for Schools and Colleges. Six hundred and sixty-six (54.5%) teachers and school staff attended the one-hour awareness raising session. In eight (66.7%) of the 12 intervention schools, the pre-specified intervention dose (at least eight percent of school staff attending the course and becoming a peer supporter) of two-day standard MHFA training was achieved. One additional staff
member was required to be trained in each of the remaining four schools to reach sufficient dose. In nine (75.0%) of the intervention schools, the pre-specified eight percent of teachers attended the one-day MHFA for Schools and Colleges training course. Of the three schools not reaching sufficient dose, an average of two additional teachers were required to be trained. Reasons for schools not achieving sufficient dose included researcher error, nominated staff unable to attend, and trained staff leaving the school shortly after training.

**Research objectives three & four: Fidelity and quality of training**

1. **Observer assessed**

In the four case study schools, observer assessed fidelity and quality of delivery of training was consistently high for each of the items of assessment (instructor knowledge of materials, presentation skills, facilitation and support of the learning, interest from the group, and coverage of materials). There was little variation in mean scores on these items for the one-day MHFA for Schools and Colleges (range: 3.9-4.3 out of 5) and two-day standard MHFA training course (range: 4.1-4.4), although mean scores were slightly lower for the one-hour mental health awareness raising session (range: 3.4-4.1) (Table 2. Observer rated fidelity and quality of delivery of the MHFA training package at case-study schools).

2. **Participant assessed**

One hundred and eighteen of the 146 (80.8%) attendees of the one-day MHFA for Schools and Colleges and 108 of 113 (95.6%) attendees of the two-day standard MHFA training course completed a participant checklist. Most attendees scored trainers highly for knowledge of materials, presentation skills, diversity of learning materials, communication skills, use of a range of teaching approaches, and ability to keep the course focused and relevant. There was little variation in the mean scores for each of the instructor qualities by the one-day MHFA for Schools and Colleges (range: 4.6-4.7) and two-day standard MHFA (range: 4.6-4.7) training courses (Table 3. Participant assessed quality of training and fidelity of the MHFA training package).

One hundred and forty-two of the 146 (97.3%) attendees of the one-day MHFA for Schools and Colleges and 110 of 113 (97.3%) attendees of two-day standard MHFA training course completed a MHFA training evaluation form. In keeping with observer-assessed quality of training, overall mean scores for the one-day MHFA for Schools and Colleges training courses were high (range: 4.4-4.7), with the exception of slightly lower scores for participant rating of environment in which the training was delivered (4.1, SD: 0.7). Mean scores for the two-day standard MHFA course were also high (range: 4.3-4.7), with lower
scores observed for participant rating of training course environment (3.8, SD: 0.9) (Table 3. Participant assessed quality of training and fidelity of the MHFA training package).

3. Trainer assessed

Despite their diversity in relation to their experience of delivering MHFA sessions, all six trainers reported high levels of fidelity in terms of ensuring key content was delivered. However, three main factors appeared to present a challenge to fidelity, requiring trainers to deliver the course with flexibility, whilst still ensuring all key content was covered. These factors were: needs of the group, location of the training, and scheduling within the school day.

Needs of the group

Trainers discussed the need to exhibit flexibility in relation to choice of materials or timetabling of exercises depending on the needs of the group: ‘You’re not meant to go off the planned route really but if the room is slumping slightly you can kind of get them sort of re-energised for a little while and get them involved in something’ [Trainer five]. They also used their skill as trainers to note and respond to dynamics within the group, to help ensure more effective participation by attendees: ‘I think it’s a general thing about watching your group, seeing how they’re interacting, and making sure that they are interacting about the subject matter’ [Trainer three].

Location of the Mental Health First Aid training delivery

Delivery of the MHFA training package usually took place on the school site, either during an In-Service Training (INSET) day (for the one-day training course) or usual school day. However, being on-site resulted in interruptions to the delivery of training in some schools, due to competing priorities of school staff, such as resolving student incidents, performance management meetings, and break duties: ‘There was an incident in the school that afternoon, which required several members of staff to have to leave in the afternoon and go and do things and come back. I guess that’s just the nature of life inside a school’ [Trainer two]. In such situations, trainers again discussed being flexible in delivery during such interruptions, to ensure coverage of sufficient content: ‘Frequently I was having to move the day around or rejig, to make sure they covered the most important points’ [Trainer three].

Scheduling MHFA training within the school timetable
The school timetable presented challenges to fidelity of the MHFA training package. Often trainers reported a reduction in time available due to expectations of delivering the course within a school day, with set break and lunchtimes, and other scheduled school events being prioritised: ‘We couldn’t start at eight thirty because it was an inset day and the Principal wanted staff to come and join the main assembly for a talk. So that pushed it beyond nine o’clock’ [Trainer four]. This required trainers to be adaptive in their delivery style to ensure that key materials were covered within a shorter timescale: ‘We’re not going to be pedantic about timescales...we’ll just go with the flow of the school day and just stop and start when it automatically fits’ [Trainer six].

The trainers reflected on the one-hour awareness raising session and perceived that it was Powerpoint heavy and not necessarily conducted at an optimum time (e.g. at the end of the school day) for the school staff to remember and fully process the messages within the session. However one particular trainer used personal experience to engage the school staff and make the messages less abstract. It was also felt that there was not enough time built in for it to be interactive and allow discussions: “They were struggling a little bit at the end of the day. There was a lot of PowerPoints and quite a lot of actually reading from the PowerPoints. The main bits that actually worked were when I handed out the little sticky post-it notes to get them to do things... I used my own experience of bipolar disorder to cover the stigma section, which completely changed the dynamic in the room”[Trainer one].

**Research objective five. Fidelity to guidance (peer support service)**

Approximately six months after the two-day standard MHFA training course, a sub-group of peer supporters, with at least one from each of the intervention schools took part in the initial feedback meeting. Nine (75%) of the intervention schools indicated that support had already been provided to colleagues by peer supporters. Peer supporters at the majority (n=9, 75%) of schools had met as a group to discuss the set-up of the staff peer service, with some schools indicating they had held regular up-date meetings since then (5, 41.7%). Usually peer supporters provided support to each other through an informal ‘buddy’ system (11, 91.7%), although one school (8.3%) reported implementing a more formal approach. Five (41.7%) of the schools had set-up a formal confidentiality policy for the peer support service at this point.

All schools used advertising to launch the peer support service. Methods to promote the service included posters provided by the research team (n=10, 83.3%), newsletters (1, 8.3%), staff briefings (11, 91.7%), staff email (4, 33.3%), and posting information in staff pigeon holes (1, 8.3%). Half of the schools planned to advertise the service at the start of the following academic year (eight to 11 months after delivery of MHFA training). All schools (12, 100.0%) offered service users the choice of which peer
supporter they contacted. Most schools offered a confidential space where support could be provided (9, 75.0%) and senior leaders had helped to raise the profile of the peer support service (8, 66.7%).

The second feedback meeting took place at ten (83.3%) schools (approximately 18 months after training). Since the first feedback meeting, none (0.0%) of the schools had met as a group, with most (n=9, 90.0%) mentioning just discussing any issues with other peer supporters informally if needed. Three (30.0%) of the schools had re-advertised the service, by email (30.0%), posters (1, 10.0%) and through a staff newsletter (1, 10.0%). Fewer schools indicated senior leadership support at the second feedback meeting (4, 40.0%).

Qualitative data from trainer interviews and peer supporter focus groups shed further light on the challenges in setting up the peer support service. In some cases a short amount of time was found at the end of the second training day for the group to begin to discuss the service, but this was limited: “…it might have prompted a little bit more conversation and discussion about what do we do? But there wasn’t a huge amount of that and the course doesn’t really lend itself, because again, you’ve got to get through this and that”[Trainer four].

Difficulty in finding further time to meet was noted as the reason that some groups failed to meet at all even to set the service up, and no groups were meeting a year on:

Peer Supporter:  "If we’ve got half an hour free at all it will be different times in the day."

Interviewer:  "Have you met as a whole group or is it difficult with the time?"

Peer Supporter:  "No, not as a whole group. We had a few meetings in the term after the training, but even then it was a real struggle to get people. And once you get the same people over and over, you start to think, well it’s not good”[School 1D, phase two].

This may have impacted the implementation of the intervention as the peer supporters did not have the space to reflect on their practice and the service and discuss any improvements that could be made.

The guidance was deliberately flexible, to ensure the peer support service could be implemented in a realistic and sustainable way in each school context. But one trainer observed that in at least one group this added an additional complexity to the peer support role that may have been counter-productive to
getting the service going: “...they got really bogged down in policy and procedure and and then some people said, well I'm not going to be comfortable doing this if, I want to know. And we were saying, it was really, really important (inaudible) different approaches”[Trainer six].

It was reported by some peer supporters that there was a struggle to find the time and the space to meet with staff. Some reflected that it is hard to find a confidential space within a school as many of the spaces have staff and students coming and going on a regular basis. This could have had an effect on the staff approaching peer supporters and the quality of the conversation undertaken: "And also, finding a place at that time as well... I was seeing someone after school, and we were chatting, talking about something they were a bit concerned about, and then somebody else just walked in and just stood there. I didn't want to say, this is a private, a mentoring, this is confidential. So this person doesn't want me telling somebody else that, so that was difficult......I didn't know what to do because I didn't want to embarrass the person that was there, I wanted to be rude to the person who just stood there but I couldn't, and they still didn't go, they still didn't get the message“[School 2L, phase two].

Although most services were delivered on an ad hoc basis, as and when colleagues approached a supporter for help, in one of the case study schools the peer supporters also created a specific space and time that the staff knew they were available to access should they need support, which may have avoided the above problem. However they found this difficult to implement due to the additional demands it placed on their time: "I mean when we first did it, there was talk about having like a drop in, and then we were going to kind of have a rota and do that. But, you know, people are just so busy that it's hard to ask people to give up their free time“[School 1D, phase two].

A number of comments suggested that to address some of these implementation problems such as lack of time and lack of clarity over policies, stronger support and recognition from senior leadership was needed: “And I think that maybe needs to be addressed because we want to have more of an impact. Then actually, we need to have that recognition, as to the role that we are playing. And perhaps sitting down with the Head and, as a group of people, this is our plan, how will you support us, kind of thing because it is really important“[School 2L, phase 1].

**Research objective six. Reach of peer support service delivery**

At the first follow-up, 34 (6.1%) of 557 teachers indicated they had accessed the peer support service in the previous 12 months. Most frequently, teachers indicated they had used the service once or twice in the
academic year (n=16, 47.1%) or once a term (three times a year) (9, 26.5%). Similarly, at the second follow-up only a small proportion (n=30, 5.9%) of 510 teachers indicated they had accessed the peer support service in the previous 12 months (Table 4. Teacher reported use of the staff peer support service at follow-up time-points).

Of the 113 peer supporters trained in the intervention schools, over half (n=60.6, 53.6%) peer supporters completed logs at each of the five time-points, and each supporter completed a mean of 3.1 (SD 1.5) logs. Sixteen (14.5%) peer supporters did not complete a log at any time-point. Ninety-two (81.4%) peer supporters were still employed by the schools at the final data collection time-point. The mean number of logs completed by school varied (range: 2.2 to 10.6) and decreased slightly over time (mean difference between first and last data collection: 0.7).

Across all time-points combined, peer supporters reported that they had supported a mean of 1.7 (SD: 1.8) colleagues in the previous two weeks, of which approximately half (mean 0.7, SD: 0.8) were additional colleagues who they would not have supported prior to being trained. Most often support was provided to each person once (mean number of colleagues helped once at each time-point (23.8, 40.8%) or twice (18.8, 32.2%). The peer supporters reflected that they were unsure about which contacts should be recorded as part of the intervention, and which would have happened anyway outside of their peer support role. This meant that the logs may overestimate the work of the peer supporters: “The struggle for me is how do you know if they’re coming to you as a peer mentor or, how do you know if they’re coming to you because they would come to you anyway. Measuring that, you know. Quantifying Peer Supporter School versus pretty much we were all doing that anyway”[School 4N, phase 1].

**Discussion**

The findings from this implementation study indicate that the WISE intervention, designed to improve the emotional wellbeing of secondary school teachers and students, was delivered with reasonable fidelity. Researcher observations and participant evaluations showed that delivery of the MHFA and one-hour mental health awareness training was achieved with high levels of quality and little variation by site and course. However, five (41.7%) schools failed to achieve the sufficient threshold for intervention dose (at least eight percent of teachers completing one-day MHFA for Schools and Colleges and two-day standard MHFA).

In all intervention schools a staff peer support service was set-up. Support was most commonly provided to teachers, face-to-face, and on an ad-hoc basis. However, reach of the peer support according to teachers was low. Further, there appeared to be a loss of momentum in relation to delivery, with few
schools reporting that they re-advertised the service in the subsequent academic year and support from senior leaders appearing to have dwindled. Both these features of the service were recommendations to encourage longer-term sustainability of the peer support service, identified as part of the qualitative evaluation comprising the pilot study [16]. However, implementation of these recommendations does not appear to have been fully realised in the present study.

Comparison with the literature

The findings presented here that participants were positive about the content and delivery of the MHFA training resonates with other studies [17, 18]. Taken together, these results indicate that it is feasible to deliver high quality and consistent MHFA and mental health awareness training to groups of staff within a school setting, although maximising numbers can be challenging. This is relevant to current policy in which there is an increasing emphasis for schools to play a key role in supporting children and young people's mental health [19]. Holding training off-site may give teachers time to learn without interruption, however, schools may not always be able to re-arrange duties to accommodate. Peer support in facilitating recovery has gained in popularity and has been shown to promote better outcomes for people with mental health problems and addiction [20, 21]. The effectiveness of MHFA training and peer support service at improving secondary school teachers and students’ emotional wellbeing assessed through the WISE study and will be reported shortly.

Complex interventions may often be tailored when being implemented in different contexts. Process evaluations can usefully identify whether delivery occurred as intended, and the impact on desired (and undesired) outcomes [22]. For example, an implementation study relating to a trial of a schools-based prevention programme delivered in the United States showed differential intervention effects in different schools. The authors suggested this was related to higher quality of implementation and senior leaders support [23]. The findings reported here indicate a high level of implementation fidelity, but with intervention dose and reach lower than anticipated. However, as part of our analysis of the main trial, we will undertake exploratory analyses to assess the impact of differing levels of implementation of the mental health training package and peer support service on corresponding improvements to outcomes.

Strengths and limitations of the study

To our knowledge, this is the first study that reports the implementation of a mental health training package and staff peer support service aiming to improve the wellbeing of secondary school teachers. We collected extensive process data using qualitative and quantitative data collection techniques related to delivery of the MHFA and one-hour mental health awareness training and implementation of the staff peer support service, to provide evidence as to the extent that the WISE intervention was delivered as intended.

There are some limitations to the study. As the process data was collected from intervention schools, researchers it was not possible to blind researchers during data collection. However, analysis was undertaken to address research questions that were established a priori. As study researchers undertook
interviews and focus groups, participants may have been influenced to respond more positively. Researcher observations of delivery of the MHFA training package occurred in case study schools only. Therefore, observer rated quality and fidelity reported in the present study may not be representative of the experience of the other intervention schools participating in the study. However, fidelity checklists completed by course attendees indicated training was consistent whether observers were present or not (results not shown). In addition, comments from feedback meetings and MHFA training forms were largely similar between the case study and other intervention schools suggesting that there was not much variation in intervention delivery across schools.

Of the 113 participants trained as peer supporters, a substantial proportion did not complete a log at any time-point (16, 14.5%) or only completed a log at one time-point (20, 17.7%). Disengagement with completion may be unrelated to delivery of the peer support service, and may relate to the confusion about precisely what kind of contact should be recorded. We do not know whether these individuals took a less active role as peer supporters, meaning the peer support service was delivered by fewer than intended individuals.

There was also discordance between teacher and peer supporter-reported use of the service and the success of the implementation of the peer support service may therefore have been over-estimated. Due to the informal nature of delivery, teachers may not have been aware that they were using the peer support service or may not be willing to disclose that they had. Peer supporters could also over-inflate reported use, although the recorded confusion about which contacts warranted recording suggests if anything, that use of the service was probably under-recorded.

**Conclusion**

The findings from this study suggest that the MHFA training package was delivered largely as intended, and the staff peer support service was established in each school. However, the data show that fewer staff than intended received MHFA training in a minority of schools, and teachers’ self-report of use of the peer support service indicates a low reach. Additional research could investigate the acceptability of alternative strategies to support teacher’s wellbeing which can be implemented more sustainably over the longer-term. The impact of the intervention on improving the emotional wellbeing of teachers, its acceptability and other issues relating to sustainability, will be reported elsewhere.

**Declarations**

Ethics approval and consent to participate

Ethical approval for the study was granted by the University of Bristol’s Faculty of Medicine and Dentistry Ethics Committee (reference 2852). Written consent for each participating school was gained from the school leader. All potential teacher and student participants were given information sheets at least two weeks before each outcome data collection session. Those not wishing to take part were not asked to
complete the questionnaire. Information was also posted or emailed by schools to all parents of eligible students at least one week before data collection. Parents returned opt-out forms to notify the study team that they withdrew their child from participation.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Abbreviations

MHFA
Mental Health First Aid
WISE
Wellbeing In Secondary Education
RCT
Randomised Controlled Trial
SD
Standard Deviation
INSET
IN-SErvice Training

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Other Information

Name of the registry: ISRCTN registry

Trial registration number: 95909211

Date of registration: 01/15/2016

URL of trial registry record: www.isrctn.com/ISRCTN95909211

Contributions to the literature

- Improving teachers mental wellbeing is a public health concern which the WISE cluster randomised controlled trial aimed to improve
- The embedded process evaluation showed implementation of a Mental Health First Aid training package in secondary schools can be achieved with reasonably high levels of fidelity and quality
- However, delivery of a peer support service compromised intervention dose and reach

Tables
Table 1. Data collection methods to assess implementation of the WISE intervention

| Research objective | Data source | Informant | Data collection | Timing | Analysis |
|--------------------|-------------|-----------|----------------|--------|----------|
| **Training**       |             |           |                |        |          |
| 1. Reach & 2. Dosage | Attendance records | Trainers (n = 10) | Course registers | During intervention training course | 8% of target cohort trained in each school |
| 3. Fidelity        | Observation of intervention training courses | WISE trainers (n = 10), training attendees (two-day standard: n = 118; one-day MHFA for schools and Colleges: n= 146; intervention case study schools n = 4) | Independent assessment of intervention training course by study team (n = 2); observation schedules | During intervention training course | Summaries of scores (means, standard deviation, range) |
| 4. Quality         | Fidelity checklist and training materials used | WISE trainers (n = 10), training attendees (two-day standard: n = 108 (95.6%); one-day MHFA for schools and Colleges: n= 118, (80.8%)) | Self-assessment; checklists and materials log | During intervention training course | Summaries of scores (means) |
|                    | Training evaluation form | Training attendees (two-day standard: n = 110 (97.3%); one-day MHFA for schools and Colleges: n=142 (97.3%)) | Self-assessment; evaluation forms | Following intervention training | Summaries of scores (means); paired t-tests |
|                    | WISE trainer interview | WISE trainer (n = 6) | Interview | Following intervention training | Thematic analysis |
| **Peer support service** |             |           |                |        |          |
| 5. Fidelity        | Peer support feedback and logs | Peer supporters (n = 113; intervention schools n = 12) | Self-assessment; logs; feedback session hosted by study team | Termly following intervention training course; 2 × feedback sessions | Summaries of responses (counts, percentages) |
| 6. Reach           | Teacher questionnaires | Teachers at intervention schools (12-mth follow-up n=557, 24-mth follow-up (n=510) | Survey questions regarding use of peer support service | 12-mth follow-up (teachers); 24-mth follow-up | Summaries of scores (counts, percentages) |

*Research objectives: 1. Reach of the WISE intervention training, mental health awareness raising session and the peer support service; 2. Completion of the WISE intervention training (dosage); 3. Fidelity to the planned intervention during delivery of the WISE intervention training; 4. Quality of delivery of the MHFA training; 5. Fidelity to the planned intervention during the peer support service set up and ongoing delivery; 6. Reach of the peer support service*
Table 2. Observer rated fidelity and quality of delivery of the MHFA training package at case study schools (mean scores by observer and across all sections of the course)

|                         | One-day MHFA for Schools and Colleges | Two-day standard MHFA training | Raising awareness session |
|-------------------------|--------------------------------------|-------------------------------|----------------------------|
|                         | N=7                                  | N=8                           | N=7                        |
| **Observer fidelity checklist forms** |                                      |                               |                            |
| Knowledge of materials  | 4.2 (0.9) 2.8-5.0                     | 4.4 (0.7) 3.0-4.9              | 4.1 (0.7) 3.3-5.0          |
| Presentation skills    | 4.3 (0.6) 3.5-5.0                     | 4.1 (0.6) 4.0-5.0              | 3.8 (0.7) 2.8-4.9          |
| Facilitation and support of the learning | 4.0 (0.8) 2.5-5.0                     | 4.1 (0.7) 3.0-4.9              | 3.6 (0.6) 3.1-5.0          |
| Interest from the group | 3.9 (0.3) 3.5-4.3                     | 4.3 (0.5) 3.7-5.0              | 3.4 (0.4) 3.0-4.1          |
| Coverage of material (Yes) | 94.0% 85.6-100.0%                     | 96.3% 84.2-100.0%             | 100.0% 100.0%              |

SD: Standard Deviation; Items measured using a five-point Likert scale

Table 3. Participant assessed quality of training and fidelity of the MHFA training package

| MHFA training evaluation forms                  | One-day MHFA for Schools and Colleges | Two-day standard MHFA training |
|------------------------------------------------|--------------------------------------|-------------------------------|
|                                               | N=146 Mean (SD)                       | N=113 Mean (SD)               |
| Overall                                       | 138 4.6 (0.5)                         | 110 4.5 (0.6)                 |
| Presentation slides                           | 140 4.4 (0.6)                         | 109 4.3 (0.6)                 |
| Video clips                                   | 140 4.7 (0.5)                         | 110 4.5 (0.6)                 |
| Manual                                        | 123 4.7 (0.5)                         | 110 4.7 (0.5)                 |
| Learning exercises                            | 136 4.4 (0.6)                         | 110 4.5 (0.6)                 |
| Environment                                   | 138 4.1 (0.7)                         | 107 3.8 (0.9)                 |
| Structure                                     | 140 4.4 (0.6)                         | 109 4.4 (0.7)                 |
| Content                                       | 140 4.6 (0.6)                         | 109 4.6 (0.6)                 |

| Participant fidelity checklist forms           | N=118 Mean (SD)                       | N=108 Mean (SD)               |
|                                               |                                      |                               |
| Knowledge of materials                         | 106 4.6 (0.7)                         | 103 4.7 (0.5)                 |
| Presentation skills                            | 107 4.7 (0.6)                         | 103 4.7 (0.6)                 |
| Diversity of learning materials                | 107 4.6 (0.7)                         | 103 4.6 (0.6)                 |
| Communication and interaction                  | 107 4.7 (0.6)                         | 103 4.7 (0.6)                 |
| Facilitation and support of the learning       | 107 4.7 (0.6)                         | 102 4.6 (0.6)                 |
| Relevance of content and discussion           | 107 4.7 (0.6)                         | 103 4.7 (0.5)                 |
| Flexibility of use of most relevant materials  | 107 4.7 (0.6)                         | 103 4.7 (0.6)                 |
SD: Standard Deviation; Items measured using a five-point Likert scale

|                             | 12-month follow-up | 24-month follow-up |
|-----------------------------|--------------------|--------------------|
|                             | N=557              | N=510              |
| **Use of staff peer support in previous year?** | n (%) | n (%) |
| Yes                         | 34 (6.1)           | 30 (5.9)           |
| No                          | 523 (93.9)         | 480 (94.1)         |
| **Frequency of use**        |                    |                    |
| Once or twice               | 16 (47.1)          | 13 (43.3)          |
| Once a term                 | 9 (26.5)           | 6 (20.0)           |
| Once or twice a month       | 5 (14.7)           | 8 (26.7)           |
| More than once a week       | 4 (11.7)           | 3 (10.0)           |
| **Usefulness of service**   |                    |                    |
| Not at all helpful          | 1 (2.9)            | 2 (6.9)            |
| It helped                   | 18 (54.6)          | 14 (48.3)          |
| It helped a lot             | 14 (42.4)          | 13 (43.3)          |

Table 4. Teacher reported use of the staff peer support service at follow-up time-points