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**Title:** Exploring Manual Handling Practices by Informal Carers: The Experiences of Two Carers

**Category:** Research

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All authors have made a substantial contribution to the study design, data collection and analysis and writing of the article.

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**Abstract:***Background/Aims:*

Manual handling is a significant component in the role of an informal carer. This research aimed to understand the manual handling needs and practices of informal primary carers.

*Methods:*

This qualitative study utilised semi-structured face-to-face interviews to gather data from one community living male and female carer with a spouse living with Parkinson's disease. Using comparative thematic analysis; categories and themes emerged from the detailed descriptions of the lived experiences.

*Findings:*

Three main themes emerged from the data. 1. *carer experience*: manual handling was a daily task, however care recipients sometimes assisted in a modified environment; and carers utilised previous experiences; 2. *equipment*: a variety of prescribed and non-prescribed equipment was used, however limited training was provided; 3. *perceived needs*: identified needs included education on manual handling techniques, physical exercises for carers, equipment information, financial assistance for equipment and increased formal support.

*Conclusions:*

A lack of assistance for Australian informal carers with manual handling in relation to information provision, training and awareness of equipment and supports was highlighted. There is a need for increased carer awareness of services and support group networks as well as for health professionals to deliver relevant advice to carers as part of service provision to care recipients.

**Keywords:**

Qualitative research; caregivers; chronic disease; community capacity; lifting and manual handling.

## **Key Points**

- Informal carers of people with a disability/illness conduct manual handling practices which can negatively impact their physical well-being;
- Health professionals must consider the carer when providing services and increase carer awareness of services and supports available;
- Informal carers require information, training and awareness of equipment in relation to manual handling;
- Informal carers need knowledge of formal and informal supports to assist them.

## **Introduction**

Informal carers provide unpaid caring duties to family members, friends or significant others (Australian Institute of Health and Welfare: authoritative information and statistics to promote better health and wellbeing, 2013). In 2012, 12% of the Australian population were identified as informal carers for an elderly person or person with a disability (Australian Bureau of Statistics, 2013). Over 750,000 people were identified by the Australian Bureau of Statistics as a primary informal carer (Australian Bureau of Statistics, 2013). In 2012, 65% of primary male carers and 34% of primary female carers provided care for a spouse or partner (Australian Bureau of Statistics, 2013); 70% of primary carers were women; and women were more likely to begin caring at a younger age. This discrepancy is reflected with carers living in England and Wales (Office for National Statistics, 2013).

As part of their daily caring role, informal carers of people with a chronic illness or disability conduct manual handling practices which can negatively impact their physical wellbeing (Fernandes, 2007, Australian Institute of Health and Welfare, 2004). Manual handling is defined as a person using physical force or exertion to lift, lower, push, pull, move, carry, hold or restrain a person or object (Disability Safe, 2008). The informal caring population is at risk of developing physical injuries and prolonged pain as a result of poor manual handling techniques (Fernandes, 2007, Australian Institute of Health and Welfare, 2004). Back pain is the most common manual handling injury experienced by informal carers (Independent Living Centre of WA, 2006). These injuries can further impact on the socio-emotional issues experienced by carers and their overall quality of life (Disability Safe, 2008, Australian Institute of Health and Welfare, 2004, Australian Institute of Family Studies, 2008). The increased manual handling duties of female carers (Pinquart and Sorensen, 2006) may result in more physical health issues and injuries when compared to male carers (Independent Living Centre of WA, 2006, Li et al., 2013).

Education and training for carers about correct manual handling techniques can reduce the risk of physical injuries (Independent Living Centre of WA, 2006, O'Brien et al., 2012, Salter et al., 2010). However, many carers are unaware of available assistance and do not receive training from an appropriate health professional for these techniques (Independent Living Centre of WA, 2006, Allen et al., 2002, Gustafsson et al., 2010). Studies that investigated manual handling practices, focussed on formal carers such as nurses rather than informal carers (Nunes et al., 2011, Taylor et al., 2012, Rinds, 2009, Hignett et al., 2007). However, the impact of providing nursing self-care techniques to carers of people recovering from stroke has been investigated; as have the general physical needs of caring for people following a stroke (Kalra et al., 2004, Hinojosa and Rittman, 2009). Although the provision of information and training to carers has been researched, few studies examine how this impacts upon informal carers. No studies were found which investigate the opinions of informal carers, specifically regarding manual handling experiences. Informal carer studies that acknowledge manual handling only briefly discuss this as part of larger quantitative studies (Independent Living Centre of WA, 2006, Docherty et al., 2008, Forbes et al., 2007, Plank et al., 2012).

The aim of this study was to understand the manual handling experiences of two informal primary carers (one man and one woman); the manual handling practices used by these carers and their perceived manual handling needs. Increased knowledge of such experiences would allow service providers to tailor interventions, supports and information to carers.

## **Methods:**

A qualitative study design enabled us to explore the perceptions and experiences of two informal carers regarding manual handling. Qualitative methodology was used to enable

participants to describe personal experiences and beliefs (Polit and Beck, 2013) with semi-structured interviews enabling the production of rich, descriptive data (Whiting, 2008).

Following ethical approval from the University of Newcastle, Australia, recruitment was initiated with flyers included in the paper and electronic versions of the Carers NSW bimonthly newsletter. Flyers were also delivered to targeted support group coordinators registered with Carers NSW whose groups met in the two local areas to distribute to members.

### Participants

Participants were recruited through Carers NSW; a not for profit Non-Government Organisation providing support and advocacy to carers living in New South Wales, Australia (Carers NSW, 2013). Carers who were informal primary carers, living in two regions of New South Wales and provided care for an adult with a chronic illness or physical disability were eligible for inclusion. This study used purposive sampling for recruitment, consistent with qualitative research (Llewellyn et al., 2004). Carers interested in the study initiated direct contact and were provided with an information statement and consent form. Upon consenting to be part of this research, participants were contacted to arrange a mutually convenient time and place for the interview.

### Data Collection

Semi-structured in-depth face-to-face interviews were conducted, to elicit detailed and descriptive data from the two participants during August 2013 (Whiting, 2008). The researchers utilised an interview template including a compilation of questions and prompts. The development of the template was guided by current literature and was peer reviewed by experienced researchers at the University of Newcastle, Australia and Carers NSW prior to being submitted to the ethics committee. The schedule provided a framework of topic areas to be addressed in the interviews and ensured similar issues were explored with both participants (Patton, 2002). The template considered demographic information, the current

caring role, information and training received by the carer and the perceived manual handling needs of the carer.

In maintaining consistency with qualitative methods, a reflective diary was utilised to record opinions, thoughts and feelings after each interview. This assisted to maintain self-awareness and to clarify personal thoughts or feelings (Clarke, 2009, Koch, 2006). These diaries contribute to the audit trail developed and increase the rigour of the data through transparency of the study (Clarke, 2009, Koch, 2006).

### Data Analysis

The interviews were tape recorded and transcribed to increase accuracy in analysis. The computer software NVivo 10 (QSR) was used to assist in this analysis. Anonymity was achieved with pseudonyms used for interview transcripts and removal of personal information from the data. The study utilised constant comparative methods of data analysis, meaning the data collection and analysis occurred concurrently (Vaismoradi et al., 2013). This method enabled the researchers to identify ideas of interest in the first interview and tailor the second interview to incorporate these ideas. Common to qualitative research, thematic analysis was used to elicit detailed and rich data from the transcripts (Vaismoradi et al., 2013).

Each transcript was read several times in full to obtain an understanding of the content. Both transcripts were then reviewed and specific statements relevant to manual handling experiences were extracted. These statements were grouped to develop meanings and then categorised. From these categories, clusters and finally themes emerged which represented rich descriptions of the carer experiences. To maintain rigour, triangulation through multiple researchers and peer reviewing of coding were employed when analysing categories, clusters and themes in the data (Polit and Beck, 2013). To further enhance the credibility of the descriptions, participants were invited to view and modify their transcripts

as appropriate. From these methods, the results of the study accurately describe the manual handling experiences perceived by the participants.

### **Findings:**

Two carers, one female; Jane caring for her husband – Robert and one male; Phil caring for his wife – Rose, participated in this study. At the time of the interview, Jane had been a full-time carer for eight years for Robert who had been diagnosed with Parkinson's disease 29 years previously. Phil had been a full-time carer for two years for Rose who was diagnosed with Parkinson's disease approximately seven years previously. Although both had been living with Parkinson's disease, the care recipients had differing levels of physical ability. Three themes emerged from the data analysis; carer experience, equipment and perceived needs.

#### *Carer Experience*

Both carers discussed their daily routines involving multiple scenarios which required manual handling. Common scenarios for both carers included providing assistance for personal care tasks; such as showering and dressing, and assisting with chair transfers. Jane furthermore described manual handling duties to assist with toileting and toilet transfers, repositioning of sitting posture and transferring in and out of bed. Jane described times when Robert “freezes up” during gait movements and requires her to physically assist him to continue walking. She also described Robert as a “dead weight” when he was unable to assist. In contrast, Phil described Rose as able to independently transfer off the bed and toilet in a modified environment by using rails. Unlike Jane, Phil commented on specific manual handling involved with grooming, transferring in and out of the car, occasionally pushing

Rose on a four wheel walker and toileting in unfamiliar environments. Both carers also described their development of routines to complete manual handling activities such as transferring in and out of the car.

Both care recipients had experienced several falls which required their carers to manually assist them. Jane described accounting for efficiency and personal safety, whereas Phil was particularly attentive to potential fall risks for Rose and conserving her energy. Both carers described problem solving following a fall to establish useful techniques without reference to direct professional information or training. Jane considered precautions regarding her physical safety in manual handling:

He also falls [sighs] and I have to get him up. That's not that easy... I always try and think everything through and work out the easiest way for me and the most efficient way.

Whereas Phil commented:

...I usually sit her, have her sitting, then I'll come in under her armpits ... to lift her up and get her back onto her feet...

These quotes identify the direct labour required in manual handling tasks by the carers following a fall. Both carers provided multiple examples of such a substantial involvement in manual handling. They also identified situations where their spouse was able to assist with the lift or transfer in a modified environment:

...the rails over the toilet help somewhat... 'cause it means he can put his hands on the rails and I'll just hold his arms and help lower him down instead of having his whole weight...(Jane).

And Phil noted

...there's two shower rails in the bathroom, which helps her, helps me, in as far as that I can get her to stand up to wash parts that I can't do while she's sitting down....

Both carers discussed difficulties they experienced as a carer. Some difficulties were shared by the carers whilst others were unique to the individual. The reduced physical

capacity to manually handle was a shared issue by Jane and Phil but was regarded from different perspectives. Jane identified injuries that reduced her caring capabilities:

But I've got constant pain in my neck and shoulders... It really can hurt. I've also got carpal tunnel in both hands.

And also considered other impacts to her manual handling abilities:

...he actually weighs a little less than I do. I certainly couldn't manage if he was a big heavy man.

However, Phil commented:

...I was used to lifting fairly heavy weights through my working life, but I've noticed over the last couple of years my lifting ability is getting less and less, but I can still handle her... Well see she's about 53 kilos, I'm getting close to 100.

Both carers commented on the fluctuation of functional abilities of their spouse; this related to the degenerative nature of Parkinson's disease with both describing "good days and bad days". Both carers commented on their ability to manage however, Phil went on to describe the intensity of ongoing challenges: "Bad days I wish I was never here... it's just part of what we do. That's all there is to it, yeah. Can't get around it."

The carers had differing levels of support for their manual handling duties. However, while neither carer had family members who were able to provide physical assistance, Phil identified more informal supports than Jane including family and friends. Both carers saw a general practitioner and medical specialists and Jane had received some allied health professional involvement many years previously. Jane was provided with a home safety assessment, some equipment and education for correct equipment use by a community allied health team as outlined in the quote below. However, Robert continued to deteriorate, with functional loss leading to increased manual handling by Jane.

...they (the community team) come to the home and they help you and they assess risks around the home for falling. And it was the OT (occupational therapist)... that arranged for us to get the bidet and the rails in the shower. The thing is though once they've done what they do they sign off on you. And I've had them a second time as well but... Robert continues to deteriorate and I wasn't doing nearly as much heavy stuff when we had them.

Whereas Phil had not been referred to any allied health professionals and received no formal assessments, support or equipment, and commented "I done it myself."

### Equipment

Participants identified multiple pieces of equipment which were used to assist in their manual handling role as a carer. Common items included a lift chair, shower seat or stool, walker and a manual wheelchair for community access. In addition, Jane also identified a bidet, bed rail and walking stick whereas Phil identified an over-toilet aid and mobility scooter. Equipment provided the care recipient with more independence and simultaneously reduced the level of manual handling required by the carer. Equipment was provided by other carers, or purchased after sighting pieces in institutions including hospitals and high-level care facilities. Carers located equipment without prescription from health professionals and purchased as they perceived a need.

One lady that I became quite friendly with, her husband did die... and she gave me a lot of the equipment. She gave me one lot of rails for the toilet, she gave us the shower seat, she gave us the wheelchair (Jane).

Phil also identified his problem solving skills in energy conservation:

(the manual wheelchair is) a lightweight one that I've picked up... the reason I got that was at one stage she wasn't able to use the walker and I used to have to use the wheelchair to move around in the house.

Jane described the benefit of equipment to reduce the intensity of her manual handling role whereas Phil chose equipment to conserve energy for Rose. The following quote illustrates reduced manual handling for Jane:

...he's got a lift chair... which has been really good because previously I'd have to pull him out. But even now once he gets up... he sort of freezes up and I still have to pull him to help him get up.

Phil commented: "I bought a wheelchair probably three, four years ago when things were a bit ordinary... I was getting her around in the walker in the house."

Jane reported mixed ideas regarding the usefulness and limitations of her prescribed equipment. Both carers also provided insight into their understanding of future changes to equipment needs. Jane stated:

...we've got a bidet... it helps. It's not the be all and end all. It doesn't do the job fully..." and "We've got a shower seat which he doesn't use very often but only this morning said he thinks he'll have to use more often.

Whereas Phil commented:

The light (wheel) chair is always in the car. Hopefully we don't have to use it again in the house... at this point in time we don't have to... I can sit her on the walker and push her around the house.

One final aspect of equipment as identified by the carers was the high expense of required pieces. The carers shared an uncertainty for the best method to purchase equipment and a poor understanding of financial assistance options available. Jane expressed:

...if you go to one of these shops that sells all the mobility aids and things, oh, they're so expensive.

Phil particularly expressed concern for other carers who may be unable to afford equipment:

And that's the biggest problem for a lot of people is the cost of these things...more equipment for those that cannot afford it; that's the story I say.

### Perceived needs

Throughout the interviews, the participants identified and described their thoughts concerning their perceived needs for manual handling techniques, information, equipment and support. Jane identified her need for formal and informal assistance to overcome some

issues within her current manual handling role. Jane also discussed education as noted: “The best ways to lift and lower, 'cause lowering is a strain as well.” In contrast, Phil noted his perceived current ability to care for his wife without assistance:

...the doctors have been getting on to me lately that I've got to look at getting somebody in to help here. I say no, at this point in time we can handle it okay ourselves.

Both carers identified a need for physical strengthening exercises to increase their ability to complete consistent manual handling tasks. This was particularly important for Jane who experienced pain and injury from manual handling:

What else would help? Possibly strengthening exercises for the carer for the shoulders and arms and back, not just for the patient.

Phil agreed to the utility of exercises however, questioned his ability to “get the time” to complete these exercises.

In addition to assistance for the techniques involved, Jane also described equipment which her husband would appreciate to further enable an increase in his independence. Jane continued to discuss the issues associated with reduced knowledge of equipment set-up and availability:

He'd like a monkey bar like they have in hospitals. We don't have one of those... I don't know what's available.

One final need expressed by Jane was for assistance in finding formal support. She commented feeling lucky to have discovered the community allied health team:

This is something I found out also the hard way. There is help out there but it's hard to find... (They) were wonderful and that was almost by coincidence... but they're fairly unique...

Conversely, Phil described no immediate need for support:

I don't ask for any help from anyone at this point. That's not saying I won't be looking for help... I don't doubt I will.

### **Discussion:**

This study found rich data to assist the understanding of the manual handling experiences of two informal carers caring for their spouses with Parkinson's disease. While findings are contextualised to the experiences of two people, they reflect and contribute to the current body of knowledge regarding informal carers and manual handling. However, limitations with the small pilot sample, with carers of spouses with the same disability, and in one geographical area, need to be acknowledged.

The informal carers in this study provided insight into the multiple considerations for those who complete manual handling tasks regularly within a daily routine. It is acknowledged carers who provide more than 40 hours of care per week are at the greatest risk of injury (Independent Living Centre of WA, 2006). The most common injuries for carers relate to manual handling with the greatest injury risk occurring when assisting a person off the floor (Independent Living Centre of WA, 2006). This study found that informal carers are constantly completing this task in caring for people with Parkinson's disease – a group who are twice as likely to fall than people with any other neurological condition (Allen et al., 2013). The findings also support Salter, Zettler, Foley and Teasell in their argument that carers may not be receiving appropriate information and training to assist with these physically intense manual handling tasks (Salter et al., 2010) as was the case for the study participants.

Without assistance, the carers of this study had problem solved methods to complete manual handling tasks. However in this process, Jane was more likely to consider her safety and Phil more likely to consider the care recipient. It is possible that carers who have received previous injuries are more aware of the implications of safe manual handling

practices to their health. This is supported by the adult learning theory which indicates adults utilise lived experiences and knowledge to assist learning (Knowles et al., 2011).

The level of allied health and organisational supports in the Australian community is limited for carers and was strongly reflected by the participants in this study. Although provision of both government and non-government support to community-based carers is essential (Bulley et al., 2010, Mackenzie et al., 2007, Gillespie and Campbell, 2011), many carers have highlighted the lack of services and difficulties with finding and accessing these supports (Cheung and Hocking, 2004). In relation to manual handling specifically, carers of stroke survivors in the community have been found to be unsatisfied with the long-term information and training services received (Simon et al., 2008, Eames et al., 2008, Murray et al., 2003, O'Brien et al., 2012, Smith et al., 2004, Tooth et al., 2005, Gillespie and Campbell, 2011, Bulley et al., 2010). This is congruent with opinions of carers for people with motor neurone disease (O'Brien et al., 2012). Although the carers in this study were members of Carers NSW and attended local support groups, they remained dissatisfied with access to other community services. It is therefore important to consider the ability of a range of supports to meet the varied needs of carers.

The lack of formal support Phil received for manual handling reflects a study by the Independent Living Centre of Western Australia with over 1600 registered informal carers participating, where only 45% of carers received information or training on injury avoidance or risk management and 40% received no assistance at all (Independent Living Centre of WA, 2006). Training was found to reduce the manual handling risks associated with lifting a person from the floor by 55% (Independent Living Centre of WA, 2006).

Additionally, health professional support that involves the provision of information to the care recipient rather than the carer is considered unsatisfactory (Gustafsson et al., 2010) as acknowledged by Jane in this study. This occurs despite the known need to incorporate carers into the service provision of referred patients and clients (Gray et al., 2007), and policy

development to recognise the importance of carers and their support needs (Department of Health, 2010a).

A range of equipment is available to assist with manual handling tasks (Rinds, 2007, Disability Safe, 2008). In this study, both participants used many pieces of equipment to assist with personal care tasks, mobility and community access. However, previous studies show that manual handling equipment is most commonly purchased to promote care recipient mobility as well as overall safety for the carer and care recipient (Fernandes, 2007, Nelson et al., 2004). Similar to a study by O'Brien, Whitehead, Jack and Mitchell, the participants identified a lack of appropriate health professional assistance in the purchase and use of equipment, regardless of valuing this input (O'Brien et al., 2012). Further, carers appear unaware of available equipment and how to source it. This appears to result in limitations to carer understanding of appropriate equipment choice, set-up and use. The results suggest poor manual handling follow-up may be common in community settings with neither carer in receipt of assistance, set-up or correct technique when using self-prescribed equipment. This is reinforced by a study of 105 carers of people who experienced a stroke who lacked information, consultation and help following fifteen months of caring (Simon et al., 2008). This is supported in studies investigating carer perspectives of this role (Mott et al., 2005, Mudzi et al., 2012).

This study suggests that access to equipment is limited by high cost. This access is further decreased when limited health professional input potentially results in the purchase of equipment which is not the most appropriate for the task. It is acknowledged that equipment used to assist manual handling can be expensive and this limits equipment access for many carers (Barbara and Curtin, 2008). However, the participants identified a need for financial assistance for those who were unable to afford equipment. While assistance schemes for equipment are available in some countries (Disabled Living Foundation, 2007, Barbara and Curtin, 2008), these do not always sufficiently respond to the equipment demand (Barbara

and Curtin, 2008). It is important for carers to have assistance from health professionals when purchasing equipment, in terms of knowledge on appropriate pieces, training in correct use and financial assistance where applicable. This will avoid unnecessary expense and risk of injury for both the carer and care recipient.

Education on correct techniques and strengthening exercises may increase the ability of carers to safely manual handle. Education and training by health professionals is often not provided with sufficient frequency, especially within the community (Bulley et al., 2010, Gillespie and Campbell, 2011, Smith et al., 2004, Eames et al., 2008, Mott et al., 2005). In this study Jane perceived a need for training regarding techniques for lifting and lowering while Phil did not share this need. This indicates carer needs vary between individuals and may depend upon several factors. Moreover, when compared to Phil, Jane completed a greater number of manual handling tasks for Robert due to his reduced independence following symptom progression. This task increase may contribute to her need for technique education and training.

It has been noted that female carers require more education and training for manual handling than males to avoid injuries (Independent Living Centre of WA, 2006). The findings from this study found the female participant completed a broader range of manual handling tasks than the male participant and she perceived manual handling as a cause of injuries. She associated this with the physical assistance her spouse required across a range of daily activities. The physical ability of the care recipient has also been shown to impact the physical strain on the carers of people who have experienced a stroke (Ilse et al., 2008) and might further explain the differences in the level of support provided by the two carers. Indeed, this corresponds with Bayulkem and Lopez finding that symptoms of Parkinson's disease fluctuate, which impacts on the level of care required for daily tasks (Bayulkem and Lopez, 2011).

Some differences between the manual handling ability between the carers in this study may have been indicative of gender as discussed in other studies. Consistent with experiences reported by Jane, several studies have found that female carers complete more hours of care than males, care over more years and are more likely to have physical health issues and injuries from the associated physical demands (Independent Living Centre of WA, 2006, Ussher and Sandoval, 2008, Gupta et al., 2012, Arber and Ginn, 1995). Within the study this may also relate to the greater support needs required by Robert due to the progression of his disease. Female carers may also be more likely to receive formal manual handling information and training as a result (Independent Living Centre of WA, 2006). Females caring for spouses or partners have decreased physical and mental health compared to their male counterparts, resulting in their reduced ability to conduct manual handling tasks and thus have an increased need for formal supports (Kniepmann, 2012, Ussher and Sandoval, 2008, Gupta et al., 2012, Pinguart and Sorensen, 2006, Li et al., 2013, Perry and Middleton, 2011). This was highlighted as a key concern for Jane in this study. In contrast, male carers may be less likely to disclose feelings of being stressed and overwhelmed (Pinguart and Sorensen, 2006) as consistent with Phil in this study. It has been found that males caring for partners with cancer do not support themselves and use their masculinity to manage caring issues (Lopez et al., 2012). Possible explanations for this difference between gender incorporate the traditional masculinity theory of men, which encompasses a reduced desire to seek help when required (Fletcher et al., 2002, Courtenay, 2003, Noone and Stephens, 2008).

However, males may also perceive their competency in the caring role more positively than females and consequently have reduced negative feelings (Ussher and Sandoval, 2008). This perceived competency could also be a result of the physiological differences between males and females, where males are on average stronger and more

physically able to manually handle (N.C. Department of Labour, 2009). This is consistent with the experiences of participants and care recipients in this study.

### **Conclusion:**

This study explored the manual handling experiences, practices and needs of two informal carers, one male and one female, and provide some insight into their associated challenges. These participants reported a lack of manual handling information and training and the use of self-prescribed equipment to assist with caring tasks. Health professionals need to be aware of the importance of providing relevant education and training to carers as part of service provision. Furthermore, despite involvement with a carer support group, both participants were unaware of access to, and availability of formal supports to assist their manual handling practices. These findings suggest there is a need for carers to have increased awareness of both formal and informal supports, by utilising a range of information sources including health professionals and support group networks.

Future research can build on these findings to investigate the experiences of a larger sample, diverse geographical locations, care recipients with various physical health conditions, different relationships between the carers and care recipients, and to explore the role of support groups for carers. These results contribute to the current evidence of manual handling practices by informal carers, can be used to improve service provision and inform future studies to enhance the experiences of carers.

### **Conflict of Interest**

The authors declare no potential conflicts of interest with respect to the research, authorship, and /or publication of this article, and no financial support was received for this research or publication.

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