



Burnout Research

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Burnout in the nursing home health care aide: A systematic review



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ARTICLE INFO

Article history:

Received 4 April 2016

Received in revised form 21 June 2016

Accepted 28 June 2016

Keywords:

Burnout
Care aides
Long term care
Systematic review
Nursing home

ABSTRACT

Objective: To systematically review the evidence on factors that influence burnout in health care aides working in nursing homes.**Design:** Systematic literature review.**Data sources:** Two search engines (Google and EBSCO Discovery Service) and five databases (MEDLINE, Scopus, CINAHL, PsycINFO and Proquest Dissertations & Theses) through to August 2013. Keywords: nursing home, health care aide and burnout (all synonyms were included).**Methods:** Two authors independently assessed methodological quality, data extraction, analysis and synthesis on the 10 included publications. 100% reliability was found between the first and second authors. Data extracted included precipitating and buffering factors related to burnout, interventions and demographic information for the health care aide population. Data were synthesized according to individual and organizational factors.**Results:** Our search and screening yielded 2787 titles and abstracts resulting in 83 manuscripts for full manuscript review and 10 included publications. Methodological quality assessments revealed 3 (30%) rated as low quality, 7 (70%) rated as medium quality. Independent variables were categorized as either *individual* or *organizational factors*. Methodological problems and heterogeneity in independent and dependant variables yielded few significant results. Only personal life (attributes of provider) was found to significantly buffer burnout (depersonalization, emotional exhaustion and personal accomplishment). Equivocal evidence was found for many of the organizational factors (work environment, workload and facility) supporting the need for further robust studies in this field. Of the two intervention studies, only dementia care mapping, and training in organizational respect buffered burnout.**Conclusion:** Factors associated with burnout in health care aides are similar to those reported among nurses, although the level of evidence and low methodological rigor of these studies suggest more robust study designs are warranted. Our findings suggest research focused on this important but largely invisible group of care providers could yield important advances in understanding burnout in this group and yield potential interventions to buffer burnout and its consequences. Without mitigating the effects of burnout on nursing home health care aides, vulnerable older adults in residential care are at risk.© 2016 The Authors. Published by Elsevier GmbH. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

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1. Introduction

Health care aides (HCAs), the majority of which are unregulated, entry-level staff, are the primary care providers for residents in nursing home (NH) facilities (Estabrooks, Squires, Carleton, Cummings, & Norton, 2015; Hewko et al., 2015). HCAs (also described as personal support workers, continuing care assistants, residential care workers) account for 70–90% of staff in NHs and are responsible for up to 90% of the direct care provided to these residents (Bowers, Esmond, & Jacobson, 2003; Institute of Medicine, 1996). Studies have consistently shown that higher staff-to-resident ratios are related to higher quality of care (Castle, 2008; Harrington et al., 2012; Katz, 2011); staffing levels in NHs are often reported as inadequate for this vulnerable older adult population (Grabowski, Aschbrenner, Rome, & Bartels, 2010; Harrington et al., 2012). The dependency and medical complexity of this increasing population of old and very old adults in NHs is mounting. Residents in NHs commonly require assistance with one or more of the following: bathing, dressing, eating, transferring, toileting and walking (Sahyoun, Pratt, Lentzner, Dey, & Robinson, 2001). The medical complexity of these residents is exacerbated by frequent alterations in health including pressure ulcers (White-Chu, Flock, Struck, & Aronson, 2011), depression (Thakur & Blazer, 2008), infection (High et al., 2009), falls (Wallis & Campbell, 2011) and failure to thrive (Robertson & Montagnini, 2004). Coupled with this, is the increasing number of residents with dementia, reports of up to 57% in Canadian NHs (Canadian Institute of Health Information, 2009) and 48.5% in United States NHs (Harris-Kojetin, Sengupta, Park-Lee, & Valverde, 2013), further straining the HCA workforce and quality of care provided.

Organizational factors that precipitate burnout in allied health professions and health care aides include; characteristics of high workload, high acuity of residents or patients, little time to perform tasks, and lack of congruence between employee and employer values (Josefsson, Sonde, Winblad, & Wahlin, 2007; Leiter & Maslach, 2009; Stevens, 2008). In this review we used the term “precipitate” to indicate the cause of an event or situation that is undesirable. Burnout is an individual response associated with work related stress over a prolonged period of time which can affect job satisfaction, productivity, performance, turnover and well being of both the professional and recipient of work (Maslach & Jackson, 1981; Maslach, Jackson, & Leiter, 1996). Burnout is composed of emotional exhaustion: an individual’s loss of emotional resources and emotional/coping energy (Maslach & Jackson, 1981; Maslach et al., 1996); depersonalization: an individual’s detachment (including

emotional detachment) from the patient or resident, includes negative attitudes toward and lack of compassion for patient or resident (Maslach & Jackson, 1981; Maslach et al., 1996); and decreased personal accomplishment: an individual’s negative feelings towards their own work and perception of competence (Maslach & Jackson, 1981; Maslach et al., 1996). Coupled with a decrease in support and resources and an increase in demand for care, HCAs are being placed at higher risk for burnout than their nursing counterparts (Gerhard, 2000). Considering the importance of the HCAs role in NH care it would seem paramount to investigate the state of the science on burnout in NH-HCAs.

1.1. Scoping review of burnout literature

To determine the need for a systematic review of burnout of HCAs in NH settings and to develop operational definitions, a preliminary scoping review was conducted using SCOPUS and EBSCO databases. English studies through August 2013 were retrieved resulting in 14,955 titles pertaining to burnout in all health care professions. The search strategy for this preliminary scoping review is not reported in this manuscript. Of these, 11 reviews were kept for inclusion. Five were systematic and six were narrative reviews of which, three included mental health nurses and staff (Dickinson & Wright, 2008; Edwards, Burnard, Coyle, Fothergill, & Hannigan, 2000; Leiter & Harvie, 1996), three included nursing staff in unspecified settings (Duquette, Kerouac, Sandhu, & Beaudet, 1994; Edward & Hercelinskyj, 2007; Khamisa, Peltzer, & Oldenburg, 2013), and one each of nurses in palliative care settings (Pereira, Fonseca, & Carvalho, 2011), oncology settings (Toh, Ang, & Devi, 2012), critical care settings (Epp, 2012), all health care professionals in all settings (Bria, Băaban, & Dumitrașcu, 2012) and one of direct care workers employed with intellectually disabled adults (Skirrow & Hatton, 2007). No reviews retrieved focused on HCAs or NH settings.

The reviews reported two main themes in the study of burnout – factors that precipitated, and factors that buffered burnout. In each of these themes, we developed subcategories that provided the structure for our systematic review’s data extraction table, individual factors (Bria et al., 2012; Dickinson & Wright, 2008; Duquette et al., 1994; Edward & Hercelinskyj, 2007; Edwards et al., 2000; Epp, 2012; Khamisa et al., 2013; Leiter and Harvie, 1996; Pereira et al., 2011; Skirrow & Hatton, 2007; Toh et al., 2012) and organizational factors (Dickinson & Wright, 2008; Duquette et al., 1994; Edward & Hercelinskyj, 2007; Edwards et al., 2000; Leiter & Harvie, 1996; Pereira et al., 2011). Organizational influences were the most commonly cited precipitators and buffers of burnout. Pre-

precipitators included workload, time pressure, employee values of safety, supervision and enough time for personal study (Bria et al., 2012; Dickinson & Wright, 2008; Duquette et al., 1994; Edward & Hercelinskyj, 2007; Edwards et al., 2000; Epp, 2012; Khamisa et al., 2013; Leiter & Harvie, 1996; Pereira et al., 2011). Buffering factors included effective communication, extra time, teamwork and support (Dickinson & Wright, 2008; Edward & Hercelinskyj, 2007; Edwards et al., 2000; Epp, 2012; Leiter, & Harvie, 1996; Pereira et al., 2011). Three systematic reviews indicated that stress plays a significant role in the development of burnout and may predict burnout (Bria et al., 2012; Khamisa et al., 2013; Skirrow & Hatton, 2007). Job strain and burden of work were also attributed to burnout in nursing staff (Dickinson & Wright, 2008; Edwards et al., 2000; Khamisa et al., 2013; Toh et al., 2012). One review proposed a model illustrating the relationship between contributing factors such as stressors, work stress and burnout however poor quality and a limited number of studies meant causality and direction of the relationships could not be established (Khamisa et al., 2013). Given the available evidence, our systematic review on burnout in HCAs included; domains of burnout (emotional exhaustion, depersonalization, decreased personal accomplishment) as dependant variables and extracted both individual and organizational factors associated with either precipitating or buffering burnout.

The purpose of this study was to systematically review existing literature to determine what is known about HCA burnout in the NH setting.

2. Methods

Using the results of the scoping review we developed a study protocol based on the Centre for Reviews and Dissemination guideline (Centre for Reviews and Dissemination, 2009) and structured this systematic review on the PRISMA (Moher, Liberati, Tetzlaff, & Altman, 2009) guidelines for systematic reviews. We used two electronic search engines, Google and EBSCO Discovery Service and five electronic databases, MEDLINE, Scopus, CINAHL, PsychINFO and Proquest Dissertations & Theses. We identified three broad categories of search terms: nursing home, health care aide and burnout. No restrictions were placed on location or year of publication.

2.1. Inclusion criteria

Publications were included if they met all of the following criteria: 1) research studies, 2) reported HCAs in NHs defined in the protocol (inclusive of assisted living, LTC and all other residential care facilities requiring the services of paraprofessional staff), 3) written in English, and 4) measured the construct of burnout or one of its sub concepts as the dependant variable (inclusive of synonymous terms listed in the definitions provided in the protocol).

2.2. Data extraction

The first author performed data extraction on all included publications. A second author confirmed data extraction on all included publications. Differences were resolved by consensus. The following data elements were extracted: sample size, sample population, geographic location of the study as well as time period of data collection, setting (example, LTC versus dementia care), study design, quality assessment tool/score, research question/purpose/hypothesis, independent variables, dependent variables and measurement scales, analysis used, interventions and significant/non-significant results.

2.3. Quality assessment

The quality of each study was assessed using the “Quality Assessment and Validity Tool for Correlational Studies” and the “Quality Assessment Pre-Post Intervention Design” tools adapted from Cummings et al. (2008). Quality assessments were conducted on the final sample of articles that met the inclusion criteria. Strength of the studies was determined by assigning a score for items posed in the respective assessment tool and assigned to weak (1–4 score), moderate (5–9 score) and strong (10–14 score) categories. Quality assessments were used to describe the relative strength of the available research findings. To confirm inter-rater reliability, a second reviewer was asked to independently score the 10 included publications and consensus was achieved.

2.4. Data synthesis

Narrative synthesis of the data via content analysis was used (Grimshaw et al., 2003; Moher et al., 2009). Data were synthesized according to individual and organizational factors that either buffer or precipitate burnout. Data were tabulated to determine statistically significant results related to the outcomes specified in the tables. Vote counting was used due to the heterogeneity of study factors and methods, the authors acknowledge this introduces a common bias towards significant results. Quantitative synthesis was achieved; factors assessed in fewer than four publications were coded as inconsistent indicating insufficient evidence to reach a conclusion (Grimshaw et al., 2003). Factors were coded as equivocal if 40–60% of publications showed a significant association (Grimshaw et al., 2003). We consider a factor as equivocal if the results are inconclusive on the strength or direction of the association. For example, if between 40 and 60% of publications show a significant association it is not clear if more than half or less report a significant relationship.

3. Results

3.1. Study selection and screening

The search yielded 2787 articles. After removing duplicates and screening titles, 83 publications remained for full-text retrieval. The inclusion tool was tested for inter-rater reliability with a second author on 10 percent ($n=8$) of the articles. The agreement rate was 100%. After applying the inclusion tool, 10 manuscripts remained in our dataset (see Fig. 1).

4. Study characteristics

4.1. Demographics

The majority of studies were conducted in the United States ($n=4$) (Gerhard, 2000; Ramarajan, Barsade, & Burack, 2008; Trainor, 1994; Yeatts, Cready, Swan, & Shen, 2010). Two original studies (Chappell & Novak, 1992; Goodridge, Johnston, & Thomson, 1996) resulting in five publications (Chappell & Novak, 1992; Goodridge et al., 1996; Martone, 1993; Novak & Chappell, 1994, 1996) were conducted in Canada and one study was conducted in Australia (Jeon et al., 2012). Of the 5 Canadian papers two independent data sets were used (Chappell and Novak, 1992; Goodridge et al., 1996), although these studies used the same dataset, they each focused on different variables. The proportion of female participants ranged from 63%–100%, in the majority of studies females accounted for 90–100% of the total participants. Participants' ages ranged from 19 to 65 years. Half of the study participants were married the remainder were either divorced, single or widowed (in rank

Table 1
Characteristics of Included Studies.

| Author, Journal, Country, Year | Sample & Setting | Study Design | Purpose | Independent variables | Dependent Variables | Analysis used | Quality Score(0–1) | Quality Rating (Low, Med, High) |
|---|---|---|--|---|--|----------------------------|--------------------|---------------------------------|
| Chappell & Novak, Gerontologist, CANADA, 1992 | 245 NAs, 26 LTC | Cross sectional descriptive survey | Test the buffering hypothesis that social support mediates the relationship between stressors and the reaction or outcome of burnout | Stressor factors – Workload & Rewards and Motivations | Burnout, Maslach Burnout Inventory (MBI) ($\alpha = 0.81$) | Multiple Regression | 0.64 | Med |
| Gerhard, Dissertation, USA, 2000 | 70 NAs, 1 NH | Cross sectional descriptive survey | Determine if optimism is a buffering factor in LTC HCA's | Support Factors – Internal and external Demographic Variables Facility Variables Demographic questionnaire- 41 items using likert scale | Burnout MBI – emotional exhaustion, depersonalization and personal accomplishment. ($\alpha = 0.71-0.9$) | Multiple Regression | 0.43 | Med |
| Goodridge et al, J of Elder Abuse & Neglect, CANADA, 1996 | 126 NAs, 1 LTC Facility | Cross sectional descriptive survey | Effect of conflict on burnout | Revised life orientation test- for optimism ($r = 0.78$) Adapted scale to measure assistant-resident conflict | Burnout Staff Burnout Scale for Health Professionals | Frequencies & correlations | 0.14 | Low |
| Jeon et al., Int'l J Nursing Studies, AUSTRALIA, 2012 | 124 (43.5% NAs of NAs, RNs, Therapy Staff, Other and Enrolled Nurses), 15 Residential Aged Care sites | Randomized Control Trial | Test the impact of person centered care, dementia care mapping versus usual care on staff burnout, general well-being & attitudes. | Person Centered Care Model | Burnout MBI – emotional exhaustion, depersonalization and personal accomplishment. ($\alpha = 0.46-0.9$) | ANOVA | NA | High Risk of Bias |
| Martone, Dissertation, CANADA, 1993 ^a | 227 NAs, 25 LTCs | Secondary data analysis of a Cross sectional descriptive survey | Examine the female nursing assistants' experience of burnout | Dementia Care Mapping Usual Care Paid/Unpaid Work | Burnout MBI –frequency and intensity of emotional exhaustion, depersonalization and personal accomplishment ($\alpha = 0.64-0.90$) | Multiple Regression | 0.64 | Med |
| | | | | Paid/unpaid work interference scale ($\alpha = 0.67$) Economic Dimensions | | | | |

Table 1 (Continued)

| Author, Journal, Country, Year | Sample & Setting | Study Design | Purpose | Independent variables | Dependent Variables | Analysis used | Quality Score(0–1) | Quality Rating (Low, Med, High) |
|--|----------------------------|--|--|---|---|-------------------------|--------------------|---------------------------------|
| Novak & Chapell, Int'l J Aging & Human Development, CANADA, 1994 ^a | 245 NAs, 25 LTC | Cross sectional descriptive survey | Examine the effects of caring for cognitively impaired patients on a random sample of nursing assistants | Economic Rewards and Motivations ($\alpha = 0.78$) Unpaid Work Paid Work Dimension Workload Scale, shift Participation in Decision Making Support Factors – Internal and external ($\alpha = 0.67$) Stressor Factors | Burnout, MBI – emotional exhaustion ($\alpha = 0.90$), depersonalization ($\alpha = 0.74$) and personal accomplishment. ($\alpha = 0.78$) | Multiple Regression | 0.64 | Med |
| Novak & Chappell, Int'l J Aging & Human Development, CANADA, 1996 ^a | 140 NAs, 25 LTC Facilities | Cross sectional descriptive survey | Determine the effects of working conditions on nursing assistant stress | Memory and Behavior Problems checklist (MBPC)– occurrence of various potentially disturbing behaviors ($\alpha = 0.92$) Appraisal of Care Demographic Variables – shift worked | Work Stress, MBI domains- Personal accomplishment & Depersonalization ($\alpha = 0.74$ & 0.77) | MANOVA | 0.57 | Med |
| Ramarajan et al., J of Positive Psychology, USA, 2008 | 108 CNA, 1 LTC Facility | Pre-test, post-test quasi-experimental | Determine the effect of organizational respect on emotional exhaustion | Level of Cognitive Impairment in patient Load Organizational respect = 5 domain likert scale survey ($\alpha = 0.81$) | Burnout, MBI – Emotional exhaustion ($\alpha = 0.76$) | Hierarchical Regression | 0.56 | Low |

| | | | | | | | | |
|--|---------------------------|------------------------------------|--|--|--|-----------------|------|-----|
| Trainor, Dissertation, USA, Trainor, Dissertation, USA, 1994 | 150 NAs, 5 LTCs | Cross sectional descriptive survey | Explore the relationship between employee/job characteristics and job strain among women employed as nursing assistants in long-term care facilities | Employee/job characteristics | Job strain, MBI – Emotional Exhaustion ($\alpha = 0.90$) | Correlations | 0.57 | Med |
| Yeatts et al., Gerontology and Geriatrics Education, USA, 2010 | 359 NAs, 11 NH Facilities | Cross sectional descriptive survey | Determine the effect of perceived training availability on burnout | Decision Latitude Scale ($\alpha=0.80$) Inventory of Socially Supportive Behaviors (ISSB) Attitude towards Old People Scale Perception of Training availability | Burnout, MBI – Emotional Exhaustion ($\alpha = 0.80$), Depersonalization ($\alpha = 0.58$) & Personal Accomplishment ($\alpha = 0.71$) | ANCOVA, MANCOVA | 0.43 | Med |

Note: Only information pertaining to the outcomes of burnout and its associated terms are extracted from each study.

NA – nursing assistant.

NH – nursing home.

LTC – long term care.

CNA – certified nursing assistant.

^a linked to the [Chappell & Novak \(1992\)](#) study.

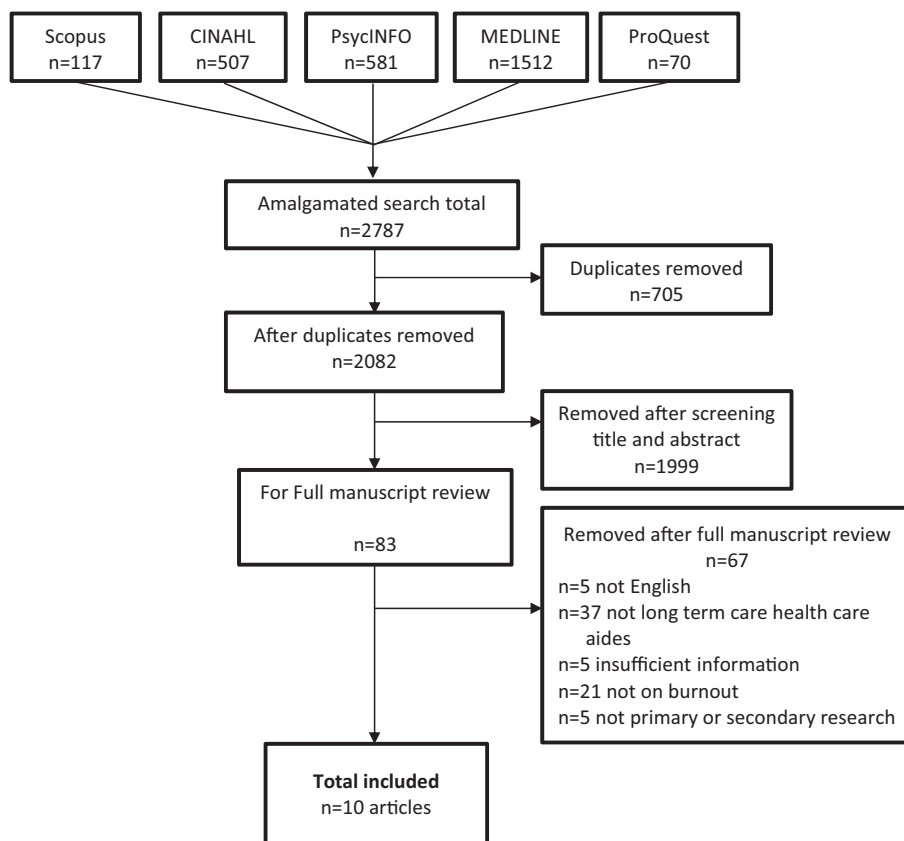


Fig. 1. Search Strategy.

order). The setting within NH (e.g., differentiation between dementia care, locked units and general units) was not readily identifiable in the majority of studies (see Table 1).

4.2. Characteristics of publications

Of the 10 quantitative studies (Chappell & Novak, 1992; Gerhard, 2000; Goodridge et al., 1996; Jeon et al., 2012; Martone, 1993; Novak & Chappell, 1994, 1996; Ramarajan et al., 2008; Trainor, 1994; Yeatts et al., 2010), 8 were cross sectional (Chappell & Novak, 1992; Gerhard, 2000; Goodridge et al., 1996; Martone, 1993; Novak & Chappell, 1994, 1996; Trainor, 1994; Yeatts et al., 2010) one was a pretest-posttest intervention study (Ramarajan et al., 2008) and one a randomized controlled trial (Jeon et al., 2012). Of the eight cross-sectional studies, four were analyzed using regression (Chappell & Novak, 1992; Gerhard, 2000; Martone, 1993; Novak & Chappell, 1994), two used analysis of variance (Novak & Chappell, 1996; Yeatts et al., 2010), and two used correlation statistics only (Goodridge et al., 1996; Trainor, 1994). The pretest-posttest intervention study was analyzed using descriptive statistics.

Six studies focused on burnout as the dependent variable using two different measurements; all three domains of the Maslach Burnout Inventory (Chappell & Novak, 1992; Gerhard, 2000; Jeon et al., 2012; Martone, 1993; Yeatts et al., 2010), and Staff Burnout Scale for Health Professionals (Goodridge et al., 1996). The remaining studies addressed emotional exhaustion, depersonalization and personal accomplishment using one or multiple Maslach Burnout Inventory domains. Less than half of the studies had theoretical framing. One study reports using the Cognitive Appraisal model of Stress framework, yet made no mention of how it applied to the

study (Novak & Chappell, 1994). Table 1 depicts characteristics of each study.

4.3. Methodological quality of publications

Table 2 and Table 3 summarize the quality assessment results of included publications. Two studies (20%) rated as low quality (Goodridge et al., 1996; Ramarajan et al., 2008), and 7 (70%) rated as medium quality (Chappell & Novak, 1992; Gerhard, 2000; Martone, 1993; Novak & Chappell, 1994, 1996; Trainor, 1994; Yeatts et al., 2010), and no publications were rated as strong. Of the 8 cross-sectional studies four used probability sampling (Chappell & Novak, 1992; Martone, 1993; Novak & Chappell, 1994, 1996) and none justified sample size. Nine reported reliability information regarding their measure of burnout (Chappell & Novak, 1992; Gerhard, 2000; Jeon et al., 2012; Martone, 1993; Novak & Chappell, 1994, 1996; Ramarajan et al., 2008; Trainor, 1994; Yeatts et al., 2010) and eight reported validity information pertaining to their measure of burnout (Chappell & Novak, 1992; Gerhard, 2000; Jeon et al., 2012; Martone, 1993; Novak & Chappell, 1994, 1996; Ramarajan et al., 2008; Trainor, 1994). All of the cross-sectional studies used self-reported measures of burnout. Four studies reported using a theoretical framework (Gerhard, 2000; Goodridge et al., 1996; Novak & Chappell, 1996; Trainor, 1994); only one addressed management of statistical outliers (Yeatts et al., 2010). Theories were used to interpret the study results (Trainor, 1994) and link findings to existing theory. Or, theoretical frameworks were described as a component of a comprehensive literature review (Gerhard, 2000). In all of the studies we examined that reported using a theoretical framework it is unclear how the theoretical framework impacted the data collection or analysis.

Table 2
Summary of included correlational studies quality assessment (n = 8).

| Criteria | Number of studies (n) | |
|--|-----------------------|-----|
| | Yes | No |
| Design | | |
| 1. Was the study prospective? | 0 | 8 |
| 2. Was probability sampling used? | 4 | 4 |
| Sample | | |
| 1. Was sample size justified? | 0 | 8 |
| 2. Was sample drawn from more than 1 site? | 6 | 2 |
| 3. Was anonymity protected? | 3 | 5 |
| 4. Was response rate >60% | 5 | 3 |
| 1. Measurement | | |
| 1. Are factors used to measure Burnout reliable? | 7 | 1 |
| 2. Are factors used to measure Burnout measured using a valid instrument? | 5 | 3 |
| 3. Is the burnout measure | | |
| a) observed (score 2) or | a)0 | a)8 |
| b) self-reported (score 1) | b)8 | b)0 |
| 4. If scale was used measuring effects is internal consistency ≥ 0.70 ? | 6 | 2 |
| 5. Was a theoretical model/framework used? | 4 | 4 |
| Statistical analysis | | |
| 1. Are correlations analyzed if multiple effects studied? | 7 | 1 |
| 2. Are outliers managed? | 1 | 7 |

Note: adapted from Cummings et al. (2008).

Table 3
Summary of pre-post intervention study quality assessment (n = 2).

| Criteria: Pre-/Post Intervention Study Design | Studies (N) | | |
|--|-------------|----|-----|
| | Yes | No | N/A |
| Sampling | | | |
| 1. Was probability sampling used? | 0 | 2 | |
| 2. Was sample size justified to obtain appropriate power? | 1 | 1 | |
| Design | | | |
| 1. One pre-test or baseline and several post-test measures? | 1 | 1 | |
| 2. Simple before-and-after study? | 1 | 1 | |
| Control of confounders | | | |
| 1. Does the study employ a comparison strategy: An attempt to create or assess equivalence of the groups at baseline by: | | | |
| a) matching or | 1 | 1 | |
| b) statistical or | 0 | 2 | |
| c) none or | 1 | 1 | |
| d) the group comparisons were the same for all occasions (free, baseline and post evaluations) | | 2 | |
| Data collection and outcome measurement | | | |
| 1. Was the dependent variable directly measured by an assessor? | 0 | 2 | |
| 2. Were dependent variables either: | | | |
| a) directly measured | 0 | 2 | |
| b) self-reported | 1 | 0 | |
| 3. Were the dependent variables measured reliably (with reliability indices previously or for this study)? | 1 | 1 | |
| 4. Were dependent variables measured validly (with validity assessments previously or for the study)? | 1 | 1 | |
| Statistical analysis and conclusions | | | |
| 1. Was (were) the statistical test(s) used appropriate for the main outcome and at least the 80% of others? | 2 | 0 | |
| 2. Were key values and confidence intervals reported properly? | 2 | 0 | |
| 3. If multiple outcomes were studied, were correlations analyzed? | 2 | 0 | |
| 4. Were missing data managed appropriately? | 0 | 2 | |
| Dropouts | | | |
| Is attrition rate <30% | 1 | 1 | |

Note: adapted from Cummings et al. (2008).

5. Findings

We noted significant variability in both the independent and dependent variables across studies. For potential buffering factors alone, more than 40 independent variables were listed. The *dependent variable* (burnout) was assessed with 2 different measures across the studies. We classified the independent variables into individual (socio-demographic, personal life and education) or organizational factors (facility, work environment, employment characteristics, work load and work related education). These classifications were developed to group conceptually similar variables and were derived from our understanding of the literature pertaining to burnout.

5.1. Individual buffers

Individual buffers predominately focused on subjective appraisal of the surrounding events and environment (Chappell & Novak, 1992; Gerhard, 2000; Novak & Chappell, 1994). Subjective appraisal consisted of job enjoyment, reaction to patient behaviour, optimism, pleasantness of tasks and feelings of identity. Positive appraisal of the job, patients and tasks served to reduce feelings of emotional exhaustion (Novak & Chappell, 1994).

while increasing feelings of accomplishment (Gerhard, 2000; Novak & Chappell, 1994). However, optimism as manifested through positive outlook, did not significantly affect depersonalization or emotional exhaustion but did serve to increase feelings of accomplishment (Gerhard, 2000). Feelings of ethnic identity served

to reduce the amalgamated overall burnout score (Chappell & Novak, 1992). 'Values' encompassed HCA's perception of influence on residents' well being and the desire to share positive experiences and changes (Gerhard, 2000). These values significantly affected emotional exhaustion, depersonalization and personal accomplishment.

Individual demographic factors had a significant influence on depersonalization only (Gerhard, 2000; Novak & Chappell, 1994). Being married, older and holding more years of education served to reduce overall feelings of depersonalization (Gerhard, 2000; Novak & Chappell, 1994). Neither marital status nor gender had a significant effect on emotional exhaustion or personal accomplishment (Gerhard, 2000). Sex did not significantly influence depersonalization (Gerhard, 2000). However, this could be a masked effect due to the lack of male participants in studies. Overall, authors reported on more individual buffering factors than organizational ones. Positive subjective appraisal of the surrounding environment was the most commonly cited individual buffering factor, a high degree of heterogeneity existed across individual buffering factors.

5.2. Organizational buffers

Four studies investigated organizational buffering factors' influence on burnout (Gerhard, 2000; Jeon et al., 2012; Martone, 1993; Novak & Chappell, 1994). They found that a reduction in work strain accounted for improved emotional exhaustion (Jeon et al., 2012), depersonalization (Jeon et al., 2012) and personal accomplishment (Jeon et al., 2012) scores. One study found the perception of available job training buffered all three domains of burnout (Yeatts et al., 2010). Many of the attributes of the work environment (pleasantness of tasks, value/meaning of work, emotional reward, making a difference) significantly buffered emotional exhaustion and depersonalization measures of burnout (Jeon et al., 2012). Such as, the more time a provider spends on physical care of a patient the less depersonalization experienced (Jeon et al., 2012) (Table 4).

5.3. Individual precipitators

Individual factors associated with precipitating burnout were few. The individual attribute of prior education or years of education had no significant effect on burnout measures (Chappell & Novak, 1992; Novak & Chappell, 1996). No studies examined a balanced number of potential buffers or precipitators from either individual or organizational factors.

5.4. Organizational precipitators

One study found workload to significantly precipitate burnout through depersonalization and emotional exhaustion (Martone, 1993). The organizational stressor of paid/unpaid work interference was reported to precipitate emotional exhaustion, yet buffer personal accomplishment measures of burnout (Martone, 1993). Martone (1993) labeled the effect that paid work for employment has on the unpaid work of family and home life including childcare as 'paid/unpaid work interference'.

5.5. Interventions

Two intervention studies are included in this systematic review. One of them focused on educational interventions (Jeon et al., 2012) while the other studied organizational change and respect (Ramarajan et al., 2008). An education intervention on dementia care mapping significantly buffered emotional exhaustion (Jeon et al., 2012). Ramarajan et al. (2008) examined organizational respect during organizational change which was found to signif-

icantly buffer the emotional exhaustion measure of burnout (Jeon et al., 2012; Ramarajan et al., 2008).

6. Discussion

Researchers have studied a broad and diverse number of factors that either precipitate or buffer burnout. However, relatively weak study designs limit confidence in the evidence for these various factors and both weak design and the small number of intervention studies makes it impossible to recommend effective strategies to reduce burnout in this population, in this setting.

Notably, the majority of factors that precipitate burnout can be attributed to modifiable organizational characteristics, events or obstacles that increase the time required to complete the task(s) at hand. With the rising demands on residential LTC and increasingly complex and heavy workloads of the resident population, HCAs' risk for developing burnout is also likely to rise. A recent Canadian study found HCAs at moderate risk for burnout (higher than the nursing counterparts reported in their larger study) but reported an unusually high score for 'job efficacy' (comparable to the earlier MBI measure of personal accomplishment) (Estabrooks et al., 2015). This may account for the conflicting results reported in the study that amalgamated the MBI subscales and only reported "burnout" (Chappell & Novak, 1992). High intrinsic rewards found in the HCA workforce (Estabrooks et al., 2015; Morgan, Dill, & Kalleberg, 2013) coupled with the hypothesis that organizational variables that increase personal accomplishment scores may buffer burnout provides direction for potential interventions. The interventions identified in this review primarily consisted of educational programs which were of limited utility. These interventions may have been more successful if designed in collaboration with managers and HCAs to determine what tools or information they needed.

6.1. Limitations

Limitations of this review include the exclusion of studies not written in English, heterogeneity of included studies, and bias towards significant results inherent with vote counting procedure.

6.2. Implications

Studies are needed that investigate the causal relationship between individual and organizational factors that influence burnout. Replication of studies investigating the relationship between organizational factors such as workload and work environment would strengthen or refute the findings here. Results indicating the importance of personal attributes as buffers should be taken into consideration during work force planning and recruitment of HCA staff. Although, our study found no significance between workplace support and burnout, further studies investigating the relationship between the buffering capacity of workplace support and burnout are warranted as the studies investigating this were of low and moderate quality.

7. Conclusion

Burnout presents a threat to workers own health and to resident quality of care. Although it has been the focus of much research for over 35 years, little research has been undertaken with this large workforce who provide the majority of direct care to medically and socially complex and vulnerable older adults in residential LTC settings. Existing research on burnout in this population suffers from serious methodological challenges. Future research should focus efforts on pinpointing the environmental characteristics that cause increased workload and its subsequent effect on burnout. Theo-

Table 4
Conclusion Summary for Burnout Sub-Scales (Depersonalization, Emotional Exhaustion, Personal Accomplishment).

| Factor | Depersonalisation Factors | | | | Emotional Exhaustion | | | | Personal Accomplishment | | | |
|----------------------------|---------------------------|---------|-----------|-----------------|----------------------|---------|-----------|-----------------|-------------------------|---------|-----------|-----------------|
| | Total # Studies* | S** | NS*** | Conclusion | Total # Studies* | S** | NS*** | Conclusion | Total # Studies* | S** | NS*** | Conclusion |
| Individual factors | | | | | | | | | | | | |
| Sociodemographic | | | | | | | | | | | | |
| Age | 2 | 2 | 0 | Inconsistent | 2 | 0 | 2 | Inconsistent | 2 | 0 | 2 | Inconsistent |
| Gender | 1 | 0 | 1 | Inconsistent | 1 | 0 | 1 | Inconsistent | 1 | 0 | 1 | Inconsistent |
| Marital Status | 3 | 0 | 3 | Inconsistent | 3 | 0 | 3 | Inconsistent | 3 | 0 | 3 | Inconsistent |
| Collapsed | 6 | 2 | 4 (67%) | Not Significant | 6 | 0 | 6 | Not Significant | 6 | 0 | 6 | Not Significant |
| Personal life factors | | | | | | | | | | | | |
| Attributes | 5 | 3 (60%) | 2 | Significant | 5 | 3 (60%) | 2 | Significant | 5 | 3 (60%) | 2 | Significant |
| Stressors | 11 | 0 | 11 (100%) | Not Significant | 11 | 1 | 10 (91%) | Not Significant | 11 | 1 | 10 (91%) | Not Significant |
| Support | 2 | 0 | 2 | Inconsistent | 2 | 0 | 2 | Inconsistent | 2 | 0 | 2 | Inconsistent |
| Collapsed | 18 | 3 | 15 (83%) | Not Significant | 18 | 4 | 14 (78%) | Not Significant | 18 | 4 | 14 (78%) | Not Significant |
| Education | | | | | | | | | | | | |
| Pre-employment | 2 | 0 | 2 | Inconsistent | 2 | 0 | 2 | Inconsistent | 2 | 0 | 2 | Inconsistent |
| Organizational factors | | | | | | | | | | | | |
| Facility | | | | | | | | | | | | |
| Collapsed | 4 | 0 | 4 (100%) | Not Significant | 4 | 2 | 2 | Equivocal | 4 | 0 | 4 (100%) | Not Significant |
| Work Environment | | | | | | | | | | | | |
| Attribute | 15 | 7 (47%) | 8 (53%) | Equivocal | 15 | 4 | 11 (73%) | Not Significant | 15 | 3 | 12 (80%) | Not Significant |
| Stressors | 2 | 0 | 2 | Inconsistent | 2 | 0 | 2 | Inconsistent | 2 | 1 | 2 | Inconsistent |
| Support | 10 | 2 | 8 (80%) | Not Significant | 10 | 4 | 6 (60%) | Not Significant | 10 | 1 | 9 (90%) | Not Significant |
| Collapsed | 27 | 9 | 18 (67%) | Not Significant | 27 | 8 | 19 (70%) | Not Significant | 27 | 5 | 22 (81%) | Not Significant |
| Employment Characteristics | | | | | | | | | | | | |
| Collapsed | 11 | 1 | 10 (91%) | Not Significant | 11 | 0 | 11 (100%) | Not Significant | 11 | 0 | 11 (100%) | Not Significant |
| Workload | | | | | | | | | | | | |
| Collapsed | 7 | 3 | 4 (57%) | Equivocal | 7 | 3 | 4 (57%) | Equivocal | 7 | 0 | 7 (100%) | Not Significant |
| Work Education | | | | | | | | | | | | |
| Variety of variables | 3 | 1 | 2 | Inconsistent | 3 | 1 | 2 | Inconsistent | 3 | 1 | 2 | Inconsistent |

1. To conclude whether or not a factor was associated with burnout, it had to be assessed a minimum of 4 times. Factors assessed fewer than 4 times were coded as inconsistent (i.e., insufficient evidence to reach a conclusion).
2. Factors assessed 4 or more times were coded as significant or not significant if at least 60% of reports showed a significant or not significant association with burnout respectively. Factors were coded as equivocal if 40–60% of reports showed a significant association.

Total # of Studies* = total number of studies that assessed this factor.

S** = total number of studies where this factor was significant.

NS*** = total number of studies where this factor was not significant

retical framing has been lacking across studies and is needed to develop robust interventions and ensure robust interpretations. Both intervention and longitudinal studies are important to successful research and research to action activity in this area.

Conflict of interest

None.

Acknowledgements

Dr. Cummings is Professor, Faculty of Nursing and holds a Centennial Professor (2013–2020) at the University of Alberta. She heads the Connecting Leadership, Education & Research (CLEAR) Outcomes Research Program. Dr. Estabrooks is supported by a Tier 1 CIHR Canada Research Chair in Knowledge Translation. Ms. Chamberlain is supported as a doctoral fellow by the Alzheimer Society of Canada. No funding agency listed above had a role in the study design, data collection, data analysis, or interpretation of the data.

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