

Influence of Individual and Contextual Characteristics on the Provision of Individualized Care in Long-Term Care Facilities

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Purpose: Previous research examining improved provision of individualized care (I-Care) in long-term care (LTC) facilities has primarily considered contextual influences. Using Kanter's theory of structural empowerment, this study explored the relationship among contextual-level characteristics, individual-level characteristics, and access to empowerment structures on LTC staffs' perceived ability to provide I-Care. **Methods:** Multilevel models were used to examine 567 staffs' (registered nurse [RN], licensed practical nurses [LPN], care aides) reported ability to provide I-Care, nested within 41 LTC facilities. I-Care was first modeled as a function of within-person (e.g., age, job classification, experience) and between-context (e.g., facility ownership status, culture change models) variables. Independent of these predictors, we then assessed the influence of staffs' access to empowerment structures (information, support, opportunities, resources, informal power, and formal power) on reported ability to provide I-Care. **Results:** The intraclass correlation coefficient indicated that 91.7% of the total variance in perceived ability to provide I-Care reflected within- versus between-person differences, with the 6 empowerment variables accounting for 31% of this

within-person variance independent of the other context- and person-level covariates. In the final model, only informal power (i.e., quality of interprofessional relationships) and resources (i.e., adequate time and supplies) uniquely predicted I-Care. Notably, access to resources also attenuated the significant effect of support, suggesting a possible mediating effect. **Implications:** These findings suggest that both contextual- and individual-level factors exert considerably less influence on I-Care than factors associated to staffs' perceptions of empowerment. Consequently, interventions aimed at increasing I-Care in LTC settings should carefully consider staffs' access to structural empowerment.

Key Words: nursing home, quality of care, organizational and institutional issues

Individualized care (I-Care) is defined as care that takes into account resident individuality, incorporates resident participation into care plan decision making, and ensures a holistic approach to wellness (Happ, Williams, Strumpf, & Burger, 1996). This philosophy of care has been described under a broad spectrum of terms (e.g.,

person-centered care, consumer-directed care, and self-directed care); each of which share concepts and definitions that are often interchanged with the term I-Care (Talerico, O'Brien, & Swafford, 2003). The attainment of the goal of improved I-Care is considered by many to be essential to both quality of care and quality of life of individuals residing in long-term care (LTC) facilities, especially those who have Alzheimer's disease or a related dementia (Brooker, 2007; Fazio, 2008; Kitwood, 1997; Talerico et al., 2003). Unfortunately, review of the literature indicates that meaningful improvements in the provision of I-Care in LTC facilities have largely been unrealized, despite significant effort (Doty, Koren, & Sturla, 2008; Miller, Mor, & Clark, 2010).

Projections suggest that the number of older adults residing in LTC facilities will triple by 2031 (Brookmeyer, Gray, & Kawas, 1998). Due to these demographic trends, it is essential that we improve our understanding of the factors that influence the provision of high quality, I-Care in LTC facilities. Using Kanter's theory of structural empowerment (Kanter, 1979), this study aimed to explore the relationship between contextual-level characteristics, individual-level characteristics, and access to empowerment structures on care staffs' perceived ability to provide I-Care.

Theoretical Framework

Kanter's theory of structural empowerment (Kanter, 1979) suggests that individuals' attitudes and behaviors are shaped primarily in response to their positions within an organization; consequently, socialization experiences and personality predispositions are seen as less influential on behaviors than situations that arise due to one's position within an organization. Central to an individual's position is her/his access to both formal and informal power. *Formal power* is derived from positions that are relevant to key organizational goals, allow discretion, and provide recognition. In contrast, *informal power* is derived from the quality of alliances and relationships with people in the organization. As such, informal power is a measure of the quality of interprofessional relationships within ones' work setting.

Several of the empowerment structures described by Kanter (1979) are relevant to this study. For example, the *structure of opportunity* refers to access to new challenges, opportunities to increase knowledge and skills, and opportunities for growth

and advancement within the organization. The *structure of proportions* refers to the social composition of people in approximately the same position—individuals who are an extreme minority are said to have token status and therefore lack access to sources of power (Izraeli, 1983). The *structure of power* denotes access to three lines of power—lines of supply (i.e., an individual's ability to exert influence outward and bring needed and valued resources into the organization), lines of information (i.e., timely access to information about organizational decisions and policy changes that may directly or indirectly affect one's organizational domain), and lines of support (i.e., guidance and feedback received from subordinates, peers, and supervisors to enhance effectiveness) (Laschinger, 1996).

Kanter (1979) further proposes that the best way to make ineffective individuals more productive is not by training or replacing them but by making structural changes in the organization that enable them to have access to empowerment structures (e.g., access to resources, access to support, and increased control over working conditions and flexibility). Having access to information, support, resources, and opportunity structures in an organization empowers individuals to effectively and constructively contribute to the attainment of the organizational goals (Kanter, 1979). In this case, the work-related goal we are focusing on is the provision of I-Care.

To date, contextual-level (i.e., facility) characteristics have been the primary focus when attempting to further our understanding as to why meaningful improvements to the provision of I-Care in LTC settings remain so elusive. According to the literature, specific facility features that may influence quality-of-care outcomes in LTC facilities include ownership status, staff assignment, staffing levels, and implementation of culture change models (CCM).

Contextual-Level Characteristics

Ownership status of LTC facilities.—The most commonly made distinction regarding ownership status of LTC facilities is between that of for-profit (FP; i.e., proprietary) and not-for-profit (NFP; i.e., religious, lay, municipal, regional/provincial/territorial, and/or federal government; Banerjee, 2009). In the United States, approximately 67% of all LTC beds are located in FP, investor-owned facilities; the same is true for 40.7% of LTC beds in Canada,

yet considerable regional variation exists in both countries (Berta, Laporte, Zarnett, Valdmanis, & Anderson, 2006).

A substantial body of research has assessed the relationship between ownership status and quality of care. A recent systematic review and meta-analysis by Comondore and colleagues (2009) concluded that on average, NFP facilities provide higher quality care than FP facilities. However, findings also suggest that while an average positive effect is clear, it likely varies across situations, potentially mediated by management philosophies and related work organization systems (Comondore et al., 2009; Eaton, 2000).

Staff levels.—Although increasing staff-to-resident ratios has been purported to be essential to care staffs' ability to provide I-Care, empirical support is mixed. In a systematic review of studies examining staffing levels and quality, Castle and Engberg (2008) observed only a weak association between LTC staffing levels and quality of care. They concluded that adding more staff may be a necessary but not sufficient means of improving the quality of care in nursing homes. Furthermore, they found that stability of staff and professional staff mix is required if improvements in the quality of care are to be realized.

Staff assignment.—The consistent assignment of staff to the same group of residents on the majority of shifts is currently advocated as a best practice (Rahman, Straker, & Manning, 2009). Although studies evaluating the effect of consistent assignment report more positive than negative resident and staff outcomes, much of the research is plagued by methodological limitations (e.g., small sample sizes, absence of control groups, and the introduction of consistent assignment as only one part of a multicomponent intervention; Rahman et al., 2009). Additionally, a notable study by Burgio, Fisher, Fairchild, Scilley, and Hardin (2004) found that nursing homes reporting consistent assignment only had residents receiving care from their primary care aide 50% of the time; a rate that is significantly below the recommended levels of between 80% and 85% (Farrell, Frank, Brady, McLaughlin, & Gray, 2006). However, it should be noted that Castle (2011) recently reported an association between consistent assignment of nurse aides and decreased nursing home deficiency citations;

lending justification for it as a preferred practice in LTC facilities.

Culture change models.—Historically, an institutional model of care has ensured that the care in LTC facilities was primarily provider driven (i.e., care that is organized based on care provider routines with a primary focus on achieving medical goals). In the last decade, however, there has been a gradual paradigm shift toward more social models of care. This shift has largely been operationalized through the development and implementation of management initiatives often referred to as CCM (e.g., Person-Centered Care, Eden Alternative, Gentle Care, Pioneer Network, Wellspring). Common to each CCM is the goal of increasing the provision of I-Care through person-centered care practices. To date, however, much of the extant research on person-centered care practices tends to be of a conceptual/theoretical or anecdotal nature (Edvardsson, Winblad, & Sandman, 2008). Findings of the few empirical studies, which are primarily focused on resident outcomes, are mixed. For example, in a cluster-randomized trial of the effectiveness of person-centered versus conventional (i.e., custodial, task-oriented) care, resident agitation was found to be significantly lower at the person-centered care sites, whereas the number of falls and psychotropic drug use were significantly higher (Chenoweth et al., 2009). Conversely, Fossey and colleagues (2006) report that the proportion of residents taking neuroleptics following a person-centered care training intervention was significantly lower than in the control sites; however, no significant differences were found in terms of falls, agitation/aggression, and quality of life. Finally, it is important to note a web-based survey of 1,147 LTC facilities across the United States, identified less than 10% as fully adopting person-centered care practices vis-a-vis culture change (Miller et al., 2010).

Individual-Level Characteristics

It is critical to note that any research conducted in LTC facilities must take into account the association between individuals and the context within which they work. We posit that these associations need to be accounted for to understand how select variables influence outcomes. To date, research has largely ignored the potential impact of individual-level characteristics such as education level, years of experience, or job classification on the provision of I-Care.

Staff demographics.—Women make up a higher percentage of the LTC workforce than the overall health care sector (Armstrong & Banerjee, 2009). In both Canada and the United States, 90% of front-line care workers and a significant proportion of management staff are women (Dodson & Zincavage, 2007). Although facility managers, administrators, and residents are predominantly white, approximately half of all care aides who work in LTC facilities across North America are from immigrant and visible minority backgrounds (Cohen, 2009). In addition to these commonalities, care aides also share a similar socioeconomic class. Situated on the lowest tier in the health care labor market, they are the least educated and the lowest paid (Tellis-Nayak & Tellis-Nayak, 1989), factors that both reflect and contribute to the widely held perception of care work as unskilled labor (Innes, 2002).

Job classification.—Direct care in LTC facilities is provided by RNs, LPNs, and care aides (i.e., front-line care staff). RNs are regulated professionals who have generally completed between 2 and 5 years postsecondary educational training and have the ability to obtain a managerial position within the hierarchy of the LTC settings. Due to the differences in their pay, education, and training, RNs tend to fall into a higher socioeconomic class than LPNs and care aides. Although different facilities will have a unique division of roles and tasks, care aides (also referred to as nursing assistants and personal support workers [PSWs] in Canada and certified nursing assistants [CNAs] in the United States) provide between 80% and 90% of direct resident care and thus play a central role in determining whether I-Care is provided (Castle, 2011; Kane, 1994). Care aides are unlicensed health professionals who work under the supervision of a regulated (or licensed) health professional or supervisor. In the case of LTC, care aides usually report to either an RN or an LPN.

Research Questions

The existing literature regarding nurse empowerment generally supports Kanter's theory and suggests that access to empowerment structures related to power and opportunity in one's position is significantly related to organizational commitment, job autonomy, and work effectiveness (Beaulieu, Shamian, Donner, & Pringle, 1997); Laschinger, 1996; Laschinger & Sabiston, 2000; Laschinger

& Wong, 1999). More specifically, Caspar and O'Rourke (2008) found that for care aides, access to *informal power*, was directly associated with perceived ability to provide I-Care.

Absent from the literature, however, are studies that take into account the nested association between individuals and the context within which they work. In addition, no study to date has explored the potential influence that access to structural empowerment has on these associations. Hence, our research questions were as follows:

1. What is the relationship between individual-level characteristics and care staff members' reported ability to provide I-Care?
2. What is the relationship between contextual-level characteristics and care staff members' reported ability to provide I-Care?
3. Does access to empowerment structures explain any relationships found between individual- and contextual-level characteristics and care staff members' reported ability to provide I-Care?

Methods

Participants

A convenience sample of 176 RNs, 65 LPNs, and 326 care aides were recruited from 41 LTC facilities within three of five regional health authorities in British Columbia, Canada (Tables 1 and 2). To be eligible, participants had to work on a permanent full-time or part-time basis (or as a casual in an equivalent full-time or part-time position), be proficient in English, and have been employed in that facility for at least 6 months. All eligible staff who agreed to participate, received a survey package that contained the study information document that emphasized the purposes, process, and confidentiality of the study, as well as study questionnaires including a demographic questionnaire. Informed consent of participants was assumed when participants voluntarily filled out the study questionnaires and returned them to the primary investigator as specified in the Study Information Letter.

Measures

Structural empowerment.—Lashinger's (1996) Conditions of Work Effectiveness Questionnaire (CWEQ), the Job Activities Scale (JAS), and the Organizational Relationships Scale (ORS) were

Table 1. Descriptive Characteristics of Participants

Demographic Variables	RN/LPNs (<i>n</i> = 241)	Care Aides (<i>n</i> = 326)
Gender		
Male	13 (5.0)	25 (7.7)
Female	228 (95)	299 (91.7)
Age (years)	45.31 ± 10.67 (19 – 65)	42.8 ± 9.1 (22 – 64)
Ethnicity (<i>n</i> = 232)		
Aboriginal/first nations	2 (0.8)	6 (1.8)
African/Black	2 (0.8)	4 (1.2)
Asian/Pacific Islander	86 (35.5)	128 (39.3)
Latina/Latino	2 (0.8)	13 (4)
Middle Eastern/North African	2 (0.8)	6 (1.8)
Caucasian/White/European	134 (55.4)	138 (42.3)
Mixed/Multi	4 (1.7)	10 (3.1)
Job title		
RN	176 (73.)	
LPN	65 (27)	
Care aide		326 (100)
Years experience in nursing	18.9 ± 11.6 (1 – 44)	12.4 ± 7.8 (1 – 40)
Years in current facility	8.7 ± 7.5 (1 – 32)	9.7 ± 7.0 (1 – 29)
Highest level of education		
High school	0	37 (11.3)
Certificate	9 (3.7)	236 (72.4)
Diploma	175 (72.6)	30 (9.2)
BScN	56 (23.1)	3 (9)
MSN	1 (0.4)	0
Work Status		
Full time	139 (57.4)	163 (50)
Part time	71 (29.3)	93 (28.5)
Casual (full time or part time equivalent)	31 (12.8)	61 (18.7)

Notes: RN = registered nurse; LPN = licensed practical nurses; SD = standard deviation.

Numbers are reported with percentages in parentheses and as mean ± SD and range in parentheses.

Table 2. Descriptive Characteristics of Long-Term Care (LTC) Facilities

Descriptive Variables	Percent
Facility location	
Urban settings	75.5
Rural settings	23.8
Facility type	
Public not-for-profit (NFP)	52.3
Private for-profit (FP)	28.5
Private NFP	18.8
Average number of residents	155 ± 84.01 (29–700)
Unionized environments	80.8
Provides complex care	90.0
Has special care unit	40.5
Has a model of care (as specified by manager)	
Yes	47.7
No	52.3
Type of model of care (as specified by manager)	
Person-centered care	10.2
Eden alternative	20.3
Gentle care	17.2

Note. Numbers are reported with percentages in parentheses and as mean ± SD and range in parentheses.

selected to measure seven constructs specific to Kanter's theory of structural empowerment in organizations. The CWEQ uses a 5-point Likert-type response key and has been used in numerous studies in health care settings. Generally, acceptable internal consistency for responses has been reported for each of four subscales: information—8 items ($0.73 \leq \alpha \leq 0.98$); support—9 items ($0.73 \leq \alpha \leq 0.92$); resources—7 items ($0.66 \leq \alpha \leq 0.91$); and opportunity—7 items ($0.73 \leq \alpha \leq 0.91$) (Laschinger, 1996). The JAS, a 9-item instrument that measures staff perceptions of formal power within work environments, also has demonstrated acceptable internal consistency ($0.69 \leq \alpha \leq 0.79$). The ORS is an 18-item instrument ($0.83 \leq \alpha \leq 0.89$) that measures staff perceptions of informal power within organizations (Laschinger, 1996).

Individualized care.—The I-Care instrument (ICI) measures three domains of I-Care and consists of four subscales with acceptable internal consistency: Knowing the Residents—11 items ($\alpha = 0.77$);

Resident Autonomy and Mastery—11 items ($\alpha = 0.80$); Staff-to-Staff Communication—10 items ($\alpha = 0.84$); and Staff-to-Resident Communication—3 items ($\alpha = 0.67$) (Chappell, Reid, & Gish, 2007).

Statistical Analysis

Multilevel models, using HLM 6.08 (Raudenbush, Bryk, Cheong, & Congdon, 2004), were fit to evaluate our research questions. Multilevel models adjust for the nested association between contextual- and individual-level variation. Thus, in contrast to conventional regression, multilevel models estimate individual differences at two levels enabling the ability to determine whether a relationship exists between both individual level 1 variables (e.g., age, job classification, experience) and facility level 2 variables (e.g., ownership status, model of care implementation, staffing assignments). The level 1 equation estimates differences in participants' perceived ability to provide I-Care yielding regression slopes and intercepts for each individual in the study. Corresponding level 2 equations subsequently treat the level 1 intercepts and slopes as

dependent variables, facilitating a test of between-context differences in within-person differences. This procedure simultaneously estimates equations for each level of the hierarchical design:

$$Y_{ij} = \beta_{0i} + \beta_{1i}(x_{ij}) + e_{ij}$$

Results

Descriptive Information

Alpha coefficients, means, range of responses, standard deviations (SD), kurtosis, and skewness for measures of information, support, resources, opportunities, formal power, informal power, and total I-Care (individualized care) scores for the RNs, LPNs, and care aides who participated in this study are reported in Table 3.

Comparison of Within- Versus Between-Person Characteristics

We formulated a hierarchical statistical model representing item variation within persons as well as person variation between facilities. The intraclass correlation coefficient indicated that

Table 3. Descriptive Features and Psychometric Properties of Model Variables for Study Participants

Variables	M	SD	Range	α	Kurtosis	Skewness
RNs ($n = 176$)						
JAS: Formal power	28.21	5.08	15–42	0.77	0.60	0.38
ORS: Informal power	43.11	11.24	9–70	0.90	-0.30	0.09
CWEQ: Support	27.81	6.69	12–45	0.89	-0.38	0.04
CWEQ: Opportunity	23.97	4.63	10–35	0.79	0.31	0.10
CWEQ: Information	24.17	6.70	8–40	0.89	-0.45	-0.84
CWEQ: Resources	20.64	4.62	9–32	0.85	-0.29	0.06
Total I-Care	48.18	12.86	12–82	0.88	0.05	-0.13
LPNs ($n = 65$)						
JAS: Formal power	26.81	4.98	15–38	0.74	-0.28	-0.10
ORS: Informal power	36.87	11.72	7–62	0.91	-0.44	0.15
CWEQ: Support	27.15	6.11	11–41	0.84	-0.20	-0.25
CWEQ: Opportunity	23.27	4.84	11–33	0.79	-0.04	-0.16
CWEQ: Information	23.38	6.19	9–37	0.85	-0.21	-0.18
CWEQ: Resources	20.89	4.11	12–32	0.81	-0.30	0.29
Total I-Care	49.15	12.52	17–84	0.87	0.52	0.02
Care aides ($n = 326$)						
JAS: formal power	26.45	6.53	10–45	0.84	0.27	0.24
ORS: informal power	45.39	12.99	18–90	0.92	0.04	0.32
CWEQ: Support	27.01	8.01	9–45	0.90	-0.38	0.08
CWEQ: Opportunity	22.89	5.73	8–35	0.85	-0.16	0.04
CWEQ: Information	23.84	7.35	8–40	0.90	-0.60	0.05
CWEQ: Resources	20.93	5.59	8–35	0.88	-0.29	0.11
Total I-Care	48.48	14.67	0–87	0.89	-0.11	0.25

Notes: SD = standard deviation; RNs = registered nurses; JAS = Job Activities Scale; ORS = Organizational Relationships Scale; CWEQ = Conditions of Work Effectiveness Questionnaire; LPNs = licensed practical nurses.

91.7% of the total variance in perceived ability to provide I-Care reflected within-person (i.e., individual) differences, whereas 8.3% of the total variance was attributable to differences between caregivers (i.e., contextual-level or facility-level characteristics).

Research Question #1: Exploring the Relationship Between Within-Person Characteristics and Reported Ability to Provide I-Care

An initial level 1 equation modeled perceived ability to provide I-Care as a function of select within-person covariates including age (centered at 19 years), years of experience (centered at grand mean), years of education (centered at grand mean), job classification, work status, and ethnicity, plus an error term reflecting residual variance independent of these predictors. Centering was employed to assist interpretation of the intercept values (centering is routinely employed in multilevel modeling to assist interpretation of the intercepts for all values where 0 is not within the measured range [Singer & Willet, 2003]). For example, in this study, chronological age ranged from 19 to 65 years. If the uncentered age covariate were entered in the model, the derived intercept value for age would be 0 years [a value that falls outside the measured range and is not meaningful in the present context]. To center the covariate age, we simply subtracted 19 [the age of the youngest participant in the study] from each value of the raw age scores. This simple linear transformation of age effectively shifted the distribution of scores, so that the intercept reflected a participant's perceived ability to provide I-Care at a more meaningful age [i.e., 19 years]. Centering at the grand mean yields a value that represents the sample average for a given covariate). The fixed effects for each of these covariates were nonsignificant (see [Supplementary Table 1](#)).

Random effects were also estimated; across participants, significant variation about the average intercept for total IC was observed indicating significant differences in perceived ability to provide I-Care. In comparison, no statistically significant differences were observed for the slope random effect. This result informs us that, although staff members vary significantly in their perceived ability to provide I-Care, within-person covariates selected for this model do not predict these differences.

Research Question #2: Exploring the Relationship Between Contextual-Level Characteristics and Reported Ability to Provide I-Care

The level 2 multilevel model permits between-individual analysis of change treating level 1 within-person intercepts and slopes as dependent variables. Between-person (i.e., contextual or facility level) variables in the level 2 model included facility ownership status, facility size (centered at 29—the smallest number of residents in a participating facility), union membership, manager's years of experience (centered at 1 year—the least experienced participating manager), and implementation of CCMs. Level 2 variables were also centered at specific values to facilitate interpretation ([Supplementary Table 2](#)).

$$\beta_{0i} = \gamma_{00} + \gamma_{01} (\text{facility group}) + u_{0i}$$
$$\beta_{1i} = \gamma_{10} + \gamma_{11} (\text{facility group}) + u_{1i}$$

Similar to our first model, we found that the fixed effects for each of the covariates were nonsignificant. Random effects were also estimated for intercept and slope terms. Across participants, significant variation in total I-Care scores was observed about the average intercept and about select slope terms (age, job title, and ethnicity). This result informs us that, although staff members vary significantly in their perceived ability to provide I-Care, none of the contextual-level covariates selected for our level 2 model predict these differences.

Research Question #3: Exploring Access to Empowerment Structures and Reported Ability to Provide I-Care

Based on Kanter's theory of structural empowerment, we expected that access to empowerment structures (i.e., formal power, informal power, support, resources, information, and opportunities) would serve as important within-person predictors in the level 1 model. To explore this, we expanded the level 1 model to include formal power, informal power, support, information, and opportunities. According to the literature, access to resources (e.g., adequate time and supplies to do one's job effectively) is particularly salient to care staffs' perceived ability to provide I-Care (Caspar & O'Rourke, 2008). Thus, to examine a potential mediating effect, resources was purposefully not entered into this model. Baseline measures of perceived ability to provide I-Care were centered at the

grand mean of formal power ($M = 27.04$), informal power ($M = 51.34$), support ($M = 27.28$), information ($M = 23.89$), and opportunities ($M = 23.27$).

Of the empowerment variables, only informal power (i.e., the quality of interprofessional relationships) and support (i.e., being thanked for a job well done) uniquely predicted perceived ability to provide I-Care (Supplementary Table 3). The average perceived ability to provide I-Care increased by 0.21 units ($p = .00$) per unit increase in perceived access to informal power and by 0.43 units ($p = .006$) per unit increase in perceived access to support. Finally, we found that the five empowerment variables explain significant variance in perceived ability to provide I-Care at the level 1 model. Furthermore, of the total variance remaining to be accounted for within individuals following the entry of predictors in model 1 (170.05), the addition of the five empowerment structures accounted for an additional 31% of the within-person variance $[(170.05 - 118.14)/170.05]$ in perceived ability to provide I-Care (Singer & Willet, 2003).

Following the inclusion of the five empowerment variables, we examined what proportion of the within-person variance estimates was mediated by staffs' perceived access to resources. To accomplish this, we added the single new level 1 variable "resources" to the model. We purposefully added this variable last because key stakeholders (e.g., LTC staff members, researchers, managers, family members) consistently indicate that staffs' access to necessary resources (e.g., time to accomplish the required tasks and access to supplies) is a requirement for high-quality, I-Care in LTC settings (Cherry, 1991; Chung, 2010; Mueller, 2002). Baseline measures of perceived ability to provide I-Care was centered at the grand mean of resources ($M = 20.84$).

We found that access to resources uniquely predicted perceived ability to provide I-Care. The average perceived ability to provide I-Care increases by 0.46 units ($p = .04$) per unit increase in perceived access to resources. Furthermore, we found that access to resources attenuated the significant effect of support, suggesting a possible mediating effect. On entering resources in the model, the support effect was reduced from 0.432 ($p = .006$) to 0.319 ($p = .093$) units, representing an attenuation of 26% $((0.432 - 0.319)/0.432 \times 100 = 26\%)$ of the support effect on perceived ability to provide I-Care. However, the same was not true

for informal power, indicating that this variable continues to predict perceived ability to provide individualized irrespective of perceived access to resources (Table 4).

Additional Analyses

Interestingly, the inclusion of support and informal power to the level 1 model led to a significant, positive association between job classification and ability to provide I-Care. Thus, when access to support and informal power is controlled for, the perceived ability to provide I-Care increases by 5.01 ($p = .014$) for LPNs and by 4.67 ($p = .008$) for care aides as compared with RNs. This is a significant finding given the considerable differences among the three care staff positions (RN, LPN, and care aide) in pay, education and training, responsibility, job function, and (most importantly) position within the hierarchy typically found within LTC settings. This finding indicates that increased access to support and informal power by front-line care staff may assist in collapsing the hierarchy traditionally found in LTC facilities.

Discussion and Implications

The movement away from provider-driven and task-oriented care to the consistent provision of person-centered, I-Care is widely recognized as the universal goal of the CCM within LTC facilities around the developed world. The attainment of this goal is considered by many to be essential to the quality of life of individuals residing in LTC facilities (Brooker, 2007; Fazio, 2008; Kitwood, 1997; Talerico et al., 2003). Although the CCM began in earnest in North America over two decades ago, a review of the literature indicates that the empirical base underlying this movement is weak and the goals have, for the most part, been largely unrealized (Doty et al., 2008; Rahman & Schnelle, 2008). The focus of this study was to explore the influence of individual- and contextual-level characteristics on staff members' perceived ability to provide I-Care.

Our initial analyses focused on exploring the influence of care staff members' individual-level, demographic characteristics (e.g., age, education, experience, job classification, ethnicity, work status) on perceived ability to provide I-Care. We observed considerable differences in perceived ability to provide I-Care among LTC staff members, yet none of the selected demographic covariates

Table 4. Model 4 Inclusion of Resources

Fixed Effects	Coefficient	SE	<i>t</i>	<i>p</i>
Reference	106.74	2.71	39.26	.00
Age	-0.01	0.07	-0.15	.88
Experience	-0.002	0.80	-0.02	.97
Education	0.46	0.68	0.68	.49
Job Classification 1 ^a	4.65	1.99	2.33	.02
Job Classification 2 ^a	3.98	1.70	2.34	.02
Work Status 1 ^b	-0.66	1.30	-0.50	.61
Work Status 2 ^b	-1.43	1.55	-0.92	.35
Ethnicity ^c	-0.13	0.86	-0.15	.87
Formal Power	0.04	0.15	0.31	.75
Informal Power	0.20	0.05	3.56	<.01
Support	0.31	0.18	1.72	.09
Information	0.21	0.13	1.60	.11
Opportunities	0.07	0.15	0.50	.61
Resources	0.46	0.22	2.09	.04
Random Effects	Variance Component	SD		<i>p</i>
Initial Status	3.34	1.82		.08
Formal Power	0.05	0.22		>.500
Support	0.43	0.65		.02
Information	0.03	0.19		0.39
Opportunities	0.03	0.17		>.500
Resources	0.54	0.73		<.005
Level 1 residual	110.06	10.49		

Notes: SE = standard error; SD = standard deviation.

Centering was employed to assist interpretation of the intercept values: age centered at 19 years; years of experience, years of education, formal power, informal power, support, information, opportunities, and resources all centered at grand mean.

^aJob classification: registered nurses = 0 (reference group), licensed practical nurses = 1, and care aides = 2.

^bWork status: full time = 0 (reference group), part time = Work Status 1, and casual = Work Status 2.

^cEthnicity: Caucasian ($n = 272$) = 0 (reference group), Asian/Pacific Islander ($n = 214$) = 1, and other ($n = 51$) = 3.

exerted any appreciable influence on this outcome variable. This finding is significant given the intra-class correlation indicated that 91.7% of the total variance in perceived ability to provide I-Care reflected within-person (or individual-level) differences. However, none of the demographic covariates typically explored within-research studies were significant predictors of care staffs' perceived ability to provide I-Care.

We then explored the contextual-level, facility characteristics (e.g., facility size, presence of a union, manager's experience, CCMs) and again found that none of these covariates were significantly associated with staffs' perceived ability to provide I-Care. We believe these results provide good news to researchers and administrators because each of the characteristics included in our original models 1 and 2 are not easily adaptable or changeable. For example, it is not possible to systematically change the ownership status or the

size of LTC facilities nor is it feasible to unilaterally increase the education or experience level of all care staff members. Consequently, our findings suggest that the facility-level and individual-level factors that are least amenable to change are perhaps exerting less influence on LTC staff members' ability to provide I-Care than has previously been assumed.

Having demonstrated that both contextual-level characteristics and demographic, individual-level characteristics exerted very little influence on care staff members' perceived ability to provide I-Care, we proceeded to explore the influence of staffs' perceived access to empowerment structures. To accomplish this, we expanded the level 1 model to include formal power, informal power, support, information, and opportunities. Consistent with our expectations, we observed that the five empowerment variables explained significant variance in perceived ability to provide I-Care at the level 1

model. Furthermore, informal power (i.e., the quality of interprofessional relationships) and support (i.e., being thanked for a job well-done) uniquely predicted perceived ability to provide I-Care.

Finally, we examined the proportion of the within-person variance estimates that was mediated by staffs' perceived access to resources. We found that access to resources uniquely predicted ability to provide I-Care and attenuated the significant effect of support, suggesting a possible mediating effect. The same was not true for informal power.

Thus, the study provides support for an increased focus on the individual-level characteristics of care staff members when attempting to understand factors that significantly influence the provision of I-Care in LTC settings. Our findings suggest that important individual-level characteristics are those associated to perceived access to structural empowerment. Of the empowerment structures, access to resources and informal power appear to be especially predictive of care staffs' perceived ability to provide I-Care. Therefore, management initiatives to enhance I-Care should focus on the determinants of positive interprofessional relationships (e.g., team building, intershift communication, trust, conflict resolution) and ensure that care staff members have adequate access to resources (e.g., supplies and time necessary to accomplish their tasks). These findings have important implications for administrators and researchers as they suggest that investments in these areas may yield significant, positive outcomes in the provision of I-Care for residents of LTC facilities. Furthermore, we assert that researchers conducting intervention studies aimed at improving quality of care in LTC settings should address these important issues within their intervention designs (e.g., evaluate staffs' access to appropriate and adequate resources required to both implement and then sustain interventions over time; measure the quality of interprofessional relationships within LTC facilities to address the potential influence this factor may have on the effectiveness of interventions).

Results of this study build on previous findings examining health care staff members' access to structural empowerment and quality of care (Caspar & O'Rourke, 2008; Laschinger & Wong, 1999) and add to the body of knowledge demonstrating the significant effect that organizational factors exert on both quality of work life and quality of care in health care settings. According to the literature, the organization and system factors that are most important to LTC staff members

(and many indicate most in need of improvement) are primarily associated with the quality of the interprofessional relationships, which include (a) group cohesion and team work, (b) participative and supportive leadership and supervision, (c) access to training or education, (d) practices that cause employees to feel respected and valued, and (e) practices that cause employees to feel supported (Bishop, Weinberg, Leutz, Dossa, Pfefferle, & Zincavage, 2008; Caspar & O'Rourke, 2008; Filipova, 2009; Karsh, Booske, & Sainfort, 2005).

Generalizability of findings from this study is limited by various factors. First, only participants who worked in LTC facilities in three of five British Columbia Health Authorities were recruited for this study. Second, differences between formal care providers who agreed to participate in this study versus those who declined cannot be ascertained. Third, the cross-sectional nature of the data does not enable us to make causal conclusions nor determine changes that might occur over time. Despite these limitations, this study adds to our understanding of how individual-level and contextual-level characteristics influence care staff members' perceived ability to provide I-Care. Future research, however, will need to more fully explore aspects of the individual-level characteristics that influence I-Care that are not associated to individual staff demographics or access to structural empowerment.

Supplementary Material

Supplementary material can be found at: <http://gerontologist.oxfordjournals.org>.

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