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**Professional Caregiving and Prosocial Behaviour: An
Exploration within Self-Determination Theory and Beyond.**

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Thesis submitted for the degree of Doctor of Philosophy

University of Sussex

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Dedication

This PhD is dedicated to the residents and staff of Heath Hill Lodge Nursing Home, Bevendean, Brighton (Jan 2006-May 2007). In particular, to June who showed me that even in great pain, one can always choose to act with dignity, love, and humour. To Gregory, who entered the nursing home full of warmth, friendliness, and good advice, and died embittered, angry, and lonely. And to Hilary, who sadly showed me that very kind, thoughtful, well-meaning staff can also do terrible things.*

*all names changed to protect identities

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UNIVERSITY OF SUSSEX

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**Professional Caregiving and Prosocial Behaviour: An Exploration
within Self-Determination Theory and Beyond****Summary**

Concerns have been raised about the quality of care provided by professional caregivers to vulnerable older adults. However, little is known about the psychological mechanisms that may affect professional caregivers' ability to provide good care. This thesis presents four papers which sought to address this gap in our knowledge.

The first paper reports a proposed quantitative multilevel study, investigating the effects of nursing home manager-level and care assistant-level variables on psychosocial caregiving among care assistants. There were no effects of manager-level variables. However, structural equation modelling (SEM) analyses found care assistants' community aspirations and basic need satisfaction at work positively predicted the autonomy and relatedness support care assistants showed towards service users. No indirect effects were found.

The second paper presents a new measure of autonomy, relatedness, and competence satisfaction, which had improved construct validity compared to an existing measure and good external validity, being related to measures of well-being and ill-being in

expected ways. The third paper reports the relationships between autonomy, relatedness, and competence satisfaction and prosocial behaviour. SEM analyses showed that a higher order factor of basic need satisfaction explained a small but significant amount of variance in prosocial behaviour, but that autonomy, competence, and relatedness satisfaction were not independent predictors.

The final paper presents a grounded theory analysis of semi-structured interviews with a range of individuals associated with nursing homes for the elderly. The findings highlight the role of a person-centred perspective at all levels of caregiving, with positive management practices interacting with the qualities and approaches of individual caregivers to support the provision of good care.

Overall, this body of research provides a preliminary understanding of the interplay between the personal qualities of professional caregivers and socio-environmental factors in the provision of good care. In addition, it has contributed meaningfully to the SDT literature and its application to real-world settings. These findings pave the way for future research to provide further beneficial insights for policy and practice in professional caregiving.

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Chapter 1: Introduction

1.1 Introduction

A society will be judged on the basis of how it treats its weakest members and among the most vulnerable are surely the unborn and the dying.

Pope John Paul II (2000)

I could never do the jobs these women do, let alone do it with the glow they bring to their work. I have come away from this project thinking that our society is incredibly lucky to have so many people with a dedication to caring. But I also fear that if we continue to take them for granted, if we do not fix dysfunctional systems of commissioning and regulation, we may find as we grow old that they are not there to look after us.

Camilla Cavendish on healthcare assistants and support workers (2013)

Historically the weak and vulnerable have been cared for within the home, principally by women (Hamington & Miller, 2006; Thane, 2005; University of Cambridge Research, 2013). A large number of informal caregivers (approximately 10% of the UK population, Office for National Statistics, 2013a) still support spouses, adult children, relatives, and friends in the tasks of day to day living and, of course, millions of parents care for their children. However, the twentieth century saw the emergence of professional caregivers paid to perform the physical tasks of care work as increasing numbers of women undertook paid employment outside the home rather than traditional (unpaid) caregiving roles (European Commission, D. G. V., 1995; Johnson & Lo Sasso, 2004). It is estimated that currently 1.3 million frontline staff (i.e., not registered nurses) provide professional caregiving services in the UK (Cavendish, 2013). In contrast to the wide-ranging research that has investigated informal caregiving (e.g., Given, Given, & Sherwood, 2012; Greenwood & Mackenzie, 2010; Greenwood, Mackenzie, Cloud, & Wilson, 2009; Li & Loke, 2014; Low, Payne, & Roderick, 1999; Quinn, Murray, & Malone, 2014; Signe & Elmståhl, 2008; Zarit, Reever, & Bach-Peterson, 1980; Zarit, Todd, & Zarit, 1986) and parenting (see

Maccoby, 2000 for a review), our understanding of the processes that facilitate and inhibit effective caregiving behaviours within a professional context is relatively scant.

The urgency of an improved understanding of professional caregiving has been highlighted by the exposure of a series of care scandals in the UK over the past five years. These include the severe physical and emotional abuse of residents with learning disabilities at Winterbourne View (BBC News, 2012a), ‘appalling care’ provided by Mid-Staffordshire NHS Foundation Trust between 2005 and 2009 which directly contributed to the unnecessary deaths of an estimated 400-1200 patients (Francis, 2013; The Guardian, 2013), and the physical abuse and suspicious deaths of the elderly in nursing homes (BBC News, 2015; The Telegraph, 2012). These events have drawn attention to the serious failures that can arise within professional caregiving settings and a series of government-funded reviews (e.g., Cavendish, 2013; Francis, 2013) have sought to understand these occurrences and begin to tackle much needed transformation of the current systems.

The Francis Inquiry was undertaken to identify the source(s) of ‘appalling care’ at Stafford Hospital and one of the key recommendations made was that there, “should be an increased focus on a culture of compassion and caring in nurse recruitment, training and education” (Francis, 2013, p.76). Research suggests that compassion is indeed important to good care (Bramley & Matiti, 2014; Macleod & Mcpherson, 2007; Perry, 2009) and that compassion deficits or compassion fatigue have negative effects on both professional caregivers and care recipients (V. L. Little, 2013; Showalter, 2010). However, there is evidence that many professional caregivers enter the profession with strong values of compassion and a desire to help, and retain these qualities despite challenging conditions (Flackman, Fagerberg, Haggstrom, Kihlgren, & Kihlgren, 2007). It has been argued that a complex set of factors, which include but are

not limited to compassion deficit or compassion fatigue, led to the Mid Staffordshire scandal, and that a focus on compassion will inevitably lead to limited change in care practices (Paley, 2014).

Paley (2014) suggested that the study of this issue from a social psychology perspective could make a significant contribution to our understanding of professional caregiving by accounting for the effects of situational factors as well personal traits. The body of research presented here sought to address this challenge, investigating the effects of individual differences, and the interactions between individual differences and contextual factors, on caregiving and associated behaviours. This introduction provides background information on professional caregiving, first identifying care for the elderly as an area of acute concern and giving a brief overview of good care as an outcome. Care assistants for the elderly in long-term care settings are highlighted as a population of particular interest, and existing knowledge about the effects of contextual factors and individual differences among caregivers on the quality of care that they give is reviewed. Theoretical frameworks from social psychology which best support empirical investigation of this area of interest are then discussed. Finally, the research aims and questions, the methodological approaches taken to complete this body of research, and an overview of the four empirical papers are outlined.

Professional Caregiving and the Elderly

Provision of care for the elderly is becoming an increasingly pressing international concern. Recent figures suggest that there are approximately 506 million adults over the age of 65 in the world, and this number is set to almost double to 1.3 billion within the next 30 years (Kinsella & He, 2009). However, the numbers of ‘oldest old’, people aged over 85, is set to increase at a markedly faster rate. For

example, in the UK the number of people aged over 85 is set to increase by 190 per cent between 2002 and 2041, from more than 950 000 to around 2 770 000 (Wittenberg et al., 2006). Current statistics show that approximately 12% of adults in the UK over 65 suffer very poor health, presumably requiring support from caregivers to meet their physical, social, and psychological needs, rising to 26% among those aged 85 years and older (Office for National Statistics, 2013b). At present 352 000 elderly service users are cared for within long-term care settings in England and Wales (Office for National Statistics, 2014, 2015). If demographic trends continue as projected, it is suggested that this number will increase to nearly 730 000 by 2041 (Wittenberg et al., 2006).

Unfortunately, elderly residents of long-term care settings form a markedly vulnerable population that can effectively be ‘voiceless’ (Bury, 1996; Parson, 2012) and especially vulnerable to abuse (Hawes, 2003; Payne & Cikovic, 1996). Concerns about quality of care in long-term settings for the elderly have been raised since the 1970s (Harrington, 2005b), and various approaches have been taken to improve understanding of this complex issue. Donabedian (1980, 1988, 1992) proposed a framework of quality of care comprised of three core categories under which evidence for various indicators of quality are grouped (Dellefield, 1999). Structure represents the attributes of the care setting including material resources, human resources, and organisational structure. Process denotes the activities undertaken by caregivers and care recipients in order to give or receive care. Outcome represents the impact of care activities on the physical and/or mental health of care recipients and their satisfaction with that care (Donabedian, 1988). Research since the 1990s has tended to focus on the outcomes of care (Harrington, 2005b), providing a comprehensive evidence base of service user requirements for good quality of care and quality of life.

The Role of Outcome in Quality of Care

Meeting the physical needs of service users is undoubtedly a crucial aspect of quality of care, as evidenced by the preponderance of clinical indicators of quality of care in relation to markers of socio-emotional care. A recent systematic review of the literature related to quality of care explored indicators of good care across seven countries (Nakrem, Vinsnes, Harkless, Paulsen, & Seim, 2009). Of the 46 items identified as indicators of quality of care, only three were related to the socio-emotional well-being of service users: assessing depression not being treated with antidepressants, changes in levels of depression and anxiety, and emotional support. The remaining items were indicators of clinical care such as continence management, pain management, nutrition and hydration, physical mobility, behavioural symptoms, cognitive impairment, and skin care.

Naturally meeting the physical needs of service users is vital to their physical health and well-being. However, the seeming imbalance in focus on clinical indicators over the socio-emotional indicators of care is concerning because there is substantial evidence to suggest that socio-emotional support is highly valued by service users and their families, and is viewed as of equal importance to care recipients' care as physical care (Bowers, Fibich, & Jacobson, 2001; de Rooij et al., 2012; Nakrem, Vinsnes, & Seim, 2011; Spalding, 1985). For example, an in depth study of quality of life from the perspective of nursing home service users identified autonomy and independence, and social relationships as key aspects in their quality of life (Ball et al., 2000). Furthermore, fulfilment of socio-emotional needs is not just a 'nice added extra,' but an essential component of nursing home service users' physical and psychological well-being. Research has shown that gender-based social group membership maintains well-being and social identification in women residing in nursing homes. For men, such

groups significantly increase their levels of social identification whilst reducing their levels of depression and anxiety to non-problematic levels (Gleibs, Haslam, Jones, et al., 2011). Another study found that nursing home service users who participated in water clubs showed increased levels of perceived social support and evidenced significant improvement in well-being through reduced numbers of General Practitioner appointments compared to service users who were only taught about the benefits of drinking water and keeping well hydrated. This effect was shown to occur through the mediating effect of social identity arising from the social support found in the water clubs (Gleibs, Haslam, Haslam, & Jones, 2011).

It has been long established that autonomy and a sense of control are related to well-being. Research found that nursing home service users encouraged to take full responsibility for decisions and choices regarding their personal care, daily activities, and their living environment, including the choice to care for a plant, were more active, happy, and alert than a control group who were told that care staff were entirely responsible for all aspects of their lives (Langer & Rodin, 1976). Further research has demonstrated the synergistic effects of group membership and autonomy. Nursing home service users who made group decisions about how to refurbish their nursing home lounge showed increases in social identification, satisfaction with the nursing home, and increases in cognitive functioning (Haslam et al., 2014). A qualitative study suggests that group membership itself in fact alleviates the sense of loss of control and autonomy experienced by many nursing home service users (Gleibs, Sonnenberg, & Haslam, 2014). In addition, the study highlighted the role of care staff in fostering positive social relations.

The Role of the Interpersonal in Quality of Care

Donabedian identified interpersonal care as a “vitally important” element of caregiving and stated that, “the interpersonal process is the vehicle by which technical care is implemented and on which its success depends” (Donabedian, 1988, p.1744). Donabedian (1988) described technical care as the skill and knowledge of care staff to implement strategies and care practices believed to result in the best possible outcome for the care recipient. Interpersonal care, on the other hand, was defined as the interactive process of communication between care professionals and care recipients regarding the management of the care recipients’ care and the encouragement of collaboration and cooperation between both caregiver and care recipient. In addition, Donabedian stated that the interpersonal aspects of care should include, “privacy, confidentiality, informed choice, concern, empathy, honesty, tact, (and) sensitivity” (Donabedian, 1988, p.1744).

Several studies have supported the importance of interpersonal relationships with care staff in supporting the psychosocial, as well as the physical, well-being of nursing home service users. In the exploration of nursing home service users’ views of quality of care, service users’ responses reflected that not only did care staff have an important role to play in delivering the technical aspects of care, such as taking care of physical needs and maintaining a clean and pleasant environment, but also were potential sources of close personal bonds and the facilitation of independence and autonomy (Ball et al., 2000). Further research with nursing home service users emphasised the importance of establishing good relationships with care staff to maintaining psychosocial well-being, citing the positive effects of a caring attitude and reciprocal conversation with staff (Nakrem et al., 2011). Quantitative studies have also demonstrated direct relationships between aspects of interpersonal care and service user

well-being. Nursing home service users who perceived a higher level of autonomy support from staff were found to have significantly lower levels of depression, and higher levels of vitality, positive mental health, and life satisfaction (V. G. Kasser & Ryan, 1999). Further research has found that both perceived fulfilment of the psychological needs for autonomy, competence, and relatedness from the caring relationships with staff and observed need support by professional caregivers have a positive effect on nursing home service users' well-being (Custers, Kuin, Riksen-Walraven, & Westerhof, 2011; Custers, Westerhof, Kuin, & Riksen-Walraven, 2010). It seems clear that the interaction between caregiver and care recipient has a profound impact on quality of care as outcome. As professional caregivers will inevitably influence the quality of interactions between caregiver and care recipient, an understanding of caregivers themselves may inform approaches that would improve the quality of these interactions.

Care assistants (also known as healthcare assistants, nursing assistants, and nurse's aides) seem to be an extremely valuable, but extremely undervalued, resource in the provision of high quality care and thus a population of great interest in the study of quality of care for the elderly. Care assistants provide the bulk of day-to-day support for elderly service users living in long-term care settings such as residential homes and nursing homes (Administration on Aging, 1980; Chappell & Novak, 1992; Diamond, 1986; Novak & Chappell, 1994) and spend considerably more time with service users, an average of 126 minutes per resident day compared to estimates of between 43.2 minutes per resident day (Harrington, Kovner, et al., 2000) to only 12 minutes per resident day (Institute on Medicine, 1986) for registered nurses. Care assistants have been characterised as, "rude, neglectful, cold and uncaring, cruel, and sometimes physically and verbally abusive" (Kayser-Jones, 1990, p.169). However, care

assistants potentially form a vulnerable population in themselves (Nielsen & Glasdam, 2013), being at high risk of violence in the workplace (Payne & Appel, 2007) and described as “the least educated, the least skilled, and the least paid, often barely above the minimum wage” (Tellis-Nayak & Tellis-Nayak, 1989, pp. 308-309).

Care assistants’ work can be viewed as ‘menial’ and unskilled, mainly involving maintaining personal hygiene, toileting, dressing, and feeding service users. However, interactions arising from physical care are seen to form the true but also invisible ‘caring work’ in nursing homes, requiring a great deal of unrecognised skill and expertise (Diamond, 1986). Care assistants can and do deliver good, and even exemplary, care as evidenced by care industry quality investigations (Care Quality Commission, 2011, 2014), nursing home testimonials (for example, see Cygnet Health, 2015; Orchard Care Homes, 2014) and research findings (Tellis-Nayak, Day, & Ward, 1988). Nevertheless the importance of these interactions seems to be overlooked in favour of a medical discourse, centred largely on physical well-being (Nielsen & Glasdam, 2013).

Understanding the Antecedents of Good Quality Care

The role of care assistants in supporting positive quality of care outcomes draws attention to one of the central propositions of Donabedian’s framework: that the categories of quality of care are causally linked, “structure leads to process, and process leads to outcome,” (Donabedian, 1992, p.357). Unfortunately investigation of the links between structure, process, and outcome are limited (Harrington, 2005b). Despite the fact that care assistants deliver the majority of direct care in nursing homes, and therefore can be seen to mediate the impact of structure variables on process and

outcome (Bowers & Becker, 1992), the interpersonal elements of these categories have been largely neglected, and the specific role of caregivers does not emerge clearly.

At the structural level, researchers have explored a number of statistical indicators that affect quality of care. In general, higher staffing levels (Harrington, 2001, 2005a; Harrington, Zimmerman, Karon, Robinson, & Beutel, 2000), not-for-profit status of nursing homes (Chesteen, Helgheim, Randall, & Wardell, 2005; Clarfield et al., 2009; Comondore et al., 2009; O'Neill, Harrington, Kitchener, & Saliba, 2003), and lower levels of nurse and care assistant turnover (Castle & Engberg, 2005; Castle, Engberg, & Men, 2007) have been associated with higher quality of care. But these findings are not always consistent. For example, it has been noted that improving staff to service user ratios does not always result in better quality of care (Miller, 1985; G. Smith, 1986), it being suggested that staff may simply not know how to make effective use of the additional time afforded by increased staffing levels (Wells, 1980). Furthermore, research in the UK has demonstrated that whilst small for-profit nursing homes were more likely to have failed one or more national standards, large corporate for-profit nursing homes had a smaller probability of reported failures (Gage et al., 2009). These findings highlight the complex nature of quality of care and indicate that additional factors may contribute to professional caregivers' ability to fulfil their duties, which may in turn affect quality of care ratings.

Some research has explored factors at the structural level from a more interpersonal perspective, with management style and organisational climate having been linked to quality of care and work effectiveness. Research carried out in the USA investigated the 'burden of culture' that most care assistants bring to their work. Tellis-Nayak and Tellis-Nayak (1989) found that many care assistants face almost overwhelming challenges in their personal lives which are compounded by an uncaring

organisational climate within the nursing home and have a significant impact on the quality of care that they are able to deliver. The study also stressed that whilst care assistants are called upon to be caring and committed, these expectations contradict the very real requirements to focus on productivity and efficiency. Other research has found that in order to manage unrealistic expectations of delivering individualised family-like care within a business-oriented organisational setting, care assistants adopt an approach of maximising efficiency by integrating tasks to meet the needs of multiple service users, attending to service users in a patterned sequence not amenable to flexibility, and resorting to cutting corners and breaking the rules. Care assistants who could not reconcile their expectations of caregiving with the reality of working within nursing homes were likely to simply quit (Bowers & Becker, 1992). More recent research confirms this trend, with care assistants being found to choose to focus on caring as a job over care as a relationship with service users in order to meet organisational demands with limited time and resources (Chung, 2010).

A small number of studies have identified specific management styles associated with poorer quality care. Sheridan, White and Fairchild (1992) found that nursing homes failing to provide adequate care were characterised by fewer human resources, and stronger ‘laissez-faire’ and ‘status orientation’ (related to a focus on division and hierarchy) attitudes. In addition, failing homes were more likely to have a ‘maintenance’ opinion of service users, where the elderly are viewed as difficult to understand and are discouraged from engaging in social activities or personal care. However, the research did not explore the effects of organisational climate on caregivers, nor was organisational climate investigated as a causal predictor of poorer quality care. Research in nursing units in acute care hospitals found that a participative group management style positively predicted group cohesion and job satisfaction among

nurses, and negatively predicted job stress. Job stress in turn negatively predicted quality of care but the analyses did not clearly indicate whether or not there was an indirect effect of management style on quality of care (Leveck & Jones, 1996). More recent research within nursing homes has identified that autocratic/custodial management styles resulted in significantly lower work effectiveness than collegial management styles, but the measure of work effectiveness could not readily be equated to quality of care (Temkin-Greener, Zheng, Katz, Zhao, & Mukamel, 2009).

A limited amount of research has sought to investigate variables directly reflecting caregiver traits or experiences that affect the type of care that they deliver (process) and/or service users' perceptions of quality of care and quality of life (outcome). Burnout among nurses has been linked to both poorer nurse-reported quality of care (Poghosyan, Clarke, Finlayson, & Aiken, 2010; Van Bogaert, Clarke, Willems, & Mondelaers, 2013; Van Bogaert, Meulemans, Clarke, Vermeyen, & Van de Heyning, 2009) and lower levels of patient satisfaction (McHugh, Kutney-Lee, Cimiotti, Sloane, & Aiken, 2011). Care assistants in nursing homes have also been shown to experience burnout (Chappell & Novak, 1992; Gosseries et al., 2012; Novak & Chappell, 1994). Alarming, burnout among care assistants has been found to predict a greater tendency to condone abusive behaviours towards elderly nursing home service users (Shinan-Altman & Cohen, 2009). A small amount of research has explored the effects of other factors such as work satisfaction and work stress on quality of care and service user well-being. A systematic review of these factors found that no studies had explored all of these variables in conjunction. In addition, the results from the limited number of studies that had explored certain relationships between these variables were inconsistent (Hannan, Norman, & Redfern, 2001). A subsequent feasibility study found significant positive correlations between staff satisfaction and staff perceptions of quality of care,

and a negative and non-significant correlation between staff job stress and staff perceptions of quality of care (Redfern, Hannan, Norman, & Martin, 2002). However, staff variables were not tested as predictors of quality of care and, despite the fact that the review had highlighted the role of contextual factors such as management style, organisational climate, and social support, contextual variables were not included in the study.

Calls for further research into the effect of the caregiving environment on nurses' delivery of high quality care (Jennings, 1995) and research to improve our understanding of the factors influencing frontline caregivers such as care assistants (Bowers & Becker, 1992; Diamond, 1986; Tellis-Nayak & Tellis-Nayak, 1989) seem to have gone unanswered. This remains an under-researched and poorly understood domain. It is encouraging that government-led initiatives have sought to understand failings in professional caregiving settings and recommendations have been made for change. However, the evidence presented here regarding the effects of both individual and contextual factors on caregiving outcomes supports the argument that the focus on boosting compassion and caring attitudes in staff may be misplaced (Paley, 2014). Furthermore, as underlined by *The Business of People* report (Campaign for Social Science, 2015), greater understanding of how organisations and individuals work through the measurement of behaviour and activity as employed by the social sciences is vital to meet the challenges currently faced by society. It seems, then, that the study of professional caregiving for the elderly from a social psychology perspective could make a meaningful and practical contribution by focusing on the inter- and intra-personal factors that affect the individuals who deliver care, in this instance focusing on care assistants.

Developing the Scope of the Research: Incorporation of Prosocial Behaviour and Identification of an Optimal Theoretical Framework

A review of social psychology literature found few explicit studies of professional caregiving. Furthermore, previous research experience had highlighted a number of difficulties in obtaining data from care assistants, including low response rates, participant fatigue completing psychological questionnaires, and the danger of over-burdening local populations of care assistants (L. G. Morgan & Farsides, 2009). It was necessary to broaden the scope of the research in meaningful directions that would enable the study of relevant variables in non-care assistant populations in addition to the study of professional caregiving. Therefore, studies in social psychology exploring factors that affect prosocial behaviour, in addition to any form of caregiving, were considered.

Actions which are voluntarily undertaken in order to aid, support, or benefit others are considered to be prosocial behaviours (Eisenberg & Fabes, 1998). They include volunteering, sharing, making charitable donations, providing emotional support, and giving both instrumental help, such as assisting another person to complete a task, and costly help, for example, putting oneself in danger to protect the well-being or safety of another person (Batson, 1998; Dovidio & Penner, 2001; Eisenberg, Fabes, & Spinrad, 2006; Penner, Dovidio, Piliavin, & Schroeder, 2005; Schroeder, Penner, Dovidio, & Piliavin, 1995). Whilst professional caregiving is paid employment, many caregiving behaviours within the role can be viewed as voluntary, particularly the more interpersonal aspects of caregiving. For example, whilst the scheduled tasks of physical care may form compulsory activities, it is the voluntary 'little extras' which are seen to alleviate suffering (Arman & Rehnsfeldt, 2007). Thus, we contend that an understanding of the factors that both inhibit and facilitate prosocial behaviour could

also inform our understanding of the factors that inhibit or facilitate certain aspects of professional caregiving, in particular the more interpersonal elements of care that do not form mandatory tasks.

Research has demonstrated the significant effects of situational factors on prosocial behaviours, including the inhibiting roles of bystander effect and diffusion of responsibility (Darley & Latané, 1968; Latané & Darley, 1970) and perceived costs of helping (I. M. Piliavin, Rodin, & Piliavin, 1969; J. A. Piliavin & Piliavin, 1972). In addition, individual differences, such as higher levels of empathy (Batson, 1991, 1998) and oneness (Cialdini, Brown, Lewis, Luce, & Neuberg, 1997), have been positively related to a number of prosocial behaviours. However, these approaches have not provided models which readily facilitate understanding of the simultaneous effects of situational and individual differences. The previous section highlighted the need for greater clarification of the relationships between structural factors, which seem to pertain to the situational level, and process and outcome variables, which seem to relate more to individual differences, in professional caregiving. Therefore, a number of theoretical frameworks which seek to account for both environmental factors and individual differences were considered, in particular those that have been applied to the study of caregiving or prosocial behaviour.

Attachment theory. Attachment style is thought to have a symbiotic relationship with caregiving, developing in response to the type of caregiving received in infancy (Bowlby, 1969/1982). The attachment/caregiving system outlined by Bowlby (1969/1982) suggests that caregiving is an innate behaviour designed to protect and support vulnerable and dependent others, usually but not limited to children. Attachment theory states that human infants form an attachment to a caregiver in order to obtain and sustain protection, sustenance, and emotional support (Bowlby,

1969/1982). Three main attachment styles have been identified, these styles having been reliably shown to persist into adulthood, normally being assessed through behaviour within close relationships. Avoidant attachment is associated with withdrawal and independence, reflecting a dislike or discomfort with emotional closeness, and is thought to arise when the main caregiver in childhood is unresponsive. Anxious attachment has been linked to a fear of being abandoned and a lack of trust within relationships, and is thought to occur when the main caregiver in childhood is inconsistent, only responding to infant/child distress sometimes. Secure attachment is characterized by the absence of avoidant or anxious responses within close relationships, and is thought to arise when the main caregiver in childhood is consistently sensitive and responsive to infant/child cues (K. Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998).

Attachment style in adulthood has been shown to affect a range of prosocial behaviours. Insecure attachment among adults has been shown to be negatively correlated to volunteering (Erez, Mikulincer, van Ijzendoorn, & Kroonenberg, 2008; Gillath et al., 2005) and to negatively predict helping behaviours (Mikulincer, Shaver, Gillath, & Nitzberg, 2005). In contrast, secure attachment has been found to positively predict helping behaviours (Mikulincer et al., 2005). J. A. Feeney & Hohaus (2001) explored actual experiences of caregiving within a partnership as well as future willingness to care for a spouse in later life. The study found that less effective caregiving was associated with high levels of avoidance and anxiety attachment, both of which were associated with less willingness to care for a partner in the future. B. C. Feeney & Collins (2001, 2003) extended this exploration of caregiving to look at the association between attachment style, knowledge and skills, motivation, and effectiveness of caregiving. They found that, consistent with previous research, partners

high in avoidance and anxiety attachment provided less responsive caregiving, a responsive caregiving style being equated with effective caregiving as it addresses the needs of the care recipient rather than the caregiver (Kunce & Shaver, 1994).

Attachment style has also been found to predict caring behaviour towards strangers. Westmaas and Silver (2001) found that participants high in anxious attachment displayed high levels of anxiety upon meeting a confederate they believed to have been recently diagnosed with cancer, and increased self-criticism regarding the way they acted during the meeting. Participants high in avoidance tended to show less verbal and nonverbal supportiveness towards the confederate, as well as rating themselves as less warm or supportive. Preliminary research suggests that attachment style in professional caregivers also predicts their caregiving behaviours within long-term care settings. In a study not submitted for this thesis (L. G. Morgan & Farsides, 2009), an avoidant attachment style in care assistants for the elderly was significantly associated with less sensitive care, with care assistants being less able to identify and be responsive to nursing home service users' feelings and needs. Care assistants high in an anxious attachment style gave more compulsive care, becoming over involved in service users' problems and taking them on as their own, rather than supporting service users to identify and resolve their own problems.

Despite the promising research carried out within the framework of attachment theory, three limitations can be readily identified. First, in adults the theory concentrates on an individual difference, the existing attachment style of each individual. This has been useful for explaining behavioural outcomes but does not account for any current contextual and environmental factors. Second, whilst it is interesting and illuminating to understand the effects of attachment on helping and caregiving from a theoretical point of view, such knowledge does not lend itself well to

interventions or training that could enhance caregiving behaviours in the adult caregiver, attachment styles largely being established in childhood. For example, whilst priming secure attachment has been shown to increase levels of prosocial behaviour in an experimental setting (Mikulincer et al., 2005), it is difficult to see how priming secure attachment could be practically applied in a caregiving setting.

Finally, attachment theory does not propose an explanation for the mechanisms through which caregiving is activated (Bell & Richard, 2000; Mikulincer et al., 2005). The lack of a direct connection between attachment style and activation of effective caregiving behaviours is demonstrated by an intervention study which sought to improve the quality of interactions between professional caregivers and their clients, adults and children with severe intellectual and visual disabilities, exploring the moderating effects of attachment security (Schuengel, Kef, Damen, & Worm, 2012). The intervention was found to increase caregivers' confirmation of signals and responsiveness to signals from clients, and to improve affective mutuality between caregivers and their clients compared to baseline results. Expected patterns of attachment style were found, with insecure attachment being associated with poorer quality of interactions pre-intervention. But the research found no consistent moderating effects of attachment style on the effectiveness of the intervention, supporting the idea that whilst attachment security does affect the capacity of adults to provide care, other mechanisms drive the activation and development of the caregiving system. Thus, attachment theory appears to be of limited use in gaining a deep understanding of professional caregiving that is likely to inform practical changes.

Social cognitive theories. Social cognitive theories seek to address the interaction between environment and the individual to bring about behaviours as well as assess the role of behavioural self-regulation that occurs in response to inter- and intra-

personal factors. Social cognitive theories have been identified as particularly useful for guiding interventions to support positive behavioural change, for example, in physical activity (Plotnikoff, Costigan, Karunamuni, & Lubans, 2013). Furthermore, existing research has demonstrated the utility of social cognitive theories in predicting prosocial behaviours. For example, using the Theory of Planned Behaviour (TPB, Ajzen, 1988, 1991), the role of social norms, attitudes, perceived behavioural control, and behavioural intentions have been explored in relation to volunteerism (Greenslade & White, 2005; Harrison, 1995; Marta, Manzi, Pozzi, & Vignoles, 2014) and donating behaviours (Ajzen, Brown, & Carvajal, 2004; J. R. Smith & McSweeney, 2007). Student attitude has also been shown to predict nursing students' intentions to work with the elderly (Lammers, 2010), but no studies were found that directly use TPB in relation to professional caregiving practices. Within the framework of Self Efficacy Theory (Bandura, 1977, 1997, 2001), the roles of empathic, interpersonal, and affective self-efficacy beliefs have been studied in relation to prosociality and prosocial behaviours (Alessandri, Caprara, Eisenberg, & Steca, 2009; Caprara, Alessandri, Di Giunta, Panerai, & Eisenberg, 2009; Caprara & Steca, 2005; De Caroli & Sagone, 2013). In addition, an intervention to increase self-efficacy among nurses was found to result in better knowledge and self-efficacy in dealing with challenging situations, and short-term reductions in caregiver burnout (Mackenzie & Peragine, 2003).

Self-determination theory. Self-Determination Theory (SDT, Deci & Ryan, 1985a; Ryan & Deci, 2000a, 2004) is positioned as an organismic-dialectical theory of motivation that seeks to explain the personality and social factors that facilitate, and inhibit, individuals' personal development and behavioural self-regulation (Deci & Ryan, 2008a; Deci & Vansteenkiste, 2004; Ryan & Deci, 2000a). SDT proposes that by nature humans are proactive, growth oriented organisms. However, in order to account

for the fact that many humans lead fragmented, passive, and even destructive lives, SDT presents a dialectical view which suggests that naturally active and growth oriented organisms interact with their environments, which can either nurture or negate natural growth and development (Ryan & Deci, 2004; Vansteenkiste & Ryan, 2013).

Using the framework of SDT, autonomy support, motivation style, basic need satisfaction and causality orientations have been demonstrated to predict prosocial behaviours (Gagné, 2003; Roth, 2008), and biopsychosocial beliefs and controlling behaviours in professional caregiving roles (Lynch, Plant, & Ryan, 2005; Williams & Deci, 1996). Additionally, SDT has been applied successfully to the study of performance and well-being within work settings (Baard, Deci, & Ryan, 2004; Deci et al., 2001; Gagné & Deci, 2005).

Selecting SDT as the Primary Theoretical Framework

Exploration. The research reviewed above demonstrates that several theoretical frameworks within social psychology have been successfully applied to the study of prosocial behaviour and certain aspects of caregiving. Nevertheless, the amount of research exploring either caregiving or prosocial behaviour within these frameworks is limited and it was not immediately apparent that there was an ideal theoretical framework within which to commence study of professional caregiving. Therefore, study design, data collection, and preliminary analyses for the grounded theory study described in Chapter 5 was in fact undertaken at the beginning of the DPhil programme to understand the experiences of caregivers themselves, and explore in depth the processes and mechanisms underlying both good and poor care behaviours.

The data were collected as described in Chapter 5, and preliminary analyses carried out. A number of categories emerged from the data which suggested that the

theoretical constructs and framework of SDT would lend themselves best to the study of professional caregiving. These preliminary categories included the role of management in supporting versus neglecting caregivers' needs, the effect of intrinsic versus extrinsic motivations for caregiving (e.g., 'I love the job' or, 'It's just a job'), and the role of professional relatedness versus detachment (e.g., forging authentic human-to-human connections versus conducting impersonal human-to-task interactions). Above all, the strong dichotomies emerging within each of the categories seemed to resonate with the organismic-dialectical view proposed by SDT and demonstrate a need for a theoretical framework that could account for both optimal and worst-case behaviours within professional caregiving. Furthermore, the small number of studies carried out within SDT exploring professional caregiving and prosocial behaviour presented an opportunity to extend the use of the theory to a relatively unexplored applied domain.

A chronological note. It must be highlighted that whilst a preliminary analysis of the grounded theory data was conducted in the early stages of this programme of research, the full analysis of concepts and categories, identification of the core category, and development of a theory was the final piece of empirical work for this thesis. Please refer to Chapter 5 for full details of the grounded theory study, to see the categories and theory that were ultimately developed, and information about how the research conducted in chapters 2 to 4 informed the analysis and the development of the theoretical model.

Elaboration of SDT and its application to professional caregiving and prosocial behaviour. In seeking to understand various aspects of behavioural and well-being outcomes, five mini-theories have been developed within SDT to explain both the 'brighter' and 'darker' sides of human functioning (Ryan & Deci, 2000b). The specific

empirical evidence supporting SDT is discussed in detail in chapters 2 to 4. The remainder of this section therefore focuses on outlining the theoretical constructs and mini theories of SDT, and how these can be applied to the study of professional caregiving and associated behaviours, such as prosocial behaviour.

Basic needs theory (BNT). Satisfaction of three basic psychological needs for autonomy, competence, and relatedness has been identified as the unifying concept of SDT, linking the effect of socio-environmental factors to individual differences in psychological and behavioural outcomes (Ryan & Deci, 2000a). The need for autonomy is satisfied by having a sense of choice and volition about one's chosen activities (deCharms, 1968). Satisfaction of the need for relatedness arises from a sense of belonging, of connection, of caring for and being cared about by others (Baumeister & Leary, 1995). The need for competence is satisfied when optimal challenges are undertaken, and a sense of mastery and effectiveness is perceived (White, 1959). Supportive environments have been found to facilitate the satisfaction of the three needs whereas negative environments can reduce or actively thwart satisfaction of any or all three of the needs (Vansteenkiste & Ryan, 2013). The level of need support provided by authority figures has been used as the key indicator of the supportiveness of the individual's environment.

Satisfaction of the three needs has been consistently related to psychological well-being (e.g., Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Sheldon, Ryan, & Reis, 1996) and positive behavioural outcomes across a wide range of domains (e.g., Ahmad, Vansteenkiste, & Soenens, 2013; Baard et al., 2004; Gagné, 2003; Ilardi, Leone, Kasser, & Ryan, 1993; V. G. Kasser & Ryan, 1999; Quested et al., 2011; Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010). Need satisfaction has also been found reliably to mediate the effects of need support (e.g., Adie, Duda, & Ntoumanis,

2012; Ahmad et al., 2013; Coatsworth & Conroy, 2009; Deci et al., 2001; Gagné, 2003; Ntoumanis & Standage, 2009). This empirical research supports the utility of need satisfaction as an individual difference variable that also reflects the effect of the socio-environmental context. However, the majority of research has explored basic need satisfaction as a single construct, and in relation to well-being rather than behavioural outcomes. An opportunity therefore exists to explore the effects of basic need satisfaction on behavioural outcomes such as professional caregiving and prosocial behaviour, and to investigate the effects of autonomy, competence, and relatedness as separate variables of interest.

Organismic integration theory (OIT). SDT distinguishes between autonomous and controlled styles of motivation. Autonomous motivation is characterised by an internal perceived locus of causality (deCharms, 1968) where an individual acts through choice and volition to engage in activities, whereas controlled motivation has an external perceived locus of causality where behaviours are perceived to be driven by factors external to the self (Deci & Ryan, 2008a; Ryan & Deci, 2000a). Whilst individuals will find certain activities naturally interesting or enjoyable, they will also be required to carry out behaviours that they may view as initially uninteresting and unenjoyable but which are necessary for functioning within society and ideally need to become self-regulated (engagement with learning at school often being cited as an example). The importance of understanding how to facilitate autonomous motivation is further supported by the fact that it reliably predicts greater psychological well-being, and greater persistence and enhanced performance in behavioural outcomes (Deci & Ryan, 2008a; Ryan & Deci, 2006).

OIT conceptualises the process by which an individual's motivation style develops from controlled motivation, driven by external motivators, to autonomous

motivation, driven by self-determined and integrated processes wherein motivation for a behaviour has been internalised and assimilated into the self (Deci & Ryan, 1985a; Ryan & Connell, 1989). The degree of internalisation is thought to lie on a continuum, from the least self-determined motivation style to the most self-determined, and is measured via behavioural regulations. Amotivation lies at the extreme end of the continuum. It is the least self-determined behavioural regulation, characterised by a complete lack of motivation and a sense of apathy with either no motivation to carry out the behaviour or no intention to complete the behaviour successfully. Extrinsic regulation is a non self-determined, controlled motivation style, where people feel competent to carry out the behaviour but are motivated by factors that are externally imposed such as a drive to avoid punishment or to obtain rewards. Introjected regulation represents a slightly internalised form of motivation where people are driven by internalised sanctions or rewards. Identified motivation represents an autonomous and more self-determined motivation style, where behaviours are viewed as important for the achievement of personally valued outcomes. Integrated motivation is the most autonomous regulation style and arises when behaviours are performed because they are fully aligned with personal beliefs and values. Intrinsic motivation occurs when a behaviour is carried out for its inherent sense of enjoyment and interest, and is fully self-determined (Deci & Ryan, 2000; Ryan, 1995; Ryan & Deci, 2000a; Vansteenkiste & Ryan, 2013). The key factor thought to facilitate internalisation is support for the three basic psychological needs (Deci & Ryan, 2000; Koestner & Losier, 2004), a proposition that has been supported by one piece of empirical research (Markland & Tobin, 2010). However, opportunities remain to explore the relationship between basic need satisfaction and different styles of behavioural self-regulation, and how these variables may interact to affect behavioural outcomes.

Cognitive evaluation theory (CET). Intrinsic motivation is evident when activities are carried out for the interest and/or enjoyment that they afford. CET was developed to explain the effect of contextual factors on people's intrinsic motivation, specifically the effect of contexts that change perceived locus of causality and perceived competence. Research has shown that intrinsic motivation is consistently undermined by social contexts that promote an external locus of causality, such as expected rewards, deadlines, threats of punishment, surveillance, and evaluation. In addition, positive feedback has been found to enhance intrinsic motivation, being thought to increase perceived competence (Ryan & Deci, 2004). Deci and Ryan (2000) suggest that supporting the need for relatedness is important to maintaining intrinsic motivation in certain social activities, and that therefore relatedness plays a more distal role in intrinsic motivation.

Together CET and OIT clarify the role of motivation in behavioural outcomes. The susceptibility of motivation to contextual factors that affect need satisfaction highlights motivation style as an additional individual difference variable that also reflects the effect of socio-environmental variables. It also points to a potentially synergistic relationship between basic need satisfaction and motivation style. This seems to be endorsed by research which found that autonomous motivation mediates the relationship between basic need satisfaction and the positive outcomes of morality and sportsmanship (Ntoumanis & Standage, 2009). Therefore, it would be of interest to explore the role of contextual factors such as autonomy support in relation to both basic need satisfaction and motivation style, and the potential interactive effects on behavioural outcomes.

Causality orientations theory (COT). Causality orientations refer to relatively stable individual differences in people's tendencies to orient towards their environment

in ways that are likely to support their sense of autonomy, or lead to a sense of being controlled or amotivated (Deci & Ryan, 1985b). COT describes these individual differences and the differing effects they have on aspects of well-being, motivation style, and behavioural outcomes. Individuals are thought to have all three orientation styles, but to differ in the extent to which they endorse each (Ryan & Deci, 2004). The autonomy orientation reflects a tendency to regulate behaviour based on personal interests and self-endorsed values. The controlled orientation reflects a tendency to regulate behaviour based on external controls and commands concerning how one should behave. The impersonal orientation reflects a tendency to not engage in action, or not behave intentionally (Deci & Ryan, 2000, 2008b; Ryan & Deci, 2004).

Causality orientations are thought to reflect the extent to which each of the basic needs has been satisfied over the life span. An autonomous orientation is thought to arise when all three basic needs have been continually supported. A controlled orientation is thought to arise when competence and relatedness needs have been met but the need for autonomy has been repeatedly thwarted. An impersonal orientation is thought to arise when all three basic needs have been consistently thwarted (Deci & Ryan, 2008b). SDT research has found that an autonomous orientation tends to be associated with positive behavioural and health outcomes. Controlled and impersonal orientations have been associated with less desirable outcomes (e.g., Baard et al., 2004; Deci & Ryan, 1985b; Gagné, 2003; Williams, Grow, Freedman, & Ryan, 1996).

Causality orientations therefore present an individual difference variable that could be explored in relation to professional caregiving and prosocial behaviours. In addition, it is not clear what relationship there is, if any, between current basic need satisfaction and causality orientations. This also poses an interesting theoretical position that requires investigation.

Goal contents theory (GCT). Researchers have identified that individuals tend to differ in the way that they frame goals or aspirations. Some people focus on intrinsic aspirations such as community, affiliation with others, and self-development. Other focus on extrinsic aspirations such as wealth, fame, and personal image (T. Kasser & Ryan, 1993, 1996). Intrinsic aspirations are labelled as such because their pursuit is thought to be more likely to support self-determined activities and thus facilitate satisfaction of the three basic needs. Extrinsic aspirations are thought to be motivated by external indicators of self-worth and thus more likely to thwart satisfaction of the three basic needs (Ryan & Deci, 2004). Intrinsic and extrinsic aspirations are viewed as relatively stable individual differences, largely set in childhood with autonomy supportive parenting being linked to greater endorsement of intrinsic, relative to extrinsic, aspirations (Lekes, Gingras, Philippe, Koestner, & Fang, 2009). Having more intrinsic relative to extrinsic aspirations has been most reliably associated with greater well-being (T. Kasser & Ryan, 1993, 1996; Sheldon & Kasser, 1998) with evidence that this relationship is mediated by basic need satisfaction (Niemic, Ryan, & Deci, 2009).

The relationship between aspirations and some behavioural outcomes has also been explored. Research has shown that extrinsic aspirations and materialistic values, which have been viewed as synonymous with extrinsic aspirations, negatively predict pro-environmental attitudes and behaviours (Hurst, Dittmar, Bond, & Kasser, 2013; Ku & Zaroff, 2014). Stronger relative extrinsic aspirations have been shown to predict health-risk behaviours, with extrinsic aspirations being negatively predicted by perceived parental autonomy support (Williams, Cox, Hedberg, & Deci, 2000). Furthermore, a synergistic positive effect of autonomy support and intrinsic goal contents on learning behaviours has been found, mediated by autonomous motivation (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004). Nevertheless evidence for the

role of aspirations or goal contents in relation to behavioural outcomes within the SDT framework is limited. There is scope for greater theoretical understanding of the effect of aspirations on behavioural outcomes, potential antecedents such as autonomy support and the role of basic need satisfaction and motivation style as possible mediators or moderators. This knowledge could in turn inform our understanding the relationships between contextual (structural) and individual (process/outcome) variables in professional caregiving and prosocial behaviours.

Ryan and Deci (2004) state that the mini theories have been developed inductively to explain various research phenomena and are all derived from an organismic-dialectical perspective. The consistency in assumptions and approaches across the mini theories enables them to be readily integrated with one another allowing individual differences and social-contextual variables across the mini theories to be studied collectively. Thus, SDT presents a framework within which the relationships between structure, process, and outcome in quality of care can be explored from a specifically interpersonal perspective, exploring care assistant variables as the intersection between interpersonal structural variables on the one hand, and the interpersonal aspects of process and outcome on the other. Existing quality of care research points to the importance of contextual factors, subsumed under structure, as well as individual differences in caregivers in affecting the process and outcome of caregiving behaviours. Thus, the role of autonomy support could highlight an important and hitherto un-researched interpersonal variable at the structural level in nursing homes. At the level of the individual caregiver, the effects of relatively stable individual differences such as causality orientations and aspirations on caregiving behaviours (process) could be studied in conjunction with variables sensitive to contextual factors, namely basic need satisfaction and motivation style.

1.2 Research Questions and Aims

The introduction identifies an apparent gap in the literature regarding a detailed understanding of the relationship between structure, process, and outcome in professional caregiving, and the role of the interpersonal, rather than the technical, in that relationship. In particular, the mediating role of caregiver variables in these relationships is seen to be poorly understood. Care assistants for the elderly in nursing homes were identified as a population of especial interest due to the ongoing and increasing need for professional care for the elderly in institutional settings. Self-determination theory was identified as the core framework within which study of professional caregiving could best commence, enabling relationships between manager variables at the structural level, and care assistant variables at the process/outcome level to be tested.

Due to the paucity of studies exploring professional caregiving within social psychology, and recognising the practical difficulties of accessing care assistant population, prosocial behaviour was identified as a construct related to professional caregiving, the study of which could further inform our understanding of key factors that may affect professional caregiving behaviours. Finally the study of prosocial behaviour in addition to professional caregiving with the SDT framework offers an opportunity to inform the theory of SDT as well as improving understanding of the antecedents of professional caregiving and prosocial behaviour.

The key aim of this thesis was therefore to **identify and examine potentially modifiable psychological mechanisms arising from interpersonal socio-environmental factors and intrapersonal individual differences that may affect the caregiving delivered by care assistants**. The overarching research aim was achieved by seeking to:

1. Examine the interaction between specific contextual and intrapersonal factors in a caregiving setting within an SDT framework, and the effect this had on aspects of interpersonal, rather than technical, caregiving (Paper 1).
2. Improve the existing measure of basic need satisfaction in order to be able to assess the separate effects of satisfaction with the three basic needs on behavioural outcomes (Paper 2).
3. Explore the potential for separate effects of the three basic needs on prosocial behaviour, and the role of basic need satisfaction as a mediator between individual differences and prosocial behaviour (Paper 3).
4. Identify the most important inter- and intra-personal factors that affect care assistants, and potential relationships between these factors and the type of care delivered (Paper 4).

1.3 Methodological Approaches

In order to achieve the research aims, both qualitative and quantitative studies were conducted, a multi-method approach being thought to make optimal use of different paradigms in comprehending a complex issue (D. L. Morgan, 1998). The relationships between structure, process, and outcome, and the potential mediating role of care assistants in professional caregiving seem to be poorly understood. The initial papers (1-3) adopted a quantitative approach, employing structural equation modelling

in order to test proposed causal pathways informed by empirical and theoretical knowledge, account for measurement error, and investigate indirect paths between variables (Kline, 2005). Where feasible to do so, fully latent models or models using item parcels were used in preference to path analysis models with total scale scores or reliability corrected models to avoid the biasing effects of measurement error and errors due to the assumption that specific variance is equal to zero (Coffman & MacCallum, 2005). A grounded theory approach was taken in the fourth paper, enabling a deep understanding of the processes and patterns of meaning in professional caregiving within nursing homes, and the relationships between those processes, to be developed.

These approaches were informed by the epistemological stance of the researcher. This is best captured by the distinction made by Little, Cunningham, Shahar, and Widaman (2002) between an empiricist-conservative stance and a pragmatic-liberal stance towards research. The empiricist-conservative approach maintains that the data collected should be represented as faithfully as possible, avoiding any possible sources of researcher bias. This reflects a positivist, objective stance that largely informs quantitative approaches to data collection. The pragmatic-liberal perspective suggests that the research process necessarily introduces researcher bias, being shaped by the choices and decisions of the researcher at every stage. This seems to acknowledge the interpretivist, subjective stance that pertains more to qualitative research. The researcher took a pragmatic-liberal stance which informed the use of structural equation modelling with latent variables in preference to observed variables as this approach accounts for measurement error (Kline, 2005) and errors due to the assumption that specific variance is equal to zero (Coffman & MacCallum, 2005). However, item parcels were adopted in preference to fully latent models, the researcher concurring with

Little and his colleagues that it is impossible to represent every source of variance for every single item (Little et al., 2002).

The researcher's pragmatic-liberal stance also informed the inclusion of a qualitative study employing a grounded theory methodology. Qualitative research seeks to understand and represent patterns of meaning, rather than to test relationships between variables. In contrast to quantitative research, qualitative methods enable the researcher to explore the experiences and knowledge of participants themselves, rather than the researcher making a priori assumptions about which variables and which relationships are of interest. Grounded theory originally stated that the theory 'emerges' from the data (Glaser & Strauss, 1967), suggesting that an objective truth can be found in the data. However, this approach has been tempered by discussion of social constructionism (Charmaz, 2000) which argues that data is interpreted by the researcher and as such represents a credible, but not the only possible, position in relation to the data. Thus care was taken in Paper 4 to demonstrate reflexivity, which acknowledges and makes transparent the role of the researcher in data analysis and theory generation.

1.4 Overview of Empirical Studies

This thesis includes four papers that address the research aims. The first paper sought to test a multilevel model based in self-determination theory which included both manager-level and care assistant-level variables hypothesised to affect the degree of psychosocial care that care assistants give. The second paper addressed emerging concerns with the measurement of basic need satisfaction, and sought to directly capture levels of satisfaction with each of the three needs, as well as improve the validity of the scale. Due to the significant effect of basic need satisfaction on psychosocial caregiving behaviours found in Paper 1, the third paper sought to develop our understanding of the relationship between basic need satisfaction and a behaviour related to caregiving,

prosocial behaviour. The fourth paper was designed to investigate the underlying processes and patterns of relationships found in professional caregiving in a nursing home environment within an idiographic framework. The basic rationale for each study, the methodology, and the hypotheses are summarised below.

Paper 1 – Using an SDT Framework to Explore the Roles of Nursing Home Managers and Care Assistants in the Provision of Psychosocial Care for the Elderly

A multilevel study was designed to examine the effect of managerial autonomy support on psychosocial caregiving, and its potential to moderate the effects of three care assistant level variables: intrinsic aspirations, basic need satisfaction at work, and autonomous motivation. It was expected that autonomy support in managers would positively predict psychosocial caregiving, in addition to intrinsic aspirations, basic need satisfaction at work, and autonomous motivation among care assistants. Managers from 38 nursing homes and 193 care assistants from those homes completed pen-and-paper questionnaires. Low intraclass correlations ($\rho_s < .10$), and design effects smaller than two indicated that multilevel analyses were unnecessary. Therefore the effects of care assistant variables on two measures of psychosocial caregiving were assessed, using complex analyses with latent structural equation modelling. This ensured that parameter estimates were accurate and bias due to measurement error was avoided.

Paper 2 - Measuring Autonomy, Relatedness, and Competence Satisfaction: Development and Validation of the ARC-S Scale

Basic need satisfaction was identified as a significant predictor of professional caregiving in Paper 1. However, Johnston and Finney (2010) demonstrated substantial

problems with local and global misfit in the widely used measure of basic need satisfaction in general (BNS-G; Gagné, 2003), with problems remaining despite a significant reworking of the scale. It also seemed that the BNS-G may measure perceived levels of the three needs, and not necessarily satisfaction with the levels of those needs. The Autonomy, Relatedness, and Competence Satisfaction (ARC-S) scale sought to present a balanced scale that directly captures levels of satisfaction with the basic psychological needs for autonomy, relatedness, and competence rather than perceived levels of the three needs. The study assessed the construct validity of the ARC-S using confirmatory factor analyses and tested the equivalence of the constructs across student and non-student groups using measurement invariance analyses in a large sample ($N = 888$). The criterion-related validity of the scale was assessed in a subsample ($n = 228$) using structural equation modelling to test autonomy, competence, and relatedness satisfaction as predictors of well- and ill-being.

Paper 3 - Basic Need Satisfaction and Prosocial Behaviour: Exploring the Effects of Autonomy, Competence, and Relatedness Satisfaction within an SDT Framework

Paper 1 demonstrated a significant positive effect of overall basic need satisfaction at work on psychosocial caregiving in nursing homes. However, basic need satisfaction is comprised of three variables, autonomy, competence, and relatedness. Furthermore, care assistants are a difficult to access population, evidenced by the relatively low response rates in Paper 1, and previous research carried out with nursing home care assistants (e.g., L. G. Morgan & Farsides, 2009). Therefore, in order to further clarify the role of basic need satisfaction in caregiving without over-burdening the accessible population of care assistants, a series of three studies sought to ascertain

whether a higher-order basic need satisfaction construct is a better predictor of the caregiving-related construct of prosocial behaviour, or whether autonomy, competence, and relatedness satisfaction have separable effects on prosocial behaviour. Across the studies, structural equation modelling with item parcels was employed in order to account for measurement error and ensure accurate parameter estimates. Study 1 assessed basic need satisfaction as a predictor of prosocial behaviour in general and within the specific domain of a university setting ($N = 205$). In Study 2 basic need satisfaction was explored as a potential mediator of the effects of intrinsic aspirations on prosocial behaviour ($N = 220$). In Study 3, basic need satisfaction was explored as a mediator of the effects of impersonal, controlled and autonomous causality orientations on prosocial behaviour ($N = 235$). In all three studies, basic need satisfaction was included as a higher-order construct, indicated by autonomy, competence, and relatedness modelled as latent constructs. Potential unique effects of each of the three psychological needs on prosocial behaviour were then assessed via the modification indices.

Paper 4 – Towards an Understanding of Professional Caregiving: Using Grounded Theory to Develop a Multidimensional Model

An extensive review of the literature revealed the interpersonal aspects of professional caregiving to be poorly understood, in particular the potential mediating role of care assistants between structure, process, and outcome. A grounded theory approach (following the methodology of Corbin and Strauss, 2008) was undertaken in order to generate a substantive theory of the processes and mechanisms that underlie high quality professional care. Twenty-one participants, including care assistants, nurses, domestic staff, multidisciplinary staff, managers, and nursing home service-

users, were recruited from two high dependency nursing homes in South East England. Semi-structured interviews were used to ask all participants about what they felt constituted good and not so good quality care, factors that they felt inhibited and facilitated good quality care, and what they felt might improve the quality of caregiving. The goal of the research was to gain a clearer picture of the components of good quality care, particularly from the perspective of caregivers, and to gain an understanding of the key relationships and the underlying mechanisms in professional caregiving.

The body of research presented in these four papers provides preliminary evidence for the significant effects of both inter- and intra-personal variables from an SDT framework on care assistants' ability to provide good care. Furthermore, the findings raise interesting theoretical and applied issues in relations to SDT. Intra-personal factors relating to traits and qualities among caregivers were clearly related to their caregiving and associated behaviours in all three applied papers. However, this thesis argues that contextual factors also play an important role in caregivers' ability to give good care, with some evidence for the effects of management style.

**Chapter 2: Paper 1 – Using an SDT Framework to Explore
the Roles of Nursing Home Managers and Care Assistants in
the Provision of Psychosocial Care for the Elderly**

2.1 Abstract

A multilevel study was designed to examine whether the social-environmental and individual difference variables proposed by self-determination theory can predict indicators of psychosocial caregiving. Due to low intraclass correlations ($\rho_s < .10$) and design effects smaller than two, multilevel analyses were not carried out. Structural equation modelling analysis showed that nursing home manager-level ($N = 38$) need support was not significantly related to the care assistant-level ($N = 193$) variables or psychosocial caregiving. However, psychosocial caregiving was positively predicted by care assistants' community aspirations and need satisfaction at work. Psychosocial caregiving was not significantly predicted by autonomous motivation and no indirect effects were found. Although the expected effects of manager need support were not found, the results suggest that helping care assistants to satisfy their psychological needs at work and endorse community aspirations more strongly could contribute positively to their ability to provide psychosocial care.

2.2 Introduction

Caregiving is the provision of physical, psychological, and social support to people (adults or children) who are unable to meet those needs by themselves. It is recognised that unpaid caregivers are affected by many factors that impact their ability to provide good care, such as burnout, isolation, depression, and even deteriorating health (Christakis & Allison, 2006; Grafström, Fratiglioni, Sandman, & Winblad, 1992; Livingston, Manela, & Katona, 1996; Schulz & Beach, 1999). Evidence has shown that negative outcomes for informal caregivers are directly related to negative outcomes for care recipients, highlighting the need to improve caregiver well-being (Brodaty, Green, & Koschera, 2003; Mittelman, Roth, Haley, & Zarit, 2004). But factors that affect the ability of professional caregivers to deliver optimal care, especially for the elderly, have not been extensively researched.

Hannan, Norman, & Redfern (2001) reviewed research into the effects of job satisfaction and markers of stress such as burnout among care staff on quality of care and well-being of elderly care recipients in long-term care settings and hospitals. The results were inconclusive due to the small number of studies that have been carried out, methodological limitations such as small samples and inadequate measures, and conflicting findings. Nevertheless, the review concluded that increasing work satisfaction and reducing work stress of care staff was likely to improve quality of care and care recipient well-being. The review also highlighted the influence of contextual factors, such as management style and staffing levels, and staff outcomes, such as role conflict and job commitment, as influencing factors. However, research to date has not applied an established psychological theory of motivation to the study of professional caregiving. Testing such a theory in a caregiving setting could improve our understanding of the psychological mechanisms underlying the effects of contextual

factors and staff variables on the process of caregiving. This in turn may inform policy and practice that could enhance and optimise professional caregivers' abilities to give good quality care.

Self-Determination Theory: The Key Processes

Self-determination theory (SDT) is a macro-theory of human motivation that seeks to understand the personality and social factors that facilitate individuals' personal development and behavioural self-regulation (Deci & Ryan, 2008a; Deci & Vansteenkiste, 2004; Ryan & Deci, 2000a). SDT proposes that all people are naturally inquisitive, active, and interested in performing behaviours successfully and effectively because success is in and of itself rewarding and satisfying. However, the social environment within which people act or behave is thought to support or thwart people's natural interest in and motivation for carrying out activities (Deci & Ryan, 1985a, 2000, 2008a). The key variables identified by SDT that have been shown to support optimal functioning and well-being are satisfaction of basic psychological needs, autonomous motivation, need support, and intrinsic aspirations. Three basic psychological needs, autonomy, competence, and relatedness, are viewed as the "critical linking pin" between the social environment and optimal functioning and well-being (Ryan & Deci, 2004). Satisfaction of the three needs is seen to support autonomous motivation which in turn leads to adaptive behaviours and psychological well-being. Satisfaction of the three needs is supported by intrinsic aspirations and a social environment that is need supportive (see Ryan & Deci, 2000a for an overview).

Basic need satisfaction. Autonomy, relatedness, and competence are viewed in SDT as innate and essential nutrients, necessary for psychological well-being, personal growth, and optimal functioning (Deci & Ryan, 2000; Ryan, 1995;

Vansteenkiste & Ryan, 2013). Autonomy reflects the need for volition and choice in one's activities (deCharms, 1968; Deci & Ryan, 2000) and is distinct from the cultural ideal of independence and individualism more commonly found in individualistic societies (Chirkov, Ryan, Kim, & Kaplan, 2003). The need for relatedness is satisfied by a sense of belonging, of caring for and being cared for by others (Baumeister & Leary, 1995). Satisfaction of the need for competence arises when individuals feel a sense of mastery and effectance in their activities (White, 1959).

A wide range of studies provides supporting evidence for the positive effects of satisfaction of these basic psychological needs. Satisfaction of all three needs have been individually positively related to both physical and psychological well-being, indexed by positive and negative affect, vitality, and symptomatology (Reis et al., 2000; Sheldon et al., 1996). Basic need satisfaction in general has been shown to be positively related to both volunteering and prosocial behaviour (Gagné, 2003; Weinstein & Ryan, 2010), behaviours with clear similarities to caregiving. In the field of work and organisational psychology, basic need satisfaction at work has been associated with employee well-being (Deci et al., 2001; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008), job satisfaction (Ilardi et al., 1993), and performance at work (Baard et al., 2004). Of greater interest for the purposes of this study, Lynch et al. (2005) found that employees within a psychiatric hospital who experienced greater satisfaction of their basic psychological needs reported greater well-being at work, more intrinsic job satisfaction, and were less controlling towards their patients.

Motivation. The extent to which the three psychological needs are satisfied has been both theoretically and empirically linked to the degree to which behaviours are driven by autonomous or controlled motivation, with autonomous motivation arising when basic needs are satisfied and controlled motivation arising when basic needs are

thwarted (Deci & Ryan, 2008a; Markland & Tobin, 2010; Ryan & Deci, 2000a).

Autonomous motivation is characterised by an internal perceived locus of causality (deCharms, 1968) where an individual acts through choice and volition to engage in activities that are perceived as interesting and enjoyable, are integrated into one's sense of self as consistent with core values and beliefs, or are identified with personally valuable outcomes. In contrast, controlled motivation has an external perceived locus of causality. Behaviours are carried out as a result of internal pressures such as contingent self-esteem or guilt, or external pressures such as obtaining a reward or avoiding a punishment (Deci & Ryan, 2008a; Ryan & Deci, 2000a).¹

Autonomous motivation has been linked to various indicators of optimal functioning, including greater psychological well-being, greater persistence and enhanced performance, especially in heuristic activities, and more positive affect (Deci & Ryan, 2008a; Ryan & Deci, 2006). Within specific life domains, autonomous motivation has been linked to better academic grades (Black & Deci, 2000), higher levels of persistence at school and in sport (Pelletier, Fortier, Vallerand, & Brière, 2001; Vallerand & Bissonnette, 1992), and lower levels of burnout at work (Fernet, Guay, & Senecal, 2004). Theoretical papers suggest that the relationship between basic need satisfaction and positive outcomes may be mediated by autonomous motivation (Deci & Ryan, 2008a; Deci & Vansteenkiste, 2004; Ryan, 1995). This is empirically supported by the finding that autonomous motivation mediates the relationship between basic need satisfaction and the positive outcomes of morality and sportsmanship (Ntoumanis & Standage, 2009).

¹ Note that previous research has separated the types of motivation into intrinsic and extrinsic, but current approaches prefer the terms autonomous and controlled respectively (see Deci & Ryan, 2008a).

Aspirations. Autonomous motivation and basic need satisfaction, as well as behavioural outcomes, have been predicted by aspirations, also referred to as values (e.g., T. Kasser, 2004) and goals or goal contents (e.g., Vansteenkiste, Simons, Lens, et al., 2004) in SDT literature. Aspirations have been found to fall into two distinct categories, labelled as intrinsic aspirations and extrinsic aspirations (T. Kasser & Ryan, 1996). Intrinsic aspirations are defined as “expressive of desires congruent with actualising and growth tendencies natural to humans,” (T. Kasser & Ryan, 1996, p. 280) such as valuing community, affiliation with others, and personal development. Extrinsic aspirations are associated with external indicators of worth, reflected by valuing fame, wealth, and image. Initial research into aspirations found that greater endorsement of intrinsic aspirations relative to extrinsic aspirations was significantly positively related to well-being. In contrast stronger extrinsic aspirations relative to intrinsic aspirations were associated with measures of ill-being such as depression, anxiety, and physical symptoms (T. Kasser & Ryan, 1993, 1996).

The positive relationship between intrinsic aspirations and well-being is thought to occur because intrinsic aspirations support behaviour that will meet the basic psychological needs for autonomy, relatedness, and competence (T. Kasser, 2004; Ryan & Deci, 2000b). Niemiec et al. (2009) found empirical evidence for this relationship. In a longitudinal study of university graduates, they found that viewing either intrinsic or extrinsic aspirations as important was positively related to attainment of those aspirations. However, only attainment of intrinsic aspirations was positively related to psychological well-being whereas attainment of extrinsic aspirations was positively related to ill-being. More importantly for our understanding of the role of basic need satisfaction in relation to aspirations and well-being, analyses showed that the

relationship between attainment of intrinsic aspirations and changes in well-being was mediated by basic need satisfaction.

There is very little empirical evidence linking aspirations to behavioural outcomes. Vansteenkiste, Simons, Lens, et al. (2004) tested the relationship between intrinsic goals for learning and depth of processing, test performance, and persistence in three studies. They found that learning text material related to recycling and ecology (study 1), communication styles (study 2), or physical exercises (study 3), when framed in terms of the intrinsic goals of community, personal growth, physical health (studies 1, 2, and 3 respectively) resulted in higher scores for depth of processing, test performance, and persistence across all three studies compared to participants whose learning was framed by the extrinsic goals of money and image. In addition, autonomous motivation was found to mediate the relationship between intrinsic goals and depth of processing and test performance. Within the workplace, research has shown that stronger endorsement of extrinsic work values relative to endorsement of intrinsic work values predicts fewer positive outcomes such as job satisfaction, dedication to work, and vitality at work. It also predicts more negative outcomes such as emotional ill-being and turnover intentions (Vansteenkiste et al., 2007). The relationship between extrinsic relative to intrinsic work values and negative job outcomes was found to arise because pursuing extrinsic goals thwarts the basic needs for autonomy, competence, and relatedness.

Need support. Need satisfaction, intrinsic aspirations, and autonomous motivation represent individual differences that affect adaptive behaviours and overall well-being. However, SDT highlights the importance of interactions between individuals and their social environment in supporting, or thwarting, these individual differences, and subsequently individual levels of functioning and well-being (Ryan &

Deci, 2004; Vansteenkiste & Ryan, 2013). Autonomy supportive environments have been identified as conducive to the satisfaction of not only the need for autonomy, but also relatedness and competence (Markland & Tobin, 2010; Ntoumanis & Standage, 2009; Ryan & Deci, 2000a). Autonomy support refers to a person in an authority role taking the perspective of the person over whom they have influence (in whatever capacity) and acknowledging the other person's feelings and thoughts, providing information and choice, and minimizing pressure and demands (with regards to the behaviour of the other) (Deci & Ryan, 1985a, 2008a).

A great deal of empirical research has linked autonomy support to autonomous motivation, better performance, and greater well-being in a range of settings. For example, in classes where teachers are more autonomy supportive, pupils are more autonomously motivated, feel more competent and have higher self-esteem (Deci, Schwartz, Sheinman, & Ryan, 1981). Children with autonomy supportive parents tend to be less shy and anxious, have fewer behavioural problems, be more autonomously motivated towards and feel more competent with schoolwork, and get better grades (Grolnick & Ryan, 1989). In sport and exercise, autonomy supportiveness from coaches and healthcare providers has been associated with more autonomous motivation for training or physical activity, and greater persistence and activity in sports (Fortier, Sweet, O'Sullivan, & Williams, 2007; Hagger, Chatzisarantis, Culverhouse, & Biddle, 2003; Pelletier et al., 2001; Vansteenkiste, Simons, Soenens, & Lens, 2004). In the domain of healthcare, a healthcare team climate perceived as autonomy supportive was shown to result in more autonomous motivation for weight loss, and greater maintained weight loss over a 23 month period (Williams et al., 1996).

Some research has been carried out which suggests that need support could be related to professional caregiving behaviours within nursing home settings, mediated by

both need satisfaction and autonomous motivation. Gagné (2003) found that parental autonomy support and perceived autonomy support in a voluntary work setting positively predicted prosocial engagement and volunteering, these relationships being fully mediated by basic need satisfaction. Williams & Deci (1996) found that the levels of autonomy support provided by medical students' tutors improved autonomous motivation for learning, leading to increased perceived competence and psychosocial beliefs among medical students. Furthermore, levels of autonomy support predicted the levels of autonomy support students later showed towards patients.

Studies carried out in the workplace provide further evidence that basic need satisfaction mediates both the relationship between autonomy support and positive outcomes, and between autonomy support and autonomous motivation. Employees with more autonomy supportive managers were found to experience greater satisfaction of psychological needs, more engagement in their work, and higher performance ratings compared to employees with more controlling managers (Baard et al., 2004). Deci et al. (2001) found a cross-culturally reliable relationship between autonomy support and employees' engagement at work and well-being at work, mediated by basic need satisfaction at work. In the domain of exercise, Markland and Tobin (2010) found that satisfaction of the needs for autonomy, competence, and relatedness individually mediated the relationships between need support and behavioural regulations synonymous with different levels of autonomous motivation.

Finally, evidence suggests that autonomy supportive environments can foster intrinsic aspirations leading to positive outcomes. A cross cultural study found that parental autonomy support was associated with greater endorsement of intrinsic versus extrinsic aspirations among adolescents, with intrinsic aspirations partially mediating the relationship between autonomy support and well-being (Lekes et al., 2009). In a

study of health risk behaviours among adolescents, Williams, Cox, Hedberg and Deci (2000) found that extrinsic aspirations positively predicted health risk behaviours such as tobacco and marijuana use, with both extrinsic aspirations and health risk behaviours being negatively predicted by perceived parental autonomy support. In their study exploring the effects of intrinsic goals for learning on test performance, persistence, and depth of processing, Vansteenkiste, Simons, Lens, et al. (2004) found that autonomy supportive contexts not only positively predicted all three outcomes but moderated the effect of intrinsic goals upon test performance and depth of processing, resulting in highest test performance and depth of processing when both intrinsic goals and autonomy support were present. Furthermore, this interaction was mediated by autonomous motivation.

Measuring Caregiving

A review of the literature (L. G. Morgan, 2009) has found that, once basic physical needs have been met, service users consistently identify autonomy (e.g., Ball et al., 2000; Davis, Sebastian, & Tschetter, 1997; Spalding, 1985) and relatedness, or strong personal relationships with others, as key elements of good care (Ball et al., 2000; Bland, 2007; Hasson & Arnetz, 2008). Investigations into the effects of autonomy and personal relationships on service users' well-being further highlight the importance of psychosocial caregiving over and above physical care. Loss of autonomy has been shown to be detrimental to both the emotional and the physical health of service users (Lieberman & Tobin, 1983; Rodin, 1986). Furthermore, both autonomous regulation and relatedness have been found to correlate with service user vitality and well-being in nursing homes (V. G. Kasser & Ryan, 1999). Therefore, rather than

explore aspects of physical caregiving, service user autonomy and relatedness were explored as indicators of psychosocial caregiving.

However, it is difficult to obtain ratings from service users themselves. Many service users in nursing homes are incapacitated, with around fifty percent being cognitively impaired (Harrington, Swan, Wellin, Clemena, & Carrillo, 2000) and therefore unable to provide feedback. It has also been found that residents tend to have very limited responses to quality of care investigations, usually stating that they are highly satisfied (Pascoe & Attkisson, 1983) even when there is evidence to the contrary (Castle & Engberg, 2004; Pearson, Hocking, Mott, & Riggs, 1993; Simmons & Schnelle, 1999). We therefore decided to measure care assistants' perceptions of the autonomy supportiveness and relatedness they provide to service users, rather than obtain data directly from service users. Care assistants were targeted in preference to nurses because they tend to give most of the direct care in nursing homes (Novak & Chappell, 1994).

Multilevel Methodology

Nursing homes are generally managed by one key figure, the manager or matron. Research has already shown that managers' autonomy supportiveness does affect employees in non-caregiving settings (e.g., Baard et al., 2004; Deci et al., 2001) and we expected to find similar effects in nursing homes. However, individual differences between care assistants, for example their degree of autonomous motivation for work, basic need satisfaction at work, and their personal aspirations, may also affect their levels of autonomy supportiveness and relatedness towards residents. Where data are collected and analysed at more than one level (e.g., nursing home and care assistant) multilevel modelling is a more appropriate method of analysis (Greenland, 2000;

Raudenbush & Bryk, 2002). Multilevel modelling accounts for the fact that care assistants are nested in nursing homes with sources of variation at both levels (among care assistants within each nursing home as well as between the managers/matrons that run each nursing home). Multilevel models are therefore able to both calculate standard errors more accurately than conventional models and estimate the variance explained at each level. Between home differences, if found, will support the notion that care assistants' autonomy supportiveness and relatedness to residents depend not only upon the characteristics of individual care assistants, but also upon the management style of the nursing home in which they work.

Current Research

The current study builds upon previous research in three key ways. First, it tests the SDT framework within the applied setting of nursing homes for the elderly, examining whether SDT variables can explain variance in caregiving. Second, it tests a full model of needs theory, exploring concurrently the effects of need support, intrinsic aspirations, basic need satisfaction at work, and autonomous motivation on a behavioural outcome. To our knowledge, a model of this complexity has not yet been tested in relation to a behavioural outcome. Third, the study design incorporates multilevel modelling and accounts for measurement errors, producing results that are statistically comprehensive and reliable (Greenland, 2000; Kline, 2005; Raudenbush & Bryk, 2002).

Specifically it is hypothesised that, at level 1 (within), intrinsic aspirations, basic need satisfaction at work, and autonomous motivation will positively predict two indicators of psychosocial care, autonomy and relatedness shown towards nursing home service users by care assistants. However, we hypothesise that the relationship between

intrinsic aspirations and caregiving will be mediated by both basic need satisfaction and autonomous motivation. Furthermore, we hypothesise the relationship between basic need satisfaction and caregiving will be mediated by autonomous motivation.

At level 2 (between), we predict that managerial need support will positively predict care assistant provision of both autonomy and relatedness. In addition, we sought to explore the relationships between managerial need support and the level 1 care assistant predictor variables: intrinsic aspirations, basic need satisfaction at work, and autonomous motivation. Based on previous research, we expected managerial need support to predict intrinsic aspirations, basic need satisfaction at work, and autonomous motivation. The hypothesised relationships between the variables are presented below in Figure 2.1. The effect of manager-level variables are reflected in the “between” section and the effect of care assistant-level variables in the “within” section.

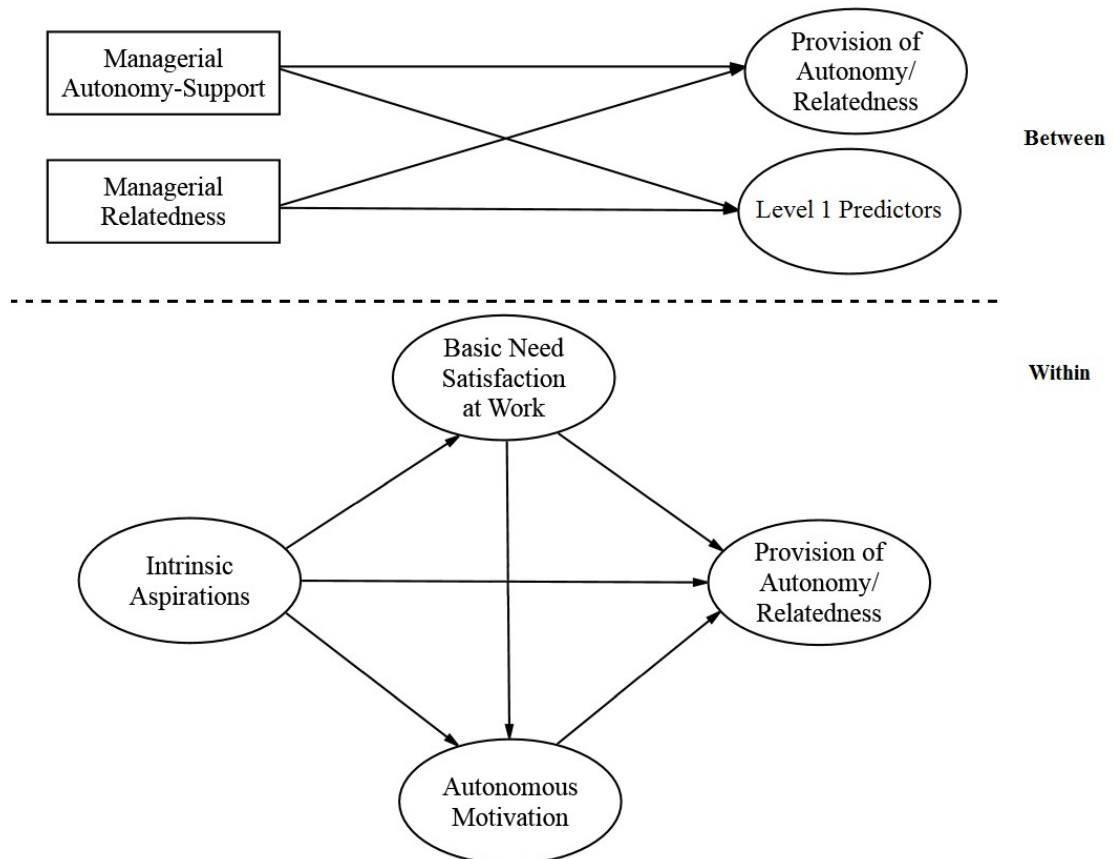


Figure 2.1. Hypothesised relationships between need support, intrinsic aspirations, basic need satisfaction at work, autonomous motivation, and the provision of autonomy/relatedness.

2.3 Method

Participants

Data was collected from two regions in the UK between 2010 and 2012.

Initially all nursing homes within three adjoining districts in the south of England were contacted (69 in total), asking for participation from managers and care assistants, and requesting a minimum of ten responses from care assistants in each nursing home.

Thirty-three nursing homes agreed to participate. Managers from 21 homes responded, of which three were excluded as no care assistants responded from their nursing home.

Ninety-one care assistants responded from 25 homes, of which 13 schedules were excluded as the manager from their home had not responded (seven homes).

Subsequently, all nursing homes within two adjoining districts in the Midlands were contacted (41 in total), of which 23 agreed to take part. Responses were obtained from 20 managers and 115 care assistants, of which no responses were excluded.

The final sample comprised 38 managers and 193 care assistants. The managers (37 women) had an average age of 51.25 years ($SD = 6.44$), ranging from 37 to 65 years old. They had been managers for an average of 12.00 years ($SD = 8.35$) and had been in their current role for an average of 6.72 years ($SD = 6.38$). The majority (95%) of managers were white, 2.5% were black and 2.5% of other ethnicities. All of the managers were British. The majority (58%) had university level qualifications, 18.5% had at least one A-level, 10.5% had NVQ level qualifications, and 13% had GCSE or O-level qualifications.

The care assistants (170 women, 7 gender not disclosed), had an average age of 39.92 years ($SD = 13.01$), ranging from 18 to 66 years old. Respondents had been care assistants for an average of 9.00 years ($SD = 8.36$), and working in their current role for an average of 5.50 years ($SD = 5.74$). The care assistants were mainly white (77.2%) or

Asian (16.1%) and 2% were of other ethnicities (4.7% of participants did not disclose their ethnicity). Most care assistants were British (78.2%), 11.5% were from Indonesia, 2.6% from Europe, 1% from China, and 1% from Africa (5.7% of the sample did not disclose their nationality). The majority of care assistants had NVQ-level qualifications (52.8%), 14% had university level qualifications, 10.9% had at least one A-level or BTEC qualification, 10.4% had GCSEs, and 6.7% had no qualifications (5.2% did not disclose their level of education).

Manager Measures

Managerial autonomy support. The Problems at Work (PAW - Deci, Connell, & Ryan, 1989) questionnaire assesses the extent to which managers are more controlling versus autonomy supportive of their employees. The measures are composed of eight vignettes describing situations that managers might encounter with employees. Each vignette is followed by four items which describe respectively a highly autonomy supportive, a moderately autonomy supportive, a moderately controlling, and a highly controlling way a manager could deal with the problem. The highly autonomy supportive items reflect a manager listening, acknowledging feelings, providing non-judgmental, supportive feedback if necessary, and encouraging employees to find their own solutions to problems. The moderately autonomy supportive items reflect a manager encouraging individuals to resolve their problems by observing how others have dealt with similar situations. Thus some autonomy support is provided because individuals are given freedom to seek their own solutions, but the response is not highly autonomy supportive because individuals are being guided to comply with norms rather than seeking creative and individualized solutions. The moderately controlling items show a manager telling employees what solution to use for a problem and implying that

it is in their best interests to adhere to this solution. The highly controlling items describe a manager that prescribes a solution and demands that it is followed, often accompanied by the promise of a reward or the threat of a punishment.

The response to each item falls upon a continuum that ranges from highly autonomy supportive to highly controlling. Managers rated the degree of appropriateness of each item based on their own managerial style on a seven-point scale from 1 (*Very inappropriate*) to 7 (*Very appropriate*). Ratings for each response style were summed across the eight vignettes and the four subscale scores were combined using weightings of +2, +1, -1, and -2 for highly autonomy supportive, moderately autonomy supportive, moderately controlling, and highly controlling scores respectively. A single overall score of managerial autonomy support was created, with higher scores reflecting higher levels of autonomy support. Scores could potentially range from -18 to +18. The alphas for the four subscales derived as described above were: highly autonomy supportive = .88, moderately autonomy supportive = .70, moderately controlling = .83, and highly controlling = .86. A full copy of this, and all subsequent measures in the thesis, can be found in the Appendices.

Relatedness towards care assistants. A 12-item scale was designed specifically for this study to measure the extent to which managers/matrons fostered closeness and connection with their staff. Two items reflecting feeling understood were adapted from a relatedness support scale developed by Parfyonova (2009). The remaining items were written to reflect three different determinants of relatedness as reported by Reis et al. (2000): talking about something meaningful, feeling appreciated and understood, and engaging in pleasant and interesting activities. Example items include ‘I encourage care assistants to talk about things that are important to them,’ ‘I make sure care assistants know that they are appreciated,’ and ‘I don’t spend much time

thinking about whether care assistants are taking part in activities that they might find especially pleasant' (reverse item). Items were assessed on a 7 point scale from 1 (*Not at all true of me*) to 7 (*Very true of me*). A reliability analysis showed that these items were internally consistent ($\alpha = .76$) therefore the items were averaged to form a single index of relatedness towards care assistants

Care Assistant Measures

Aspirations. The Aspirations Index (T. Kasser & Ryan, 1996) was developed to assess the importance of, likelihood of attaining, and current level of attainment of extrinsic and intrinsic life goals or aspirations. For the purposes of this study participants were asked to rate how important two intrinsic aspirations were to them on a scale of 1 (*Not at all important*) to 7 (*Very important*). Community and affiliation aspirations were each reflected by five items. Examples of items include 'To have good friends that I can count on' (affiliation, $\alpha = .86$) and 'To help people in need' (community, $\alpha = .80$).

Basic need satisfaction at work scale (BNS-W). The BNS-W (Baard et al., 2004; Ilardi et al., 1993) is a 21-item measure intended to rate satisfaction of the basic psychological needs for autonomy, competence, and relatedness at work. The self-report measure consists of three subscales. Seven items measure autonomy at work (e.g., 'I feel like I can make a lot of inputs to deciding how my job gets done). Six items measure competence at work (e.g., 'I do not feel very competent when I am at work'; reversed item). Eight items measure relatedness at work (e.g., 'I get along with people at work'). All items were rated on a seven-point scale from 1 (*Not at all true*) to 7 (*Very true*). Alphas for the autonomy, competence, and relatedness subscales were .65, .57, and .77 respectively.

Work self-regulation questionnaire. Self-regulation questionnaires assess the degree to which people have autonomous versus controlled motivations to carry out activities such as learning, prosocial behaviour, and health behaviours (Ryan & Connell, 1989; Williams et al., 1996). A well-validated self-regulation at work scale does not currently exist. Therefore a scale was developed adapting items from the self-regulation questionnaire for students with learning difficulties (Deci, Hodges, Pierson, & Tomassone, 1992). This simplistic scale was chosen in preference to more complex scales in order to minimise the cognitive load on care assistants following feedback from previous studies.

The original scale had four subscales: external and introjected regulation, reflecting controlled motivation, and identified and intrinsic regulation, which reflected autonomous motivation. Six items were developed in total to represent identified ('I do my work because I want to give the best care that I can') and intrinsic ('I do my work because I enjoy it') regulation. Care assistants chose from four options: *Always, Most of the Time, Sometimes and Never*, which were then converted into numerical scores of 4, 3, 2, and 1 respectively. Exploratory factor analysis revealed that the intrinsic and identified items loaded onto a single factor. In alignment with previous studies that have combined intrinsic and identified self-regulation items to form a single score for autonomous motivation (Ntoumanis & Standage, 2009; Vansteenkiste, Lens, De Witte, De Witte, & Deci, 2004) and the distinction made between autonomous and controlled motivation in SDT (Deci & Ryan, 2000; Gagné & Deci, 2005), the items from both subscales were used to indicate autonomous motivation ($\alpha = .83$).

Relatedness towards residents. This 12-item scale was adapted from the 'relatedness towards care assistants' measure described above to reflect the extent to which care assistants fostered a sense of closeness or connection with residents.

Example items include ‘I encourage residents to talk about things that are important to them’ and ‘I often spend time looking for activities that I think residents will find beneficial’. Items were assessed on a 7 point scale from 1 (*Not at all true of me*) to 7 (*Very true of me*). Reverse items were removed from the scale because of low inter-item correlations with positively worded items and associated reductions in Cronbach’s alpha. Assessment of reliability of the remaining nine, positively worded, items showed that the items were internally consistent ($\alpha = .85$)

Autonomy towards residents. This scale was developed by adapting items from the autonomy subscale of the basic need satisfaction at work scale (described above) to measure the extent to which care assistants support the autonomy of residents. The scale consisted of seven items, for example, ‘I make sure that residents are free to decide for themselves how to live their lives’ and ‘In day to day care, I frequently tell residents what to do without giving them any choices’ (reverse item). Items were assessed on a 7 point scale from 1 (*Not at all true of me*) to 7 (*Very true of me*). A reliability analysis showed that these items were internally consistent ($\alpha = .77$). This short and simple scale was used in preference to an adaptation of the Problems at Work Scale in order to reduce cognitive load and participant fatigue among care assistants.

2.4 Results

Data Analysis

All analyses were carried out using Mplus, version 6.0 (L. K. Muthén & Muthén, 1998-2010). A number of considerations needed to be taken into account with the analyses including missing data, non-normal data, and non-independence of observations due to the multilevel design of the study. Maximum likelihood estimation accounts for missing data, avoiding listwise deletion of cases when data are Missing At

Random (MAR) or Missing Completely At Random (MCAR). The majority of variables had a small amount of missing data, no more than 2% for any given variable, which could be assumed to be MAR (Enders, 2010). However, due to a printing error, the basic need satisfaction at work measure was not included in the questionnaire given to participants from the South East of England. The data was missing due to unforeseen circumstances and therefore can be treated as MCAR (Enders, 2010). This approach is further supported by the fact that analyses showed no significant differences between variables collected in South East England and the Midlands.

Screening of the data showed non-normality at both the univariate and multivariate level. In order to account for both non-normality and non-independence of observations, maximum likelihood parameter estimates with standard errors robust to non-normality and non-independence of observations were computed using the MLR estimator. This calculates a chi-square statistic asymptotically equivalent to the Yuan-Bentler T2* test statistic (L. K. Muthén, 2011), subsequently denoted as χ^2_{YB} .

To evaluate global model fit, multiple indices of model fit were assessed as recommended by Kline (2005), Boomsma (2000), and Byrne (2001). These included the root-mean-square error of approximation (RMSEA; Steiger, 1990), the standardized root-mean-square residual (SRMR; Hu & Bentler, 1999), the comparative fit index (CFI; Bentler, 1990), and the Tucker-Lewis index (TLI; Bentler & Bonett, 1980). When there is evidence of non-normality in the data, values of .95 or greater for CFI and TLI, .05 or below for RMSEA, and .07 or below for SRMR have been recommended as indicative of good model fit (Yu & Muthén, 2002). Local fit was evaluated by screening for standardized covariance residuals with values greater than 4 (Brown, 2006; Marsh, Hau, & Wen, 2004). Underestimation and overestimation of relationships between two observed variables are reflected by positive and negative

standardized covariance residual values respectively.

Preliminary Analyses

Table 2.1 shows descriptive statistics and correlations between all measured variables, analysed with complex analyses to account for the clustered nature of the data. Analyses found that none of the care assistant demographic variables were related to the provision of autonomy support by care assistants (CAAS). However, there was a significant effect of ethnicity on the provision of relatedness by care assistants (CAR), $F(3, 178) = 5.55, p < .01$, with white care assistants providing higher levels of CAR than Asian care assistants ($\Delta M = .62, SE = .10, p < .01$) and care assistants who defined their ethnicity as 'other' ($\Delta M = .53, SE = .06, p < .001$). Ethnicity was therefore included as a control variable in the analyses of CAR. None of the manager demographic variables were significantly related to either CAAS or CAR.

The descriptive statistics show that, overall, community and affiliation aspirations were very important to care assistants. Care assistants tended to be autonomously motivated to do their work nearly all the time. Care assistants' basic need satisfaction at work (BNS-W) was moderately high. Managers overall had moderately high levels of autonomy support in their management style. Showing relatedness towards care assistants was, on average, very true of the managers. Care assistants overall felt that good provision of both CAAS and CAR was very true of them. As expected, community aspirations and BNS-W were significantly positively correlated with both CAAS and CAR, as was autonomous motivation. Affiliation was not significantly correlated with either CAAS or CAR. Neither manager autonomy support nor manager relatedness towards care assistants were significantly correlated with either CAAS or CAR, raising doubts about the need for multilevel analyses.

Table 2.1

Descriptive statistics and zero-order correlations between care assistant, manager, and dependent variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
<i>Care Assistant variables</i>										
1. Community aspiration	5.79	1.01	-							
2. Affiliation aspiration	5.75	1.38	.28**	-						
3. BNS-W	5.13	0.78	.09	.06	-					
4. Autonomous motivation	3.60	0.48	.44***	.07	.25*	-				
<i>Manager variables</i>										
5. Manager autonomy support	5.85	3.03	-.15	-.10	.09	-.10	-			
6. Manager relatedness	5.82	0.58	-.19**	-.08	-.08	-.14	.27	-		
<i>Dependent variables</i>										
7. CAAS	6.22	0.83	.31***	.03	.43***	.36**	.10	-.06	-	
7. CAR	6.09	0.82	.45***	.16	.44***	.43***	.01	.03	.59***	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$; BNS-W (Basic Need Satisfaction at Work); CAAS (Care Assistant provision of Autonomy Support); CAR (Care Assistant provision of Relatedness).

Multilevel Analyses

Table 2.2 records individual managers' scores for autonomy support and relatedness shown towards care assistants, as well as key demographic variables. It should be noted that only one of the managers had a negative score for autonomy support and none of the managers scored less than 4.5 for relatedness towards care assistants. This indicates that the managers who participated in the study perceived themselves to be moderately to highly autonomy supportive, and all reported high levels of relatedness towards care assistants. Additionally, nearly all of the managers were white and female, and the majority (76.3%) had obtained A-level qualifications or higher education qualifications.

Intraclass correlation (ICC) and design effect (DEFF), which is a function of the size of ICC and the average cluster size, were considered for all variables in order to determine whether or not non-independence of observations needed to be accounted for (B. O. Muthén & Satorra, 1995; L. K. Muthén, 1999, 2007). The null model was used to calculate ICC values for all variables: CAAS $\rho = 0.09$, CAR $\rho = 0.06$, community aspirations $\rho = 0.09$, affiliation aspirations $\rho = 0.00$, BNS-W $\rho = 0.12$, and autonomous motivation $\rho = 0.09$. ICC values below 0.10 are considered low and indicate relatively small between-cluster variance, suggesting that between-nursing home variations were small for all variables (Hox & Maas, 2001; Maas & Hox, n.d.). DEFF was calculated with the equation $1 + (\text{average cluster size} - 1) * \text{ICC}$, with values greater than 2 indicating that clustering needs to be accounted for (M. Cole, 2007; Maas & Hox, 2005; L. K. Muthén, 1999). The DEFF values for each variable were as follows: CAAS = 1.34, CAR = 1.25, community aspirations = 1.34, affiliation aspirations = 1.01, BNS-W = 1.56, and autonomous motivation = 1.36.

Table 2.2

Demographic details of managers and values for managerial autonomy support and relatedness for individual nursing homes

Nursing Home ID	Autonomy support	Relatedness	Age	Time as Manager	Time in Current Role	Gender	Ethnicity	Education Level
1	4.38	6.75	41-50 yrs	> 20 yrs	3-5 yrs	Female	White	Higher education
2	11.00	6.00	41-50 yrs	11-20 yrs	3-5 yrs	Female	White	Higher education
3	5.13	5.42	51-60 yrs	6-10 yrs	1-2 yrs	Female	White	O-levels or GCSEs
4	5.38	4.92	51-60 yrs	11-20 yrs	3-5 yrs	Female	White	NVQs
5	6.25	6.08	41-50 yrs	6-10 yrs	< 1 yr	Female	White	A-levels
6	4.75	5.58	51-60 yrs	> 20 yrs	1-2 yrs	Female	White	Higher education
7	2.63	4.58	51-60 yrs	> 20 yrs	> 20 yrs	Female	White	O-levels or GCSEs
8	5.25	5.92	41-50 yrs	1-2 yrs	1-2 yrs	Female	White	Higher education
9	8.00	6.25	51-60 yrs	3-5 yrs	3-5 yrs	Female	White	A-levels
10	4.13	5.67	41-50 yrs	< 1 yr	< 1 yr	Female	White	A-levels
11	3.25	6.42	41-50 yrs	3-5 yrs	3-5 yrs	Female	White	Higher education
12	8.13	6.33	41-50 yrs	1-2 yrs	1-2 yrs	Female	White	Higher education

13	6.00	6.08	51-60 yrs	6-10 yrs	6-10 yrs	Female	White	Higher education
14	5.27	5.10	51-60 yrs	6-10 yrs	6-10 yrs	Female	White	NVQs
15	.75	6.25	51-60 yrs	> 20 yrs	> 20 yrs	Male	Black	Higher education
16	2.88	5.33	-	3-5 yrs	3-5 yrs	Female	White	O-levels or GCSEs
17	6.45	5.67	41-50 yrs	3-5 yrs	3-5 yrs	Female	White	O-levels or GCSEs
18	9.67	-	51-60 yrs	3-5 yrs	3-5 yrs	Female	White	Higher education
19	3.25	6.00	51-60 yrs	6-10 yrs	< 1 yr	Female	White	NVQs
20	4.25	5.58	41-50 yrs	6-10 yrs	6-10 yrs	Female	White	Higher education
21	7.75	6.00	41-50 yrs	11-20 yrs	11-20 yrs	Female	White	A-levels
22	4.38	6.50	51-60 yrs	> 20 yrs	1-2 yrs	Female	White	Higher education
23	2.63	5.42	31-40 yrs	1-2 yrs	1-2 yrs	Female	Other	Higher education
24	8.38	4.42	41-50 yrs	11-20 yrs	3-5 yrs	Female	White	Higher education
25	8.13	5.67	51-60 yrs	11-20 yrs	3-5 yrs	Female	White	A-levels
26	10.00	5.75	51-60 yrs	1-2 yrs	1-2 yrs	Female	White	Higher education
27	3.25	5.58	41-50 yrs	-	3-5 yrs	Female	White	A-levels

28	4.38	6.25	41-50 yrs	> 20 yrs	11-20 yrs	Female	White	Higher education
29	7.38	6.67	41-50 yrs	6-10 yrs	6-10 yrs	Female	White	NVQs
30	-2.00	5.75	60-65 yrs	11-20 yrs	11-20 yrs	Female	White	Higher education
31	2.50	5.50	41-50 yrs	6-10 yrs	6-10 yrs	Female	White	Higher education
32	8.75	6.33	60-65 yrs	11-20 yrs	3-5 yrs	Female	White	Higher education
33	7.75	4.92	-	-	-	Female	White	O-levels or GCSEs
34	9.38	5.83	51-60 yrs	6-10 yrs	3-5 yrs	Female	White	A-levels
35	10.25	6.50	41-50 yrs	11-20 yrs	11-20 yrs	Female	White	Higher education
36	11.13	6.75	41-50 yrs	> 20 yrs	> 20 yrs	Female	White	Higher education
37	-	5.92	60-65 yrs	> 20 yrs	1-2 yrs	Female	White	Higher education
38	5.50	5.25	51-60 yrs	11-20 yrs	11-20 yrs	Female	White	Higher education
Overall Mean (SD)	5.85 (3.03)	5.82 (0.58)	51.25 (6.44)	12.00 (8.35)	6.72 (6.38)	-	-	-

Given the low ICC and DEFF values, and considering the lack of significant relationships between the manager variables and the dependent variables, multilevel analyses that would accurately estimate both cluster-level and individual level parameters were deemed unnecessary for this data. It is possible that the rather homogenous sample may account for the lack of between-nursing home variations. However, due to the clustered design of the study, recommendations were followed to carry out complex analyses that accounted for non-independence of observations (B. O. Muthén, 2015).

Care Assistant Provision of Autonomy Support (CAAS)

The data were examined for relationships between aspirations, BNS-W, motivation, and CAAS. When analyses are conducted that account for non-independence of observations, it is highly recommended that the number of parameters does not exceed the number of clusters (L. K. Muthén, 2008). Furthermore, modelling variables as latent constructs enables parameter estimates between variables to be estimated without measurement error (Brown, 2006; Kline, 2005). In order to achieve both, two steps were taken. First, the manager variables were excluded from further analyses as they were not significantly correlated to CAAS. Second, having verified the unidimensional structure of the variables using confirmatory factor analyses (CFAs) (Bagozzi & Heatherton, 1994; Bandalos & Finney, 2001), item parcels were created using the item to construct balance proposed by Little et al. (2002).

Kline (2005) states that latent variables indicated by two item parcels is acceptable, but three or more parcels is advisable. Balancing the need for fewer parameters than clusters with an optimal number of item parcels that produced a stable solution was achieved as follows. Each aspirations variable was indicated by two item

parcels. Basic need satisfaction at work was indicated by the observed scores for autonomy, competence, and relatedness. Autonomous motivation was indicated by three item parcels. CAAS was indicated by two item parcels.

Following the recommendation of Cole and Maxwell (2003), the measurement model was first examined before proceeding to test the hypothesised structural relations. Fit of a measurement model, comprising unanalysed covariances between community aspirations, affiliation aspirations, BNS-W, autonomous motivation, and CAAS was inspected. Affiliation was not significantly related to CAAS and so was dropped from the analyses. The resulting measurement model had excellent global fit, $\chi^2_{YB} (29) = 37.49, ns$, CFI = .99, TLI = .98, RMSEA = .04, SRMR = .05. The standardised factor loadings were all significant ($p < .001$) and ranged in magnitude from .64 to .88 (mean $\lambda = .80$). Local fit was also good, with no standardised covariance residuals greater than 4. The ratio of cases to parameters was 5.36:1, exceeding the recommended minimum ratio (Bentler & Chou, 1987). Justification for proceeding to test the hypothesised structural relations was thus obtained.

A structural model predicting CAAS with BNS-W and autonomous motivation as proposed mediators showed excellent model fit, $\chi^2_{YB} (29) = 37.49, ns$, CFI = .99, TLI = .98, RMSEA = .04, SRMR = .05. This model is shown in Figure 2.2. CAAS was positively predicted by community aspirations ($\beta = .20, SE = .09, p < .05$) and BNS-W ($\beta = .38, SE = .09, p < .001$). However, the relationship between autonomous motivation and CAAS was non-significant ($\beta = .16, SE = .16, ns$). BNS-W was not significantly predicted by community aspirations ($\beta = .11, SE = .12, ns$). Autonomous motivation was significantly positively predicted by both BNS-W ($\beta = .23, SE = .09, p < .01$) and community aspirations ($\beta = .43, SE = .10, p < .001$).

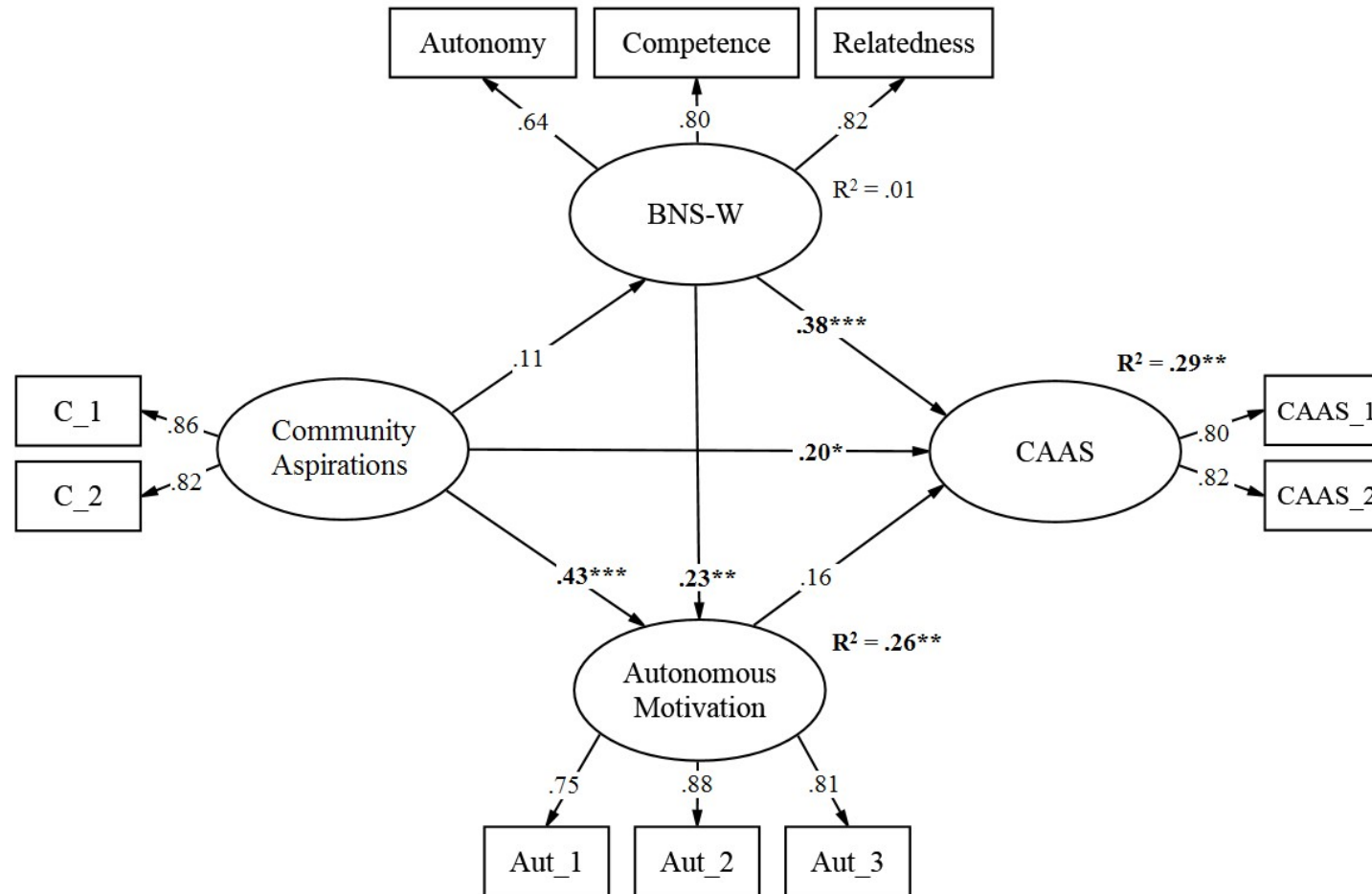


Figure 2.2. Structural equation model with standardised parameter estimates examining the structural relations between community aspirations, BNS-W, autonomous motivation, and CAAS. Note: * $p < .05$, ** $p < .01$, *** $p < .001$; BNS-W (Basic Need Satisfaction at Work); CAAS (Care Assistant provision of Autonomy Support).

None of the hypothesised indirect effects were significant. In total, the model explained 29% of the variance in CAAS. In addition, 26% of the variance in autonomous motivation was explained.²

Care Assistant Provision of Relatedness (CAR)

The data were examined for relationships between aspirations, BNS-W, motivation, and CAR. The measurement model was first examined before proceeding to test the hypothesised structural relations. In order to ensure that the number of parameters did not exceed the number of clusters and measurement error was accounted for, manager variables were again excluded from the analyses as they were not significantly related to CAR. Item parcels were created using the item to construct balance (T. D. Little et al., 2002). Each aspirations variable was indicated by two item parcels. Basic need satisfaction at work was indicated by the observed scores for autonomy, competence, and relatedness. Autonomous motivation was indicated by two item parcels. CAR was indicated by two item parcels.

Affiliation was not significantly related to CAR and so was dropped from the analyses. The resulting measurement model had excellent global fit, $\chi^2_{\text{YB}}(26) = 26.55$, *ns*, CFI = .99, TLI = .99, RMSEA = .01, SRMR = .04. The standardised factor loadings were all significant ($p < .001$) and ranged in magnitude from .64 to .95 (mean $\lambda = .83$). Local fit was also good, with no standardised covariance residuals greater than 4. The ratio of cases to parameters was 5.22:1. Justification for proceeding to test the hypothesised structural relations was thus obtained.

² In order to ensure confidence in the results given the large amount of missing data on the BNS-W variable, analyses were replicated only with participants who had received the full questionnaire ($n = 115$). Model fit was excellent, $\chi^2_{\text{YB}}(29) = 39.98$, *ns*, CFI = .98, TLI = .96, RMSEA = .06, SRMR = .05, with no evidence of local misfit. The pattern of results was almost equivalent to those in the full sample. However, the path from community aspirations to CAAS was not significant ($\beta = .10$, $SE = .13$, *ns*).

A structural model predicting CAR with BNS-W and autonomous motivation as proposed mediators showed excellent model fit, $\chi^2_{\text{YB}}(28) = 36.80$, *ns*, CFI = .99, TLI = .98, RMSEA = .04, SRMR = .07. This model is shown in Figure 2.3. CAR was positively predicted by community aspirations ($\beta = .37$, $SE = .12$, $p < .01$) and BNS-W ($\beta = .32$, $SE = .09$, $p < .001$). However, the relationship between autonomous motivation and CAR was non-significant ($\beta = .19$, $SE = .11$, *ns*). BNS-W was not significantly predicted by community aspirations ($\beta = .06$, $SE = .12$, *ns*). Autonomous motivation was significantly positively predicted by both BNS-W ($\beta = .25$, $SE = .08$, $p < .01$) and community aspirations ($\beta = .43$, $SE = .10$, $p < .001$). None of the hypothesised indirect effects were significant. In total, the model explained 41% of the variance in CAR. In addition, 26% of the variance in autonomous motivation was explained.³

Supplementary Analysis

In order to demonstrate explicitly the non-significant effects of managerial autonomy support (MAS) and relatedness (MAR) on the caregiver-level variables an additional analysis was conducted. A measurement model comprising unanalysed covariances between MAS, MAR, community aspirations, BNS-W, autonomous motivation, ethnicity, CAAS and CAR was inspected. The resulting measurement model had good global fit, $\chi^2_{\text{YB}}(46) = 50.65$, *ns*, CFI = .99, TLI = .99, RMSEA = .02, SRMR = .04. The standardised factor loadings were all significant ($p < .001$) and ranged in magnitude from .63 to .96 (mean $\lambda = .82$). Justification for proceeding to test structural relations was thus obtained.

³ Analyses for the CAR structural model were replicated only with participants who had received the full questionnaire ($n = 115$) in order to ensure confidence in the results. Model fit was excellent, $\chi^2_{\text{YB}}(28) = 24.43$, *ns*, CFI = 1.00, TLI = 1.00, RMSEA = .00, SRMR = .06, with no evidence of local misfit. The pattern of significant and non-significant paths was identical to those in the full sample.

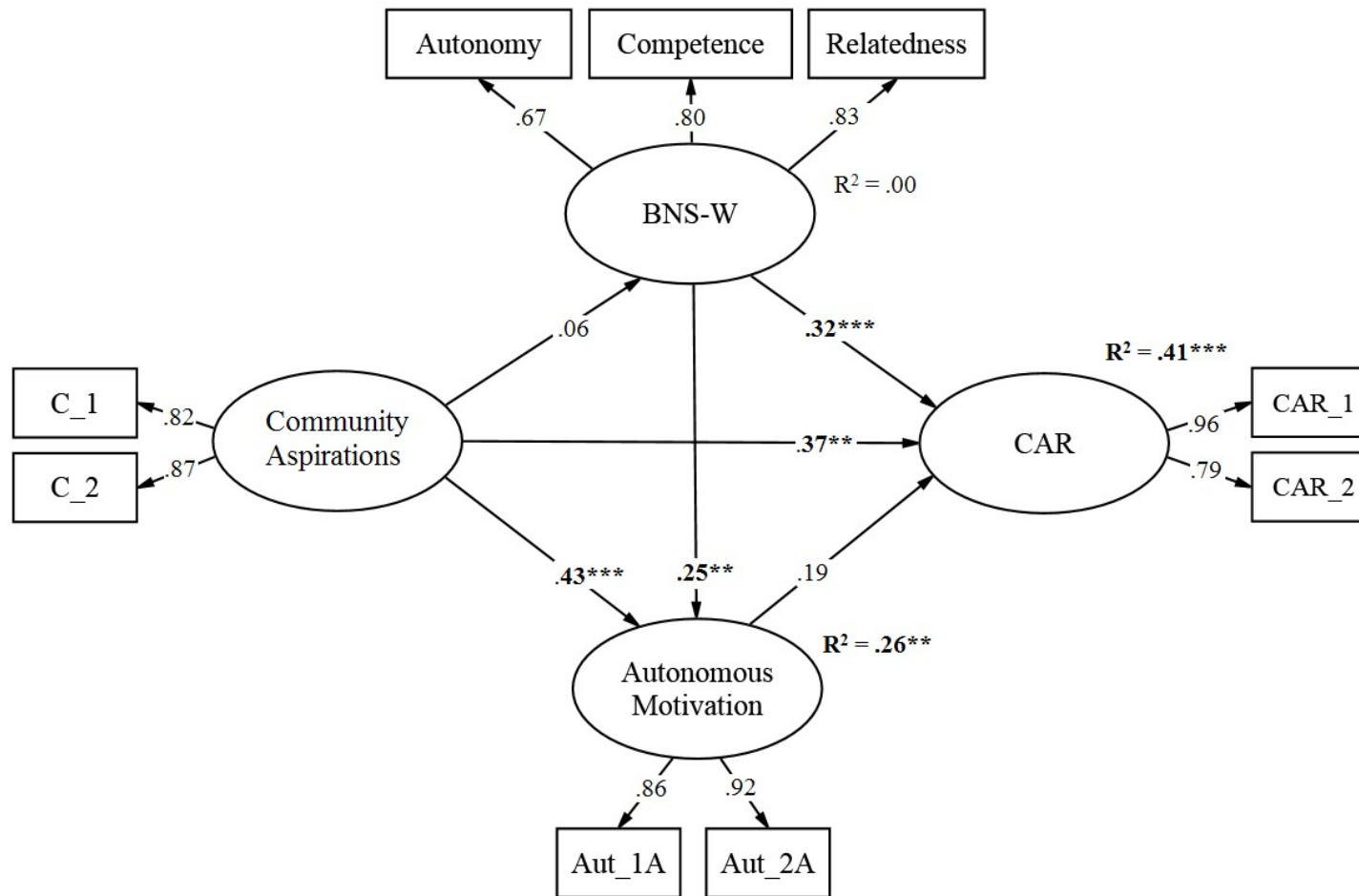


Figure 2.3. Structural equation model with standardised parameter estimates examining the structural relations between community aspirations, BNS-W, autonomous motivation, and CAR. Note: * $p < .05$, ** $p < .01$, *** $p < .001$; BNS-W (Basic Need Satisfaction at Work); CAR (Care Assistant provision of Relatedness).

A structural model with MAS, MAR, and community aspirations predicting both CAAS and CAR, with BNS-W and autonomous motivation as mediators, showed good model fit, $\chi^2_{\text{YB}}(55) = 73.58$, *ns*, CFI = .98, TLI = .96, RMSEA = .04, SRMR = .06. As in previous models, CAAS was positively predicted by community aspirations ($\beta = .27$, $SE = .09$, $p < .01$) and BNS-W ($\beta = .36$, $SE = .09$, $p < .001$). The relationship between autonomous motivation and CAAS was non-significant ($\beta = .15$, $SE = .14$, *ns*). CAR was positively predicted by community aspirations ($\beta = .38$, $SE = .11$, $p < .001$) and BNS-W ($\beta = .37$, $SE = .08$, $p < .001$). The relationship between autonomous motivation and CAR was non-significant ($\beta = .15$, $SE = .11$, *ns*). MAS was a non-significant predictor of CAAS ($\beta = .08$, $SE = .10$, *ns*) and CAR ($\beta = .08$, $SE = .08$, *ns*), as well as community aspirations ($\beta = -.12$, $SE = .10$, *ns*), BNS-W ($\beta = .19$, $SE = .12$, *ns*), and autonomous motivation ($\beta = -.09$, $SE = .10$, *ns*). MAR was a non-significant predictor of CAAS ($\beta = .00$, $SE = .15$, *ns*), BNS-W ($\beta = -.11$, $SE = .13$, *ns*), and autonomous motivation ($\beta = -.01$, $SE = .10$, *ns*). MAR was a significant positive predictor of CAR ($\beta = .15$, $SE = .08$, $p < .05$) and a significant negative predictor of community aspirations ($\beta = -.19$, $SE = .10$, $p < .05$).

However, this structural model had more parameters than clusters, which raises concerns about the reliability of the parameter estimates. In order to address this concern, a sub-component of the model testing significant pathways to CAR only was examined. This created a model with fewer clusters than parameters. A model with CAR predicted by community aspirations, BNS-W, and MAR had adequate model fit, $\chi^2_{\text{YB}}(29) = 56.25$, $p < .01$, CFI = .94, TLI = .91, RMSEA = .07, SRMR = .07. Whilst community aspirations and BNS-W were confirmed as significant positive predictors of CAR ($\beta = .50$, $SE = .11$, $p < .001$ and $\beta = .36$, $SE = .10$, $p < .001$ respectively), MAR was found to be a non-significant predictor of CAR ($\beta = .17$, $SE = .09$, *ns*). MAR

remained a significant negative predictor of community aspirations ($\beta = -.22$, $SE = .10$, $p < .05$).

2.5 Discussion

This study set out to test the key processes identified by SDT in an applied setting. We anticipated using a multilevel design to explore concurrently the effects of managerial need support upon care assistants' intrinsic aspirations, basic need satisfaction at work, autonomous motivation, and the effects of both manager-level and care assistant-level variables on the provision of autonomy and relatedness for elderly nursing home service users. Our hypotheses were partially supported. Both basic need satisfaction at work and community aspirations significantly positively predicted psychosocial caregiving. A significant amount of variance in both relatedness towards residents and autonomy towards residents was explained. In addition, autonomous motivation was positively predicted by both community aspirations and basic need satisfaction, as expected. However, no between nursing home differences were found, and the manager variables were not significantly related to any of the care assistant-level or dependent variables, with the exception of an unexpected negative relationship between manager relatedness and community aspirations. Furthermore, autonomous motivation did not significantly predict psychosocial caregiving.

The findings from this study show that, in terms of the chosen psychosocial caregiving behaviours, care assistants within participating nursing homes were not more alike than care assistants in general. This may suggest that, in nursing home settings, management style has little effect upon care assistants and the care that they provide. However, previous research suggests that this is very unlikely. Studies have shown that management style and organizational climate do have a significant impact on care

assistants' well-being and provision of care. For example, Sheridan et al. (1992) found that ineffective nursing home management, characterized by a laissez-faire attitude and poor human relations, resulted in poorer quality care and less organization commitment and poorer work attitudes among care staff. Tellis-Nayak & Tellis-Nayak (1989) identified a vicious circle of poor management, staff dissatisfaction, and poor quality care. The preliminary analyses from this study indicated that a relatively homogenous sample of nursing homes agreed to participate in the study, despite a large number of diverse homes being contacted. The participating homes were characterized by high levels of managerial autonomy and relatedness support towards care assistants, which is a probable cause of the lack of between nursing home variations.

The strong positive relationship between basic need satisfaction at work and both caregiving variables provides additional support to research carried out in organizational settings linking basic need satisfaction to job performance, job satisfaction, and engagement at work (Baard et al., 2004; Gagné, 2003; Van den Broeck et al., 2008; Vansteenkiste et al., 2007). In addition, the significant role of basic need satisfaction at work in the provision of psychosocial care strongly suggests that supporting care assistants to satisfy their needs for autonomy, competence, and relatedness may enhance their capacity to provide psychosocial care. Previous research would suggest that a need supportive environment within a nursing home is most likely to be fostered by an autonomy supportive management style (e.g., Baard et al., 2004; Van den Broeck et al., 2008; Williams & Deci, 1996) although this was not supported in the current study. It is possible that care assistants also enhance need satisfaction at work through the support of their colleagues. No research has investigated the role of work colleagues and peers upon basic need satisfaction at work. However, Baard

(2004) highlights the role of team-building exercises that, when conducted skilfully, can support employees' need for relatedness.

The positive relationship between community aspirations and care-related behaviours contributes to current research demonstrating the link between intrinsic aspirations and desirable outcomes such as greater well-being (Sheldon, Ryan, Deci, & Kasser, 2004), and positive job outcomes (Vansteenkiste et al., 2007). Furthermore, this finding adds support to research that has found that people working in caregiving professions need to have certain 'caring' qualities in order to perform well in their role (Macleod & Mcpherson, 2007). Community aspirations reflect an individual's endorsement of the importance of helping and supporting wider society and being concerned with the well-being of others in general, values that seem synonymous with caring. However, it is notable that whereas community aspirations significantly predicted psychosocial caregiving, affiliation aspirations, which focus on creating deep and meaningful relationships with others, did not. Thus it seems that good caregivers need to be more concerned with actively helping their wards than with forming close relationships with them.

Three hypothesised relationships informed by previous research were not supported. First, manager need support was not found to predict any caregiver variables, other than an unexpected negative effect of manager relatedness on community aspirations. These findings are not in line with the predictions of SDT, or other research that has found a significant effect of need support on outcome variables of interest. However, a systematic review of research assessing the efficacy of SDT to explain exercise-related behaviours has also found mixed results for the effects of need support, with need support being a non-significant predictor of exercise-related behaviours in several of the studies reviewed (Teixeira, Carraça, Markland, Silva, &

Ryan, 2012). This raises the possibility that need support may not consistently have positive effects in other domains, although further systematic reviews would be required to ascertain this. Second, to our knowledge, no previous research has tested whether intrinsic aspirations predict basic need satisfaction at work. These findings provide preliminary evidence that, within a nursing home setting at least, community and affiliation aspirations are not directly related to need satisfaction at work. This may be because the pursuit of intrinsic aspirations satisfy basic need satisfaction in general, as found in previous research (Niemic et al., 2009), rather than basic need satisfaction within specific domains.

Finally, the results also did not support the hypothesis that autonomous motivation would positively predict psychosocial caregiving. Research has shown that autonomous motivation is positively associated with better performance on more complex tasks, such as conceptual understanding of text material (Benware & Deci, 1984) or deep processing of written material (Vansteenkiste, Simons, Lens, et al., 2004). In contrast, there is some evidence that controlled motivation positively predicts performance on tasks that are not cognitively demanding, such as rote learning (Grolnick & Ryan, 1987). It is possible, then, that psychosocial caregiving is a behaviour which does not require great conceptual understanding or deep processing, and thus cannot be predicted by autonomous motivation. However, autonomous motivation is characterized both by intrinsic interest in or enjoyment of the task at hand, and by identification with the task as being instrumentally important, supporting personal goals and values (Deci & Ryan, 2008a; Ryan & Deci, 2000a). Research has found that an identified style of motivation may have more positive behavioural and psychological outcomes than intrinsic or controlled styles of motivation for tasks that require sustained discipline and determination, such as pursuing further education,

or reflective and informed action, such as voting (Koestner & Losier, 2004). This study explored autonomous motivation as a single construct, indicated by intrinsic and identified items. It is conceivable that psychosocial caregiving is an activity that requires perseverance, reflection, and dedication to achieve in settings that often value productivity and efficiency over caring and compassion (Tellis-Nayak & Tellis-Nayak, 1989). Therefore, it may be an activity that is significantly positively predicted by identified rather than intrinsic self-regulation, a relationship not tested in the current study.

Limitations and Future Directions

The data from this study were correlational and therefore assumptions about causality cannot be drawn. The hypothesized relationships in this study were grounded in both theory and empirical evidence. Nevertheless, intervention and longitudinal studies could confirm, or otherwise, causal relationships. Future studies could also expand upon this study by using objective records or observations of care assistants' psychosocial caregiving behaviours. This would overcome the limitations of self-report measures which assume care assistants' perceptions of the extent to which they exhibit autonomy support and relatedness towards nursing home service users accurately reflects service users' own perceptions.

Autonomous motivation was assessed by adapting a well validated self-regulation measure used in populations with learning difficulties, specifically selected in order to minimize the cognitive load on participants. However, this scale has not been validated for use in a care assistant population. Furthermore, the intrinsic and identified items loaded onto a single factor. Although previous studies have successfully explored the effect of autonomous motivation when measured as a single construct indicated by

intrinsic and identified self-regulation items (Ntoumanis & Standage, 2009; Vansteenkiste, Lens, De Witte, et al., 2004), it would have been useful to explore their separate effects on psychosocial caregiving. In order to establish with greater certainty the relationship between motivation and caregiving, future studies could first seek to improve and fully validate a self-regulation scale for use with care assistants. Subsequently it would be interesting to explore the separate effects of intrinsic and identified self-regulation on psychosocial caregiving, as well as the potential effects of controlled motivation.

This study did not find the expected significant effect of managerial autonomy support and relatedness on these variables. However, the manager sample was very homogenous, with all managers rating themselves as moderately or highly autonomy supportive and high in relatedness towards their staff. Purposive sampling could attempt to target failing and non-failing homes as this might capture a sample with a range of highly autonomy supportive to highly controlling managers, and managers both high and low in relatedness towards care assistants. This could provide more conclusive evidence for the effects of manager-level variables. Research has also highlighted the effect of social support on professional caregivers (Boey, 1998; Chappell & Novak, 1992; Patel, 2008; Revicki & May, 1989). Future studies could therefore explore the role of colleagues and external sources of support, such as family and friends, in relation to caregivers' need satisfaction and community aspirations.

Conclusion

This study sought to explain factors that may predict psychosocial caregiving among professional caregivers by exploring caregiving within the framework of SDT, which no previous research has attempted to date. Contrary to the predictions of SDT, in this study managerial autonomy support and relatedness, and autonomous motivation among caregivers were not found to significantly predict psychosocial caregiving among professional caregivers. This finding is of theoretical interest, highlighting the need for further research to fully ascertain the ability of certain elements of SDT to predict behaviours related to psychosocial caregiving. Nevertheless, in line with the predictions of SDT, community aspirations and basic need satisfaction at work were found to play a significant role in promoting psychosocial caregiving among professional caregivers. This is a novel finding that has not been empirically demonstrated previously. Care assistants who endorse aspirations to help others and better society, and whose needs for autonomy, competence, and relatedness at work are satisfied seem to be more likely to support service users' autonomy, and seek to form positive, connected relationships with them. These findings could inform recruitment practices, encouraging nursing homes to employ people with a strong desire to help others. In addition, it is hoped that these findings will promote reflection and future research into how best to support basic need satisfaction at work among care assistants and other professional caregivers.

**Chapter 3: Paper 2 - Measuring Autonomy, Relatedness, and
Competence Satisfaction: Development and Validation of the
ARC-S Scale**

3.1 Abstract

The Autonomy, Relatedness, and Competence Satisfaction (ARC-S) scale was developed in order to directly capture levels of satisfaction with the basic psychological needs for autonomy, relatedness, and competence rather than perceived levels of the three needs. The ARC-S was tested and validated in a large sample ($N = 888$). Validity, reliability, and measurement invariance of the scale was supported. Furthermore, the results indicate that the ARC-S scale provides a unique, explicit measure of levels of satisfaction with autonomy, relatedness, and competence, which improves on a widely used measure of general need satisfaction (Gagné, 2003). Autonomy, competence, and relatedness satisfaction were positively correlated with well-being and negatively correlated with measures of ill-being, as expected. Competence and relatedness satisfaction emerged as significant predictors of well-/ill-being, demonstrating that the ARC-S is a promising tool for exploration of the separate effects of autonomy, competence, and relatedness need satisfaction.

3.2 Introduction

Self-determination theory (SDT; Deci & Ryan, 1985a, 2000; Ryan & Deci, 2004) proposes that humans have three basic psychological needs for autonomy, relatedness, and competence, the satisfaction or thwarting of which form the “critical linking pin” between the effects of the social environment and optimal functioning and well-being (Ryan & Deci, 2004). Satisfaction of the need for autonomy arises when decisions and actions are enacted from a sense of volition and choice as opposed to being the result of external pressures or coercion (deCharms, 1968; Deci & Ryan, 2000). The psychological need for autonomy is distinct from the cultural ideal of independence and individualism and does not reflect a need to act alone or in isolation (Chirkov et al., 2003). Satisfaction of the need for relatedness results from a sense of connection, experiencing love and care towards and from significant others (Baumeister & Leary, 1995). Satisfaction of the need for competence arises when individuals feel that they can effectively interact with their environment and are capable of achieving their chosen goals and activities (White, 1959).

A wide range of studies provide supporting evidence for the positive consequences of satisfaction of the basic psychological needs. They have been positively related to well-being in general (Reis et al., 2000; Sheldon et al., 1996) as well as well-being within the specific domains of sport (Adie et al., 2012), the workplace (Deci et al., 2001), helping (Weinstein & Ryan, 2010), and relationships (La Guardia, Ryan, Couchman, & Deci, 2000). Furthermore, basic psychological need satisfaction has been shown to positively predict desirable behaviours such as volunteering (Gagné, 2003) and positive outcomes including higher teacher-rated school adjustment of children (Ahmad et al., 2013), reduced cortisol levels during dance

performance (Quested et al., 2011), and reduced body image concerns among adolescent girls (Thøgersen-Ntoumani, Ntoumanis, & Nikitaras, 2010).

Basic need satisfaction is thought to have its positive effects because it is viewed as the psychological mechanism through which social environmental factors interact with individual differences to affect well-being and behavioural outcomes (Ryan, 1995; Ryan & Deci, 2000a; Vansteenkiste & Ryan, 2013). SDT suggests that humans are naturally inclined to internalise and integrate their motivation for their actions into their sense of self, resulting in increasingly autonomous motivation, and consequently optimal functioning and well-being. A large number of studies have been carried out demonstrating that autonomous motivation predicts better performance, persistence, and well-being across a number of domains including education, sport, health and work (see Deci & Ryan, 2008a; Gagné & Deci, 2005; Ryan & Deci, 2000a). Need satisfaction is vital to this process of increasing self-determination, being thought to support the internalisation and integration of behavioural self-regulations, which in turn lead to increasingly autonomous motivation (Ryan & Deci, 2000a).

The extent to which an environment supports satisfaction of each of the three needs has been examined through the study of autonomy support. Autonomy supportive environments are those which foster and satisfy the basic psychological needs through the provision of choice, minimising control and pressure, acknowledging feelings, and providing meaningful rationales for engaging in activities (Reeve & Jang, 2006). Despite its name, autonomy support is seen to reflect environments that support satisfaction of all three basic psychological needs, not only autonomy (Ntoumanis & Standage, 2009; Ryan & Deci, 2000a). There is strong evidence that autonomy support from teachers, coaches, parents, and employers positively predicts basic need satisfaction in general and within specific domains such as sport, schools, work

performance, and prosocial behaviour (Adie et al., 2012; Baard et al., 2004; Coatsworth & Conroy, 2009; Gagné, 2003; Grolnick & Ryan, 1989).

Whilst an impressive body of research has provided support for the importance of basic need satisfaction in relation to positive outcomes, many studies explore need satisfaction as a single construct (Gagné, 2003; Rowe, Walker, Britton, & Hirsch, 2013; Schlegel, Hicks, Arndt, & King, 2009). SDT proposes that optimal growth and well-being will arise if all three needs are satisfied (Deci & Ryan, 2000; Ryan, 1995; Ryan & Deci, 2000a). However, evidence suggests that satisfaction of each separate need can have separate and distinguishable effects, and different strengths of effect, on a variety of different outcomes. For example, autonomy and relatedness have been shown to have a stronger effect on well-being among helpers than has competence (Weinstein & Ryan, 2010, Study 2). Competence has been found to be more strongly correlated with prosocial behaviour than have autonomy or relatedness (Gagné, 2003, Study 1). Furthermore, competence was found to predict meaning in life more strongly than were relatedness or autonomy, with the latter being a non-significant predictor (Hicks, Trent, Davis, & King, 2012, Study 1). Given the significant role of autonomous motivation in relation to adaptive and desirable outcomes, it is important to note that satisfaction of autonomy, competence, and relatedness have also been shown to have separable effects on levels of autonomous and controlled motivation. Markland and Tobin (2010) found that supporting relatedness but not autonomy resulted in being motivated to exercise by internal pressures such as guilt and contingent self-esteem, reflecting controlled motivation. When autonomy, competence, and relatedness were supported, participants were motivated to exercise in order to achieve personally rewarding outcomes. When autonomy and competence were supported, participants were motivated to exercise

because of the inherent enjoyment, interest, and challenges provided by exercise. These latter two forms of motivation reflect autonomous motivation styles.

Measuring Autonomy, Relatedness, and Competence Satisfaction

Construct validity of existing measures. There is a substantial amount of evidence pointing towards the importance of studying not only the effects of overall need satisfaction but also the effects of autonomy, competence, and relatedness satisfaction separately. However, a reliable and well validated scale that measures general autonomy, competence, and relatedness satisfaction as three separate constructs does not currently exist. The Basic Need Satisfaction in General (BNS-G; Gagné, 2003) scale has been used in several studies, all of which have cited the good reliability of the scale as evidence of its validity (e.g., Gagné, 2003; Kashdan, Julian, Merritt, & Uswatte, 2006; Rowe et al., 2013; Schlegel et al., 2009). However, reliability is a necessary but not sufficient requirement for validity (Kline, 2005). Construct validity can be examined by assessing whether the factor structure of the scale aligns with the proposed structure of the construct. Johnston and Finney (2010) explored the validity of measuring ‘basic need satisfaction in general’ as a single construct, indicated by the original 21-item scale. They highlighted severe global misfit, redundant items, and problems with local fit. They found that model fit was much improved with a three factor structure modelling autonomy, relatedness, and competence separately, elimination of five items, and by accounting for a negative method effect. However, areas of local misfit remained, the factors were indicated by unequal numbers of items, and no negatively-worded autonomy items were retained.

Since the completion of the current study, Sheldon and Hilpert (2012) have published the Balanced Measure of Psychological Needs (BMPN) scale. The 18-item BMPN was rigorously developed, with items being pilot-tested by Sheldon and Gunz

(2009) prior to being tested for construct validity. Sheldon and Hilpert (2012) propose a five factor BMPN model. The model differentiates general autonomy, relatedness, and competence, each need being indicated by *both* satisfaction and dissatisfaction items. In addition, the model differentiates overall need satisfaction, indicated by the autonomy, relatedness, and competence satisfaction items, and overall need dissatisfaction, indicated by the autonomy, relatedness, and competence dissatisfaction items. However, Sheldon and Hilpert's analyses did not investigate the validity of using BMPN items to differentiate between autonomy satisfaction, competence satisfaction, and relatedness satisfaction as separate constructs in contrast to autonomy dissatisfaction, relatedness dissatisfaction, and competence dissatisfaction.

Capturing the construct of 'need satisfaction'. In addition to measuring autonomy, relatedness, and competence satisfaction as three separate constructs, construct validity could be further improved by directly capturing satisfaction with each of the three needs. At present, the wording of the basic need satisfaction measures suggests that perceived levels of basic needs are being measured. For example the extent to which a participant agrees or disagrees with the statements, "People in my life care about me" (BNS-G item) or "I felt a sense of contact with people who care for me" (BMPN-item) indicates the perceived *level* of relatedness participants feel they have. But levels of perceived relatedness may not be identical to *satisfaction with* those self-perceived levels, nor have the same relationship with external variables of interest.

Measuring satisfaction with autonomy, relatedness, and competence levels may capture the construct of 'need satisfaction' better. To illustrate, two individuals may perceive that they have moderate levels of autonomy, relatedness, and competence in general. One individual may be highly satisfied with these levels, and therefore obtain all the benefits associated with basic need satisfaction as outlined above. Another

individual might be highly dissatisfied with what they consider to be ‘only’ moderate levels of autonomy, competence, and relatedness, and therefore experience the problems associated with a lack of need satisfaction (or perhaps even need ‘thwarting’; see Vansteenkiste & Ryan, 2013 for an overview). A measure that directly assesses the degree to which people are satisfied with their perceived levels of autonomy, relatedness, and competence could address this issue. It may also have greater predictive power in relation to various external variables of interest than existing measures which do not make this distinction.

Current Study

The purpose of this paper was to develop a reliable and well-validated measure of satisfaction with autonomy, relatedness, and competence as three separate needs in order to be able to explore the separate effects of the satisfaction of each basic need. We aimed to clearly demonstrate through the factor structure of the scale that autonomy, competence, and relatedness are better measured as three separate constructs. In addition, we hoped to capture the extent to which individuals are satisfied with their perceived levels of autonomy, competence, and relatedness, and demonstrate the distinct effects of satisfaction with each need.

We carefully selected 12 items from the BNS-G scale (Gagné, 2003), seeking to create a balanced scale with four items per need. Johnston and Finney’s (2010) final model was a 16-item three factor model accounting for negative method effect, with autonomy indicated by three items, competence by six items, and relatedness by seven items. The 12 items were chosen based on the work of Johnston and Finney, selecting the four items for each need that had the highest factor loadings onto their respective factors. In order to create a balanced scale, the penultimate autonomy item to be removed from Johnston and Finney’s final model was reinstated, a four-item one factor

autonomy model which included this item having shown excellent model fit in Johnston and Finney's paper. In addition, two of the highest loading relatedness items in Johnston and Finney's final model had very similar wording ("I really like the people I interact with," and "I consider the people I regularly interact with to be my friends"). Therefore, the third highest loading item ("I consider the people I regularly interact with to be my friends") was replaced with the fifth highest loading item ("People in my life care about me").

In order to reflect participants' self-perceived *personal satisfaction with* the extent to which their needs for autonomy, relatedness and competence in general were being met, all items were then reworded with the prefix "I am (not) satisfied with..." and the item as a whole reworded to make grammatical sense if necessary. These reworded items form the Autonomy, Relatedness, and Competence Satisfaction (ARC-S) scale (see Appendix J for full scale). The dimensionality and construct validity of the ARC-S scale was tested using confirmatory factor analysis (CFA) as recommended by Kline (2005). The final model was then compared to a model using the original equivalent items from the BNS-G scale. We hypothesised that model fit would be improved when autonomy, relatedness, and competence satisfaction were modelled as separate factors. We also aimed to explore whether a three factor model using ARC-S items would be distinct from a three factor model indicated by equivalent BNS-G items, and whether it would have an improved factor structure, assessed by comparing the model fit of the two scales.

The BNS-G scale and BMPN have only been validated in (mainly psychology) student samples (Johnston & Finney, 2010; Sheldon & Hilpert, 2012). In order to test whether the new scale can be utilised across student and non-student samples, invariance analyses were carried out on the ARC-S scale, splitting the full sample ($N =$

888) into two sub-samples merged by population type: students ($n = 452$) and non-students ($n = 436$). Finally, previous research has verified the relationship between basic need satisfaction and well-being (Niemic et al., 2009; Reis et al., 2000; Sheldon et al., 1996). Therefore, we sought to test the criterion-related validity of the measure by exploring the separate effects of autonomy, relatedness, and competence satisfaction on a measure of well-being (vitality) and two measures of ill-being (anxiety and depression). We hypothesised that autonomy, relatedness, and competence satisfaction, measured using the ARC-S scale, would be positively related to measures of well-being and negatively related to measures of ill-being. In addition, we aimed to investigate autonomy, relatedness, and competence satisfaction indicated by ARC-S items as separate predictors of well-being and ill-being, and explore whether autonomy, relatedness, and competence satisfaction could individually predict unique variance in well-being and ill-being.

3.3 Method

Procedure and Participants

Participants (total $N = 888$, 585 females) were recruited across four separate studies. In samples 1-3 the ARC-S scale and BNS-G scale were administered to participants alongside other measures not used in this study¹. In sample 4 the ARC-S

¹ In samples 1-3, measures in addition to the BNS-G and the ARC-S were administered.

Participants from sample 1 also completed measures of prosocial behaviours (PSBs) in general (Rushton, Chrisjohn, & Fekken, 1981), PSBs at university (Mayfield & Taber, 2010), and social desirability (Reynolds, 1982). The participants in sample 1 in the current paper also form the sample used in Paper 3, Study 1.

In Sample 2 measures of PSBs in general (Rushton et al., 1981), aspirations (T. Kasser & Ryan, 1996), and social desirability (Reynolds, 1982) were also administered. The participants in sample 2 in the current paper also form the sample used in Paper 3, Study 2.

In Sample 3, measures of PSBs in general (Rushton et al., 1981), general causality orientations (Deci & Ryan, 1985b), and social desirability (Reynolds, 1982) were also administered. The participants in sample 3 in the current paper also form the sample used in Paper 3, Study 3.

scale and BNS-G scale were administered alongside the measures of well- and ill-being used in this study. Participants from sample 1 were students recruited from a university-wide participant pool. All participants from sample 1 were given the opportunity to enter a prize draw for £50 and psychology students could also obtain extra credit. Participants from samples 2 and 3 were recruited via Facebook and email ‘snowballing’, with personal contacts of the researcher being sent details of the study and being asked to forward details of the study to their contacts, along with a request to potential participants to forward study details to *their* contacts, and so on. The majority of contacts were not university-based and therefore were largely non-students. They were given the option to enter a prize draw for £25. Participants from sample 4 were psychology students recruited from a university participant pool for extra credit. The different values in prize draw across the studies were due to changes in the university’s ethical procedure.

All participants completed the questionnaire online, having first read an explanatory statement about the study which assured participants that their responses were voluntary and confidential. Contact details obtained in order to award the prize draws were kept separately from questionnaire data to ensure anonymity. Demographic information about participants across the four samples is shown in Table 3.1. Data from all four samples were used to carry out CFAs and tests of measurement invariance for the ARC-S scale. Data from sample 4 alone was used to test autonomy, relatedness, and competence satisfaction as individual predictors of well-being.

Table 3.1

Demographics for participants across the four samples, N = 888

	Sample 1	Sample 2	Sample 3	Sample 4
<i>N</i>	205	220	235	228
Gender				
Female (%)	75	60	55	75
Male (%)	25	40	45	25
Age				
Range (years)	18-62	15-86	23-85	18-51
Mean (years)	21.52	44.38	47.36	20.04
SD (years)	5.78	15.64	14.07	3.88
Occupation				
Full-time work (%)	0	56	52	0
Part-time work (%)	0	13	14	0
Student (%)	100	6	3	100
Housewife/husband (%)	0	3	4	0
Retired (%)	0	3	1	0
Unemployed (%)	0	13	17	0
Other (%)	0	6	9	0
Ethnicity				
White (%)	83	90	93	85
Black (%)	2	1	1	4
Chinese (%)	3	3	2	3
Asian (%)	4	2	1	3
Mixed (%)	6	2	2	5
Other (%)	2	2	1	0
Relationship status				
Single (%)	73	21	14	70
Cohabit (%)	10	12	15	10
Married (%)	2	57	57	1
Divorced (%)	1	6	6	0
Widowed (%)	1	1	3	1
Other (%)	13	3	5	18

Measures: All Samples

Basic need satisfaction in general scale (BNS-G). The BNS-G scale (Gagné, 2003) is a 21-item measure intended to rate satisfaction of the basic psychological needs for autonomy, competence, and relatedness in general. The self-report measure consists

of three subscales. Seven items measure self-perceived levels of general autonomy (e.g., ‘I feel like I am free to decide for myself how to live my life’). Six items measure self-perceived levels of general competence (e.g., ‘Often, I do not feel very competent,’ reversed item). Eight items measure self-perceived levels of relatedness (e.g., ‘I really like the people I interact with’). All items were rated on a seven-point scale (1 = *not at all true*; 7 = *very true*). Reliability is reported in the results section.

Autonomy, relatedness, and competence satisfaction (ARC-S) scale. Based on the work of Johnston and Finney (2010), 12 items selected from the BNS-G scale were reworded to gauge participants’ *personal satisfaction with* their self-perceived levels of autonomy, competence, and relatedness in general (four items per need), as described in the introduction. Example items include, ‘I am satisfied with the amount of freedom I have to decide for myself how to live my life’ (autonomy), ‘I am not satisfied with how competent I am’ (competence, reversed), ‘I am satisfied with how much people around me care about me’ (relatedness). See Appendix J for the full list of items. Participants rated their responses on a seven-point scale where 1 = *Disagree strongly* and 7 = *Agree strongly*. Reliability is reported in the results section.

Measures: Sample 4 Only

Centre for epidemiological studies depression scale (CES-D Scale). The CES-D scale (Radloff, 1977) is a 20-item self-report scale which measures symptoms of depression. Example items include, ‘I had crying spells,’ and ‘I enjoyed life’ (reverse item). Respondents rated items on a four-point scale indicating the amount of time they had felt like this during the past week: 1 (*rarely or none of the time; less than one day*), 2 (*some or a little of the time; 1–2 days*), 3 (*occasionally or a moderate amount of the time; 3–4 days*), and 4 (*most or all of the time; 5–7 days*). The reliability of the scale

in this sample was very good ($\alpha = .89$). Scores were averaged to give a single index of depression.

General health questionnaire (GHQ). Participants completed 14 items from the anxiety/insomnia and somatisation subscales of the GHQ (Goldberg & Hillier, 1979). Respondents were asked to consider their general health over the past few weeks and then answer questions prefaced by the statement, 'Have you recently'. Example items include, 'Been getting scared and panicky for no good reason' (anxiety item) and, 'Been feeling run down and out of sorts' (somatisation item). Responses were rated on a four-point scale (1 = *Not at all*, 2 = *No more than usual*, 3 = *Rather more than usual*, 4 = *Much more than usual*). The reliability of the combined subscales was excellent ($\alpha = .91$). Item scores were averaged to form a single index of anxiety-somatisation.

Vitality scale (Ryan & Frederick, 1997). Individual differences in feelings of being alive and alert, of having energy available, were assessed using the seven-item Vitality Scale. Respondents were asked to read items and rate the statements on a seven-point scale (1 = *not at all true*; 7 = *very true*). Example items include, 'I feel alive and vital,' and, 'I nearly always feel awake and alert.' The reliability for the scale in this sample was very good ($\alpha = .89$). The item scores were averaged to produce a single score for vitality.

3.4 Results

Statistical Analyses

Analyses were carried out using Mplus version 6.0 (L. K. Muthén & Muthén, 1998 - 2010). Results showed that the assumption of multivariate normality was violated. Mardia's coefficient of multivariate kurtosis was 152.59 for the BNS-G items and 97.08 for the ARC-S items. Coefficient values greater than 3.00 indicate non-normality and may lead to biased results (Bentler & Wu, 2002; Finney & DiStefano, 2013). Therefore, maximum likelihood parameter estimates with standard errors and a mean-adjusted chi-square statistic (also known as the Satorra-Bentler chi-square) robust to non-normality were estimated using the MLM estimator.

Assessment of model fit. The recommendations to evaluate model fit made by Johnston and Finney (2010) were followed. Model fit was assessed using the following global fit indices: the Satorra-Bentler scaled chi-square statistic (χ^2_{SB}), the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA) and the standardised root mean square residual (SRMR). The CFI, TLI, RMSEA, and SRMR were selected because they have been demonstrated to be less sensitive to sample size than the χ^2 statistic, to be the most sensitive indices to models with misspecified factor correlations and misspecified factor loadings, and to operate effectively in conjunction with maximum likelihood estimation (Brown, 2006; Hu & Bentler, 1998, 1999).

When the distribution of the data being modelled is non-normal, guidelines have suggested the following cut-off values as indicative of good model fit: .95 or greater for CFI and TLI, .05 or below for RMSEA and .07 or below for SRMR (Yu & Muthén, 2002). However, older criteria state that CFI and TLI values of .90 or greater (Bentler, 1990) and RMSEA and SRMR values of .08 or smaller (Browne & Cudeck,

1992; Hu & Bentler, 1999) indicate good model fit. Therefore, we followed the recommendation that the older criteria can serve as a lower bound and the newer criteria as an upper bound, representing adequate and good model fit respectively (Marsh et al., 2004).

3.4.1 Phase One of Analysis: Construct Validity

Confirmatory factor analysis of the ARC-S scale. CFA can be used to test the construct validity of a measure (i.e., testing whether scores measure the hypothetical construct(s) they are believed to measure, Kline, 2005). In order to establish whether the autonomy, relatedness, and competence satisfaction items reflect a single construct of ‘need satisfaction’ or three separate constructs, two CFAs were carried out. First, a 12-item CFA of the ARC-S items tested the model fit of ‘basic need satisfaction’ as a single factor indicated by all 12 items. Model fit was poor, supporting the need for a multifactor model, $\chi^2_{SB} (54) = 480.90, p = .001, CFI = .86, TLI = .83, RMSEA = .09, SRMR = .06$. A 12-item, 3 factor (autonomy satisfaction, competence satisfaction, and relatedness satisfaction) model of the scale was subsequently tested. Model fit was good, $\chi^2_{SB} (51) = 172.94, p = .001, CFI = .96, TLI = .95, RMSEA = .05, SRMR = .04$. However, item 11 (autonomy-reversed) had a relatively low standardised factor loading (.35). Item 11 was removed from the model (see Figure 3.1 for final model), resulting in much improved model fit, $\chi^2_{SB} (41) = 91.73, p < .001, CFI = .98, TLI = .98, RMSEA = .04, SRMR = .03$.

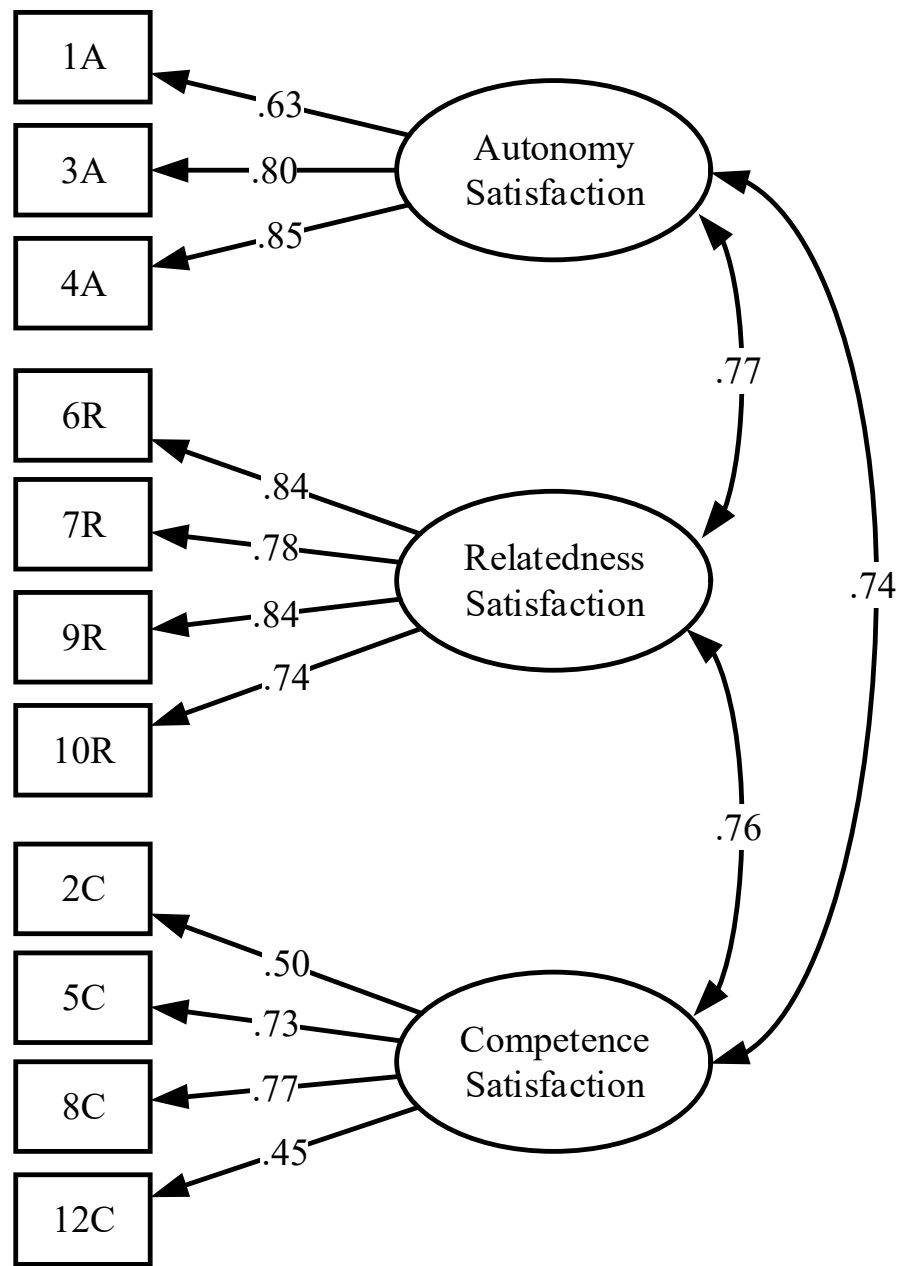


Figure 3.1. Eleven-item, three factor model of the ARC-S scale with standardised parameter estimates (all significant at $p < .001$).

Convergent validity is demonstrated when items specified to indicate a common underlying factor have statistically significant and relatively high standardised factor loadings, ideally greater than .60, on that factor, (Kline, 2005). The factor loadings of the autonomy, relatedness and competence satisfaction items on their respective factors were all significant at $p < .001$ and ranged in magnitude from .45 to .85 (standardized values; mean λ for autonomy = .75, for competence = .61, for relatedness = .80). Kline (2005) suggests that correlation values smaller than .85 between factors indicates discriminant validity between the factors. Correlations between the three factors were significant ($p < .001$) and ranged from .74 to .76. In addition, the reliabilities of the autonomy, competence, and relatedness subscales were very good (α s = .79, .72 and .85 respectively, see Table 3.2).

Table 3.2

Subscale correlations and reliabilities for the BNS-G and ARC-S models, samples 1-4, $N = 888$

	BNS-G Model			ARC-S Model		
	Aut	Comp	Rel	Aut	Comp	Rel
Autonomy	-			-		
Competence	.72	-		.74	-	
Relatedness	.79	.69	-	.77	.76	-
Reliability	.65	.62	.78	.79	.72	.85

Note: all $ps < .001$

Scale comparison. A CFA was carried out using the original 11 items from the BNS-G scale that were subsequently reworded to form the ARC-S scale. A BNS-G model with a single factor for ‘basic need satisfaction’ had poor model fit, $\chi^2_{SB}(44) =$

279.13, $p < .001$, CFI = .87, TLI = .84, RMSEA = .08, SRMR = .05. The three factor BNS-G model had adequate fit according to the lower bounds of model fit, $\chi^2_{SB}(41) = 160.20$, $p < .001$, CFI = .94, TLI = .91, RMSEA = .06, SRMR = .04. All factor loadings were significant at $p < .001$ and ranged in value from .41 to .73 (standardised values; mean λ for autonomy = .62, for competence = .56, for relatedness = .69). Correlations between the three factors were significant ($p < .001$) ranging from .69 to .79 in value. The reliabilities of the autonomy, competence and relatedness subscales were adequate (α s = .65, .62 and .78 respectively).

A detailed comparison between the models can be seen in Table 3.3. The three-factor ARC-S model had excellent model fit, compared to the adequate model fit of the equivalent BNS-G model. A cross comparison of the equivalent items in each model shows that all but one of the ARC-S items had higher standardised factor loadings than the equivalent BNS-G items. The reliabilities for the ARC-S subscales of autonomy, relatedness, and competence were also higher than those of the BNS-G subscales (see Table 3.2). These results provide strong evidence of the improved validity and reliability of the ARC-S scale in relation to the BNS-G scale.

Table 3.3

Comparison of fit indices, standardised factor loadings using samples 1-4, N = 888

	BNS-G Model		ARC-S Model	
	Single factor model	Three factor model	Single factor model (12-item)	Three factor model
<i>Model fit Indices</i>				
χ^2_{SB}	279.13	160.20	480.90	91.73
<i>df</i>	44	41	54	41
CFI	.87	.94	.86	.98
TLI	.84	.91	.83	.98
RMSEA	.08	.06	.09	.04
SRMR	.05	.04	.06	.03
<i>Standardised factor loadings</i>				
<i>Item number</i>				
1	-	.58	-	.63
3	-	.64	-	.80
4	-	.64	-	.85
Autonomy λ		.62		.75
6	-	.73	-	.84
7	-	.68	-	.78
9	-	.65	-	.84
10	-	.70	-	.74
Relatedness λ		.69		.80
2	-	.55	-	.50
5	-	.52	-	.73
8	-	.75	-	.77
12	-	.41	-	.45
Competence λ		.56		.61

Note: all *ps* were < .001.

Assessment of satisfaction with needs (ARC-S scale) and perceived levels of needs (BNS-G scale) as separate constructs. In order to test whether the ARC-S scale measures distinct constructs, here called autonomy, relatedness, and competence satisfaction, to the BNS-G scale, which this study argues measures perceived levels of autonomy, relatedness, and competence, two further models were fitted to the data. First, a three factor model was fitted with autonomy, relatedness, and competence modelled as separate factors with each factor indicated by both ARC-S *and* by BNS-G

items. The model fit was adequate, $\chi^2_{SB} (195) = 630.39, p < .001$, CFI = .94, TLI = .92, RMSEA = .05, SRMR = .04.

Next, a six-factor model was fitted, with autonomy, relatedness, and competence satisfaction indicated by their respective ARC-S items and perceived levels of autonomy, relatedness, and competence indicated by their respective BNS-G items. Model fit was good, $\chi^2_{SB} (183) = 401.62, p < .001$, CFI = .97, TLI = .96, RMSEA = .04, SRMR = .04. The Satorra-Bentler scaled chi-square statistic cannot be used for normal chi-square difference testing of nested models. Therefore chi-square difference testing of the Satorra-Bentler chi-square was calculated by hand (see L. K. Muthén & Muthén, 2005; Satorra, 2000; Satorra & Bentler, 2001 for details of the calculation). The model fit was significantly improved, evidenced by a significant Satorra-Bentler scaled chi-square difference test between the nested models ($\Delta\chi^2_{SB} (12) = 208.01, p < .001$). However, the intercorrelations between the corresponding ARC-S and BNS-G factors were high (r s between .87 and .95). These results suggest that the ARC-S scale and the BNS-G scale may in fact both measure levels of satisfaction with autonomy, relatedness, and competence, with the ARC-S scale having better validity and reliability.

3.4.2 Phase Two: Measurement Invariance of the ARC-S scale

Having established the best fitting model for the ARC-S scale, this model was tested for invariance across student and non-student populations (Byrne, Shavelson, & Muthén, 1989). The full sample ($N = 888$) was split and merged by population type into students ($n = 452$) and non-students ($n = 436$). The steps recommended by van de Schoot, Lugtig and Hox (2012) were followed, applying increasingly strict constraints on a series of nested models. Chi-square difference tests were carried out between the

nested models, non-significant results being indicative of invariance. However, chi-square testing is sensitive to sample size, with larger samples being more likely to result in significant results (Brannick, 1995; Kelloway, 1995), so changes in model fit indices were also examined. Cheung & Rensvold (2002) state that changes of less than .01 are indicative of invariance. Chen (2007) recommends that for a sample larger than 300, changes in $CFI \leq .01$, in $RMSEA \leq .015$ (all levels of invariance), and in $SRMR \leq .03$ (metric invariance) and $SRMR \leq .01$ (residual invariance) are indicative of invariance. Furthermore, each nested model was also examined for global fit. A constrained model with good model fit is preferable to the unconstrained model because it is more parsimonious. Consequently, invariance can be inferred when a nested model has good model fit (Davidov, Schmidt, & Schwartz, 2008; T. D. Little, Card, Slegers, & Ledford, 2007). Table 3.4 shows the Satorra-Bentler scaled chi-square difference tests ($\Delta\chi^2_{SB}$) with associated degrees of freedom and model fit indices for the nested models.

First, configural invariance was tested, which requires that the number of factors and pattern of loadings of indicators on factors is the same across groups. Thus, model fit of the CFA model was examined for each sample separately. The eleven-item three factor model was tested in both samples and model fit was good for both the student sample ($\chi^2_{SB} (41) = 55.82, p < .001, CFI = .97, TLI = .95, RMSEA = .05, SRMR = .04$) and the non-student sample ($\chi^2_{SB} (41) = 89.92, p < .001, CFI = .99, TLI = .99, RMSEA = .03, SRMR = .03$).

Having established the baseline model for both samples, a series of hierarchical tests were carried out. In the first step, metric invariance, also known as weak factorial invariance or equal factor loadings was tested to establish whether respondents across the samples attributed the same meaning to the latent constructs. Metric invariance requires that, in addition to configural invariance, the slopes (factor loadings) are

invariant across groups. Therefore, the factor-loadings were held equal across samples, but intercepts were allowed to vary. The change in χ^2_{SB} from the baseline model was significant. However, the CFI, TLI, and RMSEA values changed by less than .01 and the SRMR value changed by less than .03. The model fit remained good (CFI = .97, TLI = .97, RMSEA = .04, SRMR = .06).

In the next step, scalar invariance, also known as strong factorial invariance or equal indicator intercepts was tested. Scalar invariance requires that, in addition to metric invariance, the intercepts are invariant across all groups. Therefore, both factor loadings and intercepts were held equal. The change in χ^2_{SB} from the metric model was significant. The changes in model fit indices were greater than the recommended values, apart from the change in RMSEA (.011). However, model fit remained good (CFI = .95, TLI = .95, RMSEA = .05, SRMR = .09).

Finally, residual invariance, also known as strict factorial invariance or equal indicator error variances, was tested to establish whether the latent constructs were measured identically across the samples. Residual invariance requires that the indicators' error variances are equal across groups. Therefore, residual variances (error variances) were held equal across the samples. The change in χ^2_{SB} from the scalar model was significant. However, none of the changes in model fit were greater than the recommended values, apart from SRMR (.011), and model fit remained adequate (CFI = .94, TLI = .94, RMSEA = .06, SRMR = .10).

The results provide strong support for metric invariance of the ARC-S scale, demonstrated by insubstantial changes in model fit indices and good model fit of the metric model. Scalar and residual invariance were supported by the good model fit of the scalar and residual models.

Table 3.4

Measurement invariance statistics for the eleven-item, three factor ARC-S model using samples 1-4, N = 888, merged by population type in students (n = 452) and non-students (n = 436)

Model	Ref model	χ^2_{SB}	df	Scaling	cd	$\Delta\chi^2_{SB}$	Δdf	CFI (ΔCFI)	TLI (ΔTLI)	RMSEA ($\Delta RMSEA$)	SRMR ($\Delta SRMR$)
Student	-	55.82	41		-	-	-	.97	.95	.05	.04
General public	-	89.92	41	-	-	-	-	.99	.99	.03	.03
Baseline	-	144.28	82	1.614	-	-	-	.977	.970	.041	.033
Metric	Baseline	167.78	93	1.597	1.47	23.85*	11	.973 (.003)	.968 (.002)	.043 (.002)	.057 (.024)
Scalar	Metric	214.11	104	1.533	0.99	60.77***	11	.950 (.027)	.947 (.028)	.054 (.011)	.090 (.033)
Residual	Scalar	278.83	115	1.588	2.11	54.34***	11	.940 (.010)	.943 (.003)	.057 (.003)	.101 (.011)

Note: * $p < .05$ *** $p < .001$

3.4.3 Phase Three: Well-being Analyses

In order to test the criterion-related validity of the ARC-S scale, relationships between autonomy, relatedness, and competence satisfaction and well-being and ill-being were explored. Correlational analyses between autonomy, relatedness, and competence satisfaction and the indicators of well-being and ill-being can be found in Table 3.5. As expected, relatedness, and competence satisfaction were significantly positively associated with vitality and negatively associated with indicators of ill-being. Autonomy satisfaction was significantly positively related to vitality and negatively related to depression, but was not significantly related to anxiety-somatisation.

Table 3.5

Zero-order correlations between autonomy, relatedness and competence satisfaction and indicators of well-being and ill-being using sample 4, $n = 228$

	Autonomy	Competence	Relatedness
Depression	-.33***	-.47***	-.42***
Anxiety-somatisation	-.13	-.25**	-.17*
Vitality	.24**	.43**	.41***

Note: * $p < .05$, ** $p < .01$ *** $p < .001$.

In order to assess the predictive power of autonomy, relatedness, and competence satisfaction measured with ARC-S items, structural equation modelling was used to test relationships between variables whilst accounting for measurement error. Autonomy, competence, and relatedness satisfaction were modelled as latent variables indicated by their respective items. In order to reduce the number of parameters whilst

still accounting for measurement error, vitality, depression, and anxiety-somatisation were modelled as single indicator factors.¹

Following the recommendations of Cole and Maxwell (2003), a measurement model comprising unanalysed covariances between all variables was first fitted to the data. Model fit was adequate, ($\chi^2_{\text{SB}}(64) = 133.75, p < .001, \text{CFI} = .93, \text{TLI} = .90, \text{RMSEA} = .07, \text{SRMR} = .06$). Justification for proceeding to structural modelling was thus obtained. A path model (see Figure 3.2) where vitality, depression, and anxiety-somatisation were each predicted by autonomy, competence, and relatedness satisfaction was modelled. The model was fully saturated and therefore model fit was identical to the measurement model ($\chi^2_{\text{SB}}(64) = 133.75, p < .001, \text{CFI} = .93, \text{TLI} = .90, \text{RMSEA} = .07, \text{SRMR} = .06$). Vitality was significantly positively predicted by both competence ($\beta = .40, SE = .15, p < .01$) and relatedness satisfaction ($\beta = .33, SE = .14, p < .05$). Depression was significantly negatively predicted by competence satisfaction ($\beta = -.39, SE = .16, p < .05$), as was anxiety-somatisation ($\beta = -.33, SE = .17, p < .05$). Autonomy satisfaction did not significantly predict any of the well-being or ill-being variables.²

¹ In order to model each variable as a single-indicator factor, the following three steps were taken. First, the average of the item scores was used to create observed variables (represented by rectangles in Figure 3.2) for each measure, which were then modelled as single indicators of latent factors. Second, the proportion of each observed variable's variance due to measurement error was calculated (1-reliability estimate i.e., Cronbach's alpha). This value was then multiplied by each observed variable's total variance and the resulting value was fixed as the unstandardized error variance of the indicator. Third, in order for the model to be identified, the path from each factor to its respective observed variable was fixed to the value of one. Thus, latent factors could be modelled, which are free of measurement error. For further information see Kline, 2005, p.229-231.

² It was noted that the valences for the relationships between autonomy and the indicators of well-/ill-being in the path analyses were the reverse of the correlational relationships. This may indicate a suppressor effect. This possibility is explored in detail in Chapter 5.

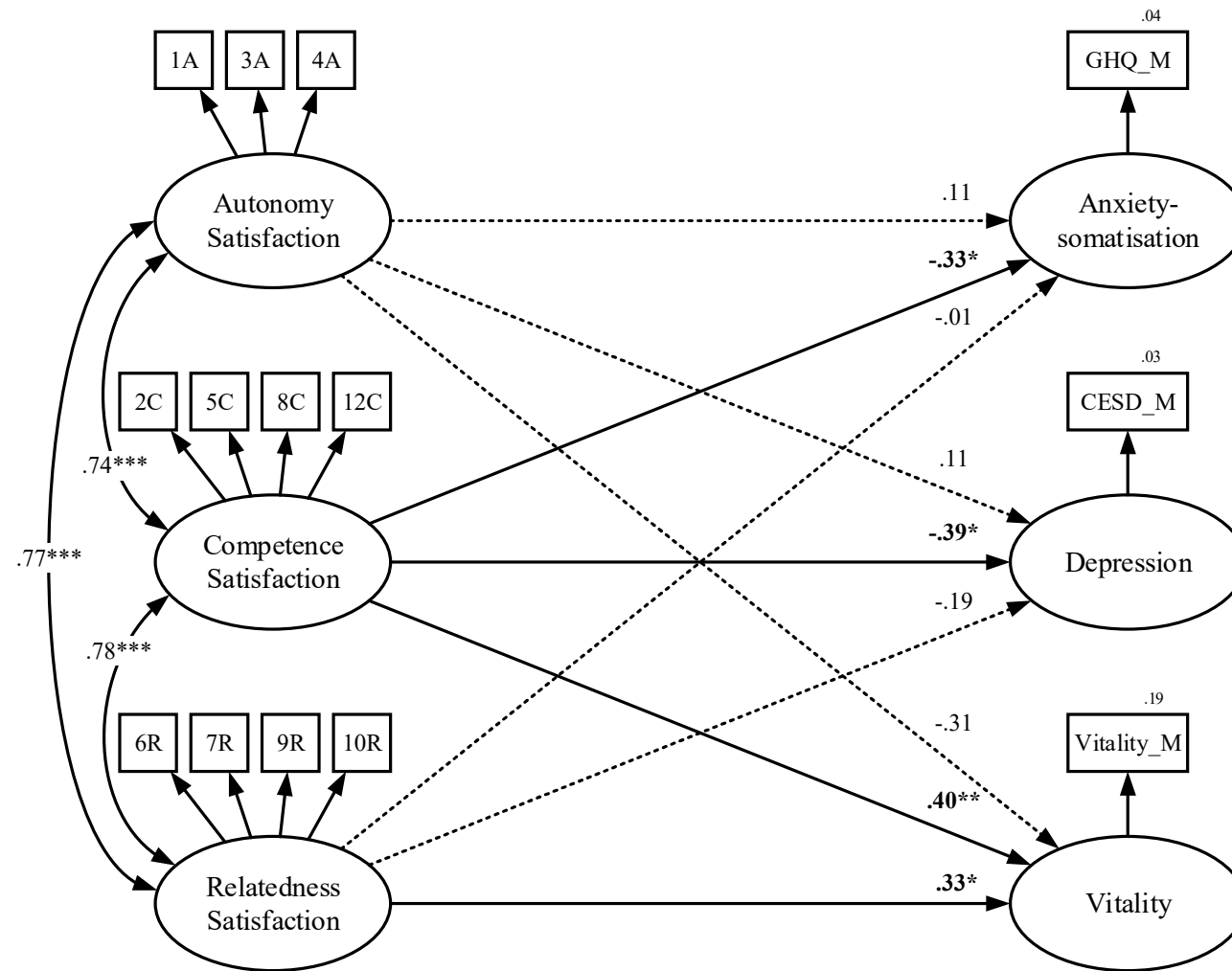


Figure 3.2. Path model with standardised estimates of the relationships between autonomy, relatedness, and competence satisfaction and measures of well-being and ill-being. Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

3.5 Discussion

The purpose of this paper was to create a well-validated and reliable scale that both measured autonomy, relatedness, and competence as three separate constructs and better captured the construct of ‘need satisfaction’ by specifically asking participants to rate their levels of satisfaction with autonomy, relatedness, and competence, rather than simply rate the perceived levels of the three needs. In line with the work of other researchers (e.g., Johnston & Finney, 2010; Sheldon & Hilpert, 2012), this study provides clear evidence that the basic needs are best measured as three separate constructs. All models where autonomy, competence, and relatedness were modelled as three separate factors had better global fit than models with a single factor of ‘basic need satisfaction’.

In addition to clarifying the three factor structure of the ARC-S scale, it was essential to demonstrate the reliability and validity of the scale (Kline, 2005).

Confirmatory factor analysis is recommended as a method for testing the construct validity of a measure (Kline, 2005). The construct validity of the new 11-item, three-factor ARC-S model was supported by its excellent global fit. All of the model fit indices met the stricter cut-off criteria set by Yu & Muthén (2002). The ARC-S scale had good convergent validity, the majority of factor loadings being greater than the recommended minimum of .60 (Kline, 2005). The individual ARC-S subscales for autonomy, competence, and relatedness satisfaction had good reliability values.

Discriminant validity was also supported, with all correlations between the factors being smaller than the maximum recommended value of .85 (Kline, 2005). Across all facets of validity and reliability, the ARC-S scale performed better than an equivalent 11-item, three factor model with the original BNS-G items. Furthermore, the tests for invariance provided evidence that factor loadings, intercepts and error variances were equivalent

across student and non-student samples. This suggests that the ARC-S scale will perform equally well in both student and non-student samples, which may be beneficial to researchers seeking to carry out applied research in non-university settings.

We aimed to further improve construct validity of a need satisfaction measure by directly asking participants to rate their satisfaction with autonomy, relatedness, and competence in the items. The statistical analyses did not provide evidence that the ARC-S variables constitute a ‘satisfaction with’ measure, distinct from a ‘perceived level’ measure indicated by BNS-G variables, as we had predicted. However, this suggests that the ARC-S and the BNS-G may *both* measure levels of satisfaction with the three psychological needs, but that the ARC-S provides an explicit measure of need satisfaction that has better validity and reliability. Furthermore, it follows that by asking participants to rate their satisfaction directly, the extent to which individuals feel satisfied with their own levels of autonomy, relatedness, and competence will be more faithfully measured.

The well-being analyses demonstrated that autonomy, relatedness, and competence satisfaction, measured by the ARC-S scale, relate to measures of well-being and ill-being in expected ways, supporting criterion-related validity. Autonomy, competence, and relatedness were significantly positively correlated with the measure of well-being, vitality, and significantly negatively correlated with depression. Competence and relatedness satisfaction were significantly negatively correlated with anxiety-somatisation. More importantly, the utility of the ARC-S scale for the exploration of the separate effects of autonomy, competence, and relatedness satisfaction on variables of interest was evidenced. When all three needs were included as predictors, only competence and relatedness satisfaction positively predicted vitality, whereas autonomy was non-significant. This is consistent with research which found

that when all three needs were entered as predictors of vitality among young sportsmen, only competence and relatedness were significant positive predictors (Adie et al., 2012). In addition, Reis et al. (2000) found that daily levels of competence and relatedness were stronger predictors of vitality (β s = .21 and .12 respectively, p s < .01) than was autonomy (β = .02, p < .05).

The correlation analyses showed that all three needs were strongly negatively correlated with depression. This is consistent with the work of Wei, Philip, Shaffer, Young, and Zakalik (2005) who found that autonomy, relatedness, and competence all had strong negative correlations with depression. We also found that only competence and relatedness satisfaction were significantly negatively correlated with anxiety-somatisation. This result accords with research which found that only competence was significantly negatively correlated with a measure of anxiety-depression among company employees (Baard et al., 2004). Unfortunately, neither Wei et al. (2005) nor Baard et al. (2004) assessed the three needs separately as independent predictors of depression or anxiety. But it is of interest to note that Sheldon and Filak (2008) found that autonomy, relatedness, and competence were all significantly negatively correlated with negative affect. However, only relatedness and competence were significant negative predictors of negative affect when all three needs were entered simultaneously as predictors. Our findings highlight the need to further investigate the relationships between each of the three needs separately and indicators of well-being and ill-being.

Limitations and Suggestions for Future Research

Johnston and Finney (2010) found supporting evidence that autonomy, competence, and relatedness measured using Gagné's (2003) BNS-G items were related to theoretically relevant external variables in expected ways using their revised BNS-G

model. Thus the basic need for autonomy factor had a significantly stronger correlation with an alternative measure of autonomy than did the other need factors, the need for competence factor had a significantly stronger correlation with a measure of environmental mastery than did the other need factors, and the need for relatedness factor had a significantly stronger correlation with a measure of positive relations with others than did the other need factors. Given that BNS-G items were adapted to form the ARC-S items, it seems probable that similar relationships will be found using the ARC-S need factors. However, it would be beneficial to also test the ARC-S scale in relation to alternative, well validated measures of autonomy, competence and relatedness. This would provide further support for the criterion-related validity of the scale. The tests of measurement invariance suggest that the scale will perform equally in student and non-student samples. Nevertheless, although responses were obtained internationally, participants were not specifically recruited by country, and cross-cultural analyses were not carried out. SDT posits that the three basic psychological needs are universal across cultures (Deci & Ryan, 2000; Deci & Vansteenkiste, 2004; Ryan & Deci, 2000b) and it would be useful to demonstrate empirically that this assumption is met when using the ARC-S scale.

The ARC-S scale did show relatively high correlations between autonomy, competence, and relatedness. Although we were able to demonstrate the distinct effects of autonomy, competence, and relatedness satisfaction on measures of well-/ill-being, the high correlations between the scales may make it difficult to test the individual effects of the three needs in future studies. Sheldon and Hilpert's (2012) BPNM scale showed much lower correlations between the three needs, with r s ranging from .46 to .49. However the analyses that they carried out only support the use of the BPNM to measure need satisfaction as a single construct indicated by autonomy, competence, and

relatedness satisfaction items, or to measure autonomy, competence, and relatedness as separate constructs but indicated by both satisfaction and dissatisfaction items. The BPMN at present does not have empirical support for use of the measure to assess the separate effects of autonomy, competence, and relatedness satisfaction. Furthermore, their scale does not explicitly measure satisfaction (or dissatisfaction) with the three needs as does the ARC-S. Therefore future research could seek to further develop the BPMN to address these concerns.

In terms of future research, it is important to note that the ARC-S scale does not attempt to measure dissatisfaction with the extent to which needs are being met or need thwarting, the effects of which are currently being explored and debated. For example, K. J. Bartholomew, Ntoumanis, Ryan, Bosch, and Thøgersen-Ntoumani (2011) have found evidence that need thwarting among athletes more consistently predicts maladaptive outcomes such as burnout and depression whereas need satisfaction predicts positive outcomes such as vitality and positive affect. It would be useful to develop and validate a scale for dissatisfaction with autonomy, relatedness, and competence in general and compare the effects of these constructs with the effects of satisfaction with autonomy, relatedness, and competence in general, measured by the ARC-S scale. The separate effects of satisfaction and dissatisfaction of each of the three needs upon a wide range of both adaptive and maladaptive outcomes could then be examined.

Finally, several of the studies cited in this paper tested the effects of the single construct ‘basic psychological needs’ on a range of other variables. It would therefore be interesting and exciting to extend existing research and explore the individual effects of autonomy, relatedness, and competence satisfaction where currently only the effect of ‘basic need satisfaction’ has been tested. For example, autonomy, competence, and

relatedness satisfaction could be studied as separate predictors of prosocial behaviour (Gagné, 2003) and self-esteem (Coatsworth & Conroy, 2009), and as individual mediators of the relationship between intrinsic goal attainment and well-being (Niemic et al., 2009).

Conclusion

The ARC-S scale appears to provide an improved and unambiguous measure of satisfaction with autonomy, competence, and relatedness compared to the BNS-G scale. This study has demonstrated that modelling autonomy, competence, and relatedness as three separate factors indicated by the ARC-S items results in greater reliability and better construct and discriminant validity than modelling the constructs using the BNS-G items. Furthermore, the explicit wording of the ARC-S will enable researchers to be confident that they are indeed measuring satisfaction with the three psychological needs. The ARC-S scale was also found to be invariant across student and non-student populations, demonstrating the potential utility of the ARC-S scale for use in non-university settings. Finally, autonomy, competence, and relatedness measured with the ARC-S scale were found to be related to indicators of well-being in expected ways, supporting the use of the scale to test the separate effects of autonomy, relatedness, and competence satisfaction on variables of interest.

**Chapter 4: Paper 3 - Basic Need Satisfaction and Prosocial
Behaviour: Exploring the Effects of Autonomy, Competence,
and Relatedness Satisfaction within an SDT Framework**

4.1 Abstract

The primary concern of this paper was to ascertain whether autonomy, competence, and relatedness satisfaction have separable effects on prosocial behaviour, or whether a higher-order basic need satisfaction construct is a better predictor of prosocial behaviour. Across all three studies a model with a higher-order basic need satisfaction factor had excellent fit to the data. In Study 1 basic need satisfaction positively predicted prosocial behaviour in general and in a university setting. In Study 2 basic need satisfaction positively predicted prosocial behaviour in general, partially mediating the relationship between community aspirations and prosocial behaviour. In Study 3 basic need satisfaction was not a significant predictor of prosocial behaviour. However, impersonal causality orientation negatively predicted prosocial behaviour. The studies provide evidence that it is better to model basic need satisfaction as a higher order factor when predicting prosocial behaviour, but that basic need satisfaction can only explain a small and unstable amount of variance in general helping.

4.2 Introduction

Self-determination theory (SDT) is a macro-theory of motivation, which seeks to understand and clarify the processes and conditions that facilitate, and thwart, psychological well-being, personal development and growth, and autonomous, responsible behaviour (Deci & Ryan, 1985a, 2000, 2008b; Ryan & Deci, 2000b). SDT argues that innate positive human tendencies towards well-being, growth, and optimal functioning are affected by social contexts (Deci & Ryan, 2000). Outcomes including vitality, persistence, performance, and behavioural self-regulation have been studied successfully within the SDT framework both generally (e.g., Nix, Ryan, Manly, & Deci, 1999) and in domains such as school, work, parenting and sport (Adie et al., 2012; Baard et al., 2004; Vansteenkiste, Simons, Lens, et al., 2004).

One behaviour that seems to exemplify well-being, growth, and optimal functioning is prosocial behaviour. Yet prosocial behaviour has not been extensively researched within the framework of SDT. Helping is important to interpersonal relationships, benefitting the well-being of both helper and recipient (Weinstein & Ryan, 2010), and contributing to the effective functioning of groups, organisations, and wider society in behaviours such as sportspersonship (Ntoumanis & Standage, 2009), occupational citizenship behaviours (Podsakoff & Mackenzie, 1994) and volunteering (Clary & Snyder, 1999). As such, it is important to understand the processes and circumstances that can encourage or hinder prosocial activities. With its focus on the interaction between intra-personal processes and social contexts, SDT is a promising forum within which to further explore the antecedents of prosocial behaviour.

Self-Determination Theory

Having been developed in an inductive fashion over thirty years of research, SDT is comprised of a series of mini-theories, all of which involve the concept of basic need satisfaction (Ryan & Deci, 2004). Given the central role of basic need satisfaction in SDT, the focus of this research was to probe the extent to which basic needs theory can enhance our understanding of prosocial behaviour. We explored the robustness of the relationship between basic need satisfaction and prosocial behaviour further by investigating the relationship in the context of two other SDT variables: aspirations and causality orientations.

Basic needs theory. SDT posits that there are three basic psychological needs which are essential psychological nutriments, as water and sunlight are essential physiological nutriments to plants (Ryan, 1995). The three basic needs are autonomy, competence, and relatedness. Satisfaction of the need for autonomy reflects feelings of volition and choice in one's activities (deCharms, 1968; Deci & Ryan, 2000). Satisfaction of the need for relatedness results from a sense of belonging, of caring for and being cared for by others (Baumeister & Leary, 1995). Satisfaction of the need for competence arises when individuals feel effective in their interactions with the social environment and able to exercise and express their capacities (White, 1959).

Social environments can support the satisfaction of these needs, leading to healthy functioning, but equally they can thwart need satisfaction, resulting in sub-optimal and maladaptive mental and behavioural outcomes. Measurement of basic need satisfaction therefore provides an indication of the interaction between the individual and their environment, and enables predictions to be made about psychological and behavioural outcomes (Ryan & Deci, 2004). Basic need satisfaction has been positively related to core intra-psychic outcomes. These include well-being in general (Reis et al.,

2000; Sheldon et al., 1996) in addition to well-being within the specific domains of sport (Adie et al., 2012), the workplace (Deci et al., 2001), helping (Weinstein & Ryan, 2010), and relationships (La Guardia et al., 2000). Positive psycho-somatic outcomes predicted by basic need satisfaction include reduced cortisol levels during dance performance (Quested et al., 2011) and reduced body image concerns among adolescent girls (Thøgersen-Ntoumani et al., 2010). Furthermore, basic psychological needs have been shown to positively predict observable behaviours such as volunteering (Gagné, 2003) and professional caregiving (L. G. Morgan, Bond, & Farsides, 2014, i.e., Paper 1).

Much of the empirical evidence for the effects of basic need satisfaction has explored basic need satisfaction as a single construct. Yet it is unclear from SDT writings whether all three needs matter equally for all outcomes. SDT emphasises that consistent satisfaction of autonomy, relatedness, and competence is necessary for psychological well-being or “eudaemonia” to arise (Ryan, 1995; Ryan & Deci, 2000a, 2000b; Ryan & Frederick, 1997). This is supported by findings that daily fluctuations in the satisfaction of each of the three needs independently predicted variability in well-being (Reis et al., 2000; Sheldon et al., 1996).

In relation to behavioural outcomes, there has been little research exploring the independent effects of the three needs. The literature suggests that relatedness may have a more distal effect than autonomy or competence on a variety of outcomes (Deci & Ryan, 2000). Gagné (2003) found that competence was more strongly correlated with prosocial behaviour than were autonomy or relatedness. In the path analyses overall basic need satisfaction was found to positively predict prosocial behaviour. Unfortunately the separate effects of autonomy, competence, and relatedness on prosocial behaviour were not modelled. Recent work by Haivas, Hofmans, and

Pepermans (2013) sought to explore the separate effects of autonomy, relatedness, and competence satisfaction on volunteer engagement and intention to quit. Supporting Deci & Ryan's (2000) theorising, they found that autonomy and competence satisfaction positively predicted volunteer engagement and negatively predicted intention to quit. Relatedness satisfaction, on the other hand, had no effect on the two outcome variables when controlling for autonomy and competence satisfaction. However, the analyses were carried out using Ordinary Least Squares (OLS) multiple regression. This method that does not account for measurement error which can result in biased estimates of direct effects (Kline, 2005).

Although independent effects for the three needs have been found in relation to behavioural outcomes, self-determination theory also suggests that the three needs are complementary. For example, truly satisfying the need for autonomy arises from free choice that is based on one's competencies and consideration for others, namely relatedness. Similarly behaviours that afford a sense of competence and efficacy only truly satisfy the need for competence if the behaviours also align with the individual's true sense of self, or autonomy (Hagger, Chatzisarantis, & Harris, 2006). The social world can create circumstances where one need is met at the expense of another need, for example, when parental love is conditional on a child behaving a certain way, the child is coerced into behaving, sacrificing its autonomy for the sake of supporting its need for relatedness. But for optimal well-being and performance in behaviours, the social context must support all three needs (Deci & Ryan, 2000).

Hagger et al. (2006) empirically demonstrated the premise of complementarity between the three needs. They studied the relationship between basic need satisfaction and intentional behaviour using factor-analytic structural equation modelling (FASEM). This enabled them to model autonomy, competence, and relatedness as three separate

needs, subsumed into a single higher-order construct of ‘psychological need satisfaction’. Hagger et al. found that the direct effects of the individual basic psychological needs, autonomy, competence, and relatedness, on dieting and exercise behaviours were non-significant. However, the higher order psychological need satisfaction factor had a significant direct effect on both exercise behaviours and dieting behaviours. The study provides evidence that satisfaction of all three needs is necessary to give rise to autonomously motivated behaviour. Furthermore, the higher order factor reduced the possibility of multicollinearity and suppressor effects, which can arise when variables are highly inter-correlated (Maassen & Bakker, 2001), and the use of FASEM ensured that measurement error was accounted for (Kline, 2005).

Aspirations. Kasser and Ryan (1993, 1996) have identified two types of aspirations. Intrinsic aspirations reflect desires or goals that are more likely to meet innate needs for self-actualisation and growth. They are thought to contribute towards basic need satisfaction, and consequently well-being, and are represented by life goals such as personal development, affiliation, and community contribution. Extrinsic aspirations, reflected by such life goals as wealth, fame, and image, are thought to have developed in conditions where basic need satisfaction was difficult or unavailable, and therefore act as need substitutes. While people might be highly motivated to pursue these goals, they are external indicators of worth and as such are believed to only provide conditional, temporary satisfaction, and therefore be unlikely to lead to more stable well-being (Deci & Ryan, 2000, 2008b; Ryan & Deci, 2004).

Aspirations have largely been studied in relation to well-being, rather than behavioural outcomes. Research has explored the benefits of holding intrinsic aspirations relative to extrinsic aspirations, as well as the effects of individual aspirations. Kasser and Ryan (1993, 1996) found that relatively high importance ratings

for intrinsic aspirations significantly positively predicted self-actualisation and vitality, indicators of well-being, and negatively predicted anxiety, depression, and physical symptoms. Sheldon and Kasser (1998) found that making progress with personal goals was also positively related to well-being, but that participants' well-being increased the most when the goals being pursued had an intrinsic orientation. Furthermore, Niemiec et al. (2009) found that basic need satisfaction mediated the relationship between attainment of intrinsic goals and psychological health, supporting the theory that valuing and pursuing intrinsic life goals actively contributes to satisfaction of the three basic psychological needs.

Aspirations and goal contents have also been related to behavioural outcomes, with intrinsic aspirations tending to be related to positive and extrinsic aspirations to negative outcomes. Williams, Cox, Hedberg, and Deci (2000) found that stronger relative extrinsic aspirations among adolescents predicted significant variance in health-risk behaviours such as tobacco, alcohol, and marijuana use after controlling for demographic variables. Vansteenkiste, Simons, Lens, et al. (2004) tested the relationship between intrinsic goals for learning and depth of processing, test performance, and persistence in three studies. They found that learning text material related to recycling and ecology (study 1), communication styles (study 2), or physical exercises (study 3), when framed in terms of the intrinsic goals of community, personal growth, physical health (studies 1, 2, and 3 respectively) resulted in higher scores for depth of processing, test performance, and persistence across all three studies compared to participants whose learning was framed by extrinsic goals. Finally, a recent meta-analysis has shown that materialism, a value synonymous with extrinsic aspirations, is negatively associated with both pro-environmental attitudes and behaviours (Hurst et al., 2013). Thus people with materialistic values tend to both believe that behaviours

designed to protect the environment are not important or necessary and they engage in more behaviours that damage the environment.

Causality orientations. Causality orientations reflect relatively stable individual differences in general behavioural regulation, rather than domain specific behavioural regulation (Ryan & Deci, 2004). The General Causality Orientations Scale (Deci & Ryan, 1985b) was developed to measure these individual differences, assessing the degree to which people have autonomous, controlled, and impersonal responses towards general life situations. The three orientations represent differing degrees of self-determination. The autonomy orientation reflects a tendency to regulate behaviour based on personal interests and self-endorsed values, and develops when all three basic needs are being satisfied on an ongoing basis. The controlled orientation reflects a tendency to regulate behaviour based on external controls and directives concerning how one should behave, and is thought to develop when competence and relatedness needs have been met to some extent but the need for autonomy has been consistently thwarted. The impersonal orientation reflects a tendency to not engage in action, or not behave intentionally, and is thought to result from a general thwarting of all three needs (Deci & Ryan, 2000, 2008b; Ryan & Deci, 2004). Closely associated with basic need satisfaction, causality orientations are thought to develop as a result of the extent to which each of the basic needs has been satisfied over the life span (Deci & Ryan, 2008b).

Study of causality orientations has generally found the autonomy orientation to be associated with positive outcomes, and controlled or impersonal orientations to be associated with poorer outcomes. In their initial research, Deci and Ryan (1985b) found that the autonomy orientation was positively significantly correlated with supporting autonomy in others, self-esteem, and ego development, a construct thought to represent

self-determined functioning. The controlled orientation was positively significantly correlated with public self-consciousness, reflecting sensitivity to the viewpoint of others, and Type-A behaviour patterns, associated with experiences of pressure and tension. The impersonal orientation was significantly positively correlated with depression, self-derogation, social anxiety, and public self-consciousness. It was significantly negatively correlated with self-esteem and ego development.

Autonomy orientation has also been linked to behavioural outcomes. For example, Williams, Grow, Freedman, Ryan, and Deci (1996) found that among morbidly obese patients, autonomy orientation positively predicted autonomous reasons for following a diet, which in turn positively predicted weight loss. Furthermore, autonomy orientation was significantly related to maintenance of weight loss at a 23 month follow up. Baard et al. (2004) found that high autonomy orientation among employees was associated with higher need satisfaction at work, which in turn positively predicted performance and well-being at work. However, although people are assumed to exhibit each of these orientations to some degree (Ryan & Deci, 2004), no research to date has explored the independent effects of all three orientations on prosocial behaviour. Furthermore, although causality orientations are thought to have arisen in relation to the extent that basic psychological needs have been met or thwarted across the lifetime, little research has explored the relationship between causality orientations and current basic need satisfaction.

Current Research

This paper presents a series of studies exploring basic need satisfaction, aspirations, and causality orientations as determinants of prosocial behaviour. The primary concern of this paper was to ascertain whether autonomy, competence, and

relatedness have separable effects on prosocial behaviour, or whether a higher-order basic need satisfaction construct is a better predictor of prosocial behaviour. To our knowledge, only one study has investigated the effects of the three needs separately on prosocial behaviour (Haivas et al., 2013). We investigated whether their findings can be replicated across three different samples using latent variables and structural equation modelling to account for the effects of measurement error. Based on the findings of Hagger et al. (2006), we tested whether a higher-order basic need satisfaction factor fit the data better as a predictor of prosocial behaviour than modelling the direct effects of autonomy, competence, and relatedness. In order to further explore the ability of basic need satisfaction to explain variance in prosocial behaviour, the effects of aspirations and causality orientations in relation to all three basic needs and general helping were also examined.

Analytical Approach

Across all three studies, analyses were carried out using Mplus version 6.0 (L. K. Muthén & Muthén, 1998-2010) and adapted the steps taken by Hagger et al. (2006). Data screening showed data non-normality at the univariate and multivariate level. Therefore maximum likelihood parameter estimates with standard errors and a mean-adjusted chi-square statistic, also known as the Satorra-Bentler chi-square, which are robust to non-normality, were estimated using the MLM estimator. In line with the recommendations of Boomsma (2000) and Byrne (2001), model fit was assessed using several global fit indices: the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA) and the Standardised Root Mean Square Residual (SRMR). Values of .95 or greater for CFI and TLI, .05 or below for RMSEA and .07 or below for SRMR have been

recommended as indicative of good model fit when the distribution of the data being modelled is non-normal (Yu & Muthén, 2002). Older criteria state that CFI and TLI values of .90 or greater (Bentler, 1990) and RMSEA and SRMR values of .08 or smaller (Browne & Cudeck, 1992; Hu & Bentler, 1999) indicate good model fit. We used the older criteria as a lower bound and the newer criteria as an upper bound, representing adequate and good model fit respectively (Marsh et al., 2004).

4.3 Study 1

Previous research has studied the effects of both basic need satisfaction as a unidimensional variable (Gagné, 2003) and autonomy, competence, and relatedness as three separate needs (Haivas et al., 2013) on prosocial behaviour. In this study we tested whether modelling autonomy, competence, and relatedness as separate variables fit the data better than modelling basic need satisfaction as a single factor. We then explored the effects of basic need satisfaction on two helping measures: helping in general and helping in the specific domain of university.

4.3.1 Method

Participants and Procedure

Participants (total $N = 205$, 153 females) were students recruited from a university participant pool. Participants were given the opportunity to enter a prize draw for £50 and psychology students could also obtain extra credit. All participants completed the questionnaire online, having first read an explanatory statement about the study which assured participants that their responses were voluntary and confidential. Contact details obtained in order to award the prize draws were kept separately from

questionnaire data to ensure anonymity. Demographic information about participants is shown in Table 4.1².

Table 4.1

Demographics for participants across the three studies

	Study 1	Study 2	Study 3
<i>N</i>	205	220	235
Gender			
Female (%)	75	60	55
Male (%)	25	40	45
Age			
Range (years)	18-62	15-86	23-85
Mean (years)	21.52	44.38	47.36
<i>SD</i> (years)	5.78	15.64	14.07
Occupation			
Full-time work (%)	0	56	52
Part-time work (%)	0	13	14
Student (%)	100	6	3
Housewife/husband (%)	0	3	4
Retired (%)	0	3	1
Unemployed (%)	0	13	17
Other (%)	0	6	9
Ethnicity			
White (%)	83	90	93
Black (%)	2	1	1
Chinese (%)	3	3	2
Asian (%)	4	2	1
Mixed (%)	6	2	2
Other (%)	2	2	1
Relationship status			
Single (%)	73	21	14
Cohabit (%)	10	12	15
Married (%)	2	57	57
Divorced (%)	1	6	6
Widowed (%)	1	1	3
Other (%)	13	3	5

² Note that participants in Study 1 form Sample 1 in Paper 2, participants in Study 2 form Sample 2 in Paper 2, and participants in Study 3 form Sample 3 in Paper 2.

Measures

Autonomy, relatedness, and competence satisfaction (ARC-S) scale (L. G. Morgan, Bond, & Farsides, 2013, i.e., Paper 2). This 11-item scale was developed to measure autonomy, competence, and relatedness as three separate needs, and explicitly capture *satisfaction with* those needs (see Chapter 3 for more details). Example items include, ‘I am satisfied with the amount of freedom I have to decide for myself how to live my life’ (autonomy, $\alpha = .82$), ‘I am not satisfied with how competent I am’ (competence, reversed, $\alpha = .68$), and ‘I am satisfied with how much people around me care about me’ (relatedness, $\alpha = .87$). Participants rated their responses on a seven-point scale where 1 = *Disagree strongly* and 7 = *Agree strongly*.

Basic need satisfaction in general (BNS-G) scale. Although the ARC-S scale was used as a primary measure of basic need satisfaction, Gagné’s (2003) 21-item BNS-G scale is a more established and more widely used measure of this construct. It was therefore included in this research and used in supplementary analyses (see footnote 1). The BNS-G scale consists of three subscales. Seven items measure self-perceived levels of general autonomy (e.g., ‘I feel like I am free to decide for myself how to live my life’, $\alpha = .71$). Six items measure self-perceived levels of general competence (e.g., ‘Often, I do not feel very competent’; reversed item, $\alpha = .70$). Eight items measure self-perceived levels of relatedness (e.g., ‘I really like the people I interact with’, $\alpha = .87$). All items were rated on a seven-point scale (1 = *not at all true*; 7 = *very true*).

Engagement in prosocial behaviours in general (Rushton et al., 1981). This 20-item scale was developed to measure the frequency with which participants have engaged in prosocial behaviours that vary broadly in the effort required and cost to the helper. A wide range of behaviours were incorporated, including behaviours that require time, time and effort, money and/or goods. Example items are, “I have helped

push a stranger's car out of the snow," "I have made change for a stranger," and, "I have donated blood." Participants rated the frequency of these actions on a 5 point scale; *Never (1), Once, More than once, Often and Very often (5)*. The 20 items showed good internal reliability ($\alpha = .84$).

Engagement in prosocial activities at university. Participants were asked how often they have engaged in 16 prosocial behaviours over the past year that would specifically benefit students or the university. Six items were based on Mayfield & Taber (2010) and the remainder were generated for this study. Participants rated the frequency of these actions on a 5 point scale; *Never (1), Once, More than once, Often and Very often (5)*. Example items are, "I have helped a student I do not know well with work that they are finding difficult", "I have volunteered to represent the university at external events", and, "I have cleared up others' litter from seminar rooms and/or lecture theatres". The items had good internal reliability ($\alpha = .86$).

Marlowe-Crowne social desirability scale: Short form B12 (Reynolds, 1982). A 12-item short version of the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) was used to control for participants' tendency to give socially desirable answers. The short form of the MC SDS was developed and validated by Reynolds (1982), and recommended above other short forms of the MC-SDS by Loo & Thorpe (2000). The scale consists of twelve items with a true-false dichotomous response format. Participants could answer True or False to each statement, with a 'True' response being assigned a value of 1 and a 'False' response a value of 0. Five items were direct items (e.g., "No matter who I'm talking to, I'm always a good listener") where a 'True' response is an indication of social desirability and seven items were inverse items (e.g., "There have been times when I was quite jealous of the good fortune of others,") where a 'False' response is an indication of social desirability. The inverse

items were reversed, and the sum of all items calculated to form a global score of social desirability. The final scores ranging from 1-12, with a higher score indicating a greater number of socially desirable responses. Reliability was acceptable ($\alpha = .60$).

4.3.2 Results

Preliminary Analyses

Table 4.2 shows descriptive statistics of the measured variables. Independent samples *t*-testing indicated that men and women differed in the amount of general help they have given, $t(203) = 3.00, p < .01$, with male participants reporting helping less ($M = 2.45, SD = .52$) than female participants ($M = 2.70, SD = .50$). Student level (measured as type of degree being studied), relationship status, and ethnicity were unrelated to general helping. Gender, relationship status, and ethnicity were unrelated to university-based helping. However, there was a significant effect of student level on university-based helping, $F(5, 199) = 2.28, p < .05$, with first year undergraduates helping less than masters students ($\Delta M = -.38, SE = .15, p = .05$). This is likely to be due to the fact that those who have attended university for longer, and therefore have higher qualifications, will have had more opportunities to engage in university-based helping. Social desirability was positively related to general helping, autonomy, competence, and relatedness. Gender, educational level, and social desirability were included as control variables in subsequent model testing. The inter-correlations (see Table 4.2) indicate that autonomy, competence, and relatedness were significantly positively related to general helping, whereas only autonomy and competence were significantly positively related to university-based helping. Furthermore, autonomy, competence, and relatedness were strongly correlated to each other.

Following the recommendation of Cole and Maxwell (2003), the measurement model was first examined before proceeding to test the hypothesised structural relations. Fit of the measurement model, comprising unanalysed covariances between the independent variables (autonomy, relatedness, and competence), the dependent variables (general helping and university-based helping) and the control variables (social desirability, gender, and educational level), was inspected. Gender and educational level were included as observed variables. Social desirability, and the independent and dependent variables were included as latent constructs, enabling parameter estimates between variables to be estimated without measurement error (Brown, 2006; Kline, 2005). Autonomy, relatedness, and competence were indicated by their respective items. Social desirability, general helping, and university-based helping were each indicated by three item parcels, created using the item to construct balance proposed by T. D. Little, Cunningham, Shahar, and Widaman (2002).

Although the ratio of cases to parameters did not meet the minimum recommended ratio of 5:1 (Bentler & Chou, 1987) recent advice recommends using latent variables in preference to total score scale path analysis or reliability corrected models whenever possible to avoid the biasing effects of measurement error and errors due to the assumption that specific variance equals zero (Coffman & MacCallum, 2005). Furthermore, the use of latent variables increases the degrees of freedom in the model, and it has been demonstrated that moderate to large degrees of freedom (e.g., *df* 80 - 100) with a moderate sample size of 200 achieves adequate power (MacCallum, Browne, & Sugawara, 1996).

Table 4.2

Descriptive statistics, Cronbach's alphas and bivariate correlations among study variables, Study 1

	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7	8
<i>Control Variables</i>											
1. Social desirability	6.14	2.34	.60	-							
2. Gender	1.25	0.43	-	.01	-						
3. Student level	1.80	1.35	-	.07	.04						
<i>Independent variables</i>											
4. Autonomy	5.69	1.07	.82	.28***	-.13	.06	-				
5. Competence	4.63	1.10	.68	.41***	-.03	.15*	.63***	-			
6. Relatedness	5.63	1.08	.87	.35***	-.17*	.02	.68***	.65***	-		
<i>Dependent variables</i>											
7. General helping	2.64	0.51	.84	.21*	-.19**	.18*	.18**	.26**	.17*	-	
8. University-based helping	1.83	0.56	.86	.11	.00	.19*	.15*	.29***	.08	.71***	-

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. The independent variables were assessed on 7-point scales. The dependent variables were assessed on 5-point scales

Estimation of the measurement model in Study 1 showed good model fit, SBS- $\chi^2(183) = 256.64, p < .001$, CFI = .95, TLI = .94, RMSEA = .04, SRMR = .05. The standardised factor loadings were all significant ($p < .001$) and ranged in magnitude from .44 to .91 (mean $\lambda = .74$). Examination of the correlations between latent factors showed strong correlations between the three basic need constructs ($M \phi = .65$). We therefore tested whether the model would be improved if the three need constructs were subsumed by a higher order basic need satisfaction (BNS) factor whilst still modelling the three needs separately at the subordinate level. The measurement model was re-specified to include a higher order BNS factor. This model showed identical model fit with the data, SBS- $\chi^2(193) = 271.11, p < .001$, CFI = .95, TLI = .94, RMSEA = .04, SRMR = .05. The standardised factor loadings were all significant ($p < .001$) and ranged in magnitude from .44 to .91 (mean $\lambda = .75$). The second order factor loadings were also high and significant (mean $\lambda = .81$), suggesting that the higher-order BNS factor accounted for the majority of the shared variance among the constructs. In addition, the average variance extracted from the first-order need constructs was high ($\rho_v = .66$), exceeding the proposed threshold of .50 (Fornell & Larcker, 1981), demonstrating that the amount of variance in the first-order need constructs captured by the higher-order BNS factor was high relative to the variance due to measurement error.

Results from the higher-order BNS measurement model indicated that the observed variables related to their underlying latent constructs in expected ways and that the residual variances related to one another as expected. The model fit of the higher-order BNS model was identical to that of the three-factor BNS model, but the use of a higher-order BNS factor model would also reduce the possibility of multicollinearity and suppressor effects in the structural analyses. The results from the

measurement model supported testing the hypothesised structural relations using a higher order BNS factor.¹

Effect of Basic Need Satisfaction on Helping

The structural model with a higher order BNS factor predicting general and university-based helping (Figure 4.1) showed good fit to the data, SBS- χ^2 (142) = 200.84, $p < .001$, CFI = .96, TLI = .95, RMSEA = .05, SRMR = .06. Gender and educational level were significant predictors of general and university-based helping and therefore were controlled for in the path analyses. Social desirability was a non-significant predictor of both helping variables and thus was excluded from the path analyses. Basic need satisfaction positively predicted both general helping ($\beta = .19$, $SE = .08$, $p < .05$) and university-based helping ($\beta = .17$, $SE = .07$, $p < .05$). Exploration of the modification indices (MIs) showed that the model would not be significantly improved by modelling direct paths between any of the three first order need constructs and either helping variable (all MIs < 3). The variance explained in general helping (12%) and university-based helping (6%) was small.

¹ These analyses were replicated using Gagné's (2003) BNS-G. Autonomy, competence, and relatedness were modelled using the full 21-item scale, a 16-item scale with method effect as recommended by Johnston & Finney (2010), and an 11-item scale using the items that have been reworded to form the ARC-S scale. In all instances the model fit was poor, supporting the use of the newly developed ARC-S scale to measure autonomy, competence, and relatedness in the main analyses. See Appendix R for details.

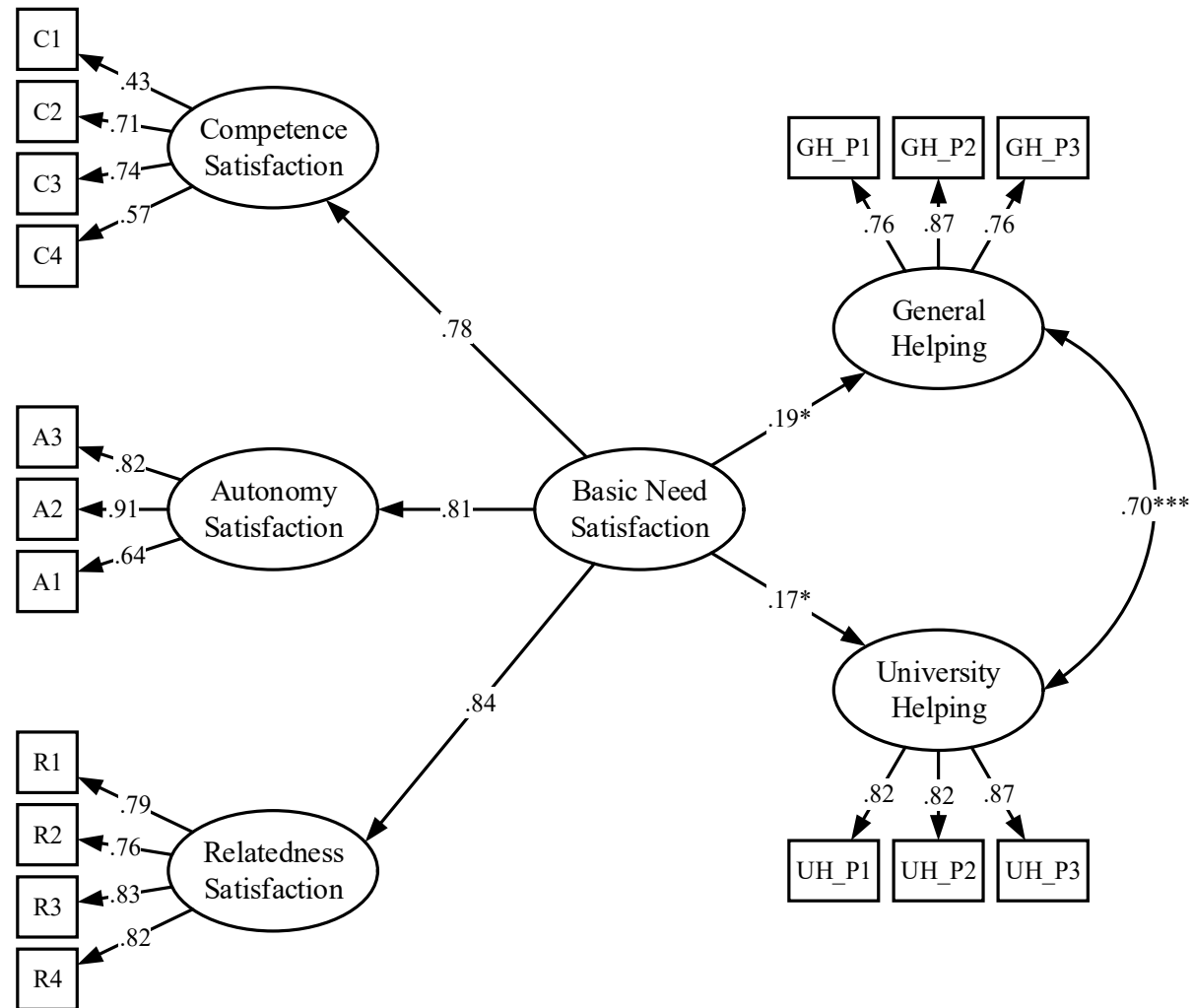


Figure 4.1. Standardised parameter estimates for the structural model of the relationships between basic need satisfaction and helping. Note: * $p < .05$, *** $p < .001$.

4.3.3 Discussion

Study 1 provided evidence that although autonomy, competence, and relatedness *can* be modelled as three separate needs, individually they do not predict any variance in general helping. The results suggest that it is in fact better to model basic need satisfaction as a *single factor*, which positively predicts prosocial behaviour. This finding supported Gagné's (2003) finding that overall basic need satisfaction positively predicted prosocial engagement.

The study was carried out with a student population. In order to be able to generalize the results, it would be useful to study whether the same effects are observed in a broader sample of the general population. In addition, the ability of other SDT variables to explain additional variance in prosocial behaviour and the role of basic need satisfaction as a mediator was not explored.

4.4 Study 2

Study 2 explored whether modelling basic need satisfaction as a higher order factor, rather than modelling the separate effects of autonomy, competence, and relatedness on general helping, would fit the data better in a general population. In addition, the relationships of intrinsic and extrinsic aspirations to both basic need satisfaction and general helping were also studied.

Aspirations have not been studied in relation to prosocial behaviour to date. However, research has provided evidence that basic need satisfaction positively predicts prosocial behaviour (Gagné, 2003; Haivas et al., 2013) and that aspirations positively predict basic need satisfaction (Niemi et al., 2009). Research has also shown that intrinsic aspirations tend to be positively associated with positive outcomes whereas

extrinsic aspirations are either unrelated or negatively related. It would be beneficial to explore whether aspirations are able to explain any variance in prosocial behaviour, and whether basic need satisfaction mediates this relationship in order to further our understanding of the relationship between aspirations and behavioural, rather than psychological, outcomes.

According to theory and previous research, we expected intrinsic aspirations to positively predict general helping and basic need satisfaction, whereas extrinsic aspirations could negatively predict or be unrelated to both variables. Based on the work of Niemiec et al. (2009), we predicted that basic need satisfaction would mediate the relationship between aspirations and general helping.

4.4.1 Method

Participants and Procedure

Participants (total $N = 220$, 132 females) were members of the public, recruited via Facebook and email ‘snowballing’. They were given the option to enter a prize draw for £25. The difference in prize draw value from Study 1 was due to changes in the university’s ethical procedure.

All participants completed the questionnaire online, having first read an explanatory statement about the study which assured participants that their responses were voluntary and confidential. Contact details obtained in order to award the prize draws were kept separately from questionnaire data to ensure anonymity. Demographic information about participants is shown in Table 4.1.

Measures

Autonomy, relatedness, and competence satisfaction (ARC-S) scale. The measure described in Study 1 (L. G. Morgan et al., 2013) was used to assess autonomy satisfaction ($\alpha = .81$), competence satisfaction ($\alpha = .70$), and relatedness satisfaction ($\alpha = .87$).

Basic need satisfaction in general (BNS-G) scale. The BNS-G scale (Gagné, 2003) as described in Study 1 was again included and used in supplementary analyses (see footnote 2).

The aspirations index (T. Kasser & Ryan, 1996). This scale was developed to assess the importance of, likelihood of attaining, and current level of attainment of extrinsic and intrinsic life goals or aspirations. For the purposes of this study participants were only asked to rate how important each aspiration was to them on a scale of 1 (*Not at all important*) to 7 (*Very important*). Extrinsic aspirations were measured with five fame items and five wealth items. Intrinsic aspirations were measured with five community items and five affiliation items. Examples of items are ‘To be admired by many people’ (fame, $\alpha = .83$), ‘To have many expensive possessions’ (wealth, $\alpha = .84$), ‘To have good friends that I can count on’ (affiliation, $\alpha = .80$) and ‘To help people in need’ (community, $\alpha = .88$).

Engagement in prosocial behaviours in general. The measure described in Study 1 (Rushton et al., 1981) assessed general helping, $\alpha = .86$.

Marlowe-Crowne social desirability scale: Short form B12. The 12-item MC-SDS (Reynolds, 1982) described in Study 1 was used to measure social desirability, $\alpha = .66$.

4.4.2 Results

Preliminary Analyses

Table 4.3 shows descriptive statistics of the measured variables. Social desirability was positively related to general helping, autonomy, competence, and relatedness. There was a significant effect of employment status on relatedness, $F(6, 228) = 2.47, p < .05$, but no effect on autonomy, competence, or general helping. Independent t -testing showed that women and men differed in relatedness need satisfaction, $t(233) = 2.19, p < .05$, with women reporting higher levels of relatedness need satisfaction ($M = 6.12, SD = .86$) than men ($M = 5.85, SD = .99$). There were no gender differences for general helping, autonomy or competence. Relationship status and ethnicity were unrelated to general helping, autonomy, competence, or relatedness. Therefore social desirability, gender and employment status were included in subsequent analyses. In this sample, autonomy, competence, and relatedness were significantly positively correlated both with general helping and with each other. Competence and relatedness were significantly positively correlated with intrinsic aspirations whereas autonomy was significantly negatively correlated with extrinsic aspirations. Intrinsic aspirations were significantly positively correlated with general helping whereas there was no significant relationship between extrinsic aspirations and general helping.

Fit of the measurement model, comprising the main variables of interest (intrinsic aspirations, extrinsic aspirations, autonomy, competence, and relatedness, and general helping) and the control variables (gender, employment status, and social desirability), was inspected. Gender and employment status were included as observed variables. The main variables were included as latent constructs, as was social desirability. Autonomy, relatedness, and competence were indicated by their respective

items. The intrinsic aspirations factor was indicated by the observed variables, community and affiliation. The extrinsic aspirations factor was indicated by the observed variables, wealth and fame. General helping and social desirability were each indicated by three item parcels. Data screening showed data non-normality at the univariate and multivariate level. Therefore maximum likelihood parameter estimates with standard errors and a mean-adjusted chi-square statistic (SBS- χ^2) were estimated.

Estimation of the measurement model showed good model fit, SBS- χ^2 (196) = 254.10, $p < .001$, CFI = .97, TLI = .96, RMSEA = .04, SRMR = .04. All factor loadings were significant ($p < .001$) and ranged in magnitude from .30 to .95 (mean $\lambda = .72$). Examination of correlations between the latent variables showed high average inter-correlations between the three basic need constructs ($M \phi = .77$) thus a higher-order BNS factor was fitted to the model, retaining separate modelling of autonomy, competence, and relatedness at the subordinate level. Extrinsic aspirations were not significantly correlated with the higher-order BNS factor or general helping. In addition, affiliation had a low factor loading onto intrinsic aspirations (.30). The measurement model was therefore further re-specified, excluding extrinsic aspirations altogether and modelling community and affiliation separately, each indicated by their five relevant items. Error terms within each of the latent aspiration variables were allowed to covary. This measurement model showed good model fit, SBS- χ^2 (351) = 470.16, $p < .001$, CFI = .95, TLI = .95, RMSEA = .04, SRMR = .06. Although the overall model fit was slightly worse, overall the factor loadings were slightly improved, now ranging from .47 to .92 (mean $\lambda = .74$). Furthermore, second order factor loadings were high and significant (mean $\lambda = .87$) and the average variance extracted from the first-order need constructs was high ($\rho_v = .76$).

Table 4.3

Descriptive statistics, Cronbach's alphas and bivariate correlations among study variables, Study 2

	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7	8	9
<i>Control Variables</i>												
1. Social desirability	7.19	2.55	.66	-								
2. Gender	1.45	0.50	-	-.02	-							
3. Employment status	2.75	2.29	-	.14	-.09							
<i>Main variables</i>												
4. Intrinsic aspirations	6.06	0.68	.83	.33***	-.05	.17**	-.01					
5. Extrinsic aspirations	3.22	1.07	.85	.27**	.24**	-.24**	-.23*	-				
6. Autonomy	5.91	1.06	.81	.49***	-.02	.20***	.14	-.22*	-			
7. Competence	5.15	1.15	.70	.51***	-.11	.14*	.25***	-.06	.77***	-		
8. Relatedness	6.00	0.93	.87	.47***	-.15	.22***	.35***	-.15	.72***	.81***	-	
9. General Helping	3.14	0.58	.86	.28***	.10	.10	.42***	-.15	.38***	.31***	.24***	-

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. General helping was scored on a 5 point scale, the other main variables on a 7-point scale.

The measurement model results provided justification for proceeding to test the hypothesised structural relations with a higher-order BNS factor, community and affiliation modelled as separate variables, and extrinsic aspirations excluded from further analyses.²

Effects of Basic Need Satisfaction and Aspirations on General Helping

A structural model testing paths from community, affiliation, and basic need satisfaction to general helping, and paths from community and affiliation to basic need satisfaction was fitted to the data (Figure 4.2). The model fit was good, SBS- χ^2 (260) = 348.36, $p < .001$, CFI = .96, TLI = .95, RMSEA = .04, SRMR = .06. Social desirability and employment status were not significant predictors of general helping. Therefore, only gender was controlled for in the structural model. Basic need satisfaction positively predicted general helping ($\beta = .25$, $SE = .07$, $p < .001$). Examination of the modification indices indicated no advantage to modelling direct paths from autonomy, competence, or relatedness to general helping (all MIs < 8.5). Community positively predicted basic need satisfaction ($\beta = .33$, $SE = .08$, $p < .001$) and general helping ($\beta = .33$, $SE = .06$, $p < .001$). Affiliation was unrelated to general helping or basic need satisfaction. There was a significant indirect effect of community via basic need satisfaction ($\beta = .08$, $SE = .03$, $p < .01$), providing evidence that basic need satisfaction partially mediates the relationship between community and general helping. Overall 25% of the variance in general helping was explained, of which 6% was explained by basic need satisfaction.

² As in Study 1, the analyses were also carried out using Gagne's (2003) BNS-G items, with autonomy, competence, and relatedness indicated by all 21-items, by 16-items and an additional latent variable accounting for method effect, and by the 11-items that were adapted to form the ARC-S scale. Again model fit was poor, supporting the use of the ARC-S scale to measure basic need satisfaction. See Appendix R for details.

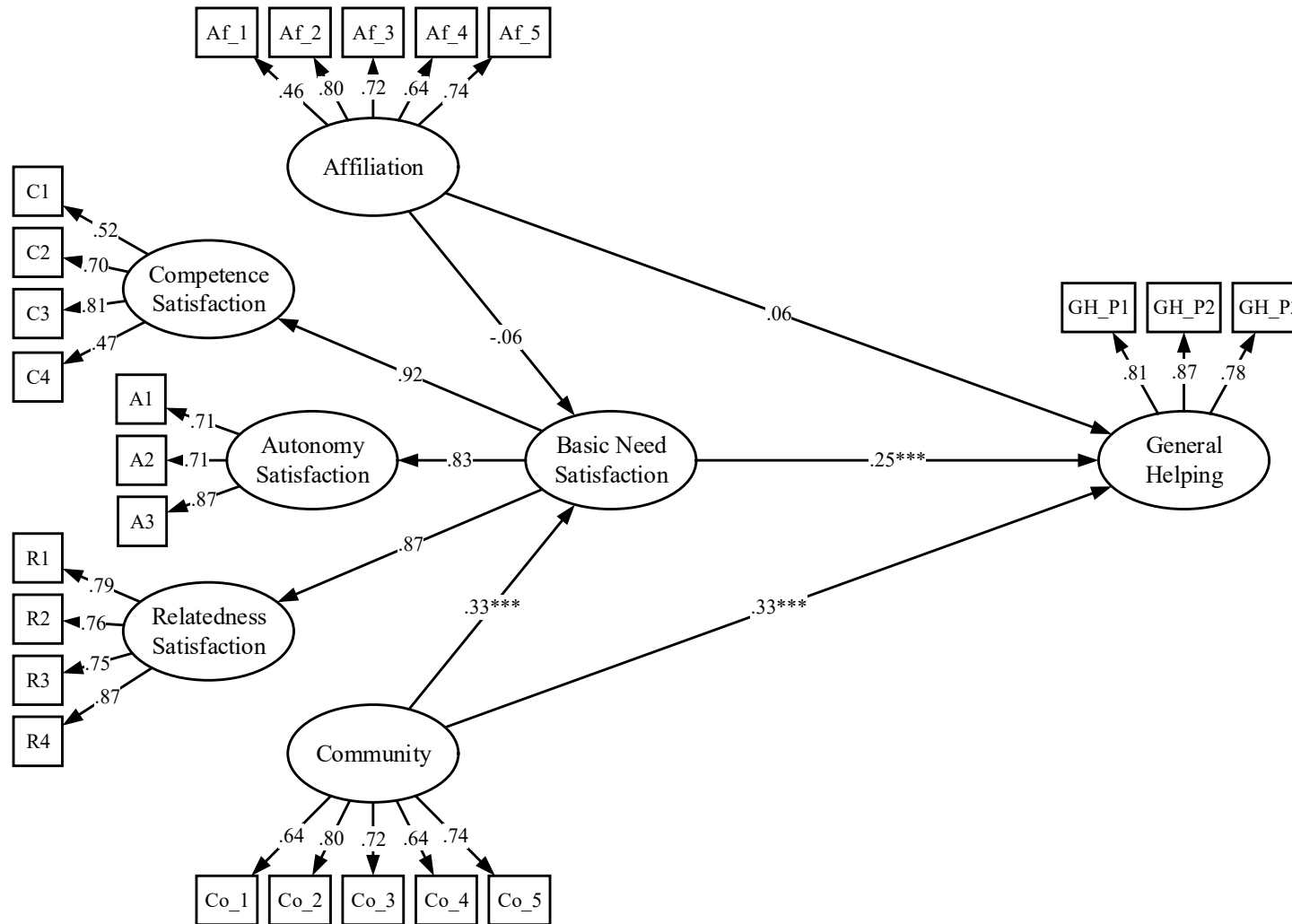


Figure 4.2. Standardised parameter estimates for the structural model of relationships between aspirations, basic need satisfaction, and helping.
Note: *** $p < .001$.

Further Analyses

In order to demonstrate the potential for suppressor effects and model misspecification when autonomy, competence, and relatedness are modelled separately, further analyses were carried out. The structural model described above was tested *without* the higher-order BNS factor. The model fit was adequate, SBS- χ^2 (214) = 316.89, $p < .001$, CFI = .95, TLI = .93, RMSEA = .05, SRMR = .05. Competence was a non-significant predictor, autonomy was a strong positive predictor ($\beta = .42$, $p < .01$), and relatedness was a significant *negative* predictor ($\beta = -.38$, $p < .05$). The change in valence between the correlation of relatedness to general helping and the parameter estimate from relatedness to general helping indicates a suppressor effect (Maassen & Bakker, 2001).

4.4.3 Discussion

The results from Study 2 provide further support that, as a predictor of prosocial behaviour, basic need satisfaction is best modelled as a higher-order factor. The benefit of this approach was corroborated by the further analyses, which demonstrated a suppressor effect when autonomy, competence, and relatedness were modelled separately. These findings conflict with those of Haivas et al. (2013) who found that autonomy and competence positively predicted prosocial behaviour, whereas relatedness had no effect. This difference could be due to genuine variation in the samples. However, the results also raise the possibility that different results are obtained using OLS regression rather than latent SEM. This could be due to the fact that latent SEM accounts for measurement error and thus produces unbiased parameter estimates (Kline, 2005).

Study 2 demonstrated that basic need satisfaction positively predicted prosocial behaviour in a general population. This result replicates the findings from Study 1, which used a student sample, providing support for the generalizability of the results. Community aspirations significantly positively predicted prosocial behaviour, this relationship being partially mediated by basic need satisfaction. This builds on the work of Niemiec et al. (2009), providing evidence that basic need satisfaction consistently mediates the relationship between certain intrinsic aspirations and behavioural outcomes. However, extrinsic aspirations and affiliation aspirations were unrelated to either basic need satisfaction or prosocial behaviour.

4.5 Study 3

Study 1 found that basic need satisfaction was best modelled as a higher-order construct, indicated by the first-order constructs, autonomy, competence, and relatedness. The higher order factor was found to positively predict prosocial behaviour in a student population. These findings were both replicated in a general population in Study 2. Additionally, basic need satisfaction was found to partially mediate the relationship between community aspirations and prosocial behaviour. Study 3 sought to further investigate the two key research questions, exploring the role of basic need satisfaction in relation to general helping when modelled as a higher order construct. In addition, the effects of autonomous, controlled, and impersonal orientation on general helping were explored.

Gagné (2003) found that autonomous orientation positively predicted prosocial engagement and volunteer hours worked, and this relationship was partially mediated by basic need satisfaction. No research has directly explored the effects of controlled and impersonal orientation on prosocial behaviour. However, Pelletier, Dion, Tuson,

and Green-Demers (1999) found that people's amotivation with regards recycling and other environmentally friendly behaviours could be attributed to people's beliefs that they were incapable of carrying out the requisite behaviours, and that those behaviours would have little positive impact on the environment anyway. These beliefs have clear similarities to the more generalised impersonal orientation discussed above.

Based on the work of Gagné (2003), we expected autonomy orientation to positively predict basic need satisfaction and general helping, and for basic need satisfaction to partially mediate the relationship between autonomy orientation and helping. Theory and previous research would suggest that impersonal orientation would negatively predict both basic need satisfaction and general helping. Given that controlled orientation has been found to positively predict competence and relatedness but negatively predict autonomy, it is not clear what the effect of controlled orientation on overall basic need satisfaction may be (Deci & Ryan, 2000, 2008b; Pelletier et al., 1999; Ryan & Deci, 2004). Over and above the relationships between the causality orientations and prosocial behaviour, we expected to find that basic need satisfaction would be best modelled as a higher order factor indicated by autonomy, competence, and relatedness, and that basic need satisfaction would positively predict prosocial behaviour.

4.5.1 Method

Participants and Procedure

Participants (total $N = 235$, 129 females) were members of the public, recruited via Facebook and email 'snowballing'. They were given the option to enter a prize draw for £25. The difference in prize draw value from Study 1 was due to changes in the university's ethical procedure. Participants completed the questionnaire online,

having first read an explanatory statement about the study which assured participants that their responses were voluntary and confidential. Contact details obtained in order to award the prize draws were kept separately from questionnaire data to ensure anonymity. Demographic details for participants can be found in Table 4.1.

Measures

Autonomy, relatedness, and competence satisfaction (ARC-S) scale. The ARC-S scale (L. G. Morgan et al., 2013), as described in Study 1, was used to measure satisfaction with autonomy ($\alpha = .81$), competence ($\alpha = .65$), and relatedness ($\alpha = .88$).

Basic need satisfaction in general (BNS-G) scale. As in the previous studies, the BNS-G scale (Gagné, 2003) was included and used in supplementary analyses (see footnote 3).

General causality orientations scale (Deci & Ryan, 1985b). This scale assessed participants' general motivation orientations, measuring the degree to which they tend to respond in ways that are autonomous ($\alpha = .77$), controlled ($\alpha = .75$), or impersonal ($\alpha = .85$). Participants read 17 vignettes that reflect a range of social interactions and achievement situations. Participants rated the likelihood that they would respond in three different ways to each scenario on a 1 (*very unlikely*) to 7 (*very likely*) scale. The three responses reflect autonomous, controlled and impersonal orientations to each scenario. For example, participants were presented with the scenario, "You are embarking on a new career. The most important consideration is likely to be..." and responses, "Whether you can do the work without getting in over your head (impersonal)," "How interested you are in that kind of work (autonomy)," "Whether there are good possibilities for advancement (controlled)."

Engagement in prosocial behaviours in general. General helping was measured by the Self-Report Altruism scale (Rushton et al., 1981), as described in Study 1, $\alpha = .83$.

Marlowe-Crowne social desirability scale: Short form B12. Social desirability was measured with the 12-item MC-SDS (Reynolds, 1982), as described in Study 1, $\alpha = .66$.

4.5.2 Results

Preliminary Analyses

Table 4.4 shows descriptive statistics of the measured variables. There were main effects of relationship status, $F(5, 214) = 5.66, p < .001$, and employment status, $F(6, 213) = 3.06, p < .01$, on general helping. Ethnicity was unrelated to general helping. Gender was unrelated to any of the main variables, and employment status was unrelated to competence. However, there was a significant effect of employment status on autonomy $F(6, 32.56) = 7.29, p < .001$, and relatedness, $F(6, 30.45) = 2.71, p < .05$. Ethnicity and relationship status were unrelated to autonomy, competence, or relatedness. Social desirability was positively related to general helping, autonomy, competence, and relatedness. Relationship status, employment status and social desirability were included as control variables in subsequent model testing.

Table 4.4

Descriptive statistics, Cronbach's alphas and bivariate correlations among study variables, Study 3

	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7	8	9	10
<i>Control Variables</i>													
1. Social desirability	6.69	2.61	.66	-									
2. Employment status	2.45	2.08	-	.04	-								
3. Relationship status	2.62	1.10	-	.20**	.10	-							
<i>Main variables</i>													
4. Autonomous orientation	6.06	0.52	.77	.33***	.26***	-.01	-						
5. Controlled orientation	4.02	0.74	.75	-.30***	.09	-.06	-.13	-					
6. Impersonal orientation	3.65	0.98	.85	-.31***	.12	-.01	-.33***	.32***	-				
7. Autonomy	5.67	1.22	.81	.37***	.21***	.09	.42***	-.04	-.48***	-			
8. Competence	4.95	1.15	.65	.51***	.11	.06	.44***	-.17*	-.63***	.83***	-		
9. Relatedness	5.87	1.06	.88	.49***	.17**	.10	.46***	-.08	-.35***	.72***	.81***	-	
10. General helping	3.11	0.53	.83	.15*	.05	.17*	.17**	-.21**	-.36***	.10	.23**	.12	-

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. General helping was scored on a 5 point scale, the other main variables on 7-point scales.

In this sample, of the three needs, only competence was significantly correlated with general helping. The three needs were highly correlated with each other. As expected, autonomous orientation was positively correlated and impersonal orientation was negatively correlated with all three needs. Controlled orientation was significantly negatively correlated with competence. Impersonal orientation was negatively correlated with autonomous orientation and general helping, and positively correlated to controlled orientation. Controlled orientation was positively correlated with impersonal orientation and negatively correlated with general helping. Autonomous orientation was positively correlated with general helping.

Fit of the measurement model, comprising the main variables of interest (autonomy orientation, controlled orientation, impersonal orientation, autonomy, relatedness, and competence, and general helping) and the control variables (employment status, relationship status, and social desirability) was inspected. Employment status and relationship status were included as observed variables. The main variables were included as latent constructs. Autonomy, relatedness, and competence were indicated by their respective items. The three orientation variables, general helping, and social desirability were each indicated by three item parcels. Data screening showed data non-normality at the univariate and multivariate level. Therefore maximum likelihood parameter estimates with standard errors and a mean-adjusted chi-square statistic (SBS- χ^2) were estimated.

Estimation of the measurement model showed adequate model fit, SBS- χ^2 (307) = 439.91, $p < .001$, CFI = .94, TLI = .93, RMSEA = .04, SRMR = .05. All factor loadings were significant ($p < .001$) and ranged in magnitude from .40 to .93 (mean $\lambda = .76$). The inter-correlations between autonomy, competence, and relatedness were extremely high in this sample ($M \phi = .79$), supporting the inclusion of a higher order

basic need satisfaction factor. This was fitted to the model and the resulting model fit was adequate, SBS- $\chi^2(321) = 465.58, p < .001$, CFI = .94, TLI = .92, RMSEA = .05, SRMR = .06, although slightly worse than the previous model. However, overall the factor loadings were slightly improved, now ranging from .41 to .98 (mean $\lambda = .75$). Furthermore, second order factor loadings were high and significant (mean $\lambda = .89$) and the average variance extracted from the first-order need constructs was high ($\rho_v = .80$). The results indicate that the observed variables related to their underlying latent constructs in expected ways and that the residual variances related to one another as expected. In addition, the inclusion of a higher-order BNS factor gave similar model fit whilst avoiding potential problems with multicollinearity and suppressor effects that could arise if autonomy, competence, and relatedness were modelled separately. Justification for proceeding to test the hypothesised structural relations with a higher-order BNS factor was thus obtained.³

Effects of Basic Need Satisfaction and Causality Orientation on Helping

A model was fitted to the data with direct paths from all three causality orientations and basic need satisfaction to general helping. In addition, paths from each of the causality orientations to basic need satisfaction were fitted in order to be able to test for indirect effects. Of the control variables, only relationship status significantly predicted general helping, and therefore was the only control variable included in the

³ As in studies 1 and 2, the analyses were also carried out using Gagne's (2003) BNS-G items, with autonomy, competence, and relatedness indicated by all 21-items, 16-items and an additional latent variable accounting for method effect, and the 11-items that were adapted to form the ARC-S scale. In all cases the model fit was poor, supporting the use of the ARC-S scale to measure basic need satisfaction in the main analyses. See Appendix R for details.

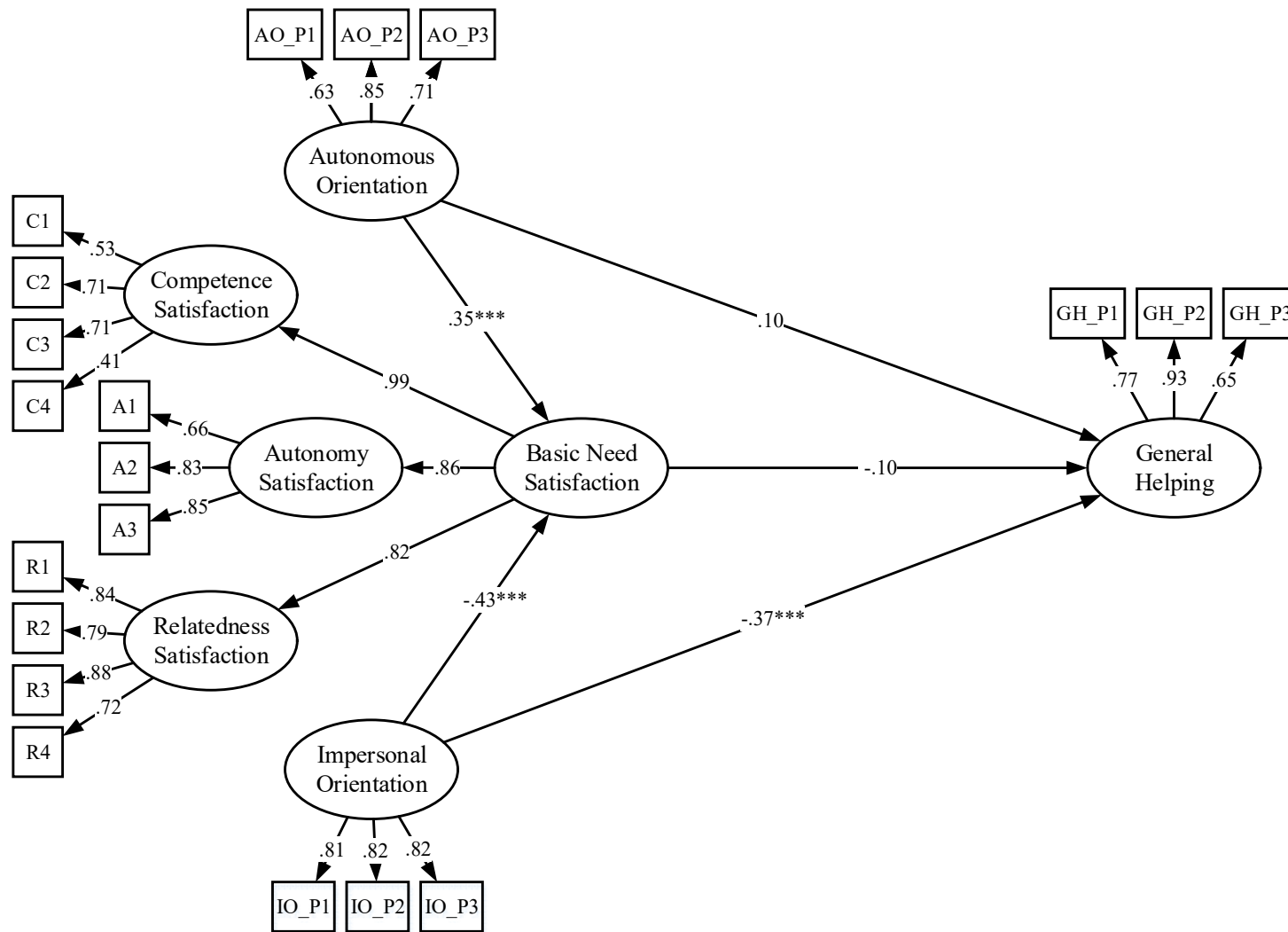


Figure 4.3. Standardised parameter estimates for the structural model of relationships between causality orientations, basic need satisfaction, and helping. Note: *** $p < .001$.

structural analyses. The model fit was adequate, SBS- $\chi^2 (236) = 360.50, p < .001$, CFI = .94, TLI = .93, RMSEA = .05, SRMR = .06. However, controlled orientation was not a significant predictor of either basic need satisfaction or general helping. In addition, basic need satisfaction was not a significant predictor of general helping. In order to achieve the most parsimonious model possible, the model was re-specified excluding controlled orientation (see Figure 4.3). The resulting model fit was good, SBS- $\chi^2 (178) = 249.64, p < .001$, CFI = .96, TLI = .95, RMSEA = .04, SRMR = .06. Unexpectedly, basic need satisfaction remained a non-significant predictor of general helping in this sample ($\beta = -.10, SE = .11, ns$) when autonomous and impersonal orientations were also included as predictors. General helping was negatively significantly predicted by impersonal orientation ($\beta = -.37, SE = .06, p < .001$) but autonomous orientation was a non-significant predictor. Autonomous orientation positively predicted basic need satisfaction, ($\beta = .35, SE = .06, p < .001$), and impersonal orientation negatively predicted basic need satisfaction ($\beta = -.43, SE = .06, p < .001$). Given that basic need satisfaction did not significantly predict general helping in the full model, indirect effects were not tested. Overall 16% of the variance in general helping was explained.

Examination of the modification indices showed that the model would not be improved by fitting direct paths from autonomy, competence, or relatedness to general helping (all MIs < 2). A model was run, excluding causality orientations as predictors. This model had good fit, SBS- $\chi^2 (85) = 122.90, p < .01$, CFI = .96, TLI = .96, RMSEA = .05, SRMR = .04, and basic need satisfaction positively predicted general helping ($\beta = .15, SE = .08, p < .05$). Again, model fit would not have been improved by fitting direct paths from the three needs to general helping (all MIs < 3).

Further Analyses

In order to demonstrate the potential for suppressor effects and model misspecification when autonomy, competence, and relatedness are modelled separately, further analyses were carried out. The structural model shown in Figure 4.3 was tested *without* the higher-order BNS factor. The model fit was slightly better than the model with the higher order factor, SBS- $\chi^2(169) = 229.84, p < .01$, CFI = .97, TLI = .96, RMSEA = .04, SRMR = .05. However, autonomy now had a *negative* relationship with general helping that approached significance ($\beta = -.29, SE = .16, p = .06$). Competence and relatedness were both non-significant predictors. The change in valence from a non-significant positive correlation between autonomy and general helping to a negative parameter estimate approaching significance indicates a suppressor effect.

4.5.3 Discussion

The effect of basic need satisfaction on general helping was non-significant in this study when causality orientations were included in the analyses. As with studies 1 and 2, the model would not have been improved by fitting direct paths from autonomy, competence, or relatedness to general helping. The results for causality orientations were in line with some expectations. Impersonal orientation negatively predicted both basic need satisfaction and general helping. Autonomous motivation positively predicted basic need satisfaction. Controlled orientation was unrelated to either basic need satisfaction or general helping. Contrary to Gagné's (2003) finding, autonomous orientation did not significantly predict general helping, nor was basic need satisfaction a significant mediator of the relationship between autonomous orientation and general helping. Further analyses supported the inclusion of a higher-order BNS factor, a

suppressor effect arising when autonomy, competence, and relatedness were modelled separately without the higher-order factor.

4.6 General Discussion

In line with Gagné (2003), we assumed that satisfaction of the basic needs would tend to lead people to orient towards others, their own needs having been fulfilled, and therefore lead to increased prosocial behaviour. Based on research by Hagger et al. (2006) and Haivas et al. (2013), we sought to investigate whether basic need satisfaction would better predict prosocial behaviour as a single higher-order factor, or as the three separate needs, autonomy, competence, and relatedness. In line with the work of Hagger et al. (2006), the results from this series of studies suggest that, in relation to behavioural outcomes, specifically prosocial behaviour, basic need satisfaction is best modelled as a higher-order factor. Across all three studies, the higher-order factor model had excellent model fit, and there was no evidence that autonomy, competence, or relatedness could predict any unique variance in general helping. In fact, when direct paths were modelled, this resulted in unreliable results, which appeared to be due to suppressor effects. Nevertheless, across all three studies, a significant positive relationship between basic need satisfaction and prosocial behaviour was found.

These results are not easily reconciled with those found by Haivas et al. (2013), who demonstrated significant positive effects of autonomy and competence on volunteering. The problems encountered when trying to analyse the separate effects of autonomy, relatedness, and competence raise important questions for SDT researchers. SDT strongly asserts that satisfaction of autonomy, competence, and relatedness are essential, universal and innate psychological requirements (Deci & Ryan, 2000; Ryan & Deci, 2000b), and that the basic needs form the ‘critical linking pin’ between the social

environment and optimal versus non-optimal outcomes, both in terms of personality and behaviour (Ryan & Deci, 2004). The current series of studies suggest that it can be difficult in practice to separate the effects of autonomy, competence, and relatedness in relation to *behavioural* outcomes. In addition, although a positive relationship between basic need satisfaction and prosocial behaviour was found in all three studies, it is not clear that the relationship between basic need satisfaction and behavioural outcomes is as stable as the theory would suggest. This could be seen most clearly in Study 3 when causality orientations were modelled alongside basic need satisfaction and basic need satisfaction no longer predicted any unique variance in prosocial behaviour.

The results from this series of studies highlight the importance of methodology, and the impact it can have on results. By using latent path modelling, misspecifications in models were revealed that could not be detected if using observed variables. Firstly, structural equation modelling allowed us to rigorously test whether the three separate needs could feasibly predict prosocial behaviour or whether overall basic need satisfaction was a more appropriate predictor. By examining models with a higher-order basic need satisfaction factor, as well as models with three separate needs, the evidence from all three studies suggested that overall basic need satisfaction was the most suitable predictor. Furthermore, latent path modelling demonstrated that modelling the three needs separately resulted in a suppressor effect, the suppressor variable evidently being overall basic need satisfaction. Haivas et al. (2013) used observed variables in their analyses, which allows for the possibility of undetected model misspecification. This may explain why they found autonomy and competence to be significant positive predictors of prosocial behaviour whereas we did not.

Some of the findings did accord with expectations regarding aspirations and causality orientations. Community aspirations did positively predict prosocial

behaviour. This finding is in line with other research that has associated intrinsic aspirations with positive outcomes for well-being (Niemi et al., 2009), as well as relating community aspirations directly to certain types of prosocial behaviours (Vansteenkiste, Simons, Lens, et al., 2004). Furthermore, impersonal orientation negatively predicted prosocial behaviour as previous research suggested it would. Nevertheless, a number of findings are inconsistent with the predictions of SDT. In Study 2, affiliation aspirations appeared to be an entirely separate construct to community aspirations, and did not significantly predict helping behaviour as anticipated. In addition, extrinsic aspirations did not have a negative effect on helping behaviour. In study 3, contrary to the findings of Gagné (2003), autonomy orientation did not positively predict helping behaviour, although the autonomy orientation did positively predict, and the impersonal orientation negatively predict, basic need satisfaction as expected. Most saliently, across all three studies satisfaction with each separate need did not individually predict helping behaviour, and overall basic need satisfaction had a small and inconsistent effect on helping behaviour.

There are a number of possible reasons for these results. In terms of aspirations, whilst stronger intrinsic aspirations relative to extrinsic aspirations overall may positively predict general well-being, it is plausible that within specific domains of behaviour, such as helping, certain aspirations may be more relevant than others. This approach is supported by research exploring exercise behaviours, where specific exercise-related intrinsic aspirations, such as enjoyment and challenge, and extrinsic aspirations, such as appearance and fitness, have been separately investigated in relation to exercise behaviours. Within the domain of exercise, extrinsic aspirations have also been shown to have positive, non-significant, and negative effects on exercise behaviours (Teixeira et al., 2012). This could reflect the possibility that whilst extrinsic

aspirations may have a negative impact on well-being, even extrinsic aspirations have been shown to support goal attainment (Niemic et al., 2009), making their effects on actual behaviours less easily predicted by SDT.

Autonomy orientation has been positively related to desirable outcomes in previous research including prosocial behaviour Gagné (2003) and better performance and well-being at work (Baard et al., 2004). However, although each orientation is thought to exist to some extent in individuals (Ryan & Deci, 2004), previous research has not yet tested the concurrent effects of the three causality orientation. This research therefore raises the possibility that within the domain of specific behaviours, the negative effect of the impersonal causality orientations outweighs the effect of the autonomy and controlled orientations when the effects of all three orientations are tested together. Finally, in relation to the effects of basic need satisfaction on helping behaviours, whilst in theory it may be possible for one need to be satisfied whilst one or even both of the other needs are not, in reality it may be the case that satisfaction of one need arises in conjunction with satisfaction of one or both of the other needs. This may explain why the effect of each need on helping behaviour could not be tested separately. However, these ideas remain speculative and further research within the domains of specific behaviours will be needed to unpack the reasons why certain predictions made by SDT were not supported.

Limitations and Suggestions for Future Research

Basic need satisfaction was measured using the ARC-S scale in this series of studies. The ARC-S scale (L. G. Morgan et al., 2013, i.e., Paper 2) was designed to counter some of the problems identified by Johnston & Finney (2010) with the widely used BNS-G scale (Gagné, 2003) for measurement of basic need satisfaction. Overall

the factor structure of the ARC-S scale was greatly improved over the BNS-G scale, but the subscales remained highly correlated. Recent work by Sheldon and Hilpert (2012) has resulted in the development of the Balanced Measure of Psychological Needs (BMPN). This 18-item scale specifies autonomy, competence, and relatedness as three latent constructs and the study demonstrated the improved construct validity and predictive power of the BMPN over the BNS-G scale. Importantly, inter-correlations between the three needs for BMPN measures were between .46-.49. If further studies are carried out using the BMPN to predict prosocial behaviour, and these obtain consistently small inter-need correlations, path analyses may further clarify whether study of the separate effects of autonomy, competence, and relatedness on prosocial behaviour is feasible.

The path models tested in this series of studies were based on theoretical considerations and empirical data (e.g., Gagné, 2003; Haivas et al., 2013), with basic need satisfaction as a predictor of prosocial behaviour. However, given the correlational nature of these studies, it cannot be conclusively said that basic need satisfaction *causes* prosocial behaviour. It is possible that performing a prosocial behaviour could in fact increase basic need satisfaction, or perhaps increase satisfaction of individual needs. For example, it is conceivable that carrying out a helpful act could enhance feelings of autonomy (acting out of one's own volition), competence (having been able to effectively provide help for another), and relatedness (fostering a sense of connection with another person in the act of helping them). However, it is beyond the scope of this paper to answer these questions. Experimental or longitudinal studies would serve to further enhance our understanding of the causal, or possibly reciprocal, relationships between basic need satisfaction and prosocial behaviour.

Overall basic need satisfaction was found to have a small but unstable positive effect on prosocial behaviour. Overall basic need satisfaction was found to positively significantly predict both prosocial behaviour in general and prosocial behaviour within the specific domain of a university setting. When studied in conjunction with aspirations, basic need satisfaction was found to partially mediate the positive effect of community aspirations on prosocial behaviour. When explored alongside causality orientations, basic need satisfaction was no longer a significant predictor of prosocial behaviour. This suggests that researchers hoping to learn how to increase prosocial behaviour would gain more from further exploration of the effects of aspirations and causality orientations, rather than basic need satisfaction.

Conclusion

Across all three studies, we demonstrated that basic need satisfaction was best modelled as a higher-order factor in relation to the behavioural outcome of general helping. The work of Hagger et al. (2006) supports the use of a higher-order basic need satisfaction factor in relation to other behavioural outcomes, specifically dieting and exercise. Thus, while the three individual needs may be able to explain independent variance in well-being (Reis et al., 2000), we suggest that researchers interested in behavioural outcomes consider including basic need satisfaction as a higher-order factor rather than attempting to investigate the effects of the three separate needs. In conclusion, we hope that this paper acts as a springboard for thorough investigation and rigorous research into this interesting issue.

**Chapter 5: Paper 4 – Towards an Understanding of
Professional Caregiving: Using Grounded Theory to Develop
a Multidimensional Model**

5.1 Abstract

A grounded theory study (following the methodology of Corbin and Strauss, 2008) was undertaken in order to generate a substantive theory of the processes and mechanisms that underlie high quality professional care. Twenty-one participants, including care assistants, nurses, domestic staff, multidisciplinary staff, managers, and nursing home residents, were recruited from two high dependency nursing homes in South East England. The core category was identified as ‘active awareness: multiple routes to a person-centred perspective.’ Active awareness, or a lack thereof, was seen to permeate manager responsibilities, caregiver suitability for and engagement with the role, and the provision of care in a nurturing, or a negative, cycle. Practice implications are explored, including the importance of management approaches in supporting the provision of good quality care.

5.2 Introduction

The need for an improved understanding of professional caregiving is a pressing one. Life expectancy at birth in the UK increased from 70.8 years for males and 76.8 years for females in 1980-82, to 78.9 years for males and 82.7 years for females in 2011-14 (Office for National Statistics, 2013b). It is likely that life expectancy will continue to rise. However, a significant minority of people will experience poor health in their old age. At present, 12% of the UK population aged over 65 experience bad or very bad health, rising to 26% among those aged over 85 (Office for National Statistics, 2013b). For some people, the physical and psychological deterioration experienced in old age will lead to long-term care in nursing homes. At present, in the UK an estimated 5% of people over 65 and 20% of people over 85 live in nursing homes (The Cochrane Library, 2011). It is concerning, then, that a number of media reports have highlighted grave concerns over quality of care in nursing homes (BBC News, 2012b; The Telegraph, 2011) with high profile cases of abuse further fuelling fears (The Telegraph, 2012).

Problems with quality of care in nursing homes have been identified since the 1970s (Harrington, 2005b). Extensive amounts of research have sought to understand the constructs of quality of care (Bowers & Becker, 1992; Bowers et al., 2001; Chung, 2010; Davis et al., 1997; Donabedian, 1980, 1988; Hannan et al., 2001; Lohr, 1997; Nakrem et al., 2009; Pearson et al., 1993; Spalding, 1985) and quality of life (Ball et al., 2000; Bland, 2007; Kydd, 2005; Lawton, 1983a, 1983b; Robichaud, Durand, Bédard, & Ouellet, 2006). In addition, researchers have explored factors that affect quality of care, such as staffing levels (Harrington, 2001, 2005a; Harrington, Zimmerman, et al., 2000), the profit-making status of nursing homes (Chesteen et al., 2005; Clarfield et al., 2009; Comondore et al., 2009; Konetzka, 2009; O'Neill et al., 2003; Tsai & Kinoshian, 2003;

Worth, 2008), burnout among care staff (Chappell & Novak, 1992; Gosseries et al., 2012; Holmqvist & Jeanneau, 2006; McHugh et al., 2011; Shinan-Altman & Cohen, 2009), and the role of training and knowledge among staff (Eggenberger, Heimerl, & Bennett, 2013; Hughes, Bagley, Reilly, Burns, & Challis, 2008). However, an integrated model of professional caregiving, demonstrating the core processes that both influence and drive care professionals, and the direct connections between professional caregivers' experiences and the quality of care that they provide has not as yet been developed.

Donabedian (1980, 1988) suggested that there are three key domains relevant to quality of care: structure quality (organisational or contextual factors that affect performance in care work), process quality (the direct care delivered by staff), and outcome quality (patient outcomes/impact on the patient). The majority of research tends to study structure, process or outcome in isolation, with few attempts to integrate the three domains. At the structural level, some research has found that management style and organisational climate influence quality of care. Sheridan, White and Fairchild (1992) suggested that organisational factors are central to poor care. They found that that, compared to nursing homes meeting minimal quality standards, failing nursing homes had significantly poorer human relations, with administration showing less concern about staff well-being and work relationships. The administration in failing homes also demonstrated a stronger 'laissez-faire' attitude (reflecting a lack of clear, consistent goals) and a stronger 'status orientation' (reflecting practices that emphasise division and hierarchy, and create conflict between units). These findings supported research which described a 'negative cycle' of impersonal caregiving, unhappy staff, and disgruntled service users in nursing homes (Tellis-Nayak & Tellis-Nayak, 1989). This cycle seemed to be largely driven by an organisational climate that

offered staff little in the way of respect, opportunities to take initiative, or appreciation. Further research has found that staff turnover is reduced when management seeks to support the intrinsic motivation of staff and promote an organisational culture where caregivers feel respected and their work is valued (Eaton, 2001).

The relationship between process, measured by caregiving staff variables, and outcome, measured by the quality of care delivered and service user well-being, seems to be little better understood. Hannan, Norman, and Redfern (2001) carried out a systematic review of work satisfaction, work stress, quality of care, and service user well-being. They found that no studies had explored all of these variables in conjunction. In addition, the existing findings were not consistent. Robertson et al. (1995) found that high levels of job satisfaction among nurses were associated with better quality of care, evidenced by more interactions between staff and service users, and greater provision of choice, independence, and privacy by staff. However, Goodell and Coeling (1994) found no significant relationships between nurse job satisfaction and either quality of care or patient satisfaction with nurses' skills. Mixed results were also found between indicators of work stress and quality of care. Two studies found positive relationships between burnout and psychological disturbance among care staff and conflict with and aggression from service users (Goodridge, Johnston, & Thomson, 1996; Macpherson, Eastley, Richards, & Mian, 1994). However, one study found a small but significant positive correlation between staff distress and *positive* interactions between staff and service users (Powers, McPherson, & Treebus, 1994). Another study found that staff distress and burnout were not significantly related to the quality of staff-service user interactions (Jenkins & Allen, 1998).

Hannan et al. (2001) identified methodological shortcomings such as small sample size and inadequate outcome measures as possible reasons for the inconsistent

findings between job satisfaction, job stress, and quality of care. Redfern, Hannan, Norman, and Martin (2002) subsequently carried out a feasibility study in one nursing home to test the relationships between work satisfaction and stress of nursing home staff, and staff and service user perceptions of quality of care. This study found a significant positive correlation between staff satisfaction and staff perceptions of quality of care, and a negative but non-significant correlation between staff job stress and staff perceptions of quality of care. The research also showed that service user perceptions of quality of care were significantly lower than staff perceptions. However, manager-level variables were not investigated in the study, and staff variables were not tested as predictors of quality of care.

Further research has pointed to the individual resources of caregivers as an important aspect of caregiving (Cohen-Mansfield, 1995; Franzmann, Krause, Haberstroh, & Pantel, 2014). Individual resources such as social skills, coping skills and social support are seen to act as intervening variables that moderate the effect of work demands and stressors, such as lack of time and staff shortages, on caregivers' responses (Cohen-Mansfield, 1995). This has been supported by empirical research which found that, for example, an intervention to increase self-efficacy resulted in better knowledge and self-efficacy in dealing with challenging situations as well as short-term reductions in caregiver burnout (Mackenzie & Peragine, 2003). Whilst it is theorised that workplace stress has a negative impact on quality of care (Cohen-Mansfield, 1995), empirical findings have not consistently supported this position. This is possibly due to the fact that research has not accounted for individual resources as moderating variables, which could account for differences between studies.

A major obstacle to the clear understanding of factors that lead to good quality care is the lack of consensus about how to define quality of care, and the related

construct of quality of life. Nakrem et al. (2009) carried out a systematic review of the quality of care literature, exploring indicators of good care across seven countries. The results indicated that whilst selected indicators had face validity, none met all the criteria for validity and there was no evidence that the quality indicators demonstrated meaningful differences in the level of care delivered. Furthermore, only three indicators out of the 46 identified as indicators of quality of care were related to the socio-emotional well-being of service users, the rest being indicators of clinical care. Yet the evidence suggests that socio-emotional support is rated by service users and their families as an important aspect of care recipients' care (Bowers et al., 2001; de Rooij et al., 2012; Nakrem et al., 2011; Spalding, 1985). Research has found that nursing home residents and their families identified being treated with respect and sympathetic involvement in relationships as two of the most important indicators of quality of life alongside perceived competency in nursing (Robichaud et al., 2006). Furthermore, aspects of socio-emotional support provided by care staff have been shown to tangibly affect residents' well-being (Custers et al., 2010). For example, perceived staff support of residents' autonomy has been found to significantly predict resident psychological well-being (V. G. Kasser & Ryan, 1999).

Research exploring the nurse-patient interaction as an aspect of good care may present a route to integration of the socio-emotional and physical aspects of quality of care. Quality of life has been directly linked to interpersonal relationships (Custers et al., 2010) with caregivers being viewed as sources of emotional as well as physical support (Bowers et al., 2001; Patterson, 1995). Brown-Wilson and Davies (2009) found that the approach taken by caregiving staff affected the experiences of both nursing home service users and their families. A resident-centred or relationship-centred approach tended to result in the most positive outcomes for services users and their

families. A resident-centred approach focused on understanding the individual preferences and needs of each service user and supported relationships characterised by friendship, love, and caring. When staff focused on relationship-centred care, the needs of individual service users were considered within the broader context of other service users' needs and the needs of the organisation, resulting in reciprocal relationships that recognised each individual's contribution and its effect on the wider community.

Interpersonal relationships between professional caregivers and service users have also been found to be an essential factor in person-centred care (Kitwood, 1993), an approach that has been viewed as synonymous with good quality care (Price, 2006). Dimensional analysis of person-centred care identified therapeutic engagement with the service user as an important process that alleviates service users' physiological and psychological vulnerabilities. This process was seen to arise through the ongoing interaction between nurse and service user (Hobbs, 2009). The nurse-service user relationship has furthermore been seen to contribute to person-centred processes such as working with service users' values and beliefs, engagement, having a sympathetic presence, sharing in decision making, and providing for physical needs. Person-centred processes in turn were seen to result in higher levels of service user satisfaction and well-being (McCormack & McCance, 2006).

The research into interpersonal relationships provides some preliminary cohesion to our understanding of professional caregiving. However, the majority of research to date paints a disjointed and unclear picture of the interplay between structure, process, and outcome factors in professional caregiving. This issue is further clouded by the lack of consensus regarding the key components of good quality care. Donabedian's framework of quality provides core categories under which evidence for various indicators of quality are grouped (Dellefield, 1999). However, one of the

central propositions of Donabedian's framework was that these categories are causally linked. "Structure leads to process, and process leads to outcome," (Donabedian, 1992, p.357). There is a gap in our knowledge regarding the overarching relationship between structure, process, and outcome. Development of a more integrated framework that could then be empirically tested would enable greater understanding of caregiving and a more focused approach to good quality care.

Current Research

The purpose of this study was to generate a substantive theory, grounded in data, to understand the social processes involved in professional caregiving for the elderly in nursing homes. To achieve this aim we sought to understand the perceived components of good, and not so good, professional caregiving from the key stakeholders in nursing homes. This included understanding the acts perceived to constitute good care, factors that were perceived to facilitate and inhibit the delivery of good care, and how caregiving might be improved.

5.3 Method

Design

Grounded theory methodology, as originally developed by Glaser and Strauss (1967) and refined by Strauss and Corbin (Corbin & Strauss, 2008; Strauss, 1987), informed the research process for this study. The core elements of the grounded theory process are coding, sensitivity, integration, theoretical saturation, and memoing. These components were integrated by the constant comparison method of data analysis. All terms are clarified within the method section, or for quick reference see Table 5.1 for a glossary of terms.

The methodology was developed by Glaser and Strauss (1967) for the purpose of building theory from data through the progressive identification and integration of categories of meaning from the data (Willig, 2013). In this study categories were identified through the process of coding. In the initial stages of analysis the researcher coded concepts, or words which represented conceptually similar incidences contained in the data. Within concepts, the researcher sought to identify properties, characteristics that define and describe concepts, and dimensions, variations within properties. As analysis progressed, the researcher identified categories, higher-level concepts under which lower-level concepts were grouped based on shared properties. Sensitivity, or insight into the data, supported the coding process. Sensitivity denotes the ability of the researcher to understand what is being said in the data and derive concepts and categories from the data, moving from a merely descriptive to an analytical level. Analytical tools aid researcher sensitivity by enhancing his/her interaction with the data. Tools include asking questions of the data and making constant comparisons between incidences in the data for similarities and differences (Corbin & Strauss, 2008; Willig, 2013).

In order to produce a theory from the data, theoretical integration was required. The data was analysed for the 'core category', defined as the category which has the greatest explanatory power and the best potential for explaining interrelations between all the other categories. Categories were linked around the core category and the resulting theory was refined by checking for gaps in logic and striving for theoretical saturation, the point at which all categories are well developed and no new categories can be identified (Corbin & Strauss, 2008). The identification and integration of categories was aided by analysing for problems or situations, process (which is described as the flow of action/interaction/emotion that occurs in response to problems

or situations), consequences, and context (Corbin & Strauss, 2008). Use of grounded theory methodology enabled the development of a testable theory, grounded in data, of professional caregiving.

Study Setting

All participants other than members of the multidisciplinary team (MDT) were recruited from two nursing homes for the elderly owned by the same person, based in an urban setting in the south-east of England. Members of the MDT were based at external sites, and were recruited via their connection with the participating nursing homes. One nursing home provided full nursing care for 33 service users (Home1) whilst the other home provided both nursing and residential care for 30 service users (Home2). Thus a broader spectrum of nursing home care was incorporated into the study's findings.

Research Sample

Initially purposive sampling of care assistants was used, care assistants having been identified as the principal providers of day to day care in nursing homes (Novak & Chappell, 1994). However, the researcher was subsequently guided by the knowledge and expertise of the owner of the nursing homes to engage in strategic sampling of a heterogeneous group of participants in terms of age, gender, and role within a professional caregiving setting. Strategic sampling enabled a wide variety of perspectives and experiences relating to quality of care in nursing homes to be obtained. Participant selection ceased once theoretical saturation had been achieved.

The final sample consisted of ten care assistants, three registered general nurses (RGNs), one member of domestic staff, one activities co-ordinator, two members of the MDT, two managers, and three service users. The professional participants' ages ranged from 21 to 64 years old. The mean age was 44. The service user participants'

ages ranged from 58 to 95 years old. The mean age was 82. Eighteen participants identified themselves as white (including all three service users), three as Asian, and one as African. Of the participants, 82% were British nationals. The professional staff interviewed had been in caregiving roles from between one month and 39 years. The service users interviewed had been in nursing homes from between one month and one year, five months.

Researcher Details

The researcher was female, aged 33 at the time of data collection, white, English, and educated to doctoral level. Prior to undertaking postgraduate studies, the researcher had worked in a high-dependency nursing home as a care assistant for one year and five months in a nursing home that was closed down due to failure to meet CQC standards approximately one year after the researcher finished working there. Following her experiences in the nursing home, the researcher had a personal as well as an academic interest in the research question. This was the first qualitative research project undertaken by the researcher. Prior to the final analysis of the data, but subsequent to the data collection and preliminary analyses for this study, the researcher conducted two quantitative studies (Paper 1 and Paper 3 in this thesis) exploring professional caregiving and prosocial behaviour within the framework of self-determination theory (SDT; see Deci & Ryan, 2000, 2008b; Ryan & Deci, 2000a, 2004 for an overview of the core constructs of SDT). The researcher was therefore sensitive to the detection of concepts and relationships that resonated with the constructs of SDT, but also careful to remain open to the detection of novel concepts and categories.

Data Collection and Analysis

Data sources for this study include 22 participant interviews, and field notes taken whilst in the nursing home environments. Nursing home staff and service users

were recruited during site visits by the principal researcher. Members of the MDT were contacted by telephone, and interviews were arranged. All interviews were carried out face to face. Interviews were audio-recorded and transcribed verbatim. Interview time ranged from 15 minutes to one hour and ten minutes. Adjusted conversational interviewing was utilised, being regarded as the most effective form of interviewing for theory development (Glaser, 1978). Adjusted conversational interviewing is a flexible interviewing approach, guided by semi-structured questions that allow the interviewer to adjust questions to probe for concepts and clarification. The primary questions asked during interviews were, “What is involved in good care?” “What helps you give/receive good care?” “What makes it difficult to give/receive good care?” and “How can you/carers improve caregiving?”

Guided by the constant comparative method, the interview transcripts were analysed line by line, looking at incidences in the data for similarities and differences. Using this method, coding, as described above, captured emerging concepts and categories in the data, within which properties and dimensions were identified. Theoretical memos and diagrams further supported the analysis. Memos are written records of analysis which perform a wide variety of functions. These include summarising the properties and dimensions of concepts and categories, recording questions and comparisons that are being asked of the data, and elaborating the analysis for context, process, consequences, and overall theory development. Diagrams are visual representations of possible relationships between concepts and categories (Corbin & Strauss, 2008). Coding, memoing, and creating diagrams supported the identification of a core category and theoretical integration.

Table 5.1

Glossary of grounded theory terms

Term	Definition
Categories	Higher-level concepts under which lower-level concepts are grouped based on shared properties
Coding	Deriving and developing concepts and categories from the data
Concepts	Words which represent conceptually similar incidences contained in the data
Constant comparison	The analytic process of looking at different incidences in the data for similarities and differences
Dimensions	Variations of properties along a range
Integration	Linking categories around a central or core category and refining the resulting theory
Memos	Written records of analysis
Process	A flow of action/interaction/emotion that occurs in response to problems or situations
Properties	Characteristics that define and describe concepts
Sensitivity	The ability to understand what is being said in the data and thus derive concepts and categories from the data
Theoretical saturation	The point at which all categories are well developed and no new categories can be identified

(adapted from Corbin & Strauss, 2008)

Quality Criteria

A number of different criteria have been suggested to ensure the rigour and quality of qualitative research (e.g., Elliott, Fischer, & Rennie, 1999; Guba, 1981; Lincoln, 1995; Lincoln & Guba, 1985; Patton, 2002; Shenton, 2004; Stiles, 1993;

Tracy, 2010). A distinction has been made between procedural trustworthiness, which refers to criteria that demonstrate the trustworthiness of the data itself, and criteria that enable the reader to judge the trustworthiness of interpretations (Stiles, 1993). Given the breadth of suggestions for best practice, which reflect the varied and complex nature of qualitative research itself, this distinction has been adopted as a meaningful way to highlight the practices used in this study and enable the reader to judge the quality of the research.

Procedural trustworthiness. The criteria of credibility, dependability, transferability, and confirmability provide a good check of procedural trustworthiness (Guba, 1981; Lincoln, 1995; Lincoln & Guba, 1985; Patton, 2002; Shenton, 2004). Every effort was made to meet all four criteria throughout this study. Credibility was supported through several different means. A reflective journal was kept in which the researcher recorded her potential preconceptions and biases in order to minimise the influence of the researcher on the results, and allow the voices of the participants to emerge as faithfully as possible. Triangulation was achieved through accessing a diverse range of participants to obtain a clear picture of the range of needs, emotions, and attitudes of participants. Member checks were achieved through presentation of early analysis and theoretical construction to participants, who corroborated the researcher's findings and expanded upon constructs. Peer scrutiny of the study was provided by one post-doctoral researcher who reviewed the scheme of results alongside a selection of interviews. Several points were raised prompting a return to the data. This resulted in a revision of the core category from 'Perceived valued of care work' to 'Active Awareness: Multiple routes to a person-centred perspective.' In addition, the proposed model was revised to improve clarity, in particular regarding the role of problems and the effect of different individuals' responses to them.

The issues of transferability, dependability, and confirmability are addressed throughout this paper. In terms of transferability, details of the context of the study have been provided under study settings and research sample. Dependability has been supported through a detailed description of the methods used in this study. Confirmability has been supported through triangulation, clear presentation of relevant information about the researcher under researcher details, a detailed description of the methodology that will enable readers to scrutinise the integrity of the results, and recognition of the limitations of the study's method in the Discussion.

Trustworthiness of interpretation. It is proposed that the criteria of coherence, reflexive validity and generativity (i.e., does the research make a significant, meaningful contribution to knowledge) will enable the reader to evaluate whether the findings presented here demonstrate trustworthiness of interpretation. Coherence is achieved by presenting a study in such a way that findings are integrated and comprehensive, ideally forming a framework or underlying structure for the topic of interest, and that the findings are meaningfully related to the research question and related literature (Elliott et al., 1999; Tracy, 2010). This study sought to achieve coherence by the presentation of a visual summary of the analysis, demonstrating via boxes and arrows the categories and relationships between the categories, subsumed under a single 'core category' (see Figure 5.1). These categories and relationships are each discussed in detail, and grounded in examples from the data. Furthermore, the structure of this paper, which includes a detailed exploration of the literature in the introduction, careful description of the methods and procedures adopted, visual and narrative presentation of the findings, and discussion of those findings, seeks to provide the reader with a coherent account of the research conducted.

Reflexive validity refers to the extent to which the data changes theoretical or personal understanding of the phenomenon of interest, moving beyond knowledge predicted by prior experience or existing literature (Stiles, 1993). This is closely associated with generativity, or the ability of the data to make a significant theoretical, practical, heuristic or methodological contribution (Tracy, 2010). These concerns are addressed in the Discussion section, which consider the contribution of the current research to the theoretical understanding of professional caregiving, as well as unique and unexpected findings.

Ethical Considerations

The University of Sussex Cluster-based Research Ethics Committee (C-REC) for Psychology and Life Sciences reviewed the research project and awarded it ethical approval prior to the collection of any data. The owner of the nursing homes gave permission for staff and service users to be approached after the purpose of the study had been explained. Individual participants were informed of the purpose of the study, and the voluntary nature of their participation. In addition they were assured that neither participants nor the nursing homes would be identifiable in the interview transcripts, field notes, or written report.

Given that the study involved work with vulnerable adults, participants were informed that confidentiality could only be assured ‘within the bounds of law and good conscience,’ and that any information supplied that indicated the welfare of a vulnerable adult was in danger would be shared with the relevant authorities. The interview transcripts and field notes were carefully screened to ensure anonymity was maintained. No true names were recorded in any of the data. All participants were given pseudonyms, which are used in the following results section. In addition, consent was not considered to be a “once given, forever binding” construct. Participants were

informed that they could withdraw from the study at any stage. Furthermore, throughout data collection the ‘ethics as process’ model was adhered to. In practice, this meant that the researcher repeatedly self-queried participants’ consent to their on-going participation and their willingness to include specific disclosures as part of their responses (Boulton & Parker, 2007; Ramcharan & Cutcliffe, 2001).

5.4 Results

Active Awareness: Multiple Routes to a Person-Centred Perspective

This study revealed professional caregiving to be a complex and nuanced activity, the engagement with and delivery of which seem to rely upon having an active awareness of the central role of a person-centred perspective. ‘Care work’ is here defined as caregiving delivered by paid professionals rather than by unpaid ‘volunteers’, such as relatives or friends. In addition, caregiving, as studied in this sample, is characterised by care assistants meeting the day-to-day physical and psychosocial needs of elderly service users. Aspects of physical care identified by participants included supporting adequate nutrition and hydration, personal hygiene and toileting, safety, pressure wound care, monitoring pain, and maintaining a clean and welcoming environment. Psychosocial care included forming relationships, making conversation, protecting dignity, giving choice, supporting personal interests, and respecting personal wishes. Caregiving in this study does not include meeting specialist clinical needs through medical or psychiatric care.

Awareness is defined by the Oxford Dictionaries (2014) as, “*knowledge or perception of a situation or fact,*” and, “*concern about and well-informed interest in a particular situation or development.*” Awareness emerged as a central property of the core category, being identified frequently throughout the data. Awareness was

represented by direct references from participants, incorporating emotional or ‘feeling’ awareness guided by empathy and enjoyment as well as a more applied awareness emerging from engagement, knowledge and managerial approaches. Awareness also emerged from the manifest *lack* of awareness apparent in certain participants’ responses. The particular situation or development requiring awareness was ‘a person-centred perspective.’ A person-centred perspective was seen to facilitate and encourage person-to-person interactions at all levels of caregiving, and detracted from person-to-object interactions. Awareness was qualified by the term ‘active’ as it was apparent from the data that being aware was not enough to ensure good quality care, caregivers and managers also need to *act* on this awareness. This is most aptly illustrated by Rachel (care assistant) who stated, “They [care assistants] do care but sometimes they don’t show it.”

The central role of active awareness can be seen visually in Figure 5.1 at the top centre of the model. Active awareness is shown to be directly influencing managerial support below and a nurturing cycle to the right, within which are the caregiver categories of suitability for the role, fulfilment in the role, problems and inhibitors, and fulfilment of care work. The negative cycle on the left hand side of the model mirrors the nurturing cycle but captures the negative aspects of the categories, thought to arise when active awareness and managerial support fail to materialise. In sum, active awareness appeared to drive a cyclical and multi-dimensional process. The data indicated that awareness did not arise uniquely from the characteristics and attitudes of caregivers, nor was it solely generated by management approaches. The process was driven by the qualities of both professional caregivers and management, providing multiple routes to enhance a person-centred perspective among all who work in nursing homes.

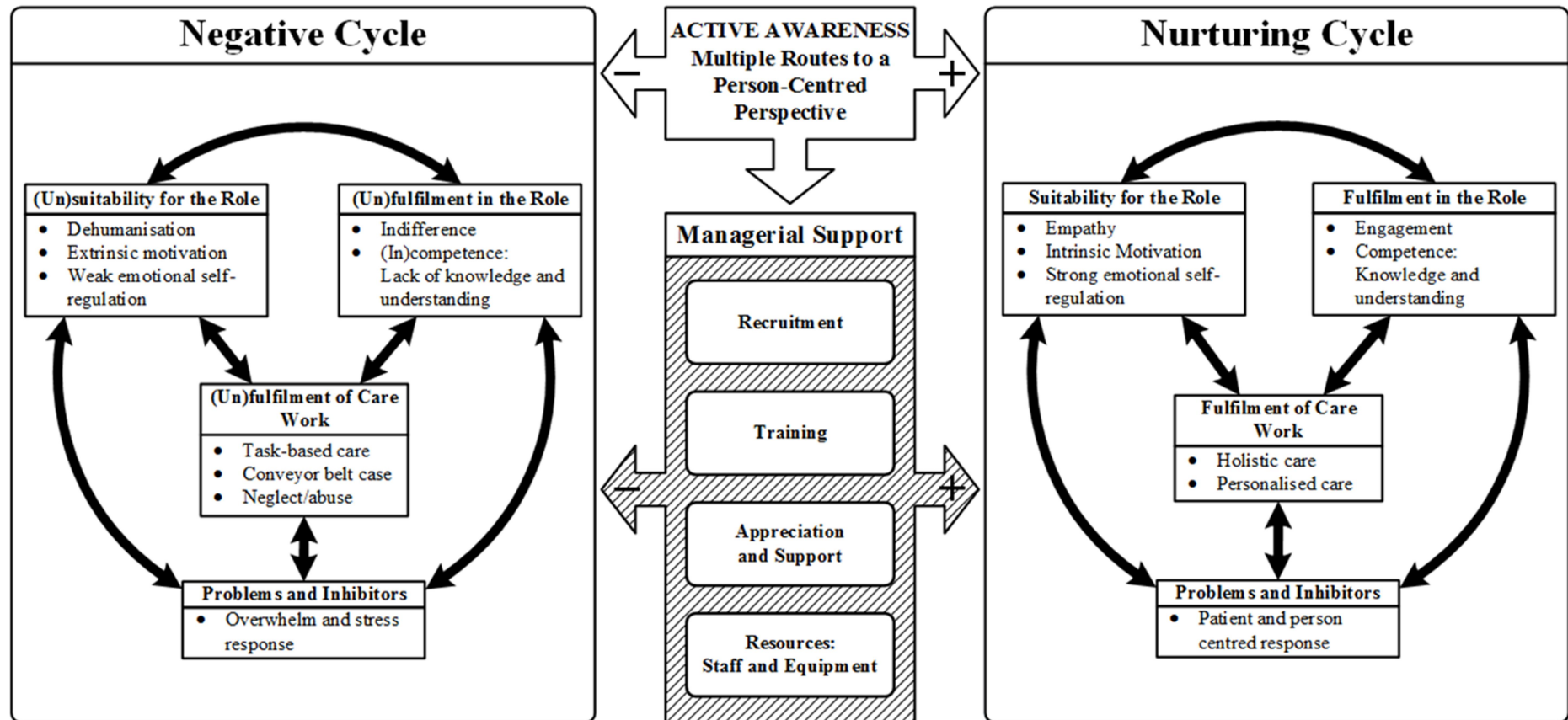


Figure 5.1. A multidimensional model of active awareness in professional caregiving: Multiple routes to a person-centred perspective.

Managerial Support

In the present study managerial support was identified as a crucial component of care work, the specific properties of managerial support/responsibility being characterised as recruitment, ongoing appreciation and support, and provision of resources. Managerial support and its specific properties are represented in the shaded box in the centre of Figure 5.1, with a positive arrow from managerial support to the nurturing cycle on the right hand side of the model and a negative arrow from managerial support to the negative cycle on the left hand side of the model. Participant responses indicated that management could initiate and support a nurturing cycle through an active awareness of the importance of a person-centred perspective in relation to both their staff and service users. The extent of this awareness was seen to determine the quality of staff employed as well as the extent to which caregivers were able to both find fulfilment in care work, and fulfil care work to a high standard. A lack of active awareness in management was seen to lead to a negative cycle of poor staff suitability for the role, lack of fulfilment in the role and poorer quality care.

Participants indicated that the recruitment process was a crucial managerial responsibility. The process ideally would be rigorous, engage intuition, and assess the prospective caregiver for their suitability for the role. Shirley (manager) described a recruitment scenario which demonstrated that while some managers would be concerned to see candidates' potential for engagement with the role and caring qualities, other managers may take on a candidate with sub-optimum qualities simply to fill the role:

S: Or, like this chap we interviewed this week, who said to me, 'Well, it's easy isn't it.' And he lost himself a job on most of his answers like that ... very negative about the last place he worked at ... Um, and yeah, he told me nights were easy. And we gave him a scenario, what would you do in this situation. And his clinical practice was really quite scary. So he didn't get the job on that, on those reasons. But he's had no problem getting jobs in various nursing homes recently.

The interviews indicated that management have a responsibility to provide support for caregivers once they commence in the role. First and foremost, it seemed that managers need to provide practical resources such as sufficient numbers of staff and equipment, without which fulfilling care work to the highest standard becomes more or less impossible. All professional participants perceived that even the best caregivers struggle to provide person-centred care without sufficient staff and/or equipment. Penny (staff) explained, “when you’ve got the time you give that extra care... [but] if you haven’t got the staff, it puts a lot of strain because the work, it’s, the work is still there, the standard is still there, you can’t cut corners. But it’s so difficult not to when you’re really stretching yourself.” Alana (RGN) explained that a lack of staff specifically led to less time with each service user, meaning less time to meet each of their needs:

I: I was wondering if you can kind of think, um, what sort of things make it difficult to give as good care as you’d like?

A: Um, staffing levels. If you’re low on staff. Facilities. Um, I suppose that’s the main thing really. So if you’re understaffed then you’re not, they’re not gonna get what they need, you know, because you’re cutting time, you’re short aren’t you, you’re cutting time, each patient you visit you’re going to cut their time short to move onto the next one.

Managers were also perceived to have responsibility for the provision of and access to training. Training was seen to be central to developing awareness through understanding and knowledge. Anne (manager) linked training specifically to greater knowledge and understanding, “So I think as people get into the job more and do more training, they realize why they’re doing it and it makes it more interesting and then they can understand why they’ve got to push fluids and perhaps actually say, ‘Because sometimes you get constipated and this will help,’ and all the rest of it.” Training was also perceived to support caregivers’ development of empathy by encouraging staff to

take the perspective of service users, for example, reflecting on feelings of fear whilst being in a hoist.

Finally, personal support via supervision and appreciation seemed to embody the awareness of a person-centred perspective of managers towards their staff. Participants indicated that supervision and expressions of appreciation enabled caregivers to cope better with the role and potentially find greater fulfilment from care work. Anne (manager) took a particularly personal stance on the provision of support, giving an example where supervision and appreciation were strongly linked to a caregiver's improvement in the role:

A: And we've talked about team work, and asked her to be quite proactive so that we'd, I said in report 'Just speak up, we respect what you say because you are on the floor,' so we all have, in the mornings we have a little bit of a discussion with handover really, But she's just flourished and she's gone from quite a quiet girl, erm, to somebody who's very jovial, has really good input, erm, and hopefully is going on to do her level 3 in care actually. I think it's a bit nurturing people really.

However, there was evidence that managers do not always engage as positively with staff, and that a lack of active awareness from management has negative repercussions. Philippa (MDT) explained that a lack of supervision and appreciation from managers was linked to a sense of pressure and a focus on carrying out tasks rather than on meeting individual needs:

I: I know that on the one hand you've got care assistants perhaps working in these places that are a bit more difficult [P: yeah]. What do you think is difficult for them, what problems do you think they encounter? Or do you think

P: Erm, again I think it's probably the same problems, they feel very pressurised, erm, the number of residents and they have to, to kind of carry out their duties really, erm, I think again sometimes you get the impression that they're not appreciated, you know, some of their managers in particular homes, you know, that that they don't appreciate them

I: What sort of things could they do to let them know that they're appreciated, if you know what I mean?

P: Erm, I think, regular appraisal should be done and in some homes they're not being done.

However, the interviews suggested that effective caregiving arises from an interaction between managerial support and the individual caregivers. For example, Anne (manager) evidenced that, even with strong managerial support, a caregiver who does not value care work will not succeed in the role:

A: Sometimes you can put, we had a guy recently who, erm, I put a lot of effort into, erm, had drifted from one job to another, seemed to say all the right things at interview, you know. We moved him from nights to days and shadowed him and everything and in the end I started to think, 'I'm wasting my time here. I've put so much into this guy and he really is still can't be bothered.' Um, and he left, you know.

Suitability for the Role

During the interviews, all participants alluded to the importance of suitability for the role in professional caregiving. Suitability for the role was therefore identified as a central category. Suitability for the role is positioned within the nurturing cycle in Figure 5.1, encompassing the particular properties of suitability for the role mentioned by participants. These were empathy, motivation, and emotional self-regulation. These properties seemed to embody qualities that were indicative of a pre-disposition among caregivers to put a person-centred perspective at the centre of their practice, or develop their awareness given the correct training. The category is mirrored in the negative cycle of Figure 5.1 to demonstrate manifestations of the negative embodiments of these qualities. Whilst these qualities reflect caregiver characteristics, management were perceived to need to detect and encourage these qualities. Anne (manager) explained:

A: I'd probably look at in interview for good eye contact, if they've got a bit of a sense of humour, erm, and if they're able to talk easily, to people. And sometimes people are quite quiet and reserved but actually they can

still communicate quite, quite well. And I think it's them the residents have confidence in, they've got to have confidence in the person they're looking after. Erm, what else? And people, someone who's enthusiastic really, and I think that's it. I think you can probably train people and give them the knowledge to become a good care assistant, but if they've got those sort of basic skills, then you're half-way there.

Empathy. A “feeling for the elderly”, or a sense of empathic connection with the elderly, emerged as a key property of suitability for the role. This concept of a feeling for the elderly was expressed by participants talking about appreciation of the universal human experience, that we all age and will one day die. Participants reported that appreciation of the universal human experience was accessed either by direct perspective-taking, imagining oneself in that same situation or knowing that one day “it could be me,” or by contemplating the elderly as though they were a parent or grandparent. For example, Carol (senior care assistant) explained that she uses both perspectives to inform her care work:

I: Well, I was just wanting to talk about, you worked with your Mum, obviously, and you looked after her, and, erm, I mean, how do you think that kind of impacted on your work as a care assistant?

C: Erm, because I would like to treat everybody the same way I treated my mother. And I would eventually like, well, no I wouldn't because I don't want to be in that position, but if I ever was in that position, I would hope somebody would have the respect to look after me.

There is a sense here that caregiving embodies a deeply held value around respecting other people as human beings. At the other end of the scale, certain participants felt that some people in care work can dehumanise and objectify service users. Some participants raised concerns that elderly service users can be treated ‘like a piece of meat’, which was characterised as, “Oh God, I suppose I'd better get her washed and get her dressed and get her out of bed. You know, that sort of attitude.” (Carol, senior care assistant).

Motivation. As mentioned by Anne, enthusiasm for the job was perceived by many participants to be vital to good care work. At the positive end of the motivation spectrum, participants reported that caregivers could be driven by an intrinsic motivation characterised by a personal desire to help, or a sense of vocation, which tended to be linked to outstanding caregiving. For example, Eileen (senior care assistant) described the progress of a care assistant who came to the role with a strong desire to make a meaningful contribution with his work:

E: We've just had recently, we've just had a guy who come, who comes from [foreign country]. He never done care in his life. Brilliant interview, um, and then we've had him and after only four actually, working on the floor with me four times, already I can put him out on his own. Now, he's just so, I don't know, he's a natural, and he'll just go on improving and improving and he's gonna be a brilliant carer. Could even go on and do his nursing

I: What do you think is sort of so good about him?

E: I think that he really wanted to do the job, um, he really felt that caring was for him, looking after other people, he wanted to give something back, um, and he felt that the way he could do that was to help the elderly.

It seems that the care assistant in question strongly felt that care work with the elderly is a worthwhile and laudable form of employment. This type of motivation contrasted with extrinsic motivation which participants often described in terms of people who came to the role simply because they wanted a job. People who viewed care work as a means to a wage packet, or 'just a job,' were consistently ranked by participants as poorer caregivers who do not connect well with service users and deliver less 'caring' care. For example, Rose (care assistant) explained:

R: The one who just does it as a job and go, come care, I don't they would be giving, they probably don't, if somebody really don't like caring for the elderly, I don't think they would be a good carer. Because, um, it will be just a job and they won't have the emotion and the feelings for the elderly as someone who, you know, loves the job. I think.

LS: So do you think the emotions and feelings are quite important?

R: Yes. Oh yes.

LS: What sort of difference do they make?

R: Well it makes the, a resident can always tell if somebody really likes the job or if they're doing it just for. Because there's the behaviour. I mean there's people how, it's not slap-dash but you can always tell someone who's disinterested because by the way they walk, the way they approach the resident.

Emotional self-regulation. During the interviews a large number of participants indicated that good emotional self-regulation, framed as patience and a positive, cheerful outlook, was essential to good quality care. Patience was viewed by several participants as a core quality that enables caregivers to cope with a lack of resources, challenging situations, and conflicting demands and continue to respond to service users calmly and respectfully. Penny (domestic staff) discussed both the challenge and the importance of having patience:

P: There is a time where you have to say no, but if you, you don't have to shout and get frustrated. It's so easy to cos when you're under that sort of pressure, 'Oh, go away will you, you're getting on my nerves.' And they do sometimes, they go on. Like we've got one here, she wants tissues, she wants tissues. But she wants them NOW. ... Erm, and it does wear you out sometimes, the frustration. But if you can't handle it, you shouldn't be here.

Many participants also talked about the ability to leave personal problems at home, and engage with others in a happy, cheerful manner whilst at work. Participants viewed this aspect of emotional self-regulation as important because of the effect it has on service users, as Jim (service user) explained:

J: I mean her attitude, she's always the happy go lucky sort with a smile

I: So that's really important [J: it is yes] to you?

J: Well it is because that brings out them, whoever they are, like you. It brings out your, your attitude, your, your, you're, who you are, it brings out you, do you know what I mean?

This was contrasted with caregivers who ‘walk about like a bear with a sore head’. Their emotional ill-being is picked up on by service users, with negative results, as Eileen (senior care assistant) explained, “If somebody goes into a room quite stiff or po-faced if you like, um, straight away you’re going to get hostility. The residents, they won’t co-operate.”

Fulfilment in Care Work.

A sense of fulfilment in the role emerged as an important category, the interviews suggesting that it was more likely to arise in caregivers who were better suited to the role, as discussed above, and tended to result in better caregiving. This is reflected in the nurturing cycle in Figure 5.1, with fulfilment in the role being associated with both suitability for the role and fulfilment of care work, and the negative counterparts of these relationships being mirrored in the negative cycle of the model. Fulfilment in care work was expressed by participants in terms of two main properties: the extent of engagement with care work, and levels of competence in care work. Fulfilment in the role seemed to embody active awareness of a person-centred perspective, with engagement and competence reflecting two routes through which caregivers satisfy their own personal needs in the role, as well as engaging in practices that would satisfy the needs of service users.

Engagement with care work. Participants indicated that caregivers can be engaged with care work both in terms of the extent to which they enjoy care work, and the extent to which they are interested in improving in the role. Most participants reported that care work can be experienced as an extremely enjoyable, rewarding role. This manifested as a simple love of the job for some participants, “I do it because I love

the job,” (Carol, senior care assistant). For other participants, both love of the job and personal satisfaction derived from caregiving were demonstrated. Jane (care assistant) stated:

I: Is there anything else that you think is important to good care that we haven't really covered? Or anything that is a problem that we haven't really covered?

J: Um, I don't think so. It's weird because when I've done, I've done retail and shop work before and I can get quite, um, well even worked in offices and things and, like, I don't like, what's the word I'm looking for? Like here, it's very much like hospitality as well, it's almost like you're working in a hotel or something, because you're bringing up tea, asking if they want anything and all that. But, you know, you can be in other environments, I can be grudging, there's only so many things I'll do for someone. But like here, it's, that's part of the job and I'm absolutely loving doing it. Which is nice.

This link between enjoying the job and ‘going the extra mile’ was further explained by Penny (staff) in terms of the personal satisfaction gained from doing so: “It's all part of caring, doing the extra bits. If you care, and you enjoy your work, it's so rewarding, it's so rewarding...knowing that I've been able to help somebody.” For participants who claimed that they love the job, there was a clear sense that they view care work as both a worthwhile pursuit and as an activity that satisfies personal values. Conversely, many participants reported that some caregivers do not appear to enjoy the work, evidenced by ‘clock-watching’ and indifference to the role. For example, Alana (RGN) stated that some caregivers, “come in with that interest, ‘Oh, it's only six hours, it's only six hours then I'm going to go home again.’” Some participants claimed that for others there was simply a lack of satisfaction derived from their day to day tasks. Shirley (manager) discussed this with reference to a caregiver who had had difficulty in the role, “I think she's in completely the wrong job, as in she likes the elderly but the care side of it, I don't think she enjoyed that shift work, I don't think she enjoyed washing and dressing people.”

Engagement also manifested as the extent to which caregivers connect with training and learning. Several participants reported that caregivers invest a lot of personal time and effort in order to obtain qualifications. For example, Penny (staff) described the dedication and perseverance she and others have shown in order to obtain National Vocational Qualifications (NVQs):

P: It's a dedication. You're dedicated to the work but it doesn't mean. I don't know how to explain myself really. I mean they do all their NVQs and, you know, that's hard work. I mean I've got an NVQ for housekeeping, housekeeping 2, NVQ 2 and that was hard work. You take it home. You can't sit here and, it does say to sit here and do it for an hour now and again but because of the nature of the job, you haven't got an hour. And when they take these NVQs, they take them home and they spend hours upon hours. I mean we've got one girl here, she's doing the, she's done them all, you know, and the hours and the dedication she's given, you know.

Participants also described engagement in terms of caregivers being proactive in seeking out information and training. Participants referred to seeking information about specific service users, for example, "if you're interested and you care, you find out about...the service user... You find out what is wrong with them, erm, have they got dementia because they've had a stroke because that the responsible thing," (Carol, senior care assistant). Participants also mentioned pursuing training beyond the mandatory training requirements, "if they're serious about being a carer, they'll want to do the training, they'll want to learn more about the elderly," (Eileen, senior care assistant.)

Competence in care work. Competence in care work was characterised by participants as levels of knowledge and understanding. Participants perceived that understanding the purpose of caregiving tasks was beneficial because caregivers' comprehension about why they are carrying out certain tasks (e.g., encouraging service users to drink because it prevents dehydration, constipation, deterioration in skin

condition, and pressure sores) was seen to support the enthusiasm of caregivers for carrying out these tasks as well as improving caregivers' confidence in their ability to carry out tasks. This process was explained by Anne (manager):

I: What are things that you're looking for, for people to improve on as they kind of get more experienced?

A: What, as care assistants?

I: Mmm, mm.

A: Erm, why things happen. You know, I think we can drum in, especially if the weather's been hot like this, you know, fluids, must push fluids, you can go back to certain people if they don't drink well, go back half-hourly. It's all very well me saying this, but why? And it's not until you've been in the job for a little while, and then you, you know, you learn a little bit more about the reasons why and then you can put all your, it's like a jigsaw puzzle isn't it, and then you can need fluids because of hydration, because your skin's better, so you don't get pressure sores and all this, so you don't get constipated, and there's, there's lots of reasons why that one simple thing to ask somebody to do, erm, is so necessary really.

Furthermore, participants reported that knowledgeable caregivers inspired the service users' confidence in the caregivers. This contrasted with participants who reported that caregivers who lack awareness cannot explain their actions to service users, nor inspire confidence in them. Stella (RGN) explained the link between knowledge and both the caregivers' and the service users' confidence in the care being provided:

S: Well, if I tell you to just go and do such and such and you just go that patient and say right, you know, you don't even explain, they just say, 'I'm doing this job,' and they say, 'Why?' and you don't know why... [both laugh] well, you're not going to give a lot of confidence, are you.

Finally, some participants reported that caregivers are empowered by knowledge and understanding. Caregivers can gain more technical skills such as taking blood pressure, pulse, respiration, and oxygen saturation measurements and also gain in personal confidence. This was seen to support their ability to interact with nurses and

managers from a position of authority, and to be able to contribute meaningfully to overall caregiving rather than being somewhat passive. Shirley (manager) explained this dichotomy: “I think it empowers them a bit more and they will come to me and say ‘Oh so-and-so’s bottom is sore, I think we need to, we need a mattress or...’ Rather than not doing anything about it or just sort of coming and saying ‘Oh, [Name’s] bottom’s red.’”

Problems/Inhibitors Encountered in Professional Caregiving

Across all the interviews and other data sources, participants mentioned problems and inhibitors encountered in professional caregiving. These could be generated at the managerial level or at the level of caregivers and caregiving tasks, with responses to these problems being perceived to have a direct impact on the care delivered as represented in Figure 5.1. A lack of resources was universally identified as a key factor preventing good care. Participants all mentioned lack of time and being short-staffed interchangeably as having a severe impact on quality of caregiving. In addition, skills shortages and insufficient provision of equipment inhibited the provision of good care. Another problem that was frequently raised was dealing with challenging situations. This included challenging situations with service users, who could be aggressive, abusive or un-cooperative, and with co-workers, who could be lazy, slapdash, or un-cooperative in providing assistance.

Finally, many participants highlighted that conflicting demands affected the delivery of good care. Conflicting demands included service user’s desires (e.g., not wanting to wash) conflicting with service user’s needs (e.g., maintenance of personal hygiene), service users competing for staff time (e.g., two service users requiring assistance from one caregiver at the same time), service users’ desires/actions infringing on the needs of others, and indirect personal care (e.g., re-stocking essential items such

as wipes, aprons, gloves) competing with direct personal care (e.g., attending to service users).

The results suggested that the key difference between those who were ultimately able to deliver good care, and those who were not, lay in individual responses to challenging situations. This applied to both managers and caregivers. Participants indicated that the optimum response was the same at both levels – a calm, positive approach that focused on meeting individual needs and obtaining the best possible outcomes. Managerial responsibility to respond positively to difficulties was strongly promoted by Anne (manager) who felt that the extent to which caregivers could fulfil their work was largely down to the attitude of the manager:

A: As a manager I think you need to walk through that door with a smile on your face and be positive, um, because it radiates down so quickly and you only need somebody to come in as a manager, erm, with a bit of a sour face and a bit huffy and puffy and the whole atmosphere of the home will change. And so to me that is really positive really, that you've got to come in positive and no matter what happens...if you say 'Ok, we'll organize it, you do this, we'll do this, we'll tie in together', perhaps get the cleaning staff to make the beds that day, and kitchen staff to help out and things, you'll find the morning whizzes past and people think, 'Oh, actually that was quite a good morning,' you know. And, it is very much leadership I think.

For caregivers the need for a calm, reflective response is particularly salient, especially when actively responding to service users. Eileen (senior care assistant) describes a difficult situation, recognising that becoming overwhelmed and stressed is a possible response, but highlighting the value of a calm, person-centred approach that enables a respectful response to be made:

E: A lot of people don't know how to deal with people. They don't have people skills.

I: So that's something that you're strong on?

E: Yeah, because if you can't sit down and talk to an elderly person, and they start shouting and ranting and raving at you, and if you start shouting

and raving, it's not going to get you anywhere. They're expecting you to do that. They're expecting you to fight back. There's a difference to fighting back and being strong. And you do have to be strong because sometimes they will test you to the absolute limit. But you've got to rise above it every time. Not easy. Especially when you've got two or three people screaming at you. Who do you turn to first? Better to step back and think, 'Right, who do I deal with first?' Rather than going, 'Oh for God's sake, shut up.' You know. It doesn't work. It doesn't work so you've got to have people skills.

Fulfilment of Care Work

Managerial support, suitability for the role, and fulfilment in the role were seen by participants to interact to bring about fulfilment of care work via responses to problems and inhibitors. These relationships are reflected in Figure 5.1, with fulfilment of care work within the nurturing cycle being supported by the positive impact of good managerial support. Conversely, the negative cycle reflects the detrimental effects of poor managerial support on caregivers, and the subsequent provision of less person-centred care. Fulfilment of care work was described by participants in terms of two properties: provision of holistic care and provision of personalised care. A person-centred orientation formed the root of fulfilment of care work, where participants reported that caregivers were able to focus on the personhood and humanity of elderly service users, identifying care work as meeting *people's* needs, rather than getting tasks completed. This comes across clearly when John (care assistant) aligned good caring with an attitude of being 'here to serve.'

I: I would like, if possible, for you to explain as fully as you can, erm, what you think makes people's caring work better or worse.

J: Um (.) I think that with caring for me basically is doing what every client wants you to do, that is what I'm here to do, provide service for the person ... Um, I know some of them might be confused, you know that but they still have you know rights to do whatever they want to do, for me, best are you provide for someone is doing what they want you to do.

Several references were also made linking good care to being prepared to ‘go the extra mile.’ Above, Penny associated doing ‘extra bits’ with the personal sense of self-satisfaction that doing so generated. However, ‘going the extra mile’ was also connected to having a person-centred orientation, having a genuine interest in service users as people. Anne (manager) explained:

A: I think it’s being interested, as I say, building a relationship and being interested with people. And, and being a bit open. Residents here like to know what’s going on in their families. And I’ll say to the girls in their interview, you know, ‘You’ll end up saying to the residents, ‘Oh this has happened,’ and then they’ll come in and want to know the next stage of the story.’ It’s almost watching Coronation Street with some of them. Live footage, you know. ... It doesn’t matter if you’re a carer or a nurse, if you’re going to look after somebody, you’ve got to be interested in them. And it’s interested in and wanting to be interested in, that’s going the extra mile I think.

Holistic care. Holistic care emerged as a property of fulfilment of the role, where participants reported seeking to support both the physical *and* the psychological well-being of service users. Meeting basic physical needs is the absolute priority in caregiving. These include the needs for nutrition, personal hygiene, physical comfort, a pleasant living environment, and safety. All care assistants interviewed identified meeting physical needs and safety needs as important parts of care work. Some care assistants mainly identified meeting basic physical needs as the core aspect of their work, but when prompted did demonstrate some awareness of the importance of meeting other needs such as autonomy, by giving choice, and affection or belonging, by forging more of a connection with service users.

However, some caregivers were seen to strive more determinedly to meet psychosocial needs of residents, which include needs for social interaction, stimulation, affection, dignity, and spirituality. For example, Apple (care assistant) identified

making sure service users were happy as one of the most important aspects of her role, seeking to achieve this through social interaction and stimulation for service users:

I: What exactly do you mean by happy? How would you know that a resident is happy?

A: Just sitting there and talking with them, often they'll say you know, are you thirsty? Getting them another drink. If they're hungry, getting them something to eat, erm, you know, sitting down and doing activities with them, erm, put some music on because a lot of them like to listen to music rather than obviously watch the telly because they've been brought up to listen to music, so yeah, stuff like that.

Rose (care assistant) highlighted the importance of ensuring dignity, connection, and allowing for the possibility of meeting spiritual needs at the end of life:

I: Is there anything else that you think that I should know about or that we haven't discussed, um, that is important to good care?

R: Er, there's something here which we didn't talk about where we care for the dying. ... Yes. The care given, we make sure they die with dignity, the rooms, they're in their room, the family is informed, the doctor is informed, no pain, and one of us usually holding their hands or, you know, the family's around. And we respect their family's wishes, you know, if they want a minister to come round and see them and it's mainly the pain free. They've got their family and if there's any wishes, it's respected, well respected here.

Holistic care contrasts with neglect, where the physical and/or psychological needs of service users are not being met. Whilst no evidence of neglect was seen at the nursing homes participating in the study, an example of neglect was clearly described by Eileen (senior care assistant) where basic needs for nutrition, cleanliness, and medication had not been met:

E: Looking at a particular lady that we have at the moment. She came to us eighteen months ago in a pretty bad way, erm, pressure areas and everything, ... And she came to us in a pretty bad way.

I: Could you briefly describe what she had?

E: Well, she had grade 4 pressure area which I could get my fist in, ok, right down to the bone. Her nutrition was really, really bad, her skin was flaking, so that, you know, it had not been taken care of. She wasn't

particularly clean. So she came to us in a bit of a bad way So she came to us and she was twitching, she was actually twitching so there was the thought that, you know, medication wasn't right or somebody hadn't bothered to say, 'You've got to come in, Doctor, you've got to come in.'

Personalised care. Personalised care was characterised by participants in terms of caregivers recognising the individuality of service users and seeking to support service users' autonomy and personal preferences where it was possible to do so. Recognising the individuality of the service user emerged as an important aspect of personalised care, and a valuable approach even when caregivers were perhaps not as strong at meeting basic needs. Anne (manager) gave an example:

A: They'll always be certain names of carers who come up who are the favourite ones who aren't necessarily I think are the best because perhaps their attention to detail isn't great but they're the ones that communicate well with the residents, that make the residents feel special or that they've got, erm, certain, erm, areas of, of, let me think, I think of football. I don't know anything about football but we've got one carer who's really knowledgeable about football so all the men quite like him because he'll discuss football with them and relate to them on that line. He's very upbeat, he's very positive and he's got a good sense of humour so they, the residents and the families all love him and I think he's very good, and he has got a lot better, but I had to, when he first came here, constantly pick him up on little things.

I: So what sort of things would matter to you that he was doing or wasn't doing?

A: Erm, fluid intake and making sure they've always got a drink in front of them and making sure the jug's clean and cup's clean, and probably from his point of view, quite nit-picky things, but to me they are still very important.

A significant element of treating the service users as individuals also seemed to be through seeking to understand and meet the personal preferences of service users, as evidenced by Carol (senior care assistant):

I: What other sort of things do you think are involved in good care?

C: Good care? Ensuring the rooms are warm, that they've got clean sheets, that they've got clean clothing, drinks, available to them, like a

drink of water, or if you know they prefer orange squash, or lemon or blackcurrant. And the whole environment is comfortable and they've got a particular wish for watching the football for instance, even if you yourself don't particularly like football you find out when it's on and go up and put it on for them.

Finally, the importance of giving choice and seeking to support service users' autonomy was associated with personalised care. Stella (RGN) highlighted the importance of giving service users choice:

S: And you know, make sure if it's ladies, do they want their lippy on, ask them what they'd like to wear, choice in what they'd like to wear, you know

I: Is that always easy, you know, we've been talking about time issues when you know,

S: It doesn't take two minutes to open a wardrobe and ask, 'Do you want to wear this?' I mean sometimes you go through like six dresses and they still go no and you think, 'Well, that looks pretty, doesn't it,' but you've still got to give them that right of choice.

Personalised care contrasted with participants referring to 'conveyor-belt care' which was characterised by rushing, being slap-dash or careless, where service users 'feel like an object' and caregivers treat service users as tasks to be completed, much like in a factory-line, rather than as human beings. Anne (manager) specifically highlighted the way that care work could become very task-centred, as opposed to person-centred, giving a factory line feel to the work:

A: You've got to treat people as people. They're not, otherwise it would be like working in factory, wouldn't it. You do this by this time and that was your, on a conveyor belt really and it's not a conveyor belt.

A specific example of slap-dash work was given by Rachel (care assistant):

I: Do you think there's anything about a person that that could mean that they're not able, that they can't produce give the best care

R: A couple of people can be a bit sloppy I suppose, a bit slap-dash

I: So, do you mean, what do you mean like

R: Erm, (.) er (.) well, like they're a bit quick putting them to bed, or like you know, that sort of thing really.

Here the task-centred, time-focused aspect of 'conveyor-belt care' comes across, where caregivers' main concern seems to be to get service users into bed as quickly as possible rather than referring to the personal preferences of the service users, or taking time over the bedtime routine.

At the extreme end of task-centred, conveyor-belt care, abuse can arise. Once again, no specific incidences of abuse were identified at either of the nursing homes included in this study. However, one service user, Jim, mentioned an incident at another location where his personal wishes had been ignored by a caregiver focused on completing a specific task:

J: What he was saying was that you're going to have a shower whether you like it or not ... And I was saying no, if I want one, I'll tell you when I want one, you're not telling it to me to keep on doing it and bullying us all the time was not right.

I: How did that like make you feel?

J: I felt, it made me feel right awful so if I could find I stand as one [makes aggressive gesture], I'd have stayed one. You wouldn't stand for that, you know what I mean? They shouldn't have to stand for crap like that, you know what I mean?

Negative Case Analysis

Jack (care assistant) had come into caring with a certain level of empathy and competence, having provided care for his elderly grandparents. However, from his perspective the management had little or no influence on his caregiving. He stated, "Well, the managers. Erm, doesn't really make a difference for me, you know, um, they're off, um, or they're not around just you know, are just the same you know, doesn't make changes. It's like that, yeah." This lack of engagement with the management was

accompanied by a certain amount of indifference towards the role. Jack stated, “I look at this as just my job. It's just my job. So I don't take it personally, so it's just my job.” Jack seemed to fit the profile of an ‘uncaring’ carer who was just there for the job yet there was no evidence that Jack gave poor care per se. However, he did appear to focus on meeting the physical, rather than any socio-emotional, needs of service users.

Further inquiry suggested that Jack struggled to manage challenging situations, for example, coping with two service users requiring assistance at the same time. As Jack often worked on weekends, it is possible that he encountered these conflicting demands more frequently than other staff, stating, “I always work in weekends so and we're always short on the weekend ... the problem is cos you can't give the quality care when you're short staffed.” Jack appeared to be overwhelmed and stressed by the situations he encountered, his indifference seeming to be a self-preservation strategy against negative emotions. He stated that, “when I'm in here I'm working, I'm working like six hours, that's six hours I'm here but after that, you know, I'm out of here so I forget about things that happen here ... cos if I think about it I get stressed, cos it's stressing, caring is a stressing.” This negative case highlights the pivotal role of emotional self-regulation and demonstrates that, even situated within a caregiving setting alleged to be person-centred by managers, caregivers can fail to engage with both with the role and with management, with a resulting impact on caregiving practices.

5.5 Discussion

This study sought to develop an integrated model of caregiving through in-depth interviews with participants involved in professional caregiving. A qualitative approach was used in preference to quantitative methods in order to gain a deeper understanding of a multifaceted phenomenon in the specific context of a nursing home (Patton, 2002). The use of grounded theory enabled the analysis to move beyond thick, rich description to posit a testable theory of professional caregiving (Corbin & Strauss, 2008).

The proposed model supported many previous findings regarding nursing home care. The important role of management in supporting good quality care accords with previous research that has linked a positive management style to greater job satisfaction among nursing home caregivers (Lucas, 1991; Nakata & Saylor, 1994). Job satisfaction has, in turn, been associated with better quality care (Redfern et al., 2002; Robertson et al., 1995). Specific caregiver qualities such as empathy, commitment to the role, competence, and personal resources have also been associated with good care (Brown-Wilson & Davies, 2009; Cohen-Mansfield, 1995; Dobbs, Baker, Carrion, Vongxaiburana, & Hyer, 2014; Franzmann et al., 2014; Hollinger-Samson & Pearson, 2000; Mackenzie & Peragine, 2003). However, existing knowledge was limited by the fact that few empirical studies have explored the interaction between all three aspects of Donabedian's (1980, 1992) framework of quality of care, namely structure, process, and outcome, at the same time.

A key unique finding from this study was to highlight the importance of active awareness in supporting and promoting a person-centred perspective at all levels of caregiving: structural (management), process (caregiving), and outcome (the impact of caregiving on service users). Mor (1995) suggested that if caregivers are treated like 'replaceable parts', they are more likely in turn to treat service users as objects rather

than fellow human beings. Previous research has also demonstrated the dynamic nature of caring, with a caring, person-centred outlook among management affecting caregivers' own sense of personhood, and supporting them in turn to promote the well-being of service users (Sikma, 2006; Tellis-Nayak, 2007). However, the findings from this study have identified and clarified the potential role of active awareness among both management and caregivers of the multiple routes that can contribute to a person-centred perspective within a professional caregiving context. Participants indicated that effective management practices of recruitment, training, and support are all potential routes to a person-centred approach towards caregivers. In relation to caregivers, participants felt that high levels of empathy, motivation, engagement with the role, and competence were conducive to a person-centred perspective, which in turn was perceived by participants to promote holistic and personalised care of service users. Most importantly participants reported that management and caregiver qualities and practices interact to affect caregiver responses to problems and challenges. In this study, the interviews indicated that a nurturing cycle between management and caregivers can support patient and person-centred responses to stressful situations and promote maintenance of holistic and personalised care. In contrast, participants' responses suggested that a negative cycle between management and caregivers would be likely to result in overwhelmed and stressed responses that were more strongly associated by participants with task-based and conveyor-belt care, or even neglect and abuse.

Another unique and unexpected finding of this study was the pivotal role that patience and emotional self-regulation potentially play as processes that enable professional caregivers to respond effectively to stressful situations, and therefore maintain a person-centred perspective and provide person-centred care. The role of

patience had not been predicted by the practical experience of the researcher.

Furthermore, patience has been associated with good caregiving in very few studies to date, and has not been previously been shown to be a specific process that may explain how person-centred perspectives among caregivers convert into practices associated with person-centred caregiving. In a grounded theory study of good care from the perspective of nursing assistants, patience was identified as a key component of good care (Chung, 2010). Patience was seen to take two forms: taking time with each resident, and enduring psychological and emotional stresses caused by interactions with residents. Patience was also identified as a caring modality in a study of transcultural caring values among American-Philippine nurses (Spangler, 1992). Philippine nurses viewed patience as a quality that they had learned early in life, and applied to their caring services in close association with respect. Interestingly, patience among nursing home administrators in the US, a position synonymous with managers in the UK, has also been positively associated with nursing home quality (Osbaldiston, 2011).

Limitations and Future Directions for Research

This study has certain limitations inherent in any qualitative study if considered against the rationalistic criteria of validity and reliability. However, it is inappropriate to apply such criteria to qualitative research which should instead be judged on its ability to meet naturalistic criteria of trustworthiness (Guba, 1981). The study overall endeavoured to meet the criteria for trustworthiness. However, several improvements are suggested. The study was carried out by a lone researcher. Every effort was made to reduce the influence of the researcher on the analysis and results through reflective journaling, member checks, and peer scrutiny. However, a team of researchers would have allowed for the possibility of stepwise replication, a process whereby the research

team is split in half to analyse data separately. Equivalent insights into the data between the two teams would provide further evidence of the stability and dependability of the results (Guba, 1981). The study also would have benefitted from further efforts to support triangulation. Observation and other forms of data collection such as focus groups could have been included in addition to interview data in order to enhance the richness of the data collected and further account for situational constraints and the constructed nature of knowledge within a qualitative research approach (Pretzlik, 1994).

The results of this study are largely based on data collected from participants working or living in two nursing homes owned by the same person. The exception is the data from the two members of the MDT, who had connections with the participating homes, but also worked with other nursing homes within a defined geographical area. It is not possible to quantify the effects of the particular research setting on the data collection and results in this study. It is possible that the importance of the person-centred perspective emerged strongly in this study as a result of the culture created and promoted by the owner of the two nursing homes. Future studies could seek to conduct an equivalent study in more diverse settings to further investigate the dependability and confirmability of these results (Shenton, 2004). Purposive sampling could attempt to reach participants in nursing homes that are struggling to meet or have failed quality of care standards, or whistle-blowers who have highlighted serious breaches in quality of care. This could reveal whether alternative models of good care exist where a person-centred perspective does not permeate caregiving.

This study obtained the responses of a diverse range of participants, allowing them to voice, to the best of their abilities, their particular needs, attitudes, emotions, and behaviours. A testable model was developed that will also support future quantitative research. In terms of applied research, studies could be designed to

simultaneously measure manager-level and caregiver-level variables upon the outcome of quality of care. Manager-level variables of particular interest include the degree to which they seek to support caregivers to feel competent in their work and to have a sense of belonging and connection in the workplace. Caregiver-level variables of interest include levels of intrinsic motivation, feelings of competence and belonging in the workplace, and emotional self-regulation. In measuring quality of care, indicators of socio-emotional well-being of service users could be prioritised, such as the degree to which service users' choices and personal preferences are supported and the extent to which service users feel a sense of connection with caregivers.

Finally, in this study participants indicated that professional caregivers benefit from a person-centred approach from management, which optimises their ability to engage effectively and compassionately with service users. However, this study did not provide any insight into the conditions that are required for managers to engage with their staff in person-centred and supportive ways. Identification of the inter- and intra-personal factors that support management could provide vital information that would support nurturing, rather than negative, cycles in professional caregiving.

Conclusion

This study strongly suggests that interventions promoting person-centred care could be effective if active awareness of the principles and multiple routes to person-centred care are developed, encouraged and upheld by both management and caregivers. Previous research has, understandably, focused on the needs of service users and sought to better understand quality of care and quality of life from their perspective (Ball et al., 2000; Bowers et al., 2001; Davis et al., 1997; Pearson et al., 1993; Robichaud et al., 2006). However, research has also identified that caregivers are also vulnerable and

require support and a ‘caring’ approach (Eaton, 2001; Sikma, 2006; Tellis-Nayak, 2007). Whilst this study highlights the importance of a person-centred perspective that permeates nursing homes, and equivalent organisations, it must be remembered that nursing homes operate within a cultural context. Nielsen and Glasdem (2013) highlight the plight of ‘vulnerable professionals’ and the relative silence of the economic and political discourse in addressing professional caregivers’ problems. They state, “Apparently the working conditions of professional caregivers do not capture the awareness of politicians,” (Nielsen & Glasdam, 2013, p.989). Active awareness appears to be crucial to good quality care within nursing homes, but it is possible that it is also a vital cultural and political variable that requires further investigation to find out how awareness can be raised to effect meaningful change.

Chapter 6: General Discussion

6.1 Overview of General Discussion

This thesis presented four studies that investigate psychological factors that facilitate and inhibit caregiving and prosocial behaviours. The general discussion will provide a summary of the key findings, and a discussion of theoretical and practical implications of the research. Limitations of the programme of research, as well as potential directions for future research are also examined.

6.2 Summary of Findings

The Role of the Intrapersonal in Professional Caregiving

The central aim of this thesis was to identify key psychological mechanisms that facilitate or inhibit the delivery of good care, focusing on an investigation of intra- and inter-personal elements of quality of care. The findings from papers 1, 3 and 4 highlight a number of intrapersonal factors, or personal qualities, that appear to support good quality care. In Paper 1, it was found that intrinsic community aspirations, which are a relatively stable individual difference, significantly positively predicted care assistants' delivery of psychosocial care. Intrinsic community aspirations were also found significantly positively to predict prosocial behaviour (Paper 3, Study 2). The results from Paper 3, Study 3 suggest that, of the three causality orientations, an impersonal orientation negatively predicts prosocial behaviour, and thus may represent another relatively stable individual difference that would predict caregiving behaviours. In Paper 4, (un)suitability for the role was identified as a key category, and one of multiple routes to person-centred care. The participants suggested that individuals who were naturally empathic, who had an intrinsic motivation to work in a care setting (characterised by a desire to help others or a sense of vocation), and who had strong emotional self-regulation were better suited to the role and were more likely to deliver

person-centred care. In contrast, individuals not suited to the role were seen to exhibit a tendency towards dehumanisation of elderly service users, find it difficult to regulate their emotions, and have a mainly extrinsic interest in the job (i.e., they were working mainly to obtain a wage), task-oriented care being more likely to result.

These findings suggest that certain psychological mechanisms known to affect prosocial behaviour also affect the quality of professional caregiving. The empathy-altruism hypothesis, proposed by Batson (1991, 1998), suggested that higher levels of empathy result in more altruistic helping. Higher levels of empathy have consistently been associated with increased levels of helping behaviour (Batson et al., 1988; Batson, Duncan, Ackerman, Buckley, & Birch, 1981; Batson, O'Quinn, Fultz, Vanderplas, & Isen, 1983; Dovidio, Schroeder, & Allen, 1990; Toi & Batson, 1982). In addition, research has shown that higher empathy among care assistants is related to lower levels of depressive symptoms in nursing home service users (Hollinger-Samson & Pearson, 2000) and affects how care assistants manage service users' pain (Dobbs et al., 2014).

The role of strong emotional self-regulation among care staff in quality of care (Paper 4) is a relatively novel research finding and its effect may also be clarified by findings from prosocial behaviour research. Research has found that personal distress can in fact inhibit helping behaviours or result in less effective helping behaviours (Batson, 1991; Eisenberg, Eggum, & Di Giunta, 2010; Kim & Kou, 2014; Paciello, Fida, Cerniglia, Tramontano, & Cole, 2013). This may explain why strong emotional self-regulation was identified by participants as an important attribute of an effective care assistant who would be more likely to deliver good quality care in Paper 4. In the first place, the ability to remain calm and composed may be a protective factor for care assistants' personal well-being. Research in a related field has shown that personal distress significantly positively predicted burnout and compassion fatigue, and

negatively predicted compassion satisfaction, in a sample of clinical social workers (Thomas, 2013). Furthermore, patience, identified as a specific aspect of good emotional self-regulation, was linked by participants to more person-centred caregiving practices in Paper 4. This finding is supported by a limited amount of research which has linked patience among both care staff (Chung, 2010; Spangler, 1992) and management (Osbaldiston, 2011) with better care. Conversely, staff distress, which would seem to characterise weak emotional self-regulation, has been positively linked to higher frequencies of aggressive behaviours among nursing home service users (Macpherson et al., 1994). A particularly interesting piece of research has shown that personal distress is positively related to moral disengagement, which in turn predicts a lesser propensity to help (Paciello et al., 2013). This may explain why weak emotional self-regulation and dehumanisation were both identified by participants as unsuitable qualities of caregivers in Paper 4.

This body of research also demonstrated that one of the key qualities of a care assistant that contributes to good quality care is an intrinsic interest in the job, which participants characterised specifically as desire to help the elderly in Paper 4. This finding was further endorsed in the quantitative studies by the significant positive link between intrinsic community aspirations and both higher levels of psychosocial caregiving (Paper 1), and more prosocial behaviour (Paper 3, Study 2). This appears to be the first piece of research that has demonstrated a significant link between intrinsic community aspirations and both caregiving behaviours among care assistants and prosocial behaviour in general. However, the findings accord with research that has investigated the effect of ‘prosocial motivation’ at work on prosocial work behaviours in general and commitment to the role among nurses. Prosocial motivation is defined as the desire to make a difference in other people’s lives (Grant, 2007, 2008), and as such

seems to be a relatively similar construct to intrinsic community aspirations. Previous research has shown that prosocial motivation has a synergistic effect with intrinsic motivation, as defined by SDT (i.e., acting from a sense of choice and volition), with high levels of both prosocial and intrinsic motivation leading to higher levels of work behaviours that benefit others (Grant, 2008). Prosocial motivation among nurses has also been found significantly positively to predict professional commitment to the role, namely the desire to stay in the job. This effect remained even after controlling for job involvement, which reflects degree of identification with the job and its personal importance (Nesje, 2015).

Causality orientations were explored as another relatively stable individual difference in relation to prosocial behaviours. The results from this body of research show that only an impersonal orientation was a significant independent predictor of prosocial behaviour (Paper 3, Study 3). Nevertheless, an autonomous orientation was significantly positively correlated with, and controlled orientation significantly negatively correlated with, prosocial behaviour. These results accord with previous research. For example, Gagné (2003) found a significant positive relationship between an autonomous orientation and prosocial behaviours, partially mediated by basic need satisfaction. Furthermore, an autonomous orientation has been linked to positive health outcomes such as weight loss maintenance (Williams et al., 1996), a controlled orientation to negative health outcomes (Deci & Ryan, 1985b), and ‘amotivation beliefs’ (a construct similar to impersonal orientation) to a lack of motivation to engage in environmentally friendly behaviours (Pelletier et al., 1999). It is possible, then, that causality orientations may also predict caregiving behaviours.

The Role of the Interpersonal in Professional Caregiving

The interpersonal has been identified as an important aspect of quality of care (Donabedian, 1988), and was discussed in the introduction as a potential element that links structure, process, and outcome in quality of care. A key unique finding from this thesis was that interpersonal factors at the structural level do appear to be important to care assistants' ability to deliver good care (process), seeming to have a synergistic effect with intra-personal factors among care assistants, ultimately affecting the actual quality of care delivered (outcome). The results from paper 4 suggest that when the management approach is person-centred at all levels of the nursing home, it leads to nurturing cycles. Participants indicated that positive management practices interact with care assistants' personal qualities resulting in strong engagement and high competency in the role. In addition, participants perceived that positive management practices supported patient and person-centred responses to challenges and difficulties, which were viewed as more likely to result in holistic and personalised care. This accords with the work of Tellis-Nayak (2007) and Sikma (2006) who highlighted the importance of caring for staff, as well as service users, in order to generate good quality care. Conversely, participants reported that where management engendered a task-oriented rather than person-centred ethos in the home, it generated negative cycles of disengagement and incompetence in staff, and poor quality care. This resonates with previous research which has highlighted the difficulties faced by care assistants in nursing homes and the compensatory, and less desirable, practices they undertake in response and/or in order to cope (Bowers & Becker, 1992; Diamond, 1986; Tellis-Nayak & Tellis-Nayak, 1989).

Specific management practices identified by participants included recruitment, provision of resources, and appreciation and support. Good recruitment was seen to

contribute to selection of care assistants with personal qualities amenable to good caregiving in the first place. This is in accordance with current government-backed recommendations (Cavendish, 2013; Francis, 2013). The provision of resources, such as training and sufficient levels of staff and equipment required to carry out the tasks of care work, were also seen as important to quality of care by participants. This finding aligns with considerable research supporting the relationship between better staffing ratios and higher quality of care (Harrington, 2001, 2005a; Harrington, Zimmerman, et al., 2000) and the positive effects of training on professional caregivers' self-efficacy, confidence, competencies, and knowledge as well as the quality of life and well-being of elderly people requiring care (Eggenberger et al., 2013; Hughes et al., 2008; Mackenzie & Peragine, 2003). Furthermore, the results indicated that practices such as appreciation and good quality supervision contribute to enhanced care assistant engagement with the role and subsequent caregiving practices.

The causal relationship between a potentially important interpersonal management practice of autonomy support, care assistant variables, and psychosocial caregiving was not empirically supported within a nomothetic paradigm in Paper 1. Given the strong emphasis on management practices found in the qualitative study, in particular the role of appreciation and good supervision, this was a surprising result. Despite targeting a large random sample (over 100 nursing homes were contacted in total), the results showed that no managers who were highly controlling, and only a handful that could be classified as moderately controlling in their management style, participated in this study. This may not reflect the true distribution of autonomy supportive styles among nursing home managers. If so, this may have resulted in an artificially small level of variance in the data, preventing a significant effect of autonomy support from being detected.

Paper 1 found that basic need satisfaction emerged as a significant positive predictor of psychosocial caregiving. Given that the positive effect of basic need satisfaction has consistently been predicted by autonomy support in other studies (Adie et al., 2012; Coatsworth & Conroy, 2009; Gagné, 2003; Markland & Tobin, 2010; Ntoumanis & Standage, 2009) it is still possible that management autonomy support has an effect on care assistant variables and their caregiving that simply was not detected in this body of research. Furthermore, unless rigorous research can prove otherwise, it can be inferred from the significant effect of basic need satisfaction that the social environment in caregiving settings does affect caregiving practices among care assistants, social environments being thought to have the potential to support or thwart satisfaction of the basic psychological needs (Ryan & Deci, 2000b, 2004; Vansteenkiste & Ryan, 2013).

Research within professional caregiving settings provides some indirect evidence that supportive environments, which could be perceived to be satisfying the psychological needs for autonomy, competence, and relatedness, positively affect professional caregivers and the quality of care that they deliver. Caspar and O'Rourke (2008) investigated the effects of access to structures of empowerment, including information, support, resources, opportunity, formal power and informal power, on the individualised care provided by nurses and care assistants in long-term care settings for the elderly. The findings showed that empowerment structures explained 50% of the variance in nurses' provision of individualised care, and 45% of the variance in care assistants' individualised care. The empowerment structures studied could potentially support satisfaction of all three basic psychological needs. Another study found that care assistants in nursing homes were more likely to be satisfied with their job when they had sick pay and pay for personal leave, were in jobs with more opportunities for

teamwork, and reported that their supervisor was a reason to stay in the job. These factors may lead to higher satisfaction of the need for relatedness. In addition, they found that care assistants were more likely to be satisfied with their job if they felt the work was challenging, they were encouraged to discuss the care of service users with service users' families, and they were not subject to mandatory overtime (Bishop, Squillace, Meagher, Anderson, & Wiener, 2009). These variables have the potential to satisfy the needs for autonomy and competence. Although the study did not relate these variables to quality of care, job satisfaction has been shown to predict quality of care in some studies (see Hannan et al., 2001 for a review). It is also possible that care assistants' basic psychological needs at work are met through other sources, such as supportive colleagues and social support at home (Boey, 1998; Chappell & Novak, 1992; Patel, 2008; Revicki & May, 1989).

Clarifying a Core Social Cognitive Mechanism in Professional Caregiving: Basic Psychological Need Satisfaction

Satisfaction of care assistants' basic psychological needs at work emerged as a core psychological mechanism among care assistants that affected their levels of psychosocial caregiving (Paper 1). This appears to be a unique finding in both SDT research and research exploring quality of care for the elderly in long-term care settings. Further research indicated that satisfaction of all three needs may contribute to caregiving behaviours, rather than one or two needs only playing a more significant role (Paper 3). However, this finding was not conclusive, as discussed in the limitations section below, and does need to be verified in a care assistant sample. Indirect effects of intrinsic community aspirations on psychosocial caregiving and prosocial behaviours, and causality orientations on prosocial behaviours, mediated by basic need satisfaction

were also tested. The results were somewhat inconclusive. Basic need satisfaction did not mediate the effect of intrinsic community aspiration on psychosocial caregiving (Paper 1) or causality orientations on prosocial behaviour (Paper 3, Study 3). However, basic need satisfaction did partially mediate the effect of intrinsic community aspirations on prosocial behaviour (Paper 3, Study 2).

A small amount of research supports the importance of autonomy, competence, and relatedness to professional caregivers in nursing homes. Mor (1995) suggested that if care assistants are treated as ‘replaceable parts’, implying a deep lack of being cared about or cared for, they will be more likely to objectify service users. The work by Tellis-Nayak (2007) and Sikma (2006) on the value of caring for staff as well as service users in order to achieve good quality care also alludes to the importance of relatedness to professional caregivers. Lack of autonomy embodied by a rigid adherence to routine among caregivers has been found to adversely affect quality of care in nursing homes (Kane, 1994; Murphy, 2007). Finally, training interventions have been shown to improve self-efficacy and knowledge among professional caregivers (Mackenzie & Peragine, 2003) as well as confidence in dealing with challenging situations that can arise in elderly care (Hughes et al., 2008) suggesting that increasing perceived competence has a positive effect on professional caregivers.

6.3 Practical and Theoretical Implications

The key implication from this body of research is that care assistants for the elderly may provide better care if recruitment strategies focus on identifying applicants who have personal qualities that align well with a care work role, if management seek to provide a nurturing supportive environment, permeated by a person-centred attitude towards both staff and service users, and if care assistants’ basic psychological needs for

autonomy, competence, and relatedness at work are satisfied. These implications seem to accord with, and also add detail to, key recommendations from government-funded reviews into professional caregiving. The Cavendish Review (Cavendish, 2013, p.9) and the Francis Report (Francis, 2013, p.77, 105) call for aptitude tests for frontline caregivers (which include care assistants for the elderly) and for nurses respectively to test for caring and compassionate attitudes and values among prospective caregiving staff. The findings from this thesis support research indicating that certain personal qualities in an individual are more likely to result in good caregiving. The results suggest that in particular aptitude tests could assess levels of empathy, aspirations or values that reflect a genuine desire to help others, and a strong capacity for emotional self-regulation, evidenced by patience and a warm, friendly approach.

The Cavendish Review calls for better leadership, supervision, and support (Cavendish, 2013, p.10), but provides little detail on how this may be achieved at an inter-personal level. The Francis Report calls for better nurse leadership and supervision by ward nurse managers (Francis, 2013, p.76, 106) but again gives no indication of how this might be achieved through person-to-person interactions. The findings from this body of research suggest that a person-centred attitude towards staff as well as service users may have beneficial effects on the quality of caregiving. In addition, it seems likely that management structures and interpersonal practices that support professional caregivers' basic psychological needs for autonomy, competence, and relatedness could enhance the provision of good quality care, in particular psychosocial caregiving.

The recently launched Social Care Commitment (Skills for Care, 2013c) exemplifies the effectiveness of a system that promotes managerial support in professional caregiving as well as recommending actions for professional caregivers.

The scheme was developed in response to the events at Mid Staffordshire NHS Foundation Trust (The Guardian, 2013; The Telegraph, 2013) and Winterbourne View (BBC News, 2012a) and seems to provide a framework that places responsibility on both management and frontline caregivers in the delivery of good quality care that respects the needs of service users. Both management and frontline caregivers agree to commit to fulfilling seven 'I will' statements. The managers agree to support the caregiving staff through effective recruitment, provision of resources that encourage and develop staff competencies, and the establishment of a respectful and positive working environment (Skills for Care, 2013b). Frontline caregivers in turn commit to taking responsibility for their actions, and seeking high standards of care. They strive to do this through good communication, promoting and supporting the dignity, rights, and well-being of service users, and seeking to enhance their competencies through on-going self-reflection (Skills for Care, 2013a). The scheme is voluntary for both employers and employees, and has yet to be given a high profile public launch. However, an initial evaluation has found beneficial effects from the scheme, with the commitment being associated with improvements in quality of care, more personalised care, and more respect for dignity in care work. Participation in the scheme has also been linked to improvements in staff training and staff morale (Allan, Hedland, & Filsak, 2014). Although the scheme does seem to have in place management commitments that are likely to support caregivers' needs for competence and relatedness, the findings from this thesis suggest that the scheme may be enhanced by recognition of the importance of meeting frontline caregivers' psychological need for autonomy.

In terms of theoretical implications, at present this appears to be the first piece of research that has employed SDT to explore psychological mechanisms in professional

caregiving, demonstrating that basic need satisfaction at work and intrinsic community aspirations among nursing home care assistants significantly positively predict their levels of psychosocial caregiving. However, the predicted links between intrinsic aspirations and basic need satisfaction at work, and between autonomous motivation and psychosocial caregiving were not supported within a caregiving context. It is possible that the lack of relationship between intrinsic aspirations and basic need satisfaction at work may be due to the fact that intrinsic aspirations reflect a generalised concept whereas basic need satisfaction at work is domain specific. This seems to be partially supported by the fact that in Paper 3, community aspirations did significantly positively predict general satisfaction with the three basic psychological needs. The lack of effect of autonomous motivation on psychosocial caregiving may reflect the need for a more specialised measure for caregivers, or it may indicate that autonomous motivation has an indirect effect on caregiving behaviours. This latter interpretation is supported by the findings from Paper 4 which suggest that there may be additional variables of interest, not encompassed by SDT, which would contribute to our understanding of professional caregiving. For example, emotional self-regulation or a person-centred perspective may mediate the path between autonomous regulation and caregiving behaviours. Thus it seems that the use of SDT is partially supported as an effective framework within which to conduct applied research. Future research seeking to deepen our understanding of the facilitators and inhibitors of professional caregiving may benefit from the development and use of more domain specific measures pertinent to SDT, but also from the inclusion of non-SDT variables.

In addition, this body of work contributes to the limited amount of literature using SDT variables to predict prosocial behaviour, using rigorous analysis techniques that account for measurement error. The findings that intrinsic community aspirations

and an impersonal causality orientation predict prosocial behaviour make an original contribution to SDT literature and research, empirically testing hitherto theoretical propositions, and extending research that has explored intrinsic aspirations in relation to behavioural outcomes rather than well-being. The findings from this body of research also make contributions to our understanding of SDT itself. The development of the ARC-S in Paper 2 will enable researchers to explicitly measure satisfaction *with* each of the three basic psychological needs, and highlights the possibility that Gagne's (2003) existing measure may also have been measuring satisfaction with the three basic psychological needs, but less explicitly so. The findings from Paper 3 highlight potential issues with the relevance of general aspirations in relation to specific behavioural outcomes. Whilst community aspirations were found to positively predict prosocial behaviour, partially mediated by basic need satisfaction, affiliation aspirations and extrinsic aspirations were found to be non-significant predictors, contrary to expectations. Research conducted in the domain of exercise-related behaviours (Teixeira et al., 2012), has successfully explored the effects of domain specific intrinsic aspirations (e.g., enjoyment, challenge) and extrinsic aspirations (e.g., appearance, fitness). It may be the case that domain specific intrinsic and extrinsic aspirations related to prosocial behaviours would demonstrate effects more consistent with the predictions of SDT.

Paper 3 also demonstrated that autonomy orientation is not a reliable predictor of prosocial behaviour when the effects of all three causality orientations are tested. Whilst previous research has tested the effects of autonomy orientation on a behavioural outcome, it seems that no research has tested the effects of all three orientations concurrently. As each orientation is thought to exist in every individual to some extent (Ryan & Deci, 2004), it seems important that the effects of all three orientations are

understood. The findings from Paper 3 provide preliminary evidence that, in fact, the effects of the impersonal orientation may supersede the effects of the autonomy and controlled orientation, in relation to prosocial behaviour at least. Finally, basic need satisfaction, aspirations and causality orientations were not found to explain a great deal of variance in prosocial behaviour. Whilst the effects of other SDT variables such as autonomy support and motivation style could be explored in more detail, this suggests that SDT is not able to fully explain the antecedents of prosocial behaviour. Future research could seek to incorporate known predictors of prosocial behaviour such as empathy (Batson, 1991, 1998) and self-efficacy beliefs (Alessandri et al., 2009; Caprara et al., 2009; Caprara & Steca, 2005) into the SDT framework, which may both enhance the theory of SDT and our understanding of prosocial behaviour.

6.4 Limitations and Future Directions

Limitations. One limitation of this thesis was recruiting nursing home managers and care assistants in sufficient numbers in Paper 1 to have adequate power for the intended analyses. For example, although autonomous motivation was found to be significantly positively correlated with psychosocial caregiving, it was not a significant independent predictor. Increasing the power of the study could have detected a small effect of autonomous motivation, if one exists. A final sample of 38 managers and 193 care assistants was achieved within the financial and time constraints faced by a single DPhil researcher. The results showed that the minimum recommended ratio of cases to parameters was exceeded (Bentler & Chou, 1987). However, the analyses were constrained by the need for the number of parameters to be less than the number of clusters. In order to achieve this but also account for measurement error, latent variables were used, indicated by the minimum number of

item parcels or observed variables possible. In contrast to Papers 2 and 3, this resulted in relatively few degrees of freedom. Under these constraints, the only possible way to increase the power in Paper 1 would have been to increase the sample size.

Power and minimum sample size in SEM can be calculated using an online facility provided by Preacher and Coffman (2006). Power calculations using the recommended null RMSEA value of .05 and alternative RMSEA value of .08 (MacCallum et al., 1996) showed that in order to achieve power of .80 with alpha set at .05, a sample size of 322 care assistants would have been necessary in Paper 1. Power calculations for Paper 3 showed that high power (.99) had been achieved across all three studies. Across the studies in Paper 3, the number of parameters was not constrained and the sample size exceeded 200. Fully latent variables, or latent variables indicated by item parcels were used. This resulted in large degrees of freedom which, in conjunction with even a moderate sample size of 200, has been shown to result in adequate power (MacCallum et al., 1996). Future studies of professional caregiving using a clustered design could recruit greater numbers of participants in order to improve the power of the analyses and their ability to detect small effects.

The other limitation was not obtaining a broad enough spectrum of responses, particularly among nursing home managers and care assistants. The analyses in Paper 1 revealed that the majority of participating managers and care assistants tended to rate demonstrations of autonomy and relatedness towards care assistants and service users respectively as moderately to highly true of themselves. Very few, if any, nursing home participants stated that this was moderately or very untrue of them. As with research into prosocial behaviour, this could be due to a self-selection bias (Olsen, 2008), with individuals who are more prone to more caring behaviours potentially being more likely to participate. One possible way to obtain a broader range of responses could be to

employ a stratified sampling design, with nursing home quality rating defining the strata. This would produce a more representative sample of nursing homes by seeking to sample nursing homes at all levels of quality.

Another possible problem was the validity and reliability of the measures for use in samples of professional caregivers. Although all of the measures used in this body of research had been previously tested and validated, none of the measures had been validated in a sample of professional caregivers. Previous research has raised concern about the reading ability of care assistants, some of whom have been found to struggle to interpret measures designed for an eighth-grade reading ability (Smyer, Brannon, & Cohn, 1992). Therefore, every attempt was made to keep questionnaires as short as possible in order to reduce participant fatigue and to keep the measures as simple as possible for ease of comprehension. Initial feedback on the questionnaire was positive. However, over the course of data collection, informal feedback suggested that a small number of care assistants (two or three) still struggled to complete the questionnaires, taking up to and over an hour to complete a questionnaire designed to take no more than ten to fifteen minutes to complete. This raises a concern that other care assistants may have also found the questionnaire difficult to complete, which may in turn have affected both the quality of the responses obtained and the rate of participation. Further research could seek to further simplify measures, to create measures specifically for use by professional care staff, or to employ alternative methods to obtain data such as interviews, focus groups, and observation.

One further limitation of this thesis was the focus on the role of inter- and intra-personal factors in the relationship between structure and process in quality of care, with little examination of their effects on outcome. A small amount of data was obtained from service users in Paper 4. However, psychosocial caregiving was only measured as

process (i.e., the self-reported level that care assistants perceived that they delivered) and not as outcome (i.e., the degree of service user satisfaction with and benefits from the care they received) in Paper 1. Although difficulties in measuring quality of care and quality of life from the perspective of service users have been noted (see Paper 1), future research would benefit from measurement of both process and outcome when assessing the effects of interpersonal structural variables and intrapersonal professional caregiver variables on quality of care. Finally, the studies were all cross-sectional. Although the relationships tested were firmly grounded in theoretical and empirical knowledge, causality cannot be inferred from these results. Future research could seek to test causal relationships through experimental, intervention, and longitudinal studies.

Future directions. There remains a great deal to understand about professional caregiving, and the findings presented here point to a wealth of theoretically interesting and practically useful avenues of future research. Three potential routes of particular value for further exploration of professional caregiving behaviours are discussed below.

Predicting the ‘darker’ side of caregiving. This body of research focused on the ‘brighter’ sides of human functioning in relation to caregiving and prosocial behaviours by examining the SDT constructs of autonomy support, basic need satisfaction, intrinsic aspirations, and autonomous motivation, all of which have been positively associated with well-being and optimal functioning. However, the results from Paper 3, Study 3 demonstrated that an impersonal orientation negatively predicts prosocial behaviour. This provides some evidence that further investigation of the ‘dark’ side of human functioning, could illuminate processes that not only are *not* conducive to good quality caregiving, but may also actively contribute to negative ‘caregiving’ behaviours.

A number of SDT studies have attempted to understand the mechanisms that lead to maladaptive behaviours and suboptimal functioning. Whereas need satisfaction is positively related to autonomy support and reliably predicts well-being and positive behavioural outcomes, recent research has shown that need thwarting is a better predictor of ill-being and maladaptive outcomes and is related to authority figures perceived to be controlling (K. J. Bartholomew, Ntoumanis, Ryan, Bosch, et al., 2011; K. J. Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011; Costa, Ntoumanis, & Bartholomew, 2015). Extrinsic aspirations have also been consistently related to psychological ill-being (T. Kasser & Ryan, 1993, 1996), their pursuit being thought to thwart need satisfaction (Deci & Ryan, 2000, 2008a; Ryan & Deci, 2004). In addition, controlled motivation has been reliably related to poorer psychological health as well as poorer performance and persistence in a range of domains including healthcare (Williams et al., 1996), religious activities (Ryan, Rigby, & King, 1993), education (Grolnick & Ryan, 1987), physical exercise (Fortier et al., 2007; Pelletier et al., 2001) and morality in sport (Hodge & Lonsdale, 2011; Ntoumanis & Standage, 2009). This suggests that future research could seek to predict aspects of poor quality caring, including neglect and abuse, using variables including controlling social environments, need thwarting, extrinsic aspirations, and controlled motivation.

Clarifying the effects of autonomy, competence, and relatedness. A clear understanding of whether satisfaction of all three needs is necessary to affect caregiving behaviours positively, or whether one or two needs have a greater impact, would be useful for informing practical advice on how best to support professional caregivers to deliver good quality care. Whilst the results from Paper 3 suggest that satisfaction of all three basic needs results in higher levels of prosocial behaviour, this relationship was not tested within a caregiving setting. Furthermore, research in the field of prosocial

behaviour has provided mixed evidence for the role of satisfaction of the three basic needs. Haivas et al. (2013) found that turnover intention and work engagement among volunteers was significantly predicted by autonomy and competence, and that relatedness had no effect after controlling for the effects of the other two needs. In contrast, Pavey, Greitemeyer, and Sparks (2011) found that highlighting relatedness had a significant impact on prosocial intentions, whereas highlighting autonomy and competence did not. Moreover, fostering a sense of connection and relatedness in participants resulted in both higher prosocial intentions and higher donations to charity.

These mixed results make it difficult to draw concrete conclusions about the role of the three basic needs in relation to prosocial behaviours, let alone caregiving behaviours. This problem is compounded by two issues. First, the studies adopted different approaches (cross-sectional vs. experimental), which makes comparisons between the studies difficult. Second, concerns have been raised about the reliability of the results of both the Haivas et al. (2013) study, due to the use of OLS regression techniques, and Paper 3, due to the high correlations between the three basic needs. Further research could seek to investigate the separate effects of autonomy, competence, and relatedness satisfaction on caregiving behaviours using the recently developed BMPN (Sheldon & Hilpert, 2012). Correlations between the subscales in the BMPN were relatively low, and both construct and predictive validity of the scale has been demonstrated. Ideally latent path analyses would be employed, which would account for measurement error, and also have greater sensitivity to model misspecification and problems such as suppression effects (Coffman & MacCallum, 2005; Kline, 2005).

Moral disengagement. Dehumanisation was identified as an attitude that care assistants can adopt when working with service users. Such care assistants were considered unsuitable for a care work role (Paper 4). Dehumanisation is one of a series

of strategies recognised in Bandura's theory of moral disengagement (Bandura, 1999, 2002; Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). The theory of moral disengagement seeks to understand mechanisms which appear to enable people to engage in amoral or antisocial behaviours, whilst sustaining their image of themselves as moral people. No studies to date have explored the relationships between overall moral disengagement and professional caregiving. However, research has found a strong relationship between moral disengagement and antisocial behaviours. For example, it was shown that whilst moral disengagement is not associated with prosocial behaviour, it is significantly linked to aggression in teenagers (Hardy, Bean, & Olsen, 2014) and to antisocial behaviour among athletes (Kavussanu, Boardley, Sagar, & Ring, 2013). In addition, moral disengagement has been found negatively to predict the tendency to help, mediating the effects of personal distress (Paciello et al., 2013).

Of particular interest to the current research question, it has been proposed that 'defensive dehumanisation' may protect professional caregivers from burnout, especially among those who have higher levels of direct contact with service users. It was found that professional healthcare workers who attributed more uniquely human emotions to a fictitious terminal patient and had the most direct contact with their patients were more likely to report symptoms of burnout, compared to those who tended to attribute non-uniquely human emotions to a fictitious patient (Vaes & Muratore, 2013). The role of moral disengagement in care assistants' delivery of poor quality of care, in particular dehumanisation, could therefore be a useful avenue of research. Moral disengagement could potentially be examined within the framework of SDT to clarify mechanisms at play in the 'dark' side of caregiving by exploring it in conjunction with variables such as a controlling social environment, need thwarting,

extrinsic aspirations, and controlled motivation (Deci & Vansteenkiste, 2004; Ryan & Deci, 2000b; Vansteenkiste & Ryan, 2013).

6.5 Conclusions

Whilst the need to improve quality of care for vulnerable and weak members of society who are dependent on others to meet their needs is widely recognised, this thesis sought to highlight the role of professional caregivers in relation to this goal. A great deal of research remains to be carried out. Nevertheless, the results of this research programme form a preliminary understanding of the key psychological mechanisms that facilitate and inhibit caregiving behaviours among professional caregivers. The qualitative grounded theory study (Paper 4) has improved our understanding of the phenomenon of professional caregiving through investigation of the underlying processes and patterns of relationships in nursing home care. The quantitative studies (Papers 1-3) further clarified this understanding through the measurement and analysis of proposed causal relationships. This research has provided evidence for the interaction between inter- and intra-personal qualities in quality of care. Among professional caregivers for the elderly, empathy, strong emotional self-regulation, and intrinsic community aspirations, as well as satisfaction of the basic psychological needs at work were associated with better quality of care. The role of positive management practices was also highlighted. In addition, this research has contributed meaningfully to our understanding of self-determination theory and its application to real-world settings.

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Appendices

APPENDIX A.

Letter sent to nursing home managers, Paper 1



Manager/Matron
Nursing Home 1
Address 1
Address2
City County
Postcode

15th Nov 2010

Dear Manager/Matron

Research Project Exploring the Manager/Matron – Care Assistant Relationship

I am currently in the second year of a three year DPhil exploring factors that may affect professional caregivers' ability to 'care' effectively. (You may remember me contacting you about a study I carried out in 2009). This is still a very under-researched area, with researchers often focusing on the recipients of care rather than the providers of care, an issue that I am hoping to address.

My studies so far have indicated that the relationship between the key figure in the nursing home, usually the manager or matron, and the care assistants that they manage may have important effects on the way that care assistants interact with residents.

In order to understand this relationship better, I need to collect data from both managers/matrons and care assistants within the same nursing homes. I am therefore asking:

- 1) As the primary figure in the nursing home, would you be willing to complete a questionnaire that assesses your approach to managing care assistants?

- 2) Would you be willing for care assistants at your nursing home to complete a questionnaire that assesses some of the ways they approach their job and interact with residents?
- 3) Do you think that at least ten of your care assistants would be willing to complete a questionnaire?

Obviously the study is **completely voluntary**. However, in order to collect meaningful data I do need responses from both the manager/matron and care assistants within the *same* nursing home. No-one is required to give any personal data and each nursing home would be identified with a unique code (i.e., the names of individual nursing homes will NOT be disclosed). Therefore rest assured that responses will be completely confidential. In addition, this study has ethics approval from the University of Sussex (copy of certificate enclosed).

I very much hope that you are interested in participating in this study. I will be in contact over the next few days to find out whether or not you think we can collaborate on this project.

Yours sincerely

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APPENDIX B.

Problems at Work Scale (Deci, Connell, & Ryan, 1989), Paper 1

On the following pages you will find a series of vignettes. Each one describes an incident and then lists four ways of responding to the situation. Please read each vignette and then consider how appropriate you feel each response is in turn. Rate the appropriateness of each response by circling the relevant number on the scale.

There are *no right or wrong ratings* on these items. People's styles differ, and we are simply interested in what you consider appropriate given your own style.

1. Jim, an employee for several years, has generally done work on a par with others in his branch. However, for the past couple of weeks he has appeared preoccupied and listless. The work he has done is good but he has made fewer calls than usual. The most appropriate thing for Jim's supervisor to do is:

	Very inappropriate		Moderately appropriate			Very appropriate	
a. Impress upon Jim that it is really important to keep up with his work for his own good.	1	2	3	4	5	6	7
b. Talk to Jim and try to help him work out the cause of his listlessness.	1	2	3	4	5	6	7
c. Warn him that if he continues to work at a slower rate, some negative action might be taken.	1	2	3	4	5	6	7
d. Let him see how his productivity compares with that of his co-workers and encourage him to catch up.	1	2	3	4	5	6	7

2. Nancy, one of your employees, has been going to night school working toward her degree. She has been working hard at it, doing extremely well and is proud of her accomplishments. However, you are concerned, because she is very hard to work with whenever the pressure at school is high. You decide the best thing to do is:

	Very inappropriate		Moderately appropriate			Very appropriate	
a. Ask her to talk out how she plans to handle the situation.	1	2	3	4	5	6	7
b. Tell her that she ought to watch the balance between work and school and suggest she put more of her energies into her job.	1	2	3	4	5	6	7
c. Point out how other working "students" have handled the problem and see if that helps her handle the situation better.	1	2	3	4	5	6	7

d. Insist that she cut down on the studying or take fewer courses; you can't allow it to interfere with work.	1	2	3	4	5	6	7
--	---	---	---	---	---	---	---

3. One of the work teams in another branch has been doing more poorly than the other groups all year. The appropriate way for that manager to handle the situation would be to:

	Very inappropriate		Moderately appropriate			Very appropriate	
a. Tell them that performance has to improve and offer them tangible incentives to improve.	1	2	3	4	5	6	7
b. Let them know how the other teams are performing so they will be motivated to do as well.	1	2	3	4	5	6	7
c. Have some discussions with the team as a whole and facilitate their devising some solutions for improving output.	1	2	3	4	5	6	7
d. Keep a record of each individual's productivity and emphasize that it is an important performance index.	1	2	3	4	5	6	7

4. For some time Jack's down times have been at a steady, average level. You suspect however that he could do better. A useful approach might be to:

	Very inappropriate		Moderately appropriate			Very appropriate	
a. Encourage Jack to talk about his performance and whether there are ways to improve.	1	2	3	4	5	6	7
b. Stress to Jack that he should do better, and that he won't get ahead if he continues at his current level.	1	2	3	4	5	6	7
c. Go over your evaluation with him and point out his relative standing with others.	1	2	3	4	5	6	7
d. Watch him more closely; praise him for increased output, and point out whenever he falls behind.	1	2	3	4	5	6	7

5. Recent changes in the operation have resulted in a heavier work load for all the employees. Barbara, the manager, had hoped the situation would be temporary, but today learned that her branch would need to continue to work with reduced staff for an indefinite period. Barbara should:

	Very inappropriate		Moderately appropriate			Very appropriate	
a. Point out that her employees will keep their own jobs only if they can remain productive at the current rate; and then watch their output carefully.	1	2	3	4	5	6	7
b. Explain the situation and see if they have suggestions about how they could meet the current demands.	1	2	3	4	5	6	7
c. Tell all of her employees that they should keep trying because it is to their advantage to do so.	1	2	3	4	5	6	7
d. Encourage her employees to keep up with the work load by pointing out that people are doing it adequately in other branches.	1	2	3	4	5	6	7

6. One assignment in your territory is regarded by all as the worst, involving a regular visit to an unpleasant building to work with poorly maintained equipment. It has been given to the employee with the least seniority. Dave, the man currently assigned to this job, has been doing it for some time. While he is generally very cooperative and satisfied, Dave seems to be increasingly resentful about this job, in part because it's an object of jokes from peers. Dave's manager might:

	Very inappropriate			Moderately appropriate			Very appropriate
a. Let him know that the other people at his level also have to put up with unpleasant aspects of their jobs, and give him a few examples of these.	1	2	3	4	5	6	7
b. Be clear with him that it is his responsibility and be sure he continues to do it.	1	2	3	4	5	6	7
c. Talk to him about the job; see if he can work through his feelings about it and the jokes that get directed at him.	1	2	3	4	5	6	7
d. Point out that the job is fairly assigned based upon seniority: the system works for his good as well as others'.	1	2	3	4	5	6	7

7. Harry, who manages the parts department, seems to be creating something of a bottleneck. Important parts are often "on order" and not in stock, and he often is slow in meeting short notice demands and "emergency" situations. The best thing for his supervisor to do is:

	Very inappropriate		Moderately appropriate			Very appropriate	
a. Emphasize how important it is to keep up with orders and emphasize that he should meet ongoing demands.	1	2	3	4	5	6	7

b. Let him know how other people in comparable positions are managing to keep up, so he can think about it. This might help him figure out how to better keep up.	1	2	3	4	5	6	7
c. Insist that the orders be done within a specified time limit, and check to be sure he is meeting the deadlines.	1	2	3	4	5	6	7
d. Ask Harry what he thinks is wrong and see if you can help him figure out how to better organize his operation.	1	2	3	4	5	6	7

8. One of the customers has let you know that he is not very satisfied with the attitude of his service representative. The thing for you to do might be:

	Very inappropriate		Moderately appropriate			Very appropriate	
a. Raise the matter with your subordinate to see what has been going on for him in dealing with that customer.	1	2	3	4	5	6	7
b. Point out that customer satisfaction is important and that he should work on relating better to the customer.	1	2	3	4	5	6	7
c. Show him some ways that others relate to their customers so he can compare his own style to others.	1	2	3	4	5	6	7
d. Tell him to see to it that the customer is more satisfied and let him know you will be checking up on him.	1	2	3	4	5	6	7

APPENDIX C.

Relatedness towards Care Assistants Scale, Paper 1

Please read each of the following statements carefully, thinking about how it relates the way that you work with care assistants, and then indicate how true each statement is for you by circling the appropriate number.

	Not at all true of me			Somewhat true of me		Very true of me	
I encourage care assistants to talk about things that are important to them	1	2	3	4	5	6	7
I try to suggest activities that I think care assistants will enjoy	1	2	3	4	5	6	7
I try to make sure that care assistants' feelings are acknowledged	1	2	3	4	5	6	7
I encourage care assistants to discuss their problems	1	2	3	4	5	6	7
I make sure care assistants know that they are appreciated	1	2	3	4	5	6	7
I usually encourage care assistants to take part in activities in the nursing home that I think they will enjoy	1	2	3	4	5	6	7
I tend not to let care assistants know that it is important to me that they feel understood	1	2	3	4	5	6	7
I ensure that care assistants are provided with emotional support	1	2	3	4	5	6	7
I don't spend much time thinking about whether care assistants are taking part in activities that they might find especially pleasant	1	2	3	4	5	6	7
I often ask care assistants to talk about what's going on in their lives	1	2	3	4	5	6	7
I often spend time looking for activities that I think care assistants will find beneficial	1	2	3	4	5	6	7
I discourage care assistants from talking too much about themselves	1	2	3	4	5	6	7

APPENDIX D.

Aspirations Index (Kasser & Ryan 1993, 1996), Paper 1; Paper 3 (Study 2)

Everyone has long-term Goals or Aspirations. These are the things that individuals hope to accomplish over the course of their lives. In this section, you will find a number of life goals, presented one at a time.

Please rate how important each goal is to you by circling the appropriate number on the scale:

	Not at all important			Moderately important			Very important
To be financially successful	1	2	3	4	5	6	7
To have good friends that I can count on	1	2	3	4	5	6	7
To work to make the world a better place	1	2	3	4	5	6	7
To have committed, intimate relationships	1	2	3	4	5	6	7
To have many expensive possessions	1	2	3	4	5	6	7
To be admired by many people	1	2	3	4	5	6	7
To help people in need	1	2	3	4	5	6	7
To be famous	1	2	3	4	5	6	7
To have my name appear frequently in the media	1	2	3	4	5	6	7
To assist people who need it, asking nothing in return	1	2	3	4	5	6	7
To be admired by lots of different people	1	2	3	4	5	6	7
To have enough money to buy everything I want	1	2	3	4	5	6	7
To share my life with someone I love	1	2	3	4	5	6	7
To be rich	1	2	3	4	5	6	7

	Not at all important			Moderately important			Very important
To feel that there are people who really love me, and whom I love	1	2	3	4	5	6	7
To have my name known by many people	1	2	3	4	5	6	7
To work for the betterment of society	1	2	3	4	5	6	7
To be a very wealthy person	1	2	3	4	5	6	7
To have deep enduring relationships	1	2	3	4	5	6	7
To help others improve their lives	1	2	3	4	5	6	7

APPENDIX E.

Basic Need Satisfaction at Work Scale (Baard et al., 2004; Ilardi et al., 1993), Paper 1

In this section we would like to explore how you feel when you are at work.

Please rate how true each statement is for you by circling the appropriate number on the scale. Remember, your manager will never know how you responded to the questions so please be as honest as possible.

	Not at all true		Moderately true			Very true	
I feel like I can make a lot of inputs to deciding how my job gets done	1	2	3	4	5	6	7
I really like the people I work with	1	2	3	4	5	6	7
I do not feel very competent when I am at work	1	2	3	4	5	6	7
People at work tell me I am good at what I do	1	2	3	4	5	6	7
I feel pressured at work	1	2	3	4	5	6	7
I get along with people at work	1	2	3	4	5	6	7
I pretty much keep to myself when I am at work	1	2	3	4	5	6	7
I am free to express my ideas and opinions on the job	1	2	3	4	5	6	7
I consider the people I work with to be my friends	1	2	3	4	5	6	7
I have been able to learn interesting new skills on my job	1	2	3	4	5	6	7
When I am at work, I have to do what I am told	1	2	3	4	5	6	7
Most days I feel a sense of accomplishment from working	1	2	3	4	5	6	7
My feelings are taken into consideration at work	1	2	3	4	5	6	7
On my job I do not get much of a chance to show how capable I am	1	2	3	4	5	6	7

	Not at all true		Moderately true			Very true	
People at work care about me	1	2	3	4	5	6	7
There are not many people at work that I am close to	1	2	3	4	5	6	7
I feel like I can pretty much be myself at work	1	2	3	4	5	6	7
The people I work with do not seem to like me much	1	2	3	4	5	6	7
When I am working I often do not feel very capable	1	2	3	4	5	6	7
There is not much opportunity for me to decide for myself how to go about my work	1	2	3	4	5	6	7
People at work are pretty friendly towards me	1	2	3	4	5	6	7

APPENDIX F.

Work Self-Regulation Questionnaire (adapted from Deci, Hodges, Pierson, & Tomassone, 1992), Paper 1

In this section we would like to explore possible reasons why you do things at work. Please rate each possible reason by ticking the appropriate box for you.

Possible Reason	Always	Most of the time	Some-times	Never
I do my work so that my manager won't hassle me				
I do my work because I want my manager to think I'm a good care assistant				
I try to deal with challenging situations at work because I'll feel bad about myself if I don't try				
I do my work because it's my job				
I try to deal with challenging situations at work because that's what I am supposed to do				
I do my work because I'll feel bad about myself if it doesn't get done				
I do my work because it's interesting				
I try to deal with challenging situations at work because I want others to think I am a good care assistant				
I try to do good work so my manger will think I'm a good care assistant				
I do my work because I enjoy it				
I try to deal with challenging situations at work because it's interesting learning to deal with them				
I do my work because I want to give the best care that I can				
I try to work well because it will cause me problems if I don't				
I try to deal with challenging situations at work so that I can learn better ways to deal with them				
I try to do good work because that's what I am supposed to do				
I try to do my work well because I like doing a good job				
I try to work well because I'll feel really bad about myself if I don't do a good job				

APPENDIX G.

Relatedness towards Residents Scale, Paper 1

Please read each of the following statements carefully, thinking about how it relates the care that you give to residents, and then indicate how true each statement is for you by circling the appropriate number.

Remember your manager will never know how you have responded so please answer as honestly as possible.

	Not at all true of me			Somewhat true of me			Very true of me
I encourage residents to talk about things that are important to them	1	2	3	4	5	6	7
I try to suggest activities that I think residents will enjoy	1	2	3	4	5	6	7
I try to make sure that residents' feelings are acknowledged	1	2	3	4	5	6	7
I encourage residents to discuss their problems	1	2	3	4	5	6	7
I make sure residents know that they are appreciated	1	2	3	4	5	6	7
I usually encourage residents to take part in activities in the nursing home that I think they will enjoy	1	2	3	4	5	6	7
I tend not to let residents know that it is important to me that they feel understood	1	2	3	4	5	6	7
I ensure that residents are provided with emotional support	1	2	3	4	5	6	7
I don't spend much time thinking about whether residents are taking part in activities that they might find especially pleasant	1	2	3	4	5	6	7
I often ask residents to talk about what's going on in their lives	1	2	3	4	5	6	7
I often spend time looking for activities that I think residents will find beneficial	1	2	3	4	5	6	7
I discourage residents from talking too much about themselves	1	2	3	4	5	6	7

APPENDIX H.

Autonomy towards Residents Scale, Paper 1

Please read each of the following statements carefully, thinking about how it relates the care that you give to residents, and then indicate how true each statement is for you by circling the appropriate number.

	Not at all true of me		Somewhat true of me			Very true of me	
I make sure that residents are free to decide for themselves how to live their lives	1	2	3	4	5	6	7
I pressure residents to behave in a certain way or do certain things	1	2	3	4	5	6	7
In day to day care, I frequently tell residents what to do without giving them any choices.	1	2	3	4	5	6	7
I often find ways to encourage residents to be themselves in their daily life	1	2	3	4	5	6	7
I tend not to give residents many opportunities to decide for themselves how to do things in their daily lives	1	2	3	4	5	6	7
I encourage residents to carry out their day to day activities in the way that they prefer	1	2	3	4	5	6	7
I often allow residents to choose how to carry out their daily activities	1	2	3	4	5	6	7

APPENDIX I.

Basic Need Satisfaction In General Scale (Gagné, 2003), Papers 2 & 3

Please read each of the following items carefully, thinking about how it relates to your life, and then indicate how true it is for you.

Please rate **how true each statement is for you** by circling the appropriate number on the scale:

	Not at all true		Moderately true			Very true	
I feel like I am free to decide for myself how to live my life	1	2	3	4	5	6	7
I really like the people I interact with	1	2	3	4	5	6	7
Often, I do not feel very competent	1	2	3	4	5	6	7
I feel pressured in my life	1	2	3	4	5	6	7
People I know tell me I am good at what I do	1	2	3	4	5	6	7
I get along with people I come into contact with	1	2	3	4	5	6	7
I pretty much keep to myself and don't have a lot of social contacts	1	2	3	4	5	6	7
I generally feel free to express my ideas and opinions	1	2	3	4	5	6	7
I consider the people I regularly interact with to be my friends	1	2	3	4	5	6	7
I have been able to learn interesting new skills recently	1	2	3	4	5	6	7
In my daily life, I frequently have to do what I am told	1	2	3	4	5	6	7
People in my life care about me	1	2	3	4	5	6	7
Most days I feel a sense of accomplishment from what I do	1	2	3	4	5	6	7
People I interact with on a daily basis tend to take my feelings into consideration	1	2	3	4	5	6	7

	Not at all true		Moderately true			Very true	
In my life I do not get much of a chance to show how capable I am	1	2	3	4	5	6	7
There are not many people that I am close to	1	2	3	4	5	6	7
I feel like I can pretty much be myself in my daily situations	1	2	3	4	5	6	7
The people I interact with regularly do not seem to like me much	1	2	3	4	5	6	7
I often do not feel very capable	1	2	3	4	5	6	7
There is not much opportunity for me to decide for myself how to do things in my daily life	1	2	3	4	5	6	7
People are generally pretty friendly towards me	1	2	3	4	5	6	7

APPENDIX J.

Autonomy, Competence, & Relatedness Satisfaction Scale (Morgan, Bond, & Farsides, 2013), Papers 2 & 3

In this section we would like to find out how **satisfied** you are with the way you feel about your life.

Please rate **how true each statement is for you** by circling the appropriate number on the scale:

	Not at all true		Moderately true			Very true	
I am satisfied with the amount of freedom I have to decide for myself what I do with my life	1	2	3	4	5	6	7
Often, I am not satisfied with how capable I feel	1	2	3	4	5	6	7
I am satisfied with how free I am to express my ideas and opinions	1	2	3	4	5	6	7
I am satisfied with the extent to which I am able to be myself in my daily situations	1	2	3	4	5	6	7
I am satisfied with how often people I know tell me I am good at what I do	1	2	3	4	5	6	7
I am satisfied with how well I get along with people I come into contact with	1	2	3	4	5	6	7
I am satisfied with how much people around me care about me	1	2	3	4	5	6	7
I am satisfied with how often I feel a sense of accomplishment from what I do	1	2	3	4	5	6	7
I am generally satisfied with how friendly people are towards me	1	2	3	4	5	6	7
I am satisfied with how much I like the people that I interact with	1	2	3	4	5	6	7
I am not satisfied with how pressured I feel in my life	1	2	3	4	5	6	7
I am satisfied with how often I have been able to learn interesting new skills recently	1	2	3	4	5	6	7

APPENDIX K.

Centre for Epidemiological Studies Depression Scale (Radloff, 1977), Paper 2

In this section, we would like to explore how you have felt recently, both in your general outlook and physically.

Below is a list of the ways you might have felt or behaved recently. Please indicate how often you have felt this way **during the past week** by ticking the appropriate box.

During the past week:	Rarely or None of the Time (less than 1 day)	Some or a Little of the Time (1-2 days)	Occasionally or a Moderate Amount of Time (3-4 days)	Most or All of the Time (5-7 days)
I was bothered by things that don't usually bother me				
I did not feel like eating; my appetite was poor				
I felt that I could not shake off the blues even with help from my family or friends				
I felt that I was just as good as other people				
I had trouble keeping my mind on what I was doing				
I felt depressed				
I felt that everything I did was an effort				
I felt hopeful about the future				
I thought my life had been a failure				
I felt fearful				
My sleep was restless				

During the past week:	Rarely or None of the Time (less than 1 day)	Some or a Little of the Time (1-2 days)	Occasionally or a Moderate Amount of Time (3-4 days)	Most or All of the Time (5-7 days)
I was happy				
I talked less than usual				
I felt lonely				
People were unfriendly				
I enjoyed life				
I had crying spells				
I felt sad				
I felt that people dislike me				
I could not get "going"				

APPENDIX L.

General Health Questionnaire, Anxiety/Insomnia & Somatisation Subscales (Goldberg & Hillier, 1979), Paper 2

We would like to know if you have had any medical complaints, and how your health has been in general *over the past few weeks*. Please answer ALL the questions of the following page by circling the answer which you think best applies to you. Remember that we want to know about **present and recent complaints only**.

Have you recently:	<i>Not at all</i>	<i>No more than usual</i>	<i>Rather more than usual</i>	<i>Much more than usual</i>
Lost much sleep over worry?				
Had difficulty in staying asleep once you are off?				
Felt constantly under strain?				
Been getting edgy and bad-tempered?				
Been getting scared or panicky for no good reason?				
Found everything getting on top of you?				
Been feeling nervous and strung-up all of the time?				
Been feeling perfectly well and in good health?				
Been feeling in need of a good tonic?				
Been feeling run down and out of sorts?				
Felt that you are ill?				
Been getting any pains in your head?				
Been getting a feeling of tightness or pressure in your head?				
Been having hot or cold spells?				

APPENDIX M.

Psychological Vitality Scale (Ryan & Frederick, 1997), Paper 2

Please respond to each of the following statements by indicating the degree to which the statement has been **true for you over the past few weeks**.

	Not at all true		Moderately true			Very true	
I have felt alive and vital	1	2	3	4	5	6	7
I didn't feel very energetic	1	2	3	4	5	6	7
Sometimes I have felt so alive I just wanted to burst	1	2	3	4	5	6	7
I have had energy and spirit	1	2	3	4	5	6	7
I have looked forward to each new day	1	2	3	4	5	6	7
I nearly always have felt alert and awake	1	2	3	4	5	6	7
I have felt energised	1	2	3	4	5	6	7

APPENDIX N.

Engagement in Prosocial Behaviours in General Scale (Rushton, Chrisjohn, Fekken, 1981), Paper 3 (Studies 1-3)

In this section we would like to find out about ways in which you may have helped strangers or people you don't know very well. Please indicate **how often you have carried out each possible action** by ticking the appropriate box for you.

Possible Action	Never	Once	More than once	Often	Very often
I have helped push or restart a stranger's car that was stalled					
I have given directions to a stranger					
I have offered to help a disabled or elderly stranger across a street					
I have made change for a stranger					
I have given money to a stranger who needed it (or asked me for it)					
I have donated goods or clothes to a charity					
I have done volunteer work for a charity					
I have donated blood					
I have helped carry a stranger's belongings (books, parcels, etc.)					
I have delayed a lift and held the door open for a stranger					
I have allowed someone to go ahead of me in a queue (at photocopying machine, in the supermarket)					
I have given a stranger a lift in my car					

Possible Action	Never	Once	More than once	Often	Very often
I have pointed out an assistant's error (in a bank, at the supermarket) in undercharging me for an item					
I have let a neighbour I don't know very well borrow an item of some value to me (e.g., tools, a dish, etc.)					
I have helped someone I did not know that well with a task when my knowledge was greater than his or hers					
I have bought 'charity' Christmas cards deliberately because I knew it was a good cause					
I have voluntarily looked after a neighbour's pets or children without being paid for it					
I have offered my seat on a bus or train to a stranger who was standing					
I have helped an acquaintance to move households					
I have given money to a charity					

APPENDIX O.

Engagement in Prosocial Activities at University Scale, Paper 3 (Study 1)

In this section we would like to find out about ways in which you may have helped fellow students or the university. Please indicate how often you have carried out each possible action **over the past year** by ticking the appropriate box.

Possible Action	Never	Once	More than once	Often	Very often
I have helped a student I do not know well with work that they were finding difficult					
I have invited a student who seemed lonely to join in with social activities/my group of friends					
I have volunteered at the Students' Union					
I have given advice to other students on a university on-line forum					
I have given a fellow student that I do not know well a pen/paper during a lecture/seminar					
I have tutored other students free of charge					
I have shared lecture/seminar notes with a student I don't know well who was unable to attend					
I have looked after a student I don't know well who was ill/drunk					
I have spent time advising people considering becoming students at the university					
I have cleared up others' litter from seminar rooms and/or lecture theatres					
I have mentored another student(s)					

Possible Action	Never	Once	More than once	Often	Very often
I have helped new students to settle in and find their way around campus (orienting)					
I have volunteered to represent the university at external events					
I have participated in fund-raising for the university					
I have cooked for another student that I do not know very well					
I have participated in a university campus clean-up					

APPENDIX P.

Marlowe-Crowne Social Desirability Scale: Short Form B12 (Reynolds, 1982), Paper 3 (Studies 1-3)

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is *true* or *false* as it pertains to you personally.

Question	True	False
It is sometimes hard for me to go on with my work if I am not encouraged.		
I sometimes feel resentful when I don't get my way.		
There have been times when I felt like rebelling against people in authority even though I knew they were right.		
No matter who I'm talking to, I'm always a good listener.		
There have been occasions when I took advantage of someone.		
I always try to practice what I preach.		
I sometimes try to get even rather than forgive and forget.		
I am always courteous, even to people who are disagreeable.		
I have never been irked when people expressed ideas very different from my own.		
There have been times when I was quite jealous of the good fortune of others.		
I am sometimes irritated by people who ask favours of me.		
I have never deliberately said something that hurt someone's feelings.		

APPENDIX Q.

General Causality Orientations Scale (Deci & Ryan, 1985b), Paper 3 (Study 3)

Below are a series of hypothetical sketches. Each sketch describes an incident and lists three ways of responding to it. Please read each sketch, imagine yourself in that situation, and then consider each of the possible responses. Think of each response option in terms of how likely it is that you would respond that way. (We all respond in a variety of ways to situations, and probably most or all responses are at least slightly likely for you.)

If it is very unlikely that you would respond the way described in a given response, you should circle answer 1 or 2. If it is moderately likely, you would select a number in the mid-range, and if it is very likely that you would respond as described, you would circle answer 6 or 7.

1. You have been offered new position in a company where you have worked for some time. The first question that is likely to come to mind is:

	Very unlikely		Moderately likely			Very likely	
a. What if I can't live up to the responsibility?	1	2	3	4	5	6	7
b. Will I make more at this position?	1	2	3	4	5	6	7
c. I wonder if the new work will be interesting.	1	2	3	4	5	6	7

2. You had a job interview several weeks ago. In the post you received a formal letter which states that the position has been filled. It is likely that you might think:

	Very unlikely		Moderately likely			Very likely	
a. It's not what you know, but who you know.	1	2	3	4	5	6	7
b. I'm probably not good enough for the job.	1	2	3	4	5	6	7
c. Somehow they didn't see my qualifications as matching their needs.	1	2	3	4	5	6	7

3. You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. You would likely handle this by:

	Very unlikely		Moderately likely			Very likely	
a. Telling the three workers the situation and having them work with you on the schedule.	1	2	3	4	5	6	7
b. Simply assigning times that each can break to avoid problems.	1	2	3	4	5	6	7
c. Find out from someone in authority what to do or do what was done in the past.	1	2	3	4	5	6	7

4. You have just received the results of a test you took, and discovered that you did very poorly. Your initial reaction is likely to be:

	Very unlikely		Moderately likely			Very likely	
a. "I can't do anything right," and feel sad.	1	2	3	4	5	6	7
b. "I wonder how it is I did so poorly," and feel disappointed.	1	2	3	4	5	6	7
c. "That stupid test doesn't show anything," and feel angry.	1	2	3	4	5	6	7

5. When you and your friend are making plans for Saturday evening, it is likely that you would:

	Very unlikely		Moderately likely			Very likely	
a. Leave it up to your friend; he (she) probably wouldn't want to do what you'd suggest.	1	2	3	4	5	6	7
b. Each make suggestions and then decide together on something that you both feel like doing.	1	2	3	4	5	6	7
c. Talk your friend into doing what you want to do.	1	2	3	4	5	6	7

6. You have been invited to a large party where you know very few people. As you look forward to the evening, you would likely expect that:

	Very unlikely		Moderately likely			Very likely	
a. You'll try to fit in with whatever is happening in order to have a good time and not look bad.	1	2	3	4	5	6	7
b. You'll find someone with whom you can relate.	1	2	3	4	5	6	7
c. You'll probably feel somewhat isolated and unnoticed.	1	2	3	4	5	6	7

7. You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterised as:

	Very unlikely		Moderately likely			Very likely	
a. Take charge: that is, you would make most of the major decisions yourself.	1	2	3	4	5	6	7
b. Follow precedent: you're not really up to the task so you'd do it the way it's been done before.	1	2	3	4	5	6	7
c. Seek participation: get inputs from others who want to make them before you make final plans.	1	2	3	4	5	6	7

8. Recently a position opened up at your place of work that could have meant a promotion for you. However, a person you work with was offered the job rather than you. In evaluating the situation, you're likely to think:

	Very unlikely		Moderately likely			Very likely	
a. You didn't really expect to get the job; you frequently get passed over.	1	2	3	4	5	6	7
b. The other person probably "did the right things" politically to get the job.	1	2	3	4	5	6	7
c. You would probably take a look at factors in your own performance that led you to be passed over.	1	2	3	4	5	6	7

9. You are embarking on a new career. The most important consideration is likely to be:

	Very unlikely		Moderately likely			Very likely	
a. Whether you can do the work without getting in over your head.	1	2	3	4	5	6	7
b. How interested you are in that kind of work.	1	2	3	4	5	6	7
c. Whether there are good possibilities for advancement.	1	2	3	4	5	6	7

10. A woman who works for you has generally done an adequate job. However, for the past two weeks her work has not been up to par and she appears to be less actively interested in her work. Your reaction is likely to be:

	Very unlikely		Moderately likely			Very likely	
a. Tell her that her work is below what is expected and that she should start working harder.	1	2	3	4	5	6	7
b. Ask her about the problem and let her know you are available to help work it out.	1	2	3	4	5	6	7
c. It's hard to know what to do to get her straightened out.	1	2	3	4	5	6	7

11. Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:

	Very unlikely		Moderately likely			Very likely	
a. Feel interested in the new challenge and a little nervous at the same time.	1	2	3	4	5	6	7
b. Feel excited about the higher status and salary that is involved.	1	2	3	4	5	6	7
c. Feel stressed and anxious about the upcoming changes.	1	2	3	4	5	6	7

12. Within your circle of friends, the one with whom you choose to spend the most time is:

	Very unlikely		Moderately likely			Very likely	
a. The one with whom you spend the most time exchanging ideas and feelings.	1	2	3	4	5	6	7
b. The one who is most popular of them.	1	2	3	4	5	6	7
c. The one who needs you the most as a friend.	1	2	3	4	5	6	7

13. You have a school-age daughter. On parents' evening, the teacher tells you that your daughter is doing poorly and doesn't seem involved in the work. You are likely to:

	Very unlikely		Moderately likely			Very likely	
a. Talk it over with your daughter to understand further what the problem is.	1	2	3	4	5	6	7
b. Scold her and hope she does better.	1	2	3	4	5	6	7
c. Make sure she does the assignments, because she should be working harder.	1	2	3	4	5	6	7

14. Your friend has a habit that annoys you to the point of making you angry. It is likely that you would:

	Very unlikely		Moderately likely			Very likely	
a. Point out each time you notice it, that way maybe he (she) will stop doing it.	1	2	3	4	5	6	7
b. Try to ignore the habit because talking about it won't do any good anyway.	1	2	3	4	5	6	7
c. Try to understand why your friend does it and why it is so upsetting for you.	1	2	3	4	5	6	7

15. A close (non-romantic) friend of yours has been moody lately, and a couple of times has become very angry with you over "nothing." You might:

	Very unlikely		Moderately likely			Very likely	
a. Share your observations with him/her and try to find out what is going on for him/her.	1	2	3	4	5	6	7
b. Ignore it because there's not much you can do about it anyway.	1	2	3	4	5	6	7
c. Tell him/her that you're willing to spend time together if, and only if, he/she makes more effort to control him/herself.	1	2	3	4	5	6	7

16. Your friend's younger sister is a 1st year undergraduate at university. Your friend tells you that she has been doing badly and asks you what he (she) should do about it. You advise him (her) to:

	Very unlikely		Moderately likely			Very likely	
a. Talk it over with her and try to see what is going on for her.	1	2	3	4	5	6	7
b. Not mention it; there's nothing he (she) could do about it anyway.	1	2	3	4	5	6	7
c. Tell her it's important for her to do well, so she should be working harder.	1	2	3	4	5	6	7

17. You feel that your friend is being inconsiderate. You would probably:

	Very unlikely		Moderately likely			Very likely	
a. Find an opportunity to explain why it bothers you; he (she) may not even realise it is bothering you.	1	2	3	4	5	6	7
b. Say nothing; if your friend really cares about you he (she) would understand how you feel.	1	2	3	4	5	6	7
c. Demand that your friend start being more considerate; otherwise you'll respond in kind.	1	2	3	4	5	6	7

APPENDIX R.

Supplementary Analyses Details for Paper 3 (Studies 1-3)

Supplementary Analyses for Paper 3, Study 1

Analysis using Gagné's (2003) 21-item BNS-G scale. A measurement model with autonomy, competence, and relatedness indicated by their corresponding BNS-G items, a higher-order basic need satisfaction factor indicated by autonomy, competence, and relatedness, and with general helping, university-based helping, gender, education level, and social desirability as described in Study 1 was fitted to the data. The model fit was poor, SBS- χ^2 (448) = 889.01, $p < .001$, CFI = .81, TLI = .79, RMSEA = .07, SRMR = .08. A further measurement model *without* the higher-order basic need satisfaction factor was run. Again, model fit was poor, SBS- χ^2 (438) = 858.36, $p < .001$, CFI = .82, TLI = .80, RMSEA = .07, SRMR = .08.

Analysis using Johnston & Finney's (2010) 16-item model. Johnston & Finney (2010) found that model fit of the BNS-G scale was greatly improved when autonomy was indicated by three items, competence by six items, and relatedness by seven items. In addition, all negatively worded items were loaded onto a 'method effect' factor. Therefore, a measurement model was run with autonomy, competence, and relatedness modelled as described above, a method effect factor, and a higher-order basic need satisfaction factor indicated by autonomy, competence, and relatedness. General helping, university-based helping, gender, education level, and social desirability were modelled as described in Study 1. The overall model fit was poor, SBS- χ^2 (351) = 2213.39, $p < .001$, CFI = .89, TLI = .87, RMSEA = .06, SRMR = .07. A further measurement model *without* the higher-order basic need satisfaction factor

was run. Model fit was on the lower bounds of adequate to poor, SBS- χ^2 (285) = 445.28, $p < .001$, CFI = .91, TLI = .89, RMSEA = .05, SRMR = .06.

Analysis using 11 BNS-G items. A measurement model was run with autonomy, competence, and relatedness indicated by the 11 BNS-G items that were reworded to form the ARC-S scale in Paper 2. In addition, a higher-order basic need satisfaction factor indicated by autonomy, competence, and relatedness was modelled, and general helping, university-based helping, gender, education level, and social desirability modelled as described in Study 1. The overall model fit was poor, SBS- χ^2 (193) = 361.15, $p < .001$, CFI = .88, TLI = .86, RMSEA = .07, SRMR = .07. A further measurement model *without* the higher-order basic need satisfaction factor was run. Again, overall model fit was poor, SBS- χ^2 (189) = 331.68, $p < .001$, CFI = .89, TLI = .87, RMSEA = .06, SRMR = .06.

Supplementary Analyses for Paper 3, Study 2

Analysis using Gagné's (2003) 21-item BNS-G scale. A measurement model with autonomy, competence, and relatedness indicated by their corresponding BNS-G items and a higher-order basic need satisfaction factor indicated by autonomy, competence, and relatedness was modelled. In addition, general helping, community, affiliation, gender, employment status, and social desirability as described in Study 2 were modelled. The model fit was poor, SBS- χ^2 (676) = 1322.03, $p < .001$, CFI = .78, TLI = .76, RMSEA = .06, SRMR = .08. A further measurement model *without* the higher-order basic need satisfaction factor was run. Again, model fit was poor, SBS- χ^2 (664) = 1271.19, $p < .001$, CFI = .79, TLI = .77, RMSEA = .06, SRMR = .08.

Analysis using Johnston & Finney's (2010) 16-item model. A measurement model was run with autonomy, competence, and relatedness modelled as described above, a method effect factor, and a higher-order basic need satisfaction factor indicated by autonomy, competence, and relatedness. In addition, general helping, community, affiliation, gender, employment status, and social desirability as described in Study 2 were modelled. The overall model fit was poor, SBS- $\chi^2(561) = 3024.31, p < .001$, CFI = .88, TLI = .86, RMSEA = .05, SRMR = .07. A further measurement model *without* the higher-order basic need satisfaction factor was run. Overall model fit was on the lower bounds of adequate to poor, SBS- $\chi^2(475) = 732.52, p < .001$, CFI = .90, TLI = .88, RMSEA = .05, SRMR = .06.

Analysis using 11 BNS-G items. A measurement model was run with autonomy, competence, and relatedness indicated by the 11 BNS-G items that were reworded to form the ARC-S scale in Paper 2. In addition, a higher-order basic need satisfaction factor indicated by autonomy, competence, and relatedness was modelled, and general helping, community, affiliation, gender, employment status, and social desirability as described in Study 2. The overall model fit was on the lower bounds of adequate to poor, SBS- $\chi^2(351) = 556.79, p < .001$, CFI = .90, TLI = .88, RMSEA = .05, SRMR = .07. A further measurement model *without* the higher-order basic need satisfaction factor was run. Again, overall model fit was on the lower bounds of adequate to poor, SBS- $\chi^2(339) = 524.21, p < .001$, CFI = .91, TLI = .89, RMSEA = .05, SRMR = .06.

Supplementary Analyses for Paper 3, Study 3

Analysis using Gagné's (2003) 21-item BNS-G scale. A measurement model with autonomy, competence, and relatedness indicated by their corresponding BNS-G items, a higher-order basic need satisfaction factor indicated by autonomy, competence, and relatedness, and with general helping, autonomous orientation, controlled orientation, impersonal orientation, employment status, relationship status, and social desirability as described in Study 3 was fitted to the data. The model fit was poor, SBS- $\chi^2(636) = 1186.94, p < .001$, CFI = .79, TLI = .77, RMSEA = .06, SRMR = .08. A further measurement model *without* the higher-order basic need satisfaction factor was run. Again, model fit was poor, SBS- $\chi^2(622) = 1111.38, p < .001$, CFI = .81, TLI = .79, RMSEA = .06, SRMR = .08.

Analysis using Johnston & Finney's (2010) 16-item model. A measurement model was run with autonomy, competence, and relatedness modelled using the 16 BNS-G items as described above, a method effect factor, and a higher-order basic need satisfaction factor indicated by autonomy, competence, and relatedness. General helping, autonomous orientation, controlled orientation, impersonal orientation, employment status, relationship status, and social desirability were modelled as described in Study 3. The model would not converge. A further measurement model *without* the higher-order basic need satisfaction factor was run. Overall the model fit was on the lower bounds of adequate to poor, SBS- $\chi^2(437) = 628.51, p < .001$, CFI = .91, TLI = .89, RMSEA = .05, SRMR = .06.

Analysis using 11 BNS-G items. A measurement model was run with autonomy, competence, and relatedness indicated by the 11 BNS-G items that were reworded to form the ARC-S scale in Paper 2. In addition, a higher-order basic need satisfaction factor indicated by autonomy, competence, and relatedness was modelled,

and general helping, autonomous orientation, controlled orientation, impersonal orientation, employment status, relationship status, and social desirability as described in Study 3. The overall model fit was poor, SBS- χ^2 (321) = 534.01, $p < .001$, CFI = .88, TLI = .86, RMSEA = .06, SRMR = .07. A further measurement model *without* the higher-order basic need satisfaction factor was run. Overall model fit was on the lower bounds of adequate to poor, SBS- χ^2 (307) = 487.05, $p < .001$, CFI = .90, TLI = .88, RMSEA = .05, SRMR = .06.

Comment

In the supplementary analyses using BNS-G items, the model fit of the measurement models assessed was poor, or demonstrated model fit on the lower bounds of adequate to poor. In particular, the low values of CFI, TLI, and RMSEA for the models using BNS-G items suggest misspecified factor loadings (Hu & Bentler, 1998). In all instances the model fit of measurement models using BNS-G items was worse than the model fit of the measurement models in studies 1-3 using ARC-S items. These results provide robust support for the use of the ARC-S scale in the main analyses in Paper 3.