Mental Health Screening, Intervening and Training (SIT) of Student Health Care Professionals; a multi methods study

Study Protocol
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Plain English Summary

Currently student Health Care Professionals (SHCP) face distinct and unique pressures on their mental health and are experiencing poorer mental health *e.g.* heightened levels of anxiety and depression. Part of this is a result of the interactions that they are required to have with patients, and families via remote means e.g. phone connection due to social distancing and which is highly pressured and intense given the unforeseen impact of the COVID-19 pandemic. We have undertaken many small research studies, which, when combined, have given us a new model to guide specialist practice and training, the Model of Emotions, Adaptation and Hope (MEAH). The MEAH allows us to provide a single e-learning training session which includes: (a) Mental health screening of SHCP by self-completing the MEAH questionnaire, (b) a brief mental health intervention involving a 20-minute e-based or telephone call around the screening and (c) teaching of a storytelling-based therapy (underpinned by the MEAH model to enhance interactions). We have named this e-learning training package, the Screen, Intervene, and Train (SIT) approach to care.

Parts a and b of the SIT approach require SHCP to complete a MEAH questionnaire and state the most significant difficulty they are experiencing at that point in time (past research identified that this would focus on the COVID-19 impact on the ability to work, relationships or include the combination of difficulties from COVID-19 alongside additional stressors such as family bereavement). The MEAH questionnaire will be email to Dr Soundy before a single e-based (e.g., Skype or Zoom) or telephone call. The single 20-minute conversation will include questions taken from our successful pilot research. Following this, part c will commence using an e-learning intervention based on past pilot research. We have developed a presentation to train SHCP to use a story-telling approach to for patient's management; this will additionally include the rationale for the use of MEAH including the science and theory. Finally, SHCP will be provided with a e-learning presentation that summarises coping strategies identified from the interview in part a. The unpinning rationale for SIT approach is that we support the mental health of SHCP and also and train them to apply the approach in clinical practice to improve patient outcomes.

Our primary aim is to assess the effectiveness of the intervention on levels of depression and anxiety in SHCP. Other outcomes of interest relate to confidence of SHCP achieving quality indicators of SHCP-patient communication, SHCP attitudes, empathy, hope, NHS related cost-savings utilisation, work outcomes and quality of life.

The planned study requires SHCP to be allocated to either a control group or the intervention group (with MEAH training). SHCP assessment will take place before and after the intervention and again at 12-weeks. The waiting list control group will receive the MEAH training at 12-weeks. Follow up assessment for both groups will be at 3 months. The main purpose of this study is to investigate the content of the SIT e-learning training on SHCP and gain an insight into the effect of this inexpensive and accessible, evidence-based training on patient outcomes. The most direct benefits include; (a) improved mental health for SHCP and patients. (b) empowerment of patients to seek positive coping behaviours, reducing the need for additional costly healthcare services for SHCPs and potentially patients. (c) increase resilience of SHCP and reduced burn out (d) improve patient satisfaction and (e) reduced need for pharmacological approaches to treat mental illness SHCP (f) reduced work absence and improved productivity of SHCP .

Introduction

Understanding and supporting the mental health of frontline workers during the COVID-19 is fundamental to the health of staff and patients. Within the hospital setting SHCP face

environments of extreme stress caused by COVID-19, this includes access to appropriate personal protective equipment, being deployed to new and unknown practice environments, a lack of updated information, being exposed to the virus and then concerns about perhaps unknowingly transmitting to a family member, peers or others (Shanafelt et al., 2020). Outside the work setting opportunities to support others within their family circle are impacted by government legislation of lockdown and social distancing. As a result, SHCP are experiencing profound psychological problems, including anxiety, depression and distress; a direct result of caring for patients who have COVID-19 (Pfefferbaum and North, 2020; Lui et al., 2020).

Research is therefore urgently needed to investigate the mental health of frontline staff (Holmes et al., 2020), including both training to help SHCP cope with patients' emotional concerns, anxiety and panic (Chen et al., 2020), and mental health screening for all SHCP (Pfefferbaum and North, 2020), including support mechanisms to help SHCP manage the extreme and unforeseen challenges of a pandemic (Shanafelt et al., 2020). Benefits would see improved work-related outcomes of SHCP, improved quality of care and as a result cost effective treatment for patients. Flexible, cost-effective and widely accessible approaches are urgently needed, with e-learning being an obvious choice during the COVID era. Evidence supports this with e-learning associated with improved standardisation of instruction and enhanced cost-effectiveness compared to face-to-face instruction (Cendan and Locke, 2012). Moreover, e-learning methods provide SHCP an opportunity and means to reflect and self-correct their actions and behaviours (McDonald et al., 2018). The benefits of this include enhanced resilience and experience of interactions resulting in reduced stress. E-learning interventions offer an alternative solution to screen and support the mental health of SHCP, bypassing the need for direct contact with trainers (Pfefferbaum and North, 2020). Thus, this e-learning offers considerable potential to both support the mental health of SHCP and train them to manage stress during challenging interactions within their clinical environment. Our e-learning training approach, the Screen, Intervene, and Train (SIT) approach to care could easily be scaled up and implemented effectively on a national level (Duan et al., 2020). Our pilot research into the SIT approach has contributed to the creation of an evidence based and short e-learning training which could achieve the needs identified at a population level.

The SIT approach was developed from the model of emotions, adaptation and hope (MEAH). The MEAH was the final development of a set of 12 reviews that focused on the (re)conceptualisation hope and psychological adaptation. This work was conducted across various chronic conditions (e.g., Parkinson's, Multiple Sclerosis, Stroke, Spinal Cord Injury) and palliative conditions (e.g., Motor Neurone Disease and Cancer) and subsequently supported by empirical research on chronic and palliative conditions led by Dr Soundy. The MEAH reconceptualises psychological adaptation and represents the key psychological features of common story plots identified from illness stories across various illness experiences (Soundy, 2018). The MEAH screening tool was developed to capture psychological responses to a personally named difficulty faced within a short period of time (30 seconds). Pilot research has identified these difficulties as the experience of suffering or loss, the impact of change and an uncertain future and changes in meaningful social identities, activities or relationships. This is constant with the structure and framework for hope (Soundy et al., 2014). The benefit of this was that SHCP can use the difficulty to support a brief personalised intervention with as little as one question if needed, meaning enhanced and immediate therapeutic interaction. By analysing data gathered from pilot studies, patients and participants used an iterative process to develop a screening tool (MEAH Scale). The three critical applications of the MEAH together are referred

to Screen, Intervene and Train "SIT" approach to care:

a) Screen and Intervene: The MEAH can be used as a unique screening tool for SHCP as part of training (or subsequently in routine clinical practice by SHCP). The MEAH screening tool focuses on a self-selected difficulty and allows the SHCP a chance to understand the MEAH model through direct and personal experiences that can be shared. Being able to talk about this difficulty using specific questions was associated with increased hope, enhanced acceptance as well as positive changes in emotions. The questions of the tool are derived from two validated scales (Soundy et al., 2016; Russell, 1980) that provide the central psychological constructs associated hope, adaptation and emotions. The screening and intervening aspects of the training uses a form of pedagogy known as 'real play' (Norris et al., 2019). Our pilot research[1] in May 2020 involved screening and supporting the psychological adaptation and hope of student physiotherapists (n=19) when the COVID-19 crisis resulted in significant changes in their professional education. The research included a mixed methods study and identified the impact of a student talking and responding to questions related to the MEAH. The study demonstrated significant and positive changes in hope, adaptation or emotions across student participants. This demonstrates the importance of being able to share personalised experiences using the MEAH scale as a way of supporting the mental health of SHCP. This provides evidence to support the use of MEAH as a brief screening and intervening tool to initially support SHCP with a single Skype/Zoom or phone call at the start of the training.
b) Train: The MEAH offers the science as to why narrative-based interventions have been associated with improvement in patient mental well-being outcomes. Our recent research[2] to assess the training of SHCP has included a sequential 2-phase mixed methods study involving student physiotherapists. The e-learning included a 1-hour training session, providing proof of concept and piloted since the outbreak of COVID-19. Findings suggest that SHCP who use a narrative-based intervention experienced perceived improvements in recognised communication skills that enhance therapeutic conversations. Notably a consistent reduction in personal distress from pre-post and from pre-6-week follow up in relation to challenging interactions was found. Physiotherapist participants had applied the training and were more confident in difficult interactions.

Together these two applications (screen, intervene and train) of the MEAH model have been combined into a single e-learning approach to support the mental health of SHCP and to train SHCP to manage patients in very short time period (under 2 hours). Having completed the SIT approaches we would be able to consider effectiveness of the training during SHCP-patient interactions by focusing further on emotions, adaptation and hope.

It is important to note that all stages of the SIT approach have been developed using electronic resources, and as such the planned study methods are compliant with current legislation on social distancing, whilst being scalable to achieve a wider reach of SHCP across the NHS and other practice settings in the post COVID era across the UK. The additional benefit of this work

[1] Ethical approval was gained from University of Birmingham ethics committee reference: ERN_20-0565.
[2] Ethical approval was gained from University of Birmingham ethics committee reference: ERN_18-1970B and ERN_18-1970C. Online protocol number: ISRCTN 13368968

is that once trained, SHCP can apply the training at a patient level, or as part of personalised medicine and we would be able to pilot the effectiveness of the training on patients using a multi-centre quasi-experimental design.
Our research to date underpins our rigorously developed e-learning training which has been tested as a proof of concept in a single application and has the potential, following further research to be applied to the NHS and then more globally. The proposed research seeks to combine the above two applications for a novel study that can be offered across all frontline SHCP.

Aims and Objectives

The aim of this study is to investigate the impact of a 2-hour MEAH e-learning training session on depression and anxiety of SHCPs.

Objectives
1. To explore changes in depression and anxiety as a primary outcome measure across three time points (pre-intervention, post intervention, at 12-weeks) for all front-line SHCP during the screening and intervening phase. To compare the intervention and control at the pre-, post- and follow up time points
2. To identify longer term outcomes for the SHCP intervention group at 6 months
3. To examine changes in secondary outcome measures on SHCP including quality of life, stigma, communication, hope, and empathy.
4. To identify any differences between SHCP cohorts (e.g. doctors, speech and language therapist, nurses, occupational therapists and physiotherapists)

To illuminate the benefits of our e-learning approach on the SHCP mental health.

Main Study
We report this according to the SPIRIT guidelines (Chan et al., 2013).

Design: A multi methods study involving a randomised trial with a waiting list inactive and active control group. Following the CONSORT recommendations and flow diagram (Schulz et al., 2010). See Figure 1 for trial design and Table 1 for Gantt Chart. Qualitative data will be generated through the training which will further help understanding experiences of COVID-19 and a qualitative study involving semi-structured interviews to consider the benefit of the study will be undertaken from week 12. PPI involvement has contributed to this across different stages see below.

Study setting: The trial will be run from the following Universities: University of Birmingham, Birmingham City University, Coventry University, Brighton University, Southampton University and Oxford Brookes University.

Contacts at the following Universities have been made to agree access:

University of Birmingham
Existing contacts: David Punt, Dr Carolyn Roskell, Dr N Heneghan – Physiotherapy here at Birmingham
New requests: Nursing – Dr Alistair Hewson, Medicine – Dr Karl Nightingale.
Brighton University – Dr Helen Fiddler Physiotherapy Program

Southampton University - Dr Dorit Kunkel lecturer in health sciences here and PT, and Prof Cathy Bowen
Birmingham City University - Mille Gabirelle Speech and Language therapy course lecturer.
Oxford Brookes University. - Mark Williams (programme Lead) and Robyn Stiger (Subject coordinator) for the physio programmes at Brookes.
Coventry University for Occupational Therapy Program – Dr John OShea
Nottingham University – Occupational Therapy Prof Avril Drummond.

Eligibility; Any SHCP currently studying at on a course from the above Universities.
Approach and Recruitment; An initial email contact (Appendix A) will be sent to all SHCP with an information sheet via email (See Appendix B). After 48 hours individuals will be recruited.

Sampling and sample size; Any SHCP currently studying and working in COVID-19 units. Pilot research identified significant impact on student communication and a medium effect size is expected. Using Cohen's (1988) tables with an alpha of 0.01, d = 0.5 (a medium effect) and beta of 0.9 we will recruit 94 SHCP per group to take part in this research. This will give a total of 120 SHCP and we will add in a 10% margin (n=20) for dropout or incomplete data. This gives a total of 140 SHCP to be randomised per arm or 280 in total. We will try and ensure a mixed sample with SHCP from different allied health professional groups using purposive sampling.
Sequence generation; Random number calculator with randomly selected block sizes (Efird, 2011).
Allocation concealment; undertaken by e-links not known to the researcher
Sequence generation; We will replicate the pilot research and include a random number calculator with randomly selected block sizes (Efird, 2011). Randomisation undertaken by a member of the research team separate from the study will allocate SHCP to an intervention control group using a random number generator.
Blinded assessor; Only blinded assessment will take place. Before randomisation a blinded assessor (lecturer in physiotherapy or research student) will distribute questionnaires. The pre-recorded e-learning programme has been prepared by Dr Soundy who developed and prepared all pilot studies. Following the completion of the training an assessor who is blinded to treatment arm will organise and collect follow-up assessments.
Data collection methods: Before data collection starts SHCP will be shown the information sheet via email and asked to consent (Appendix B). A baseline measurement will take place (Appendix C). The baseline measurement will take place over a secure electronic data capture system called Research Electronic Data Capture (REDCap). Following this, students in each group will receive the training. Once the training is complete students will again fill in the measurement tools using REDCap. The research associate will send out two email reminders to any participant who doesn't fill in the forms.

Intervention: The SIT intervention will include a single screening interview taking 20 minutes with Dr A Soundy. Following this the participant will be sent a pre-recorded e-based training session. The lecture takes 45 minutes. The indicative content considers examples of interactions, the science behind the MEAH, the use of screening and how to engage in a brief narrative-based intervention within practice. It has the same components as the pilot studies, although adapted into one training session. The final part of the training for SHCP will include an e-learning presentation. The presentation will provide an analysis of the screening calls. This will reveal the most common difficulties and stories expressed within screening and will

summarise the difficulties that were challenging to adapt to, illustration of how the MEAH is important for this understanding and the most common coping strategies identified (this was undertaken and achieved as part of the pilot research to consolidate learning). The principles are that sharing this information will provide direct access to others experiences which has been associated with enhanced mental health outcomes (Ooms et al., 2016; Soundy et al., 2019). The benefit of this is SHCP can access effective coping strategies that promote mental health and psychological well-being outcomes. This entire process will take a maximum of two hours to complete at a pace and time that is convenient to the participant.

Inactive control group 1: an inactive waiting list control group will be used. Individuals in this group will receive or be offered the SIT intervention at week 12.

Active control group 2: an alternative e-intervention will be used which includes a 45 minutes pre recorded lecture. Individuals in this group will receive or be offered the SIT intervention at week 12.

Outcome measures for SHCP;
See Appendix C for all outcome measures
Demographics; Age, gender, professional group, type of course, year of course. Time experience of working in a COVID-19 setting in months.

Primary outcome measure for SHCP:
The Hospital Anxiety and Depression Scale (HADS: Zigmond and Snaith, 1983). A 14-Item questionnaire that assesses depression and anxiety.

Secondary outcomes measures for SHCP;
(a) The SF-12 Quality of life questionnaire (Ware et al., 1995). A 12-item questionnaire that assesses quality of life.
(b) The 15-item open minds scale for health care providers (Kassam et al., 2012; Modgill et al., 2014). This score uses a five-point Likert scale and a total score is calculated which exists between 15-75. Five items are reversed coded. Higher scores signify more stigmatising attitudes and intentions of behaviour.
(c) Froehlich Communication Survey (Froehlich et al., 2016). A 25-item scale that assesses communication. The pilot research identified a significant change across time from this outcome.
(d) The interpersonal reactivity index (Davis, 1983). A 28-item scale that uses a 5-point Likert scale that measures empathy. Pilot research showed a reduction in personal distress for challenging interactions.
(e) The Adult Hope Scale (Synder 1991). A 12-item measure of respondents hope.
(f) The MEAH version 3.3 which is made up of the hope and adaptation scale (Soundy et al., 2016) and the circumplex model of affect (Russell, 1980).

The total time to complete the primary and secondary outcome measure is about 10 minutes. After this there will be a 12 week, 6-month follow up for primary and secondary outcome measures.

Other qualitative data generated:
The screening at the beginning of the intervention will be recorded across a 20-minute

Skype/Zoom interview (see Appendix D) to reflect on the difficulty identified within the MEAH screening tool version 3.3. This replicates the pilot screening work which produced significant improvements in psychological well-being. The summarised data will be presented to SHCP following the intervention and can be used for a qualitative peer reviewed publication.

Finally, a single semi-structured interview at week 12 will be undertaken to detail SHCP perception of the processes. See Appendix E for the interview schedule

Participant timeline:
The participant timeline is based on evidence from the pilot studies showing an efficient timeline. This included ethical approval given in April 2020 and submission of one study by late May 2020 and the second is on course for late June 2020. Given this the following has been planned, **maximum** time periods are as follows:
Ethical approval submitted: September 2020
Trials registration submitted and completed: October 2020
Advertisement of study: October 2020
Enrolment and randomisation: October 2020-November 2020
Post assessment completed by: December 2020
12-week follow up completed by: February 2021
Main Publication submitted for publication: March 2021
24-week intervention group follow up completed by: May 2021 (analysis completed by trials unit other staff costs covered by University)
Follow up publication: June 2021
Other publications: September 2021.

Data management: The research associated will use the University REDCap system to access the data and only work on a University password protected computer.
Statistical methods; For the main study and sub-study descriptive statistics will be used. Confidence intervals will be used to consider change. A factorial ANOVA (a parametric statistical technique which can assess change in one test rather than needing to perform many) will be used to test group differences across outcome measures. An ANOVA will consider the change in scores across time for the intervention group. All qualitative data will be analysed using a thematic analysis (Braun and Clarke, 2006).
Data monitoring: Dr Soundy will report any adverse events to University program leader for consideration. Any program leader will be able to stop the study if required. No adverse events were reported across all pilot research. All adverse events will be reported to the steering group committee.

Ethics: We will adhere to the; Research Governance Framework (Department of Health 2005), Declaration of Helsinki (World Health Association, 2013) and University of Birmingham Code of Practice for research (University of Birmingham 2018) and General Data Protection Regulation (2018).
Protocol amendments: Dr Soundy will report any protocol amendments.
Consent: the research associate will ensure consent is obtained from participants.
Confidentiality: All data will be stored anonymously on the University of Birmingham computer.
Declaration of interest: None are declared.
Access to data: only the research team will have access to the full data.
Ancillary and post-trial care: This will be reported by Dr Soundy to program leads if required.

Deliverables

Benefits within the Hospital setting

- Reduced depression and anxiety across SHCP
- Positive changes in hope, psychological adaptation and emotions in relation to a specified difficulty
- Increased resilience and decreased burn out in staff
- Enhanced interactions that are supportive and able to empower patients to be more autonomous
- Increased patient satisfaction
- Potential to decrease reliance on pharmacological approaches
- Reduced work absence and improved work productivity
- Identification of basic NHS-related cost savings

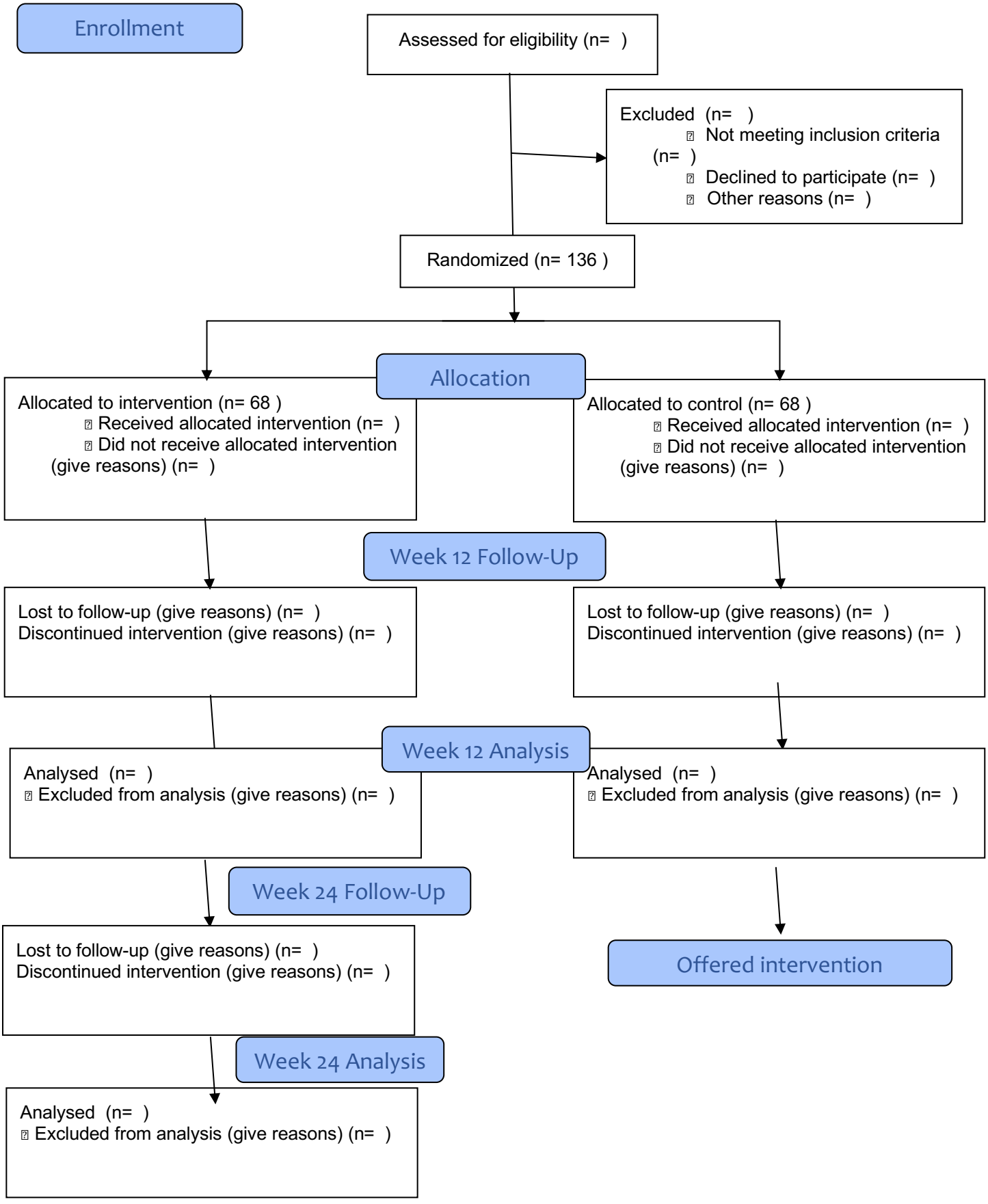
Multiple Publications

- A main publication on the trial results and qualitative publication using follow up interviews; Submitted to a journal like British Journal of Psychiatry impact factor: 7.33.
- A qualitative publication around the narratives used within a discussion board set up as part of the training. Submitted to a well-established SHCP related journal like Physiotherapy: impact factor 3.
- A secondary publication around the application of the training for patients across a single session. This will act as pilot research for development of the tool. Submitted to a well-established SHCP related journal like Physiotherapy: impact factor 3.

Training in other settings

- Offer the training to any UK hospital if successful and pilot results are repeated
- Be able to offer the training to alternative settings as required
- Be able to identify a training guide for teaching the intervening stage to professionals who want to use the MEAH screening

Figure 1.0 CONSORT 2010 Flow Diagram



Task timeline in months	pre	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Ethical and R&D approvals	X														
2. Finalise protocols	X														
3. Recruitment and randomization and baseline assessment		X	X												
4. Application of SIT (2 hour requirement)		X	X	X											
5. Post assessment		X	X	X											
6. Prepare and disseminate initial findings			X	X	X										
7. 12 week follow up assessment and interviews					X	X	X								
8. Prepare main trial paper for publication and associated report							X	X							
9. 24-week intervention group follow up							X	X	X	X					
10. Prepare other findings and disseminate								X	X	X	X	X			
11. Study Steering Group meetings	X		X		X		X								
12. Consider conference presentations								X	X	X	X	X	X	X	X

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Appendix A

Initial Email Advertising training

Subject Title: Mental Health Screening, intervening and Training (SIT) of Health Care Professionals; a randomised control trial

Message content:

We are looking for student health care professionals to take part in a new study designed to support mental health and patient interaction.

The assessments if you joining the study take a total of 10 minutes on three occasions (pre, post and 12-week follow up)

IF you take part in the study you could be allocated to a control group or intervention group

If you get allocated to the intervention group:

The total training time takes 2 hours that can be completed at a self-pace <u>online (undertaken as suits you). The training has 3 parts</u>

1. **Arrange a e-based screening call with Dr Soundy (zoom or skype or telephone) to support you and your mental health**
2. **Watch a pre-recorded 45 lecture to train you**
3. **Consider a summary e-presentation of the responses given across health care professionals to part 1.**

If you get allocated to the control group

You will either view a 45 minute lecture or be allocated to a no treatment control

Appendix B: E-Information sheet and Consent form

Version 1.3 08/09/2020

Dr Andy Soundy and Mr James Bateman,
School of Sport, Exercise and Rehabilitation Sciences, University of Birmingham

1. **Study title**
Mental Health Screening, Intervening and Training (SiT) of Student Health Care Professionals; a randomised control trial

2. **Invitation**
You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

3. **What is the purpose of the study?**
The purpose of this study is to use and understand a mental health screening tool and narrative-based intervention that is able to support interactions with patients. We will be testing an e-based form of training and all health care professionals will receive links to e-lectures as part of the training and an opportunity to discuss their own screening results with Dr Soundy. *We are asking whether you would be prepared to consent to completing a questionnaire that gathers more details about your opinion of the ideas after the session.* We have undertaken pilot research and identified particular benefits that we need to establish further. You assistance would prove vital to this.

4. **Why have I been chosen?**
You have been chosen to take part because you are a student healthcare professional who could benefit from receiving training. As part of the development of this intervention it is essential that your views, experiences and perceptions of intervention are incorporated and help inform future courses or training events.

5. **Do I have to take part?**
It is up to you to decide whether or not to take part. If you do decide to consent to participate you will keep this information sheet as something to which you might choose to refer back. You will be asked to sign a consent form to say you are happy to take part in the study. If you decide to take part you are still free to withdraw at any time without giving a reason. Please be aware that once the data has been published then you will not be able to withdraw. It is expected the date after which it will not be possible to withdraw will be 1 January 2021. To remove your responses from the research please take a note of your Unique Identification Number written on your questionnaire and email Dr A Soundy (A.A.Soundy@bham.ac.uk) to have your completed questionnaire removed from the data that is gathered.

6. **What will happen to me if I take part?**
You will be allocated to a control group or an intervention group. For both groups you will be required to complete a short set of questionnaires/outcome measures ***before*** and ***after***

(straight after the session) the training session has been completed and then at follow up (12 ***weeks). These will be sent via an attached excel document.*** These questionnaires take 10 minutes to complete. The intervention group will consider the impact of receiving information relevant to the concepts of illness narratives and the psychology of illness.

At a later point we will invite some students to take part in an interview about the study.

7. **What do I have to do?**

You will view one e-based lecture delivered by Dr A Soundy. This lecture will either provide you with a control condition or the intervention group. The intervention group will be required to complete some tasks in addition to the lecture. At the start of the lecture and at the end of the training lecture you will be asked to answer a set of questionnaires that would include demographic details about yourself as well as open questions around your views, attitudes and perceptions of the session and its content. IF you are in the control condition you will complete a set of outcome measures, be required to wait two hours and fill in the outcome measures again. After 12 weeks you will be offered the intervention.

Please note filling in the questionnaires is optional, it is research and part of a study **not** part of your requirement as a student. These questionnaires take a total of 10 minutes to complete each time. Some people will be asked to take part in an interview, although taking part is not obligatory. Once you have begun any part of a questionnaire or interview you will be able to keep the vouchers even if you choose to leave during the process.

8. **What are the possible disadvantages and risks of taking part?**

Giving time to this training may impact on your day. This training is not a core part of your role as a student. When you undertake the screening part of the study it requires you to think of, and talk about, a difficult challenge you are facing now. No adverse effects have been documented in our pilot work.

9. **Will my taking part in this study be kept confidential?**

All information that is collected about you during the course of the research will be kept strictly confidential. All questionnaires following the session will be anonymous and will be kept in a locked office in a secure building at the University of Birmingham. This data will be kept for 10 years and in accordance with GDPR (2018).

10. **What will happen to the results of the research study?**

The results will be presented within the university, used for conference presentations and publications which might include journals or a book. We will prepare a presentation of the results for you to help as part of the training and to give you an idea of the different study outcomes before publication of the work is achieved.

11. **Who has reviewed the study?**

The University of Birmingham ethics committee has reviewed this study. Review number: ERN_XXXXX.

12. **Contacts for further Information**

Dr A Soundy
Email: A.A.Soundy@bham.ac.uk Phone: 0121 4148385
Mr J Bateman
Email: JLB910@student.bham.ac.uk

Ethics ID: ERN_XXXX
Study Number: MEAH02
Participant Identification Number for this trial:_____

CONSENT e-FORM

Title of Project: Testing the model of emotion, adaptation and hope (MEAH) training for Health Care Professionals; a randomized control trial

Name of Researcher: Dr A Soundy
Please initial box or place an X in each box.

Statement	Initial
I confirm that I have read the information sheet dated 08/09/2020 (Version 1.3) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.	
I understand that the information collected about me will be used to support other research in the future, and may be shared anonymously with other researchers in the team.	
I agree to take part in the above study and to take part in a subsequent intervention which will anonymously record interactions.	
I agree to take part in a single interview about my experience if required	
I would like to be contacted and provided with a summary of the study findings	

Name of Participant Date Signature

Name of Person Date Signature

Document provided to participants if it is identified that they are distressed or become concerned following the intervention.

Appendix C: Questionnaire pack given across email to SHCP at pre-post and follow up time points trial.

Unique Identification Number Generated for you: MEAH 02 A (CHANGED FOR EACH PARTICIPANT)

Please complete this questionnaire which asks specific questions about the course content and your reflections of the value of the course.

PLEASE NOTE BY COMPLETING THIS QUESTIONNAIRE YOU ARE PROVIDING CONSENT FOR YOUR PARTICIPATION. Please contact Dr A Soundy should you want your data removed by 1 August 2020.

Demographics

Age (Years)	
Gender	
Name of Profession (e.g., Nurse, Physiotherapist)	
Type of Course: BSc, MSc	
Year of Course:	
Have you had experience within a COVID-19 unit	Yes / No
Have you had experience of caring for people with COVID-19 as part of your role	Yes / No
Have you had past teaching or experience related to psychological adaptation, hope, emotions or illness stories (narratives)? (circle one)	YES / NO

Hospital Anxiety and Depression Scale (HADS)

Tick the box beside the reply that is closest to how you have been feeling in the past week. Don't take too long over you replies: your immediate is best.

I feel tense or 'wound up':

Most of the time	3
A lot of the time	2
From time to time, occasionally	1
Not at all	0

I still enjoy the things I used to enjoy:

Definitely as much	0
Not quite so much	1
Only a little	2
Hardly at all	3

I get a sort of frightened feeling as if something awful is about to happen:

Very definitely and quite badly	3
Yes, but not too badly	2
A little, but it doesn't worry me	1
Not at all	0

I can laugh and see the funny side of things:

As much as I always could	0
Not quite so much now	1
Definitely not so much now	2
Not at all	3

Worrying thoughts go through my mind:

A great deal of the time	3
A lot of the time	2
From time to time, but not too often	1
Only occasionally	0

I feel cheerful:

Not at all	3
Not often	2
Sometimes	1
Most of the time	0

I can sit at ease and feel relaxed:

Definitely	0
Usually	1
Not Often	2
Not at all	3

I feel as if I am slowed down:

Nearly all the time	3

Very often	2
Sometimes	1
Not at all	0

I get a sort of frightened feeling like 'butterflies' in the stomach:

Not at all	0
Occasionally	1
Quite Often	2
Very Often	3

I have lost interest in my appearance:

Definitely	3
I don't take as much care as I should	2
I may not take quite as much care	1
I take just as much care as ever	0

I feel restless as I have to be on the move:

Very much indeed	3
Quite a lot	2
Not very much	1
Not at all	0

I look forward with enjoyment to things:

As much as I ever did	0
Rather less than I used to	1
Definitely less than I used to	2
Hardly at all	3

I get sudden feelings of panic:

Very often indeed	3
Quite often	2
Not very often	1
Not at all	0

SF-12®:
Answer every question by placing a check mark on the line in front of the appropriate answer. It is not specific for arthritis. If you are unsure about how to answer a question, please give the best answer you can and make a written comment beside your answer.

1. In general, would you say your health is:

Excellent (1)
Very Good (2)
Good (3)
Fair (4)
Poor (5)

The following two questions are about activities you might do during a typical day. Does YOUR HEALTH NOW LIMIT YOU in these activities? If so, how much?

2. MODERATE ACTIVITIES, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf:

Yes, Limited A Lot (1)
Yes, Limited A Little (2)
No, Not Limited At All (3)

3. Climbing SEVERAL flights of stairs:

Yes, Limited A Lot (1)
Yes, Limited A Little (2)
No, Not Limited At All (3)

During the PAST 4 WEEKS have you had any of the following problems with your work or other regular activities AS A RESULT OF YOUR PHYSICAL HEALTH?

4.ACCOMPLISHED LESS than you would like:

Yes (1)
No (2)

5.Were limited in the KIND of work or other activities:

Yes (1)
No (2)

During the PAST 4 WEEKS, were you limited in the kind of work you do or other regular activities AS A RESULT OF ANY EMOTIONAL PROBLEMS (such as feeling depressed or anxious)?

6. ACCOMPLISHED LESS than you would like:

Yes (1)
No (2)

5. Didn't do work or other activities as CAREFULLY as usual:

Yes (1)
No (2)

8.During the PAST 4 WEEKS, how much did PAIN interfere with your normal work (including both work the home and housework)?

Not At All (1)
A Little Bit (2)
Moderately (3)
Quite A Bit (4)
Extremely (5)

The next three questions are about how you feel and how things have been DURING THE PAST 4 WEEKS. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the PAST 4 WEEKS –

9. Have you felt calm and peaceful?

All of the Time (1)
Most of the Time (2)
A Good Bit of the Time (3)
Some of the Time (4)
A Little of the Time (5)
None of the Time (6)

10. Did you have a lot of energy?
All of the Time (1)
Most of the Time (2)
A Good Bit of the Time (3)
Some of the Time (4)
A Little of the Time (5)
None of the Time (6)
11. Have you felt downhearted and blue?
All of the Time (1)
Most of the Time (2)
A Good Bit of the Time (3)
Some of the Time (4)
A Little of the Time (5)
None of the Time (6)
12. During the PAST 4 WEEKS, how much of the time has your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your social activities (like visiting with friends, relatives, etc.)?
All of the Time (1)
Most of the Time (2)
A Good Bit of the Time (3)
Some of the Time (4)
A Little of the Time (5)
None of the Time (6)

The Model of Emotions, Hope and Adaptation Screening Tool
Version 3.3

Participant ID: MEAH COVID P

Hope and Adaptation Questions

Please answer the following five questions. The questions will relate to an aspect of your current situation to which you are finding it difficult to adapt or a challenge. Examples of this include adapting to the following; experiences relating to the process of diagnosis, the impact of the diagnosis, changes or losses in relationships in the workplace, socially or at home, the inability to be independent, and the loss of an identity like being an athlete or father. This assessment and screening tool is designed to identify the need you have for support and is able to track your process of adaptation to the difficulty over time. During subsequent meetings, you may like to track other difficulties or challenges. All information is collected anonymously and may only be used for research and as group feedback to support coping activities. These aspects should benefit your mental health.

Note: The numbers identified on the left-hand side of each scale distinguish responses by a rating relating to hope, adaptation and emotions. Positive or negative numbers further away from zero illustrate a more intense response.

1. Complete the sentence below and name the one aspect of your adaptation that you are finding most difficult?

I am finding considerable/most difficulty adapting
to_____

2.Regarding the difficulty you have identified how hopeful are you right now that you can or will overcome it?

Level of Hope associated with difficulty	**Circle** a number reflecting the statements on the left
I am completely certain and have no doubt that I will be able to overcome this difficulty	+4
I am certain that I will be able to overcome this difficulty	+3
I believe it is likely that I will overcome this difficulty	+2
I believe it is possible to overcome this difficulty	+1
I accept that it might not be possible to overcome this difficulty	0
I feel uncertain and don't know if this difficulty can be overcome	-1
I feel that it is likely that I wont overcome this difficulty	-2
I have little hope or ability to overcome this difficulty	-3
I see neither hope or ability to overcome this difficulty	-4

3. Regarding the difficulty you have identified do you feel able to psychologically adapt to it right now? Circle a number by considering the statements.

Ability to adapt to the difficulty	**Circle** a number reflecting the statements on the left
I am able to positively embrace and use this difficulty for benefit	+4
I am able to fully accept and embrace this difficulty	+3
I am able to fully accept this difficulty	+2
I acknowledge this difficulty but can't fully accept it	+1
I am able to acknowledge this difficulty	0
I struggle with acknowledging this difficulty	-1
I find it difficult to accept this difficulty	-2
I find it very difficult to accept this difficulty	-3
I reject and cannot accept this difficulty	-4

Mood Questions

Mood or feelings, for the purpose of this study, is considered by using two separate questions.

4. What level of energy do you have today right now with regards to dealing with the difficulty you have identified. Please mark it on a scale from extremely high to extremely low

Energy Level to deal with the difficulty	**Circle** a number reflecting the statements on the left
I feel very highly energised to deal with this difficulty	+4
I feel highly energised to deal with this difficulty	+3
I feel moderate levels of energy to deal with this difficulty	+2
I feel above average levels of energy to deal with this difficulty	+1
I feel average or normal levels of energy to deal with this difficulty	0
I feel below average levels of energy to deal with this difficulty	-1
I feel moderately low levels of energy to deal with this difficulty	-2
I feel little energy available to deal with this difficulty	-3

I feel very little energy available to deal with this difficulty	-4

5. Please score how you feel about the difficulty you have identified in a range from pleasant to unpleasant

Valence or Pleasantness on how you feel about the difficulty	**Circle** a number reflecting the statements on the left
I have extremely positive feelings regarding the difficulty I am facing	+4
I have positive feelings regarding the difficulty I am facing	+3
I have pleasant feelings regarding the difficulty I am facing	+2
I have above average feelings regarding the difficulty I am facing	+1
I have average or normal feelings regarding the difficulty I am facing	0
I have below average feelings regarding the difficulty I am facing	-1
I have below average or unpleasant feelings regarding the difficulty I am facing	-2
I have negative feelings regarding the difficulty I am facing	-3
I have extremely negative feelings regarding the difficulty I am facing	-4

Interpersonal reactivity index

Source: Davis (1980, 1983).
Please indicate the extent that each statement describes you, using the following scale: 01234
(does not describe me well) (describes me very well)

Scoring	**0 (does not describe me well)**				**4 (describes me very well)**
Fantasy Scale	0	1	2	3	4
When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.					
I really get involved with the feelings of the characters in a novel.					
I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.*					
After seeing a play or movie, I have felt as though I were one of the characters.					
I daydream and fantasize, with some regularity, about things that might happen to me					
Becoming extremely involved in a good book or movie is somewhat rare for me.*					
When I watch a good movie, I can very easily put myself in the place of a leading character.					
Scoring	**0 (does not describe me well)**				**4 (describes me very well)**
Perspective-Taking Scale	0	1	2	3	4
Before criticizing somebody, I try to imagine how I would feel if I were in their place.					
If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.*					
I sometimes try to understand my friends better by imagining how things look from their perspective.					
I believe that there are two sides to every question and try to look at them both.					
I sometimes find it difficult to see things from the other person's point of view.*					
I try to look at everybody's side of a disagreement before I make a decision.					
When I'm upset at someone, I usually try to "put myself in their shoes" for a while.					
Scoring	**0 (does not describe me well)**				**4**

					(describes me very well)
Empathetic Concern	0	1	2	3	4
When I see someone being taken advantage of, I feel kind of protective toward them.					
When I see someone being treated unfairly, I sometimes don't feel very much pity for them.*					
I often have tender, concerned feelings for people less fortunate than me.					
I would describe myself as a pretty soft-hearted person.					
Sometimes I don't feel sorry for other people when they are having problems.*					
Other people's misfortunes do not usually disturb me a great deal.*					
I am often quite touched by things that I see happen.					
Scoring	**0 (does not describe me well)**				**4 (describes me very well)**
Personal Distress Scale	0	1	2	3	4
When I see someone who badly needs help in an emergency, I go to pieces.					
I sometimes feel helpless when I am in the middle of a very emotional situation.					
In emergency situations, I feel apprehensive and ill-at-ease.					
I am usually pretty effective in dealing with emergencies.*					
Being in a tense emotional situation scares me.					
When I see someone get hurt, I tend to remain calm.*					
I tend to lose control during emergencies.					

Note: Labels should be removed and items randomly ordered prior to administration. Items marked with an asterisk (*) are reverse-scored. After reverse scoring, scores from each subscale are averaged.

Open Minds Scale for Health Care Providers (OMS-HC-15)

Question	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
I am more comfortable helping a person who has a physical illness than I am helping a person who has a mental illness.					
If a colleague with whom I work told me they had a mental illness, I would be just as willing to work with him/her.					
If I were under treatment for a mental illness I would not disclose this to any of my colleagues.					
I would see myself as weak if I had a mental illness and could not fix it myself.					
I would be reluctant to seek help if I had a mental illness.					
Employers should hire a person with a managed mental illness if he/she is the best person for the job.					
I would still go to a physician if I knew that the physician had been treated for a mental illness.					
If I had a mental illness, I would tell my friends.					
Despite my professional beliefs, I have negative reactions towards people who have mental illness.					
There is little I can do to help people with mental illness.					
More than half of people with mental illness don't try hard enough to get better.					
I would not want a person with a mental illness, even if it were appropriately managed, to work with children.					

Healthcare providers do not need to be advocates for people with mental illness.					
I would not mind if a person with a mental illness lived next door to me.					
I struggle to feel compassion for a person with mental illness.					

Froehlich Communication Survey **Name** _____

Developing effective interpersonal communication is an ongoing process. The purpose of this survey is to help you identify your strengths, areas for improvement and goals related to effective interpersonal communication. Please circle the number that best reflects your agreement with the following statements so you can clarify where you need to work to be a more effective communicator.

1 Strongly Disagree	**Much Improvement Needed**
Disagree	**Moderate Improvement Needed**
Agree	**Some Improvement Needed**
10 Strongly Agree	**Little Improvement Needed**

I can listen without interrupting.
1 2 3 4 5 6 7 8 9 10

I can keep my mind free of distractions while listening.
1 2 3 4 5 6 7 8 9 10

I can allow for silence.
1 2 3 4 5 6 7 8 9 10

When appropriate, I can offer steady eye contact while listening.
1 2 3 4 5 6 7 8 9 10

I am aware of body language while listening.
1 2 3 4 5 6 7 8 9 10

My posture and facial expression show interest and caring.
1 2 3 4 5 6 7 8 9 10

I don't fidget while listening.
1 2 3 4 5 6 7 8 9 10

I can build rapport with others.
1 2 3 4 5 6 7 8 9 10

I appropriately maintain confidentiality.
1 2 3 4 5 6 7 8 9 10

I can maintain compassion while listening.
1 2 3 4 5 6 7 8 9 10

I use open and closed-ended questions to determine someone's concerns and goals.
1 2 3 4 5 6 7 8 9 10

I can effectively use restatement, summaries and clarification in a conversation.
1 2 3 4 5 6 7 8 9 10

I can identify, reflect and validate emotional and verbal content in a conversation.
1 2 3 4 5 6 7 8 9 10

I can maintain mental focus when listening to someone who is upset.
1 2 3 4 5 6 7 8 9 10

I can convey hopefulness.
1 2 3 4 5 6 7 8 9 10

I can use humor effectively.
1 2 3 4 5 6 7 8 9 10

I can judge when to use touch during conversations.
1 2 3 4 5 6 7 8 9 10

I can judge when to redirect someone or help someone get their attention off their distress in a conversation.

1 2 3 4 5 6 7 8 9 10

I can judge when someone is ready to hear information or advice.

1 2 3 4 5 6 7 8 9 10

I am clear, concise and confident when I speak.

1 2 3 4 5 6 7 8 9 10

I can give, receive and solicit constructive feedback including appreciation of others and myself.

1 2 3 4 5 6 7 8 9 10

I can be appropriately assertive in interactions with others.

1 2 3 4 5 6 7 8 9 10

I communicate well on teams by listening to multiple perspectives and sharing mine.

1 2 3 4 5 6 7 8 9 10

I understand the importance of seeking an interpreter when I don't understand the language of a client.

1 2 3 4 5 6 7 8 9 10

I can communicate effectively with people from different racial and cultural groups.

1 2 3 4 5 6 7 8 9 10

Score /250

Adult Hope Scale (Synder, 1991)

Directions: Read each item carefully. Using the scale shown below, please select the number that best describes YOU and put that number in the blank provided.

1. = Definitely False 2. = Mostly False 3. = Somewhat False 4. = Slightly False

5. = Slightly True 6. = Somewhat True 7. = Mostly True 8. = Definitely True

1. I can think of many ways to get out of a jam. ___
2. I energetically pursue my goals.
3. I feel tired most of the time.
4. There are lots of ways around any problem. ___
5. I am easily downed in an argument.
6. I can think of many ways to get the things in life that are important to me.
7. I worry about my health.
8. Even when others get discouraged, I know I can find a way to solve the problem. ___
9. My past experiences have prepared me well for my future.
10. I've been pretty successful in life.
11. I usually find myself worrying about something.
12. I meet the goals that I set for myself.

Scoring:

Items 2, 9, 10, and 12 make up the agency subscale. Items 1, 4, 6, and 8 make up the pathway subscale.

Researchers can either examine results at the subscale level or combine the two subscales to create a total hope score.

Screening, intervene and Train (SiT) intervention for Health Care Professionals
Version: 2.4
Date: 17/06/2020

Appendix D: Therapeutic Questions to assist the MEAH Screening

1. You identified a difficulty or challenge you are experiencing at this present time can you
    a. Identify the impact it has had on you
2. Can you identify how this difficulty has evolved over time
    a. Was there a time in the past when you would have rated it differently?
    b. How do you see it in the future evolving
3. Do you identify with these concerns (NAME of feeling identified e.g., worry, anxiety, frustration; identified from MEAH)
    a. Can you explain that
4. Are there other people you know that are facing a similar difficulty
    a. Have you considered how they manage the difficulty
        i. If not could you consider this going forward
5. Have you been able to share this difficulty with others
    a. If no what factors make it difficult to share
6. What helps you manage the difficulty at present?

Appendix E Semi-structured interview

Section 1: General questions

Can you tell me about your experience of taking part in this intervention?

Would you recommend this intervention? If so, to who and why? OR if not why not?

Was there anything that stood out about it? Can you explain what that was?

Section 2: Perception and experiences of the intervention

What was good or not so good about this intervention? Can you explain why?

Were there any benefits associated with taking the intervention? Can you explain what these were OR can you identify why there weren't any?

Did the e-application of the intervention work from your perspective? Can you explain your answer?

Was the length of time and level of content appropriate? Can you explain your answer?

Have you changed anything you were doing as a result of the intervention? Can you explain what this was?

Have you used aspects of the intervention in clinical practice? If so, how? Can you explain your answer?

From the above questions about the intervention, if there were to be changes to the intervention what should these be?

Section 3: Future application of the intervention

Do you think the intervention should be used for physiotherapists more widely? Can you explain why?

Do you think the intervention could be used in clinical placement education training settings? I.e. whist you go on placement? Can you explain your answer?

Do you think the intervention could be integrated into a university course? Can you explain your answer?

Appendix F: The Model of Emotions, Hope and Adaptation Screening Tool
Version 3.4

Participant ID: MEAH COVID P

Hope and Adaptation Questions

Please answer the following five questions. The questions will relate to an aspect of your current situation to which you are finding it difficult to adapt or a challenge. Examples of this include adapting to the following; experiences relating to the process of diagnosis, the impact of the diagnosis, changes or losses in relationships in the workplace, socially or at home, the inability to be independent, and the loss of an identity like being an athlete or father. This assessment and screening tool is designed to identify the need you have for support and is able to track your process of adaptation to the difficulty over time. During subsequent meetings, you may like to track other difficulties or challenges. All information is collected anonymously and is only used to support the present conversation and promote your mental health.

Note: The numbers identified on the left-hand side of each scale distinguish responses by a rating relating to hope, adaptation and emotions. Positive or negative numbers further away from zero illustrate a more intense response.

1. Complete the sentence below and name the one aspect of your adaptation that you are finding most difficult?

I am finding considerable/most difficulty adapting
to_____

2.Regarding the difficulty you have identified how hopeful are you right now that you can or will overcome it?

Level of Hope associated with difficulty	**Circle** a number reflecting the statements on the left
I am completely certain and have no doubt that I will be able to overcome this difficulty	+4
I am certain that I will be able to overcome this difficulty	+3
I believe it is likely that I will overcome this difficulty	+2
I believe it is possible to overcome this difficulty	+1
I accept that it might not be possible to overcome this difficulty	0
I feel uncertain and don't know if this difficulty can be overcome	-1
I feel that it is likely that I wont overcome this difficulty	-2
I have little hope or ability to overcome this difficulty	-3
I see neither hope or ability to overcome this	-4

difficulty	

3. Regarding the difficulty you have identified do you feel able to psychologically adapt to it right now? Circle a number by considering the statements.

Ability to adapt to the difficulty	**Circle** a number reflecting the statements on the left
I am able to positively embrace and use this difficulty for benefit	+4
I am able to fully accept and embrace this difficulty	+3
I am able to fully accept this difficulty	+2
I acknowledge this difficulty but can't fully accept it	+1
I am able to acknowledge this difficulty	0
I struggle with acknowledging this difficulty	-1
I find it difficult to accept this difficulty	-2
I find it very difficult to accept this difficulty	-3
I reject and cannot accept this difficulty	-4

Mood Questions

Mood or feelings, for the purpose of this study, is considered by using two separate questions.

4. What level of energy do you have today right now with regards to dealing with the difficulty you have identified. Please mark it on a scale from extremely high to extremely low

Energy Level to deal with the difficulty	**Circle** a number reflecting the statements on the left
I feel very highly energised to deal with this difficulty	+4
I feel highly energised to deal with this difficulty	+3
I feel moderate levels of energy to deal with this difficulty	+2
I feel above average levels of energy to deal with this difficulty	+1
I feel average or normal levels of energy to deal with this difficulty	0
I feel below average levels of energy to deal with this difficulty	-1

I feel moderately low levels of energy to deal with this difficulty	-2
I feel little energy available to deal with this difficulty	-3
I feel very little energy available to deal with this difficulty	-4

5. Please score how you feel about the difficulty you have identified in a range from pleasant to unpleasant

Valence or Pleasantness on how you feel about the difficulty	**Circle** a number reflecting the statements on the left
I have extremely positive feelings regarding the difficulty I am facing	+4
I have positive feelings regarding the difficulty I am facing	+3
I have pleasant feelings regarding the difficulty I am facing	+2
I have above average feelings regarding the difficulty I am facing	+1
I have average or normal feelings regarding the difficulty I am facing	0
I have below average feelings regarding the difficulty I am facing	-1
I have below average or unpleasant feelings regarding the difficulty I am facing	-2
I have negative feelings regarding the difficulty I am facing	-3
I have extremely negative feelings regarding the difficulty I am facing	-4