International Journal of Nursing Studies 52 (2015) 666–676

Contents lists available at ScienceDirect

International Journal of Nursing Studies

journal homepage: www.elsevier.com/ijns

The impact of an emergency department nursing intervention on continuity of care, self-care capacities and psychological symptoms: Secondary outcomes of a randomized controlled trial

Sylvie Cossette [a,*], Nancy Frasure-Smith [b], Alain Vadeboncoeur [c], Jane McCusker [d], Marie-Claude Guertin [e]

[a] Faculty of Nursing, University of Montreal, Montreal Heart Institute Research Center, Canada
[b] Psychiatry and Nursing, McGill University, Centre hospitalier de l'Université de Montréal and Montreal Heart Institute Research Center, Canada
[c] Emergency Department, Montreal Heart Institute, Canada
[d] Department of Epidemiology, Biostatistics, and Occupational Health, McGill University, St. Mary's Research Centre, Canada
[e] Biostatistics, Montreal Health Innovations Coordinating Center, Canada

ARTICLE INFO

Article history:
Received 27 June 2014
Received in revised form 11 December 2014
Accepted 19 December 2014

Keywords:
Clinical trials
Randomized
Quality of health care
Nursing care
Emergencies
Heart diseases
Health services utilization

ABSTRACT

Background: As yet there is no firm evidence about the types of intervention that can reduce emergency room revisits. However, the literature on emergency room revisits suggests patient difficulties with managing their health problems and treatments after discharge may play a role.
Objectives: We carried out a randomized trial of an emergency department-based nursing intervention, but results showed no reduction in revisits (primary outcome). This paper describes the secondary outcomes of the trial: patient perceptions of continuity of care, illness perceptions, self-care capacities, psychological symptoms and medication adherence 30 days after emergency room discharge.
Design: Randomized, controlled trial.
Settings: The trial was conducted in the emergency department of a tertiary cardiac hospital in Montreal, Canada between November 2007 and March 2010.
Participants: The study involved 203 patients, including 108 in the experimental group and 95 in the control group.
Methods: The intervention included one nurse patient encounter before discharge and two phone calls in the 10 days after discharge. Participants provided data 30 days post-discharge on secondary outcomes potentially related to emergency department revisits.
Results: Although, as previously reported, the intervention had no impact on the primary outcome of emergency department revisits, the present study demonstrated a significant positive effect on patients' perceived continuity of care ($p = .033$), self-care capacities ($p = .037$), anxiety ($p = .007$) and depressive symptoms ($p = .043$), and the illness perceptions treatment control subscale ($p = .037$). No differences were found for other illness perception subscales or medication adherence (all p's $> .05$).
Conclusion: Although the intervention did not influence emergency department revisits it did improve secondary outcomes, suggesting pathways for future research.

* Corresponding author at: Montreal Heart Institute Research Center, S-2510, 5000, Bélanger est, Montreal (Quebec), Canada H1T 1C8. Tel.: +1 514 376 3330x4012; fax: +1 514 793 7441.
E-mail address: Sylvie.cossette.inf@umontreal.ca (S. Cossette).

http://dx.doi.org/10.1016/j.ijnurstu.2014.12.007
0020-7489/

What is already known about the topic?

- Frequent, unnecessary use of the emergency department causes overcrowding and delays that may jeopardize outcomes for patients who need urgent care.
- Most interventions aimed at reducing unnecessary emergency department visits have not been successful.
- Because of their potential link with health service utilization, secondary outcomes such as perceived continuity of care, illness perceptions, self-care capacities, psychological symptoms and medication adherence might influence ED revisits.

What this paper adds

- Several secondary outcomes were improved by an emergency department-based nursing intervention: continuity of care, self-care capabilities, anxiety and depressive symptoms and one aspect of illness perceptions.
- Improving these secondary outcome variables was not sufficient to reduce emergency department revisits.

The emergency department is a major entry point into the health care system of many countries with around one-third of individuals aged 15 or more reporting having visited an emergency department in the last two years in Canada (38%), the United States (34%), Australia (29%), the United Kingdom (29%), and New Zealand (27%) (Canadian Institute of Health Information, 2005; Schoen et al., 2004). Unnecessary emergency department revisits may result in overcrowding, increased waiting time, and failure to provide appropriate emergency care. We developed an emergency department-based intervention aimed at reducing emergency department revisits by targeting secondary outcomes that may predict emergency department utilisation according to the Andersen (1995) model of service utilization. The aim of the present paper is to report the impact of the intervention on the secondary outcomes of perceived continuity of care, illness perceptions, self-care capacities, psychological symptoms and medication adherence.

1. Background

The emergency department-based interventions literature focuses primarily on service use and ways to reduce emergency department revisits, with very little focus on impacting secondary outcomes, i.e. those factors that may influence emergency department utilisation. Systematic reviews of clinical emergency department-based interventions (Althaus et al., 2011; Fealy et al., 2009; McCusker and Verdon, 2006) have summarized the results of eight randomized controlled trials conducted in Canada (Gagnon et al., 1999; Lang et al., 2006; McCusker et al., 2003), United States (Mion et al., 2003; Shumway et al., 2008; Spillane et al., 1997), Australia (Caplan et al., 2004) and Sweden (Hansagi et al., 2008). Only one trial reported a significant impact on both secondary outcomes and revisits (Shumway et al., 2008). Shumway et al. found that an intervention delivered by a social worker to frequent emergency department users with psychosocial problems improved secondary outcomes such as peer and social service support, while also reducing emergency department revisits. Two other emergency department-based intervention studies observed some impact on secondary outcomes but did not observe effects on emergency department revisits (McCusker et al., 2003; Mion et al., 2003). McCusker et al. showed that an intervention in high-risk seniors was effective in improving secondary outcomes such as increased use of homecare services, increased primary physician referral and reduced 4-month functional decline. However, only one-third of patients who were referred to their primary care physician actually went to an appointment during the month after the emergency department visit. Therefore, failure to increase primary care use may have contributed to the intervention's lack of impact on emergency department revisits. Mion et al. (2003) found that a comprehensive geriatric assessment of seniors in the emergency department resulted in higher satisfaction with the information they received. However, this positive impact on a secondary outcome was not accompanied by a reduction in emergency department revisits. Gagnon et al. (1999) found no impact of a 10-month nurse case management intervention for frail elderly patients on secondary outcomes. There was also an unexpected greater mean number of emergency department visits in the intervention group than in the usual care group. Two other emergency department-based randomized controlled trials reported no impact of interventions on either secondary outcomes or emergency department revisits (Caplan et al., 2004; Spillane et al., 1997).

Other studies tested non-clinical interventions to reduce emergency department revisits. Electronic linkage between the emergency department and family physicians in both general Canadian (Lang et al., 2006) and Swedish populations (Hansagi et al., 2008) showed no difference in emergency department revisits. However, positive secondary outcomes were found in Hangasi et al., i.e. family physicians judged the information received from the ED useful and valuable.

It is difficult to pinpoint the key to success among interventions that have had an impact on emergency department revisits or secondary outcomes. While all interventions used models of case management combined with screening for at-risk patients, they tended to be individualized to the particular needs of the patients, with variable intensity and duration. Interventions lasting up to 10 months (Gagnon et al., 1999) were no more successful than single contact interventions (McCusker et al., 2003; Mion et al., 2003).

Recently, we reported the primary outcome results of a randomized controlled trial of an intervention delivered in the emergency department of a tertiary cardiac hospital (Cossette et al., 2013). At 30 days post-discharge, emergency department revisit rates were similar in the experimental and control groups (18% vs. 20% respectively, $p = .81$), with similar patterns seen at 90 days ($p = .44$), 180 days ($p = .98$) and 365 days ($p = .75$). As mentioned in the trial registration protocol (Current Controlled Trials, 2008) (ISRCTN88422298) we also selected specific secondary outcomes based on Andersen's model of service