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Impact of personalized care on isolated older adults living with dementia

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Abstract. Dementia is a common condition among older adults; it is estimated that one-third of people aged 85 and up have some form of dementia. With the growing population of dementia among older adults and the younger generation's shift to a more individualistic lifestyle, a large number of older adults have been forced to live in isolation. Isolation can impair cognitive functions and decrease overall well-being in older adults, particularly those with dementia. Many research studies have focused on implementing and evaluating personalized care interventions for this vulnerable population in response to this issue. The purpose of this paper is to investigate the impact of personalized care on isolated older adults living with dementia. Current literature findings highlight the significance of personalized approaches that aim to satisfy the unique needs, preferences, and backgrounds of each older adult. Research demonstrates individualized care can improve emotional connections improve cognitive function and enhance well-being among older adults with dementia. Furthermore, it emphasized the importance of community engagement, caregiver training, and technological innovations in delivering effective personalized care solutions. By shedding light on the potential of personalized care for older people with dementia, this study aims to contribute to the ongoing research on enhancing the well-being and quality of life for isolated older adults with dementia.

Keywords: Personalized care, Isolated older adults, Dementia, Cognitive well-being, Emotional Health

1. Introduction

As the ageing of the global population continues, the prevalence of dementia among older adults has emerged as a major concern that could become a significant burden on healthcare systems and societal support structures. Therefore, finding ways through personalized care to improve the symptoms of dementia and dementia prevention has come into sight. Within the context of dementia care, the traditional one-size-fits-all routine medical care is not the best; it is inadequate in addressing the diverse and nuanced needs of this vulnerable population. Recognizing the detrimental effects of isolation on the cognitive and emotional health of older adults living with dementia is crucial. Luckily, there has been a growing emphasis on the implementation of personalized care interventions. During the past decades, numerous research regarding this topic have surfaced. However, most of the studies only had a small group of participants. The purpose of this paper is to investigate the impact of personalized care on isolated older adults living with dementia, focusing on the complex interaction between specific interventions, emotional well-being, and cognitive function within this population. This paper aims to

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contribute to the ongoing discussion about innovative and compassionate approaches to dementia care, as well as to bring more attention to this topic, by emphasizing the critical role of individualized support in fostering a sense of dignity and connection for those navigating the complicated environment of cognitive decline and social isolation.

2. Literature Review

The growing problem of dementia among older people, along with the negative impacts of social isolation, has gotten a lot of attention in geriatric care research [1].As a result of the limits of traditional standardized care techniques, a paradigm shift towards personalized care has emerged, emphasizing individualized treatments that recognize the unique needs and experiences of older persons living with dementia in isolated settings [2]. Existing research highlights the complex influence of personalized care on this vulnerable population's cognitive well-being, emotional health, and overall quality of life [3,4].

Shaji et al. performed fundamental research that emphasized the critical impact of personalized care plans in creating a feeling of autonomy and dignity in solitary older individuals with dementia [5].The study found that customized approaches incorporating reminiscence therapy, music therapy, and personalized engagement activities significantly mitigated the negative effects of social isolation, leading to enhanced emotional expression and cognitive functioning.

Similarly, Brooker et al. highlighted the transformational potential of person-centred care approaches in reducing the negative impacts of social isolation on dementia patients. The study indicated significant gains in emotional well-being, social engagement, and cognitive stimulation among participants in long-term care facilities by emphasizing empathic communication, personalized activities, and specialized training for carers [6].The findings emphasized the need to build meaningful connections and develop belonging in the care setting.

Toot et al. conducted a comprehensive systematic review to synthesize available information on the impact of personalized care interventions on the cognitive and emotional health of older persons living with dementia. The review emphasized the importance of personalized support in fostering a sense of identity and purpose among people with cognitive decline and social isolation [7].

The study done by Surr et al. also investigated the effectiveness of technology-assisted personalized care interventions in facilitating social engagement and cognitive stimulation among isolated older adults with dementia. The study demonstrated promising outcomes in terms of enhanced cognitive resilience, emotional well-being, and connectivity with the broader community by integrating digital platforms, virtual reality experiences, and telemedicine services into the care continuum, highlighting the transformative potential of technological innovations in addressing the challenges of social isolation and cognitive decline [8].

These studies together highlight the critical role of personalized care in improving the cognitive well-being, emotional resilience, and social integration of isolated older adults living with dementia. The literature highlights a paradigm shift in geriatric care by emphasizing the importance of individualized interventions, empathetic communication, and innovative technological solutions, advocating for a comprehensive and compassionate approach that prioritizes the unique experiences and needs of this vulnerable population.

3. Methodology

3.1. Setting, recruitment, and eligibility criteria

The study was done at the University of Washington, collaborating with the National Institute on Aging (NIA), with information provided and research conducted by Hyun-Jun Kim. For the eligibility criteria, the participant is required to be age 50 years or older; Self-identify as LGBT (or sexual or gender non-binary or same-sex sexual behaviour); Have early-stage dementia, including Alzheimer's disease or needs help with complex daily activities; Living in the community, not in a care facility; with no known terminal illness (with death anticipated within the next 12 months)

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3.2. Trial design and study setting

This study will utilize a 2-group randomized controlled trial design including 2 assessments.

3.3. Intervention description

Group (Arm) 1 will receive the Personalized care network intervention includes exercise training for participants with dementia and behavioral management training for addressing challenges. Group (Arm) 2 will be the controlled group, with no intervention, and routine medical care.

3.4. Outcome measures

The study's primary outcome measures have two parts. The first part is the change in physical activity of the participants. This is measured by the participant's minutes spent on exercising per week in the past month, which was calculated from two questions: (1) How much time did you spend on exercises (hours per day) on a typical day during the last month; (2) How many days did you spend on exercises during the last month. With the timeline being the baseline (pre-treatment) and after 7 weeks (post-treatment).

The second area being measured is the change in physical functioning through a 36-item Short Form (SF-36) consisting of 10 items. It measures how much participants' health status limits their activities, including walking, climbing, lifting, and bathing or dressing oneself, based on self-reports. Each item is measured on a 3-point scale (1 = Yes, limited a lot; 2 = Yes, limited a little; 3 = No, not limited at all), then recoded into 0, 50, and 100, respectively. The recorded scores are averaged to generate a summary score with a possible range from 0 to 100. The higher the score, the better the physical functioning. With the same timeline as the outcome measure in the first part.

The secondary outcome measure is the participant's change in quality of life. Which is measured with Alzheimer's Disease (QOL-AD), it is a 13-item scale that measures participant's self-reported feelings about different aspects of life, including energy, mood, living situation, memory, family, friends, ability, and money. Each item has a 4-point response scale (1 = poor; 2 = fair; 3 = good; 4 = excellent). Higher scores indicate higher quality of life.

3.5. Summary

There were a total of 30 participants in the trial, with one not completing the trial due to grieving over the recent death of a parent.

Table 1. Summary of participants

	Arm 1	Arm 2	Total
Number of participants	14	15	29
Average age	68.4	68.8	68.6
Gender:			
Male	5 (35.7%)	4 (26.7%)	9 (31.0%)
Female	9 (31.0%)	11 (73.3%)	20 (69.0%)

4. Results

Table 2. Change in Physical Activity

	Arm 1	Arm 2
Overall Number of Participants Analysed	14	15
Unadjusted means at baseline	227 (69)	282 (129)
Unadjusted mean at 7weeks*	380 (105)	232 (76)

*Mean (Standard Error) | Unit of Measure: minutes per week

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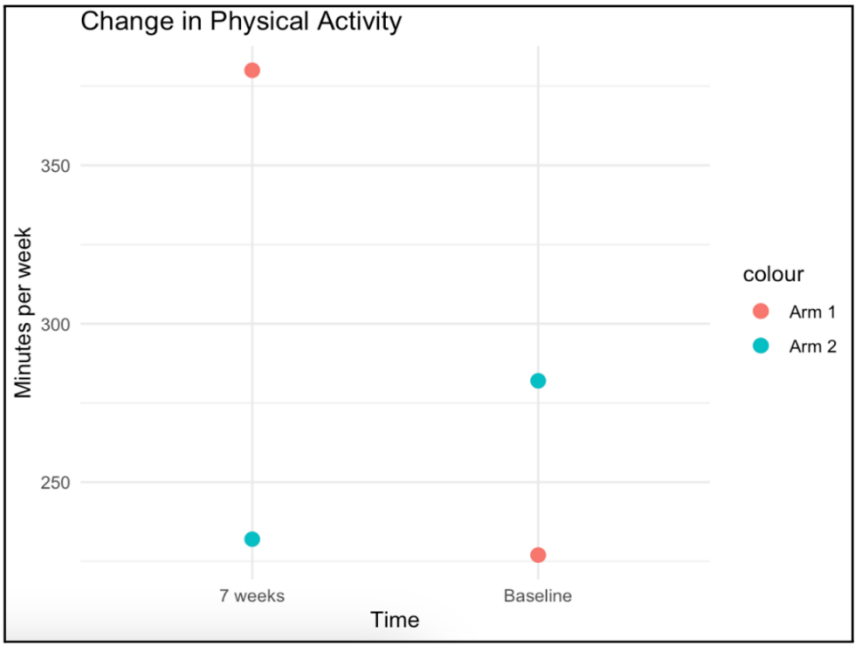

Figure 1. Change in Physical Activity Amount within Seven Weeks

Table 3. Change in physical functioning

	Arm 1	Arm 2
Overall Number of Participants Analysed	14	15
Unadjusted means at baseline	66.1 (6.7)	73.0 (6.1)
Unadjusted mean at 7weeks*	73.2 (7.3)	72.0 (6.2)

*Mean (Standard Error) | Unit of Measure: score on a scale

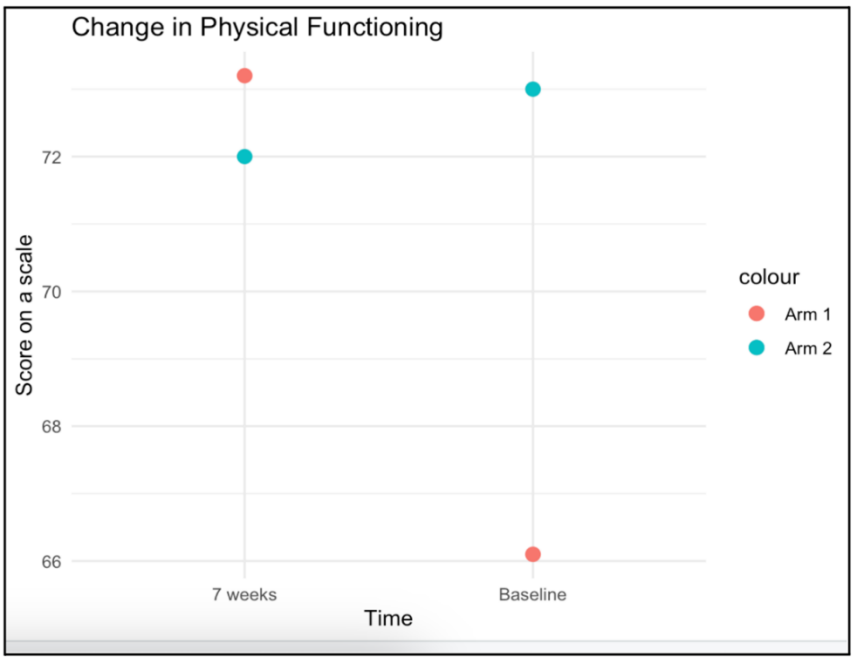

Figure 2. Change in Physical Functioning within the Seven Weeks

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Table 4. Change in Quality of Life

	Arm 1	Arm 2
Overall Number of Participants Analysed	14	15
Unadjusted means at baseline	30.9 (2.3)	32.2 (1.8)
Unadjusted mean at 7weeks*	32.7 (3.3)	32.0 (1.5)

*Mean (Standard Error) | Unit of Measure: score on a scale

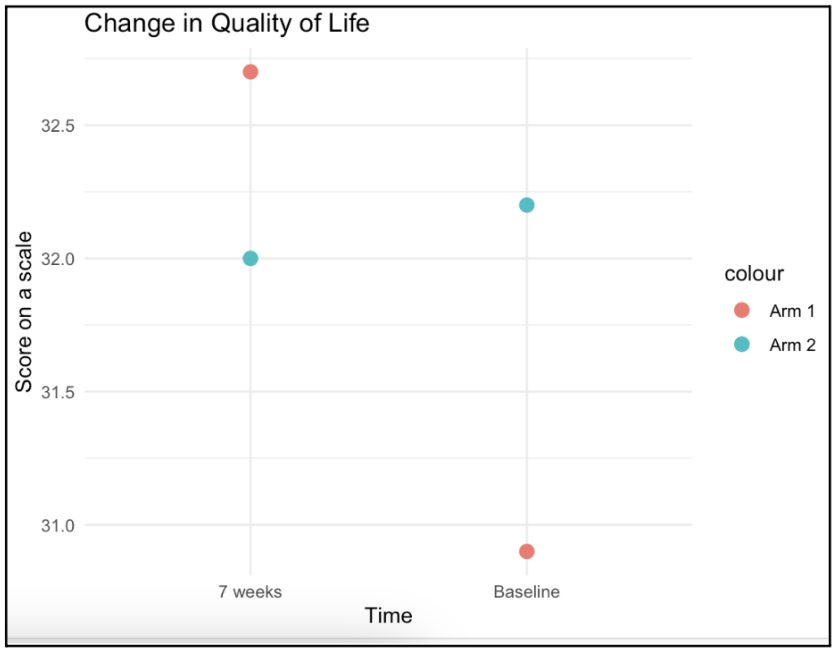

Figure 3. Change in quality of life for the participants within the 7 weeks

5. Discussions

In terms of physical activity, the results indicate a notable increase in the average minutes per week in Arm 1 from 227 at baseline to 380 at 7 weeks, emphasizing the efficacy of the implemented personalized care strategies in promoting and sustaining physical engagement that was demonstrated in Table 2 and Figure 1. Contrarily, Arm 2 displayed a slight decline in activity levels, emphasizing the importance of continued support and adaptation to individual needs for maintaining a healthy level of physical activity.

Regarding physical functioning, both arms exhibited an improvement in scores over the 7-week period, albeit with slight variations, as shown in both Table 3 and Figure 2. Arm 1 displayed a notable increase from a baseline mean of 66.1 to 73.2 at 7 weeks, suggesting the positive impact of personalized care on enhancing physical capabilities and overall functional independence. Arm 2, despite a slight decrease in the mean score at 7 weeks, maintained a relatively stable level of physical functioning, indicating the need for further investigation into the nuanced effects of tailored interventions on this aspect of well-being.

Furthermore, the assessment of quality of life revealed promising outcomes, with both arms demonstrating an increase in the mean score at 7 weeks compared to baseline. Arm 1 exhibited a rise from 30.9 to 32.7, while Arm 2 showed a more conservative increase from 32.2 to 32.0, underscoring the positive impact of personalized care on subjective well-being and life satisfaction among the participants. They are shown in Table 4 and Figure 3.

However, one of the limitations of this study is the small number of participants (only 29 completed the trial), which may lead to inaccuracy or data that is not completely unbiased. It is suggested that similar studies be conducted in the future, but with more participants and from a broader range.

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6. Conclusion

The findings of this study shed light on the impact of personalized care interventions on the well-being and functional outcomes of individuals facing various challenges related to ageing and health. Analyzing the data collected over a 7-week period, it is evident that tailored interventions have a significant influence on critical aspects such as physical activity, physical functioning, and quality of life among the participants.

Overall, the results underscore the crucial role of personalized care interventions in promoting positive health outcomes and enhancing the overall quality of life for individuals facing the challenges of ageing and health-related issues. While the data demonstrate encouraging progress, further research is warranted to explore the long-term effects and sustainability of personalized care approaches in diverse populations. Additionally, future studies should consider the integration of complementary interventions and the optimization of care delivery to maximize the potential benefits for individuals in need of specialized support and assistance.

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