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Introduction

- Care home residents in the Republic of Ireland (ROI) are at risk of loneliness and the adverse affects of social isolation due to COVID-19 restrictions and social distancing measures.
- Studies link social isolation to cognitive decline, depression and disrupted sleep^(1&2) which may increase agitated behaviours in residents with dementia.
- Hence, social isolation associated with COVID-19 restrictions, may increase responsive behaviours in residents with dementia. Responsive behaviours arise in response to an unmet physical or psychological need and include a wide spectrum of behaviours including agitation, aggression & wandering³.
- Therefore, this research aims to understand how COVID-19 restrictions, affects the wellbeing and behaviours of residents with dementia, to inform practice and policy changes to support care home staff and residents.

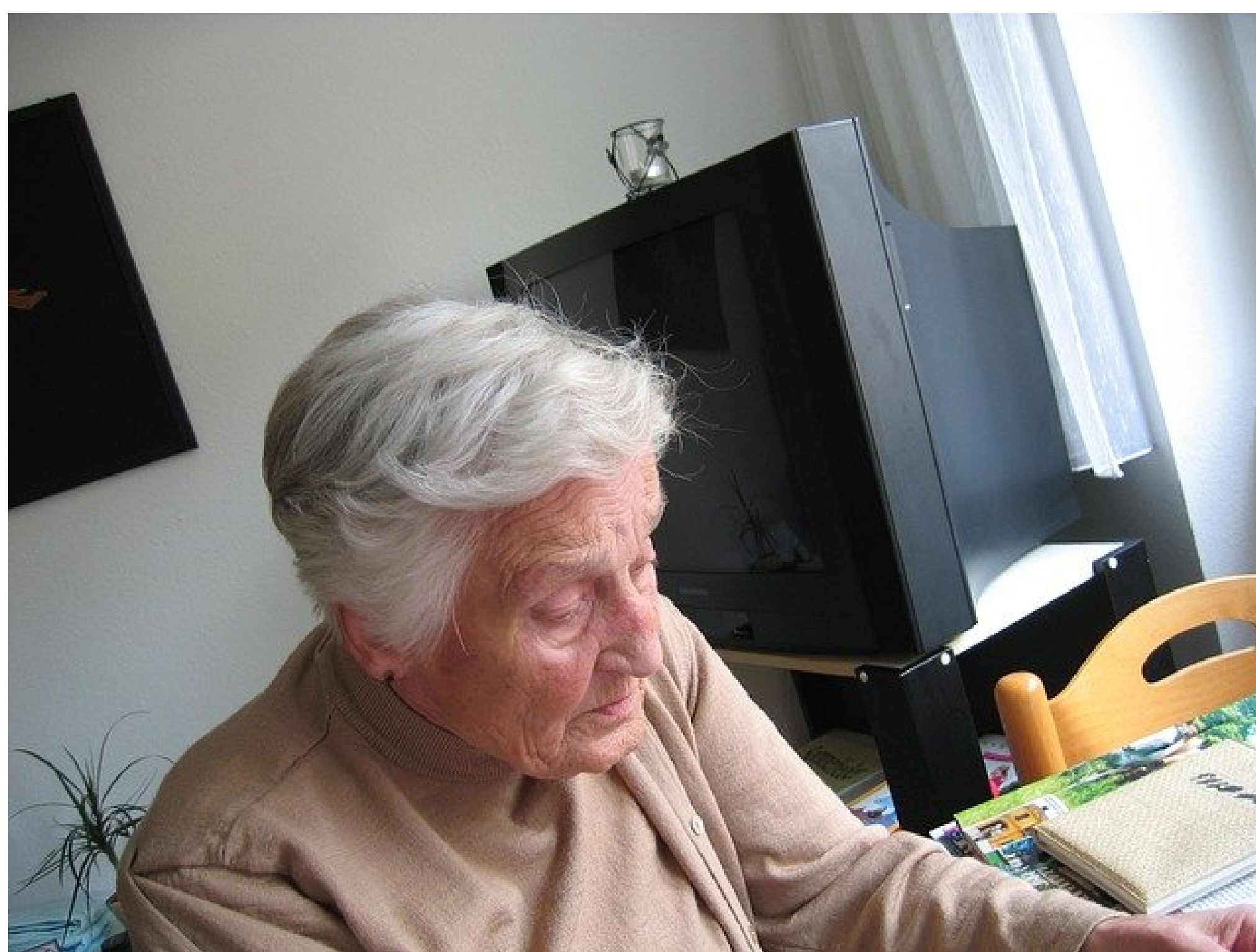


Figure 1. Geralt Altmann from Pixabay_dependent-441405_640

Preliminary findings

Care home staff in Ireland describe how social isolation, associated with COVID-19 restrictions, affects the wellbeing of residents (fig 2)

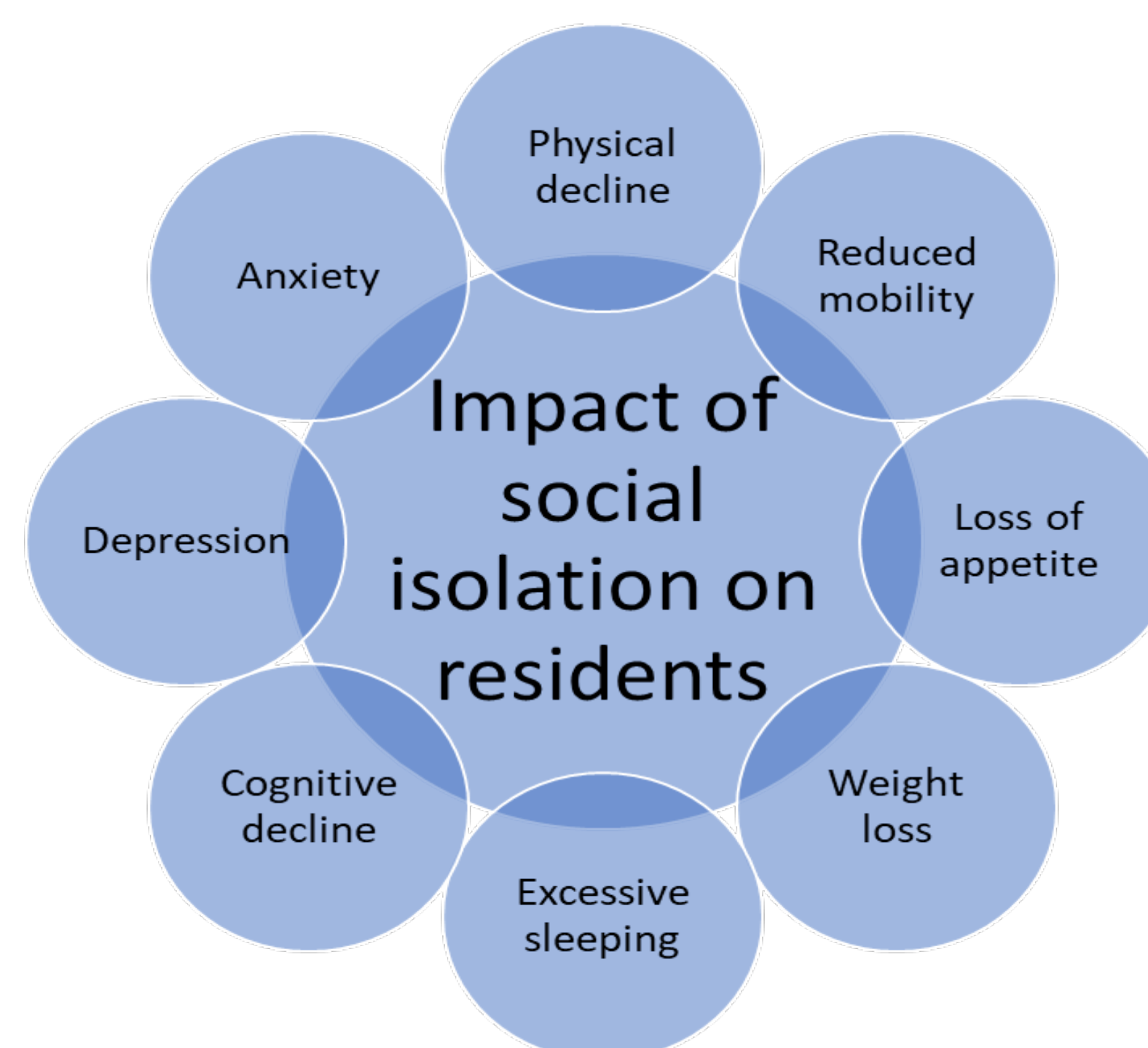


Figure 2. Impact of social isolation, associated with COVID-19 restrictions, on care home residents in Ireland

Changes in responsive behaviours, associated with dementia, during COVID-19 restrictions in Ireland (fig. 3).

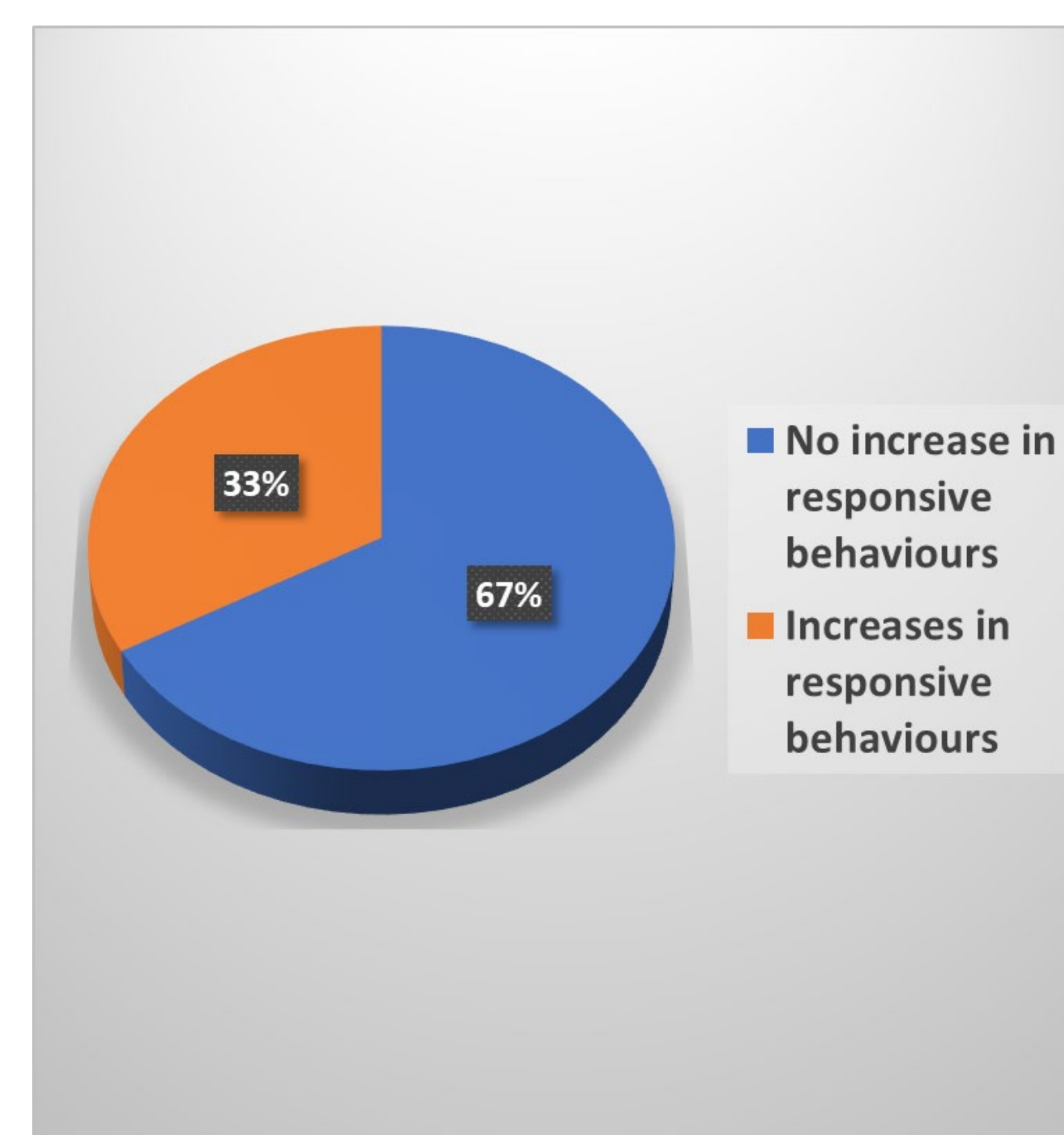


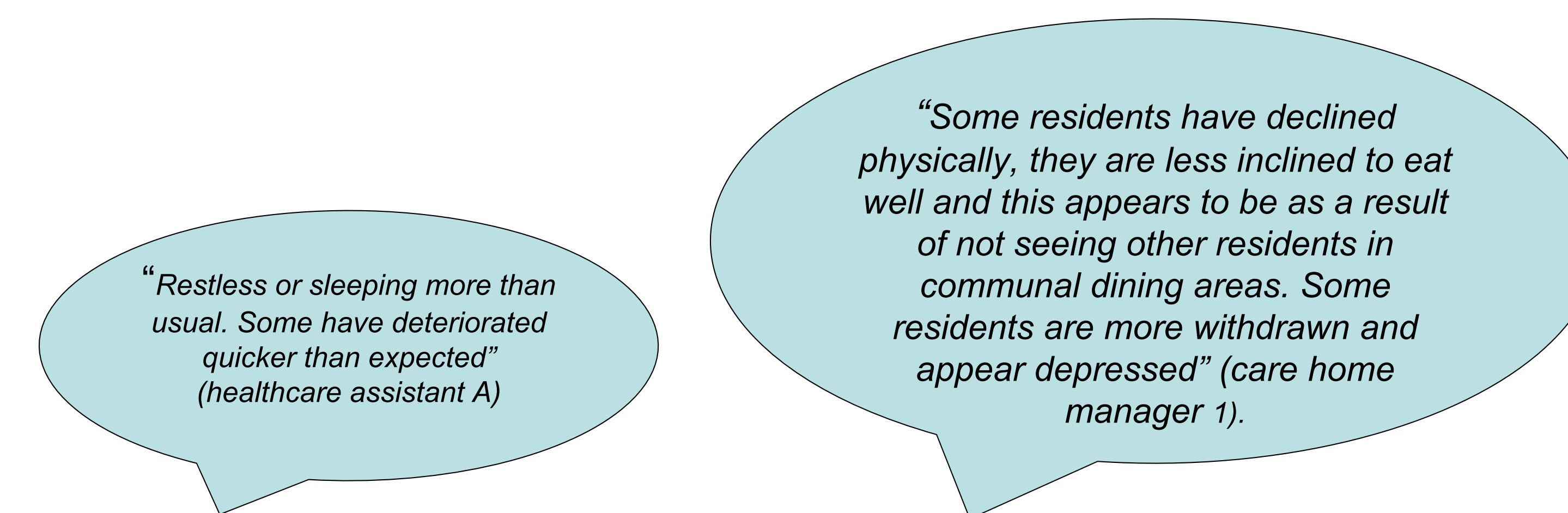
Figure 3. Changes in responsive behaviours, associated with dementia, during COVID-19 restrictions

Responsive behaviours during COVID-19 restrictions (preliminary findings of ongoing study)

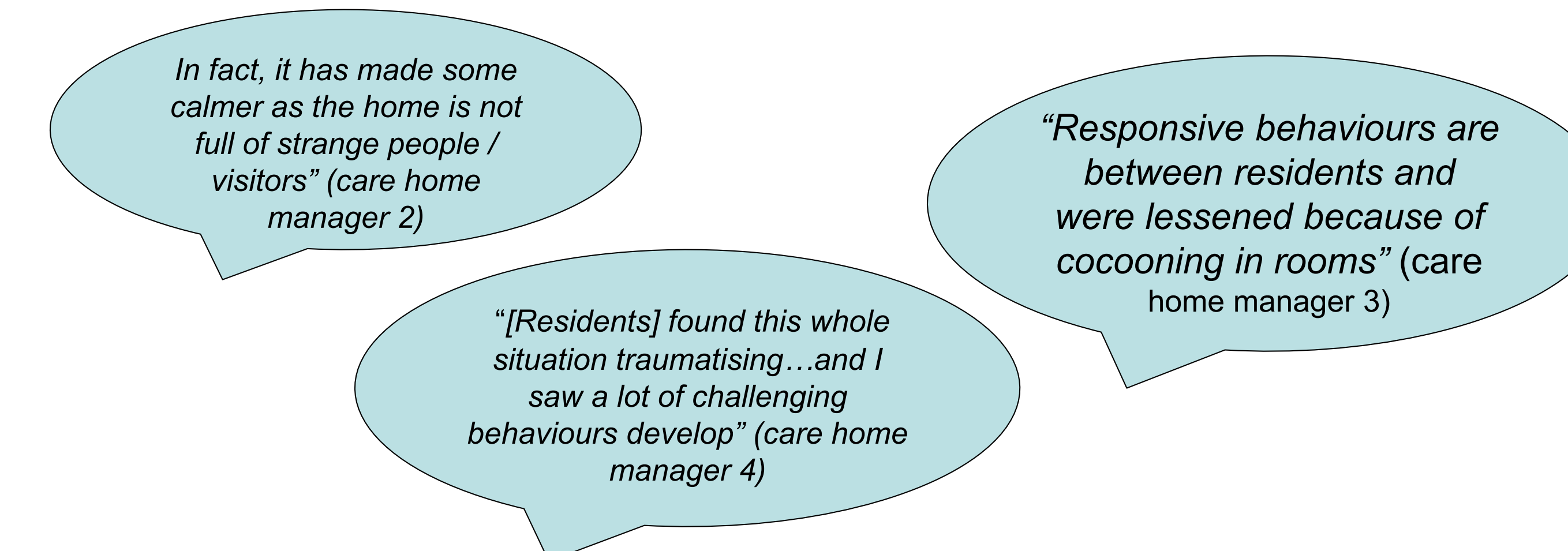
- Two-thirds of care home staff did not observe increases in responsive behaviours during COVID-19 restrictions.
- Care staff noted that some residents with dementia were calmer due to absence of visitors/strangers
- Care staff reported less resident-to-resident aggression due to social distancing measures.
- One-third of care home staff observed increases in responsive behaviours during COVID-19 restrictions.

Preliminary Results

Care home staff quotes describe the impact of social isolation, associated with COVID-19 restrictions, on the wellbeing of residents with dementia



Care homes staff quotes describe the impact of social isolation, associated with COVID-19 restrictions, on responsive behaviours



Conclusion

- Preliminary findings indicate that social isolation is associated with physical and cognitive decline, increased symptoms of depression and anxiety and sleep disturbance in care home residents with dementia in ROI.
- One-third of care home staff reported increases in responsive behaviours in residents with dementia during Covid-19 restrictions, however, two-thirds of care staff did not observe an increase in responsive behaviours, such as agitation, aggression and wandering. Several care home managers noted that residents with dementia were calmer due to absence of visitors/strangers and reduced resident-to-resident aggression.
- The findings will be presented to the Health Services Executive (HSE) and the Health and Information Quality Authority (HIQA) in ROI to inform policy and practice changes to support care home staff and residents.

Key References

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Methods

An online questionnaire was sent to 443 care homes in the Republic of Ireland to be completed by managers, nurses & healthcare assistants. A follow up telephone or Microsoft Teams interview (30 – 60 min duration) was conducted with care home staff who had submitted a questionnaire.

Participant demographics

The study is ongoing but to date, 20 care home staff have completed surveys and five in-depth interviews have been conducted with care home managers in ROI.

Participants include sixteen managers with, on average, over 18 years of work experience in care home settings.

Exploring older adults' attitudes towards virtual Reality

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Introduction

In the last decade, immersive virtual reality (VR) has gained more interest and acceptance, as an innovative technology intervention in a wide range of health settings for older adults. Immersive VR is an emerging technology that immerses an user into an alternate virtual 3-Dimensional environment through the use of Head mounted device (HMDs) (e.g. Oculus Rift/ Oculus Quest, HTC Vive), giving a complete sense of presence (Lombard & Ditton,1997). The Immersive VR allows the user not just to view, but also to engage and interact with the virtual environment, by moving their head to look around and could also use the handheld controllers to move and interact within the virtual world.

Therefore, understanding older adults' attitudes towards accepting Immersive Virtual Reality (VR) is fundamental for maximising the potential that this emerging technology could offer, in delivering improved health and wellbeing outcomes for older adults. Hence, this study aims to examine the attitudes of older adults towards immersive VR experiences.

Methodology

This study will be using a mixed methods approach, both quantitative and qualitative methods to get a comprehensive picture, addressing the limitations of the earlier studies. This study will happen in two phases. The phase I of the study, aims to examine the attitudes of older adults' towards technology using a Technology Acceptance Model (TAM) questionnaire to establish a baseline (Davis,1986). The questionnaire will be administered either via online, hosted in the Survey Monkey site, or in a paper format which will be posted to the participants with a self-addressed returnee envelope, depending on their personal preference.

In the phase II of the study, older adults' attitudes towards immersive VR experiences will be examined using telephone interviews. Before the interview, a private link to the demo video on immersive VR will be sent to the older adult participants, who will be purposively chosen from the same sample used for the phase I keeping with the diversity goal of the sample.

Followed by the participants' viewing of the video, they will be interviewed for a duration of 45-60 mins on a mutually agreed time and date. The interview will be informed by Person-Environment(P-E) lens of environmental gerontology.

Recruitment & Sampling

Participants for both the phase I and phase II of the study will be older adults (male and female) in the age group of 60- 80 years, recruited from Lancaster University's C4AR volunteer panel, and online senior forums such as the Longevity Forum, Silver surfers and Hell's Geriatrics. For Phase I, the sample size is 89 participants which was calculated using G*Power 3.1 application. For Phase II, 15- 20 participants will be purposively recruited to achieve a diverse sample for the interview.

Benefits of the study & participation

Some people may find it to be a positive experience to reflect, offer their thoughts and suggestions on the challenges of ageing and how best technology and more specifically immersive (VR) technology could open a new window of opportunity for engagement and entertainment in improving their wellbeing. More so, the findings and insights gained from this study could deepen the understanding of the older adults as a group, which could lead to older adults' focussed design of VR devices and content, which could eventually benefit them.

Key References

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Lombard, M., & Ditton, T. (1997). At the heart of it all: The concept of presence. *Journal of Computer-Mediated Communication*, Vol 3, Issue 2. <https://doi.org/10.1111/j.1083-6101.1997.tb00072.x>

Is childhood loneliness related to cognitive performance in later life? Longitudinal results from the Survey of Health, Ageing and Retirement

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Introduction

Loneliness is an important concern for the maintenance of health and well-being in later life. A large body of research focusing on the impact of loneliness on cognitive functioning have been conducted (see Cacioppo et al., 2006). Findings suggest a link between loneliness and the reduction in cognitive performance in later life (James, 2010). Older adults at risk of high level of loneliness are found to be twice as likely to develop Alzheimer's disease as those with a low level of loneliness (Wilson et al., 2007). The effects of loneliness on cognitive function has been stressed, however, whether early life experience of loneliness played a role in this link has not yet to be confirmed.

Aim

This study aims to investigate the long-term effects of childhood loneliness on cognitive performance in later life in nationally representative samples of regular residents aged 50 or above across Europe, after controlling for numerous reported predictors of cognitive decline: age, education, gender, BMI, physical inactivity, functional impairment (ADL, IADL), and psychological depression.

Data and Methods

Sample

Data were derived from Waves 6 and 7 of the Survey of Health, Ageing and Retirement in Europe (SHARE Release 7.0.0) in 2019. The analytical sample is respondents with information available regarding all variables of interest (N=7,673).

Childhood loneliness

In the latest SHARELIFE (Wave 7), two questions capturing childhood loneliness were introduced: 1) How often were you lonely for friends? 2) How often did you have a group of friends that you felt comfortable spending time with? Response options range from 1 "often" to 4 "never".

Cognitive functioning

Cognitive performance is measured through two assessments in SHARE: verbal fluency and numeracy (Dewey & Prince, 2005). Verbal fluency is assessed by one item on semantic verbal fluency and thus used as an indicator of cognitive ability; numeracy is a measure of mathematical performance. The former is a continuous variable, and the latter is dichotomized into a binary variable.

Depression

Depression was measured by a 12-item EURO-D Scale, which is an established and validated instrument to measure depressive symptoms in various European countries (Prince et al., 1999). The response ranges from 0 "not depressed" to 12 "very depressed".

Physical inactivity and functional impairment

Physical inactivity was assessed by the duration and intensity participants engaged in physically demanding activities. Functional impairment was assessed through the number of chronic disease that lasted at least over six months, and the limitations of managing daily life (ADLs, IADLs). They were dichotomized into binary variables with 0 "being active/less than 2 diseases/ no limitations" and 1 "being inactive/2+ chronic diseases/1+ limitations".

BMI

The Body Mass Index (BMI) refers to respondents' weight in relation to body height, calculated in kg/m². It was classified into three categories guided by the World Health Organization (WHO) standards: 1 "normal" (14-24.9999), 2 "overweight" (25-29.9999) and 3 "obese" (>30).

Sociodemographic factors

Age, gender, education level were included as main sociodemographic factors.

Statistical analysis

Multiple linear regression and logistic regression model were run separately to estimate the effects of childhood loneliness on cognitive performance controlling for confounding in Stata.

References

Cacioppo, J. T., Hughes, M. E., Waite, L. J., Hawkley, L. C., & Thisted, R. A. (2006). Loneliness as a specific risk factor for depressive symptoms: cross-sectional and longitudinal analyses. *Psychology and aging*, 21(1), 140; Wilson, R. S., Krueger, K. R., Arnold, S. E., Schneider, J. A., Kelly, J. F., Barnes, L. L., & Bennett, D. A. (2007). Loneliness and risk of Alzheimer disease. *Archives of general psychiatry*, 64(2), 234-240; Dewey M.E. & Prince M.J.: Cognitive Function. In: Börsch-Supan, A., A. Brügiavini, H. Jürges, J. Mackenbach, J. Siegrist and G. Weber. (2005). *Health, ageing and retirement in Europe – First results from the Survey of Health, Ageing and Retirement in Europe*. Mannheim: Mannheim Research Institute for the Economics of Aging (MEA), pp. 118 – 125; Prince, M. J., Reischies, F., Beekman, A. T. F., Fuhrer, H., Roelands, M., Skoog, I., Turrina, C. & Copeland, J. R. (1999). Development of the EURO-D scale – a European Union initiative to compare symptoms of depression in 14 European centres. *The British Journal of Psychiatry*, 174(4), 330-338.

Results

Table 1: effect of childhood loneliness on verbal fluency

Verbal fluency	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Childlone1	.3318846	.0815814	4.07	0.000	.1719626 .4918066
Childlone2	-.2286543	.1081862	-2.11	0.035	-.4407291 -.0165795
age	.1723738	.0090244	19.10	0.000	.1546835 .1900641
education	.443477	.0200249	22.15	0.000	.4042226 .4827313
sex	.3316411	.1663152	1.99	0.046	.0056174 .6576648
BMI	.0398903	.1099626	0.36	0.717	-.1756668 .2554475
Chronic (2+)	.7425794	.1777033	4.18	0.000	.3942317 1.090927
IADL (1+)	-.6094424	.3137685	-1.94	0.052	-1.224515 .0056307
ADL (1+)	.1101739	.355538	0.31	0.757	-.586779 .8071268
depression	-.3159034	.0385987	-8.18	0.000	-.3915674 -.2402393
phactivity	-2.719762	.3244029	-8.38	0.000	-3.355681 -2.083843
_cons	-322.3638	17.56071	-18.36	0.000	-356.7877 -287.94

A total of 7,603 respondents were included into this regression model. The model is statistically significant (F=159.60, p<.001), R² is 0.1878. The above table shows that childhood loneliness is associated with the performance of verbal fluency in later life, controlling for a set of potential confounders. As previous study suggested, age, education, sex have related to this kind of cognitive performance; chorionic disease, depression, physical activity are predictors of cognitive performance in later life too.

Table 2: effect of childhood loneliness on mathematical performance

Numeracy	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
childlone1	-.0812857	.025101	-3.24	0.001	-.1304828 -.0320886
childlone2	.0765806	.033229	2.30	0.021	.0114531 .1417082
age	-.0137164	.0028007	-4.90	0.000	-.0192056 -.0082271
education	-.1009011	.0065173	-15.48	0.000	-.1136749 -.0881274
sex	.0857262	.0523069	1.64	0.101	-.0167935 .1882459
BMI	-.0625899	.0345105	-1.81	0.070	-.1302292 .0050494
chronic (2+)	.0027175	.0555699	0.05	0.961	-.1061974 .1116324
IADL (1+)	.1058302	.0944031	1.12	0.262	-.0791964 .2908569
ADL (1+)	-.0056591	.1076995	-0.05	0.958	-.2167464 .2054281
depression	.1103392	.0118586	9.30	0.000	.0870967 .1335816
phactivity	.3369124	.0977184	3.45	0.001	.1453878 .5284369
_cons	27.04996	5.449451	4.96	0.000	16.36923 37.73069

A total of 7,624 respondents were included in this logistic model. The model is statistically significant (chi-square=677.19, p<.001). Results show that childhood loneliness has significant association with mathematical performance among older adults. Different from table 1, gender, chronic disease are not found to be related to mathematical performance in this model. Age, education, depression and physical inactivity are still important predictor of this kind of cognitive performance.

Conclusion

To conclude, childhood loneliness is found to be significantly associated with two kinds of cognitive performance in later life, while controlling for a set of confounding factors. Results suggest a long-term effect of early life experience of loneliness on cognitive functioning in older age. This study does not find any relevance of limitations of managing basic or instrumental activities in daily life (both ADLs and IADLs) to cognitive functioning. Sociodemographic factors like age, sex, education and health-related issues such as chronic disease, depression, physical inactivity, are significant predictors of cognitive performance in older age. Also, other kinds of cognitive performance need to be studied to get a comprehensive assessment of the effect of childhood loneliness on cognitive functioning in later life.

Exploration of the experiences of informal caregivers for people with a moderate to advanced dementia within a domestic home setting

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Introduction:

In the UK, people who provide a home-based care for someone with a moderate to advanced dementia have reported a feeling of an internal conflict due to not knowing what to do especially towards the end of life. Studies show that this experience is called 'moral distress' and has also been reported by carers within other settings. The experiences of people providing home-based care are yet to be investigated.

Data and Methods:

To elicit accounts from informal/family caregivers who currently provide home-based care to people within the moderate to advanced stages of dementia (GDS Score ≥ 5), or who had done so within the previous 6 months. Fifteen (n=15) voluntary participants recruited from community-based support groups and via Joint Dementia Research (JDR). Single-time interviews of ≤ 2 hrs within a domestic home-setting. Narrative analysis guided by Reissman (2008).

Results

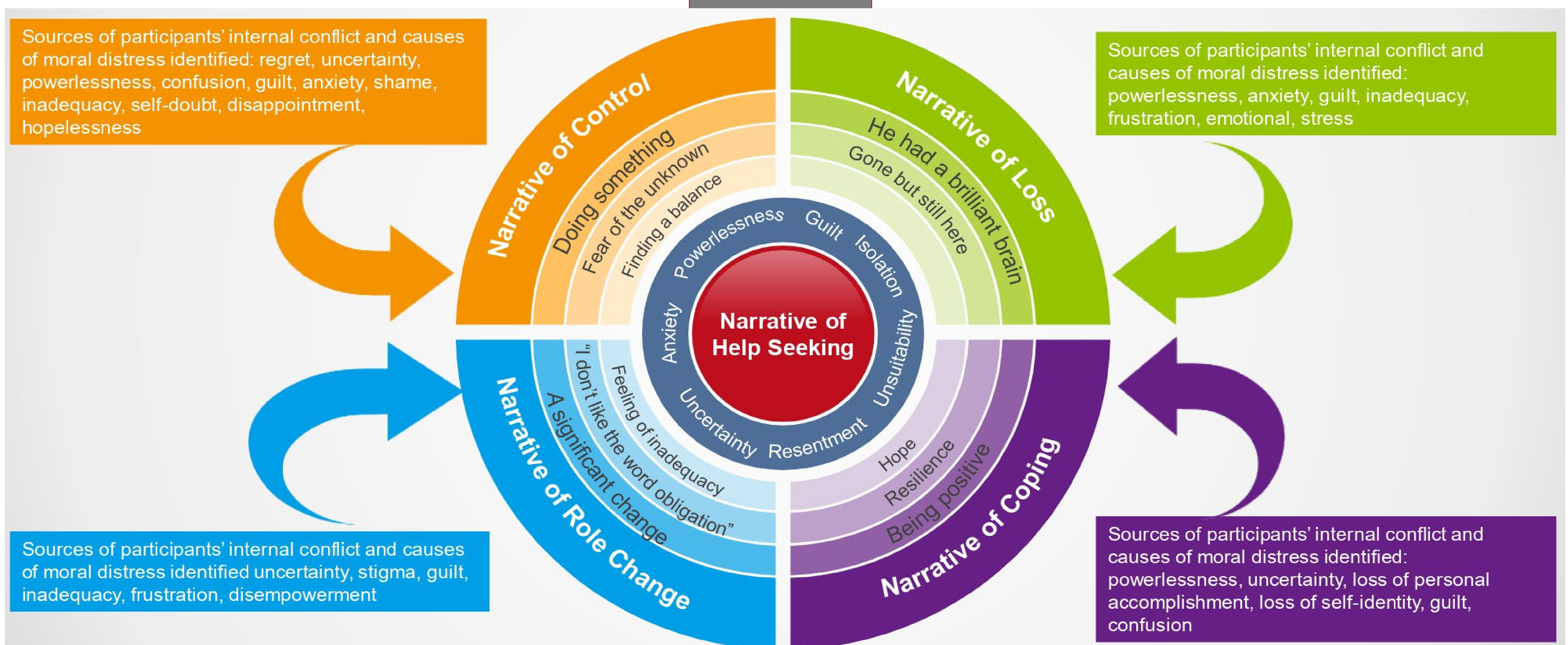


Fig 1: Experience of home-based caregiving for informal caregivers of people with moderate to advanced dementia

Findings/Discussions:

(a) Participants experienced an uncertainty in terms of their role transformation following the care-recipient's diagnosis. (b) Participants experienced a moral distress due to their fear of the loss of care-recipient's autonomy (c) Participants also experienced a moral distress due to a feeling of inadequacy in performing their caregiving duty.

Conclusion:

Caregivers experience a complete role transformation early in the diagnosis. Early interventions are therefore required to support their understanding of this new role. Periodic interventions are also needed to ensure understanding and coping within the role develop with the progressive decline of the person receiving care.

Key references

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(b) Riessman, C.K. (2008). *Narrative Methods for the Human Sciences*. London: Sage.

