

WORK IN PROGRESS REPORT

Resilience in Emergency Medical Responders: A Pilot Study of a Reflective Journal Intervention Using a Mixed Methods Approach

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Emergency Medical Responders (EMRs) work in potentially traumatic situations as part of their job. To enable them to do so requires a degree of resilience (i.e., the ability to bounce back from exposure to disruptive events). Taking a mixed-methods approach, the proposed study addresses the question of whether a reflective journal intervention will impact EMRs’ resilience to support positive outcomes. Data will be collected in four EU countries. The Connor-Davidson Resilience Scale will be administered for pre- and post-intervention assessment, while qualitative data will be collected for further analysis.

Keywords: resilience; trauma; emergency responders; intervention; reflective journal

Editor’s Note

This work in progress report (WiP) was developed by the 2014–2015 cohort of the Junior Researcher Programme (JRP), a service supported by the European Federation of Psychology Students’ Associations (EFPSA). During the course of the JRP calendar, the six research groups that are initiated via the European Summer School submit the WiPs of their research to the Journal of European Psychology Students (JEPS). The WiPs are short methodology papers that outline steps undertaken by research groups in developing and carrying out a research project in the context of low-resource, independent, student-driven, cross-cultural

research. The WiPs are submitted prior to project completion to enable the authors to improve their research according to the comments resulting from the peer-review process. WiPs also support the dissemination of methods used by student-driven, independent research projects, with the hope of informing others carrying out such work.

The 2014–2015 cohort was inducted into the JRP at the European Summer School 2014, held in Vorarlberg, Austria.

Background

For the purpose of the proposed study, Emergency Medical Responders (EMRs) are defined as trained healthcare professionals working across Emergency Medical Services (EMS) systems and responding first to medical emergencies and disasters (WHO, 2008). Several professions employed in these services can be considered as EMRs. Specifically, healthcare professionals such as paramedics and ambulance crews (i.e., emergency medical technicians, ambulance care assistants and ambulance drivers), as well as physicians and nurses in acute settings, are accepted as EMRs within the EU (WHO, 2008). Despite some country-specific differences regarding their job titles (Dick, 2003), EMRs’ job duties remain consistent: providing acute care for urgent medical conditions (e.g., bleeding, cardiac arrest, and spinal injuries), on-scene and pre-hospital life support, and safe transportation to organised medical facilities (WHO, 2008; Al-Shaqsi, 2010).

Due to their job duties, EMRs regularly attend potentially traumatic incidents such as accidents, physical injuries, violent assaults and acute illnesses. In addition, they regularly treat people who are in life-threatening conditions. Exposure to such experiences has been linked

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to adverse psychological conditions, predominantly to post-traumatic stress disorder (PTSD; Bennet, Williams, Page, Hood, & Woollard, 2004; Kleim & Westphal, 2011; Khashaba, El-Sherif, Ibrahim, & Neatmatallah, 2014). A study by Bennett and colleagues (2004) examining the prevalence of PTSD among 617 British ambulance workers (i.e., paramedics and emergency medical technicians [EMTs]) suggested that two thirds of them were experiencing intrusive and distress-causing memories as a result of job-related content, while an average of 22% (21.8% for paramedics and 22.2% for EMTs; 95% CI 19–26) were meeting the criteria for a PTSD diagnosis (Bennett et al., 2004). These rates are significantly higher than the general population prevalence of almost 4% (Kessler, Chiu, Demler, & Walters, 2005). Yet the majority of these professionals continue to provide care and fulfil their job roles without experiencing psychological dysfunction. The question of how they cope with such difficulties remains important for ongoing studies. One component could be resilience, which is the ability to maintain healthy levels of psychological and physical functioning during exposure to events with the potential to disrupt lives significantly, and the capacity for generative experiences and positive emotions in the face of such events (Bonanno, 2004).

Luthar, Cicchetti and Becker (2000) suggest that resilience is a dynamic process of adapting positively during significant adversity. This conceptualisation is consistent with Bonanno's (2004) perception of resilience as long-term trajectory in the aftermath of trauma. Bonanno argues that theorists working in the area of adult resilience may have underestimated the significance of personal resilience in surviving and thriving from trauma. A high level of resilience predicts lower levels of psychological problems (e.g., PTSD, suicidality and depression; Green, Calhoun, Dennis, & Beckham, 2010), risk for developing substance abuse (Fadardi, Azad, & Nemati, 2010) and psychological vulnerability (Abolghasemi, Rajabi, Sheikhi, Kiamarsi, & Sadrolmamaleki, 2013). In addition, it increases the possibility of posttraumatic growth (Vaillant, 2000). Masten (2001) purports that resilience is not necessarily a positive outcome for life, but rather a positive outcome despite adversity and trauma. Previous research suggests that resilience oriented interventions can facilitate the adjustment of healthcare workers to potentially traumatic events, especially if they feel supported through their social support networks (Rowntree, 2015), and that this may increase the potential for what Masten views as a positive outcome for the work the EMRs undertake.

This offers the potential for evidence of both resilience and posttraumatic growth through an increase in self-awareness, mental strength and a supportive network (Haidt, 2006). Additionally, Vaillant (2000) suggests that any individual faced with a potentially traumatic event has the opportunity to make changes to how they might respond in future. Aldwin and Levenson (2004) found related results from reviewing small and brief exposure to stressors that allowed for the development of a type of "stress inoculation" (p. 20) and concluded that exposure to minor stressors on a regular basis may form a higher degree of resilience and potentially growth.

In a similar study to the proposed research, Aiello et al. (2011) found a significant increase in the percentage of health workers who felt able to cope with an anticipated influenza pandemic after five months of resilience training. The employed intervention by Aiello et al. focused on effective coping by making implicit coping strategies explicit. The proposed study adopts the rationale that externalising implicit coping strategies can be resilience enhancing through the use of a reflective journal intervention.

Meaning-making often forms a crucial factor in treatment interventions for those recovering from traumatic and stressful experiences (Foy, Eriksson, & Trice, 2001) and can be developed through self-reflection. Self-reflection is the ability to consider our own thoughts, memories, feelings and actions and turn attention inwards (Philippi & Koenigs, 2014). Therefore, reflective journal interventions may be beneficial in raising EMRs' resilience by enhancing meaning-making and reflectivity of coping strategies, which are important factors in recovering from trauma.

The impact of reflective journal interventions on resilience remains largely unknown. However, reflective journaling, or written self-disclosure, about traumatic events is consistently shown to significantly improve both mental and physical health (Esterling, L'Abate, Murray, & Pennebaker, 1999). In particular, journaling which facilitates both cognitive and emotional processing of stressful events may improve well-being more than other forms of journaling (Ullrich & Lutgendorf, 2002). This may be due to an increase in 'meaning-making', or changing the meaning of a stressful event by drawing on values, beliefs and goals (Park & Folkman, 1997; Folkman & Moskowitz, 2004).

The proposed pilot study aims to evaluate the impact of a reflective journal intervention aimed at raising self-awareness and reflectivity of the variety of coping skills used by EMRs'. Using the Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003) for an initial baseline evaluation of resilience on both an experimental and a control group, the primary research question is whether a reflective journal intervention has an impact on the resilience level of the experimental group. Differences are anticipated between the experimental group's resilience scores before and after the intervention, and also between post-intervention scores of the experimental and the control group.

Methods

Participants

Participants will be EMRs over the age of 18 who are currently employed in medical services within the EU. The study will collect data in Germany, Lithuania, Ireland and the UK. Participants will be recruited via personal contacts and social media, or relevant organisations (e.g., hospitals and other healthcare services). The sample size was estimated through a power analysis. The calculation was based on data (i.e., sample, mean score and standard deviation) from the original validation of CD-RISC in populations also exposed to potentially traumatic incidents (Connor & Davidson, 2014, Table 7a & 8a). A small-to-medium expected effect size was set, based on previous

studies using the same scale to evaluate a resilience intervention (Connor & Davidson, 2014, Table 11a) and on the consideration that a previously untested intervention is being evaluated. Accordingly, a sample of 45 to 60 participants per group is needed for sufficient power to test the reflective journal intervention's effect. Considering the issue of non-adherence to the intervention, participants will be recruited in both groups for as long as necessary to achieve a sufficient sample size. Such an approach seems suitable since the proposed study will not conduct an intention-to-treat analysis.

Materials

In this study, CD-RISC was chosen as it was already validated in all three required languages (i.e., English, German and Lithuanian) by the authors (Connor & Davidson, 2014). The CD-RISC contains 25 items from five factors each rated on a 5-point Likert scale from 0 (*not true at all*) to 4 (*true nearly all the time*), with a score range of 0 to 100. The five factors are: personal competence, high standards and tenacity; trust in one's instincts, tolerance of negative affect and strengthening effects of stress; positive acceptance of change and secure relationships; control; and finally, spiritual influences. The total of all items will be summed and subscales will not be investigated, as recommended by the authors (Connor & Davidson, 2014). Previous research investigated the reliability of the scale which ranged from $r = .70$ to $r = .90$ (Connor & Davidson, 2003; Khoshouei, 2009; Baek, Lee, Joo, Lee, & Choi, 2010), while Cronbach's Alpha was $\alpha = .89$ (Connor & Davidson, 2003).

A questionnaire will be used to assess various sociodemographic and work-related variables (e.g. age, gender, current occupation, years of experience). In addition, questions about social support, substance use and exposure to potentially traumatic events and life stress are included to control for potential confounds and differences between the groups. The use of a secure platform (Qualtrics) will allow participants to have a personal account to ensure anonymity and protection of the data. The key

consideration here was the desire to allow participants to review their entries throughout the process so that they feel in control of how, when and what they offer the study.

Intervention

The intervention will consist of a templated reflective journal. This will be available to the experimental group for six weeks after completion of the first questionnaire. The reflective journal invites participants to reflect upon their daily experiences and their own coping skills. The key components of the templated journal mirror the five factors of the CD-RISC questionnaire. The names of the factors, however, were adapted to ensure a better understanding for the participants. Examples of the key components include dealing with pressure and social support. Each key component consists of a short description and questions to help participants to reflect upon the respective topic (see **Appendix 1** for the template of the reflective journal).

Procedure

The questionnaire and reflective journal intervention will be hosted online. Volunteer participants will be randomly assigned to the experimental or the control group by use of a sequential selection process based on surname. Under specific instructions, both groups will initially complete the CD-RISC within a stated one week period. The experimental group will then be contacted and given access to the reflective journal intervention to submit regular entries for a period of six weeks. On completion of the test intervention period, both groups will complete the CD-RISC for a second time (**Figure 1**). Emails will be sent regularly to the participants during the time of the intervention to motivate them, thus aiming to reduce attrition.

Design

To investigate the research questions, the study will adopt a mixed methods approach, combining an experimental, questionnaire-based design with repeated measures of resilience (**Figure 1**) and a thematic approach

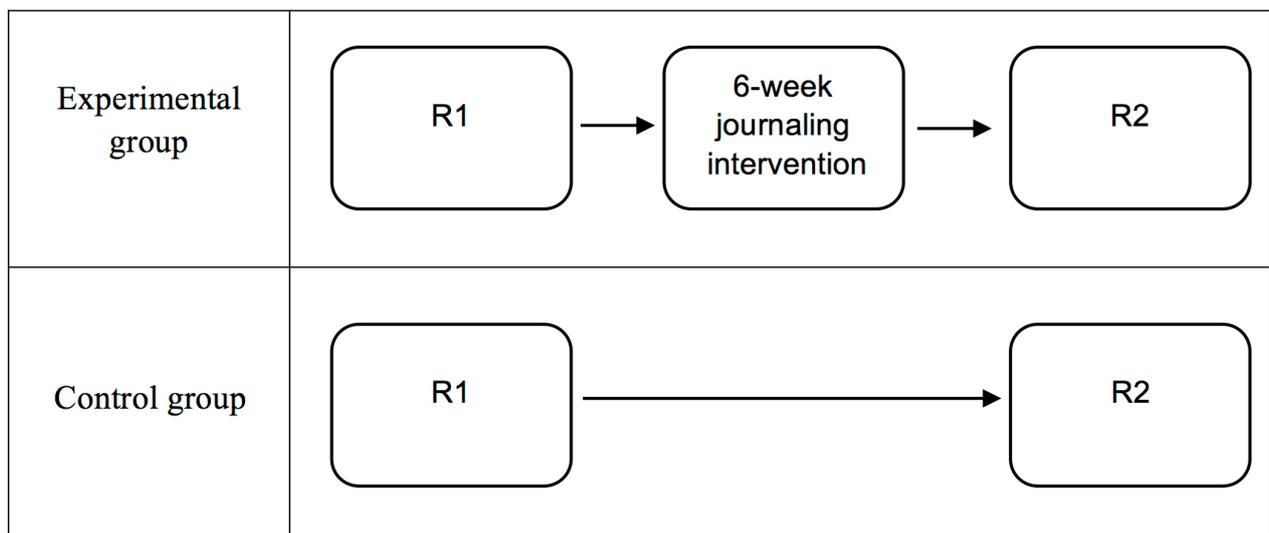


Figure 1: Structure of group and testing design. R = Resilience Measurement.

to the reflective journal entries. This design allows both between- and within-groups comparisons, as well as additional understanding from the more personal reflective journal entries.

Data Analysis

Quantitative. The analysis will be conducted on the basis of combined data from the entire sample. Independent samples *t*-tests will be employed to test differences in CD-RISC scores between the experimental and the control group, both at the baseline measurement (R1) and after the intervention (R2). For within-groups comparisons of resilience, repeated measures analysis of variance (rANOVA) will be used. Resilience levels will take into account potential variations of sociodemographic features within and among groups. Effect sizes will be calculated for confirmation of any statistical differences.

Qualitative. Thematic analysis will be conducted on the reflective journal intervention entries. The analysis of entries will provide insight into participants' daily coping mechanisms. Thematic analysis allows for the identification of emergent themes in the data (i.e., the reflective journal intervention entries). This will enhance understanding of the coping mechanisms and the potential impact of the journal intervention for adaptive assimilation of experiences for the sample group.

Ethics

Ethical approval for the proposed study has been sought from a British university. Ethical considerations included how the sample group would be recruited and how ongoing support can be offered during the study. Information about the study will be given to all participants and written consent will be gained prior to participation. A debriefing will follow completion of the study. This will include information about how the data will be used by the study team and in subsequent publications.

Practical Considerations

Several practical issues need to be considered, many of which are common to transnational research. One of the primary issues concerns the translation of materials used in the study, as it will be conducted in different languages. The CD-RISC is already fully validated by the authors and available in all three languages of the target countries. The translations of the CD-RISC questionnaire are fully certified at the required standard for academic studies. However, other materials such as instructions for the participants and the reflective journal intervention will need to be translated for the non-English speaking countries. In addition, any qualitative data collected from a non-English speaking country will need to be translated. All translations, transcriptions and qualitative analysis will be reviewed by native speakers (i.e., academics and translators) to ensure accuracy and reliability. These translators will not be associated with the study or the participants. In the case of any disagreement, a local notary will be used for verification and certified accuracy. A practical issue unique to the proposed study is the creation and use of a new reflective journal intervention based on current resilience

literature. The factors identified as affecting resilience in the proposed study are not an exhaustive list of variables that could enhance resilience. This poses two problems. First, because the reflective journal intervention is based on factors highlighted in the CD-RISC scale, the effects of other factors affecting resilience will not be accounted for. Second, it may be difficult to identify any uncontrolled variables that do affect participants' resilience levels. An additional issue to consider is the technical ability of participants to use Qualtrics to access their previous entries into the online reflective journal intervention.

Current Status of the Project

At the time of writing, the group is focused on finalising both the content and structure of the reflective journal intervention. Emphasis is being placed on providing a platform that is anonymous, easy to use and secure in order for participants to feel comfortable when completing the intervention. Participant recruitment is currently taking place both through direct contact with organisations and social networking sites. The final stage is the collection and analysis of quantitative and qualitative data, which will take place between March and June 2015.

Prospective Discussion

Potential limitations of the proposed study include a small sample size and variation in results due to cultural differences within the sample. Recommendations drawn from study results will be provided to EMRs' occupational management. In addition, the results may inspire further research into the potential use of reflective journal interventions in relation to resilience. Finally, in contrast with previous reflective journal intervention designs that applied CD-RISC (Connor & Davidson, 2003), the proposed design is the first to evaluate an online reflective journal intervention based entirely on the domains of the questionnaire and in templated form (Connor & Davidson, 2014).

Competing Interests

The authors declare that they have no competing interests in publishing this article.

Appendix: Template of the Reflective Journal

Personal competence – This refers to setting own standards at work and trying constantly to meet them

Example questions to help you write about this topic:

1. What difficulties or challenges did you face since your last entry? What personal skills or abilities did you use to overcome those difficulties?
2. What part of your job did you do well over the last days?
3. What did you achieve at work over the last days?

Dealing with pressure – The strategies you use to cope with the pressure and stress at work

Example questions to help you write about this topic:

1. Did you feel some unpleasant or painful feelings at work like sadness, fear, or anger since your last entry? How did you handle those feelings?
2. How did you cope with stress over the last working days?

3. Did anything funny happen at work since your last entry? Was it helpful to deal with pressure or stress?

Adapting to change – Accepting change as a positive part of your work rather than as a negative part of your work

Example questions to help you write about this topic:

1. How do you feel that your working day is never the same two days running?
2. How did you cope with changes imposed on you during your working day in the last days?
3. What changes happened over your last working days? How do you feel about them?

Social support – Having support from your social network (e.g., family, friends, colleagues)

Example questions to help you write about this topic:

1. Do you feel that you had enough social support since your last entry?
2. Would you like to have more support? If yes, what kind of support do you wish/ what would be helpful?
3. Do you feel that the support you got over your last working days was helpful in reducing any stress you experienced at work?

Control – How much control you would like to have at work and how you feel when you may not have as much control as you would wish

Example questions to help you write about this topic:

1. Were there any situations at work since your last entry when you felt that you are losing control of the situation?
2. What did you do to keep in control of these situations?
3. How did you feel when you had less control at work?

Making meaning – Finding the meaning of your experiences at work. This can relate to your spiritual or religious influences

Example questions to help you write about this topic:

1. Did you have the feeling that things happen for a reason?
2. Did you have any spiritual or religious feelings or experiences since your last entry? If yes, please describe them.
3. Did they help you with your experiences at work over the last days?
4. Do you feel that your spirituality helped you cope in work in any way? If so, how?

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