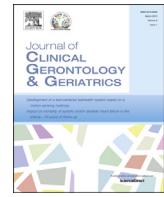
Contents lists available at [ScienceDirect](#)**Journal of Clinical Gerontology & Geriatrics**journal homepage: www.e-jcgg.com**Brief communication****Does nurses' education reduce their work-related stress in the care of older people?**

Inderpal Singh, MBBS, MD, MRCP, MSc ^{a,*},
 Karen Morgan, Diploma in Professional Practice DIPP ^b, Gagan Belludi, MBBS, MRCP(UK) ^a,
 Ajit Verma, MD (Medicine, India), MRCP UK (Geriatrics), FRCP Edin ^c,
 Sridhar Aithal, MBBS, MRCP (UK), MRCP UK (Geriatrics) ^a

^a Department of Geriatric Medicine, Ysbyty Ystrad Fawr, Aneurin Bevan University Health Board, Caerphilly, Wales, UK^b Ysbyty Ystrad Fawr, Caerphilly, Wales, UK^c Department of Geriatrics, Royal Gwent Hospital, Newport, Wales, UK**ARTICLE INFO****Article history:**

Received 10 April 2014

Received in revised form

14 August 2014

Accepted 15 September 2014

Available online 19 December 2014

Keywords:

comorbidity

frail

hospitals

nurses teaching

ABSTRACT

Background: High stress levels have been reported among nurses from various backgrounds. It is challenging to nurse frail older people in hospitals, and a lack of appropriate knowledge of geriatric giants can result in work-related stress. Sources of stress and coping mechanisms have been studied, but the impact of intervention with regular teaching sessions at the ward level is unclear.

Aims: This work aims to find out the prevalence of work-related stress level in care of the elderly wards and also to find out whether improvement in the knowledge of common problems (geriatric giants) in older people would help alleviate the stress level in our study group.

Methods: All nurses in the two care of the elderly wards were enrolled for the study. Teaching on understanding and management of delirium, dementia, malnutrition, incontinence, pressure sores, postural instability, and falls was delivered twice per week for 6 consecutive weeks. The teaching cycle of 6 weeks was repeated two more times to cover night shifts and leaves. This was done to ensure that each staff member has attended at least one teaching session on each of the six topics over 18 weeks.

Results: Stress levels among staff members were measured using a validated scale, the Expanded Nursing Stress Scale, at the beginning and end of these 18 weeks.

Conclusion: Although the mean overall stress scores were lower after the teaching, this was not statistically significant. However, subanalyses showed significant reduction in stress from their routine workload in managing complex and frail older people.

Copyright © 2014, Asia Pacific League of Clinical Gerontology & Geriatrics. Published by Elsevier Taiwan LLC. Open access under [CC BY-NC-ND license](#).

1. Introduction

Worldwide, the population is aging and hospitals are increasingly being challenged with very old and frail people admitted with acute illness.¹ Nurses are caring for more adults aged over 65 years than any other patient population. Caring for older people requires specific knowledge and training to manage both acute and chronic problems in older people.

Older people with any acute illness can have further complications including delirium, malnutrition, incontinence, or pressure

sores. The National Institute for Health and Care Excellence reported that about 30% of older people fall every year,² and their hospital admission is associated with increased risk of falls.³ Over one-third of the older people admitted to hospitals have background cognitive impairment or dementia. Incontinence, immobility, instability (falls), and intellectual impairment (dementia) have collectively been labeled as geriatric giants to highlight the major illnesses associated with aging.^{4,5} Despite being potentially reversible, they do not present in a classical "text book" manner; old patients are frequently labeled as "failing to cope".^{6,7}

Among all health care professionals, nurses play a vital role in the health care system and often they are the first point of contact for the patients and their families. In order to provide safe, affordable, and patient-centered care, nursing education needs to

* Corresponding author. Department of Geriatric Medicine, Ysbyty Ystrad Fawr, Aneurin Bevan University Health Board, Caerphilly, Wales CF82 7EP, UK.

E-mail addresses: inder.singh@wales.nhs.uk, inder.singh@hotmail.co.uk (I. Singh).

be enhanced fundamentally. Nursing education is available in most health care settings, but participating in such training events may be difficult due to time and service constraints. The impact is overworked nurses who are unable to keep themselves up to date with their own training and development.⁸ This not only increases the stress burden at work, but can also compromise the patient care.^{9,10} High stress levels have been reported among nurses from various backgrounds.^{11–15} Sources of stress and coping mechanisms have been studied, but the impact of an intervention with regular teaching of nurses at the ward level is unclear.

Various discussions with the nursing staff members have suggested increasing stress at the work place, and it has been reported secondary to a lack of knowledge, training, and confidence in managing older people in the hospital. Our hypothesis was that a regular teaching program for nurses on understanding and management of the most common conditions in older people admitted with acute illness can reduce their work-related stress. The objective of this study was to measure the prevalence of work-related stress level in care of the elderly (CoTE) wards in a local general hospital and also to find out whether improvement in the knowledge of geriatric giants would help alleviate the stress level in the study group.

2. Methods

A focus group was established with the nursing ward manager, senior nurses, and doctors, and discussions were held to understand staff perception, attitude, and factors leading to stress. Nurses working in CoTE wards suggested that in order to deliver enhanced care, they need improved nursing knowledge and education to manage frail older people in the hospital setting. The main issue established was the lack of nursing staff training in understanding and management of six commonly encountered problems in older people. These problems include delirium, dementia, malnutrition, incontinence, pressure sores, postural instability, and falls, which are also known as "geriatric giants".^{4,5}

The focus group decided to enroll all nurses in CoTE wards for the teaching sessions on geriatric giants. A formal sample size calculation was not undertaken, since all the nurses who attended the sessions were sampled. Teaching sessions were organized to improve the understanding and current guidelines on management of delirium, dementia, malnutrition, incontinence, pressure sores, postural instability, and falls. The teaching sessions were delivered by a consultant geriatrician (I.S.) and two specialty trainee registrars (G.B. and S.A.). The teaching was delivered twice per week for 6 consecutive weeks. This teaching cycle of 6 weeks was repeated two more times to cover night shifts and leaves, to ensure that each staff member had attended at least one teaching session on each of the six chosen topics over 18 weeks. Teaching was done based on

the national UK guidelines by the National Institute for Health and Care Excellence or the National Service Framework for Older People.^{16,17} Each session was for 30 minutes and included lectures, case-based discussions, and reflective practice. Printed handouts of key learning points were given at the end of session.

Nurses were asked to give voluntary feedback and complete questionnaires before and at the end of 18 weeks of teaching voluntarily. Stress level among staff members was measured using the Expanded Nursing Stress Scale (ENSS) prior to commencing nurses' education and again at the end of 18 weeks of nurses' education.¹⁸ ENSS is a well-known and widely used scale to measure work-related stress among nurses.¹⁸ It had been validated to measure sources and frequency of stress perceived by nurses. ENSS has 57 items to rate the stress on a scale of 1–4 for each item (a score of 1 indicates being not at all stressful and a score of 4 indicates being always stressful). Sources of stress comprised nine subscales, including death and dying, conflict with physicians, inadequate preparation, problems with peers, problems with supervisors, workload, uncertainty concerning treatment, patients and their families, and discrimination.

Statistical analysis was performed using SPSS for windows (version 16.0; SPSS Inc., Chicago, IL, USA). Data are presented as means + standard deviation. The difference in scores before and after intervention was summarized with the paired *t* test. The level of statistical significance at which the null hypothesis was rejected was chosen as 0.05.

3. Results

Nurses' age ranged from 22 years to 62 years (all nurses did not answer the age question) and have been in the profession for 2–40 years. Fifty ENSS questionnaires were given to nursing staff from two CoTE wards. The response rates to return questionnaires pre- and postintervention were 52% (26 participants) and 58% (29 participants), respectively. The total mean ENSS scores were 137.46 ± 41.82 before nurses' training and 122.48 ± 29.14 ($p = 0.13$) after the teaching sessions. There was no significant reduction in overall stress with this teaching activity.

Subanalyses were performed for four out of nine parameters (stress related to workload, conflict with physicians, dealing with patients and their families, and uncertainty concerning treatment), which we thought to be relevant to nursing stress caused by a lack of knowledge (Fig. 1). Stress related to workload was 27.15 ± 5.04 before teaching, and after teaching it was significantly lower (20.86 ± 5.18 ; $p = 0.001$).

Stress of dealing with patients and their families (preteaching = 23.19 ± 5.89 , post-teaching = 20.38 ± 5.68 , $p = 0.07$) and stress due to uncertainty concerning treatment

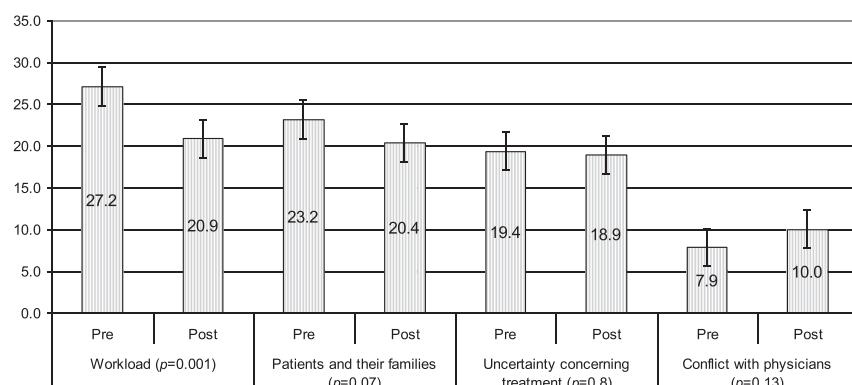


Fig. 1. Nurses' stress pre- and post-teaching (subanalysis).

(preteaching = 19.38 ± 8.37 , post-teaching = 18.93 ± 5.60 , $p = 0.8$) were lower after teaching, but the mean stress scores for conflict with physicians increased from 7.88 ± 5.28 prior to training sessions to 10.03 ± 2.82 ($p = 0.13$) after the sessions. These results were statistically nonsignificant.

4. Discussion

Age-related changes affect the function of every body system. Nursing staff should be provided with information on the demographics of aging, age-related changes in the functioning of the body, medication use, and assessment of older patients with any acute illness to enhance nursing experience and knowledge. A lack of this knowledge and awareness of atypical presentation in older people may be one of the factors that can make nursing care stressful.

One-third of hospital patients can have background cognitive impairment, and a significant number of these patients do not get the diagnosis.¹⁹ Delirium is also common in medical inpatients, and its incidence varies between 5% and 42%, with associated adverse effects on mortality, functional outcomes, length of stay, and institutionalization.²⁰ Therefore, it becomes essentially important for nurses to have a good knowledge and confidence to identify various factors that can distinguish between reversible confusion and dementia. Similarly, in older patients, the prevalence of malnutrition, incontinence, pressure sore, and falls is high as well. Not all nurses receive specialized education to care for older people after completing their nursing training. To add to their stress levels, older people's care is constantly scrutinized in the UK through various national audits.

The National Health Service (NHS) Knowledge and Skills Framework defines and describes the knowledge and skills that NHS staff need to apply in their work in order to deliver quality services. The purpose of the NHS Knowledge and Skills Framework is to support effective learning and development of teams. It also aims to support the development of individuals in the post they are employed so that they can be effective at work. Thus, nursing staff should be able to apply the knowledge and skills appropriately in providing good clinical care.²¹

The updated framework of standards, "Doing Well, Doing Better—Standards for Health Services in Wales" set out the requirements of what is expected of all health services in all settings. These standards provide a consistent framework that enables health service providers to look across the range of their services in an integrated way to ensure that everything they do is of the highest quality and that they are "doing the right thing, at the right time, for the right patient in the right place and with the right staff". The recommendations are that services and teams should use these standards to make changes that will contribute to overall quality improvement within their services.²²

Recent research and knowledge in gerontology also suggest a new evidence base that all clinicians and practitioners should routinely employ in the care of older people. Therefore, education on geriatric giants is as important for nurses as for any other medical professionals involved in the care of older people. However, in spite of the guidance and available resources for nurses' education, further training and learning are not always feasible due to work pressure. Nonetheless, nurses are expected to have knowledge and also to take appropriate actions to manage the most common problems of older patients in medical wards. Supporting nurses at ward-based level can be helpful to improve patient care.

In our study, training of nurses on geriatric giants showed a nonsignificant reduction in their overall stress levels. Interestingly, nurses reported more stress due to conflict with physicians ($p = 0.13$), which is nonsignificant. We have observed that

workload-related stress was significantly lower after 18 weeks of teaching sessions. The nurses reported that it was less stressful to work with older people if you have appropriate knowledge and strategies to manage delirium. However, we cannot exclude the possibility that any other factors in the hospital or ward organization that would have been placed during our intervention, which we did not measure, had any effect on lowering workload-related stress.

A large teaching intervention providing continuing medical education in geriatrics to community-based generalist physicians over a 3-year period had reported improvement in the care of older people and teaching of geriatrics.²³ The feedback from physicians included improvement in the assessment of functional activities, cognition, and drug use by older people. In our study, feedback from nurses on enhanced knowledge of geriatric giants was also positive, including improvement in patient care such as avoiding inpatient falls, early diagnoses of dementia, and prevention of delirium.

Regular nursing training plays an important role in providing the highest-quality care and in the delivery of evidence-based medicine. However, most nurses do not receive any further specialized training after gaining a nursing qualification.^{6,24} Nursing schools are under pressure to offer accelerated programs to meet growing workforce demands and provide students with the knowledge they require to care for an aging population. An integrated course involving both adults and older individuals has demonstrated important improvement and positive influence on nursing students' knowledge and beliefs about care of older adults.²⁵

In many countries, the medical model is disease-oriented medical care, where, in comparison, older people have multiple long-term conditions and are on polypharmacy.²⁶ Worldwide, populations are aging and there is a shortage of geriatricians. Health care needs of older adults require a multidisciplinary team approach in which team members should have knowledge about the aging process. There is clear evidence for comprehensive geriatric assessment²⁷ and multidisciplinary intervention, which are the cornerstones of modern world geriatric practice. Therefore, there is a need not only to implement training programs to generate more geriatricians, but also to expand training programs for interdisciplinary team members.²⁸ Training of interprofessional team members, including nurses, physiotherapists, occupational therapists, social workers, and dietitians, would effectively multiply the number of individuals who would be able to care for older adults.²⁸ Formal curricula of interdisciplinary team training in caring for older people are needed to prepare health professionals from other nonphysician disciplines to achieve effective team working.²⁹ The Department of Ageing and Life Course has developed a toolkit that assists health care workers to educate themselves regarding the diagnosis and management of chronic diseases and the so-called four giants of geriatric medicine (memory loss, urinary incontinence, instability, and immobility).³⁰

We acknowledge the study's weakness. The sample size was relatively small, and this study was conducted in only one center and two CoTE wards (a total of 60 patients). Probably, by conducting a large-scale study involving acute and general medical wards, we may be able to measure the change in their stress levels more clearly. The subanalyses were carried out using four out of nine domains of whole of ENSS questionnaires, as we thought that the other five domains related to nurses' stress factors were not very relevant to our study. The improvement in knowledge was not measured, and its relationship with stress reduction was not studied. We have not measured the sustainable effect of educational intervention in reducing stress levels of nurses. Further study is currently underway to determine whether the reduction in stress is an ongoing, long-term effect of training, or whether repeated educational interventions are required.

Our study has certain strengths. The nurses were asked about their learning needs and how they prefer to learn, and this information was shared to plan the teaching program in the focus group led by the nursing ward manager. Nursing stress was measured by the most validated tool, and nursing education was the key innovation in CoTE wards to improve patient care. New ways of multidisciplinary working by teaching nurses in routine clinical care in CoTE wards were explored and evaluated. Improvement in our multidisciplinary functioning was observed following this nursing teaching activity.

5. Conclusion

Regular nursing training is essential to achieve excellent quality of care for older people. Nursing staff not only appreciated the teaching sessions, but also were less stressful. Regular nursing education showed significant reduction in stress from their routine workload in managing complex and frail older people. Medical teams could be formally appraised to involve in the multidisciplinary teaching and evaluation of their teaching effectiveness. Further studies on similar interventions would be helpful to confirm our findings and also to measure the length of time that work-related stress remained low, to compute the optimum interval prior to conducting another training program.

Conflicts of interest

None of the authors has any financial or any other kind of personal conflicts with this article.

Acknowledgments

We are grateful to the Department of Geriatric Medicine, Caerphilly, for the support and all nursing staff members for attending the nursing education program and completing the questionnaires.

References

- United Nations. *World population ageing*. Department of Economics and Social Affairs; 2009. Available at: http://www.un.org/esa/population/publications/WPA2009/WPA2009_WorkingPaper.pdf [accessed 16.09.13].
- National Institute for Health and Clinical Excellence. *The assessment and prevention of falls in older people*. Clinical guideline 161. London: NICE; 2013. Available at: <http://www.nice.org.uk/nicemedia/live/14181/64088/64088.pdf> [accessed 10.10.13].
- Singh I, Okeke J. Risk of inpatient falls is increased with single rooms. *BMJ* 2013;347:f6344.
- Isaacs B. *The challenge of geriatric medicine*. Oxford: Oxford University Press; 1992.
- Flacker JM. What is a geriatric syndrome anyway? *Geriatr Ageing* 2003;6:58–9.
- Oliver D. Geriatric medicine. Changing staff attitudes. *Health Serv J* 22 November 2007;7–9. <http://www.hsj.co.uk/resource-centre/geriatric-medicine-changing-staff-attitudes/262440.article#>.
- Burns E, Cracknell A. When should older people go in to care? *Clin Med* 2007;7:508–11.
- Wood J. Exploring staff nurses' views of professional development. *Nurs Times* 2006;102:36–8.
- Currid T. Experience of stress in acute mental health nurses. *Nurs Times* 2008;104:39–40.
- Querstret D, Cropley M. Why nurses need to unwind from work. *Nurs Times* 2011;107:14–7.
- Chappel NL, Novak M. The role of support in alleviating stress among nursing assistants. *Gerontologist* 1992;32:351–9.
- Lim J, Bogossian F, Ahern K. Stress and coping in Australian nurses: a systematic review. *Int Nurs Rev* 2010;57:22–31.
- Li J, Lambert VA. Workplace stressors, coping, demographics and job satisfaction in Chinese intensive care nurses. *Nurs Crit Care* 2008;13:12–24.
- Raja Lexshimi R, Tahir S, Santhna L. Prevalence of stress and coping mechanism among staff nurses in the intensive care unit. *Med Health* 2007;2:146–53.
- Tyler PA, Cushwany D. Stress, coping & mental wellbeing in hospital nurses. *Stress Med* 1992;8:91–8.
- National Institute for Health and Clinical Excellence. *Delirium—diagnosis, prevention and management*. 2010. Available at: <http://www.nice.org.uk/nicemedia/live/13060/49913/49913.pdf> [accessed 20.05.14].
- Department of Health. *National Service Framework for Older People*. London: Department of Health; 2001. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/198033/National_Service_Framework_for_Older_People.pdf [accessed 20.05.14].
- French SE, Lenton R, Walters V, Eyles J. An empirical evaluation of an expanded nursing stress scale. *J Nurs Meas* 2000;8:161–78.
- Joray S, Wielhabach V, Bula CJ. Cognitive impairment in elderly medical inpatients: detection and associated six-month outcomes. *Am J Geriatr Psychiatry* 2004;12:639–47.
- Siddiqui N, Hose A, Holmes J. Occurrence and outcome of delirium in medical inpatients: a systematic literature review. *Age Ageing* 2006;35:350–64.
- Department of Health. *The NHS Knowledge and Skills Framework (NHS KSF) and the development review process*. Department of Health; 2004. Available at: [http://www\[msg\].scot.nhs.uk/wp-content/uploads/KSF-Handbook.pdf](http://www[msg].scot.nhs.uk/wp-content/uploads/KSF-Handbook.pdf) [accessed 21.10.13].
- Welsh Assembly Government. *Doing well, doing better*. Cardiff: Welsh Assembly Government; 2010. Available at: <http://www.wales.nhs.uk/sites3/documents/919/english%20web%20version.pdf> [accessed 21.10.13].
- Willett RM, Boling PA, Meyers ME, Hoban JD, Lawson SR, Schlesinger JB. Professional development in geriatrics for community-based generalist faculty. *J Am Geriatr Soc* 2007;55:300–4.
- McClug D, Jamieson K, Hagen S, Cheater F, Eustice S, Burke J. Improving continence education for nurses. *Nurs Times* 2013;109:16–8.
- Baumbusch J, Dahlke S, Phinney A. Nursing students' knowledge and beliefs about care of older adults in a shifting context of nursing education. *J Adv Nurs* 2012;68:2550–8.
- Chen CY. Strategies for solving the shortage of geriatricians in Taiwan. *J Clin Gerontol Geriatr* 2012;3:1–2.
- Ellis G, Whitehead MA, Robinson D, O'Neill D, Langhorne P. Comprehensive geriatric assessment for older adults admitted to hospital: meta-analysis of randomised controlled trials. *Br Med J* 2011;343:d6553.
- Weiss BD, Mohler MJ, Fain MJ. Geriatrics in Taiwan: what is the solution? *J Clin Gerontol Geriatr* 2011;2:93–5.
- Singh I, Hubbard RE. Teaching and learning geriatric medicine. *Rev Clin Gerontol* 2011;21:180–92.
- World Health Organization. *Age-friendly primary health care (PHC) centres toolkit*. World Health Organization; 2008. Available at: <http://www.who.int/ageing/publications/Age-Friendly-PHC-Centre-toolkitDec08.pdf> [accessed 10.10.13].