Injury, Int. J. Care Injured xxx (2018) xxx–xxx

Contents lists available at ScienceDirect

Injury

journal homepage: www.elsevier.com/locate/injury

Identifying research priorities around psycho-cognitive and social factors for recovery from hip fractures: An international decision-making process

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ARTICLE INFO

Article history:
Received 29 January 2018
Accepted 16 April 2018

Keywords:
Decision-making process
Hip fracture
International study
Older adults
Psycho-cognitive
Social factors
Survey

ABSTRACT

Hip fractures rank in the top ten disabling conditions worldwide. With an ageing population, this public health problem is expected to increase. Despite the success of surgery for hip fractures and the extensive health services utilisation, health outcomes are often poor. Considering the recovery process as multifactorial and intervening to address all relevant factors may improve recovery rates. However, we need first to fully understand the factors contributing to recovery after hip fractures, including psycho-cognitive and social factors. The purpose of this study was to identify future research priorities for understanding the role of psycho-cognitive and social factors in the recovery process for community-dwelling older adults after hip fracture and to survey world experts to confirm the identified priorities.
Methods: This was a two-stage process. First, a workshop of international experts in hip fracture care (researchers and clinician-scientists) was held in 2016 in Montreal, Quebec, Canada. Using Nominal Group Technique accompanied by Multi-voting Technique, workshop attendees identified the most important future research areas for psycho-cognitive and social factors contributing to recovery after hip fractures. Second, an online survey of the International Fragility Fracture Network (FFN), which includes researchers and clinicians interested in fragility fractures, followed the meeting. The survey respondents reviewed and added to priorities from the first stage and then ranked the top priorities.
Results: Twenty-three experts participated in the meeting (from five countries) and 152 participants (from 29 countries) responded to the survey. Top priorities for the psycho-cognitive domain were preventing and treating in-hospital delirium; comparing the effectiveness of targeted versus multifactorial interventions; studying interactions between psycho-cognitive, social, and environmental factors in the recovery process; and modifying the environment to enhance patients' cognitive reserves. Top priorities for the social domain were understanding the role of social factors in the recovery process; understanding patients' perspectives on important social factors; identifying components of social support relevant to recovery; understanding attitudes towards patients with hip fractures among all stakeholders; and understanding the social support needs for caregivers.
Conclusion: A set of future research priorities to understand the role of psycho-cognitive and social factors has been developed and confirmed through a rigorous international decision-making process. These priorities offer valuable guidance for researchers, scientific bodies, and funding agencies.

Introduction

As life expectancy increases worldwide, hip fractures are projected to become an even greater global health problem in the near future [1–3]. The estimated number of hip fractures worldwide is expected to reach 6.3 million in 2050 [4]. Health

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https://doi.org/10.1016/j.injury.2018.04.017
0020-1383/

outcomes after hip fractures are frequently poor. Hip fractures result in more mortality, disability, and medical costs than all other fragility fractures combined [5]. The mortality rate in the first 12 months after fracture may exceed 20% [6,7]. Immediately after acute hospital care, 20% of patients lose the ability to care for themselves and are relocated to a long-term care institution (LTC) [8], which adds to the personal and economic burden created by hip fractures.

Although most of the recovery process happens after discharge from acute and subacute care settings, the available guidelines for rehabilitation focus solely on these settings and address mainly physical factors. However, emerging evidence suggests that recovering from a hip fracture is often complicated by the presence of many 'non-physical' factors that can influence recovery. Recent studies suggest that psycho-cognitive factors (e.g. fear of falling, dementia, and depression) and social factors (e.g. size of social network) can play critical roles, but these factors are not currently common targets for evaluation and/or management in hip fracture rehabilitation programs or research. In order to fully understand the role psycho-cognitive and social factors play in hip fracture recovery, we need to identify and address timely and relevant research questions. Thus, the *purpose* of this study was to identify future research priorities for understanding the role of **psycho-cognitive** and **social factors** in the recovery process for community-dwelling older adults after hip fracture. The findings from this study will inform more focused and relevant research to enhance recovery after hip fracture.

Methods

The project consisted of two stages:

Stage 1: think tank meeting

In recognition of the potential importance of the role of psycho-cognitive and social factors in recovery after hip fractures across all healthcare settings, a nationally-funded think tank meeting was held in October 2016 in Montreal, Quebec, Canada. Meeting attendees were researchers and clinician-scientists from Brazil, Canada, Colombia, Mexico, and the United States who were interested in recovery after a hip fracture and in studying psycho-cognitive and social factors among older adults (see Appendix A). The meeting had two aims: 1) to provide an arena to discuss emerging evidence of the role of psycho-cognitive and social factors in the recovery process after hip fractures; and 2) to identify gaps in the current body of knowledge and establish timely interdisciplinary research priorities to fill these gaps.

Using Nominal Group Technique (NGT) [9] accompanied by Multi-voting Technique [10], workshop attendees (who were divided into 4 groups) identified what they thought were the most important areas of future research. NGT, developed by Delbecq and Van de Ven in 1968, is based on social-psychological strategies for collecting individual decisions and judgments, and has gained considerable attention in health studies since its development [9]. Using a step-wise approach directed by neutral facilitators to guide interacting groups, NGT is intended to reduce process shortcomings, (e.g., the domination of discussion by one or few persons, the tendency for groups to pursue peripheral ideas for lengthy periods, or the social pressure to follow group norms) [9]. The accuracy of group judgments produced by a NGT approach has been validated previously [11]. We deemed NGT the most suitable decision collecting approach for the think tank meeting because of the multidisciplinary group involved (including early-career researchers) and the representation of multiple countries. Multi-voting is a proven group decision-making technique to rank and narrow a large list to a smaller one according to items of importance to the group [12]. After thorough group discussions, participants in each group ranked the list in order of priority. Rankings were assigned a numerical score and researchers tallied scores for each priority and discussed results; participants had the chance to re-vote if needed. This approach complemented NGT; its use at the think tank meeting allowed each group to consolidate their ideas and collectively produce one list that they agreed on while saving a considerable amount of time. The emergent priorities from the meeting were subsequently vetted and reorganised by a core team of two. The final outcome of the meeting was a list of research areas that the group considered important.

Stage 2: survey of international researchers

The results from the think tank meeting were organised and used to construct a survey of an international group of experts in hip fracture care and research. An online, cross-sectional, mixed-methods survey methodology was used. The combination of qualitative and quantitative analyses provided a better understanding of the topic and participants' perspectives than either type of analysis alone. The survey was developed in collaboration with the Hip Fracture Recovery Research Special Interest Group of the Fragility Fracture Network (FFN) [13]. The FFN is a global network of researchers and clinicians with interest in fragility fracture care that includes approximately 600 members. The survey was distributed to all FFN members.

Survey instrument

The survey consisted of three parts:

1) Research priorities for **psycho-cognitive** factors and recovery: participants were asked to review the list of priorities from the think tank meeting and identify any additional research priorities for understanding the role of psycho-cognitive factors in recovery after hip fracture followed by the ranking of their top five priorities (which might include any additionally identified priorities). The ranked lists from all participants were used in the final analysis.
2) Research priorities for **social factors** and recovery: participants were asked to review the list of priorities from the think tank meeting and identify any additional research priorities for understanding the role of social factors in recovery after hip fracture followed by the ranking of their top five priorities (which might include any additionally identified priorities). The ranked lists from all participants were used in the final analysis.
3) Demographic data: participants also provided information about the field in which they trained, country or residence, clinical and/or research expertise, and years of experience.

Survey respondents also had "other" response options and could write free text to describe their intention and add suggestions. The survey was pre-tested in a pilot study of eight healthcare professionals and researchers; the results of this pilot study led to minor changes in the final survey content and layout.

Human research ethics approval for this study was granted by Queen's University (HSREB-6020540), and consent was implied by participants who completed the online survey.

Survey administration

To administer the survey, we used the *FluidSurveys* online tool (SurveyMonkey Inc., San Mateo, California, USA). An initial invitation to participate with an accompanying link to the online survey was distributed via email to all FFN members. This email

Please cite this article in press as: M. Auais, et al., Identifying research priorities around psycho-cognitive and social factors for recovery from hip fractures: An international decision-making process, Injury (2018), https://doi.org/10.1016/j.injury.2018.04.017