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Effectiveness of the implementation of a perinatal bereavement care training programme on nurses and midwives: protocol for a mixed-method study

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ABSTRACT

Introduction The psychological outcomes for many parents who experience perinatal loss depend on nursing staff's ability to provide effective bereavement support. However, most nurses and midwives lack the ability to provide bereavement care and suffer from heavy emotional burden. The study aims to investigate the effectiveness of the perinatal bereavement care training programme on nurses and midwives to increase their perinatal bereavement care confidence (PBCC) and to reduce secondary traumatic stress and emotional exhaustion.

Methods and analysis This study will follow a mixed methodology consisting of two stages. The first stage will adopt a pre/post repeated quasi-experimental design without a control group. The second stage will use a qualitative interview study. This study will be conducted in a tertiary maternity hospital in China in 2022–2023. Ethical approval was obtained from the institutional review board in January of 2020. Outcome measures will be assessed using the Chinese version of the PBCC, STS and the EE subscale of Chinese Burn-out Inventory at baseline, postintervention and at the 3-month follow-up. Participants will be interviewed to understand their perceptions of the training programme.

Ethics and dissemination This research protocol was approved by the Ethics Committee of the Women's Hospital School of Medicine, Zhejiang University (IRB no. 20210091). The results will be disseminated through peer-reviewed journals and academic conferences.

Trial registration number ChiCTR2100049730.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ A mixed methodology will be followed to comprehensively understand the effectiveness of this perinatal bereavement care training programme.
⇒ The design of this perinatal bereavement care training programme was based on self-efficacy theory and the results of a systematic scoping review.
⇒ This is a quasi-experimental study without a control group, and blinding was impossible.

INTRODUCTION

Perinatal loss is associated with negative pregnancy outcomes, including miscarriage, therapeutic abortion, stillbirth and neonatal death.[1] Worldwide, the incidence of abortion is approximately 35 per 1000 women.[2] In 2015, there were approximately 2.6 million stillbirths in the world.[3] Perinatal bereavement is a global healthcare problem that may cause serious psychological problems to bereaved women and their families. Depression, anxiety, feelings of failure, guilt, post-traumatic stress disorder (PTSD) and suicidal ideation are commonly seen among bereaved parents.[4] Parents considered that their psychological outcomes depended on the healthcare professionals' ability to provide effective bereavement support.[5 6] When nurses and midwives do not have the ability to provide appropriate bereavement care services, it may negatively impact the emotional trauma of bereaved parents.[7 8] However, the reality was that women's experiences of clinical care did not meet their expectations.[7 9] Disrespectful care of parents and infants was reported.[10]

Nursing professionals experience challenges such as a lack of perinatal bereavement care confidence (PBCC), heavy emotional burden and insufficient organisational support.[11] Recently, published results revealed that systematic training was an essential influencing factor of midwives' perinatal bereavement care competence.[12] Relevant international guidelines and principles also emphasises the importance of improving the self-care of professionals and their ability to provide perinatal bereavement care.[13–15] Therefore, it is necessary to implement a systematic and effective training programme to assist nursing staff in providing effective perinatal bereavement care.

The bereaved parents' experience of perinatal bereavement care may directly affect their ability to cope with the traumatic event and have a significant impact on their mental health.[5 11 16] Due to the negative psychological

emotions of women, they were more sensitive to the care provided by nursing staff.[17] It was reported that women were dissatisfied with pain management, medical communication, and humanistic care.[18–20] In general, women's needs for perinatal bereavement care include the following four aspects[21–23]: (1) that medical staff adopt a respectful attitude and provide adequate humanistic care; (2) that adequate information support is provided throughout the whole process; (3) that medical staff assist bereaved mothers in decision making and (4) that continuous care and support is provided.

Most nursing professionals felt unprepared and lacked the confidence to provide perinatal bereavement care.[24 25] They do not know how to communicate with the women and their families.[26 27] Nurses and midwives also described feelings of powerlessness regarding pain management.[10 28] Moreover, a scoping review indicated that perinatal death had a profound influence on the psychological well-being of healthcare professionals.[29] Many nurses and midwives experienced symptoms of PTSD and burn-out.[30–32] A cluster analysis revealed that nurses emphasised the need for better bereavement care knowledge and experience, improved communication skills and greater organisational support from hospitals and team members.[33] Nursing professionals hoped that they could participate in continuing education meetings and seminars related to pregnancy termination to improve their knowledge and skills.[34] Thus, nurses and midwives have two important demands; one is receiving professional training in providing perinatal bereavement care and the other is seeking sufficient emotional support.[17]

Research indicates that support and training for healthcare professionals is one of the most important aspects of perinatal bereavement care.[35] A global expert consensus states that the highest quality of bereavement care can be guaranteed through comprehensive and ongoing training and support for healthcare providers.[36] However, few healthcare professionals have received training in this specific area.[37 38] The existing training programme could not meet their clinical needs.[39] Due to the lack of appropriate training, staff reported that communication with parents was not always as sensitive as they would have preferred,[22] which could lead to more painful experiences for the parents.[40] Improving the quality of perinatal bereavement care services is a recognised global priority and an important matter of national primary healthcare.[40] Therefore, establishing a systematic training programme and meeting the educational needs of nursing professionals is an important premise of perinatal bereavement practice.[41]

This programme is designed based on self-efficacy theory.[42] PBCC is a primary outcome in our study, which belongs to the scope of self-efficacy. Self-efficacy theory describes that perceived self-efficacy is a determining factor for behaviours. There are four domains that can influence self-efficacy: verbal persuasion, emotional arousal, performance accomplishments and vicarious

experience. It provides useful information for adopting appropriate strategies in improving the PBCC of nursing staff. Additionally, we refer to relevant international guidelines and principles[13 14 36] and take the results of a systematic scoping review[43] into consideration. The intervention design, duration, outcomes and measurements of the training programme have been clarified, and a preliminary draft of the perinatal bereavement care training programme (PBCTP) for nurses and midwives has been validated by a panel of experts.

OBJECTIVES

The first aim of the study is to evaluate the effectiveness of the PBCTP intervention in enhancing PBCC and in reducing secondary traumatic stress (STS) and emotional exhaustion (EE) among nurses and midwives. The second aim of the study seeks to explore participants' acceptability and satisfaction with the PBCTP intervention and identify any adjustments needed to provide the basis for the clinical application and improvement of the PBCTP.

MATERIALS AND METHODS
Setting and study design

This study will be conducted at a tertiary maternity hospital in Zhejiang Province, China, in 2022–2023. This exploratory mixed-method study will be conducted using quantitative and qualitative data in two consecutive stages. The general design of this study is displayed in figure 1.

Phase I: quantitative study
Design

In the first phase, a quasi-experimental study with a before-and-after design will be implemented. This will be a quasi-experimental study with one pretest and two posttests to evaluate the efficacy of the designed PBCTP.

Description of the PBCTP intervention

This programme is specifically designed for nurses and midwives who provide perinatal bereavement care to parents who experienced a perinatal loss. The training programme will be designed based on two objectives. The first objective is to improve the perinatal bereavement care knowledge and skills of nurses and midwives to enhance their confidence and ability to provide perinatal bereavement care. The second objective is to relieve the heavy emotional burden of nursing professionals and improve their psychological well-being, which is an important guarantee to high-quality perinatal bereavement care services.

The PBCTP has been validated by a panel of experts. The characteristics of experts can be seen in online supplemental file 1. There are five modules in this programme, and they will be delivered through 10 online theoretical sessions and one offline group intervention. We will invite experts who have more than 10 years clinical working experience in providing perinatal bereavement care or
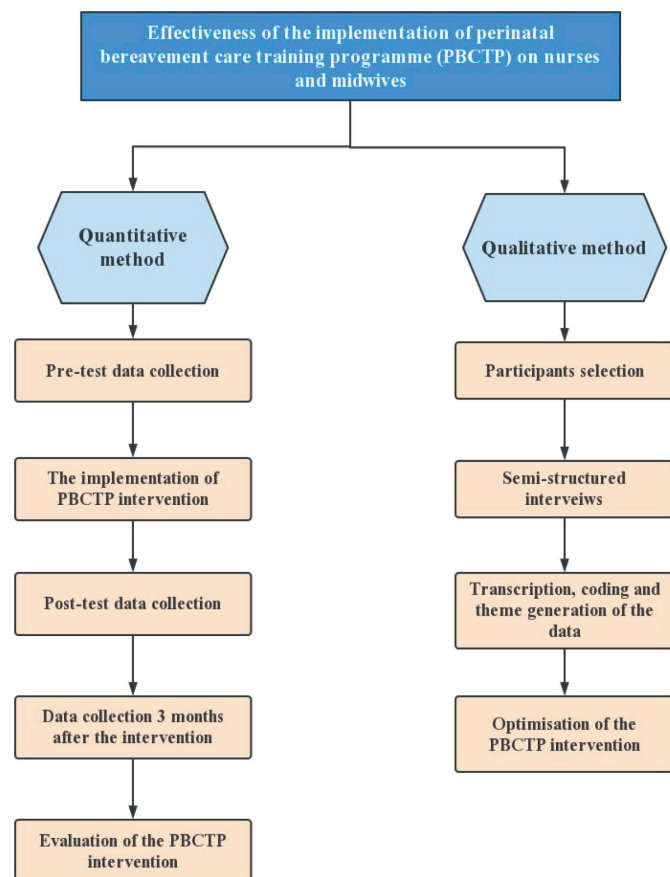
Figure 1 The general design of the study.

who engage in research of perinatal bereavement care for more than 10 years to give lectures. Prerecorded online lectures of the 10 theoretical sessions will be provided for participants. Each theoretical session takes approximately 30 min. These 10 sessions will be given once every 2 days considering participants' shift arrangement. Participants will be required to write a reflective journal after learning each online lecture. One offline group intervention will include a scenario simulation through role playing and experience sharing workshops (1 hour), and a mindfulness training (0.5 hour). The offline group intervention will be conducted within 1 week after finishing online theoretical study. In this study, teaching methods, including online lectures, videos, scenario simulation, workshops, mindfulness training, etc, will be used. The settings of the PBCTP are shown in table 1. The training contents are outlined in table 2.

Targeted population and sample

A convenience sampling method will be used to recruit participants. The inclusion criteria will be clinical nurses or midwives from a a tertiary maternity hospital (1) who have worked in maternity wards or delivery rooms with experience providing perinatal bereavement care; (2) who have over 1 year of nursing experience and (3) who provide informed consent. Nurses and midwives who take sick leave or have received perinatal bereavement training will be excluded. To ensure the efficacy and

quality of the intervention, we will include participants who entirely complete 10 online theoretical sessions and reflective journals. Participants who only receive offline group intervention will be excluded.

The software program G*Power V.3.1 will be used to perform a power analysis to determine the sample size. It required certain criteria, including effect size, significance level and power.[44] The effect size of a study that evaluated the efficacy of bereavement care education and training on confidence was 0.51 in student midwives.[45] We aimed to enrol 54 participants, with an effect size of 0.51, probability level of 0.05 and power of 0.9, allowing for 20% attrition.

Outcome variables and measurements
Sociodemographic and professional characteristics

A self-designed form consisting of nine questions regarding sociodemographic and professional characteristics, including age, current area of practice, education level, job title, marital status, having children, region, length of work experience, and training in perinatal bereavement care will be used.

Primary outcome
Perinatal bereavement care confidence

The Chinese version of the PBCC Scale (C-PBCCS) was used to measure nurses' and midwives' PBCC. The original scale was developed by Kalu et al.[46] This scale was first translated into Chinese and the 43-item PBCCS was reduced to 40 items.[47] It contains 4 scales, including bereavement support knowledge (13 items), bereavement support skills (8 items), self-awareness (8 items) and organisational support (11 items). The items are scored on a 5-point Likert scale, ranging from strongly disagree to strongly agree. The scales of bereavement care knowledge and skills are used to assess midwives' and nurses' PBCC. Self-awareness and organisational support are identified as psychosocial factors that influence confidence in providing bereavement care. The Cronbach's alpha ranges from 0.835 to 0.901. The Guttman split-half coefficient is between 0.868 and 0.933.

Secondary outcomes
Secondary traumatic stress

STS is evaluated by applying the validated 10-item Secondary Trauma Scale,[48] which is a subscale of the Professional Quality of Life Scale. It is used to assess the severity of responses to work-related secondary exposure to others' trauma. Each item is evaluated on a 5-point scale from 1 (not at all) to 5 (extremely), with total scores ranging from 10 to 50. The total score can be used to categorise participants at a low level (≤ 22), average level (≥ 23 and ≤ 41) or high level (≥ 42) for STS. The Cronbach's alpha for this scale is 0.81 in this study.

Emotional exhaustion

The Chinese Burn-out Inventory[49 50] has 15 items and 3 dimensions. EE is one of the major dimensions and consists of five items. Each item is rated on a 7-point

3

Table 1 Specific settings of the PBCTP

	Results of the scoping review[43]	Clinical conditions	PBCTP
Formats	▶ Workshops and debriefings were commonly used for discussion. ▶ Scenario simulation through role playing. ▶ Other forms: artwork and exhibition, reading poetry, interactive workbooks and e-learning lectures.	The clinical work schedule of nurses and midwives has great uncertainty.	Combine multiple forms to provide a more comprehensive intervention content. 1. Use role playing, workshops and video learning to improve the fun of the training programme and to strengthen peer support; 2. Combination of online and offline forms
Duration	▶ The duration of most training programmes ranged from half a day to 3 days. ▶ Some programmes were conducted for 5 days, 10 weeks and 6 months.	Manpower, material resources and time costs; the busyness of nursing staff;	The duration of the intervention in this study should not be too long. Accommodating the training content will be appropriate. This programme will be delivered through 10 online theoretical sessions and one offline group intervention. Each theoretical session takes approximately 30 min. One offline group intervention takes 1.5 hours.
Implementer	▶ Most studies were conducted by the researchers themselves. ▶ Add a mindfulness therapist or psychologist	Our research team includes researchers, mindfulness therapists and psychologists who have long engaged in the field of perinatal bereavement.	Establish an intervention team including researchers, a mindfulness therapist and a clinical psychologist.
Outcomes	▶ Confidence, knowledge, satisfaction, etc; ▶ Psychological variables: PTSD, STS, stress, burn-out, satisfaction, etc.	The Perinatal Bereavement Care Confidence Scale is a valid and reliable tool with good psychometric properties.	PBCC, STS and EE will be used as outcomes.
Evaluation methods	▶ Scale survey ▶ Qualitative interview	Training and interviews can be conducted.	1. Longitudinal study design: pretest, post-test and 3-month follow-up. 2. Semistructured interviews will be used to collect participants' experiences of the training.

EE, emotional exhaustion ; PBCC, perinatal bereavement care confidence; PBCTP, perinatal bereavement care training programme; PTSD, post-traumatic stress disorde; STS, secondary traumatic stress.

Likert scale from 0 (never) to 6 (every day). Total scores range from 0 to 30. Higher scores indicate a high level of EE. The level of EE experienced is categorised as follows: ≤16 is low, 17–26 is average and ≥27 is high (Xie *et al*, 2020). The Cronbach's alpha for this subscale is 0.91.

Data collection
The head nurses of selected departments will be approached through formal written letters that inform them about the aim and procedures of the study. The head nurses will issue questionnaires to nurses and midwives who meet the inclusion criteria. Data will be collected using WJX (www.wjx.cn), a website that allows the creation of electronic questionnaires. A link to the survey will be sent to eligible nurses and midwives who consent to participate by WeChat (a chatting software). All participants will be guaranteed the confidentiality of private information. After collecting baseline data (T0), nurses and midwives will receive the PBCTP intervention. The post-test measurement will commence immediately after the intervention (T1). Data collection will also be collected at the 3-month intervention follow-up (T2) by referring to a previous study.[45]

Data analysis
To analyse the data in this quasi-experimental study, SPSS software, V.20.0 (IBM) will be used. All data entered into SPSS will be cross-checked for verification. Descriptive statistics will be reported as the mean (SD) for continuous variables and frequency counts (percentages) for categorical variables. Non-parametric inferential tests will be used to examine assumptions of normality. The homogeneity variance and sphericity of the data will also be checked. A repeated measures Analysis of variance (ANOVA) will be adopted to investigate changes in PBCC, STS and EE scores at different time points (T0, T1 and T2), using a type I error rate ≤0.05 as statistical significance. The data of participants based on their specialties (group 1: nurses; group 2: midwives) and intervention forms (group 1: online theoretical sessions; group 2: online theoretical sessions+offline group intervention) will be compared with assess differences in the various groups of the participants. Covariance analysis will be used. The baseline data will be chosen as a covariate to control the influence of baseline differences between groups.

Table 2 The training contents of the PBCTP

Module	Main content	Specific content
1.Introduction	1.1 Content, meaning, objectives, duration and form of the training	–
2.General knowledge of perinatal bereavement care	2.1 The introduction of clinical guidelines and relevant nursing theory	2.1.1 Summary of clinical practice guidelines on perinatal bereavement care
		2.1.2 Introduction of chronic grief theory
	2.2 Knowledge of law and ethics	2.2.1 Domestic laws, regulations and ethical issues related to perinatal bereavement
	2.3 Psychological characteristics and needs of bereaved families	2.3.1 Psychological characteristics of grieving women in different stages of perinatal period
		2.3.2 Various needs of the bereaved women
		2.3.3 Psychological characteristics of bereaved family members (grieving fathers, bereaved sibling, etc)
		2.3.4 Watching a Chinese movie clip about perinatal bereavement care
	2.4 Perinatal bereavement care based on different cultures	2.4.1 Examples of the special beliefs and practices of death according to different cultural/religious background groups
3.Practical skills of perinatal bereavement care	3.1 Communication skills and contents	3.1.1 Basic principles of effective communication
		3.1.2 Communication methods commonly used in perinatal bereavement care
		3.1.3 Role playing of common communication situations in perinatal bereavement care
		3.1.4 Communicating with grieving families: Do say and do not say
	3.2 Psychological support strategies for the bereaved parents	3.2.1 Information support throughout the prenatal, delivery and postpartum period
		3.2.2 Physical contact and verbal encouragement
		3.2.3 Improving the quality of company
	3.3 Grief care during the pregnancy termination	3.3.1 Asking and respecting grieving needs of bereaved women (eg, seeing/hugging the baby, dressing, keeping mementos)
		3.3.2 Matters needing attention in providing grief care
	3.4 Skills of labour pain management	3.4.1 Improving pain management awareness
		3.4.2 Nonpharmacological interventions for labour pain, including supportive interventions, music therapy, acupoint stimulation, etc
		3.4.3 The application of painless labour in induced abortions
	3.5 Support strategies for postpartum recovery	3.5.1 Postpartum exercise guidance
4.Emotional support for nurses and midwives	4.1 Introduction of secondary traumatic stress among healthcare professionals	4.1.1 Symptoms and self-assessment of secondary trauma
	4.2 Emotion management and relaxation techniques	4.2.1 Writing therapy: three good things
		4.2.2 Mindfulness training intervention
	4.3 Provision of psychological support resources and platforms	4.3.1 Strengthening peer support among colleagues via group workshops
		4.3.2 Establishing psychological support groups and providing accessible psychological counselling services

Continued

Table 2 Continued

Module	Main content	Specific content
5. Practices reflection and learning	5.1 Group workshop	5.1.1 Experience sharing and interactive exchange between nursing professionals
	5.2 Practical reflection conference	5.2.1 Feedback on clinical practices and issues from nursing professionals and the bereaved women
		5.2.2 Summarising the experiences and feelings in the training

PBCTP, perinatal bereavement care training programme.

Phase II: qualitative study

Design

In the second phase, a descriptive qualitative approach will be used.[51]

Participants

Purposive sampling will be used in this qualitative study. We will interview nurses and midwives who participate in the entire training (10 online theoretical sessions and 1 offline group intervention). Participants will be selected based on their scores on the C-PBCCS immediately after the intervention (T1). In addition, different specialities will also be considered. We will approach nurses and midwives respectively with scores on the C-PBCCS above and below the mean. The sample size is determined when saturation is reached.[52]

Qualitative data collection

Face-to-face, semistructured interviews will be conducted to collect data. At the beginning of the interview, a clear explanation of the objectives of the interview will be provided. Then, all participants will be informed about the sound recording. Written and verbal consents will be obtained. Listening, paraphrasing and other counselling skills will be used to facilitate participants' willingness to express their authentic experiences of the training.[53] The time and place of interviews will be chosen based on the participants' preferences. The interviews might approximately take 1 hour (The shortest length of each interview should be more than 30 min to make sure the quality of the interview). The interview guide will focus on participants' perceived impact of the training on PBCCs and suggestions for training improvement. The interview outline mainly includes the following open questions:

► What is the experience of participating in the training programme?
► Do you have any changes in the provision of perinatal bereavement care after the training?
► Which part of training do you find most impressive and helpful to you and how does it work?
► Do you have any suggestions for improving the training programme?

Qualitative data analysis

Thematic analysis will be used to identify, analyse and report the themes that emerged from the data.[54]

Recordings will be transcribed verbatim within 12 hours after the interviews. All participants were given a pseudonym to ensure confidentiality. The data will be analysed following the three stages: becoming familiar with the data, coding and generating themes and subthemes.[54] Regular meetings will be held by research team members in order to discuss the uncertain themes and ensure the confirmability of the interpretations. Any disagreements will be discussed to ensure that consensus will be reached.[55] After data analysis, the researchers will telephone four participants (two midwives and two nurses) and openly share the research findings with them.[56] If the participants do not agree with the findings, the research team will focus on the differences participants propose and recheck the related codes to work on the final analysis. In this way, the researchers will obtain feedback from the participants to ensure that their perspectives are represented and guarantee the accuracy and credibility of the results.[57]

Accuracy and reliability of the qualitative data

To guarantee the trustworthiness of the qualitative results, evaluative criteria consisting of credibility, transferability, dependability and confirmability will be used. The researchers will maintain reflexivity to recognise their potential impact on the study results and remain faithful to the experiences of the participants.

Patient and public involvement

Patients were not involved in this study. The results will be shared with stakeholders.

Ethics and dissemination

This research protocol was approved by the Ethics Committee of the Women's Hospital School of Medicine, Zhejiang University (IRB no. 20210091) on 29 January 2021. This study was registered at the Chinese Clinical Trial Registry, ChiCTR2100049730. Participants will receive a participant information sheet, and written consent will be obtained to participate in the study. Confidentiality and anonymity will be preserved. Participants will have the right to freely withdraw from the study at any time without any consequences.

Results will be disseminated through peer-reviewed journals and academic conferences. Negative, positive, conclusive or inconclusive results will be published.

Participant data will be kept confidential and will not be shared with the public. Data will be available from the corresponding author on reasonable request.

DISCUSSION

Despite recent medical advances, disrespectful care was still described by parents in perinatal bereavement practice.[10] This suggests that nurses and midwives need to receive relevant trainings so that they can be fully prepared to provide high-quality perinatal bereavement care for parents. Therefore, it is important to explore a dependable and effective PBCTP that can be disseminated quickly and promptly. To compensate for this gap, the PBCTP containing 10 online lectures and one offline group intervention has been developed depending on the principles of self-efficacy theory and the results of a systematic scoping review.[43]

In the current research, a mixed-method approach will be implemented. A longitudinal study design will be used. In addition to pretest and post-test, a 3-month follow-up will be conducted to comprehensively understand the long-term effectiveness of the training programme. Quantitative research cannot deeply describe the attitudes, thoughts and beliefs of participants, and qualitative research studies phenomena in their natural environment.[58] Process evaluation is a vital method of evaluating the effectiveness of interventions.[59] Subjective data can be interpreted by researchers using a scientific method. Therefore, the overall objective of the study is to investigate the effectiveness of this PBCTP and to optimise this programme for better clinical application among nurses and midwives.

Our hypothesis in this study protocol is that nurses and midwives who receive the PBCTP will have better PBCC and psychological well-being. If this hypothesis is confirmed, then the results could help to generalise the implementation of PBCTP to improve nursing staff confidence in providing perinatal bereavement care and to improve the quality of bereavement care services as an effective training programme. In Chinese traditional culture, there is a big taboo about death. Chinese nursing staff are unfamiliar with how to provide high-quality perinatal bereavement care. It is reported that the majority of Chinese nurses and midwives had not received training in perinatal bereavement care (85.2%).[47] Therefore, it has become an urgent problem to construct the PBCTP preparing competent nurses and midwives to provide this special care in the context of China. Although a series of PBCTPs have been designed and conducted,[60–63] the lack of a theoretical basis, long-term follow-ups, valid and reliable evaluation tools and comprehensive training contents were the main deficiencies of the existing education programmes.[43] The PBCTP intervention in our protocol is designed after taking these limitations into consideration. The PBCTP intervention in our study could contribute to the literature and be immensely interesting to nursing managers, educators and clinicians alike. We anticipate the PBCTP intervention could give some enlightenment to the future programme design and research in this field.

The study has some limitations. First, this is a quasi-experimental study without a control group, and blinding is impossible in this study. Therefore, it is difficult to control for potential confounders, and the study is subjected to expectation biases. However, an exhaustive collection of data may help to strengthen the analysis by controlling for possible confounding factors with a sample size ensuring sufficient statistical power to validate the true effectiveness of the training programme. Second, it is difficult to recruit nurses and midwives and ensure their full participation due to heavy clinical workload, which may influence their motivation to participate in this training. This requires that researchers gain sufficient support from nurse supervisors so that they can encourage nurses and midwives to participate in the training. Last, participants will be enrolled from a single site, compromising the generalisability of the results.

We expect that this training programme can assist nurses and midwives in improving their confidence and ability to provide perinatal bereavement care and to relieve the symptoms of STS and EE in the context of bereavement practice. The results of our research could modestly assist in providing a referable training programme for nurse managers to improve education and organisational support for nursing professionals. The expected beneficial effects will relate to the promotion of bereavement services, thereby improving the psychological outcomes of bereaved parents.

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Supplementary file: Table 1　Characteristics of experts（N=17）

Characteristic		n	%		Characteristic	n	%
Age (years)	30-40	8	47.1	Job title	Intermediate grade	13	76.5
	41-50	8	47.1		High professional title	4	23.5
	＞50	1	5.8	Health service regions	Obstetric care	8	47.1
Years of experience	10-19	11	64.7		Midwifery care	8	47.1
	＞20	6	35.3		Perinatal psychology	1	5.8
Education level	Undergraduate	15	88.2				
	Postgraduate or above	2	11.8				