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BRIEF REPORT

Interventions to improve wellbeing among obstetricians and midwives at Cork University Maternity Hospital

Sinead O'Riordan [1] · Keelin O'Donoghue [1,2,3] · Karen McNamara [1,2]

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Abstract

Background There is an increasing body of research demonstrating stress, burnout, and compassion fatigue among those working in obstetrics and gynaecology. The literature is lacking with respect to targeted interventions aimed at improving staff wellbeing.

Aims To investigate whether an intervention which increases support for staff is feasible to implement and effective at improving staff wellbeing.

Methods This study was conducted in a tertiary university teaching maternity hospital. All doctors in training (DITs) ($N = 28$) and midwives ($N = 69$) working in the delivery suite were invited to participate. Wellbeing was assessed by measuring burnout, compassion fatigue, and perceived stress using validated questionnaires. These were distributed pre-intervention and 6 months after implementation of the interventions. The support interventions consisted of posters promoting self-care, team bonding sessions, and end of shift meetings.

Results Eighteen (64%) DITs and 22 (31%) midwives returned pre-intervention questionnaires. Thirteen (18%) midwives retuned post-intervention questionnaires, of which five midwives (7%) returned both the pre-intervention questionnaire and the post-intervention questionnaire. Eighty-seven percent of participants were experiencing emotional exhaustion pre-intervention. There was a statistically significant decrease in the Professional Quality of Life burnout score from pre-intervention ($M = 25.8$) to post-intervention ($M = 21.4$), $p = 0.02$. End of shift meetings were discontinued after 5 weeks due to low attendance. End of shift meetings provided an opportunity for support and debriefing; however, the timing of these sessions impaired their long-term feasibility.

Conclusion DITs and midwives of this sample are experiencing high levels of burnout and compassion fatigue. End of shift meetings for midwives and team bonding sessions for DITs may positively impact on wellbeing, but in current format, they are not feasible for long-term implementation. The low level of participation highlights a challenge in implementing institution-wide support interventions.

Keywords Burnout · Compassion fatigue · Intervention · Midwives · Obstetrics and gynaecology · Stress · Wellbeing

Introduction

Healthcare professionals can suffer from stress due to the physical and psychological demands of their work [1]. Burnout and compassion fatigue can result from exposure to occupational stress [2, 3].

Professional burnout is a work-related syndrome that occurs among professionals that work with people [2]. The syndrome involves three symptoms: emotional exhaustion, depersonalisation, and reduced personal accomplishment [2]. Emotional exhaustion occurs when healthcare professionals can no longer engage with patients at a psychological level [2]. Depersonalisation is the development of a negative and cynical attitude towards one's patients [2]. Reduced personal accomplishment occurs when healthcare professionals become dissatisfied with their professional accomplishments and performance [2].

Compassion fatigue, first defined by Figley in 1995, is defined as a state of psychological distress and reduced capacity for empathy in caregivers [3–5]. It is caused by

✉ Sinead O'Riordan
sineadellaoriordan@gmail.com

[1] Pregnancy Loss Research Group, University College Cork, Cork, Ireland

[2] Cork University Maternity Hospital, Cork, Ireland

[3] Irish Centre for Fetal and Neonatal Translational Research, Cork, Ireland

emotionally demanding relationships with patients, usually those who have suffered trauma [3]. The syndrome is similar to burnout; however, it also includes the symptoms of secondary traumatic stress. Secondary traumatic stress manifests in symptoms such as intrusive images and avoidance [3]. Reciprocally, compassion satisfaction is the positive aspect of working with people; it describes the positive feelings that comes from helping others [3].

Burnout levels of up to 90% have been reported among obstetricians, with a prevalence of 65% among midwives [6, 7]. Secondary traumatic stress has a reported prevalence of 29% among midwives [8].

Burnout is an indicator of psychological distress among healthcare professionals. Associations have been identified between burnout and depression, anxiety, and suicidal ideation [7, 9, 10]. Burnout and compassion fatigue are associated with suboptimal patient care, increase in reported medical errors, unprofessionalism, and reduced work effort [11–14].

Obstetrics and gynaecology is a high-risk specialty, and serious adverse events can occur and have a profound effect on the wellbeing of the healthcare professionals involved [8, 15]. Exposure to adverse events, high levels of direct patient contact, and the empathetic nature of the relationship with the patient places those working in obstetrics and gynaecology at increased risk of burnout and compassion fatigue [1, 8, 16].

There is an increasing number of studies investigating strategies to improve wellbeing in the general medical and nursing literature, but it is still unclear which style of intervention is the most effective [17, 18]. Organizational level interventions which increase support for staff are less commonly studied in the literature, despite the evidence that support from colleagues and a safe forum to share traumatic experiences are key to midwives' ability to cope with traumatic experiences at work [8, 17]. One study found that support groups among nurses resulted in a reduction in emotional exhaustion; however, there was no significant difference between the control and intervention groups [19]. Another study investigating the effect of reflecting group sessions found that these sessions provided an opportunity for colleagues to provide mutual support and showed favourable effects on burnout [20].

Aims and objectives

The aim of this study was to investigate the impact of an organizational intervention that increases support for staff on the wellbeing of healthcare professionals working in obstetrics and gynaecology. To achieve this, the specific objectives were to investigate the levels of burnout, compassion fatigue, and perceived stress among midwives and obstetrics and gynaecology doctors in trainings (DITs); to investigate whether an intervention that increases staff support was effective at reducing burnout, compassion fatigue, and perceived stress; and to investigate whether it was feasible to establish support interventions for this cohort.

Methods

Study design, participants, and setting

The study design was a pilot pre- and post-interventional study. It was conducted in Cork University Maternity Hospital (CUMH), a large tertiary university teaching maternity hospital with 8200 deliveries per annum. As this was a pilot study, the sample size was limited by the number of midwives and obstetrics and gynaecology doctors who worked in the delivery suite. Convenience sampling of all midwives ($n = 69$) and DITs ($n = 28$) who worked in the delivery suite was used. All midwives and residents who worked in the delivery suite were eligible and were invited to participate in this study. Those who were not working in the hospital during the period in which the interventions were conducted were excluded from this study.

Study measures

Demographics including age, gender, work title, and number of years of work experience were collected. Wellbeing and staff distress were assessed by measuring burnout, compassion fatigue, and perceived stress. A review of the literature was conducted to assess for validity of these scales. The Maslach Burnout Inventory (MBI) was used to assess burnout; it includes subscale measures of burnout, secondary traumatic stress, and compassion satisfaction. The validity of MBI is well supported in the literature; it has a Cronbach alpha rating of 0.9 for emotional exhaustion, 0.76 for depersonalization, and 0.76 for personal accomplishment [2]. The Professional Quality of Life Scale (ProQoL) was used to assess compassion satisfaction; it included three subscale measures of compassion satisfaction, burnout, and secondary traumatic stress; each subscale has a reported alpha reliability greater than 0.7 [21]. The Perceived Stress Scale was used to assess perceived stress. The PSS has a Cronbach alpha rating > 0.7 [22]. We developed a short additional post-intervention survey which included a free text section to provide feedback on the interventions (Appendix 1). The post-intervention survey was developed using expert opinion, supported by the use of participant evaluations completed in similar studies [23].

Interventions

The interventions were comprised of a pocket card and posters promoting self-care and resilience; team bonding sessions for the DITs; and "Recognise and Reflect", an end of shift staff meeting for the midwives.

The poster and card were designed and displayed around the delivery suite in areas regularly used by staff. Themes utilized in the poster and hand-out to promote self-care included healthy habits; getting help from a friend or a professional; supporting colleagues; remembering what you did well; and acknowledging that healthcare professionals are human too.

"Recognise and Reflect" was a short work-focused discussion group led by a specialist registrar and senior labour ward midwives. It was held at the end of each day shift, Monday to Friday. All midwives who had worked that day in the delivery suite were invited to attend. During "Recognise and Reflect", midwives were encouraged to reflect on the previous shift, discuss the good aspects of the clinical day, and identify any issues which arose, in a non-judgmental environment. Participants were encouraged to voice any ideas for improving clinical practice, and these ideas were documented and passed on to appropriate officials. One team bonding session was held for DITs. It consisted of a movie night and was led by a senior DIT.

Data collection

Clinical midwife managers were asked to inform staff midwives of the study during daily handover meetings. The delivery suite was attended, and midwives were approached, and a brief explanation of the study was done verbally. DITs were recruited by attending the regular weekly teaching sessions. Those who agreed to participate in the study were provided with a participant information cover sheet (Appendix 2) and a hard copy of the questionnaires. The post-intervention questionnaires were not distributed to the DITs. In the original project design, we had intended to survey the DITs post-intervention; however, given the lack of interest that ensued from the DITs with respect to the team bonding sessions, these were discontinued after one session. We, therefore, chose to exclude DITs from the post-intervention follow-up. Data was entered by the primary investigator into the statistical software IBM-SPSS 23.

Data analysis

Preliminary analysis was performed using descriptive statistics. Kolmogorov-Smirnov was used to test for violations of the assumption of normality within the data. Paired samples *t* test and independent samples *t* test were used to analyse the data. When data was not normally distributed, a non-parametric equivalent test was used.

Timeline

This project was started in October 2016. Project design and planning was done from October 2016 to January 2017. Ethical approval was granted in December 2016. Pre-intervention data collection started in February 2017 and continued for 4 weeks. The intervention started in March 2017 and ran until August 2017. Post-interventional data collection ran from August 2017 until October 2017. Data analysis was carried out in October 2017 and November 2017.

Results

Sample characteristics

Eighteen DITs (64%) and 22 midwives (31%) responded to the pre-intervention questionnaire. Five midwives (7.2%) completed the full study, returning both the pre-intervention questionnaire and the post-intervention questionnaire. Only the responses of the midwives that completed the full study ($n = 5$) were used to evaluate the impact of the intervention on wellbeing scores. Eight midwives (11.6%) returned a post-intervention questionnaire without having returned a pre-intervention questionnaire. Their responses were only included for analysis of feedback on the interventions.

Within the pre-intervention group, 87.5% of participants ($n = 35$) were female. The median age of participants was 31 (range = 25 to 53). The median number of years of professional experience was five (range = 1 to 30). Of the five midwives who completed the full study, all were female. The median age was 37 (range = 27 to 40) and the median years' experience was 13.5 (range = 6 to 18).

The pre-intervention data was used to assess the levels of burnout, compassion fatigue, and perceived stress; the results are displayed in Fig. 1 and Table 1. Above-average levels of perceived stress were experienced by 79.5% of participants.

Effect of the intervention

A paired sample *t* test was conducted to evaluate the impact the intervention had on the midwives' burnout, compassion fatigue, and perceived stress scores. The results are displayed in Table 2. Despite a small sample size ($n = 5$), there was a statistically significant decrease in the Professional Quality of Life burnout score from pre-intervention ($M = 25.8$, $SD = 7.69$) to post-intervention ($M = 21.4$, $SD = 6.03$), $t = 0.431$, $p = 0.02$ (two-tailed). The mean decrease in burnout scores was 4.4 points, with a 95% confidence interval ranging from 1.16 to 7.64. The Cohen *d* was 0.64, indicating a medium effect size.

Feasibility and acceptability of interventions

The DIT team bonding sessions were discontinued after one session. Eight DITs (27.6%) attended this session. Further attempts were made to organize subsequent sessions but there was low interest among the DITs. The "Recognise and Reflect" sessions were discontinued after 5 weeks; in which time, 20 sessions had been held. The average attendance rate at these sessions was 50% of the midwives who had been

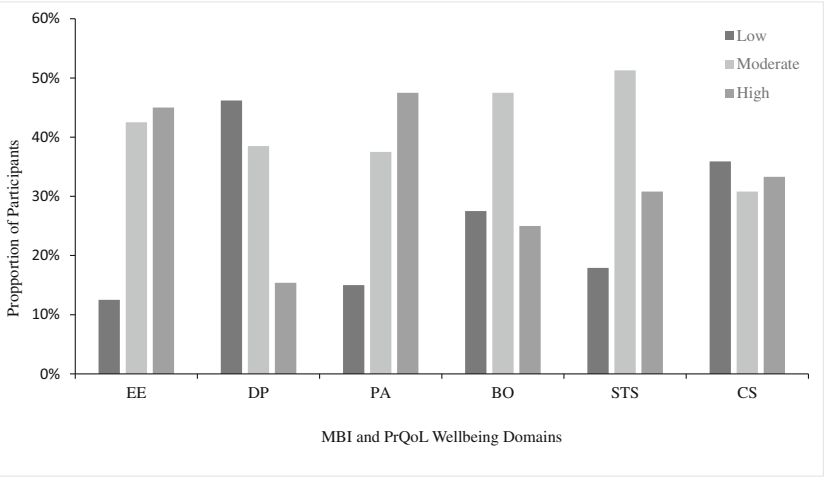


Fig. 1 Proportion of participants scoring high, moderate, or low for each domain of MBI's Burnout and ProQoL's Compassion Fatigue at baseline ($n = 40$). EE emotional exhaustion, DP depersonalization, PA personal accomplishment, BO burnout, STS secondary traumatic stress, CS compassion satisfaction

working that day. The head hygiene posters were displayed for 6 months.

Three themes emerged from the feedback on the "Recognise and Reflect" sessions: inopportune timing, an opportunity to support colleagues, and time to destress and debrief (Table 3). Feedback on the head hygiene poster was divided into two themes: a reminder think about your own mental health and that the poster was confusing (Table 4).

Discussion

Almost 45% of midwives and obstetrics and gynaecology DITs were experiencing high levels of emotional exhaustion, and 42.5% were experiencing moderate levels of emotional exhaustion. These findings reflect the literature, where it has been reported that almost 90% of obstetrics and gynaecology residents experience burnout [6]. In this study, 31% of healthcare professionals were experiencing high levels of secondary traumatic stress, again comparable with the literature where high levels of secondary traumatic stress have been reported in 29% of midwives [8].

Although many participants were experiencing impaired wellbeing, many also felt a high sense of personal accomplishment and compassion satisfaction. Previous research has found that midwife-mother relationships where midwives feel appreciated were personally and professionally sustaining [24]. Increasing opportunities for healthcare professionals to receive positive feedback may increase the positive effects of patient encounters.

Despite a small sample size, a significant decrease in ProQoL's burnout was demonstrated post-intervention. Reductions in emotional exhaustion, depersonalization, secondary traumatic stress, and perceived stress were also noted, but none of these reached significance. Due to the small sample size and poor response rate post-intervention, we cannot conclude that this intervention improved staff wellbeing, but the reduction in ProQoL's burnout does suggest that this intervention may be of benefit.

The feasibility of these interventions was assessed by analysis of the attendance rates, the length of the

Table 1 Midwives vs. DITs' pre-intervention scores in MBI's Bunrout, ProQoL compassion fatigue, and Perceived Stress Scale. *M* mean, *SD* standard deviation, *df* degrees and freedom, *t* *t* value, *p* *p* value

Wellbeing measure	Midwives		DITs		*df*	*t*	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*				
Emotional exhaustion	26.05	9.79	26.83	7.43	38	0.281	0.78	0.09
Depersonalisation	5.52	4.86	10.05	4.61	37	2.97	0.005	0.98
Personal accomplishment	37.27	5.82	36.61	6.53	38	− 0.338	0.74	0.11
Burnout	24.55	4.96	24.83	4.29	38	0.194	0.847	0.06
Secondary traumatic stress	21.57	4.58	24.44	5.6	37	1.764	0.086	0.58
Perceived stress	16.32	8.01	18.76	5.35	37	1.085	0.285	0.36

Table 2 Pre-intervention vs. post-intervention scores in MBI's Burnout, ProQoL's Compassion Fatigue, and Perceived Stress Scale. *M* mean, *SD* standard deviation, *df* degrees and freedom, *t* *t* value, *p* *p* value

Wellbeing measure	Pre-intervention		Post-intervention		*df*	*t*	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*				
Emotional exhaustion	27.2	8.26	24.8	13.94	4	0.91	0.41	0.21
Depersonalisation	5.8	6.21	5.4	7.02	4	0.31	0.77	0.06
Personal accomplishment	39.4	5.64	39.8	7.69	4	− 0.13	0.9	0.03
Burnout	25.8	7.69	21.4	6.03	4	3.77	0.02	0.64
Secondary traumatic stress	18.8	4.71	18	5.34	4	0.78	0.48	0.16
Compassion satisfaction	41.4	3.91	41	4.74	4	0.43	0.69	0.09
Perceived stress	15.8	9.4	10.6	5.6	4	2.27	0.09	0.67

intervention, and the qualitative feedback. Having been discontinued after 5 weeks due to low attendance, we can conclude that "Recognise and Reflect" sessions were not feasible for long-term implementation. When studying the feedback, it became clear that having these sessions take place at the end of a 12-h shift had rendered them impractical for the long-term. Midwives reported being eager to return home and feeling "exhausted and slow to talk". This likely affected engagement and attendance. Due to lack of interest, only one DIT team bonding session was held, despite repeated efforts to organize subsequent sessions. No written feedback was obtained from the DITs; however, as these sessions were also held outside of rostered working hours, it is likely the low interest was again due to the timing of these sessions.

The low levels of attendance in this study highlight an important challenge in creating effective and sustainable organization-wide support interventions. This study is one of the few that assesses feasibility of an intervention, particularly when implemented across an entire unit. Future research in this area needs to consider the long-term feasibility of their intervention when rolled out across a whole institution. Within the literature, healthcare professionals have reported not having enough time to spend with families, and those working in obstetrics and gynaecology are unsatisfied with their work-life balance, relative to other specialties [25, 26]. Limiting the time commitment out of rostered hours, and avoiding placing sessions at the end of a shift, needs to be considered when designing future interventions.

Despite "Recognise and Reflect" sessions being discontinued, the feedback demonstrated that they were mostly viewed as a positive experience. Midwives reported that "Recognise and Reflect" had facilitated an opportunity to support colleagues, get positive feedback, and debrief after a stressful day. Comparable findings have been reported by other studies investigating the impact of peer-support group style interventions [20, 27]. As previously noted, collegial support, forum to share traumatic experiences, and increasing staff appreciation have been identified as key to improving staff wellbeing.

Table 3 Feedback on "Recognise and Reflect"

Themes	Example quotes
Inopportune timing	"Timing wise after a long shift people were exhausted and slow to talk! People had to get home to childminders etc" "I personally found at end of 12 hour shift most people are impatient to return home/exhausted/drained" "I work mainly night shift and when I come on at 8 when the sessions were on though I was interested in attending, I had to go to my allocated area of work to take handover" "… not available on my shifts. I usually work nights"
Opportunity to support colleagues	"…it gave us time to gather as a team to discuss the events from the day. Often when the LW is busy we would not get an opportunity to all discuss what we went through that day" "Hear others concerns and offer suggestions and support to junior colleagues" "They were beneficial for team bonding, learning and colleague support" "Good to get feedback, good and bad – how else can we improve?"
Time to destress and debrief	"Yes good to express feelings of stress after incidents" "A safe environment to discuss issues of day" "A great opportunity to debrief and just sit together after a shift" "Good to have a quick debrief before home – felt I did not carry it home with me if I had a bad day" "Feel like the day was finished" "Positives and negatives discussed while at work enabled me to switch off when I walked out the door"

Table 4 Feedback on "head hygiene" posters

Themes	Example quotes
Reminder to think about your own mental health	"Made you think to mind yourself" "Gives you time to reflect and think of what you need to do to benefit your mental health" "Permission to think about your thoughts and feeling. A regular reminder to do so" "The 5 moments of head hygiene poster was a handy reminder to take a little break each day and mind my emotional wellbeing" "A gentle reminder of ways to cope with stressful situations" "Makes you think to care for yourself and co-workers. To be more mindful of how you are feeling and what those around you might be going through if they have had a tough day"
Confusement	"To be honest I did not realise they were not hand hygiene posters until it was pointed out!" "I found it confusing at first – as they seemed about hand hygiene" "Not initially very clear on what it was" "I personally found it confusing – I am not a visual learner"

Strengths and limitations

The strengths of this study include its prospective study design. It is one of few studies investigating the impact of an organizational intervention on burnout, compassion fatigue, and stress among those working in maternity services. Validated questionnaires were used. It also assessed the feasibility of an intervention when applied globally, as opposed to when only applied to a group that volunteer to participate in a study.

This study has several limitations. The small sample size and poor response rate post-intervention significantly limits the ability to conclude on improvements in wellbeing following the intervention. The poor response rate warrants further discussion. Although participants were anonymized, it may reflect the sensitive nature of the questions in the survey. Another possible contributing factor was that surveys were distributed while the midwives were at work, and professional commitments were prioritized over completing the surveys. These explanations do not explain the lower response rate post-intervention. It is possible that the declining response rate may have been due to a decreased interest in the study following discontinuation of the "Recognise and Reflect" sessions. Further research investigating barriers to midwives completing surveys is needed. Another limitation was excluding the DITs from post-intervention data collection. It was felt that as no substantial intervention had been performed on this group, post-intervention follow-up would not contribute to this study.

This study is subject to responder bias. It is likely that the midwives who responded to the post-intervention questionnaire were those who attended the "Recognise and Reflect" sessions and found them helpful. Midwives who did not attend any sessions or did not find them helpful were probably less likely to respond to the post-intervention questionnaire. This may have resulted in type 1 error when assessing the impact of the intervention on burnout, compassion fatigue, and perceived stress. Furthermore, the positive feedback on the intervention may not be representative of the views of all the midwives working in the labour ward. As this study was not controlled, we cannot conclude that the improvement in burnout was due to the intervention and not due to a confounding factor.

Conclusion

Healthcare professionals working in Cork University Maternity Hospital are experiencing impaired wellbeing. This is evident through the high levels of burnout, compassion fatigue, and perceived stress we identified in our cohort.

This study identifies low levels of participation as a challenge when attempting to implement organizational support interventions across an entire unit. In their current format, the "Recognise and Reflect" and team bonding sessions are not feasibly long term in CUMH. However, these sessions received positive feedback and showed a significant reduction in burnout. Changes to the timing of these sessions may improve their long-term feasibility.

In a modified format, these sessions may have the potential to improve staff wellbeing in other units. It is hoped that this study will guide future research in this area.

Funding information Funding was received from the Irish Centre for Fetal and Neonatal Translational Research and from the Science Foundation Ireland in part (12/RC/2272).

Compliance with ethical standards

This project was formally approved by the Clinical Research Ethics Committee of the Cork Teaching Hospitals as part of the protocol "Perinatal Death and the Labour Ward. The Personal and Professional Impact on Healthcare Professionals and Maternity Services" (ECM 4 (III) 07/07/2015, ECM 3 (III) 08/12/15, ECM 6 qq 6/12/16). Participation in this study was voluntary; participants could withdraw from the study at any time. All data gathered was anonymous.

Appendix 1

CUMH Staff Well-being at Work

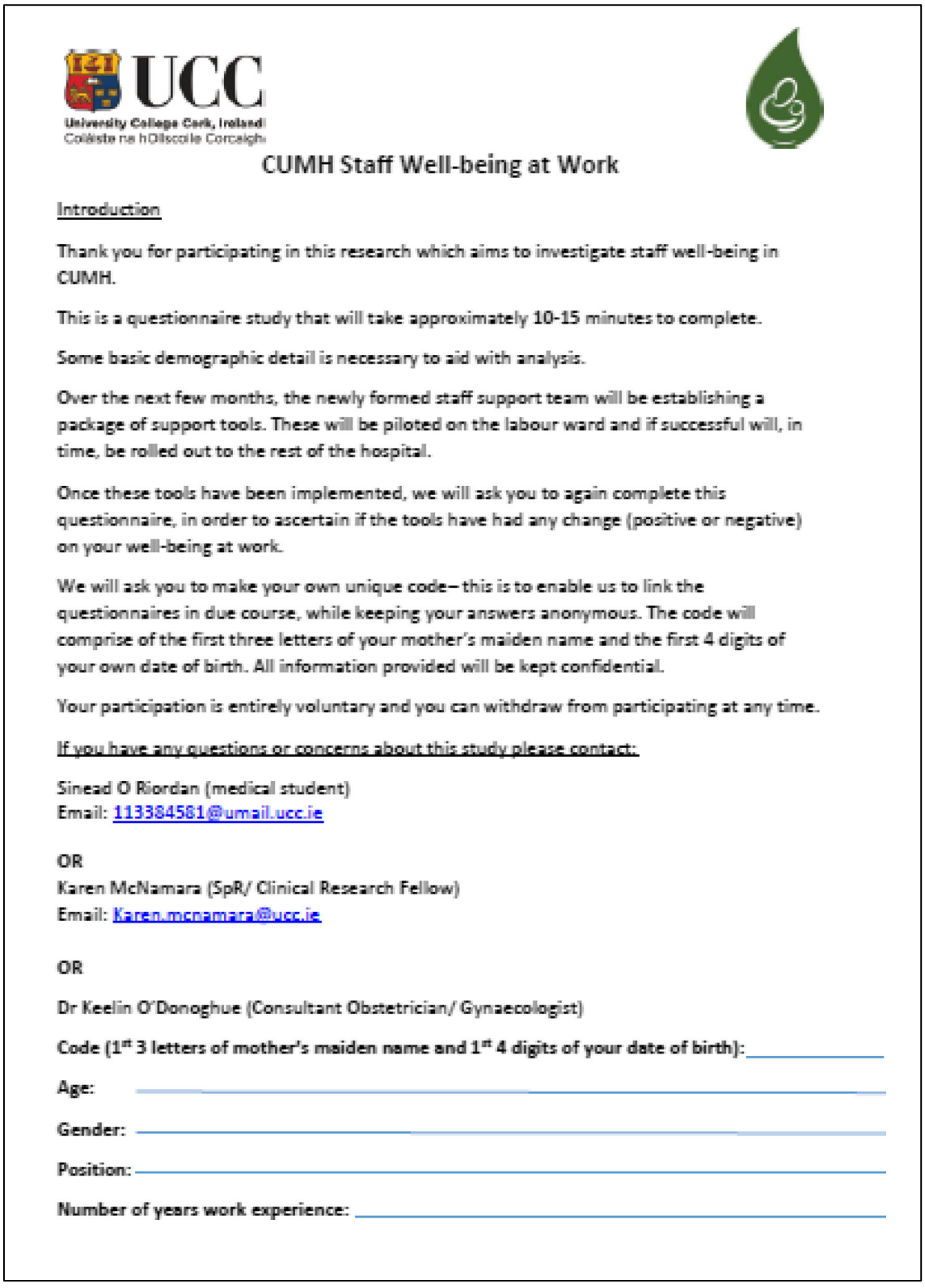
1. Did you attend the R&R&R sessions? If not, why not?

2. Did you find the R&R&R meetings beneficial? Please give reasons for your answer.

3. Did you find the ideas expressed in the "5 Moments of Head Hygiene" poster and card beneficial? Please give reasons for your answers.

Fig. 2 Post-intervention feedback questionnaire

Appendix 2



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University College Cork, Ireland
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CUMH Staff Well-being at Work

Introduction

Thank you for participating in this research which aims to investigate staff well-being in CUMH.

This is a questionnaire study that will take approximately 10-15 minutes to complete.

Some basic demographic detail is necessary to aid with analysis.

Over the next few months, the newly formed staff support team will be establishing a package of support tools. These will be piloted on the labour ward and if successful will, in time, be rolled out to the rest of the hospital.

Once these tools have been implemented, we will ask you to again complete this questionnaire, in order to ascertain if the tools have had any change (positive or negative) on your well-being at work.

We will ask you to make your own unique code– this is to enable us to link the questionnaires in due course, while keeping your answers anonymous. The code will comprise of the first three letters of your mother's maiden name and the first 4 digits of your own date of birth. All information provided will be kept confidential.

Your participation is entirely voluntary and you can withdraw from participating at any time.

If you have any questions or concerns about this study please contact:

Sinead O Riordan (medical student)
Email: 113384581@umail.ucc.ie

OR
Karen McNamara (SpR/ Clinical Research Fellow)
Email: Karen.mcnamara@ucc.ie

OR

Dr Keelin O'Donoghue (Consultant Obstetrician/ Gynaecologist)

Code (1st 3 letters of mother's maiden name and 1st 4 digits of your date of birth): _____

Age: _____

Gender: _____

Position: _____

Number of years work experience: _____

Fig. 3 Participant information cover sheet

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