

JARNA



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Volume 19 Number 3 December 2016

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Copy Editor Rachel Hoare
Graphic Designer Gordon McDade
Advertising Enquiries Simon Henriques
Tel: +61 8 6314 5231 Fax: +61 8 6314 5299
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PO Box 546, East Melbourne, VIC 3002, Australia
Tel: +61 3 9895 4483 Fax: +61 3 9898 0249
Web: www.arna.com.au

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Editorial

Where does theory fit in the everyday practice of nursing in rehabilitation?

Julie Pryor RN, BA, GradCertRemoteHlthPrac, MN,
PhD, FACN

Editor-in-Chief

Email: editor@arna.com.au



Nurses probably seldom consider the place of theory in the course of their everyday practice in rehabilitation. Instead, they are consumed by their multiple patient allocations and the endless list of patient needs to be met. As demonstrated in the article by Pryor and Fisher in this edition, nurses juggle 'drips, drugs, drains and dressings' (also known more formally as illness, injury and complication management) along with interventions that support the achievement of patients' personal rehabilitation goals, such as 'I want to take my grandchildren to the local park after school'.

While many university graduates of nursing would have been introduced to nursing theorists and their work, I suspect the relevance may not be forefront in their minds once they have graduated. My own work has led to two theoretical contributions (Pryor, 2005, 2015), but I wonder if nurses at the bedside are aware of these works or apply them to their practice. I raise this not to promote my own work, but to bring to your attention an increasing interest in theory in the world of rehabilitation.

Broadly speaking, theories use concepts and general principles that provide an explanation of a phenomenon. As nurses, our choice of intervention and the delivery of that intervention should be informed by the outcome we expect the intervention to produce. This means we have belief systems about how something will work and why; this is theory. These theories often relate to very specific aspects of our practice, for example, wound management or the management of sepsis. However, nursing also has theories about our practice as a whole. Examples of nurse theorists are Virginia Henderson, Lydia Hall, Dorethea Orem and Vera Irurita (Pryor, 1999).

The relevance of these theories is limited in rehabilitation service delivery where many disciplines are involved. The practice of each discipline is likely to be informed by one or more theories, but the dilemma of how to transform many theories into one goes largely unnoticed in the literature. Dijkers (2014, p. S1) attributes the "atheoretical state of rehabilitation" to the "lack of a universally accepted set of terms and concepts to talk about rehabilitation treatment". However, treatments are only one aspect of rehabilitation. If patients do the work of rehabilitation as proposed by Pryor and Dean (2012), and contextual factors can influence functioning and disability (World Health Organization, 2001), rehabilitation theory needs to explain a whole lot more than just treatments. The following questions posed more than a decade ago by Siegert, McPherson and Dean (2005) are helpful in thinking about this:

1. What are the phenomena of interest in rehabilitation?
2. What are the boundaries of rehabilitation?
3. What are the units comprising a rehabilitation theory?

To assist with answering these questions, I recommend the following reading:

- *Archives of Physical Medicine and Rehabilitation* (2014; 95 (1 Suppl 1) – this entire supplement is about theory, with explanations of treatment theory and enablement theory.
- *Rethinking rehabilitation: theory and practice* (2015) – a book edited by McPherson, Gibson and Leplege.
- A series of four recent editorials in *Clinical Rehabilitation* by Wade (2015a, 2015b, 2016a, 2016b).



All these have provided me with excellent reading about the role of theory in rehabilitation, but it was not until I read Wade's four editorials that I considered bringing this body of work to the attention of *JARNA* readers.

While I accept that the role of theory in rehabilitation might not initially attract everyone's attention, I would encourage you all to at least read Wade's four editorials. They are short and easy to follow. But, most importantly, they contain little gems, such as "rehabilitation is not synonymous with therapy" (Wade 2015a, p. 1041) and "the central process of change [in rehabilitation] is learning, learning by the patient and also often by family members of how to achieve wanted activities in the presence of altered or limited skills and abilities" (Wade, 2015, p. 1151) to help us understand the nature of rehabilitation.

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Working with families in rehabilitation settings

Candice Care-Unger

Professional Leader of Social Work, Royal Rehab, Sydney, NSW, Australia

Email: candice.unger@royalrehab.com.au

As a social worker, supporting families in health settings is one of my core roles. For the past 10 years I've worked in spinal cord injury and have witnessed the lives of hundreds change because of that injury. It's not only the people who sustain the injury whose lives are changed – it's the friends and family who are an integral part of that person's life. They are in it together.

Years ago I was involved with a research project exploring family resilience after traumatic injury, and one of the take-home messages that still resonates with me, is that in the early weeks, months and in some occasions years the word "carer" is not one family members associate with. They were a wife, a sister, a son, a brother, a husband, a daughter. "Carer" was something health professionals saw. Whilst people may provide a caring role, they have other more defining titles they prefer to identify with. Of course, some family members do take on that carer title and if that's what they identify with then we adopt that, but there is no "one size fits all".

The longevity of care provision has become increasingly interesting and important for researchers in the rehabilitation field. The story of burden, fatigue, family breakdown and burn-out is well known. We've been told about the long-term health impacts on people who are providing care. It is well documented that providing care can be hard. It can often be lonely and many people report feeling unsupported by systems and health professionals. Anyone who has tried accessing services when they are needed know it can be challenging. Yet this does not constitute the whole story of care giving. Why and how do some families thrive in adversity? How do people provide care 20, 30,

40 years post injury? It is a story of resilience, family commitment and evidence that people develop and adapt loving ways to support their relatives. We need to be putting our energies into researching ways to support families, to foster that resilience, to partner with them in the rehabilitation of our clients, and to see the strength in their relationships. If we see these relationships through a lens of adaptation, strength and resilience we see another, very inspiring story – a story of love.

We must see these relationships as two-way, because the injured person is also giving to their relationships. They play important family roles as husband or wife, parent, sibling, child, grandparent and friend. The emotional bond that keeps a family together wouldn't happen if it was all one way. In a hospital environment, it's easy to see only the person with the injury and their ailment that has brought them into the service, but this is not who that person is at home.

"Strength 2 Strength: Building family resilience after traumatic injury" is a program we use at Royal Rehab and other health services around Australia have also adopted it. It aims to enhance family communication, participation and foster relationships within the family. It looks at balancing the care needs of the injured person with the needs of all members of that family. It looks at how families can position themselves to provide support over the long term, using both formal and informal resources. It includes hearing from other family members who have walked this path before them and provides the advice of the "lessons learnt" from others. Ultimately, it is a peer-based, psychoeducational group in which relatives have the opportunity to share their journey to date



and to consider the future they want to create whilst drawing on new and existing strengths. This is just one example of how we can partner with families, how the opportunities we have to interact and support relatives as well as injured clients can have benefits for the whole family.

Nurses are often the ones who see the families after hours, on weekends and in between all the many hours spent in hospital units. This is such an opportunity to partner with the families, to see them as an integral part of your client's recovery and help support them to learn any skills that might be required to provide support at home. Educate the family members about their relative's condition, ask them in what ways they want to be involved in the provision of care and understand some families may not want to take on this role at all. Encourage them to

accept services and assistance at home. Don't assume they have adopted a carer identity yet help them see how they can provide support to their loved one in ways that are sustainable over the longer term. There is no doubt it is a balancing act to do all of this amongst normal work expectations but the outcomes will be worth it.

Finding ways in which we can support families and the extended support networks of our clients is where we need to see further research. We need to see our clinical practice shift to partnering with families at all time points, not just the early days of injury but over the lifetime so that when people come into our services they know they will receive a family-centred approach to their treatment because we already know the adverse outcomes if we don't.

Guidelines for submission of manuscripts to *JARNA*

Aims and scope

Rehabilitation nursing is a recognised specialty area of nursing within Australia with a broad and expanding knowledge base. As the official Journal of the Australasian Rehabilitation Nurses' Association (ARNA), *JARNA* seeks to enhance this expanding knowledge base through the publication of information pertaining to rehabilitation nursing. An equally important purpose of *JARNA* is to facilitate the development of ARNA members as writers for publication by providing constructive feedback to authors.

Prospective authors are asked to follow the following guidelines when compiling a manuscript they wish to submit for consideration for publication in *JARNA*.

Terms of submission

JARNA is published three times a year and manuscripts pertaining to rehabilitation nursing are invited. The Editor welcomes manuscripts on research, quality activities, innovative practice, education, management, case studies and any other item of interest to rehabilitation nurses. *JARNA* also invites new and first-time authors, with mentoring provided by the Editorial Board to assist in achieving publication standards.

All work will be sub-edited to the journal's style. The Editor reserves the right to modify the style and length of any manuscript submitted, so that it conforms to journal format. Major changes to a manuscript will be referred to the author for approval prior to publication.

Once published, the manuscript and its illustrations become the property of *JARNA*, unless rights are reserved before the publication.

Authorship

All authors must make a substantial contribution to the manuscript and will be required to indicate their contribution. Participation solely in the acquisition of funding, collection of data or supervision of such does not justify authorship. All participating authors must be acknowledged as such: proof of authorship may be requested by the editors. The first-named author is responsible for ensuring that any other authors have seen and approved the manuscript and are fully conversant with its contents. If the author wishes to reproduce material subject to copyright, it is the responsibility of that author to obtain written permission from the copyright holder and to acknowledge that permission within the manuscript.

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Determinants of the caregiving experience

Christina Aggar

Senior Lecturer, School of Health and Human Sciences, Southern Cross University, Gold Coast Campus, Queensland, Australia

Email: christina.agggar@scu.edu.au

Abstract

The traditional discourse of caregiving focuses on burden, depression and anxiety. However, there is an emerging understanding of the complexities of the caregiving experience. This review paper highlights the complexity and often ambiguous reporting of variables associated with the caregiving experience and raises a number of research questions. The paper concludes that the identification of determinants that affect aspects of the caregiving experience, including anxiety and depression symptoms, is required to inform health care professionals of carer support needs.

Keywords: Caregiving, carer, experience.

The traditional discourse of caregiving focuses on burden, depression and anxiety. Whilst information from studies on caregiving burden provides some important evidence on the general impact of providing care there is an emerging understanding of the complexities of the caregiving experience. Carer and care recipient characteristics, the caregiving context and resources available to the carer have been found to be predictive of negative caregiving experiences (Piercy, & Dunkley, 2004). Carer characteristics include gender, age, employment status, personal coping strategies (Wanless *et al.*, 2006), self-perceived health (Aggar, Ronaldson, & Cameron, 2010b), spirituality (Kim, Reed, Hayward, Kang, & Koenig, 2011) and functional status (Chung, Pressler, Dunbar, Lennie, & Moser, 2010). Care recipient characteristics include degree of frailty, disability, dependency or functional ability (Aggar, Ronaldson, & Cameron, 2010a; Raphael, & Cornwell, 2008) and mental health (Sewitch, McCusker, Dendukuri, & Yaffe, 2004). The caregiving context often refers to the relationship of the carer to the care recipient, whether the carer resides with the care recipient and the caregiving responsibilities (Zarit, Stephens, Townsend, & Greene, 1998), including length of time caring and hours of care provided (Hirst, 2005).

It has also been proposed that it is the carer's reaction to and consequences of caregiving, rather than the actual practical tasks, that renders the carer's role challenging (Jarvis, Worth,

& Porter, 2006). The quality of the carer and care recipient relationship has been demonstrated to impact on carers' well-being and caregiving experience (Gaugler, 2010). A poor interpersonal relationship (Williamson, & Shaffer, 2001) and depressive symptoms (Aggar, Ronaldson, & Cameron 2011; Braun, Scholz, Perren, Hornung, & Martin, 2009) have been associated with resentment in caregiving, and can affect how much carers are willing or able to invest in the caregiving role (Foster, 2010; Synder, 2000). The point on the caring continuum (Burton, Zdaniuk, Schulz, Jackson, & Hirsch, 2003; O'Connell, Heslop, & Fennessy, 2010) and the formal support provided by health care services and professionals, including poor access to health care, have also been flagged as variables which may affect reactions to caregiving (Aggar, Ronaldson, & Cameron, 2014; Arksey, & Hirst, 2005; Yedidia, & Tiedemann, 2008).

This paper is the second in a series examining caregiving. The first examined the implications of caregiving; this paper focuses on variables associated with caregiving. An overview of the determinants of the caregiving experience will be discussed within the context of a narrative review of the literature, with a particular focus on care burden, depression and anxiety. This includes gender, age, co-residence, financial capacity, employment status, social and cultural aspects, carer optimism, resilience and coping styles.



Gender

There are more female than male carers, although the gap is narrowing. Women are more likely to care for someone living in the same household, as well as a person in need of support who lives elsewhere (Amirkhanyan, & Wolf, 2006; Maher, & Green, 2002). The caregiving role is predominately taken on by females between 45 and 64 years (Hirst, 2002; Stephens, & Franks, 2009) who are typically the spouse (Del Bono, Sala, & Hancock, 2009), adult daughter (Byrne, Goeree, Hiedemann, & Stern, 2009; Schulz, & Martire, 2004) and daughters-in-law (Henz, 2009).

Throughout the carer literature there is evidence of gender differences in coping style (Garcés, Carretero, Ródenas & Sanjosé, 2009), and caregiving experience (Covinsky *et al.*, 2001; Cuijpers, 2005). More specifically, gender differences have been reported in the ability to maintain control of caregiving tasks and coping with the emotional aspects of caregiving (Navaie-Waliser, Spriggs, & Feldman, 2002). Females tend to experience more carer burden (Chan, & Chui, 2011; Chiou, Chang, Chen, & Wang, 2005; Seltzer, & Li, 2000; Yee, & Schulz, 2000) and stress than men (Seematter-Bagnoud, Karmaniola, & Santos Eggimann, 2010; Yee, & Schulz, 2000), particularly daughters (Glaser, Evandrou, & Tomassini, 2005) and wives experience more anxiety and depression than husbands (Bookwala, & Schulz, 2000). Other studies have found that older men are more satisfied with their caregiving situation than older women, claiming they find the experience rewarding (Ekwall, & Hallberg, 2007; Ekwall, Sivberg, & Hallberg, 2007). There are also reported gender differences in choices over service provision. A wife who cares for her husband will most likely reject assistance with meals and home help, if traditionally this has been her domain, whereas a male carer will tend to accept domestic assistance (Hirst, 2005).

Age

The gender pattern of caregiving has been demonstrated to correlate with carers' age (Dahlberg, Demack, & Bamba, 2007). A large percentage of male carers are older husbands (Hirst, 2005) and because of their age, Ducharme *et al.* (2007) suggest they are vulnerable to caregiving burden and adverse health risks. Generally, a large proportion of carers providing care to elderly people are elderly themselves and more likely to have co-morbidities that may impact on their ability to provide care (Ducharme *et al.*, 2007). However, Covinsky *et al.* (2003)

reported higher rates of depression in middle-aged rather than older carers. Some researchers reason that the caregiving situation of older carers has usually evolved over time and therefore they have had time to adapt to their caregiving situation (Chappell, & Dujela, 2008; van Exel, Brouwer, van den Berg, Koopmanschap, & van den Bos, 2004). Older carers have also been reported to be more accepting of and satisfied with their caregiving roles (Simon, Kumar, & Kendrick, 2008).

The increase in survival rates of older populations, particularly of the frailest group, means more adult children will care for a parent for a longer period of time, whilst looking after children of their own (Worcester, Archbold, Stewar, Montgomery, & O'Connor, 1990). These carers are termed 'sandwich carers' or the 'sandwich generation' because they care for more than one person: a frail parent and a partner or child with a disability or chronic condition (Spillman, & Pezzin, 2000).

Co-residence

Co-residence is an indicator for the provision of increased carer activities and caregiving commitment (Arksey, & Hirst, 2005; Hirst, 2002; Noël-Miller, 2011). Those carers who co-reside with the care recipient generally provide more caregiving, yet they are less likely to receive formal assistance (Tennstedt, Crawford, & McKinlay, 1993). Women carers who co-reside have higher caregiving loads, are more stressed within their caregiving role and less likely to use support services than women carers who live elsewhere (McKenzie, Tooth, Lucke, & Dobson, 2009). There is some debate concerning co-residence and carer health. Bakas and Burgener (2002) found that those carers not residing with the care recipient had poorer health outcomes than co-residents. However, 61% of the carers in their study were employed adult children, the majority women, who combined work and caring responsibilities and possibly earned lower wages than did non-carers (Heitmueller, & Inglis, 2007). It is agreed, however, that those carers who juggle work and family often experience more negative reactions and an increased sense of carer burden (Stephens, & Franks, 2009). Interestingly, care recipients co-residing with family experience better physical health, self-esteem and health-promoting behaviours than those who live alone (Aggar, Ronaldson, & Cameron, 2012; Sok, & Yun, 2011).

Financial capacity and employment status

Providing care to a family member or friend may impact on employment status (Berecki-Gisolf, Lucke, Hockey, & Dobson,



2008; Moscarola, 2010) and financial capacity (Butterworth, Pymont, Rodgers, Windsor, & Anstey, 2010; Lymer, Percival, & Harding, 2006), particularly for women (Hirst, 2002; Muller, & Volkov, 2009). The disruption to carers' employment and/or employment opportunities can cause financial hardship. A loss of income affects superannuation benefits, particularly for women (Hirst, 2002). A carer's financial capacity, particularly those who rely on income support can directly impact on the opportunity and preference for support. Direct costs of caregiving may include medical expenses, transport and home modifications (Armstrong-Esther, & Hagan, 2005; Petrus, & Wing-chung, 2005). Carers who do not co-reside with the care recipient may incur travel, food and accommodation costs (Pickard, 2004).

Adult daughters provide the majority of care to frail, older parents (Johnson, & Lo Sasso, 2006) and are more likely to have reduced working hours as a result of caregiving (Covinsky *et al.*, 2001). A study investigating a large prospective cohort of middle-aged Australian women found that taking on the role of carer resulted in a decrease in paid employment (Berecki-Gisolf, Lucke, Hockey, & Dobson, 2008). Carers are less likely to work full-time, relinquishing future entitlements such as superannuation and paid leave, and impacting on their ability to save for future retirement (Australian Bureau of Statistics, 2004).

Research has reported employment obligations difficult to manage when in the caregiving role (Heitmueller, & Inglis, 2007). However, there is discrepancy as to which gender experiences employment difficulty. Carmichael and Charles (2003) suggest both male and female carers find employment difficult to manage, whereas Chelsey and Moen (2006) found that only females experienced difficulty in managing employment obligations. Generally carers can find it difficult to manage both their caregiving and employment roles (Katz, Lowenstein, Prilutzky, & Halperin, 2011), with many preferring the opportunity for flexible working hours (Gautun, & Hagen, 2010). However, a return to the workforce or increasing employment working hours has also been found to be difficult following the cessation or reduction of a caregiving role (Muller, & Volkov, 2009). Alternatively, employment has also been reported to provide an outlet or respite from arduous caregiving activities (Bachner, Karus, & Raveis, 2009; Stephens, & Franks, 2009) and a source of social connection (Freeman, Kurosawa, Ebihara, & Kohzuki, 2010).

Overall, the literature suggests that those carers who are unemployed, have low incomes, financial concerns and limited

resources, experience high levels of distress, poor health-related quality of life (Ekwall, Sivberg, & Hallberg, 2007) and depression (Robison, Fortinsky, Kleppinger, Shugrue, & Porter, 2009). Workplace support and flexibility has been recommended to reduce the levels of anxiety experienced by carers (Beitman, Johnson, Clark, Highsmith, Burgess, Minor, & Stir, 2004).

Social isolation

Carers are recognised as being at risk of social exclusion (Australian Government, 2010; Baumann, Lurbe-Puerto, Alzahouri, & Aïach, 2011), particularly if they live with the care recipient (England, 2001). The social isolation from friends, family and work colleagues has been found to cause carers to experience feeling alone and abandoned in their caregiving role (Butterworth *et al.*, 2010). For elderly husbands who care for their spouse, 'role captivity' and number of services received, was related significantly to institutionalisation of the woman (Ducharme *et al.*, 2007). Care demands and care recipient disabilities, for example incontinence, if not managed appropriately can deter or prevent a carer's ability to leave the home and pursue social activities (Brittain, & Shaw, 2007). Changes in spouse's physical and mental capacity affecting intimacy and sexual relations can impact on a couple's relationship and result in carer depression (Forsberg-Warleby, Moller, & Blomstrand, 2004). Social burden has been found to predict anger and resentment of one's caregiving role (Wright, Battista, Pate, Hierholzer, Mogelof, & Howsepian, 2010). Alternatively, social support has been shown to improve a carer's confidence and competence, and directly impact on their health (Edwards, Higgins, Gray, Zmijewski, & Kingston, 2008; Mitrani, Lewis, & Feaster, 2006; Scharlach, Li, & Dalvi, 2006; Sit, Wong, Clinton, Li, & Fong, 2004).

Cultural perspectives

Ethnic and cultural influences have been identified as variables impacting on the filial responsibilities of caregiving (Dilworth-Anderson, Brummett, Goodwin, Williams, Williams, & Siegler, 2005; Kahalaila & Litwin, 2011; Webb, 2008) and affecting carer anxiety, ability to cope (Aranda, & Knight, 1997; Crowther, & Austin, 2009), depressive symptoms and service utilisation (Chenoweth, Gietzelt, & Jeon, 2002; Gallagher-Thompson *et al.*, 2007; Ho, Weitzman, Cui, & Levkoff, 2000; Pinguart, & Sorenson, 2005; Siegler, Brummett, Williams, Haney, & Dilworth-Anderson, 2010). Caregiving that is provided due to a cultural sense of duty or obligation has been reported to adversely impact on recent immigrant carers (Han, Choi, Kim, Lee, & Kim, 2008).



However, a study involving Chinese-Canadian carers found that a strong sense of filial piety was associated with a more positive perception of caregiving (Lai, 2010). Findings from Losada, Márquez-González, Knight, Yanguas, Sayegh, & Romero-Moreno (2010) concur with the negative influence of filial obligations, that carers' perceived support from family and extended members produced a negative significant association with depression.

Inadequate participant numbers in multicultural research limits the research findings. However, there appears to be a relationship between tendency to provide care and ethnicity attributable to socio-economic factors (Young, Grundy, & Kalogirou, 2005). Migration issues such as housing, employment, access to health, education and social services have been identified as impacting on the caregiving experience. Research examining older people from ethnic minorities suggests consideration of cultural perspectives (Suhonen *et al.*, 2010; Lai, 2007), including language (Ho *et al.*, 2000) and religion (Temple, Glenister, & Raynes, 2002). Culturally appropriate caregiving interventions are recommended (Anngela-Cole, & Hilton, 2009), particularly from service providers (Chenoweth *et al.*, 2002; Katbamna, Ahmad, Bhakta, Baker, & Parker, 2004; Merrell, Kinsella, Murphy, Philpin, & Ali, 2006; Scharlach, Giunta, Chow, & Lehning, 2008).

Carer optimism

Carer optimism has been found to influence reactions to caregiving (Kurtz, Kurtz, Given, & Given, 1995). Generally, satisfying caregiving reactions have been described as components of larger inquiries and have included improved relationships and strengthening of bonds (Donelan *et al.*, 2002), increased self-esteem and personal achievement in being able to care (Halm, Treat-Jacobson, Lindquist, & Savik, 2006; López, López-Arrieta, & Crespo, 2005; Ross, Holliman, & Dixon, 2003). Providing care can be an essential part of a close relationship (Lyons, Sayer, Archbold, Hornbrook, & Stewart, 2007). Those carers who report a satisfying caregiving experience usually have a good relationship with the care recipient, good social supports, coping strategies (Chan, & Chui, 2011; Kramer, 1997; López *et al.*, 2005), good health (Cohen, Gold, Shulman, & Zuccherro, 1994) and family support (Lashewicz, Manning, Hall, & Keating, 2007; Palmer & Glass, 2003). The rewarding or satisfying components of caregiving have been found to buffer the negative aspects of caregiving (Archbold *et al.*, 1995; Kramer, 1997; Rapp, & Chao, 2000), including anxiety and depression (McLennon, Habermann, & Rice, 2011; Yee, & Schulz, 2000).

The literature reveals that even though carers experience caregiving burden, the opportunity to provide care for a loved one or friend results in a sense of well-being (Chappell, & Dujela, 2008; Nolan, Lundh, Grant, & Keady, 2003; Pinguart, & Sorensen, 2004), positive health benefits (Brown, Ness, Vinokur, & Smith, 2003; Peacock *et al.*, 2010) and happiness (Brouwer, van Exel, van den Berg, van den Bos, & Koopmanschap, 2005). Research has recommended that support interventions, which promote and encourage the positive aspects of caregiving, may well assist carers to consider their caregiving role as an opportunity rather than a burden (Peacock *et al.*, 2010).

Resilience and coping

Resilience is the personal strength in which one has the ability to face and manage adversity. Carers' resilience enables them to manage the difficult task of caregiving, whether it is through endurance and/or coping with their often challenging caregiving role (Wilcox, Evenson, Aragaki, Wassertheil-Smoller, Mouton, & Loevinger, 2003). One's strength, motivation and ability to confront life and adapt to new roles contributes to resilience (Wilcox *et al.*, 2003). Psychological resilience has been found to predict the absence of depression (O'Rourke, Kupferschmidt, Claxton, Smith, Chappell, & Beattie, 2010).

Resilience is not innate but learned, and it can be nurtured or encouraged, enabling one to cope with stressful life events (Bonanno, 2004). Synder (2000) suggests that to encourage carers to be resilient just so that they can continue to care may harbour feelings of resentment and anger towards the care recipient. Alternatively, if caregiving is an unchosen role, anger and resentment can impact on the total caregiving situation (Jarvis *et al.*, 2006). Adult children providing care to a frail, older parent, and who also have competing obligations with their own family and work commitments may harbour anger and resentment, particularly if siblings do not share the caregiving responsibility (Pinguart, & Sorensen, 2003). There is support for health care professionals to be more sensitive to the caregiving situation, particularly to consider what motivates a carer (Romero-Moreno, Márquez-González, Losada, & López, 2011).

Coping strategies utilised by carers have been found to depend generally on age and gender (Chappell, & Dujela, 2008; Garcés *et al.*, 2009; Navaie-Waliser *et al.*, 2002; van Exel *et al.*, 2004). Often carers have to learn to navigate and negotiate complicated health care systems and community resources, so problem solving appears to be the most helpful method assisting with



their ability to manage (Barbosa, Figueiredo, Sousa, & Demain, 2011; Kuuppelomaki, Sasaki, Yamada, Asakawa, & Shimanouchi, 2004). Researchers have found religion and spirituality were associated with carers' coping abilities by encouraging caregiving satisfaction and greater social support (Hirst, 2005), and influencing psychological well-being in both carers and care recipients (Kim *et al.*, 2011).

Conclusion

Various factors that impact on the caregiving experience have been highlighted in this paper. The complexity and often ambiguous reporting of variables associated with the caregiving experience raises the following research questions:

1. Do positive aspects of providing care protect carers against depression and anxiety symptoms?
2. Do health care services support the caregiving experience?

The identification of determinants that affect aspects of the caregiving experience, including anxiety and depression symptoms in carers are required to inform health care professionals of carer support needs.

Recommendations for practice

The inclusion of individual and ongoing carer assessments in rehabilitation nursing practice will facilitate a more comprehensive understanding of reactions to caregiving, carer perspectives and support needs and assist in the identification of at-risk carers.

The third paper in this series will provide an overview of carer policy and government support initiatives.

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Implementation of a long-term weight chart in inpatient rehabilitation units

***Jennifer Kohlhardt** *BN, MN, MEd*

Clinical Nurse Consultant (Training, Education and Leadership), GARU, Princess Alexandra Hospital, Brisbane, Qld, Australia

Email: jenny.kohlhardt@health.qld.gov.au

Angela Vivanti *BSc, GradDip(Nutr & Diet), MAppSc, DHSc*

Research and Development Dietitian, Dept of Nutrition and Dietetics, Princess Alexandra Hospital, Brisbane Qld, Australia; School of Human Movement and Nutrition Studies, University of Queensland, Qld 4072, Australia

David Lewis *DipHlthSc(Nursing), GradCertHlthMgt, MN(Aged care)*

Nurse Unit Manager Bunya GARU, Princess Alexandra Hospital, Brisbane, Qld, Australia

** corresponding author*

ABSTRACT

Introduction

Previous research in a geriatric and rehabilitation unit (GARU) identified that body weight measurement was most accurate when recorded at the same time each day. Tracking a patient's weight history through admission to discharge is difficult without appropriate collection tools. A study was undertaken to develop an improved chart to record patient body weight for utilisation by many disciplines in order to plan and evaluate patient interventions during hospital admissions. The aim of the study was to develop, implement and evaluate a new weight documentation chart.

Method

A new chart was trialled in GARU and BIRU (brain injury rehabilitation unit) inpatient units. Compliance data were collected prior to the implementation and again at three and 18 months post-implementation. The results are presented using descriptive statistics.

Results

After implementation, documentation including unit admission date and weight, weight completion dates, time of day, type of scales used, body mass index (BMI) and other factors affecting weight interpretation significantly improved at three months and was sustained at 18 months.

Discussion

The chart was confirmed to be beneficial in assisting staff compliance with recording accurate and comprehensive daily weight information. The chart incorporates evidence from the literature, meets staff needs and was created with active engagement from all multidisciplinary team members. Sustainability of this practice change was also confirmed.

Conclusion

This study has successfully developed and tested a comprehensive chart for patient weight documentation, providing a visual means to track weight changes over time. This supports a holistic, multidisciplinary approach to patient care during admission to inpatient rehabilitation.



Introduction

People aged over 65 years account for 52% of hospital admissions in Australia (Karmel, Hales, & Lloyd, 2007). In the June 2013 Australian census, the number of people aged 65 years and over had increased by 19% to reach 3.34 million people, which accounted for 14% of the population (Australian Bureau of Statistics, 2014). The worldwide phenomenon of an increasingly aged population is considered a major challenge, especially in settings where there is finite institutional, human and monetary capacity to meet the needs of the older person (International Council of Nurses, 2006). In the next half century, the number of persons worldwide over 60 years of age is expected to triple to nearly 1.9 billion by 2050 (International Council of Nurses, 2006). Increased life expectancy is expected to be associated with an increased care burden arising from higher levels of co-morbidities, which require multiple interventions. This will result in an increased acuity level in rehabilitation, acute/chronic and palliative care units (International Council of Nurses, 2006).

The prevalence of malnutrition within the community is estimated to be between 5% and 20% (Leggo, Banks, Isenring, Stewart, & Tweedale, 2008). Malnutrition is associated with increased mortality (Agarwal, Ferguson, & Banks, 2013), decreased quality of life (Isabel, Correia, & Waitzberg, 2003; Sutton, Windsor, & Husk, 2014) and increased falls risk (Coleman, Welsh, & McMahon, 2000; Vellas *et al.*, 1992). Malnutrition is also associated with increased length of hospital stay (Agarwal *et al.*, 2013), a trend that may be present even in shorter stay acute care units. Tracking body weight changes and responding accordingly is a fundamental component in the provision of quality health care and achieving optimal outcomes for patients.

The monitoring of body weight is essential to the nursing assessment process in order to determine potential and actual risk factors (Evans, 2012). Increased acuity and co-morbidities of patients within geriatric and rehabilitation settings include renal failure, heart failure, diabetes, frailty and deconditioning, dermatological conditions and morbid obesity. An element of the management of these patient groups is dependent on correct body weight recording in order to safely prescribe anticoagulants, analgesia, sedatives and blood pressure medication, as well as bariatric management (Hilmer, Rangiah, Bajorek, & Shenfield, 2007). Assessment of fluid balance, pressure injury risk assessment and malnutrition screening are areas where correct weight monitoring contributes to the provision of safe and effective nursing care. Accurate body mass index (BMI) recording can impact on correct patient handling and equipment choice, and is essential to ensure patient and staff safety, particularly when nursing the bariatric patient (Hahler, 2002).

There tends to be poor compliance in obtaining body weight measurements in clinical settings (Lees, 2009). Lees (2009) suggests that a standardised documentation and updating process benefits patients' health outcomes. The recording of baseline body weight is extremely important, particularly when patients are inpatients for extended periods of time.

The aim of this study was to develop, trial, implement and evaluate a new weight documentation chart inclusive of factors that influence interpretation during inpatient admission to rehabilitation within a major tertiary teaching hospital.

Setting

The project was conducted in four inpatient rehabilitation units comprising 78 geriatric and rehabilitation beds across three inpatient units and a 26-bed brain injury rehabilitation unit (BIRU). At the start of this project, geriatric and rehabilitation patients were 52% male with a median age of 74.6 years (range 16 to 104 years) and had a median length of stay (LOS) of 29 days (Varghese, 2012). The brain injury rehabilitation patients were 70.7% male with a mean age of 38.2 years and a mean length of stay of 53.8 days (AROC, 2012).

Method

The multidisciplinary team met and collaboratively developed a long-term weight chart. Previous geriatric and rehabilitation unit (GARU) research identified that body weight measurement was most accurate when recorded at the same time of the day (Vivanti, Yu, Palmer, Dakin, Sun, & Campbell, 2013); therefore this was incorporated into the chart.

The chart also included:

- type of scales used;
- BMI/weight on unit admission;
- time of day weighed;
- current weight; and
- factors affecting interpretation of weight, for example, wheelchair weight, casts and shoes.

To save staff time and to encourage compliance, a BMI chart was included on the reverse side of the chart.

Initially, the chart was trialled for six weeks in one GARU ward. The chart was introduced after consultation with ward-based nurse leaders, dietitians and the medical team. The education team was aware that nursing staff had recently undertaken numerous chart changes and felt that for the chart to be successful, staff needed to be engaged and feel that their voices were heard in the process. Hence a trial ward was chosen, two



weeks were allocated for education and face-to-face meetings were organised to gain feedback from ward staff to discuss how the chart flowed and changes to the chart could be made. This process was informed by Teasdale's (1992) model of change management and the quality cycle of plan, do, study, act approach (Sutton *et al.*, 2014). Teasdale's (1992) following six strategies were used in the change management process:

- creating ownership and involvement;
- creating a positive environment;
- identifying the need to change with staff;
- working with staff on an action plan;
- communicating the changes; and
- anticipating conflicts and resistance

Modifications made following the trial were a highlighted section about how to fill out the chart, reinforcement for binding and clarification of admission information. Following this, the modified chart was introduced to the four inpatient units.

Evaluation of the chart was undertaken using pre- and post-implementation documentation audits. Approval to conduct the evaluation was granted by the Human Research and Ethics Committee (Reference Number HREC/14/QPAH/131).

Pre-implementation audits were conducted in all four inpatient units to determine compliance with completion of patient weight. Post-implementation audits were conducted on random days at three and 18 months after implementation. The pre-implementation audits were conducted by a dietitian; the three month post-implementation audits were undertaken by a senior nursing staff member and the same dietitian. The 18-month audits were undertaken by the same nurse. Neither was directly responsible for inpatient care. Audits were completed unannounced and end-of-bed charts were audited in a private setting; therefore eliminating direct patient, carer and staff involvement with the auditor.

Data analysis was completed using the Statistical Package for the Social Sciences (SPSS for windows, Release 11.5, 2003; SPSS Inc., Chicago, IL, USA). Descriptive data are presented as counts and percentages.

Results

Feedback from staff after the six-week trial indicated that improvements could be made in both the chart and clinical practice. A number of barriers to successful use of the chart were identified and solutions identified including:

- Work flow: Transfers to the unit late in the day resulting in an inability of the physiotherapy staff to assess mobility status; hence weights were not being completed on admission.
- Chart layout: The format of the chart led to patient weights being recorded in different sections of the chart.

As a consequence, ward transfers were encouraged to occur earlier in the day and staff were encouraged to record the patient's weight in the admission section of the chart. Other changes to the format of the chart from staff feedback were also incorporated including: type of scales used and inclusion of examples of what variance could be documented such as 'patient wearing heavy jacket'.

Data were collected at three time points. Table 1 presents the results of the audits undertaken pre-, at three months post-implementation and at 18 months post-implementation. The audit undertaken at three months following implementation showed considerable improvement in compliance, with completion of the chart including admission date, date weight completed, and time of day and wheelchair weight. Documentation of scale, BMI and admission weight substantially improved, while completion of weight documentation remained consistent.

The 18-month post-implementation audit showed further improvement in compliance, including admission weight, admission height, admission BMI, while the remaining items of documentation were sustained, including completion of admission date, date weight completed, time of day, documentation of the scale used and weight.

Discussion

This study found that the new weight chart facilitated documentation of patient weight on a regular basis, with the additional benefit of documenting factors that influence weight measurement, including time of day, type of scales used and other comments. Prior to implementation of the new chart there was good compliance with documentation of weights in the GARU, throughout the patient's episode of care. However, supporting documentation such as initial admission date, weight, height and BMI were inconsistently completed. The documentation of weight did not necessarily provide all the details that might influence weight such as type of clothing and time of day.

Practice change in relation to the timely and regular documentation of patient weight in a rehabilitation setting was achieved. Engagement of staff prior to implementation of the chart, staff participation in the trials and provision of feedback enabled opportunity to modify the chart to suit local clinical practice,



staff needs and patient needs, and positively contributed to the successful implementation of the weight chart. The success of the change management approach used is evidenced by the sustained utilisation of the chart at 18 months following its initial introduction.

Although completing weights at the same time of day is most accurate (Vivanti *et al.*, 2013), it may be challenging in practice and not always possible in a clinical setting. The greatest contributors to short-term weight change include added or removed clothes, pre- or post-food, fluid and voiding (Vivanti *et al.*, 2013). Consequently, noting these and other key contributors to weights, such as wheelchair weight or scales used, was an important component of the chart design. Weight loss and malnutrition is associated with increased mortality and morbidity, including pressure injury, infection and increased length of stay from complications (Banks, Bauer, Graves, & Ash, 2010; Bender, Pusateri, Cook, Ferguson, & Hall, 2000; Stratton *et al.*, 2005; Stratton, Green, & Elia, 2003). Therefore, tracking weight changes can be a vital aspect of care provision. Strategies that enhance the routine completion of weight include the utilisation of tools that facilitate accurate and timely recording of weight by busy health professionals. It is considered that the format of the weight chart helped streamline communication between all health professionals. It facilitated day-to-day discussions with patients, during ward rounds and at the weekly patient case conference.

Other benefits of the regularity of the time of weight measurement were evident for chronic conditions requiring fluid management, such as heart failure and renal impairment; both are frequent co-morbidities of patients in inpatient rehabilitation settings. Although primarily a nursing activity, multidisciplinary involvement is evidenced in the fact that any team member was encouraged to contribute to chart completion. Consequently, the

comprehensive chart enabled improved communication between all team members due to the chart design encompassing all the essential elements identified by the multidisciplinary team engaged in its design.

Post-implementation documentation consistently included recording unit admission date, date of weight and time of day. Documentation of the scale utilised for weight measurements, BMI and unit admission weight were all improved at three months. Between three and 18 months, weight, height, and BMI recording on unit admission were identified to have improved further.

This project developed and assessed a centralised means of recording patient weights for utilisation by all disciplines, which facilitated the planning and evaluation of interventions during hospital admission. Practice change was achieved and sustained. The chart was designed in a way that enables transition to an electronic version in order to accommodate electronic data collection in the health care service provision of the future.

The final version of the chart was approved by the hospital forms committee following 12 months of the trial. The development and implementation of the chart has been part of the professional development of some of the GARU staff; and it has been presented at the GARU Grand Rounds and the Australasian Rehabilitation Nurses' Association conference in Hobart 2012.

Key strengths of this study are its multidisciplinary focus, completion within a rehabilitation setting, with less mobile clients having multiple co-morbidities and complex medical needs. All audits were completed without prior knowledge of the ward staff, improving confidence of unbiased data.

Future directions could include the incorporation of weight adjustment for amputees. Incorporation into the new electronic health records now provides a new direction for the future.

Table 1: Comparison between pre-intervention, 3 months post-intervention and 18 months post-intervention audits

	Pre-intervention n=102 % (n=)	3 months post-intervention n=91 % (n=)	18 months post-intervention n=77 % (n=)
Completion of unit admission date	0	91 (n=83)	95 (n=73)
Date weight completed	95 (n=97)	97 (n=88)	97 (n=75)
Time of day	0	87 (n=79)	92 (n=71)
Documentation of scale	14 (n=14)	91 (n=83)	88 (n=68)
BMI	46 (n=47)	82 (n=75)	96 (n=74)
Unit admission weight	46 (n=47)	85 (n=77)	97 (n=75)
Unit admission height	46 (n=47)	82 (n=77)	98 (n=76)
Completion of weight documentation	97 (n=99)	96 (n=97)	92 (n=71)



Limitations

Limitations of this study include bed closures occurring for several weeks during implementation, impacting on the numbers of follow-up audit data available as evidenced by a reduction in audit numbers at 18 months. Staff turnover was ongoing; however, good results were able to be sustained.

Conclusion

For the first time, to the authors' knowledge, previously published information regarding factors influencing weight interpretation have been incorporated into a chart developed in a real clinical setting. This study has successfully developed and tested a comprehensive chart for weight documentation, which allows for easy recording of the factors influencing the interpretation of weight measurements and provides a visual means to track weight changes over time. This supports a holistic, multidisciplinary approach to inpatient rehabilitation care.

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Nursing management of illness, injury and complications in rehabilitation

Julie Pryor RN, BA, GradCertRemoteHlthPrac, MN, PhD, FACN

Nursing Research & Development Leader, Royal Rehab, Sydney, NSW, Australia

Clinical Associate Professor, University of Sydney, Sydney, NSW, Australia

Email: Julie.pryor@royalrehab.com.au

Murray Fisher RN, ICT Cert, DipAppSc (Nursing), BHSc (Nursing), MHPEd, PhD

Associate Professor, University of Sydney, Sydney, NSW, Australia

Nursing Scholar in Residence, Royal Rehab, Sydney, NSW, Australia

Email: murray.fisher@sydney.edu.au

Abstract

Many rehabilitation patients have more than just rehabilitation needs; however, this has not been the focus of recent studies about how nurses contribute to patient rehabilitation. Therefore, the aim of this study was to explore nurses' perceptions of the nature and extent of the various aspects of their role in relation to illness, injury and complication management in the delivery of rehabilitation care.

A convenience sample of 289 nurses working in rehabilitation across Australia and New Zealand who completed a five-part survey reported that most of their patients received nursing care relating to: 1) the ongoing acute management of their presenting health conditions; 2) the prevention of complications or deteriorations in their presenting health conditions; 3) the management of complications or deteriorations in their presenting health conditions; 4) the ongoing management of co-morbid health conditions; 5) the prevention of complications or deteriorations in their co-morbid health conditions; and 6) the management of complications or deteriorations in their co-morbid health conditions. The majority of study participants understood these aspects of nursing's role as part of rehabilitation.

The findings of this study extend the findings of previous Australian studies of nursing's contribution to patient rehabilitation. They also provide nurses with language to make more visible nursing's complex role in rehabilitation. In so doing, the findings of this study have implication for nursing education and the development of rehabilitation nurse-effectiveness.

Keywords: Nursing, rehabilitation.

Background

Our understanding of nursing practice in rehabilitation settings in Australia has developed over the past 20 years, with a primary focus on documentation of the specialty practice of rehabilitation nursing (Pryor & Smith, 2002; Pryor *et al.*, 2009). However, many rehabilitation patients have more than just rehabilitation needs. This includes the active management of acute and chronic health breakdown due to illness, injury and/or complications (Pryor, 2005a, 2015).

Concerns about the extent to which these aspects of care compromise nursing's ability to allocate time to the more

commonly recognised aspects of rehabilitation are not new (Pryor, 2005a). Currently, there is no systematic process for documenting patients' additional care needs. Furthermore, while nursing's role in the "management and promotion of homeostasis" has been recognised (McPherson, 2006, p. 788), nursing's role in meeting the illness, injury and complication management needs of rehabilitation patients has not, as yet, been the focus of any research.

The aim of this study was to explore nurses' perceptions of the nature and extent of the various aspects of their role in relation to illness, injury and complication management in the delivery of rehabilitation care.



Methods

This descriptive cohort survey study used a convenience sample of nurses who work in the rehabilitation sector in Australia or New Zealand. Data collection commenced after ethics approval was given by Northern Sydney Local Health District Human Research Ethics Committee.

Survey

The survey consisted of five sections. The first section asked a series of questions related to participant demographics (for example, age, gender, nurse designation, nursing experience, current position as well as type and location of employing rehabilitation service). The second section consisted of six questions about the nursing care of the presenting health problems of patients in rehabilitation. The third section consisted of seven questions about the nursing care of co-morbid conditions of rehabilitation patients. The fourth section consisted of a single question about patient complications in rehabilitation services and the final section consisted of three questions that explored nursing as rehabilitation therapy.

Data collection

Two data collection methods were used. Firstly, all nurses who attended the Australasian Rehabilitation Nurses' Association (ARNA) conference in Brisbane 22–23 October 2015 were invited to participate. Time was allocated during a plenary session for participants to complete the survey. Participants returned the completed survey to a centrally located collection box after the completion of the plenary session. Data from these surveys were manually entered into SPSS (Statistical Package for Social Sciences) for analysis.

Following the conference all members of ARNA were sent an email from the ARNA office inviting them to participate in an online survey through Survey Monkey. The participant information sheet was attached to the email. The email directed participants to the survey via a web link. A second reminder email was sent by the ARNA office about a month later. Non-identified data were exported to an Excel spreadsheet and uploaded into SPSS, where it was merged with the data set of survey responses collected at the ARNA conference.

Informed consent process

An implied model of consent was used where consent was considered given upon completion of the survey. An information sheet was attached to the paper survey (and as part of the electronic survey) containing all the relevant project information.

Data analysis

Descriptive statistics were used to report on numerical data. In addition, independent sample t-tests were used to determine differences between groups unless the data was not normally distributed, in which case a Mann-Whitney U test was used. Chi square was used to determine difference between groups for nominal data. Content and thematic analyses were used to analyse responses to open-ended questions.

Results

Two hundred and eighty-nine completed surveys were received; 170 (58.82%) were completed at the ARNA conference and 119 (41.18%) were completed online.

Study participants

The majority of respondents were: ARNA members (n=229, 79.2%), female (n=256, 88.6%), registered nurses (n=258, 89.3%) and worked in Australia (n=277, 95.8%). They ranged in age from 25 to 71 years (mean 50.17 years ± 9.21) and worked across Australia and New Zealand (see Table 1).

Table 1: Respondents by location of employing rehabilitation service

Location	Number	Percentage
Queensland	94	32.5
Victoria	68	23.5
New South Wales	46	15.9
South Australia	28	9.7
Tasmania	13	4.5
Western Australia	13	4.5
Northern Territory	12	4.2
New Zealand	9	3.1
Australian Capital Territory	3	1.0
Missing data	3	1.0
Total	289	99.9

About two-thirds (n=184, 63.7%) worked in capital cities, 85 (29.4%) in regional centres and 12 (4.2%) in rural areas. One person (0.3%) worked across all three locations. Most (n=198, 68.5%) worked in mixed rather than diagnostic-specific rehabilitation services (see Table 2). There was a statistically significant difference between nurses from public and private sector rehabilitation services for type of service ($\chi^2=32.021$, $p<0.0001$).

Most worked in inpatient rehabilitation (n=252, 87.2%) rather than outpatients (n=8, 2.8%), community (n=15, 5.2%) or



Table 2: Respondents by type of rehabilitation service

Type of service	All	Public	Private
Mixed general/ medical rehabilitation	198 (68.5%)	138 (68%)	58 (75%)
Spinal rehabilitation	18 (6.2%)	14 (6.9)	3 (3.9%)
Aged care rehabilitation	17 (5.9%)	17 (8.4%)	0
Other	15 (5.2%)	14 (6.9%)	0
Orthopaedic rehabilitation	13 (4.5%)	3 (1.5%)	10 (13%)
Brain injury rehabilitation	12 (4.2%)	7 (3.4%)	5 (6.5%)
Neurological rehabilitation	11 (3.8%)	10 (4.9%)	1 (1.3%)
Missing data	5 (1.7%)		
Total	289 (100%)	203 (100%)	77 (100%)

inreach (n=1, 0.3%); 10 (3.5%) worked in more than one of these service types. Most (n=205, 70.9%) worked in public rehabilitation services; 78 (27%) worked in private and two (0.7%) worked in both.

Years of nursing experience ranged from 1 to 52 (mean 25.96 years \pm 12.08). Years of nursing experience in rehabilitation settings ranged from 0 to 40 (mean 12.29 years \pm 8.44).

Nursing management of patients' presenting health conditions

The percentage of rehabilitation patients reported to be receiving nursing care relating to the **ongoing acute management of their presenting health condition** ranged 0–100%, with a mean of 63.49% \pm 31.44 (n=221). The median score was 70% and the mode was 100%. There was no significant difference between nurses working in public and private rehabilitation services (Mann-Whitney U test p=0.081). Across jurisdictions, the means ranged from 50.63% for nurses from the Northern Territory to 80% for nurses from the Australian Capital Territory (see Table 3).

The percentage of rehabilitation patients reported to be receiving nursing care for the **prevention of complications or deteriorations in their presenting health condition** ranged 0–100%, with a mean of 74.57% \pm 31.69 (n=219). The median score was 90% and the mode was 100%. There was no significant difference between nurses working in public and private rehabilitation services (Mann-Whitney U test p=0.257). Across jurisdictions, the means ranged from 50% for nurses from the Northern Territory to 77.22% for nurses from New Zealand (see Table 4).

Table 3: Percentage of rehabilitation patients receiving nursing care relating to the ongoing acute management of their presenting health condition across Australia and New Zealand

Jurisdiction	Number	Mean % (SD)	Range
New Zealand	9	78.33% (34.1)	0–100
Queensland	79	75% (31.83)	5–100
New South Wales	32	72.58% (35.23)	0–100
South Australia	16	72.19% (35.35)	0–100
Australian Capital Territory	3	80% (20)	60–100
Tasmania	10	78% (23)	40–100
Victoria	52	77.52% (30.74)	5–100
Western Australia	10	73% (35.91)	20–100
Northern Territory	8	50.63% (22.11)	0–100
Total	219		

Table 4: Percentage of rehabilitation patients receiving nursing care for the prevention of complications or deteriorations in their presenting health condition across Australia and New Zealand

Jurisdiction	Number	Mean (SD)	Range
New Zealand	9	77.22% (27.05)	30–100
Queensland	76	64.05% (29.71)	10–100
New South Wales	33	50.33% (35.69)	0–100
South Australia	16	69.69% (31.81)	0–100
Australian Capital Territory	3	70% (26.46)	50–100
Tasmania	10	57% (26.16)	5–80
Victoria	52	70.8% (30.11)	10–100
Western Australia	10	55% (40.82)	5–100
Northern Territory	8	50% (24.35)	20–80
Total	217		

The percentage of rehabilitation patients reported to be receiving nursing care for the **management of complications or deteriorations in their presenting health condition** ranged 0–100%, with a mean of 53.5% \pm 34.01 (n=220). The median score was 50% and the mode was 100%. There was no significant difference between nurses working in public and private rehabilitation services (Mann-Whitney U test p=0.630). Across jurisdictions, the means ranged from 38.75% for nurses from the Northern Territory to 73.33% for nurses from the Australian Capital Territory (see Table 5).

The most common nursing activities in the acute management of patients' presenting health conditions

Collectively, the data indicates that respondents interpreted this question to be about the acute management of all conditions a patient may have. As a consequence, they included nursing activities relating to the acute management of exacerbations of co-morbid chronic conditions as well as the ongoing acute management of presenting health conditions.



Table 5: Percentage of rehabilitation patients receiving nursing care for management of complications or deteriorations in their presenting health condition across Australia and New Zealand

Jurisdiction	Number	Mean (SD)	Range
New Zealand	9	66.11% (39.67)	10–100
Queensland	79	53.32% (35.49)	0–100
New South Wales	32	49.85% (33.78)	0–100
South Australia	15	50.33% (36.86)	0–100
Australian Capital Territory	3	73.33% (23.09)	60–100
Tasmania	10	44% (23.19)	10–80
Victoria	52	57.21% (34.31)	0–100
Western Australia	10	52% (32.25)	10–100
Northern Territory	8	38.75% (24.31)	10–75
Total	218		

The nursing activities in the acute management of patients' health conditions reported by respondents as most common fell into three groups. The differentiation between groups was based on whether the nursing activity was preventative, curative or educational in focus.

Nursing activities with a preventative focus

Nursing activities with a preventative focus took two forms. The first was **active prevention** and the second was **monitoring** for changes in a patient's condition. Both were very common in the data.

Active prevention involved a wide range of activities to prevent deteriorations and complications. The prevention of deteriorations and complications in physical health and function were more commonly reported. Cognition, mental health and behaviour were mentioned to a lesser extent.

Nurses used general and specific terms to report active prevention. Examples of more general terms included: *preventing decline in homeostasis/condition; preventing clinical deterioration; prevention [of] further functional decline; preventing deterioration in health condition; prevention of complications; and preventing complications/deterioration in health condition.* More specific reports of active prevention mentioned preventing *falls, pressure injuries, delirium, URTI, DVT, contractures, constipation, UTIs, second stroke, infection and bladder distention.* The prevention of falls and pressure injuries were the most commonly reported.

Active prevention also included nursing activities to maintain the function of specific body systems. Examples of these nursing activities included: airway management (for example, *O₂ therapy, tracheostomy care and chest physio*), administration of *nutritional support* (for example, via *NG, PEJ, PEG tube or TPN*), *hygiene, basic ADL + mobility assistance because patient too ill to actually participate and elimination* (for example, *stoma care*).

Nursing activities with a preventative focus also took the form of **monitoring** for changes in a patient's condition. Monitoring was reported repeatedly throughout the data. This activity was essential for the prevention of deteriorations and complications through the identification of early warning signs.

Nurses used general and specific terms to report monitoring. Examples of more general terms included: *regular observations, regular general observations, observation and assessments of our patient, medical monitoring, monitoring of vital signs and signs of deterioration, blood test monitoring, monitoring deterioration, monitoring of observations, ongoing monitoring of patient, acute care monitoring, monitoring, monitor vital signs and recognise deterioration/change in the pt's status, observations and monitoring of the health status, monitoring for signs of 'instability', monitoring for complications, Ax/monitoring and continuous monitoring of patients who feel unwell.*

More specific monitoring activities included the monitoring of patients in relation to: *BP, BSL, ECG, SAGO observations, neuro obs/GCS, fluid intake, fluid charts, nutrition, bladder scanning, constipation, pain, cognition for signs of delirium, orthostatic hypotension as well as respiratory and cardiac assessments.*

It seems that particular patients were the focus of some monitoring activities. For example, *fluid intake monitoring in cardiac + renal pts, monitoring fluid intake and ECGs performed with any palpitations/irregularities, and close monitoring of delirium to prevent falls and manage behaviours.*

Regardless of whether the nurses used general or specific terms, it was clear that these monitoring activities were very clinical or disease focused. They reported: *monitoring and treatment of hypertension; monitoring and treatment unstable diabetes; monitoring and treatment of angina; monitoring and treatment of respiratory conditions such as COPD; monitoring and assessment of pulmonary oedema, UTI [and] chest infections, monitoring wound management and seizure management/monitoring.*



While nurses predominantly described their monitoring activities as focusing on the identification of early signs of deteriorations and complications, one nurse was explicit that monitoring was about detecting improvement as well as deterioration. Nevertheless, the primary reason for monitoring was to inform decisions about actions to be taken next.

Nursing activities with a curative focus

Nursing activities with a curative focus were undertaken **to treat reversible clinical problems**. These nursing activities were undertaken either: 1) as part of a treatment regime that was commenced before transfer and continued in rehabilitation; or 2) new treatments initiated in response to deterioration in a patient's condition.

A common feature of the data set was the use of abbreviations and brief responses when reporting nursing activities. This meant that it was not always clear if the reported nursing activities related to the treatment regime for an existing or new condition, for example:

treatment for UTI, falls, pressure injury

sepsis management, cardiac management and diabetic management

managing IHD including CCF, hypertension, hypotension, COPD management

For this reason, no attempt was made to differentiate between the two groups of nursing activities.

Once again, nurses used general and specific terms to report nursing activities with a curative focus. General terms included *rapid responding to clinical deterioration, recognition of deterioration and escalating as required and management of the deteriorating patient*.

More specific terms included:

IV therapy. Anticoagulation therapy. IV antibiotics. Nebuliser therapy

dressings, antibiotics, blood transfusions

administration of medications (IV, oral, et cetera) wound dressings

IVT for infections and fluid replacement. Wound dressings.

IV antibiotics, oral antibiotics and nebulisers, additional diuretic, delirium management

wound management, drug management, behavioural management

wounds that require VAC dressing, PICC lines for IVABs, IVT for Blood, IVABs

Some nurses provided examples of deteriorating patient scenarios, for example:

managing critical scenarios, that is, deteriorating condition, that is, arrest, decrease in conscious state, unstable condition requiring return to acute and emergency.

management of clinical deterioration, undiagnosed conditions not identified in the acute setting, for example, recently we identified a fractured hip, a fractured spine and diagnosed Ca. Not things that should traditionally be happening in a sub-acute setting.

Interdependence with other disciplines (especially medicine) was explicit in the responses of some nurses, for example:

escalating their care, that is: increasing vital signs, notifying doctor and following doctor's orders

administer medications accordingly as per doctors order identifying if further intervention by team/doctors is/are required, for example, MET call/call 000

assisting medical staff in the Mx of the following: diabetes management, obstructive sleep apnoea (pre-morbid), orthostatic hypotension, weight management, cardiac issues

referrals with the other health practitioner; cooperation and team working with multidisciplinary team

Nursing activities with an educational focus

The third and final group of nursing activities in the acute management of patients' health conditions had an educational focus. These activities were reported far less frequently than either nursing activities with a preventative focus or nursing activities with a curative focus. While many nurses simply wrote *education* and *education of patients*, others mentioned the education of families as well as patient education. How the education was conducted was alluded to by some with words such as *coaching, guiding, prompting* and *counselling*.



Far more common was the inclusion of information about the focus of the education. For example, education about health conditions and their management was common:

education of condition and management of symptoms

management of chronic disease exacerbations – coaching and education about these conditions to promote self-efficacy

patient/family/carer education to minimise impact of health conditions, prevent negative, impact where possible and to support adaptation to health condition where cannot completely remove impacts

provide education and guidelines to follow to get a better living with their current abilities

education of pt and their carers/family to ensure ongoing management of the condition to allow the pt to return to an accepted lifestyle

Education about specific aspects of self care, including wound management, were also common:

pt education related to: bladder complications such as UTI; bowel complications such as constipation; pressure injury; respiratory function; medications

Education about falls and pressure injuries were also specifically mentioned.

Nursing management of patients' co-morbid health conditions

The percentage of rehabilitation patients reported to be receiving nursing care relating to the **ongoing management of co-morbid health conditions** ranged 3–100%, with a mean of 72.36% ± 25.4 (n=221). The median score was 80% and the mode was 100%. There was no significant difference between nurses working in public and private rehabilitation services (Mann-Whitney U test p=0.649). Across jurisdictions, the means ranged from 56.67% for nurses from New Zealand to 85% for nurses from Western Australia (see Table 6).

The percentage of rehabilitation patients reported to be receiving nursing care for the **prevention of complications or deteriorations in their co-morbid health conditions** ranged 0–100%, with a mean of 71.04 ± 29.79 (n=218). The median score was 80% and the mode was 100%. There was no significant difference between nurses working public and private rehabilitation services (Mann-Whitney U test p=0.827). Across jurisdictions, the means ranged from 60.56% for nurses from

Table 6: Percentage of rehabilitation patients receiving nursing care for the ongoing management of co-morbid health conditions across Australia and New Zealand

Jurisdiction	Number	Mean (SD)	Range
New Zealand	9	56.67% (29.9)	20–100
Queensland	78	73.22% (25.69)	10–100
New South Wales	34	75.97% (25.15)	3–100
South Australia	15	73.27% (25.68)	20–100
Australian Capital Territory	2	75% (35.36)	50–100
Tasmania	9	71.11% (19)	50–100
Victoria	53	71.09% (26.5)	15–100
Western Australia	9	85% (16.96)	50–100
Northern Territory	10	67.5% (23.12)	35–100
Total	219		

Table 7: Percentage of rehabilitation patients receiving nursing care for the prevention of complications or deteriorations in their co-morbid health conditions across Australia and New Zealand

Jurisdiction	Number	Mean (SD)	Range
New Zealand	9	60.56% (34.86)	10–100
Queensland	76	73.69% (29.84)	0–100
New South Wales	34	70.09% (30.77)	3–100
South Australia	15	66.33% (34.67)	0–100
Australian Capital Territory	2	75% (35.36)	50–100
Tasmania	9	73.33% (18.71)	50–100
Victoria	52	68.54% (23.03)	25–100
Western Australia	9	89.44% (17.76)	50–100
Northern Territory	10	65.5% (23.03)	25–100
Total	216		

New Zealand to 89.44% for nurses from Western Australia (see Table 7).

The percentage of rehabilitation patients reported to be receiving nursing care for the **management of complications or deteriorations in their co-morbid health conditions** ranged 0–100%, with a mean of 57.23% ± 30.46 (n=217). The median score was 50% and the mode was 50%. There was no significant difference between nurses working public and private rehabilitation services (Mann-Whitney U test p=0.175). Across jurisdictions, the means ranged from 51.8% for nurses from the Northern Territory to 80% for nurses from Western Australia (see Table 8).

Most common pre-existing/co-morbid conditions

From the list of 25 conditions used by AROC (Australasian Rehabilitation Outcomes Centre), the nurses reported the following as the most common pre-existing/co-morbid conditions:



Table 8: Percentage of rehabilitation patients receiving nursing care for the management of complications or deteriorations in their co-morbid health conditions across Australia and New Zealand

Jurisdiction	Number	Mean (SD)	Range
New Zealand	9	55% (38.57)	10–100
Queensland	77	56.59% (32.35)	0–100
New South Wales	33	52.4% (28.65)	3–100
South Australia	14	53.93% (29.10)	0–100
Australian Capital Territory	2	75% (35.36)	50–100
Tasmania	9	52.22% (23.33)	30–100
Victoria	52	60.35% (30.67)	0–100
Western Australia	9	80% (21.21)	40–100
Northern Territory	10	51.8% (27.53)	20–98
Total	215		

1. Cardiac disease (n=169, 58.5%)
2. Diabetes mellitus (n=168, 58.1%)
3. Respiratory disease (n=109, 37.7%)
4. Stroke (n=96, 33.2%)
5. Dementia (n=80, 27.7%)
6. Chronic pain (n=78, 27.0%)
7. Osteoarthritis (n=65, 22.5%)
8. Drug and alcohol abuse (n=39, 13.5%)
9. Mental health problem (n=37, 12.8%)
10. Parkinson's disease (n=36, 12.5%)

Most common nursing activities in the management of patients' co-morbid health conditions

Collectively, the data indicates that respondents interpreted this question to be about the management of co-morbid chronic conditions a patient is admitted with.

Nursing activities in the management of patients' co-morbid health conditions reported by respondents as most common fell into three groups: the management of health conditions, the monitoring of health conditions and education about health conditions. To a lesser extent, there was mention of the management of deteriorations in co-morbid conditions.

Management of chronic health conditions

Unlike the language used in responses about the management of acute conditions which referred to the *treatment* of reversible situations, the language used in responses to chronic conditions referred to *management* of the condition. This implies control over the condition and acknowledges the condition cannot be

cured. The nurses talked of managing the disease, symptoms and behaviours.

Disease management

Many responses referred to medical and nursing management of specific diseases, for example *diabetes mellitus*, *CCF* and *COPD*. Others referred to activities related to the management of disease including the administration of medications (including insulin), fluid management (for renal and cardiac patients) and oxygen management. For example:

Administration of medication accounting for patients' condition, for example, pt with CCF requires treatment for oedema, medical and other nursing interventions such as elevation of lower limbs and spacing of activities.

Symptom management

Many responses related to the management of specific symptoms related to chronic diseases. Examples included the management of *SOB*; *pain*; *weight and nutrition*; *fatigue*; *hypertension*; and *wounds and chronic pain*: *pain relief – provision of pain relief meds; adjustment of rehab intervention if low threshold of pain.*

Behaviour management

The management of adverse behaviour was mentioned to a lesser extent. These were linked to some specific co-morbid conditions, such as drug and alcohol use/withdrawal, mental health and dementia. Examples included:

Behaviour management plan agreement of rules for abstinence from alcohol/drugs, plan of care/med plan for management of mental health disorders, crisis planning, script writing for team consistency when communicating with client

Behaviour management (drug- and alcohol-related)

Dementia: communication – adapted + modelled to suit cognitively impaired patients. Behaviour management – focused on safety of patients with dementia + facilitating their needs within the rehab program.

Monitoring of chronic health conditions

The monitoring of chronic health conditions was very common in the data, with many reports of taking observations and conducting assessments. Two main reasons for monitoring were reported. Firstly, and less prominent in the data when compared with the management of acute conditions, was for monitoring **to detect deterioration** in a patient's health as a result of a chronic condition.



The second reason for monitoring was **to evaluate the strategies used to manage chronic condition and for the titration of treatment**. Examples included the monitoring of BSL for the titration of insulin to establish a normal acceptable range and the titration of oxygen therapy to establish a normal range of oxygen saturation. Monitoring in this context was viewed as essential for the management of conditions, regardless of whether it was for the management of disease, symptoms or behaviour. Examples included:

Assisting + monitoring food/fluid intake; General observations and making clinical judgement to implement nursing strategies to reduce or improve situation or involve medical/allied health where required; behavioural management; skin inspections

Maintain hydration; monitoring fluid balance; management glycaemic control; Observations – ECG; manage postural hypotension

BGL management; observations; medication monitoring esp. compliance with cardiac/diabetes + respiratory meds; pain management

BGL monitoring; behavioural charts; Pt education; maintain pt safety; monitoring weight; fluid balance charts – to monitor fluid

Education about chronic health conditions

There were many who identified teaching patients about their co-morbid health conditions as a primary nursing activity. The main aim of this activity was to promote patient independence and self-management, and readiness for discharge. A primary example was:

Teaching them a little about the condition, getting them to identify issues that impact on their life, showing them different ways of carrying out activities, knowing the correct way to administer medication and identify complications with medications, how to prevent and deal with acute presentations of symptoms and when to seek help.

Common patient complications

Most nurses (n=239, 82.7%) provided information about complications with most (n=224, 93.7%) reporting more than one complication. From the list presented in Table 9, the most

commonly reported complication was 'urinary tract infections and urinary complications', followed by falls. However, if respiratory infections are combined with other respiratory complications 'all respiratory complications' would be the most commonly reported. See Table 9 for complications reported by more than 10% of survey respondents.

Table 9: Most commonly reported complications

Complication	yes
UTI and urinary complications	N=99, 34.3%
Falls	N=82, 28.4%
Cardiac complications	N=58, 20.1%
Respiratory complications (other than infections)	N=56, 19.4%
Diabetic/BGL complications	N=54, 18.7%
Infections (other)	N=49, 16.9%
Pressure injury	N=42, 14.5%
Respiratory infections	N=42, 14.5%
Skin issues	N=39, 13.5%
Cognitive complications	N=38, 13.1%
Pain	N=36, 12.5%
Blood pressure complications	N=34, 11.8%

Is the acute nursing management of patients' presenting health conditions part of rehabilitation?

Most (n=222, 76.8%) of the nurses said the acute nursing management of patients' presenting health conditions was part of rehabilitation; 39 (13.5%) said no and 28 (9.7%) did not answer. There was no significant difference between nurses working in public and private rehabilitation services ($\chi^2=0.078$, $p=0.78$).

Two hundred and four (91.89%) of those who answered yes supported this answer with their reason/s. Most (38, 97.44%) of those who answered no also provided reason/s. Four of the 28 who did not answer yes or no, provided additional information. While the handwriting of one of the four could not be deciphered, the other three referred to patients who were too unwell to participate in rehabilitation. This was understood to mean that because those patients were not able to participate in rehabilitation the nursing care provided to them could not be viewed as part of rehabilitation.

Is the nursing management of co-morbid health conditions part of rehabilitation?

Most (n=245, 84.8%) said the nursing management of patients' co-morbid health conditions was part of rehabilitation; three (1%) said no and 41 (14.2%) did not answer. There was no significant difference between nurses working in public and private rehabilitation services ($\chi^2=0.02$, $p=0.89$).



Two hundred and thirty (93.9%) of those who answered yes supported this answer with their reason/s. All three who answered no also provided reasons.

Rationale for why the acute management of presenting health conditions and co-morbid conditions are part of rehabilitation

Overwhelmingly, the majority of responses identified **rehabilitation nursing as holistic and person-centred**. Respondents referred to looking after the whole person, including acute and co-morbid conditions as part of rehabilitation.

Holistic care requires acknowledgment of the whole person, I don't think you can be effective if you exclude pre-existing conditions, must be included into any goals.

Respondents were explicit that the management of acute and co-morbid conditions allows patients to participate in rehabilitation and improves rehabilitation outcomes by allowing the patient to engage in rehabilitation effectively, efficiently and at an optimal intensity.

Acute conditions

Respondents reported that rehabilitation should be a continuum starting at the onset of the acute condition because early rehabilitation leads to better patient outcomes, for example:

Early intervention and commencement of rehab can and should begin prior to the patient over acute phase so as to have better outcomes and prevent further deconditioning.

Many respondents advocated for early admission of acute patients into rehabilitation units. Some believed that patients being admitted to rehabilitation have a higher acuity, that is, patients being admitted to rehabilitation 'sicker and sooner' because they are being pushed out of acute care.

We take patients early in their rehab phase prior to them being totally stable/treated for their acute condition to prevent further deconditioning.

We're a rehab unit within an acute hospital, necessarily we admit people who are still recovering and able to do rehab early reduces complications and maximises recovery.

Patients move through the acute setting more quickly to accommodate the access demand, as soon as they are deemed medically stable they transfer to rehabilitation. The cohort of patients in rehabilitation have increasingly

complex care needs including social, medical and rehabilitation.

Respondents who did not believe that the management of acute conditions is part of rehabilitation reported that acute care should be managed prior to transfer to rehabilitation. They reported patients should be medically stable and able to participate prior to rehabilitation. In the event of an exacerbation of the acute episode patients should be transferred back to the acute setting.

Acute episode care needs should be managed prior to transfer to Rehab Units. Patient should meet a sub-acute Rehab criteria – 'be rehab ready'. However, acute episodes of care should be expected as a result of an exacerbation of patient's co-morbidities/underlying health issues. Acute episodes should see the patient being transferred back to acute care units/facilities until acute situation is resolved.

Co-morbid conditions

Numerous respondents identified that many people admitted to rehabilitation are older in age and have a higher incidence of comorbidities, and that it is more the norm.

The older the population usually the more co-morbidities people have to manage, when they come into hospital they still have the pre-existing co-morbidities plus reasons for being in rehab.

Age group of clientele mean high number of co-morbidities -> frequent need to Rx as part of whole pt care, especially during extended stays

It was also identified that comorbid conditions can cause deconditioning and that deconditioning can be the primary reason for rehabilitation. Some respondents believe that there is a need to consider the impact of comorbid conditions in order to set appropriate rehabilitation goals.

Especially so if admitted under a reconditioning program, for example: exacerbation episode of COAD or CCF. Teaching/reconfirming strategies with patients in managing there these pre-morbid condition in order to return to pre-hospitalisation living and manage independently or with increased supports



Nursing care is providing holistic care. The impact of co-morbidity on existing condition requires understanding to plan and provide care and set achievable realistic goals.

Nursing as rehabilitation therapy

Nurses were asked if nurses in general and if they themselves provide rehabilitation therapy. Almost three-quarters (n=211, 73%) said nurses in general provide rehabilitation therapy, but 30 (10.4%) answered no. There was no significant difference between nurses working in public and private rehabilitation services ($\chi^2=1.168$, $p=0.28$).

About two-thirds (n=196, 67.8%) said they themselves provide rehabilitation therapy, with 40 (13.8%) saying they did not. There was no significant difference between nurses working in public and private rehabilitation services ($\chi^2=0.053$, $p=0.818$). Some nurses (n=23) reported that nurses (in general) do not provide rehabilitation therapy, but they themselves do.

Of note, more nurses did not answer the questions about nursing as rehabilitation therapy than any other question in the survey: 48 (16.6%) did not answer about nurses in general and 53 (18.3%) did not answer about themselves. Forty-four (15.22%) nurses did not answer either of the questions about nurses providing rehabilitation therapy. Nevertheless, most nurses (n=242, 83.74%) provided examples of nursing care they considered to be rehabilitation therapy. This included many of the nurses who said that nurses in general provided rehabilitation therapy but they themselves did not.

Collectively, the data set generated from responses to the request for examples of nursing care that respondents considered to be rehabilitation therapy was larger than that for any other question in the survey. As in the responses to all other questions, abbreviated language was used extensively. But overall, the individual responses were longer than for other questions. This was surprising, given it was the last question on the survey. It suggests a familiarity with the concept of nursing as rehabilitation therapy.

The examples of nursing care considered to be **rehabilitation therapy covered technical nursing care of the body, interpersonal nurse-patient interactions and ward atmosphere**. These were used to address physical, psychological, emotional, social, cognitive, spiritual and sexual patient needs as well as for disease management. References to advocacy and preparation of patients and family/carers for

self-management and life after discharge were spread across the data.

Repeated mention of setting goals with patients and using those goals to inform nursing practice provided very strong evidence of person-centred practice in the data. Education, which was evident across the two major themes in the data, was central to person-centred practice.

The first major theme of the nursing care considered to be rehabilitation therapy was **nurse-initiated interactions with patients to engage them in the activities of rehabilitation**.

Central to nursing as rehabilitation therapy was a therapeutic nurse-patient relationship, the hallmarks of which were described as: *education, re-education, training, retraining, teaching, instruction, guidance and support*. Nurses also spoke about *coaching, encouraging, empowering, facilitating, enabling and prompting* patients. Some also mentioned celebrating with patients. To a lesser extent, they spoke of assisting and supervising patients; there was little mention of doing for patients unless it was absolutely necessary. Some nurses were explicit about nursing's 24/7 role in rehabilitation, while others alluded to it in reference to specific aspects of nursing care in relation to prevention, monitoring, symptom management (in particular energy conservation and fatigue management) and disease management.

As well as working with patients individually, the data reported nurses creating a particular atmosphere in rehabilitation services. This atmosphere was used to encourage and facilitate active patient participation in the activities of rehabilitation. *Encouragement, humour, keeping hope alive, providing motivation, believing in patients and discontinuation of the sick role* were central to this. However, creating an atmosphere that encouraged and facilitated active patient participation in the activities of rehabilitation was balanced with need to ensure patient safety. Many nurses emphasised this point.

A second major theme in the data about nursing care considered to be rehabilitation therapy-related to more **nurse-directed aspects of nursing care**. They spoke of monitoring, managing, maintaining, preventing and ensuring various aspects of patient care. The most common aspects of patient care nurses 'managed' were medications, bladder and bowel function, urinary catheters, pain, wounds and behaviours. A final but minor theme in the data related to nursing's role in linking, coordinating and supporting the input of other disciplines.



Discussion

This study used a self-administered survey to explore nurses' perceptions of the nature and extent of the various aspects of their role in relation to illness, injury and complication management in the delivery of rehabilitation care. The number of respondents was high, comprising almost all delegates at the 2015 national ARNA conference (n=170) and 119 online responses following the conference. Almost 80% of the 289 nurses who completed the survey were ARNA members. This indicates that the survey was of interest to these nurses and they valued its focus.

The survey provided a structure for nurses to report on specific aspects of their practice previously not researched. Interestingly, the provision of this structure seemed to enable the nurses to describe discrete aspects of nursing's role in rehabilitation without having to generate the structure themselves.

Collectively, strong themes were apparent across the data set. Regardless of whether nurses work in public or private rehabilitation services, they share similar views about the nature of rehabilitation nursing; this is despite differences in the casemix between the sectors.

The key findings are:

1. Patients coming to rehabilitation 'sicker and sooner' is an everyday reality in rehabilitation units.
2. Nurses provide holistic and person-centred care in rehabilitation.
3. Nurses view the acute care management of the patient's presenting health conditions and their comorbid health conditions as part of rehabilitation.
4. The management of acute and comorbid health conditions enables patients to participate in rehabilitation and improves rehabilitation outcomes.
5. Patients benefit when rehabilitation starts early.
6. Deteriorations in patients' health conditions are commonly managed as part of rehabilitation, with patients benefiting from not having their rehabilitation interrupted by transfer back to an acute unit.
7. Nurses provide goal-directed rehabilitation therapy in relation to the management of health conditions as well as the promotion of person-level functional independence and self-management.
8. The primary technologies of nursing as rehabilitation therapy are interpersonal and educational in nature.

The findings of this study provide clear evidence of a paradigm shift from rehabilitation as the third stage of health care (Rusk, 1960) to rehabilitation as a philosophy and approach that should permeate the whole continuum of health care services. While several nurses alluded to this, one captured it succinctly in saying that the *notion of rehabilitation starting when patients are medically stable went out last century*.

No longer are nurses thinking that rehabilitation is not really a nursing responsibility as was the case in the early 1990s (Pryor, 2005b). Nor are they describing their role in the management of secondary health conditions as not part of rehabilitation as they were 15 years ago (Pryor, 2005a). Instead, nurses are describing their work in rehabilitation as holistic, person-centred care and they view nurses meeting whatever needs patients may have as directly contributing to patient rehabilitation.

The nurses in this study were explicit that the management of acute and co-morbid conditions allows patients to participate in rehabilitation and improves rehabilitation outcomes by allowing the patient to engage in rehabilitation effectively, efficiently and at an optimal intensity.

The findings of this study extend the findings of previous Australian studies of nursing's contribution to patient rehabilitation (Pryor & Smith, 2002; Pryor, 2005a). No longer is nursing's contribution to patient rehabilitation limited to 'coaching patients to self-care' with the management of secondary health conditions as something else (Pryor, 2005a, 2009). Nurses are seeing a direct relationship between these dual aspects of their role.

This study also demonstrates that nurses do see themselves as providing rehabilitation therapy. However, while the primary technologies of nursing as rehabilitation therapy are interpersonal and educational in nature, this study demonstrates that within rehabilitation settings these technologies are enacted within the context of holistic nursing practice. This provides nurses resources for addressing the invisibility of the therapy work of nursing as explained by Kearney and Lever (2010). By providing a language for making more visible nursing's complex role in inpatient rehabilitation, the findings of this study have implication for nursing education and the development of rehabilitation nurse-effectiveness.

Figure 1 is proposed as a framework for explaining nursing's role to nursing students and nurses new to rehabilitation as well as other disciplines. It brings together findings from this study with findings from an earlier Australian study (Pryor, 2005a, 2009)

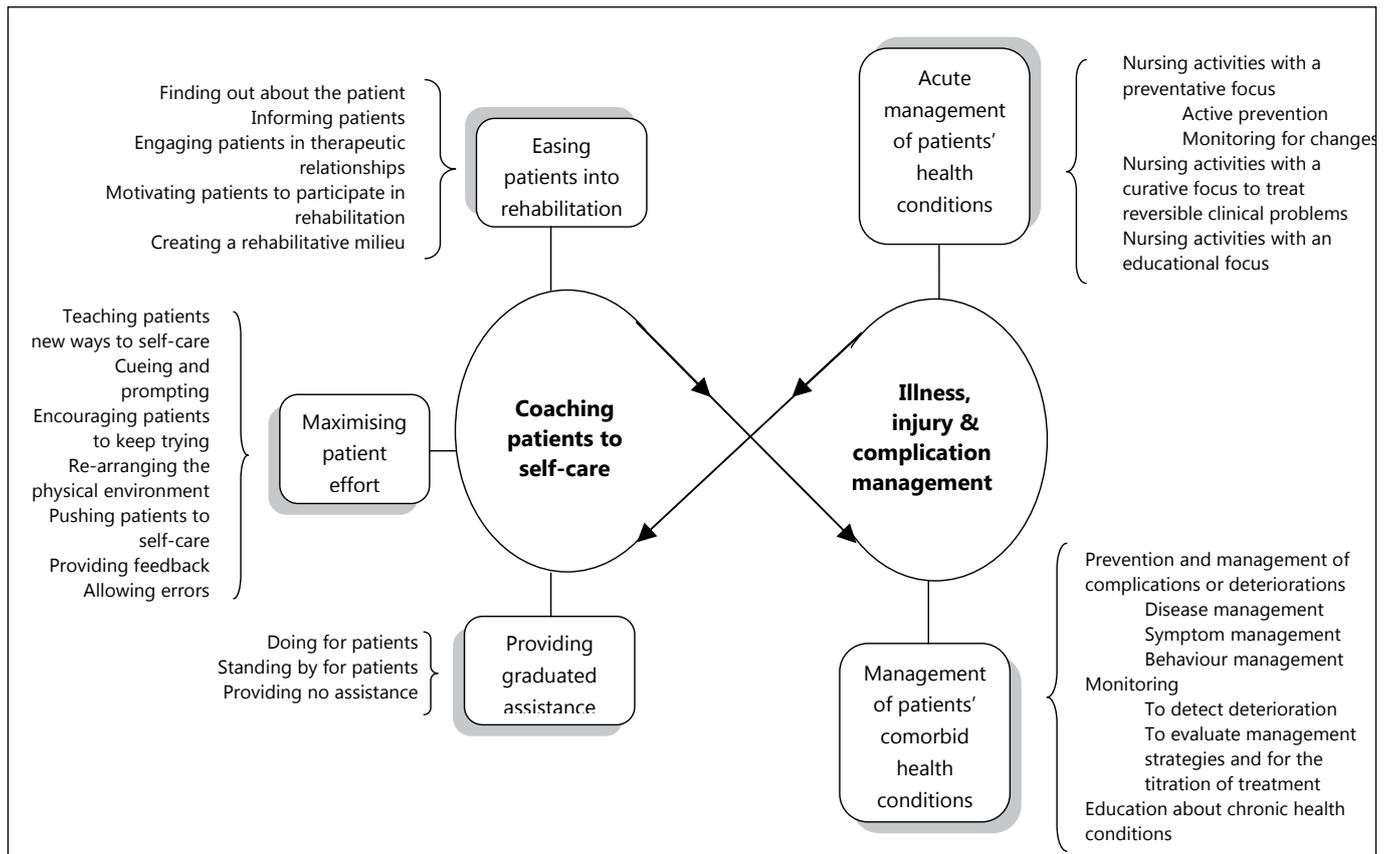


Figure 1: Proposed framework for nursing's contribution to patient rehabilitation

where nurses did not articulate the place of illness, injury and complication management as part of their contribution to patient rehabilitation. This makes explicit nursing's contribution to patient rehabilitation as illness, injury and complication management as well as coaching patients to self-care, with both being concurrent and ongoing processes.

Concluding comments

By studying nurses' reports of their day-to-day practice, this study describes a broader nursing contribution to rehabilitation service delivery than previously reported. In so doing, it provides nurses with a language to explain their role to others and, most importantly, it provides a framework for the preparation of nurses for meeting the full range of rehabilitation patients' needs.

More broadly, however, this study questions the notion that rehabilitation as a form of sub-acute care is somehow 'less than' acute care. Rather, it suggests that contemporary rehabilitation service delivery is commonly acute care and more.

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Australasian Rehabilitation Outcomes Centre

**Australasian Rehabilitation Outcomes Centre (AROC)
University of Wollongong, NSW, Australia**

Web: <http://chsd.uow.edu.au> Tel: +61 2 4221 4411

Email: aroc@uow.edu.au

AROC Paediatric rehabilitation outcomes benchmarking initiative

Paediatric rehabilitation aims to maximise the ability of the child to participate in activities at home, school and the community. A common adage is that children are not simply "little adults". While the focus of rehabilitation is maximal restoration of function, regardless of age, there are substantial differences between children and adults in the types of impairments of concern, development and maturation and, importantly, decision-making abilities. Thus, families and caregivers play a key role in paediatric rehabilitation.

While the AROC adult rehabilitation benchmarking initiative has been well established since 2002, with close to 100% participation of all inpatient rehabilitation facilities in Australia and New Zealand, a paediatric equivalent has not been available. AROC is now very pleased to announce the launch of the AROC Paediatric rehabilitation outcomes benchmarking initiative.

The paediatric data set and associated documentation such as data dictionaries have been developed as a collaboration between AROC and leading paediatric rehabilitation clinicians in Australia and New Zealand. The Paediatric Rehabilitation Data Set Workshop (a combined AROC and Australasian Rehabilitation Faculty of Rehabilitation Medicine working group) first met in Christchurch in March 2010. Subsequent work included development of paediatric-specific impairment codes and data set.

In 2016, the Queensland Paediatric Rehabilitation Service (QPRS) at Lady Cilento Children's Hospital was successful in obtaining funding to allow AROC in association with QPRS to undertake the development of a paediatric rehabilitation outcomes benchmarking initiative.

The project achievements to date include:

- the finalisation of an agreed national outcome data set and data points for inpatients and day hospital paediatric rehabilitation services. The major outcome measure in the data set is the weeFIM;
- the extension of the current AROC database to include inpatient and day hospital paediatric rehabilitation outcome measures; and
- the development and implementation of systems (including training) to collect data in line with the agreed national data set for inpatients and day hospital paediatric rehabilitation services.

Following training in the data set and data collection system QPRS commenced piloting the data collection in August 2016. This has allowed time to address any issues. Training will be rolled out in November and December 2016 across other paediatric rehabilitation services in Australia and New Zealand wishing to join the initiative.

AROC would like to acknowledge the valuable contributions of all involved in the project and look forward to the next steps in this collaboration, including the development and provision of paediatric outcome reports (six-monthly) and the provision of support to review and analyse paediatric rehabilitation outcome data.

For further information about the paediatric clinical quality benchmarking initiative, please contact aroc@uow.edu.au.



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