Effectiveness of the community areas for sustainable dementia care and excellence in Europe (CASCADE) model of care: findings from a residential care home in Belgium

Martin, A. and Hatzidimitriadou, E., Smith, R., Sangeorzan, I., Wright, T., & Hulbert, S.

VPOS1- 14

Effectiveness of the Community Areas for Sustainable Dementia Care and Excellence in Europe (CASCADE) Model of Care: *Findings from a Residential Care Home in Belgium*

Anne Martin[1], Eleni Hatzidimitriadou[1], Raymond Smith[1], Irina Sangeorzan[1], Toni Wright[1], Sabina Hulbert[2]

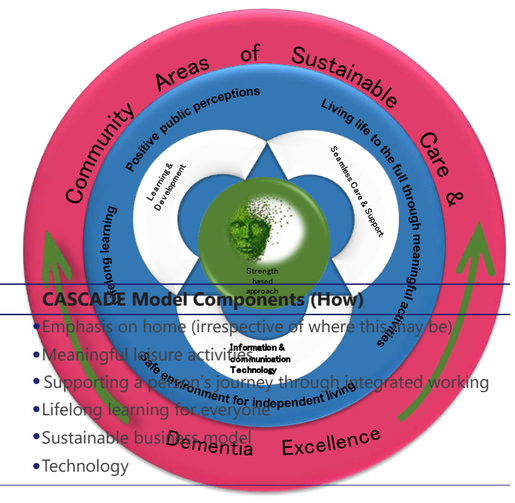
[1]Faculty of Medicine, Health and Social Care, Canterbury Christ Church University
[2]University of Kent, Centre for Health Services Studies

Abstract

Community Areas for Sustainable Dementia Care and Excellence in Europe (CASCADE) is a cross border initiative. The partnership was formed to co-create a sustainable model of care that promotes the independence of people living with dementia in their communities. A mixed methods evaluation study undertaken between February 2021 and March 2022 involved baseline and follow up measures at two time points. Residential care staff received training in providing care tailored to the CASCADE model after baseline measures were undertaken. Twelve people living with dementia out of 20 (intervention N=10; control N=10) participants recruited completed the study. Observable differences in proxy measures for health and use of healthcare resources existed between the two groups. Process evaluation methods identified implementation constraints and mechanisms for supporting good quality care and the wellbeing of staff and residents.

Introduction

The CASCADE initiative involves partners from Belgium, France, the Netherlands and United Kingdom. The partnership was formed to co-create a sustainable model of care that promotes the independence of people living with dementia in their communities. To that end, the CASCADE model was developed using a multi-stakeholder input, involving representatives of people living with dementia and family carers. Figure 1 describes the fundaments and components of the CASCADE model of care. This study aimed to establish the effectiveness of the CASCADE model in a residential care setting.



CASCADE Model Fundaments (What)

- Personalised holistic care in the community
- Strengths based approach
- Living life to the fullest
- Positive public perception
- Safe environment for independent living

CASCADE Model Components (How)

- Emphasis on home (irrespective of where this may be)
- Meaningful leisure activities
- Supporting a person's journey through integrated working
- Lifelong learning for everyone
- Sustainable business model
- Technology

Figure 1. Fundaments and Components of the CASCADE model

The CASCADE Model

Holistic strengths-based care enabled through:

- Seamless community care and therapeutic services (to maintain health & wellbeing)
- Learning & development (Health & social care professionals and public)
- Technology (assistive for optimal safety & independence)

Is a sustainable business model for:

- Safe environment for independent living
- Living life to the full through meaningful activities
- Positive public perception
- Lifelong learning

Methods

A mixed method design guided the data collection, which involved baseline (T_0) and follow up measures at two time points (T_1 & T_2). Changes in participants' health-related quality of life were assessed using proxy-rated EQ-5D-5L scores and reported using the Paretian Classification of Health Change (PCHC).[1] Participants' use of health and social care resources was measured using the Resource Utilisation in Dementia (RUD)[2] questionnaire and RUD scores analysed nonparametrically using the Mann-Whitney U test. Qualitative data from interviews and focus group discussions with staff were analysed using the template analysis approach.[3]

Baseline (T_0)

Staff receives training in the CASCADE model of care
EQ-5D-5L (proxy-rated) participants data collected
RUD (proxy-rated) participant data collected

First Follow-Up (T_1)

Interviews & Focus Groups
EQ-5D-5L (proxy-rated) participant data collected
RUD (proxy-rated) participant data collected

Second Follow-Up (T_2)

Interviews & Focus Groups
EQ-5D-5L (proxy-rated) participant data collected
RUD (proxy-rated) participant data collected

Results

Quantitative Insights: EQ-5D-5L and RUD

Participants in the intervention group were observed to experience a wider range of health-related changes as measured by the EQ-5D-5L questionnaire (Figure 1). Specifically, participants in receipt of the CASCADE model of care were observed to experience 60% more mixed changes and 30% more improvements as compared to the control group. While 40% of participants in the control group were observed to experience 'no changes' across one or more health-related dimensions, this was not the case for the intervention group. Indeed, none of the participants in receipt of the CASCADE model of care were observed to experience a lack of changes across one or more health-related dimensions throughout the study time course.

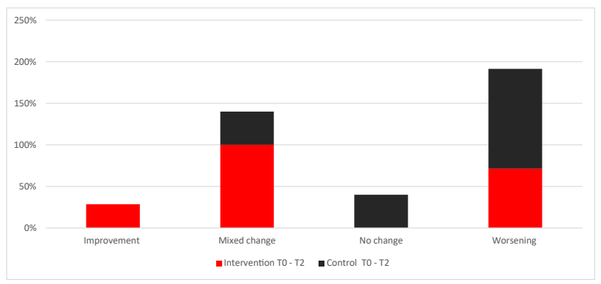


Figure 1. *Paretian Classification of Health-Related Changes (PCHC) by Intervention and Control Group*

The frequency of 'worsening' health related changes was observed to diminish between the comparison timepoints by 14% in the intervention group (Figure 2). In the control group, the frequency health-related changes classed as 'worsening' remained the same (60%) between the two comparison timepoints.

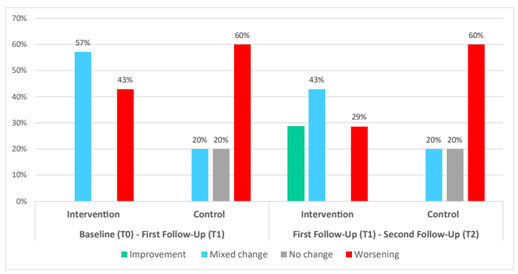


Figure 2. *Frequencies of Health-Related Changes by Intervention and Control Group According to the Paretian Classification of Health Change (PCHC)*

We are unable to report on participants' RUD scores at this time owing to a series of discrepancies identified in the data.

Participants' health scores were equal at baseline (M = 64). As the study progressed, the scores of participants in the intervention group increased by 5 points by the first follow-up (T_1), stabilising at this value (M = 70) (Figure 2). A smaller increase of 1 point was observed in the health scores of participants in the control group by the first follow-up (T1) (M = 65). This score also stabilised at the same value and can be observed at the point of second follow-up (T_2).

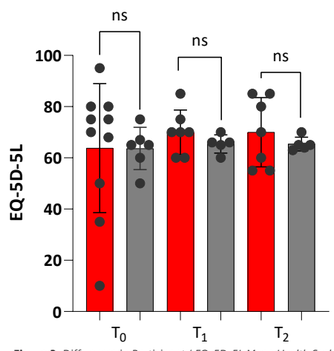


Figure 3. *Differences in Participants' EQ-5D-5L Mean Health Scale Scores.*

Note. *Intervention and control groups are represented in red and black, respectively. Bar charts represent means and standard deviations; 'ns' = not significant*

Summary

We found no statistically significant differences (positive or negative) in the EQ-5D-5L scores of participants in the intervention group over time. However, observable differences suggested an improvement particularly in the 'worsening' category for health-related changes of the intervention group between baseline (T0) and the second data collection wave (T2). In contrast, the worsening category for the control group remained the same at T0 and T2 OR all time points. Presenting the EQ-5D-5L scores using the PCHC is beneficial for investigating health-related changes at the individual level, instead of the level of the dimension. To our knowledge, similar findings have not been reported elsewhere. Further dementia-intervention longitudinal studies investigating changes in participants EQ-5D-5L profiles are needed to conceptualise these results.

Qualitative Insights: Interviews and Focus Group Discussions

Mechanisms for good quality care and residents' wellbeing

Qualitative data illuminated mechanisms for supporting good quality care and the wellbeing of people living with dementia. We identified mechanisms at resident, teams and organisational levels.

Residents

- The life story booklet completed by residents, family and or with staff provides a basis for person-centredness care.
- Focusing holistically on living and wellbeing enables continuous adjustment of care and support to maintain the independence of people living with dementia.
- The small scale living setting facilitates creating a homelike feeling promoting social interactions among residents, their families, friends and staff.

Teams

- Training multidisciplinary teams in the pillars of person-centred dementia care creates cohesive teams with a shared vision.
- Maintaining authenticity about caring helps to build and sustain good relationships in the care environment.

Organisation

- Engaging staff in organisational matters and providing regular feedback transforms organisation values into a dementia care practice framework transferable to new recruits.

CASCADE implementation constraints

Residential care staff reported other challenges of implementing the CASCADE model besides limitations that the COVID-19 pandemic generated:

- Establishing the correct balance between delivering fundaments of the model and expectations of other dementia care stakeholders such as insurers was difficult.
- Recreating the feeling of home in a residential care setting was often a challenge due to the limited space restricting personal belongings included in the room.
- Staff turnovers and shortages hindered consistency in implementing principles of the CASCADE model.

Recommendations

- A reassessment of operational rules and regulations of the organisation must precede implementing the CASCADE model to provide clear direction during implementation.
- Ongoing staff training should be embedded in discussing real cases during multidisciplinary team meetings.
- Staff training should include guidance on optimal communication strategies and channels with family carers.
- Staff training requires inhouse facilitators to enable a practice-oriented approach to learning.

Funding

This work is part of the Community Areas of Sustainable Care and Dementia Excellence (CASCADE) project from the Interreg 2 Seas Mers Zeeën Programme. The European Territorial Cooperation Programme spanning England, France, the Netherlands and Belgium (Flanders) is funded by the European Regional Development Fund to develop research-based knowledge and innovations for a sustainable and inclusive 2 Seas Area.

Acknowledgements

We are grateful to the people living with dementia participants whose data were used in this study. We sincerely thank the staff who delivered the CASCADE model of care and collected data from the study site. Thank you to all study partners who contributed to the development of the model and made this work possible.

References

1.Devlin N PD, Janssen B. Methods for Analysing and Reporting EQ-5D Data. 1 ed. Springer; 2020:XV, 102.

2. Wimo A, Gustavsson A, Jonsson L, Winblad B, Hsu MA, Gannon B. Application of Resource Utilization in Dementia (RUD) instrument in a global setting. Alzheimers Dement. Jul 2013;9(4):429-435.e17. doi:10.1016/j.jalz.2012.06.008

3. King N, Brooks, J. Doing template analysis: A guide to the main components and procedures. In: Lee,B, Saunders NK, Saunders VK. Template analysis for business and management students. SAGE Publications Ltd.; 2017.

correspondence: anne.martin@canterbury.ac.uk