Received: 12 July 2023 | Revised: 23 October 2023 | Accepted: 24 October 2023

DOI: 10.1002/capr.12719

ORIGINAL ARTICLE

WILEY

Exploring the effects of written emotional disclosures (WED) on healthcare workers' (HCWs) mental health symptoms in the UK: A feasibility study

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Abstract

Background: Written emotional disclosure (WED) is a creative writing intervention that allows a person to confront emotions and traumatic experiences, which has been shown to produce well-being benefits and could be used to support healthcare workers (HCWs). Written emotional disclosure is usually delivered as a written intervention, and despite some research exploring the effects of other forms of typing interventions using emotional expression, expressive writing and structured writing, the efficacy of WED as a typing-based intervention is yet to be examined.

Aim: The aim of this mixed method feasibility study was to address whether a writing or typing WED intervention would reduce HCW's mental health symptoms. Additionally, to address whether the WED intervention groups were acceptable to HCW as a supportive intervention.

Findings: Fifty-five participants (seven males) aged between 22 and 60 took part in this study. The results demonstrate that both the writing and typing WED intervention groups significantly reduce mental health symptoms. Most participants (96.4%) deemed both the WED intervention groups acceptable.

Conclusion: Therefore, WED interventions could potentially be integrated into existing counselling and therapeutic interventions to support HCW and could be implemented within the existing debrief and clinical supervision frameworks.

KEYWORDS
anxiety, depression, healthcare workers, stress, writing intervention, written emotional disclosure

1 | INTRODUCTION

Healthcare workers (HCWs) are defined as anyone who delivers care and services to those in need (Joseph & Joseph, 2016). They offer services in various fields, including physical health, mental health, palliative respite, and rehabilitation care and recovery (NHS, 2022). Due to the range of care services they offer, some HCWs may experience several stressors, such as the death of patients, large caseloads, physical and verbal abuse, and long working hours with few rest breaks (Joseph & Joseph, 2016; Pink et al., 2021). These stressors can result in distress, vicarious trauma, and physical and emotional trauma from caring for others who are unwell (Pink et al., 2021) and can lead to depression, anxiety, acute stress and post-traumatic stress (Drapeau et al., 2012;

Sirois & Owens, 2021). In 2020, 44% of NHS staff reported that they felt unwell due to work-related stressors and approximately over 511,00 days per year are lost on sick days due to work-related stressors (NHS Employers, 2022; NHS, 2022). In turn, this can lead to a decrease in the quality of care they deliver to patients, increase fracturing across staff teams and dissatisfaction with their job role (Sirois & Owens, 2021).

Current support strategies available for HCWs include talking therapies, texting support, well-being hubs, well-being apps and counselling (NHS England, 2022). However, the continuous increase in stress and psychological ill health, especially following the pandemic, emphasises the need for additional interventions that can help staff effectively manage distressing experiences in their workplace (NHS England, 2022).

One support strategy for HCWs could be a creative writing intervention. A wealth of literature has demonstrated positive therapeutic impacts associated with creative writing interventions (Burton & King, 2004; Casperson & Peckham, 2018; Snead et al., 2015). These interventions are typically completed anonymously, are cost-effective utilising a pen and paper only, and can be used at any time of the day (Williamson & Wright, 2018). Examples of creative writing include poetry, expressive writing and free writing (Williamson & Wright, 2018).

One specific creative writing intervention is written emotional disclosures (WED). This intervention was created by health researcher James Pennebaker in 1986. Pennebaker and Beall (1986) and Pennebaker (2017) found that suppressing emotions or traumatic experiences could lead to negative physical and mental health symptoms. However, it was found that disclosing and confronting these experiences through writing on paper reduced psychological stressors and improved participants' overall well-being (Pennebaker & Beall, 1986). Consequently, Pennebaker and Beall (1986) created the theory of inhibition and disclosure along with the WED intervention protocol that involves participants disclosing their emotions and traumatic experiences continuously for a controlled time period (usually 15–20 min per day) for 3–4 days to obtain well-being benefits.

Previous research into WED interventions has shown benefits for individuals struggling with physical health difficulties and psychological distress (Blasio et al., 2015; Frattaroli, 2006; Niles et al., 2013).

The limited studies that have been conducted with HCWs so far have shown that the intervention seems to reduce depression and post-traumatic stress disorder (PTSD) symptoms (Procaccia et al., 2021), reduce anger (Cosentino et al., 2019) and increase help-seeking behaviours and sleep hygiene (Cosentino et al., 2019), thus demonstrating that WED could lead to improvements to HCWs' psychological well-being. Written emotional disclosure seems to allow HCWs to confront emotions and traumatic events that they experience through their job roles and, therefore, may be a particularly beneficial intervention for this population.

As the research in this area is limited, this warrants further exploration. Writing is historically proposed to bring therapeutic benefits due to the physical act of using pen on paper, and it often takes longer, which may potentially be better for confronting the traumatic memories (Baikie & Wilhelm, 2018; Bond & Pennebaker, 2012). This is why the traditional WED intervention was handwriting-based (Pennebaker & Beall, 1986). However, a potential alternative method could be a typing-based WED intervention. Typing could be a more accessible and convenient method, which is a modern equivalent to the writing methodology. To explore an alternative methodology would give researchers an insight into what WED intervention methods are beneficial for HCWs' mental health symptoms. Therefore, this feasibility study aimed to compare writing and typing WED interventions to establish whether these would produce the same well-being benefits

Implications for practice and policy

- Written emotional disclosure (WED) interventions could be implemented within the existing debrief and clinical supervision frameworks. After a significant event within healthcare settings, debriefs should be offered to help reduce the possibility of psychological harm.
- Written emotional disclosure interventions could be incorporated into current apps, such as Headspace, StayAlive and Unmind, recommended by NHS England (2022). The intervention task could be offered as a recommendation within the apps to provide an alternative tool or support strategy. Healthcare workers (HCWs) could utilise this in their own home to gain the perceived therapeutic benefits and allow the expression of emotion.
- Written emotional disclosure interventions could be offered within the mental health and well-being hubs (NHS England, 2022). These hubs are available to support health and social care staff and help refer them for appropriate support, including talking therapies and counselling. The hubs provide a contained environment, which may be beneficial to express emotions when completing the intervention.
- It is recommended that WED interventions are integrated with regular therapeutic interventions as a creative method. Utilising creative methods has been shown to allow individuals to express their emotions and experiences whilst having significant benefits on their well-being, which is important for overall healthy functioning. Therefore, this study expands upon the psychotherapy and counselling evidence base by demonstrating that creative writing interventions can have a positive impact on reducing clients' mental health symptoms. Written emotional disclosure interventions could provide practitioners with additional tools that are effective to support individuals' mental health and well-being whilst helping them to process difficult and traumatic experiences.

for HCWs within the UK. In addition to this, qualitative data were obtained to address participants' perceptions of the acceptability of utilising WED interventions. Qualitative data were important to gain participants' views of completing the WED interventions to see whether they would use this tool to help their mental health and to manage ongoing daily stressors.

To the best of our knowledge, this was the first study to examine the efficacy of implementing a WED intervention to a HCW population to help reduce depression, anxiety and stress within the UK.

1.1 | Aims and questions

The aim of this study was to explore whether a writing or typing WED intervention would be feasible for HCWs to reduce depression, anxiety and stress. The second aim of this study was to extend the previous existing literature by utilising a qualitative component to examine whether the WED interventions were acceptable to HCWs.

The research question to address was as follows: Are the writing and typing WED interventions acceptable to HCWs and do they reduce depression, anxiety and stress?

Based on the previous research indicating the benefits of WED, the first experimental hypothesis was that stress, anxiety and depression symptoms would reduce from pre- to postintervention. The second experimental hypothesis was that both the writing and typing WED intervention groups will reduce depression, anxiety and stress symptoms equally. The third experimental hypothesis was that HCWs will find the writing and typing WED interventions acceptable.

2 | METHODOLOGY

2.1 | Design

A mixed methodology was used. These data were collected through a concurrent triangulation approach to simultaneously collect and analyse quantitative symptomology data and quantitative questionnaire data. The quantitative element implemented an experimental comparative effectiveness 2×2 study design.

The two independent variables were as follows: the independent measure of the WED intervention (writing or typing group) and the repeated measure mental health symptom questionnaire (pre- and postintervention). The dependent variables were the participants' responses on the mental health symptom questionnaires of the Patient Health Questionnaire-9 (PHQ-9), Generalised Anxiety Disorder-7 (GAD-7) and stress thermometer.

2.2 | Power analysis

A power analysis using G*Power was used to detect sample and effect size. For a medium effect size ($\eta=0.06$), it was indicated that 34 participants, 17 in each intervention group, were required.

2.3 | Participants

There was a total of 55 HCWs (48 female; seven male; mean age 39 years) within this study, with 33 taking part in the writing group and 22 in the typing group. Full sampling details are illustrated in Figure 1. A total of six participants did not complete all daily debriefs; however, their data were not removed from the final data set due to completing both the pre- and postintervention questionnaires. All were recruited through purposive sampling. The inclusion criteria were that participants had to be HCWs who worked in any healthcare setting from any organisation within the UK that had direct patient contact. They had to have worked in health care for over 1 year, be over the age of 18, able to read, write and speak English, have a desire to take part in this study, have an email account and internet access, have an ability to write about personal emotions, feelings and have a good insight into thoughts, and have access to a pen and paper.

Participation was voluntary, but participants were advised not to take part if they had prior mental health or trauma concerns due to the need to write or type about sensitive topics. This was up to the participants' discretion. This recommendation was outlined in the information sheet, which detailed the study requirements and available support options. Participants were also informed about their right to withdraw at any time. No financial payments were made to participants.

2.4 | Materials

2.4.1 | Demographics

An ad hoc demographic information questionnaire eliciting details about gender, age, job role and length of time as an HCW was given to participants, to provide descriptive statistical data of the participants.

2.4.2 | Depression

The Patient Health Questionnaire-9 (Kroenke et al., 2001) scale was used for screening depression symptoms. This is typically scored on a scale of 0 (not at all), 1 (several days), 2 (more than half the days) or 3 (nearly every day) for each category response. A score of 5–9 equates to mild depression, a score of 10–14 equates to moderate depression, a score of 15–19 equates to moderately severe depression, and a score of 20 or above equates to severe depression ($\alpha=.839$). However, for this study, we are looking at participants' overall symptom score only as continuous data.

2.4.3 | Anxiety

The Generalised Anxiety Disorder-7 (Spitzer et al., 2006) scale was used for screening anxiety symptoms. This is typically scored on a

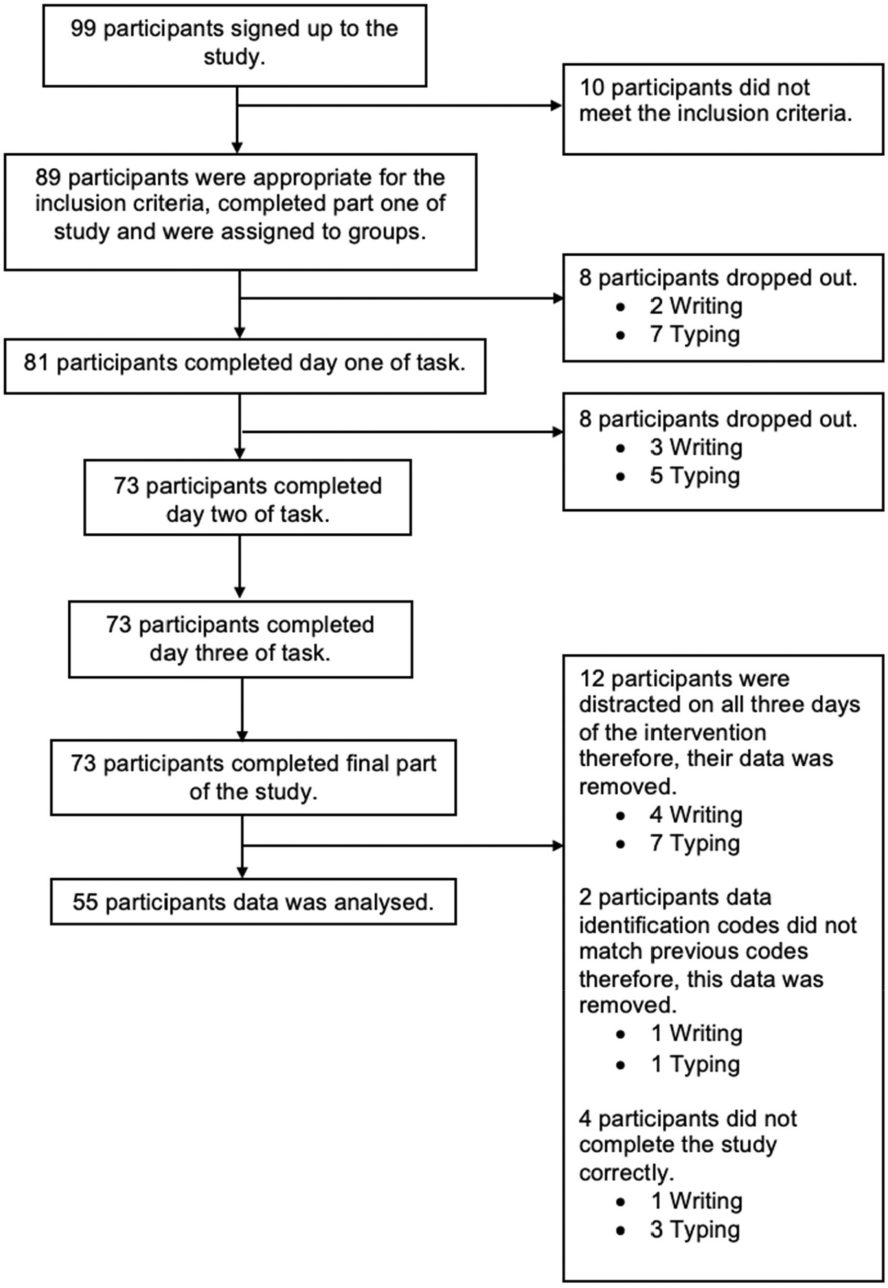

FIGURE 1 Participants' attrition rate.

scale of 0 (not at all), 1 (several days), 2 (more than half the days) or 3 (nearly every day) for each category response. A score of 0–4 equates to minimal anxiety, a score of 5–9 equates to mild anxiety, a score of 10–14 equates to moderate anxiety, and a score of 15–21 equates to severe anxiety ($\alpha = .895$). However, for this study, we are looking at participants' overall symptom score only as continuous data.

2.4.4 | Stress

A stress thermometer scale was used for screening stress symptoms. Participants were asked to indicate how they felt on a scale of 0 (least stressed) to 10 (most stressed). The GAD-7 and PHQ-9 and the stress scale were administered as pre-intervention and postintervention outcome measures.

2.4.5 | Daily debrief

An ad hoc daily debrief questionnaire was given to participants. This was to assess for any potential distress the task may have caused for participants to allow them to reflect and have a small self-contained debrief after each day. This was also used to assess any distractions that may potentially impact the results.

2.4.6 | Acceptability

A postintervention acceptability questionnaire was used for qualitative data and for quantitative data. These acceptability questionnaires addressed how participants found the intervention and if this was acceptable.

2.5 | Ethics approval

This study was given ethics approval by the lead author's university.

2.6 | Procedure

Recruitment was completed online through an advertisement on the student researcher's social media platforms of Twitter, Facebook and Instagram, throughout February 2023. Participants then contacted the researcher if they were interested in taking part. Once participants contacted the researchers, a link to Jisc Survey was emailed to participants, which contained the study information sheet and a consent form. Participants then signed the consent form and completed the pre-intervention questionnaires. Participants were asked to generate their own replicable and memorable code, for example, A3, to use for identifying their data whilst remaining anonymous and preserving confidentiality.

The first researcher then randomly allocated participants through block randomisation to the two intervention groups—writing or typing. They were emailed their group allocation along with their task instructions (see protocol instructions) to complete over the next 3 days. Participants were asked to limit their distractions throughout the task, for example, not to use their mobile phones, answer the door or speak to others. After each day of the intervention, they were required to complete an ad hoc daily debrief questionnaire. Participants were asked to email the researcher to confirm that they had finished each day of the study to help ensure data reliability. Participants then completed the postintervention questionnaire on Day 3. Each participant was given a debrief sheet which included information about helplines and mental health support services, such as talking services, listening services, IAPT services, emergency services and local crisis telephone numbers. This debrief was offered automatically to all participants who completed or withdrew from the study.

Furthermore, participants were offered an optional debrief via Microsoft Teams with one of the researchers. The optional debrief involved a full description of the study, including an explanation of the study aims, and the researcher would address any questions related to the study. The optional debrief would not be a therapeutic engagement session to discuss emotions or thoughts around the study; if participants felt they need this, they would be offered further information about available support services. No participant requested an opt-in video call debrief.

2.7 | Protocol instructions

The writing group instructions were the same as those used in Procaccia et al.'s (2021) study. This is because they seemed to be easy to follow and required a minimal time commitment, which was most appropriate for HCWs. The same instructions were then adapted for the typing group to give typing-based instructions.

2.7.1 | Writing intervention group instructions

'Over the next three days, we would like you to write about your most profound thoughts and feelings about the stressful experiences you have had in your job. It is very important that you describe the most secret thoughts and feelings that you have not said and that you would not tell anyone. Get a piece of paper and a pen and write for 20 consecutive minutes, without removing your pen from paper. Do not worry about the grammar, spelling, or structure of the writing. We would like, in your text, for you to examine your moods and deeper thoughts about this experience. It is essential that you let yourself go and encounter your emotions and deeper thoughts. You can write about different experiences during each session, or about the same experience for all three days. If you wish, you can also write about how you felt, of what you have thought and felt about your present, past or future life. The only rule is that once you start writing, you continue until the end of 20 minutes for 3 consecutive days'.

2.7.2 | Typing intervention group instructions

'Over the next three days, we would like you to type about your most profound thoughts and feelings about the stressful experiences you have had in your job. It is very important that you describe the most secret thoughts and feelings that you have not said and that you would not tell anyone. Open a word document (or your computer's equivalent) and type for 20 consecutive minutes, without removing your hand from keyboard. Do not worry about the grammar, spelling, or structure of the typing. We would like, in your text, for you to examine your moods and deeper thoughts about this experience. It is essential that you let yourself go and encounter your emotions and deeper thoughts. You can type about different experiences during each session, or about the same experience for all three days. If you wish, you can also type about how you felt, of what you have thought and felt about your present, past or future life. The only rule is that once you start typing, continue until the end of 20 minutes for 3 consecutive days'.

2.8 | Analysis

2.8.1 | Quantitative analysis

The distribution of data was assessed prior to running any analysis through normal distribution histograms and Box's Test of Equality of Covariance Matrices.

Whilst the distribution histograms were not perfectly distributed, there was no skewness, suggesting normal distribution.

Box's Test of Equality of Covariance Matrices was assessed for homogeneity of data. For depression, anxiety and stress, scores were not significant, $p \geq .05$. Therefore, homogeneity of data was met, and parametric analysis was undertaken. Additionally, Levene's

Test of Equality of Error Variances was not significant for each outcome variables.

Three 2×2 analysis of variance (ANOVA; repeated measure with a between-subject interaction) models, one for each dependent variable: (a) depression, (b) anxiety and (c) stress symptoms, were utilised. This was to examine the mean differences between the pre- and postmeasure effects of the writing and typing WED intervention groups and their interactions.

Chi-squared tests were then utilised to examine whether there were differences in the proportion of responses of the acceptability questions between the two intervention groups.

2.8.2 | Qualitative analysis

The qualitative method analysis is an essentialist/realist method to thematic analysis as this was flexible and focussed on reporting experiences, meanings and the reality of participants from the research data (Braun & Clarke, 2006). This was suitable as we were trying to capture the explicit and real opinions of HCWs undertaking WED interventions and their opinions on using these interventions. Therefore, undertaking thematic analysis in a hypothesis-driven and deductive way allowed the researchers to make sense of the written data to answer the research questions.

The thematic analysis followed Braun and Clarke's (2006) six-step guide to establish explicit themes from the data set. For the first phase, the researcher familiarised themselves with the data set by continuously reading the data and noting down initial ideas. The second phase was undertaken by generating initial codes and searching for initial themes from these codes. The third phase was undertaken with the researcher's supervisor, where the initial themes were reviewed and discussed to ensure both researchers agreed on these themes. The fourth and fifth phases were undertaken to review the themes and to check whether they were representative of the entire data set, along with defining and naming the theme agreed upon. This was undertaken with the researcher's supervisor for member checking and to ensure trustworthiness and credibility of findings. Finally, the report was produced for the sixth and final phase.

3 | RESULTS

3.1 | Quantitative analysis

All data from Jisc Surveys were downloaded into spreadsheets, and SPSS Version 27 was utilised to analyse the data.

3.1.1 | Descriptive statistics

Table 1 shows the mean (and standard deviation) for depression, anxiety and stress pre-intervention scores and postintervention scores for both the writing and typing intervention task groups.

TABLE 1 Means and standard deviations.

	Writing group		Typing group	
	Pre-task (*M* [*SD*])	Post-task (*M* [*SD*])	Pre-task (*M* [*SD*])	Post-task (*M* [*SD*])
Depression	8.27 (5.99)	6.39 (4.58)	8.73 (5.27)	6.23 (5.99)
Anxiety	8.39 (4.64)	6.39 (3.46)	8.82 (4.89)	6.41 (4.79)
Stress	4.06 (2.44)	2.45 (1.93)	4.32 (2.78)	2.64 (1.89)

3.1.2 | Inferential statistics

Depression

The ANOVA indicated a significant main effect of the intervention on pre- to postdepression scores, $F(1,53)=15.762$, $p<.001$; however, there was no significant effect of intervention group type on depression scores, $F(1,53)=.011$, $p>.918$, or a significant interaction effect, $F(1,53)=.317$, $p>.576$.

Anxiety

The ANOVA indicated a significant main effect of the intervention on pre- to postanxiety scores, $F(1,53)=20.020$, $p<.001$; however, there was no significant effect of the intervention type on anxiety scores, $F(1,53)=.039$, $p>.844$, or a significant interaction effect, $F(1,53)=.172$, $p>.680$.

Stress

The ANOVA indicated a significant main effect of the intervention on the pre- and poststress scores, $F(1,53)=32.230$, $p<.001$; however, there was no significant effect of the intervention type on stress scores, $F(1,53)=.157$, $p>.694$, or a significant interaction effect, $F(1,53)=.017$, $p>.896$.

Acceptability questions

A chi-square analysis demonstrated that for Q1 (how did you find the intervention you undertook? $\chi[3]=4.814$, $p=.186$), Q2 (Would you recommend this intervention to others? $\chi[2]=3.406$, $p=.182$) and Q3 (would you use this in future? $\chi[2]=2.009$, $p=.366$) there was no significant association between the writing and typing WED intervention groups.

Additionally, this analysis demonstrated that for Q2 (how did you find the intervention you undertook? $\chi^2[2]=56.095$, $p<.001$) there was a significant difference between scores and most people answered 'yes' ($n=49$) compared with 'maybe' ($n=8$) or 'no' ($n=6$). For Q3 ($\chi^2[2]=19.260$, $p<.001$), there was also a significant difference between scores and most people answered 'yes' ($n=42$) compared with 'maybe' ($n=16$) or 'no' ($n=15$).

3.2 | Qualitative analysis

Three major themes were identified from the data. These are outlined with supporting, verbatim quotes.

3.2.1 | Theme 1: Benefits of the intervention

Subtheme 1.1: Space for reflection and switching off

A common subtheme across both interventions is related to reflection. Participants in both groups highlighted how the intervention helped them reflect, 'I found it really helpful and it helped me to reflex(ct) on myself and how I feel when under pressure' [typing intervention]. Other participants spoke about the intervention giving them an opportunity to reflect on work-related issues in relation to managing situations, 'it made me reflect on what was handled well and what wasn't' [writing intervention].

In addition to this, participants recommended the intervention as a wind-down activity for those who struggle with taking work worries home as they are unable to switch off, 'as a reflective & wind down activity if your (you're) bothered by intrusive thoughts or taking work worries home' [writing intervention]; 'I think it would be beneficial for those that struggle to switch from work to personal time' [typing intervention].

Subtheme 1.2: Perceived therapeutic impact

Another common subtheme across both intervention groups was the perceived therapeutic effect of the intervention, 'I found it therapeutic' [writing intervention]. Some participants described how the interventions offered them a sense of relief, 'when I got into the flow of wiring (writing) it down I felt a relief of some kind' [writing intervention], whereas others highlighted how the intervention helped them relax and feel less stressed, 'It made me more relaxed and less stressed like a weight had been lifted off my shoulders' [typing intervention]. Participants across both interventions felt that the intervention allowed them to have an outlet to express themselves, 'It's a good way to vent and express your inside thoughts and feelings' [typing intervention].

Subtheme 1.3: Expressing emotions

Participants in both intervention groups highlighted how they found expressing their feelings beneficial, 'I think the intervention was enjoyable as it made me feel that I gave 20 minutes to gather my thoughts and express my feelings' [writing intervention]. Participants from both intervention groups highlighted how they felt this could be beneficial for others to use as a strategy to express their emotions, which appeared to be important, 'It's good to be able to let how you feel out' [typing intervention].

Participants also addressed how the interventions allowed them to share their experiences in a safe way, which helped them with their emotions, 'it really helped me share the "weight" of this experience in a safe space and helped me emotionally' [writing intervention].

3.2.2 | Theme 2: Challenges of the intervention

Subtheme 2.1: The emotional impact

A common subtheme across both the intervention groups was related to the emotional impact participants felt when undertaking the intervention task.

Participants explained that the task was difficult at times when reliving the painful memories they had experienced, 'initially I found it difficult as I was reliving painful memories' [writing intervention]. Furthermore, participants highlighted how the task became harder when exploring difficult situations, 'Some days were harder purely because of the individual situations I was referring back to' [writing intervention]. Other participants discussed how the task was difficult for them when thinking about their life currently, 'sometimes difficult thinking about things in my life' [typing intervention].

Subtheme 2.2: Practical difficulties with time

A subtheme from both intervention task groups discussed how the intervention had practical time difficulties for them. Some participants appeared to feel that it was difficult finding the time to complete the daily task, 'I found it difficult to find the time to complete' [writing intervention]. They also found it inconvenient to find the time to do it, 'Due to working very long shifts the writing was slightly inconvenient finding time to do it' [writing intervention]. Others appeared to have some difficulty finding the time in their day to prioritise this particular activity over others they needed to complete, 'the main stressor for me was finding the time and prioritising it over other things' [typing intervention].

Subtheme 2.3: Initial difficulties at the start of the intervention days

Participants in both groups found the task initially difficult on the first day, 'I found the first day most difficult' [typing intervention]. However, it appeared to get easier as participants persevered and got accustomed to the task, 'difficult at first but became easier once I got used to the task' [writing intervention].

3.2.3 | Theme 3: Recommended changes

Participants across both intervention groups identified changes they would like to make to the intervention.

Subtheme 3.1: Time change

Participants discussed how they would like to change the length of time of the intervention task. Some participants spoke about how they would not time themselves and would instead just write until they felt they were finished, 'I would probably not set a time limit on the intervention; just finish when I had managed to write down all I felt on the situation' [writing intervention]. Other participants recommended specific time limit changes, 'I'm not sure I would write for 20 minutes. Maybe more 10' [typing intervention].

Subtheme 3.2: Frequency change

Participants from both intervention groups highlighted how they would change the frequency of the intervention task.

Some participants stated that they would only complete the task when they felt they needed to get their thoughts out and felt overwhelmed, 'I probably wouldn't do it daily but more so if I felt

very overwhelmed and needed to get my thoughts out' [writing intervention].

Other participants reported that they would do it weekly rather than daily, 'it would be something I would aim to do weekly either mid week or end of my working week' [typing intervention].

3.3 | Combined results

Based upon the quantitative results, the following hypotheses can be accepted: (a) The WED intervention will be associated with a reduction in stress, anxiety and depression symptoms over the course of the intervention; (b) both the writing and typing WED intervention groups will reduce depression, anxiety and stress symptoms equally; and (c) HCWs will find the writing and typing WED interventions acceptable.

4 | DISCUSSION

The aim of this feasibility study was to examine the effects of a WED intervention on depression, anxiety and stress in HCWs and explore the acceptability of WED for HCWs by qualitatively analysing participants' views on the utility and feasibility of the intervention.

Results showed that both the writing and typing WED interventions demonstrated a significant reduction in symptoms of depression, anxiety and stress. This suggests that participants found the ability to confront emotional and traumatic events beneficial, which then impacted their psychological well-being and symptom scores. Therefore, this demonstrates WED as a useful support intervention for HCWs. This supports the previous literature on this topic, which has indicated WED as a beneficial intervention for HCWs' well-being. It also supports previous findings that writing activities yield therapeutic benefits in processing traumatic events and promoting psychological health (Nicholls, 2009). Expressive writing, specifically, has shown promise in alleviating symptoms of depression, anxiety and PTSD (Reinhold et al., 2018), potentially serving as a tool to enhance mental health (Ruini & Mortara, 2022). This is highly significant since HCWs can experience high rates of distress and trauma due to their roles, which can result in depression, anxiety, acute stress and post-traumatic stress (Drapeau et al., 2012; Sirois & Owens, 2021).

Additionally, there was no significant difference between the writing and typing WED intervention groups at reducing depression, anxiety and stress. This was examined to extend the previous literature and to explore whether an alternative methodology for the WED intervention could be utilised. As the results demonstrate both tasks significantly reduced HCWs' mental health symptoms, the typing computer-based WED intervention can be utilised as an alternative to the handwriting method. This additional method allows for flexibility for HCWs undertaking this intervention if they have a preference.

In terms of acceptability of the interventions, the majority of participants (96.4%) rated their intervention group as somewhat useful. Most participants (76.4%) would use these interventions in future and would recommend the interventions to others (89.1%). Additional analysis on this demonstrated that there was no difference between the writing and typing WED intervention groups in terms of acceptability. Therefore, it can be concluded that most participants found the WED interventions acceptable and, thus, these could be implemented as a support strategy to benefit HCWs' mental health symptoms.

The qualitative analysis showed that participants in both groups found that the intervention had benefits, which included aiding reflection, providing a space to express emotions, and offering therapeutic impacts to participants. Challenges of the interventions were also highlighted, with participants in both intervention groups remarking that the interventions had an emotional impact on them. Participants also spoke about practical time difficulties, as they were required to spend 20 min per day on the intervention over the course of 3 days. Participants who commented on the difficulty of starting the process did, however, state that it became easier once they started. Recommended changes to the intervention protocol were highlighted, including changing the length of time, frequency and method to undertake the task. This qualitative data highlights HCWs' opinions of WED interventions. It is important to understand how HCWs found the intervention before suggesting this to be implemented as a strategy to help mental health symptoms.

It is important to note that 12 participants in the typing group and five participants in the writing group left the study. Whilst we cannot conclude that the higher rate of attrition in the typing group was due to the nature of the intervention, it is important to highlight when drawing conclusions from these data.

The results of this study support the previous research demonstrating the benefits of WED interventions in improving HCWs' well-being whilst extending the literature in this field (Cosentino et al., 2019, 2021; Procaccia et al., 2021; Tonarelli et al., 2017, 2018).

This was the first study in the field of expressive writing in the context of HCWs' mental health in the UK that utilised a mixed methodology approach and, thus, allowed researchers to gain better insights into participants' perceptions of the WED interventions. Additionally, it was the first study that paired the writing intervention group to a computer-based typing intervention to address whether this would be as effective for HCWs.

4.1 | Implications for practice and policy

Recent epidemiological data highlighted that 44% of NHS staff in 2020 reported feeling unwell due to work-related stressors (NHS Employers, 2022), with over 511,000 days lost due to sickness from anxiety, depression, psychiatric illnesses and stress (NHS Employers, 2022; NHS, 2022). This demonstrates the need for support strategies for HCWs. The current strategies provided by NHS England for HCW range from texting support, phone lines, well-being apps and support hubs, and counselling (NHS England, 2022). The results of this research demonstrate that WED interventions could be another

support strategy that can be integrated into the existing therapeutic modalities.

The WED intervention could be implemented within the existing debrief and clinical supervision frameworks. After a significant event within healthcare settings, debriefs should be offered to help reduce the possibility of psychological harm (Royal College of Nursing, 2023). Additionally, clinical supervision is required to support healthcare staff and ensure that they are receiving the appropriate support required (CQC, 2023). Within this framework, the WED intervention could be offered as a further support strategy. This could be carried out as an autonomous reflective task to help express emotions and gain the therapeutic benefits that participants within this study felt. As this could be autonomous, it would allow for a private and non-judgemental space, which participants stated they valued.

Another way the WED intervention could be applied is within the well-being apps that are already implemented by NHS England (2022). As this research utilised a typing computer-based WED intervention as an alternative to the handwriting-based task, and this format appeared to significantly reduce mental health symptoms, this intervention could be a digitalised tool. Current apps recommended by NHS England (2022) include Headspace, StayAlive and Unmind, which all focus on strategies to support HCWs to improve their mental health and well-being. The intervention task could be offered as a recommendation within the apps to provide an alternative tool or support strategy. Healthcare workers could utilise this in their own home to gain the perceived therapeutic benefits and allow the expression of emotion, which participants highlighted in this study.

In addition to integration into well-being apps, the WED intervention could be offered within the mental health and well-being hubs (NHS England, 2022). These hubs are available to support health and social care staff and help refer them for appropriate support, including talking therapies and counselling. The hubs provide a contained environment, which may be beneficial to express emotions when completing the intervention. This could be offered alongside referrals for talking therapies and counselling, as the participants in this study explained that a challenging aspect of the interventions was the emotional impact. In a recent literature review, Ruini and Mortara (2022) found that whilst writing techniques are often implemented into talking therapies with positive outcomes, expressive writing has proven effective as a stand-alone method, providing a useful tool to promote mental health with only minimal contact with a therapist. However, it is important to note that the client should be involved in deciding whether to incorporate writing interventions alongside talking therapies or use them as a stand-alone treatment. Based on the current findings, it should be considered that implementing WED alongside regular therapeutic interventions could mitigate some of the emotional impact that participants described. Nevertheless, in line with Ruini and Mortara (2022), this would depend on the needs of individual clients.

One distinctive aspect of counselling and psychotherapy is that, even though it is firmly rooted in evidence-based practices and well-established therapeutic techniques, there is a significant creative dimension within the discipline, such as art, music, dance, drama and writing (Carson & Becker, 2003). Utilising creative methods has been shown to allow individuals to express their emotions and experiences whilst having significant benefits for their well-being, which is important for overall healthy functioning (Fancourt et al., 2019; Tang et al., 2021). Therefore, this study expands upon the psychotherapy and counselling evidence base by demonstrating that creative writing interventions can have a positive impact on reducing clients' mental health symptoms. Written emotional disclosure interventions could provide practitioners with additional tools that are effective to support individuals' mental health and well-being whilst helping them to process difficult and traumatic experiences.

Participants identified some recommendations and challenges of utilising these interventions that need to be taken into consideration when implementing the WED intervention for staff. Participants explained that due to working long days, they had difficulties with the time practicalities of being able to undertake the intervention. Thus, it would be recommended to healthcare organisations that if they were to implement this intervention for staff, they would need to take this into account. Therefore, it could be implemented towards the end of the working shift as a reflection on and confrontation of traumatic and emotional memories from that day. This would help staff reflect and switch off, which participants from this study commented as a benefit of the intervention. In turn, this may benefit HCWs' mental health symptoms and overall well-being, which may then impact positively on their work performances and reduce sickness rates, which is a current drive within the NHS (NHS, 2023).

Participants also highlighted some recommended changes to the protocol to accommodate their personal preferences. As the results indicate both intervention groups were significantly effective at reducing mental health symptoms, this suggests that different methods work sufficiently, which allows for flexibility of the intervention. This intervention can also work for those with learning difficulties and those who are neurodiverse, which allows for all HCWs to be accommodated for.

4.2 | Future research

As the participants of this research study were mainly female nurses or healthcare assistants, future research could also include male HCWs. This would address whether male HCWs find this intervention as effective as female HCWs. Future research could further analyse specific job roles and types of hospitals to address whether the WED intervention groups reduce mental health symptoms within all healthcare professions equally.

Additionally, as this research was the first to introduce qualitative analysis to the pairing of HCW and WED interventions, interviews or focus groups could be undertaken to gain richer, more in-depth data and gain further insights into HCWs perceptions of the interventions. From participants' recommended changes to the intervention, further research to address changing the frequency of the intervention and length of time spent on the intervention task would be helpful to determine whether this would bring the same benefits as the standardised protocol proposed by Pennebaker and Beall (1986).

As this was a comparative effectiveness study, future research should consider conducting a full-scale randomised controlled trial (RCT) to measure the effectiveness of WED interventions in comparison with a control group. This would allow researchers to draw further conclusions as to whether the intervention could be used for HCWs within a clinical setting. An RCT provides a rigorous design to examine new interventions, which would benefit this topic of research (Hariton & Locascio, 2018). Finally, future research should explore how this intervention can be integrated into other therapeutic modalities and treatment plans.

4.3 | Limitations

Most participants were female healthcare assistants or nurses. Whilst this reflects the previous literature in this area, it reduces the current study's external validity and generalisability. Furthermore, the number of participants in each group was unequal due to the dropout rate, making it difficult to conclude whether both groups were equal at reducing mental health symptoms.

It should be noted that some participants may have known the main researcher since the study advert was posted on their social media channels, which increases participant bias. Furthermore, demand characteristics could have been a factor in this study. As participants work in health care and most professions need higher education degrees that require research as part of this, participants may have formed an interpretation of the study aims and predicted outcomes. This may have subconsciously altered participants' natural behaviour and their answers to the outcome measures.

An additional potential limitation of this research study is the lack of control due to participants undertaking this study in their own home. Whilst this was used to enhance ecological validity due to the setting mimicking a real-life experience and allowing participants to be potentially more transparent and honest around this difficult topic, distractions could have been an issue for participants. To help address this, the data from participants who reported they were distracted during the intervention tasks were removed as they may not have been able to fully engage with the task.

5 | CONCLUSION

To conclude, this research study is the first to our knowledge within the UK to pair and analyse the effectiveness of WED on HCWs. The results demonstrate that both the writing and typing WED intervention groups significantly reduce mental health symptoms of depression, anxiety and stress; however, there was not a significant difference between the groups. Thus, we can conclude that both tasks significantly reduce mental health symptoms, which gives HCWs the flexibility of their preferred method choice. Therefore, WED interventions, with further research, could be implemented and integrated into therapeutic practice to support HCWs and their mental health needs.

FUNDING INFORMATION

The authors declare that no sources of funding or other support were provided for this research paper. This research paper is part of a counselling psychology doctoral thesis.

CONFLICT OF INTEREST STATEMENT

The authors declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

DATA AVAILABILITY STATEMENT

The data generated during and/or analysed during this study are not publicly available nor are they available upon request because participants did not offer consent for these data to be shared.

ETHICS STATEMENT

Ethics approval for this study was provided by Teesside University Department of Psychology's Ethics Committee on 15 January 2023 (Review reference: 2023 Jan 7722 KILVINGTON).

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How to cite this article: Kilvington, A., Allen, S., & Kyriakopoulos, A. (2023). Exploring the effects of written emotional disclosures (WED) on healthcare workers' (HCWs) mental health symptoms in the UK: A feasibility study. *Counselling and Psychotherapy Research*, *00*, 1–11. https://doi.org/10.1002/capr.12719