Original article

Psychological recovery after intensive care: Outcomes of a long-term quasi-experimental study of structured nurse-led follow-up

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A R T I C L E   I N F O

Keywords:
- Anxiety
- Clinical practice nursing research
- Depression
- Follow-up studies
- Intensive care units
- Memory
- Patient appointments
- Post-traumatic stress disorder

A B S T R A C T

Objectives: To compare psychological recovery of patients receiving structured nurse-led follow-up and patients receiving usual care after intensive care discharge.

Design: Quasi-experimental study.


Main outcome measures: Symptoms of post-traumatic stress disorder, anxiety and depression measured three and four times over 12 months after intensive care discharge. Disturbing memories of the intensive care stay and psychological reactions (that one’s life was in danger, threat to physical integrity, intense fear, helplessness, horror) three months after intensive care. A mixed effect model tested differences between the groups over time and regression model predicted post-traumatic stress at three months.

Results: The experimental group had significantly more symptoms of post-traumatic stress and anxiety than the control group over the 12 months. Patients from both groups had severe symptoms of post-traumatic stress. Patients with post-traumatic stress at three months had disturbing memories and psychological reactions.

Conclusion: The structured nurse-led follow-up did not improve patients’ measured outcomes of psychological recovery after intensive care. Patients with severe symptoms of post-traumatic stress are of concern. Emphasis needs to be placed on disturbing memories of the intensive care stay and psychological reactions when constructing intensive care nurse-led follow-up.

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Implications for clinical practice

- There is a need for interventions during patients’ intensive care stay that challenge disturbing memories and coexisting psychological reactions of helplessness, intense fear, life in danger, threat to physical integrity and horror.
- Screening for post-traumatic stress after discharge from intensive care should be a standard component of an intensive care, nurse-led follow-up.
- Nurse-led follow-up with additional psychological services is imperative for supporting patients’ psychological recovery after intensive care.

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Introduction

Patients’ stay in the intensive care unit (ICU) is an experience that can have detrimental influences on psychological health and recovery (McKinley et al., 2016). These include symptoms of post-traumatic stress disorder (PTSD), anxiety and depression which are often experienced following an ICU stay (Bienvenu et al., 2015; Herridge et al., 2011). PTSD is a trauma and stress-related disorder that develops after a traumatic event and can last for months and years thereafter (American Psychiatric Association, 2013). The prevalence of PTSD symptoms in the first year after the ICU stay can range from 18% to 27% (Myhren et al., 2010; Rattray et al., 2005). Frightening memories from the ICU stay and psychopathology before the ICU admission are high risk factors for PTSD symptoms, anxiety and depression post-ICU (Paparrigopoulos et al., 2014; Samuelson et al., 2007; Stevenson et al., 2013).

Follow-up of patients after ICU discharge, nurse-led or multidisciplinary, has been presented as an intervention to support patients’ recovery during the first year post-ICU (Egerod et al., 2013; Griffiths et al., 2006). The outcome of ICU nurse-led follow-up interventions on psychological recovery has been measured with symptoms of PTSD, anxiety and depression (Cuthbertson et al., 2009; Jensen et al., 2016; Jones et al., 2003; Schandl et al., 2011). The interventions include appointments to an ICU follow-up clinic, one to three times, over one to 12 months post-ICU (Cuthbertson et al., 2009; Jensen et al., 2016; Jones et al., 2003; Schandl et al., 2011) with additional contact, five and ten months post-ICU (Jensen et al., 2016). The appointments involve discussion with the patient of the ICU experience (Cuthbertson et al., 2009; Jensen et al., 2016; Jones et al., 2003; Schandl et al., 2011), screening for PTSD symptoms, anxiety and depression in relation to the ICU stay, and referrals to appropriate professionals if psychological comorbidity occurs (Cuthbertson et al., 2009; Schandl et al., 2011). The interventions have not revealed differences in symptoms of PTSD, anxiety and depression in the first year after ICU discharge compared to usual care without an ICU follow-up post-ICU (Cuthbertson et al., 2009; Jensen et al., 2016). There is an indication of less anxiety experienced by patients from three to 12 months post-ICU when attending three appointments during that time period (Schandl et al., 2011).

In this study, the nursing intervention of structured ICU nurse-led follow-up presents a new approach of continuous support from ICU discharge to three months post-ICU with clinical surveillance of ICU nurses’ general ward visits directly after the patient’s ICU discharge, contact during the first week after discharge from the ward to home, and an appointment three months after ICU discharge.

Methods

Objectives

The objectives of the study were to: (1) measure the difference over time between the experimental group, receiving structured nurse-led follow-up and the control group, receiving usual care, of symptoms of PTSD at three, six and 12 months after the ICU discharge, and anxiety and depression after discharge from the general ward, three, six and 12 months after ICU discharge, (2) to compare background, memories of the ICU stay and psychological reactions related to the memories of patients with and without symptoms of PTSD three months after the ICU stay and (3) to find predictors of symptoms of PTSD three months after the ICU stay.

Study design and setting

The study was prospective, quasi-experimental, non-blinded and carried out at a single university hospital centre, and focused on two, mixed patient population ICUs, each in a separate building.

Ethical approval

Approval for the study was obtained from the Chief Medical Officer of Landspliti – The National University Hospital (No. 2012/16 MI(e)), the Landspliti Bioethics Committee (#5/2012 Jsn/js) and the Data Protection Authority (Raudararstig 10, 105 Reykjavik, Iceland; No. 201201008SHGK/).)

Participants

Patients, > 18 years of age with ≥72 hour ICU stay, were eligible if they were native speakers, likely to survive the general ward stay, likely to be alert or mentally able to communicate after the ICU discharge, did not have dementia and were not active drug and/or alcohol abusers. Patients, including both acute and elective ICU admissions, were prospectively recruited, from November 2012 to May 2015. Patients discharged from the ICUs to general wards in building I were in the experimental group and those discharged to general wards in building II were in the control group. Both ICUs served medical and surgical units located in building I and building II in the hospital. During the ICU stay informed consent was obtained from the patient or their closest relative. Participation in the study was confirmed again during the patient’s ward stay.

Intervention

The ICU structured nurse-led follow-up consisted of ward visits, contact during the first week after discharge from the ward to home, and a follow-up appointment three months after the ICU discharge (Fig. 1). The content and structure of the intervention were based on findings from an integrative review of a nurse-led follow-up of patients after ICU discharge (Jónasdóttir et al., 2016). Patients in the control group received usual care after the ICU discharge (Fig. 1).

Measurement scales and data collection

The Impact of Event Scale-Revised (IES-R) measured symptoms of PTSD, with 22 questions of intrusion, avoidance and hyperarousal from 0 (not at all) to 4 (extremely) and total score 0–88 with a higher score indicating more PTSD symptoms (Weiss and Marmar, 1997). According to Bienvenu et al. (2013a), when psychometrically testing the IES-R on patients post-ICU, an IES-R score ≥22 signifies no symptoms of PTSD, ≥23 represents partial PTSD and a score of ≥36 indicates full PTSD. Here, a score ≥22 on the IES-R represents not having symptoms of PTSD and, to include participants with partial and full PTSD, a score ≥23 represents having symptoms of PTSD. Additionally, an IES-R score ≥36–88 is presented as severe symptoms of PTSD.

The Hospital Anxiety and Depression Scale (HADS) measures anxiety (HADS-A) and depression (HADS-D) where a score from 0 to 7 is normal; a score of 8–10 suggests anxiety and/or depression and a score of ≥11 indicates anxiety and/or depression (Snith, 2003; Zigmond and Snaith, 1983).

Data collection was from November 2012 to May 2016. The patients answered a questionnaire, sent by mail with a pre-paid envelope, at three, six and 12 months containing the IES-R and the HADS. Additionally, they answered the HADS at the time of ward discharge. At three months they were requested to note, in the questionnaire, disturbing memories of the ICU stay and answer questions on psychological reactions related to that memory. The psychological reactions were the two items of criteria A for PTSD of the fourth edition of Diagnostic and statistical manual of mental disorders (American Psychiatric Association, 2005), namely: (1) experience of actual or threatened death or serious injury or threat to the physical integrity of self or others and (2) the person's