

Impact case study (REF3b)

Institution: University of Dundee
Unit of Assessment: UoA3 Allied Health Professions, Dentistry, Nursing and Pharmacy
Title of case study: Improving patient care experience and staff well-being: The application of novel methodological advances
1. Summary of the impact

Beneficiaries of this research are patients in intensive care and healthcare staff. This research has had impacts in two distinct but related areas:

- Improving care provision for acute and critical care patients post-intensive care unit (ICU) treatment locally, nationally and internationally and through national guidelines (from the National Institute for Health and Care Excellence (NICE));
- Improving healthcare staff well-being and understanding the links to patient experience, via NICE guidelines, influencing national and international Higher Education Institution practice.

These advances are informed by our synthesis and application of rigorous, innovative methodologies relating to questionnaire development and real-time data collection.

2. Underpinning research

The link between patient experience and staff wellbeing is of increasing national and international strategic importance. **Rattray** and **Jones** (School of Nursing & Midwifery, Dundee 1990-2013; now Reader (**Rattray**), Professor (**Jones**)) commenced this programme in 1998 to improve the methodological quality of questionnaires in Nursing. We first tackled intensive care unit (ICU) patients, given **Rattray's** clinical insight that little was known of ICU patient outcome. **Jones'** initial work was related to his expertise in work stress. Two questionnaires were developed: the Intensive Care Experience Questionnaire (ICEQ) and the Student Nurse Stress Index (SNSI). A robust evidence base now details (a) the care experience of ICU patients and its impact on subsequent outcomes; (b) the work experience of healthcare staff, its link to care provision and patient reported experience. This has driven service redesign to improve care delivery to patients post-ICU and staff well-being, leading to an innovative, reliable, valid, real-time data collection platform now applied across healthcare environments. Current research combines these strands examining the link between the work experience of nurses and quality of patient experience in acute care (Improving Patient Experience of Care study), a significant study into patient experience and delivery of frontline health care (funding: Williams, **Jones et al.** (2012-14)).

Rehabilitation post Intensive Care: A significant minority (25%) of ICU survivors suffer physical and psychological problems. In the 1990s there was no standardised way of measuring patients' ICU experience. The ICEQ [i,ii], first reported in 2004, does this, establishing the relationship between reported experiences and psychological outcome. Its development contributed to a larger programme of study identifying health outcomes and quality of life in ICU survivors, generating and testing interventions to promote recovery and rehabilitation. It has been used in completed studies including PRaCTICaL [iii] and a current multi-centre study (DESSIST). The randomised controlled trial [iii] showed that the current model of follow-up services was ineffective in improving health outcomes. A revised model, implemented locally, reaches 250 patients yearly. The ICEQ is incorporated into routine practice, administered at a follow-up clinic in NHS Tayside.

Psychosocial risk in healthcare staff: In the late 1990s there was no reliable and valid measure of student nurse stress. The psychosocial risks facing student nurses during their preparation and transition to staff nurse were not well understood. The SNSI [iv], first reported in 1999, was developed using state of the art exploratory and confirmatory factor analytic methods, allowing both the key determinants of student distress to be identified and a tailored, effective stress management intervention to be developed [v]. This intervention, developed and tested in Dundee in 2000, contributed significantly to the evidence base on stress management in several meta-analyses, NICE guidelines and NICE-led evaluations of the economic impact of stress management programmes. Extension of this methodology [vi], using real time behavioural diaries,

Impact case study (REF3b)

has driven service re-design initiatives in the NHS, extending the reach and significance of this research. In 2009, further development of psychosocial risk assessment resulted in a software application, "Pocket Interview", applied across a range of settings [vi].

3. References to the research

- i. **Rattray** J, Johnston M and Wildsmith JAW (2004) The Intensive Care Experience: Development of the Intensive Care Experience (ICE) Questionnaire *J. Adv. Nursing*, **47**, 64-73 (DOI: 10.1111/j.1365-2648.2004.03066.x).
- ii. **Rattray** J, Johnston M and Wildsmith JAW (2005) Predictors of Emotional Outcome of Intensive Care. *Anaesthesia*, **60**, 1085-1092 (DOI: 10.1111/j.1365-2044.2005.04336.x).
- iii. Cuthbertson B, **Rattray** J, Campbell MK., Gager M, Roughton S, Smith A, Hull A, Breeman S, Norrie J, Jenkinson D, Hernandez R, Johnston M, Wilson E and Waldmann C (2009) The PRaCTICaL study of nurse led, intensive care follow-up programmes for improving long term outcomes from critical illness: a pragmatic randomised controlled trial. *Brit. Med. J.*, **339**:b3723 (DOI: 10.1136/bmj.b3723).
- iv. **Jones** MC and Johnston DW (1999) Derivation of a brief Student Nurse Stress Index. *Work and Stress*, **13**, 162-181 (DOI: 10.1080/026783799296129).
- v. **Jones** MC and Johnston DW (2000) Evaluating the impact of a worksite stress management programme for distressed student nurses: A randomised controlled trial. *Psychology and Health*, **15**, 689-706 (DOI: 10.1080/08870440008405480).
- vi. **Jones** MC and Johnston DW (2012) Does clinical incident seriousness and receipt of work-based support influence mood experienced by nurses at work? A behavioural diary study. *Int. J. Nursing Studies*, **49**, 978-8 (DOI: 10.1016/j.ijnurstu.2012.02.014).

Funding

- Wildsmith JAW, Johnston M and **Rattray** J: Quality of Life in Survivors of Intensive Care: Assessment and Prediction; Chief Scientist Office, Scotland (1998 -2001) £167,580.
- McKee L, West M, Flin R, Johnston D and **Jones** M: Understanding the dynamics of organisational culture change in the NHS: Creating safe places for patients and staff; NHS SDO R&D Development Programme (2005-2008) £330,000.
- Cuthbertson B, **Rattray** J, Johnston M, Wildsmith J.A.W, Wilson E, Hull A, Vale L, Ramsay C, Norrie J and Campbell M: A Pragmatic Randomised Control Trial of Intensive Care Post-Discharge Review Clinics in Improving Longer-Term Outcomes Trial from Critical Illness; Chief Scientist Office, Scotland (2006 -2008) £225,000.
- Johnston DW, Hay JL, Johnston M, **Jones** MC and Farquharson B Stress in NHS 24 Nurses: Level, determinants and consequences assessed using psychological, physiological and behavioural measures. Chief Scientist Office, Scotland (2007-2009) £219,470.
- Johnston M, Johnston D, **Jones** MC, Allan J, Schofield P and Ricketts I: Nursing stress and patient care: Real-time investigation of the effect of nursing tasks and demands and physiological stress and job performance; Chief Scientist Office, Scotland (2010 to present) £210,000.
- Walsh T, Huby G, Ramsay P, Hull A, **Rattray** J, Salisbury L, Forbes J, Merriweather J, Lewis S and Mackenzie S: Development and evaluation of a rehabilitation complex intervention for patients following intensive care discharge: The RECOVER study; Chief Scientist Office, Scotland (2010-2112) £317,414.
- Ramsay P, Huby G, **Rattray** J, Salisbury L, Walsh T and Kean S: RELinQuiSh: Recovery following critical illness: A Longitudinal Qualitative exploration of perceived healthcare and support needs among survivors: developing timely interventions following Hospital discharge; NHS Lothian (2010-2012) £80,835.

Impact case study (REF3b)

- Williams, B, Jones M, Rattray J *et al.*: Improving Patient Experience of Care Study; Chief Nursing Officer, Scottish Government (2012-2014) £304,109.

4. Details of the impact

The impact of this methodological programme of research has extended well beyond academia, impacting on the health and welfare of patients, service redesign and the well-being and research capability of practitioners. A further area of impact, simultaneously exploring staff experience and quality of patient care, is emerging (e.g. the ongoing Improving Patient Experience of Care study).

Rehabilitation post Intensive Care:

- The PRaCTICaL [1,iii] study influenced the redesign of co-ordinated care after ICU discharge with the implementation of a modified model of the nurse-led clinic. One Scottish NHS Board has offered this service to all survivors since 2008 (approximately 250 patients per year), leading to the establishment of the first patient-led support group (locally) and a developing web-based resource for all patients in Scotland.
- NICE guideline CG83 (Critical Illness Rehabilitation) cites the PRaCTICaL study [2,iii] as a key contributor to the evidence base to inform development in ICU service delivery.
- Evidence [1,i,ii] informed the local implementation of an intensive care liaison service and a nurse-led intensive care follow-up service. These posts support patient recovery post-ICU through hospital visits and invitations to return to follow-up clinic, meeting the unmet needs of ICU patients and relatives before and after hospital discharge.
- Further innovative research is currently evaluating the role of a generic health care assistant in supporting patients from ICU to hospital discharge [1,3]. This research, [ii] has been cited in two influential systematic reviews (e.g. [4]), informing the evidence base routinely used in clinical practice and delivery of critical care services. This research has been adopted in the work of the Scottish Critical Care Research Liaison group, which has emerged over the last 2-3 years. The group is a subgroup of the Critical Care Specialty Group with strong links with the Scottish Critical Care Trials Group and the Edinburgh Critical Care Research Group.
- The ICEQ and subsequent recovery research has considerable international reach. The ICEQ has been translated into Swedish (Masters dissertation) and Turkish. In 2010, in collaboration with established critical care researchers from Griffith University, Australia, the Scottish Critical Care Interdisciplinary Research and Liaison group hosted an Economic and Social Research Council-funded international summer school for early career researchers. A second event was held in the Gold Coast in 2011, with a third in Finland in 2013. A corroborative statement confirms the reach and significance of this research [5].

Psychosocial risk in healthcare staff:

- Jones & Johnston (1999) [iv] has influenced educational and pedagogical practice in the University of Nevada. The SNSI has international impact, being used to evaluate the effects of clinical placement innovation on distress and academic performance of student nurses in Nevada [6]. The SNSI has been administered in a web-based form to evaluate student nurse well-being and to evaluate the effect of Faculty support to improve well-being and performance in foreign born Baccalaureate Nursing students in Texas Women's University [7].
- Jones & Johnston (1999) [iv] has guided the redesign of Nursing and Midwifery educational programmes to reduce sickness absence and attrition which are costly, affect student progression, establish patterns of behaviour that endure into practice and affect patient care delivery [6, 7].
- Jones & Johnston (2000) [v] is cited in 2010 NICE Public Health Guidance 22: Promoting Mental Wellbeing at Work (2009) and in a NICE economic analysis publication reaching over three million staff employed in the NHS and local government (at 2010 levels of staffing) [8,9]. Jones & Johnston (2000) [v] subsequently influenced the design and assessment strategy of a study exploring psychosocial risk and physical activity in healthcare students in Wales.

Impact case study (REF3b)

- A real-time diary-based approach to the assessment of psychosocial risk [vi] has been used to evaluate the effect of health policy on the work performance of senior charge nurses in Tayside. This NHS-commissioned research evaluates the implementation of Leading Better Care (Scottish Government 2008) and is referred to in the NHS Tayside Nursing and Midwifery Governance Framework (2009) [10].
- The SNSI, ICEQ and related methodological papers are influencing professional knowledge, understanding and practice in developing questionnaires for clinical use. These methods have been used to develop the Valuing Patients as Individuals Scale to evaluate patient experience in Acute Medicine in NHS Tayside (see corroborative statement from NHS Tayside [10]).
- **Jones** and **Rattray** (2010) "Questionnaire design" In *Research Methods in Nursing*, Sixth Edition (Eds. Gerrish & Lacey) has sold 6627 copies worldwide as of 13/05/13.

5. Sources to corroborate the impact

Rehabilitation post Intensive Care:

1. Corroborative statement from the Clinical Director, Tayside Anaesthesia and Intensive Care, NHS Tayside.
2. The protocol for paper [iii] is cited in NICE Guideline GC83 (2009) Rehabilitation after Critical Illness; Available from <http://www.nice.org.uk/nicemedia/live/12137/58250/58250.pdf>
3. Walsh TS, Salisbury LG, Boyd J, Ramsay P, Merriweather J, Huby G, Forbes J, **Rattray** JZ, Griffith DM, Mackenzie SJ, Hull A, Lewis S, Murray GD (2012) A randomised controlled trial evaluating a rehabilitation complex intervention for patients following intensive care discharge: the RECOVER study. *BMJ Open*, **2**, e001475 (DOI: 10.1136/bmjopen-2012-001475).
4. Davydow DS, Gifford JM, Desai SV, Bienvenu J, Needham DM. 2009. Depression in general intensive care unit survivors: a systematic review *Intensive Care Medicine*, **35**, 5, 796-809. (DOI: 10.1007/s00134-009-1396-5)
5. Corroborative statement from Professor of Critical Care Nursing, Faculty of Health University of Technology, Sydney detailing the international reach of ICEQ and its influence on subsequent service redesign.

Psychosocial risk in healthcare staff:

6. Yucha CB, Kowalski S and Cross C (2009) Student nurse stress and academic performance: Home Hospital programme. *Journal of Nursing Education*, **48**, 631-637 (DOI: 10.3928/01484834-20090828-05).
7. Junious DL, Malecha A, Tart K, and Young A (2010) Student nurse stress and perceived faculty support: A triangulation study with foreign-born baccalaureate nursing students. *Journal of Nursing Education*, **49**, 261-70 (DOI: 10.3928/01484834-20100217-02).
8. NICE Public Health Guideline PH22 (2009) Promoting mental wellbeing at work (available at <http://guidance.nice.org.uk/PH22/Guidance/pdf/English>) reports a NICE economic analysis of the effectiveness of stress management interventions.
9. Boyd R, Hunt A and Ortiz R (2009) An Economic Analysis of Workplace Interventions that Promote Mental Wellbeing in the Workplace (available at <http://www.nice.org.uk/nicemedia/live/11669/42521/42521.pdf>) citing **Jones** [iv].
10. Corroborative statement from Associate Nurse Director, NHS Tayside, confirming the impact of this research on service redesign and delivery.