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Academic and Clinical Central Office for Research and Development

NHS Lothian

Feasibility Study Investigating the Efficacy and Acceptability of a Pregnancy Focussed Online Cognitive Behavioural Therapy Package

Enjoy Your Bump

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List of Abbreviations

cCBT Computerised Cognitive Behavioural Therapy

CRF Clinical Research File

CTIMP Clinical Trial of an Investigational Medicinal Product

GAD- 7 Generalised Anxiety Disorder 7-item scale

GAD -2 Generalised Anxiety Disorder 2 – item scale

NHS National Health Service

NICE National Institute for Clinical Excellence

PHQ -2 Patient Health Questionnaire -2 (also known as the Whooley questionnaire)

PHQ-9 Patient Health Questionnaire -9.

PNMH Perinatal Mental Health

EPDS Edinburgh Postnatal Depression Scale.

PES Pregnancy Experience Scale

WEMWS Warwick Edinburgh Mental Wellbeing Scale

PAI Prenatal Attachment Inventory

MAI Maternal Attachment Inventory

1. INTRODUCTION

1.1. Background

Depression and anxiety during the perinatal period is one of the most common complications of childbearing, with a reported occurrence in 10-15% of pregnancies (1, 2). Depression in pregnancy has been linked to poorer obstetric outcomes such as an increased incidence of preterm birth, obstetric interventions such as caesarean sections, and low birth weight in infants (3). In the longer term, depression and anxiety in pregnancy have been linked with poorer cognitive and developmental outcomes for the infant (4). It is reported that women can often be reluctant to seek professional support for depressive symptoms due to social stigma, potential long waiting times for face-to-face psychological therapies and the reported uncertainties of using pharmacological interventions during pregnancy (5).

There is therefore an unmet need for an effective, low-cost, non-pharmacological intervention to help treat depressive symptoms during the perinatal period. Computerised courses based on the Cognitive Behavioural Therapy (CBT) approach have a proven evidence base as an effective and acceptable intervention for depression in a non-pregnant population and is recommended by NICE as a low-intensity psychosocial intervention for mild-moderate depression. The current NICE Guidelines pathway for Antenatal and Postnatal Mental Health signposts the practitioner to the general population guidelines when mild-moderate depression is suspected in pregnancy, however the content of generic depression sites are by very nature generic and aren't adapted to meet the needs of expectant mothers. Therefore, generic cCBT packages are being put forward as a low-intensity intervention for mild-moderate depression in pregnancy without a strong evidence base to support its efficacy in this unique population experiencing a major life event and evolving psychosocial needs (6).

Studies have highlighted that women are also increasingly turning to the internet to seek health related information in pregnancy, and many women would like health professionals to actively suggest suitable online resources (7). Advantages of the internet, including cCBT is that it can be accessed anonymously, at low cost and at a time and place convenient for the user. Although there is strong theoretical support for web-based interventions specific to supporting perinatal mental health, more evidence is required in order to fully evaluate its effectiveness.

1.2. Rationale for the Study

'Enjoy Your Bump (EYB)' is an online life skills course based on CBT principles which has been designed by Professor Chris Williams from the University of Glasgow to specifically support women in the antenatal period. A survey of women and health professionals has demonstrated that this is a resource that both groups find acceptable. The aim of this quasi-experimental feasibility study is to evaluate the user experience and efficacy of this online programme as a non-pharmacological, low intensity intervention for women experiencing mild-

moderate depressive symptoms in pregnancy. This will be achieved by measuring depression and anxiety as well as measures of attachment to the developing baby, pre and post intervention. It is hoped the results from this study will help inform whether this is a resource that should be made more widely available to women in the NHS. It is hypothesised that the 'Enjoy Your Bump' will be an acceptable and effective intervention for women experiencing mild to moderate depressive symptoms in the antenatal period.

2. STUDY OBJECTIVES

2.1. Primary and Secondary Objectives

Primary Objectives:

i) Evaluate recruitment and retention to study and return of questionnaire data.
ii) Evaluate feedback questionnaire data to assess acceptability of intervention.
iii) Obtain an estimate of effect size for changes in anxiety, depression, social function and attachment to the developing baby.

Secondary Objectives:

i) Measure depression (PHQ-9, EPDS, PES, WEMWS) anxiety (GAD-7) scores before and after the intervention (immediately post-intervention and 12 weeks postnatal)
ii) Evaluate Mother-baby relationship and attachment using PAI before and after intervention and MAI at 12 weeks postnatal.
iii) Measure pregnancy-experience pre and post intervetion.
iv) Test the ability to deliver and support the intervention, and quantify how long it typically takes women to complete the intervention.

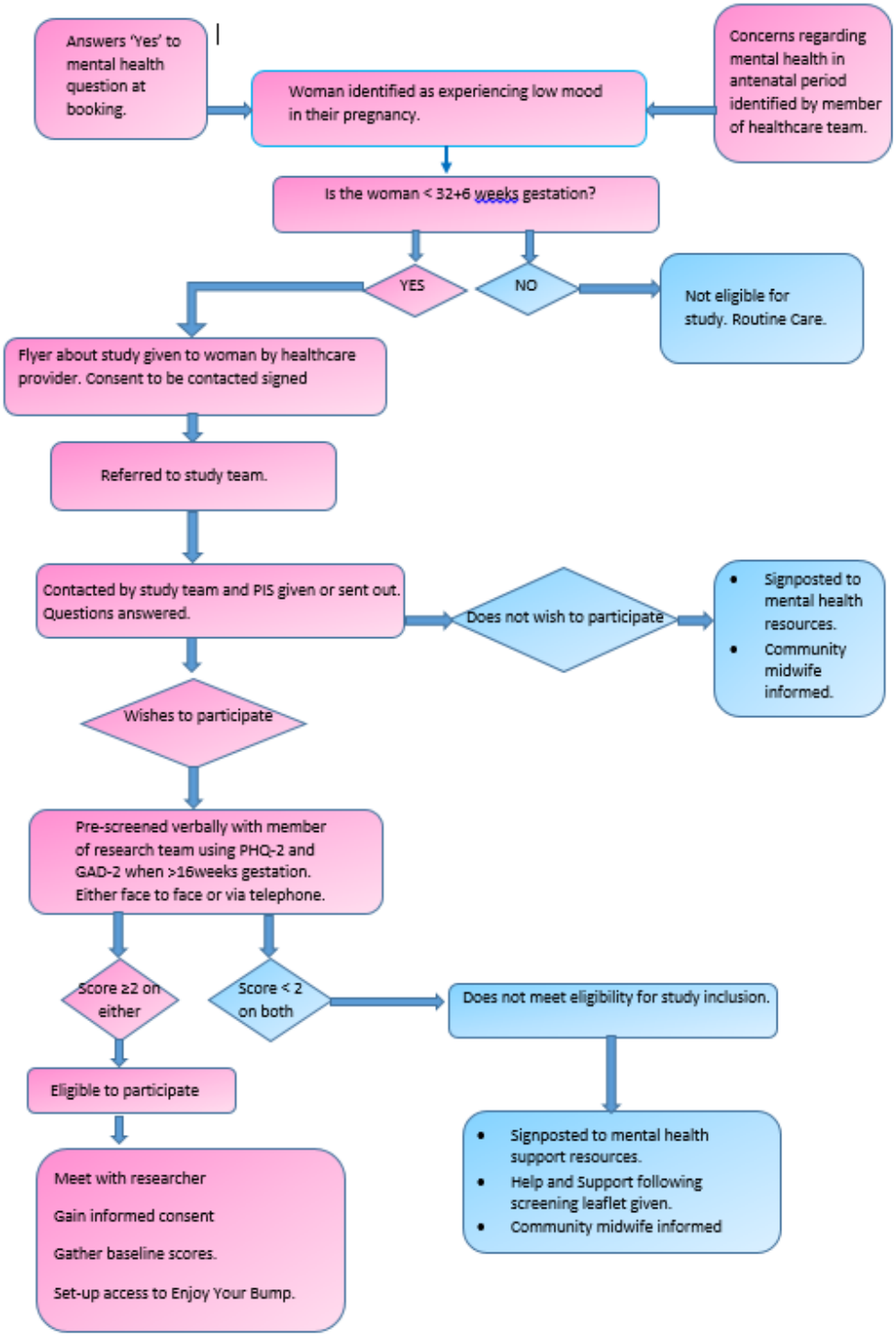
2.2. Primary and Secondary Endpoints

i) Completion of verbal screening, baseline scores, intervention (Enjoy Your Bump), post intervention questionnaire and 12-week postnatal follow-up questionnaires.

3. STUDY DESIGN

We propose a quasi-experimental design, in which an identified population: pregnant women with mild to moderate chronic PNMH identified with score ≥2 on PHQ-2 and/or a score ≥2 on GAD -2, and who are 16-32+6 weeks' gestation will be approached by a member of the research team and encouraged to engage with intervention (cCBT programme Enjoy Your Bump). Outcomes: an assessment of recruitment, retention and return of questionnaire data. In addition, outcome data will be measured pre-intervention, immediately post-intervention and 12 weeks postnatal.

Recruitment: Pre-screening



Women will be identified for participation in this study by three different means:

1. Answering 'yes' to one or both of the routine mental health screening question at booking with their community midwife. The two routine questions asked at a booking appointment are as follows:

   "During the past month have you often been bothered by feeling down, depressed hopeless?"

   "During the past month have you often been bothered by having little interest or pleasure in doing things?"

Midwife will then give participant flyer about the project, and ask if they would be happy to sign a 'consent to be contacted slip' and advise them that research team may be in touch.

2. Referred to the study by a member of the healthcare team, who has identified concerns with mental health in the antenatal period (prior to 32+6 weeks of pregnancy). Only women who have a signed a 'consent to be contacted' slip will be referred.

3. Self-refer to study having received a flyer about study from a member of the healthcare team.

Answering 'yes' to one or both routine mental health screening questions at booking (approximately 8-11 weeks of pregnancy), will prompt the community midwife to give a flyer to the woman giving an overview of the study. They will ask women if they are happy to sign a 'consent to be contacted' slip. If the woman is happy to do so, the midwife will advise the woman that a member of the research team may approach them. The flyer will also contain contact information if potential participants wish to contact the research team themselves. Our research midwives manage two specialist antenatal clinics on behalf of the NHS (Obesity and preterm birth clinic). They are an essential part of the overall NHS Lothian team caring for women in pregnancy. Each hold an honorary contract with NHS Lothian and ensure they meet the standards required by the Trust to support and care for women during pregnancy. As a member of the clinical care team to whom the patient has been referred or directly in their capacity as a researcher they may approach women within the maternity setting to participate in research.

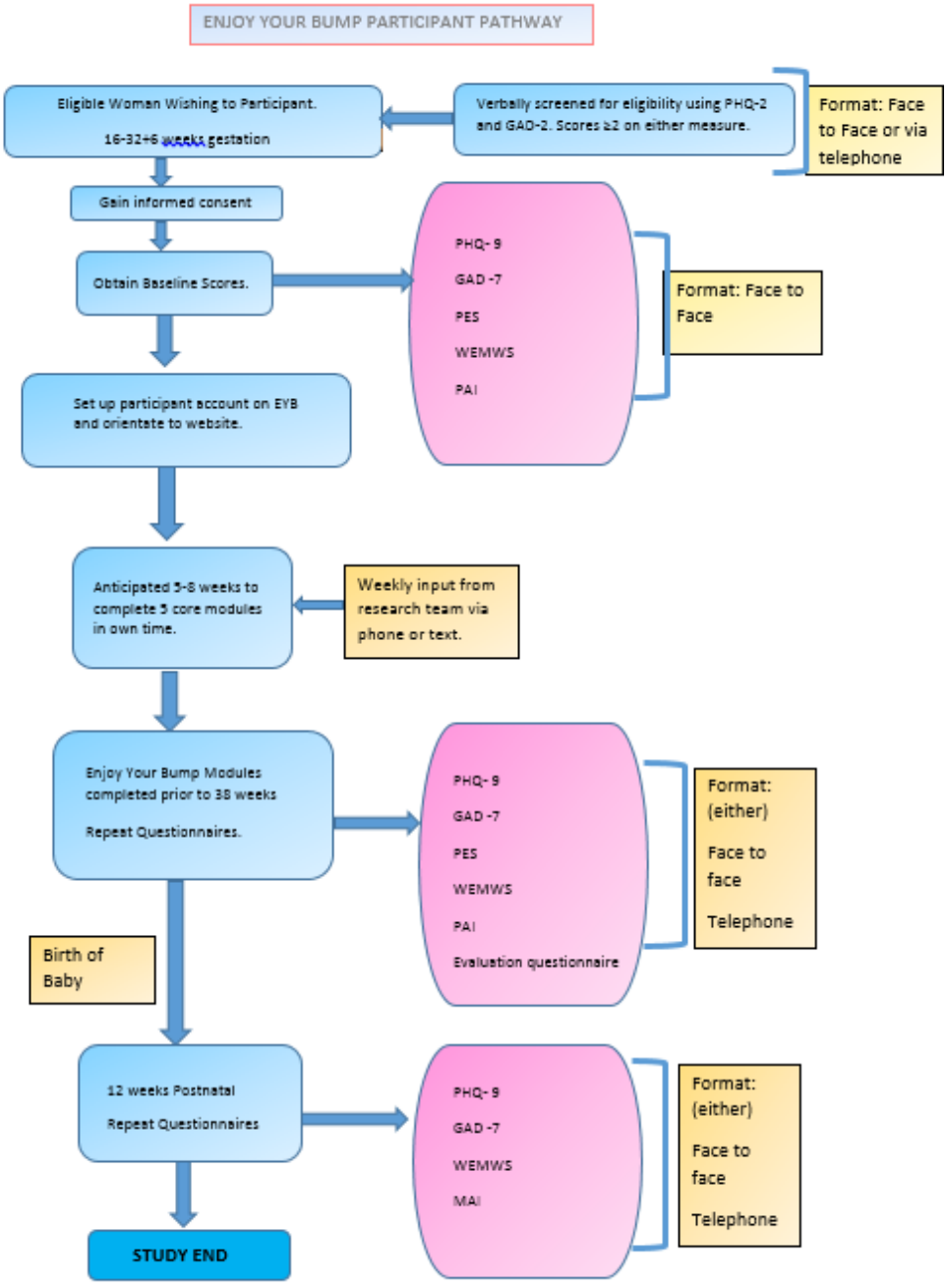
A member of the research team will personally approach these women who have consented to be contacted when they attend for their booking scan and ask if they would be interested in taking part. Alternatively, potential participants will be contacted via telephone by a member of the research team following their first scan. If potential participants are interested in participating they will be given a participant information sheet (either in person or via post).

Alternatively, women may be referred to the study by a member of the healthcare team, who has identified concerns with mental health in the antenatal period (prior to 32+6 weeks of pregnancy). In this instance, a member of the healthcare team will give a flyer giving an overview of the study to the woman, and ask if she would be willing to sign a 'consent to be contacted' slip. They would then make a referral to the research team who will then meet with the woman or contact the woman via telephone to gauge interest, answer any questions and invite for pre-screening. A patient information sheet shall be given/sent out in the post.

Prior to invitation to attend for the first visit for this project, interested volunteers will be assessed for eligibility to take part in this study by being asked by the researcher either face to face in the antenatal clinic setting or over the telephone, the two questions in the PHQ-2 and GAD-2 questionnaires. Those who score ≥2 on either questionnaire will be eligible for

study and invited to meet the researcher for consent and first visit. The PHQ-2 and GAD-2 are short, standardised screening tools that identifies people at highest risk of depression. Those who are ineligible will be thanked for their time and given an information leaflet signposting them to appropriate perinatal mental health support. This will either be given in person, or if screening occurs over the phone this leaflet will be sent in the post.

Women will be at least 16+0 and less than 32+6 weeks pregnant when they attend to consent to this study. The meeting will take place in a clinical setting within Lothian which is most convenient for the woman to travel to. During the first visit the following process will occur:



Study

Consented participants will:

i) Complete questionnaires to obtain baseline scores. They will be asked to complete:
   a. Patient Health Questionnaire – 9(PHQ-9)
   b. Edinburgh Postnatal Depression Score (EPDS)
   c. Pregnancy Experience Scale (PES)
   d. Warwick Edinburgh Mental Wellbeing Scale (WEMWS)
   e. Prenatal Attachment Inventory (PAI)
   f. Generalized Anxiety Disorder 7-item scale (GAD-7)

ii) The participant will then be allocated a unique code to unlock access the EYB website. They will register to the website with the help and support of a member of the study team who will ensure the participant understands the website and can navigate to the five core 'Change Modules' which they will need to complete as part of the intervention. Each module takes the form of an online slideshow with audio. Participants work through the slides at their own pace. There is no data input required from them to complete the module. Each module has worksheets that accompany the content. Participants will be given all the worksheets at this first session. These worksheets are for participants own reference and do not need to be seen by the research team. Before leaving the session, participants will be given a leaflet signposting them to further perinatal mental health support.

iii) The participant will have up to 38+0 weeks gestation to work through and complete the five modules and accompanying worksheets. During this time, participants will be offered ongoing support from a Research Midwife in the form of phone call and/or text message no more frequently than once weekly. We anticipate that the intervention will take about 5-8 weeks to complete.

iv) On completion of the intervention, (up to 38+0 weeks gestation) participants will be invited to attend to repeat all measurements of assessment obtained prior to the intervention. This can be gathered either face to face or via telephone. . In addition, participants will be asked to complete an anonymous evaluation questionnaire online detailing their experience of the intervention.

v) 12 weeks following the birth of their baby, participants will be invited to complete all questionnaires other than the PES and PAI for the final time. The MAI will be used to assess attachment. These measures shall be collected face to face or via telephone.

The volunteers will be thanked for their participation in the study. The participant data collected will be coded and anonymised.

During the study, if the researcher has any concerns regarding the mental wellbeing of participants they will respond using the standard risk management protocols used in NHS Lothian and make the appropriate referrals in consultation with the participant. In this instance, a member of the research team will also contact the woman's named midwife and/or obstetrician to discuss and make them aware of the concerns. After consultation, if thought appropriate, a referral would be made to perinatal mental health services and/or contact made with the woman's GP. At the screening phase of the study participants will be given a leaflet detailing further mental health support available.

4. STUDY POPULATION

4.1. Number of participants

We are seeking approval to recruit up to 120 participants. It is anticipated that there may be a high dropout rate of women who fail to engage with the programme or do not complete it and this information will be recorded as part of testing the efficacy of the programme. A current survey-based study has found that while women were happy to be recruited, approximately 15% fully completed all five modules of the programme and questionnaires, and 30% completed at least three of the five core modules.

4.2. Inclusion/exclusion criteria

Inclusion Criteria

- ≥ 18 years old
- Singleton pregnancy
  Mild to moderate chronic PNMH identified with score ≥2 on PHQ-2 or GAD-2
- 16+0 – 32+6 weeks' gestation at time of recruitment.

Exclusion Criteria:

- Severe PNMH problem- schizophrenia, bipolar disorder; substance abuse/dependence, active risk of self-harm.
- Already receiving psychological therapy.
- Insufficient English language to engage with intervention or complete questionnaires.
- Unable to give informed consent.
- Illiterate
- No internet access
- Taking part in another current research project focussed on mental health.

4.3. Identification of participants

As part of the routine clinical antenatal booking appointment, all women are asked the following two questions about their mental health:

- *"During the past month have you often been bothered by feeling down, depressed hopeless?"*
- *"During the past month have you often been bothered by having little interest or pleasure in doing things?"*

Women who answer yes to one or both questions will be given summary information about the study by a member of the healthcare team. Alternatively, if a healthcare provider identifies a concern with a woman's mental health in the antenatal period prior to 32 weeks gestation, they can refer the woman to the research team. In additions to referrals from the community

setting, a research midwife will screen TRAK for potential participants attending. two specialist antenatal clinics managed by our research midwives on behalf of the NHS (Obesity and preterm birth clinic). They are an essential part of the overall NHS Lothian team caring for women in pregnancy. Each hold an honorary contract with NHS Lothian and ensure they meet the standards required by the Trust to support and care for women during pregnancy. As a member of the clinical care team to whom the patient has been referred or directly in their capacity as a researcher they may approach women within the maternity setting to discuss participation in research. A research midwife will personally approach these women when they attend for their booking scan and ask if they would be interested in taking part. Alternatively, potential participants will be contacted via telephone. Interested women will be given an information sheet about the study and the researcher will answer any questions she may have. There is no pre-agreed specified time to consent. However, participants should be given time for reflection and their consent informed and voluntary. The participant also has the right to make an immediate decision to consent. If they are interested in participating and are beyond 16+0 weeks, a member of the research team will confirm eligibility using the PHQ-2 and GAD-2.

4.4. Co-enrolment

We do not anticipate that participants being involved in other clinical studies will affect their ability to be involved in this study, unless the other study is addressing mental health.

4.5. Consent

If a participant agrees to take part and meets eligibility by being verbally asked the questions on the PHQ-2 and GAD-2 Questionnaires, the research midwife, principal investigator, or other trained and delegated member of the research team will go through the study information with the patient and take written informed consent. Participants will have been given a patient information leaflet prior to agreeing to take part.. There is then no pre-agreed specified time to consent. However, potential participants should be given time for questions and reflection and their consent informed and voluntary. The participant also has the right to make an immediate decision to consent.

4.6 Risks and Benefits to Participants

There are few apparent risks to participating in this study. As we are looking to recruit women with mild-moderate symptoms of depression, it is important to back-up the online intervention with support from an appropriately trained individual and be able to signpost/refer women appropriately for further support. During the study, if the researcher has concerns regarding the mental wellbeing of participants beyond their scope of practice they will make the appropriate referrals in consultation with the participant. In this instance, a member of the research team will contact the woman's named midwife and/or obstetrician to discuss and make them aware of the concerns. After consultation, if thought appropriate, a referral would be made to perinatal mental health services and/or contact made with the woman's GP. Participants will be given a leaflet at the outset of the study signposting them to further mental health support.

Although there is little current evidence regarding cCBT in the pregnant population the strength of the evidence with regard to the general population suggests that participants may potentially derive some benefit from participating in this study.

4.6. Participant Withdrawal

Participants can withdraw themselves from the study at any stage without giving a reason. Participants will be made aware that withdrawing from the study will not affect their care in any way.

5. SAFETY

No safety reporting is applicable or required for this study.

6. DATA COLLECTION

Data will be collected as follows:

Demographics will be gathered from participant's health records including age, BMI, Parity, previous mental health history and postcode.

Participant's depression, anxiety and attachment scores will be collected using standardised assessment tools PHQ-9, GAD-7, PES, WEMWS, EPDS, PAI and MAI respectively. Participants will be allocated a code and their data entered onto a coded Clinical Research File.

Qualitative data will be gathered by asking participants to complete an online evaluation questionnaire following the intervention.

7. STUDY OVERSIGHT

The PI and other study investigators will provide study oversight. The Research Governance and QA office (University of Edinburgh) will review the study and determine if an independent risk assessment will be performed by an ACCORD Clinical Trials Monitor to decide (a) if monitoring is required and (b) if so, at what level. An independent risk assessment may also be carried out by the ACCORD Quality Assurance Group to determine if an audit should be performed before, during and/or after the study and if so, at what locations and at what frequency."

8. STATISTICS AND DATA ANALYSIS

8.2. Proposed analyses

We will use simple descriptive statistics to describe the participant demographics.

Differences in scores from before and after the intervention will be tested using paired t-tests. Summary statistics of data obtained from the other questionnaires will be described and used as pilot data to calculate sample size for future studies.

The comments in the feedback questionnaire will be analysed using thematic analysis to identify themes within the interviews.

DATA PROTECTION

9.1. Data Protection

All Investigators and study staff involved with this study will comply with the requirements of the Data Protection Act 1998 with regard to the collection, storage, processing and disclosure of personal information and will uphold the Act's core principles. Access to collated participant data will be restricted to the study team.

Computers used to collate the data will have limited access measures via user names and passwords.

Published results will not contain any personal data that could allow identification of individual participants.

9.2. Data Storage

Data collected during the course of this study will be securely stored on a password-protected computer or in a locked office within Simpsons Centre for Reproductive Health at Edinburgh Royal Infirmary. Only research team members have access to this office. No data with identifying information will leave the research office. .

9.3. Data Archiving

Data collected during the course of this study will be securely stored for a minimum of 5 years.

9.4. Confidentiality

All evaluation forms, reports, and other records will be identified in a manner designed to maintain participant confidentiality. All records will be kept in a secure storage area with

limited access. Clinical information will not be released without the written permission of the participant. The Investigator and study staff involved with this study will not disclose or use for any purpose other than performance of the study, any data, record, or other unpublished, confidential information disclosed to those individuals for the purpose of the study. Prior written agreement from the sponsor or its designee will be obtained for the disclosure of any said confidential information to other parties.

9. REFERENCES

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