Ageing & Society (2022), **42**, 2454–2470
doi:10.1017/S0144686X21000301

ARTICLE

The relation between older adults' trust beliefs in nursing home carers and adjustment to residential care

Ken J. Rotenberg*, Lucyna Chmielowiec and Sanjay Patel

School of Psychology, Keele University, Keele, UK
*Corresponding author. Email: k.j.rotenberg@keele.ac.uk

(Accepted 9 February 2021; first published online 29 March 2021)

Abstract

The study examined the relation between older adults' trust beliefs in nursing home carers (NHCs) and adjustment to residential care. Seventy-six older adults (mean age = 83 years, standard deviation = 7 years from UK nursing homes completed standardised scales of trust beliefs in NHCs and adjustment to residential care (satisfaction with care-giving, social engagement in the nursing home, loneliness and a latent measure). As expected, trust beliefs in NHCs were linearly associated with adjustment to residential care on all measures. There were quadratic relations between trust beliefs in NHCs and on given measures of adjustment to residential care (latent measure, satisfaction with care-giving and loneliness). Adults with very high and those with very low trust beliefs in NHCs showed depressed levels on those measures of adjustment to residential care relative to older adults with the middle range of trust beliefs. The research highlights the importance of older adults' trust beliefs in NHCs for adjustment to nursing homes. The findings show though, that older adults who hold very high, as well those who hold very low, trust beliefs in NHCs are at risk for lower levels of adjustment.

Keywords: adults; trust beliefs; adjustment; residential care

Introduction

Nursing homes are facing the challenge of delivering quality care to a rapidly growing number of older adults (Quadagno and Stahl, 2003; Towers *et al.*, 2019). Researchers have examined the extent to which the quality of nursing care such as organisational characteristics (*e.g.* propriety status, urban *versus* rural), other structures of care (*e.g.* material resources) and processes of care (*e.g.* type of care provision) affect older adults' physical health and psycho-social adjustment (*see* Zimmerman *et al.*, 2013). Some interventions have been found to improve the processes of care for residents of nursing homes (Sloane *et al.* 2004; Fritsch *et al.*, 2009). Reviews of the research (*see* Zimmerman *et al.*, 2013) have concluded, however, that there is insufficient empirical evidence to support the effectiveness of the

factors affecting the qualities of nursing homes on physical health and psychosocial adjustment of the residents. The current study investigated the relation between a process of nursing home care, in the form of residents' trust beliefs in nursing home carers (NHCs), and psych-social adjustment to residential care.

During pandemics, such as COVID-19, NHCs play a role in the residents' physical and mental health by engaging in the requisite health and safety regimes (*see* Hodgson *et al.*, 2020). With respect to more normal nursing home routines, NHCs provide a range of services to the residents such as helping with immediate needs and providing emotional support. As a result, older adults' trust beliefs in NHCs to carry out those tasks could be associated, and potentially affect, their adjustment to residential care. Nevertheless, research with children and adolescents indicate that those who hold very high trust beliefs in others are at risk of psycho social problems (Rotenberg, 2019*a*). Similarly, older adults who hold very high trust beliefs in NHCs could be at the risk of poor adjustment to residential care. The current study was designed to examine those issues.

Conceptualisation of older adults' trust beliefs in their NHCs

The current study was guided by the Basis, Domain, and Target Interpersonal Trust Framework (the BDT; Rotenberg, 2010, 2019*b*). According to the BDT framework, trust beliefs include expectations that others show: (a) reliability by fulfilling their word or promise; and (b) emotional trustworthiness by refraining from causing emotional harm primarily by acceptance of disclosures and maintaining confidentiality of them.

Reliabilty trust beliefs

Several studies show that individuals' reliability (as well emotional) trust beliefs in others are concurrently associated with, and longitudinally predict, psychosocial adjustment in children, adolescents and young adults (*see* Rotenberg, 2019*b*). Regarding older adults, it has been found that their generalised reliability trust beliefs in others are associated with their satisfaction, physical health and longevity (Barefoot *et al.*, 1998; Nummela *et al.*, 2012; Miething *et al.*, 2020). In that context, older adults' reliability beliefs in their NHCs could play a role in their adjustment to residential care. Specifically, NHCs promise to help older adult residents with their immediate needs (*e.g.* assisting in meals) and basic daily tasks (*e.g.* paying bills). If older adult residents believe that their NHCs fulfil promises to help them with their immediate needs and daily tasks then they may be better adjusted to residential care.

Emotional trust beliefs

Young adults' low emotional trust beliefs in others are concurrently associated with, and longitudinally predict, loneliness and social disengagement (Rotenberg *et al.*, 2005). Regarding older adults, researchers have highlighted the importance for care providers (including nurses) to be supportive of older adults' disclosure of their emotional states in order to understand them and foster their wellbeing

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

and health (Hupcey *et al.*, 2004; Corbett and Williams, 2014). Also, older adults expect that a good nurse provides emotional support to them by being acceptant of disclosure (*see* Van der Elst *et al.*, 2012). Finally, older adults' reminiscing as part of their dyadic relationship with their care providers has been found to foster psychosocial adjustment (O'Rourke *et al.*, 2011; Ingersoll-Dayton *et al.*, 2019). If residents of nursing homes believe that their NHCs refrain from causing emotional harm by being acceptant of disclosures and maintaining confidentiality of them (*i.e.* emotional trust beliefs) then adjustment to residential care is likely.

Loneliness and social engagement in older adults

It has been found that loneliness increases, and social engagement decreases, with age primarily when individuals enter old age and are male (Dugan and Kivett, 1994; Tijhuis *et al.*, 1999; Graneheim and Lundman, 2010; Isherwood *et al.*, 2012; Nicolaisen and Thorsen, 2014). Those shifts in loneliness and social engagement with age are associated with the loss of a partner and when individuals move into an old age home. Loneliness and low social engagement are predictive of poor health (*e.g.* cardiovascular problems), psychosocial problems (*e.g.* depression) and mortality in old age (Shankar *et al.*, 2011; Ong *et al.*, 2016; Courtin and Knapp, 2017; Derwin *et al.*, 2017). Research shows that trust beliefs in others is concurrently and prospectively associated with low loneliness and social engagement (Rotenberg *et al.*, 2010). If older adults hold elevated trust beliefs in their NHCs then that could have the potential to decrease their loneliness and enhance their social engagement.

The current study tested the hypothesis that older adults' trust beliefs in their NHCs would be linearly associated with their adjustment to residential care (high satisfaction with carer, low loneliness and high social engagement with others in the nursing home). In addition to the separate measures, the study examined older adults' adjustment to residential care as a convergence of their experience of adjustment to residential care. The convergent experience of adjustment to residential care was assessed by the latent factor underlying those three measures.

There is a greater prevalence of women in nursing homes which has been ascribed to age-related frailty of men as care providers (McCann *et al.*, 2012). Research has yielded some gender differences in the correlates of satisfaction with nursing homes. It has been found that the length of stay in the nursing home predicts satisfaction with the nursing home for men but not for women (Claridge *et al.*, 1995). Also, male residents more often complained about technical, impersonal and legalistic issues pertaining to nursing homes, whereas women more often complained about personal care and socio-emotional-environmental issues pertaining to nursing homes (Allen *et al.*, 2006). Nevertheless, the research did not provide a definitive basis for expecting gender differences in the relations between trust beliefs in NHCs and adjustment to residential care.

Are there risks of holding very high trust beliefs for older adults?

Researchers have found that holding very high trust (as well as very low) beliefs in others have negative consequences for psychosocial maladjustment during

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

childhood and adolescence (*see* Rotenberg, 2019*b*). Quadratic (curvilinear) relations have been found between trust beliefs and psychosocial adjustment during childhood and adolescence. In comparison to children and adolescents with the middle range of trust beliefs, those with very high trust beliefs and those with very low trust beliefs have been found to show elevated: (a) internalised maladjustment across time, (b) rejection and exclusion by peers, (c) aggression to hypothetical peer provocation, and (d) aggression to peer provocation in a natural setting (Rotenberg *et al.*, 2005, 2013, 2014; *also see* Rotenberg, 2019*a*). Some studies have shown that the quadratic relations are skewed such that those with very low trust beliefs showed lower psycho-social adjustment than those with very high trust beliefs (*see* Rotenberg *et al.*, 2005). This finding supports the conclusion that holding very low trust beliefs may have more detrimental effects on psycho social adjustment than holding very high trust beliefs.

Mechanisms responsible for the quadratic relation

Three mechanisms have been advanced to account for the observed quadratic relations (Rotenberg *et al.*, 2005, 2014). First, individuals with extreme trust beliefs violate social norms and thus they tend to be rejected by others. Second, individuals with very low trust beliefs demonstrate psychosocial maladjustment because they are not inclined to integrate with others socially (*e.g.* lack friends). Third, and finally, individuals with very high trust beliefs show elevated psychosocial maladjustment primarily because they are at risk of being betrayed, and thus disappointed, by others.

The current study investigated the hypothesis that there would be a quadratic relation between older adults' trust beliefs in NHCs and adjustment to residential care on each of the three measures and a latent measure. It was hypothesised that adults with very low trust beliefs in NHCs would show lower levels of adjustment to residential care relative to those with a middle range of trust beliefs in NHCs. The study was guided by the notion that NHCs would infrequently demonstrate trustworthiness or sustain trustworthiness across time. Consequently, NHCs would fail to fulfil expectations of being highly trustworthy by those older adult residents with very high trust beliefs who would feel betrayed and disappointed. The measure of satisfaction with carers served a dual purpose. In addition to serving as a measure of adjustment to residential care, it served as a marker of the hypothesised feelings of betrayal and disappointment by older adults with very high trust beliefs in NHCs. The older adult residents who held very low trust beliefs were expected to display very poor adjustment to residential care because of the heightened social withdrawal that accompanies low trust beliefs.

Overview of the study and hypotheses

Older adults residing in nursing homes in the United Kingdom (UK) completed standardised scales assessing reliability and emotional trust beliefs in NHCs and adjustment to residential care (satisfaction with care-giving, social engagement with others in the nursing home, loneliness and a latent measure).

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

The hypotheses were:

(1) The older adults' trust beliefs in NHCs would be linearly associated (correlated) with the measures of adjustment to residential care (*linear trust-adjustment hypothesis*).
(2) The linear relations would be qualified by quadratic relations between trust beliefs in NHCs and each of the measures of adjustment to residential care. It was expected that older adults with very high and those with very low trust beliefs in NHCs would demonstrate lower levels of adjustment to residential care relative to those with the middle range of trust beliefs in NHCs (*quadratic trust-adjustment hypothesis*).
(3) The quadratic relations would be found for satisfaction with care providers uniquely because it was a marker for the feelings of betrayal and disappointment by older adults who hold very high beliefs in NHCs (*betrayal and disappointment hypothesis*).

Some methodological and statistical issues

Different judgement formats were used in the different measurement scales. The measure of trust beliefs in NHCs required older adults to report their expectations of the trustworthiness of NHCs for very concrete activities. The measures of adjustment to residential care (*e.g.* satisfaction with care-giving and loneliness) required older adults to make relatively abstract and general judgements. The different formats were designed to minimise the role that common judgement biases played in associations between the two sets of measures (*see* Podsakoff *et al.*, 2003).

The study was guided by the premise that older adults' trust beliefs in NHCs are a potential cause of adjustment to residential care as shown by linear and quadratic relations. The study included tests for the reverse quadratic relation to examine the reverse direction of potential causation. This strategy was guided by the principle that a quadratic relation between variable X (a predictor) and variable Y (the dependent measure) is not statistically equivalent to the reverse quadratic relation (*i.e.* Y is the predictor and X is the dependent measure) (*see* Cohen *et al.*, 2003). Finding quadratic relations between trust beliefs in NHCs and adjustment to residential care, rather than the reverse, would yield evidence in support of the hypothesised direction of causality

Method

Participants

The participants were 76 older adults with the demographics shown in Table 1. Older adults with records of very severe illnesses (*e.g.* Alzheimer's) or mental deficits according to nursing home records were excluded from participating in the study. Participants participated if their native language was English and they had sufficient hearing capacity to hear the questions (items) posed. The participants were drawn from three nursing homes (*see* Table 1). The ratings and size of the nursing homes are typical of nursing homes in the UK (*see* Q CareQuality Commission, 2021). Approximately 65 per cent of the residents in each nursing

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

Table 1. Participant demographics and nursing home (NH) details

Number of women	50
Number of men	26
Age of participants:	
Mean (SD)	83 (7)
Range	62–95
Number of beds:	
First NH	48
Second NH	42
Third NH	48
Care Quality Commission rating:	
First NH	Good
Second NH	Good
Third NH	Needs improvement

home participated in the research. Only a few residents (*i.e.* 5%) declined to take part in the study.

Participation in the research was secured by consent from: (a) the nursing home, (b) the individual's next of kin, and (c) the individual himself or herself. Ethical clearance for the study was obtained from the appropriate ethics committee of Keele University. The study adhered to American Psychological Association and British Psychological Society ethics guidelines.

Measures

Trust beliefs in NHCs

This was assessed by eight items from the Trust in Specific Person scale developed by Johnson-George and Swap (1982) that assessed reliability trust beliefs (four items) and emotional trust beliefs (three items). Those items were those found to be common to males and females. One additional reliability item identified by Johnson-George and Swap (1982) for trust beliefs by females was included in the current study in order to achieve more balanced scales. The items were considered by the administrative staff of the nursing homes to be suitable for testing older adults.

Johnson-George and Swap (1982) found evidence for the reliability of the reliability trust beliefs subscale (four items) and emotional trust beliefs subscale (three items) with α values > 0.71. As evidence of validity, the reliability trust beliefs items and emotional trust beliefs items had substantial loadings on their respective factors in the factor analysis. Evidence for the criterion validity of the two subscales was found in two studies. In one study, the participants held lower reliability, but not lower emotional, trust beliefs in a partner who had not shown up to an experimental session as promised as compared to a control condition. In the second

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

study, participants held lower emotional, but not reliability, trust beliefs in a therapist who was described as being low rather than high in emotional trustworthiness.

Variations of the Trust in Specific Person scale (Johnson-George and Swap, 1982) have been used in other studies. Rotenberg *et al.* (2010) used ten-item versions of reliability trust beliefs and emotional trust beliefs (which included the seven common items) to test undergraduates across a six-month period. It was found that a total scale demonstrated acceptable internal consistency, α values > 0.71, and stability across time ($r = 0.50$, $p < 0.001$). Factor analysis carried out by Sook-Jeong (2007) on a Korean version of the Trust in Specific Person scale yielded evidence for reliability and emotional trust belief subscales. Inspection of the factor analysis indicates that seven gender-common items had factor loadings on their respective reliability and emotional trust factors.

The items from the Trust in Specific Person scale were used for the following three reasons. First, to our knowledge, there were no other scales that assess older adults' trust beliefs in their NHC. The scale served that purpose. Second, the items were concrete, simple linguistically and required limited testing time. Consequently, answering the items placed minimal demands on the language ability, comprehension and attention-span of the older adults. Third, the items paralleled those used to assess older trust reliability trust beliefs as part of generalised trust belief scales (Rotenberg, 1990) and the finding that older adults expect a good nurse to fulfil their emotional trust beliefs (*see* Van der Elst *et al.*, 2012).

For each item in the scale, the participant judged his or her specific NHC (by the carer's initials) on five-point Likert scales that ranged from very unlikely (1) to very likely (5). The trust in NHCs scale was composed of four reliability trust beliefs items that assessed expectations that carers fulfilled a promise (*e.g.* 'If my alarm clock was broken and I asked my carer to call me at a certain time I could count on receiving the call' and 'If my carer was going to give me a ride somewhere and didn't arrive on time, I guess there was a good reason for the delay'). The scale was composed of four emotional trust items that assessed expectations that the carer would refrain from emotional harm by uncritically accepting disclosures and maintaining confidentiality of them (*e.g.* 'I would be able to confide in my carer and know that he/she would listen' and 'I would be able to confide in my carer and know that he/she would not discuss my concerns with others'). Initially, the items were summed, and averaged, to construct a reliability trust belief subscale ($\alpha = 0.83$) and an emotional trust belief subscale ($\alpha = 0.76$). The two subscales were substantially correlated, $r(74) = 0.68$, $p < 0.001$, and there were similar patterns of findings for each subscale. Consequently the subscales were summed, and averaged, to construct a trust beliefs in NHCs scale and that demonstrated acceptable internal consistency, $\alpha = 0.73$. Larger numbers on the scale denoted greater trust beliefs in NHCs.

Social engagement in the nursing home

This construct was assessed by six items from the Social Engagement Index (ISE; Mor *et al.*, 1995). Two of the items were: 'I found it easy interacting with others' and 'I actively seek involvement in the life of the facility'. The items were judged on five-point Likert scales ranging from strongly disagree (1) to strongly agree (5). Mor *et al.* (1995) administered the ISE to 1,848 residents from 268 homes in

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

ten states in the United States of America. It was found that the ISE demonstrated acceptable internal consistency and validity by its association with the average time spent in activities in the nursing home and level of cognitive/physical functioning. The Social Engagement in Nursing Home scale demonstrated acceptable internal consistency, $\alpha = 0.80$. The six items were summed to construct the Social Engagement in Nursing Home scale in which high scores denoted greater social engagement in the nursing home.

Loneliness

This was assessed by the full (20-item) revised version of the UCLA Loneliness Scale (Russell, 1996) in one sample and by a shortened (four-item) version of that scale in another other sample. The items include 'How often do you feel that you are "in tune" with the people around you?' and 'How often do you feel alone?' Those were judged on five-point scales ranging from not at all to very frequently. The revised UCLA Loneliness Scale and a short form of the scale have been found to demonstrate both construct validity and reliability (Russell, 1996) and have been used frequently with older adults (Courtin and Knapp, 2017). In the current study, the Loneliness scale demonstrated acceptable internal consistency with $\alpha = 0.84$ and 0.91 for the 20- and four-item scales, respectively. The scales were standardised for each subsample as z scores to yield a scale for the entire scale in which higher scores denoted greater loneliness.

Satisfaction with care-giving

This was assessed by the five-item satisfaction scale derived from the Caregiver Content for Resident Satisfaction Surveys in Nursing Homes (Robinson *et al.*, 2004). The scale was composed of two negatively worded (*e.g.* 'I am rarely treated as an individual') and three positively worded items (*e.g.* 'I am always treated with respect'). Those were judged on five-point Likert scales ranging from strongly disagree (1) to strongly agree (5). The items were selected from those identified by Robinson *et al.* (2004) as cutting across the content of established survey instruments and from interviews with residents of nursing homes regarding their frequent satisfactions with care providers. In the current study, the Satisfaction with Care-giving scale demonstrated acceptable internal consistency, $\alpha = 0.65$. The items were summed, and averaged, to yield a scale in which higher scores denoted greater Satisfaction with Care-giving.

Procedure

The participants were tested individually with a cross-sectional design. Individualised testing was required because the research examined each participant's trust beliefs in his or her own NHC. This method was adopted in order to avoid assessing older adults' stereotypes of NHCs and to examine trust in specific NHCs. The participant identified the NHC who carried out his or primary caring duties as the 'person who did the most or majority of the caring duties'. The participant identified (by initials) his or her NHC in the trust scale. Drawing upon nursing home records, it was confirmed that the NHC identified by each

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

participant matched his or her actual NHC. The size of the sample was the product of this individualised intensive research strategy.

During the testing, the participant was informed that there were no right or wrong answers and his or her answers would be anonymous. The tester read the scale items to the participants and ensured that the items were heard by the participants' verbal confirmation. The research spanned two years with one group of participants tested in the first year and a second group of participants tested in the second year. The same procedure was followed for both groups except that the Loneliness scale was reduced in length in testing during the second year. The scores by year were converted to *z* scores for use in the data analyses. Statistical comparisons (*t* and *z* comparisons) confirmed that there were no appreciable differences between the two times on the properties of the scales or associations between them.

Strategies for the analyses

First, the adjustment to residential care measures were subjected to a principal components analysis to assess the latent measure of adjustment to residential care. Second, the data were subjected to correlational analyses in order to examine the hypothesised associations between the measures. A supplemental step-wise regression tested whether there were gender differences in the associations and gender differences.

Third, the data were subjected to regression analyses in order to examine the linear and quadratic relations between trust beliefs in NHCs and the measures of adjustment to residential care (satisfaction with care-giving and latent measure of adjustment to residential care). The regression analyses were tested for quadratic relations by assessing whether the scores adjusted by the main associations conformed to a quadratic curve. The measures were centred for the regression analyses (*see* Cohen *et al.*, 2003). Fourth, and finally, in order to examine the issue of reverse causation, the regression analyses were repeated with the measures of adjustment to residential care as predictors of the dependent measure of trust beliefs in NHCs.

Results

Latent measure of adjustment to residential care

The principle component analyses of the three measures of adjustment with a varimax rotation yielded a common underlying factor/dimension with an eigenvalue of 1.85 that accounted for 62 per cent of the variance. Satisfaction with care-giving, loneliness and social engagement had weights on the underlying factor of 0.80, −0.82 and 0.72, respectively. The regression factor scores from the analysis served as a measure of the latent measure of adjustment to residential care.

Correlations between the measures

The correlations between the measures (with means and standard deviations) are shown in Table 2. The expected correlations between each of the four measures of adjustment to residential care (including the latent measure) were found. There were correlations between satisfaction with care-giving, social engagement

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

Table 2. Correlations between the measures

Measure	Mean	SD	SCG	LONE	SENH	LARC
Trust beliefs in NHCs	24.03	4.68	0.25*	−0.26*	0.38***	0.37***
Adjustment to residential care:						
Satisfaction with care-giving (SCG)	19.26	3.29		−0.51***	0.36**	0.80***
Loneliness[1] (LONE)	0.00	1.00			−0.40***	−0.82***
Social engagement in nursing home (SENH)	20.90	7.07				0.73***
Latent measure of adjustment to residential care[1] (LARC)	0.00	1.00				

Notes: Degrees of freedom = 74. [1]:Standardised scores. NHCs: nursing home carers.
Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

in the nursing home and the latent measure of adjustment to residential care and negative correlations between those and loneliness. In support of the linear trust-adjustment hypothesis, trust beliefs in NHCs were: (a) correlated with satisfaction with care-giving, social engagement and the latent measure of adjustment to residential care, and (b) negatively correlated with loneliness. Step-wise regression analysis (main effects and then the interaction) showed that the association between trust beliefs in NHCs and social engagement in the nursing home was moderated by gender, $\beta = 0.87$, $p = 0.036$. The correlation between the two variables was stronger in males, $r(24) = 0.76$, $p < 0.001$, than in females, $r(48) = 0.16$, $p = 0.26$.

Testing the hypothesised quadratic relations

In support of the linear trust-adjustment hypothesis, the regression analyses yielded linear relations between trust beliefs in NHCs and each of the measures of adjustment to residential care: (a) latent measure of adjustment (*see* Figure 1), (b) satisfaction with care-giving (*see* Figure 2), (c) loneliness adjusted by gender (*see* Figure 3), and (d) social engagement ($B = 0.38$, $p < 0.001$). These correspond to the observed correlations shown in Table 1. In support of the quadratic trust-adjustment hypothesis, the regression analyses also yielded quadratic relations between trust beliefs in NHCs and: (a) latent measure of adjustment to residential care, (b) satisfaction with care-giving, and (c) loneliness adjusted by gender (at a trend level). Regarding social engagement, regression analysis yielded $\beta = -0.13$, $p = 0.31$, as a quadratic effect. The observed quadratic curve was similar to those found in other measures of adjustment to residential care but the effect did approach or attain statistical significance. As expected, participants with very low and those with very high trust beliefs in NHCs showed lower levels of the latent measure of adjustment to residential care, satisfaction with care-giving and loneliness relative to those with the middle range of trust beliefs in NHCs. The quadratic curves were representative of the distribution of the scores. The curves were modestly skewed, though, such that lower levels of adjustment to residential care tended to be shown by participants with very low trust beliefs relative to those with very

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

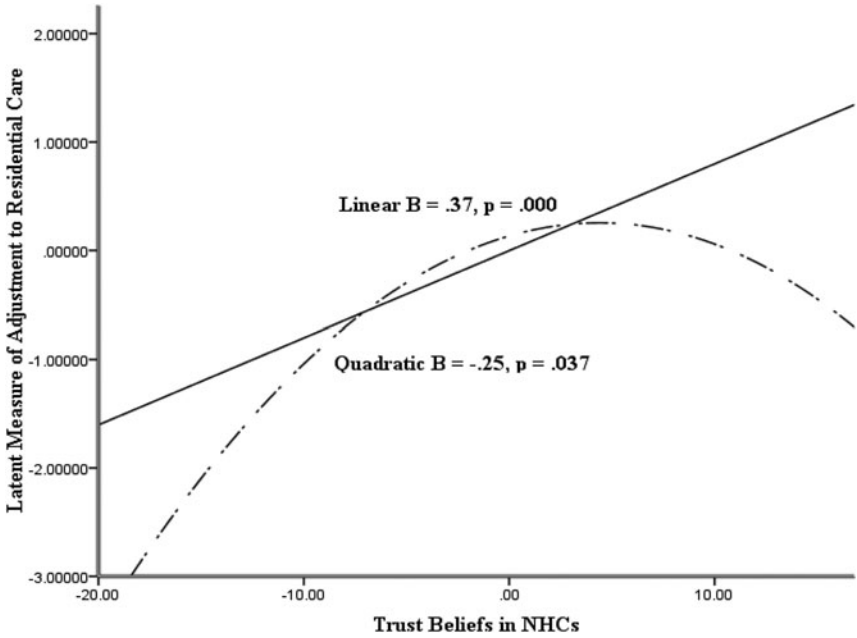

Figure 1. Linear and quadratic relations between trust beliefs in nursing home carers (NHCs) and the latent measure of adjustment to residential care.

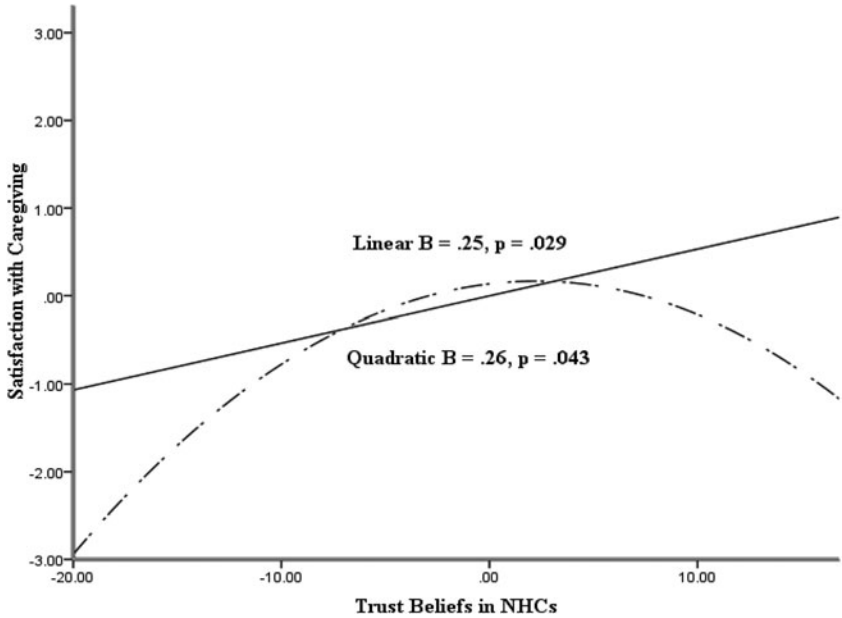

Figure 2. Linear and quadratic relations between trust beliefs in nursing home carers (NHCs) and satisfaction with care-giving.

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

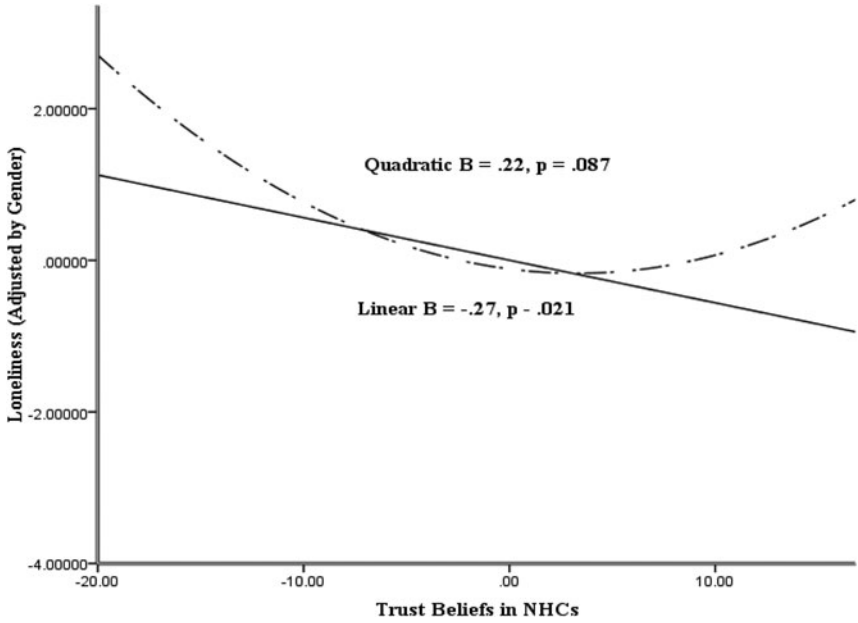

Figure 3. Linear and quadratic relations between trust beliefs in nursing home carers (NHCs) and loneliness (adjusted by gender).

high trust beliefs. The quadratic analyses and the observed curves are consistent with the disappointment/betrayal hypothesis because the quadratic effects were found primarily for satisfaction with care-giving. Those with very high trust beliefs in NHCs showed depressed levels of satisfaction with care-giving relative to those with the middle range of trust beliefs in NHCs.

Testing the reverse quadratic relations

A regression analysis showed that there was a linear relation between each of the four measures of adjustment to residential care and trust beliefs in NHCs with $\beta = 0.37$, $p = 0.001$ (latent measure), $\beta = 0.25$, $p = 0.029$ (satisfaction with care-giving), $\beta = 0.38$, $p = 0.001$ (social engagement) and $\beta = -0.26$, $p = 0.022$ (loneliness). These are consistent with the observed correlations. The linear relations were not qualified, however, by quadratic relations with $\beta = -0.04$, $p = 0.72$ (latent measure), $\beta = 0.03$, $p = 0.81$ (satisfaction with care-giving), $\beta = -0.10$, $p = 0.34$ (social engagement) and $\beta = -0.10$, $p = 0.42$ (loneliness).

Discussion

The findings yielded by the current study highlight the importance of older adults' trust beliefs in their NHCs for their adjustment to residential care. As expected, the more older adults held trust beliefs in their NHCs, then the more they were adjusted to residential care in the form of high satisfaction with nursing home care-giving, low

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

loneliness, high social engagement with others in the nursing home and high latent measure of adjustment to residential care. These findings are consistent with the range of studies showing that trust beliefs in others are associated with psychosocial adjustment in children, adolescents and young adults (Rotenberg *et al.*, 2005, 2014). The findings complement research that shows that older adults' generalised trust beliefs in others are associated with their life satisfaction and physical health (*e.g.* Barefoot *et al.*, 1998). The current study uniquely showed this relation, however, with respect to older adults' trust in their NHCs and adjustment to residential care.

The association between trust beliefs in NHCs and social engagement in the nursing home was stronger in men than in women. One explanation of those gender differences is that women show a modestly greater orientation to social communion in social relationships by greater striving for intimacy, social connectedness and social solidarity (Wiggins, 1991; Zarbatany *et al.*, 2004). It may be that those tendencies become manifest in women's social relationships with other nursing home residents and thus override the influence of their trust beliefs in their NHCs on social interactions.

The observed quadratic relations are similar to the patterns found during childhood and adolescence (Rotenberg *et al.*, 2005, 2013, 2014). As anticipated, the quadratic relation was clearly evident in satisfaction with care providers in which older adults with very high trust beliefs showed relatively depressed levels of satisfaction with their care provider. This potentially reflects the disappointment or sense of betrayal experienced by those very old adults. The quadratic relation tended to be shown for loneliness for a related reason. When older adults held low trust beliefs in NHCs then they may be unwilling to disclose to them and experienced elevated loneliness. When older adults held high emotional trust beliefs in NHCs and that level of emotionally trustworthiness was not reliably fulfilled then the older adults may be reluctant to disclose to them and experienced elevated loneliness. The lack of an appreciable quadratic relation in social engagement could have been due to other highly influential factors that affect older adults' social engagement in a nursing home, such as the sociability of other residents or the availability of leisure activities. The findings showed that the quadratic relation was found in the latent measure which assessed the convergence of the experience of adjustment to residential care.

As expected, it was found that older adults with very low trust beliefs in NHCs showed lower levels of adjustment to residential care relative to those with a middle range of trust beliefs in NHCs. The findings are consistent with the principle that individuals with low and very low trust beliefs in others tend to be socially disengaged from others, isolated and lonely (*see* Rotenberg *et al.*, 2005). The observed quadratic curve was modestly skewed in the current study, which supports the conclusion that it was more detrimental to adjustment to residential care if the older adults held very low than very high levels of trust beliefs in NHCs.

The findings yielded by the current study broadly lend support for the usefulness of the BDT (Rotenberg, 2010) as a way of conceptualising the trust beliefs by older adults and examining its correlates. In the current study, the BDT-derived measures served as useful way to assess older adults' trust beliefs in a specific category of persons (*i.e.* NHCs) and implications of those beliefs for adjustment in a given setting (*i.e.* nursing homes).

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

The current findings are cross-sectional and therefore there are limitations in inferences that can be drawn about the causal relations between the variables. In response to these issues, the trust beliefs in NHCs measure was anchored in the older adults' expectations of concrete behaviours and regression analyses confirmed that there were no appreciable quadratic relations between the measures of adjustment to residential care and the older adults' trust beliefs in NHCs. Longitudinal designs are required, though, to test whether older adults' trust beliefs in NHCs are a probable cause of their adjustment to residential care. There are several problems that would be encountered in a longitudinal investigation. There are high turnover rates of NHCs (Costello *et al.*, 2020) and the limited lifespan of older adults (*i.e.* over 80 years). Problems would arise because of considerable variations across residents in the timing and duration of the social contact between them and their NHC.

The current study was limited to psychosocial measures of the residents. Future lines of research could include examining the extent to which trust beliefs in NHCs by older adults predicts their physical health and longevity (*see* Barefoot *et al.*, 1998). In that vein, it would be worthwhile to examine the extent to which older adults' health and cognitive functioning affected the relation between their trust beliefs in NHCs and adjustment to residential care. For example, older adults with Alzheimer's require specific forms of care and the NHCs' trustworthy provision of that care could affect both the older adults' trust beliefs in their NHC and adjustment to residential care. It would be worthwhile for researchers to investigate whether there is cross-cultural constancy in the relations observed in the current study. The current study added to evidence regarding the effectiveness of processes of care to affect older adults' psychosocial adjustment. The findings may be regarded as one aspect of the quality of nursing homes that include organisational characteristics and other structures of care.

Researchers have found that some interventions (animal-assisted therapy, mindfulness-stress training and new technologies) are effective in reducing loneliness and isolation in older adults (*see* Hagan *et al.*, 2014; Brimelow and Wollin, 2017). There have been interventions designed to increase the processes of care such as assistance with daily activities, involvement of informal care-givers and activity programmes (Sloane *et al.*, 2004; Fritsch *et al.*, 2009). Researchers might consider implementing an intervention that trains NHCs to increase and sustain their reliability and emotional trustworthiness in interactions with the older adult residents. It would include training NHCs to be acceptant of the residents' disclosure of emotional states/cognitions (*e.g.* health needs and reminiscing). There would be various other consequences of that intervention. It could increase the likelihood that older adults would receive psychological and medical treatment by permitting NHCs to convey relevant information to clinical psychological and medical professionals (*see* Corbett and Williams, 2014). The intervention could promote adaptive reminiscing by older adults as part of dyadic relationships with care providers (Ingersoll-Dayton *et al.*, 2019). The recommended intervention would assist those residents with very low trust beliefs, as well as those with very high trust beliefs, in their NHCs. Broadly, the intervention could help the nursing homes to achieve the quality of care needed to serve the growing population of older adults.

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

Ethical standards. Ethical clearance for the study was obtained from the appropriate ethics committee of Keele University. The study adhered to American Psychological Association ethics and British Psychological Society ethics guidelines.

References

Allen PD, Nelson HW, Gruman C and Cherry KE (2006) Nursing home complaints: who's complaining and what's gender got to do with it? *Journal of Gerontological Social Work* **47**, 89–106.

Barefoot JC, Maynard KE, Beckham JC, Brammett BH, Hooker K and Siegler IC (1998) Trust, health and longevity. *Journal of Behavioral Medicine* **21**, 517–526.

Brimelow RE and Wollin JA (2017) Loneliness in age: interventions to curb loneliness in long-term care facilities. *Activities, Adaptation & Aging* **41**(4), 301–315.

Claridge KE, Rowell KR, Duffy J and Duffy M (1995) Gender differences in adjustment to nursing home care. *Journal of Gerontological Social Work* **24**, 1/2, 155–168.

Cohen J, Cohen P, West SG and Aiken LS (2003) *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*, 3rd Edn. Mahwah, NJ: Lawrence Erlbaum.

Corbett S and Williams F (2014) Striking a professional balance: interactions between nurses and their rural patients. *British Journal of Community Nursing* **19**, 162–167.

Costello H, Cooper C, Marston L and Livingston G (2020) Burnout in UK care home staff and its effect on staff turnover: MARQUE English national care home longitudinal survey. *Age and Ageing* **49**, 74–81.

Courtin E and Knapp M (2017) Social isolation, loneliness and health in old age: a scoping review. *Health & Social Care in the Community* **25**, 799–812.

Derwin C, Takeshi H, Liman Man Wai L and Xin Z (2017) Is trusting others related to better health? An investigation of older adults across six non-Western countries. *Journal of Cross-Cultural Psychology* **48** (8), 288–1301.

Dugan E and Kivett VR (1994) The importance of emotional and social isolation to loneliness among very old rural adults. *Gerontologist* **34**(3), 340–346.

Fritsch T, Kwak J, Grant S, Lang J, Montgomery RR and Basting AD (2009) Impact of TimeSlips, a creative expression intervention program, on nursing home residents with dementia and their caregivers. *The Gerontologist* **49**, 117–127.

Graneheim UH and Lundman B (2010) Experiences of loneliness among the very old: the Umeå 85+ project. *Aging & Mental Health* **14**, 433–438.

Hagan R, Manktelow R, Taylor BJ and Mallett J (2014) Reducing loneliness amongst people: a systematic search and narrative review. *Aging & Mental Health* **18**, 683–693.

Hodgson H, Grimm F, Vestesson E, Brine R and Deeny S (2020) *Adult Social Care and COVID-19. Assessing the Impact on Social Care Users and Staff in England So Far* (Briefing). London: Health Foundation.

Hupcey JE, Clark MB, Hutcheson CR and Thompson VL (2004) Expectations for care: adults' satisfaction with and trust in health care providers. *Journal of Gerontological Nursing* **30**, 37–45.

Ingersoll-Dayton B, Kropf N, Campbell R and Parker M (2019) A systematic review of dyadic approaches to reminiscence and life review among adults. *Aging & Mental Health* **23**, 1074–1085.

Isherwood LM, King DS and Luszcz MA (2012) A longitudinal analysis of social engagement in late-life widowhood. *International Journal of Aging & Human Development* **74**, 211–229.

Johnson-George C and Swap WC (1982) Measurement of specific interpersonal trust: construction and validation of a scale to assess trust in a specific other. *Journal of Personality and Social Psychology* **43**, 1306–1317.

McCann M, Donnelly M and O'Reilly D (2012) Gender differences in care home admission risk: partner's age explains the higher risk for women. *Age and Ageing* **41**, 416–419.

Miething A, Mewes J and Giordano GN (2020) Trust, happiness, and mortality: findings from a prospective US population survey. *Social Science and Medicine* **252**, 112809.

Mor V, Branco K, Fleishman J, Hawes C, Phillips C, Morris J and Fries B (1995) The structure of social engagement among nursing home residents. *Journals of Gerontology: Psychological Sciences and Social Sciences* **50B**, P1-P8.

Nicolaisen M and Thorsen K (2014) Loneliness among men and women – a five-year follow-up study. *Aging & Mental Health* **18**, 194–206.

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

Nummela O, Raivio R and Uutela A (2012) Trust, self-rated health and mortality: a longitudinal study among ageing people in Southern Finland. *Social Science & Medicine* **74**, 1639–1643.

Ong AD, Uchino BN and Wethington E (2016) Loneliness and health in adults: a mini-review and synthesis. *Gerontology* **62**, 443–449.

O'Rourke N, Cappeliez P and Claxton A (2011) Functions of reminiscence and the psychological well-being of young- and adults over time. *Aging & Mental Health* **15**, 272–281.

Podsakoff PM, MacKenzie SB, Lee J-Y and Podsakoff NP (2003) Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology* **88**, 879–903.

Q CareQuality Commission (2021) The independent regulator of head and social care in England. https://www.cqc.org.uk/what-we-do/services-we-regulate/find-care-home.

Quadagno J and Stahl SM (2003) Challenges in nursing home care: a research agenda. *The Gerontologist* **43**, supplement 2, 4–6.

Robinson JP, Lucas JA, Castle NG, Lowe JT and Crystal S (2004) Consumer satisfaction in nursing homes: current practices and residents' priorities. *Research on Aging* **26**, 454–480.

Rotenberg KJ (1990) A measure of the trust beliefs of elderly individuals. *International Journal of Aging and Human Development* **30**, 141–152.

Rotenberg KJ (2010) The conceptualization of interpersonal trust: a basis, domain, and target framework. In Rotenberg KJ (ed.), *Interpersonal Trust During Childhood and Adolescence*. Cambridge: Cambridge University Press, pp. 8–27.

Rotenberg KJ (2019*a*) Interpersonal trust and psychosocial adjustment: is trust always good? In Sasaki M (ed.), *Trust in Contemporary Society*. Leiden, The Netherlands: Brill Academic Publishers, pp. 161–172.

Rotenberg KJ (2019*b*) *The Psychology of Interpersonal Trust: Theory and Research*. Abingdon, UK: Routledge.

Rotenberg KJ, Boulton MJ and Fox C (2005) Cross-sectional and longitudinal relations among trust beliefs, psychological maladjustment, and social relationships, during childhood: are high as well as low trusting children at risk? *Journal of Abnormal Child Psychology* **33**, 595–610.

Rotenberg KJ, Addis N, Betts LR, Fox C, Hobson Z, Rennison S, Trueman M and Boulton MJ (2010) The relation between trust beliefs and loneliness during early childhood, middle childhood and adulthood. *Personality and Social Psychology Bulletin* **36**, 1086–1100.

Rotenberg KJ, Betts LR and Moore JJ (2013) Children's trust beliefs in peers and retaliatory aggression. *Journal of Genetic Psychology: Research and Theory on Human Development* **174**, 450–456.

Rotenberg KJ, Qualter P, Barrett L and Henzi P (2014) When trust fails: children's trust beliefs in peers and peer interactions in a natural setting. *Journal of Abnormal Child Psychology* **42**, 967–980.

Russell D (1996) The UCLA Loneliness Scale (Version 3): reliability, validity, and factor structure. *Journal of Personality Assessment* **66**, 20–40.

Shankar A, McMunn A, Banks J and Steptoe A (2011) Loneliness, social isolation, and behavioral and biological health indicators in older adults. *Health Psychology* **30**, 377–385.

Sloane PD, Hoeffer B, Mitchell CM, McKenzie DA, Barrick AL, Rader J, Stewart BJ, Talerico KA, Rasin JH, Zink RC and Koch GC (2004) Effect of person-centered showering and the towel bath on bathing-associated aggression, agitation, and discomfort in nursing home residents with dementia: a randomized, controlled trial. *Journal of the American Geriatrics Society* **52**, 1795–1804.

Sook-Jeong L (2007) Preliminary examination of psychometric properties of the Korean version of the Specific Interpersonal Trust scale. *Psychological Reports* **100**, 355–364.

Tijhuis MA, De Jong-Gierveld J, Feskens EJ and Kromhout D (1999) Changes in and factors related to loneliness in elderly men. The Zutphen Elderly Study. *Age and Ageing* **28**, 491–495.

Towers AM, Palmer S, Smith N, Collins G and Allan S (2019) A cross-sectional study exploring the relationship between regulator quality ratings and care home residents' quality of life in England. *Health and Quality of Life Outcomes* **17**, 22.

Van der Elst E, Dierckx de Casterle B and Gastmans C (2012) Elderly patients and residents' perceptions of 'the good nurse': a literature review. *Journal of Medical Ethics* **38**, 93–97.

Wiggins JS (1991) Agency and communion as conceptual coordinates for the understanding and measurement of interpersonal behavior. In Grove WM and Cicchetti D (eds), *Thinking Clearly About Psychology*. Minneapolis, MN: University of Minnesota Press, pp. 89–113.

https://doi.org/10.1017/S0144686X21000301 Published online by Cambridge University Press

Zarbatany L, Conley R and Pepper S (2004) Personality and gender differences in friendship needs and experiences in preadolescence and young adulthood. *International Journal of Behavioral Development* **28**, 299–310.

Zimmerman S, Anderson WL, Brode S, Jonas D, Lux L, Beeber AS, Watson LC, Viswanathan M, Lohr KN and Sloane PD (2013) Systematic review: effective characteristics of nursing homes and other residential long-term care settings for people with dementia. *Journal of the American Geriatrics Society* **61**, 1399–1409.

Cite this article: Rotenberg KJ, Chmielowiec L, Patel S (2022). The relation between older adults' trust beliefs in nursing home carers and adjustment to residential care. *Ageing & Society* **42**, 2454–2470. https://doi.org/10.1017/S0144686X21000301