UNIVERSITY OF AUCKLAND

How satisfied are frail older adults with living in retirement villages?

HOPE Foundation

SCHOLARSHIP IMPACT REPORT

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Thank You and Summary

I would like to give thanks to the University of Auckland Faculty of Medical and Health Sciences Summer Research Scholarship for enabling this opportunity. I would also like to express my gratitude to the Hope Foundation, who provided funding for this project making my participation possible. Finally, I want to thank my supervisors and the research team involved in the wider 'Older Adults in Retirement Villages' study; Katherine Bloomfield, Zhenqiang Wu, Annie Tatton, Cheryl Calvert, Michal Boyd, Joanna Hikaka, Dale Bramley, and Prof. Martin Connolly. The support and guidance they have provided during this project has been invaluable and I have learnt so much about research and the geriatrics field.

This project was a cross-sectional observational study on retirement village residents in the Auckland and Waitematā district health board regions. This study aimed to use survey and health data to evaluate satisfaction with RVs in frail older adults, and see how this compared to residents classed as fit. I first performed a literature review around older adult health, RVs, and frailty to get my head around the topic and its importance. Following this I was tasked with writing a draft manuscript for publication, which also involved data analysis using SPSS.

Prior to studying medicine I completed a Bsc majoring in Biochemistry. This sparked an initial interest in research which I have been able to nurture and grow by completing this project. I have learnt not only about research but also the field of geriatric medicine and gerontology. I admire the holistic and multifaceted nature of this field and can definitely see myself working in this in the future.

Input

I was able to complete this project due to generous funding provided by the HOPE Foundation.

Research Activity

Background

Population aging is a rapidly occurring process, with the older adult population projected to reach 1 million by 2028 and grow from 1 in 6 to 1 in 5 people (Stats NZ, 2022). This has coincided with the rapid development and expansion of retirement villages (RV) (Boyd et al., 2022)The demand for RVS continues to rise, with an estimated 26000 additional units required by 2033 to accommodate future growth (Jones Lang LaSalle, 2020). Older adults in RVs reside in an apartment or unit inside a wider community with various services and facilities (Dickins et al., 2023). Primarily, RVs provide older adults with accommodation that is more secure and requires less maintenance. Services often include meal provision or

delivery, and the availability of a nurse or regular health clinic. Social environments such as community centres and game nights are also an important part of RV living. The marketing of RVs has meant that the needs and motivations of older adults entering RVs can be highly variable, particularly among those with diverse health needs (Bernard et al., 2007). The ranging health needs and expectations among RV residents is reflected through their varying levels of frailty. Frailty is characterised by an accumulated reduction in physiological capacity across multiple organ system (Hoogendijk et al., 2019). Individuals experiencing frailty have difficulty restoring homeostasis following a stress, meaning minor stressors can trigger large changes in health. Our earlier research utilised the interRAI Community Health Assessment (CHA) tool to develop a quantitative frailty index (FI) (Bloomfield et al., 2021). In a sample of older adults residing in RVs across 2 Auckland DHBs, we found that 45% of residents were mildly frail, and 19% were moderately-severely frail (Bloomfield et al., 2021). This exemplifies the high health needs among RV residents. Our research also found that mild and moderately-severely frail residents have a higher likelihood of hospitalisation both before and after entering an RV (Bloomfield et al., 2021; Bloomfield et al., 2022).

Aims + Rationale

This research aims to evaluate the satisfaction of frail older adults with aspects of RV living, and how this compares to non-frail residents. To our knowledge, none of the literature has explored satisfaction with RVs relative to a quantifiable measure of frailty. While research suggests that overall satisfaction is high (Kennedy & Coates, 2008), there is evidence suggesting that frail older adults may have different experiences with RVs than those who are fit. A recent RV study reported low wellbeing in 22% of respondents and found that this could be correlated to pain, falls, and limited ability to prepare meals (Dickins et al., 2023). Similarly, unplanned hospitalisations could also be associated with lower wellbeing. These are all characteristics of a more frail group of people, who could potentially have different levels of satisfaction with RVs than those who are not. Supporting this, our research found that loneliness is significant in RVs. 27.7% of respondents sometimes feel lonely, and nearly 10% often or always feel lonely (Boyd et al., 2021). It has also been suggested that satisfaction may be influenced by varying needs among residents and conflicting views on what a retirement village should be. Some studies have highlighted experiences of exclusion and stigma among residents with higher health needs, and a negative perception towards those needing more care from more independent residents (Carr & Fang, 2022). However, much of this research is qualitative. This provides a basis for the use of a quantitative measure of frailty to compare satisfaction with various aspects of RV living between frail and non-frail older adults. The results of this research will help to inform older adults in their housing decisions as well as the RV industry in ensuring they are meeting the needs of their frail residents.

Method

Between July 2016 and August 2018, 53 RVs in the Auckland and Waitemata DHBs were approached and asked to participate in the study. 34 were subsequently recruited. Resident recruitment occurred through random sampling where possible and through volunteers from resident meetings, newsletters and posters. The recruited sample of residents (n=578) were asked to complete a questionnaire. This survey encompassed a multitude of topics including reason for moving into the village and levels and aspects of satisfaction. Aspects of satisfaction surveyed included household maintenance/chores, help with current/future health issues, opportunities to be active, security, affordability, and services offered in the village. Response options for each category were very satisfied, satisfied, neutral, dissatisfied and very dissatisfied. For this analysis, the latter 3 were grouped into neutral-very dissatisfied. Participants also completed a health assessment using the international resident assessment instrument (interRAI) community health assessment (CHA). The use of an interRAI questionnaire allowed for information about function, health, social support, and service use to be gained. A frailty index (FI) was derived using the InterRAI-CHA data based on 57 variables where participants were scored between 0 and 1 (Mitnitski et al., 2001). FI was confirmed to predict negative health outcomes in this population (Bloomfield et al., 2022).

Differences in frailty index across baseline characteristics were detected with independent sample T tests or ANOVA. This was also used to identify differences in frailty index for different levels of satisfaction with various aspects of RV living. Our analyses also looked at whether an event prompted a participant to move into an RV, and whether push/pressure from family was an important factor in the decision to move to an RV. Descriptive results include n (%) and mean (standard deviation, SD) FI. Multivariable linear regression analyses were performed with mean differences (MDs) and 95% confidence intervals (Cis), to identify factors independently associated with frailty index. Variables adjusted for in multivariable regression included gender, age, marital status, ethnicity, socioeconomic status, village size and length of stay in village. A separate analysis was performed for each variable of interest due to high correlations with one another. All analyses were performed with IBM SPSS Statistics (Version 29), and a two-sided p value < 0.05 was considered statistically significant.

Research Output(s)

Five hundred and seventy-eight eligible participants were recruited from 33s RVs. 217 (38%) were enrolled from random sampling as planned and 361 (62%) were volunteers. Recruitment via volunteer participation occurred due to access issues detailed elsewhere16.

Twelve additional residents were excluded due to a lack of legal capacity for informed consent. All participants completed a resident survey and the interRAI CHA (n=565) or interRAI HC (n=13) assessments. 1 participant was excluded due to incomplete interRAI data, resulting in 577 participants included in the analyses.

Participant Demographics

The mean age of participants was 81 years and most (n=419, 72.5%) were women. 247 (42.7%) of subjects were married, and 330 (57.1%) were either never married, divorced, widowed, or other. Participants were mostly of European ethnicity (96.5%, n=557). The ethnicities of non-European participants included Asian (n=8), Māori (n=7), Pacific Island (n=1), and other (n=4). Participant sociodemographic characteristics can be seen in Table 1.

Unadjusted Analyses

Table 1 shows the mean frailty index across sociodemographic characteristics. Table 2 demonstrates frailty index for factors involved in relocation to RVs. A higher mean frailty index was significantly associated with push or pressure from family being a factor in the decision to relocate to an RV (FI = 0.19 vs 0.16, p=0.01). Moving into an RV after being prompted by a particular event was also associated with a significantly higher mean FI (0.18 vs 0.15, p=0.00).

Adjusted Analyses

Table 4 demonstrates FI mean differences with 95% confidence intervals between the different levels of satisfaction. After adjusting for confounders (gender, age, marital status, years in village, number of units in village, ethnicity, and NZ deprivation index), the multivariate regression analysis found that frailty was significantly associated with satisfaction levels and factors for moving into a RV. Those with an overall satisfaction level of neutral to dissatisfied had a higher mean FI than the reference category of very satisfied (MD = 0.059; 95% CI 0.031-0.087). This was also seen in the aspects of satisfaction of: social activities (MD=0.050; 95% CI 0.023-0.076), opportunities to be active (MD = 0.036; 95% CI 0.009 – 0.063), security (MD = 0.012; 95% CI -0.019-0.43), affordability (MD = 0.043; CI 0.019-0.067), services (MD = 0.037 CI 0.010 – 0.063). Overall satisfaction and satisfaction with social activities had the highest increases in mean FI associated with lower levels of satisfaction. Table 4 also shows the FI mean difference between those who moved to a RV after being prompted by a particular event and those who didn't. This found that frailty is significantly associated with this circumstance of relocation. Similarly, a higher mean FI was also observed in participants who had selected push or pressure from family as a key factor in their relocation to a RV.

Research Outcome(s)

To our knowledge, this is the first study to utilise a quantitative frailty index to investigate the relationship between frailty and satisfaction with various aspects of RVs. While earlier research explored overall satisfaction in the whole RV population, our research intended to identify satisfaction differences in terms of frailty (Bunce & Reid, 2021). We also examined variation in factors involved in relocation, showing that for some circumstances in relocation, frailty was higher. These were push or pressure from family, and being prompted to move by a particular event. These are factors that could be indicative of a lower level of autonomy in the decision-making process. This could suggest that moving to a RV is a more reactive decision for older adults living with frailty, compared to those who are fit where relocation is a more proactive and independent decision which is made early on (Stimson & McCrea, 2004). This situation is likely to influence the needs and expectations of frail older adults as they enter a RV. Linking to this, in terms of satisfaction, this study found lower levels of satisfaction to be associated with frailty. This indicates that residents experiencing frailty might be having a different experience of RVs, and that RVs may not be meeting the expectations of all their residents. Our results provide information to older adults living with frailty in their housing decisions. They also offer insight to the RV industry to ensure that they can meet the needs of those who are frail. This study would benefit from further qualitative research identifying the specific features of RVs contributing to dissatisfaction.

This study demonstrates an association between frailty and certain circumstances in relocation. These included push or pressure from family, and the occurrence of an event that prompted relocation, including death of a spouse or partner, or onset of an illness. Due to low responses the type of event was not able to be included in analyses. This relationship depicts the choice to relocate for those living with frailty as a reactive one, involving more push factors (Stimson & McCrea, 2004). Push factors are stressors encouraging a change in housing, such as deteriorating health. This differs to pull factors which are attractors promoting the RV environment and lifestyle (Stimson & McCrea, 2004). RVs place an emphasis on continuing care, and many are collocated with serviced apartments or long term care facilities (LTCs) (Boyd et al., 2022). This means many anticipate extra care and support in the case of declining health, despite relocation to collocated facilities not always being guaranteed (Yeung et al., 2017). It was found that this anticipation of extra care occurs regardless of what is stated in the management policy (Broad et al., 2020). Since RVs are seen as an alternative to LTCS (Roy et al., 2018), more work is required to identify the expectations of frail older adults and how these can be met. This will be achieved by understanding factors that encourage and discourage relocation to RVs. There is not a lot of information on this for older adults living with frailty specifically, but in general, factors encouraging relocation can include maintained independence, social opportunities, and amenities (Bernard et al, 2019). Nonetheless, RVs cater to a very heterogeneous demographic in terms of health making it important to understand and meet the expectations of all residents (Nguyen et al., 2021).

The association found between frailty and lower levels of satisfaction is somewhat in contrast to previous satisfaction studies which reported high rates of satisfaction. Our own research also found satisfaction rates of 93% (Broad et al., 2020). However, this study shows that those who are less satisfied were more likely to be living with higher degrees of frailty, representing a specific group of residents who may be limited in terms of satisfaction outcomes. This is reinforced by some of the qualitative literature, which although has not explicitly measured frailty in participants, found that

those with higher health needs experience isolation and difficulty adjusting in RVs (Nielson et al., 2019). A US study also found that villages tend to serve a greater benefit for those who are more involved in village activities, while for those who are in poorer health and not able to participate, the impacts are fewer (Graham et al., 2014). It noted an uncertainty around whether villages are meeting the needs of vulnerable and aging residents (Graham et al., 2014). Qualitatively identifying specific features of RVs that contribute to lower satisfaction in RVs could help address this discrepancy between fit and frail older adults.

The social environment is an important feature of RVs, increasing social connection a significant motivator for relocation (Peri et al., 2020). Many anticipate that social isolation will decrease upon moving to a RV. However, our results suggest that the social expectations when moving into a RV may not be fully met for residents experiencing frailty. Our previous work on loneliness also found that the proportion of those feeling lonely in RVs is not only significant, but higher than that of the community (Boyd et al., 2021). This may explain our results, if older adults are anticipating a reduction in loneliness entering a RV but finding this not to be the case. The heterogeneity of the RV population can also allow us to understand these results. While RV residents make up the same age demographic, their needs and abilities differ greatly, which can influence their experience socially (Nguyen et al., 2021). One study noted this manifested in an "us and them" mentality. This was found to be reflected by the negative language used by some participants, talking about older, more dependent residents. This conflict mostly stems from different ideas of what a retirement village should be. Some residents believed that they were sold an environment that would allow them to remain active and enable a "prolonged midlife". These residents felt that those with high care needs encroached on these ideas (Carr & Fang, 2022). The RV industry also has a role in this as it offers different and potentially conflicting narratives to different people moving to RVs (Carr & Fang, 2022). This exclusionary mindset has also been mentioned by other studies, with recounts of residents struggling to feel included when they need more support to engage in social activities[5]. Further to this, unmet social needs are a known dimension of frailty (Bu et al., 2021), and social participation is a means to slow frailty progression (Sun et al., 2022). However, the labelling and stigmatisation of older adults living with frailty may feed into the development of social frailty itself (Warmoth et al., 2016). One study reported that identifying as frail had consequences of physical and social disengagement (Warmoth et al., 2016). This may create a feedback loop where older adults living with frailty feel that they can't participate socially which can then further increase incidences of disability and mortality (Bu et al., 2021). Further research will be necessary to understand how these narratives around frailty develop and how they might be changed.

(Future) Impact

Aotearoa New Zealand has a rapidly aging population as well as a fast-growing RV industry. Research in this field is crucial in meeting the needs and expectations of the older adult

demographic. This study not only contributes to literature on the ageing population, but also literature surrounding frailty and the experiences of frail older adults. It puts previous work to develop a quantitative frailty index into practice by applying it to evaluating satisfaction of older adults in terms of frailty. This study provides a new perspective on the satisfaction of older adults with retirement villages, taking the experiences of those who are frail into account. Our research will be valuable in informing housing decisions of older adults and their families. It also provides insight for the RV industry to take into consideration when aiming to meet the needs of frail residents.

Our study demonstrated that the motivations and circumstances for relocation may differ between those who are fit and those who are frail. Frail older adults are more likely to relocate following a prompting event or push/pressure from family. In contrast to this, fit older adults generally relocate earlier on in a more proactive manner, often for lifestyle reasons or the social environment. The lower level of autonomy characterising relocation of frail older adults links to the fact that frail residents have different needs and expectations to other residents which should be met. This study found that satisfaction levels are lower in those who are frail, indicating that the expectations of frail older adults may not be completely met in the RV environment.

This study creates opportunities for follow up studies which provide a qualitative perspective to our research. Our study was mainly quantitative and a qualitative study that further explores satisfaction with RVs in frail older adults could exemplify our findings.

The manuscript produced as part of this project will be developed for publication in a peer reviewed scientific journal. I will also be presenting the findings in an oral presentation at the HOPE Foundation for research in ageing fundraising event in March.

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Appendix

Table 1. Sociodemographic Characteristics

Variable	N(%)	Mean (SD) FI (n=577)	P value for group difference
Gender			0.32
M	158 (27.3)	0.15 (0.09)	
F	419 (72.5)	0.16 (0.09)	
Age			0.00
60-69	21 (3.6)	0.14 (0.09)	
70-79	196 (33.9)	0.14 (0.09)	
80-89	292 (50.5)	0.17 (0.09)	
>90	68 (11.8)	0.18 (0.08)	
Marital Status			0.00
Married	247 (42.7)	0.14 (0.09)	
Other	330 (57.1)	0.18 (0.08)	
Years in Village			0.15
<1 year	89 (15.4)	0.15 (0.09)	
1-5 years	260 (45.0)	0.16 (0.09)	
5-10 years	116 (20.1)	0.17 (0.09)	
>10 years	95 (16.4)	0.17 (0.09)	
Number of units			0.12
0-49	64 (11.1)	0.15 (0.09)	
50-99	113 (19.6)	0.17 (0.09)	
100+	401 (69.4)	0.16 (0.09)	
Ethnicity			0.86
NZ European	410 (70.9)	0.16 (0.09)	
Other European	147 (25.4)	0.16 (0.09)	
Non-European	20 (3.5)	0.15 (0.08)	
NZ deprivation index			0.14
1-5	443 (76.6)	0.15 (0.08)	
6-10	135 (23.4)	0.18 (0.10)	

Table 2

Variable	N (%)	Mean (SD) FI (n=577)	P value
Push/pressure from family			0.01
Yes	59 (10.2)	0.19 (0.08)	
No	503 (87.0)	0.16 (0.09)	

Particular event			0.00
Yes	254 (43.9)	0.18 (0.09)	
No	322 (55.7)	0.15 (0.09)	

Table 3

Variable	**N(%)**	**Mean (SD) FI (n=577)**	**P value**
Overall Satisfaction			0.00
Very Satisfied	343 (59.3)	0.15 (0.09)	
Satisfied	189 (32.7)	0.16 (0.09)	
Neutral to very dissatisfied	39 (6.7)	0.21 (0.10)	
Satisfied with social activities			0.00
Very satisfied	305 (52.8)	0.15 (0.09)	
Satisfied	192 (33.2)	0.16 (0.09)	
Neutral to very dissatisfied	48 (8.3)	0.20 (0.09)	
Satisfied with opportunities to be active			0.00
Very satisfied	320 (55.4)	0.15 (0.08)	
Satisfied	176 (30.4)	0.17 (0.09)	
Neutral to very dissatisfied	49 (8.5)	0.18 (0.11)	
Satisfied with security			0.05
Very satisfied	334 (57.8)	0.15 (0.08)	
Satisfied	204 (35.3)	0.17 (0.09)	
Neutral to very dissatisfied	32 (5.5)	0.17 (0.09)	
Satisfied with affordability			0.00
Very satisfied	192 (33.2)	0.15 (0.09)	
Satisfied	303 (52.4)	0.16 (0.09)	
Neutral to dissatisfied	68 (11.8)	0.19 (0.08)	
Satisfied with services			0.01
Very satisfied	280 (48.4)	0.15 (0.08)	
Satisfied	220 (38.1)	0.17 (0.09)	
Neutral to dissatisfied	47 (8.1)	0.19 (0.09)	

Table 4

Characteristic	FI MD (95% CI), p	Covariate-adjusted p value
Overall Satisfaction		<0.001
Very satisfied	0	
Satisfied	0.017 (0.002 – 0.032), 0.030	
Neutral to very dissatisfied	0.059 (0.031 – 0.087), <.001	
Satisfaction with social activities		<0.001
Very satisfied	0	
Satisfied	0.016 (0.00 – 0.032), 0.046	
Neutral to very dissatisfied	0.050 (0.023 – 0.076), <.001	
Satisfaction with opportunities to be active		0.006
Very satisfied	0	
Satisfied	0.020 (0.004 – 0.036), 0.014	
Neutral to very dissatisfied	0.036 (0.009 – 0.063), 0.008	
Satisfaction with security		0.044
Very satisfied	0	
Satisfied	0.019 (0.004 – 0.034), 0.013	
Neutral to very dissatisfied	0.012 (-0.019 – 0.43), 0.449	
Satisfaction with affordability		0.002
Very satisfied	0	
Satisfied	0.008 (-0.008 – 0.023), 0.355	
Neutral to very dissatisfied	0.043 (0.019 – 0.067), <0.001	

Satisfaction with services		0.018
Very satisfied	0	
Satisfied	0.012 (-0.003 – 0.028), 0.125	
Neutral to very dissatisfied	0.037 (0.010 – 0.063), 0.007	
Event occurred which prompted move to RV		<0.001
No	0	
Yes	0.027 (0.013 – 0.041), <0.001	
Push/pressure from family as an important factor in the decision to move to a RV		0.08
No	0	
Yes	0.021 (-0.03 – 0.45), 0.080	