

Evaluating the CARE Intervention for Improving Ethical Confidence in Dementia Care Professionals

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Abstract

Few programs specifically aim to raise healthcare professionals' assurance when facing ethical dilemmas in dementia care, even though training initiatives have repeatedly demonstrated benefits for staff knowledge and self-efficacy. Still, mixed results reported in existing studies regarding the true value of these educational efforts emphasize the demand for more precise, purpose-built solutions. The CARE intervention was created expressly to build confidence in ethical decision-making and to close this shortfall. This research investigates the impact of the CARE intervention on boosting ethical self-efficacy among healthcare staff who care for individuals with dementia, with particular focus on those entering the program with particularly low self-efficacy. The study adopted a non-experimental pre-post evaluation approach. The CARE intervention was provided to healthcare professionals (n = 86), and their ethical self-efficacy was recorded both prior to and following participation. We anticipated notable shifts in average ethical self-efficacy scores from before to after the program across all participants, with the strongest gains predicted among those starting with low baseline scores, as this group was expected to gain the most. Analyses included paired t-tests for the overall group and Wilcoxon tests for the low pre-score subgroup. No meaningful difference was observed in the full participant group. In contrast, individuals who began with low self-efficacy showed a clear, statistically significant increase in their scores after the intervention ended. The CARE intervention offers promising potential to strengthen ethical self-efficacy, especially for healthcare professionals who initially feel less confident. Such focused efforts are critical for narrowing existing confidence gaps when addressing ethical problems in dementia care. These gains carry important consequences for staff wellbeing and the standard of care delivered. Subsequent investigations should track long-term outcomes and use larger samples to improve the extent to which the results can be applied and their durability over time.

Keywords: Dementia care ethics, Ethical decision-making, Healthcare professionals, Ethical self-efficacy

Introduction

Attempts to strengthen healthcare professionals' belief in their own ability to address ethical concerns in dementia care have remained uncommon. Educational efforts and structured programs have typically shown favorable, although often brief, improvements in staff knowledge

[1, 2]. Many of these initiatives have additionally produced notable gains in self-efficacy and perceived confidence regarding dementia care responsibilities [3-5]. Nevertheless, a recent literature review notes that outcomes related to professionals' sense of competence or self-efficacy are far from uniform across the published literature [2]. This observation fits with broader evidence revealing that a large number of caregivers still feel unprepared or unsure when handling difficult behaviors shown by people with dementia [6, 7].

Numerous training schemes have been introduced to improve various elements of dementia care, among them several programs dedicated to supporting staff in managing challenging behaviors [3, 4, 8]. Even so,

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according to current knowledge, only one intervention has been specifically designed to increase confidence or self-efficacy in ethical decision-making [9]. Drawing on Bandura's framework, self-efficacy refers to a person's conviction that they can perform the necessary actions to achieve certain goals [10]. When applied to ethical decision-making in dementia care, it describes how certain healthcare professionals feel about their capacity to navigate ethical difficulties successfully.

The shortage of dedicated work in this area stands out, particularly given how often healthcare professionals encounter ethical questions in dementia care [11-13]. Such ethical matters receive extensive coverage in research [14-16] and frequently involve, in the initial phases, matters of personal autonomy and agreement to treatment [17], behavioral symptoms in residential care [18], and choices surrounding resuscitation or terminal care during advanced stages [16]. Navigating these situations regularly requires balancing opposing ethical values while prioritizing what is best for the individual with dementia. The widespread nature of these challenges often leads to moral distress among staff [19, 20]. Supporting evidence indicates that greater confidence in tackling ethical issues can assist professionals in coping with moral distress [21, 22] and may also help decrease burnout [23, 24]. Well-planned education and training for healthcare staff can therefore contribute positively to the wellbeing of both the professionals and the people with dementia they serve [25]. Should self-efficacy enable better management of job-related pressures, including ethical conflicts, and simultaneously lower burnout risk, then targeted programs that deliberately enhance confidence hold substantial value.

In the present article, we describe outcomes from an assessment of the CARE intervention, which was designed with the clear purpose of raising healthcare professionals' confidence when making ethical decisions in dementia care [9]. The central goal of this study was to determine whether the CARE intervention increased ethical self-efficacy among healthcare professionals caring for patients with dementia. Special attention was directed toward those who reported low self-efficacy at the outset, because earlier research has linked low self-efficacy with unfavorable outcomes, such as burnout. This state commonly arises when workplace demands exceed a worker's perceived capacity to meet them [26].

Materials and Methods

Design and hypotheses

This study used a non-experimental pre-post evaluation approach. We delivered the CARE intervention to healthcare professionals responsible for caring for individuals with dementia, aiming to increase their confidence when making ethical decisions [27]. The study rested on two core hypotheses. First, we anticipated a clear difference in average ethical self-efficacy scores from before to after the intervention when examining the entire group of participants. Second, we foresaw a notable difference in mean scores before and after the program among those who started with low self-efficacy ratings. The emphasis on participants with lower starting confidence arose from the recognition that they face a higher risk of adverse effects associated with low self-efficacy. Yet, they also stand to gain the most from a focused program. As a result, we predicted that this group would experience the greatest positive shift.

We evaluated their level of assurance with the established Dementia-Specific Ethical Self-Efficacy (DemESE) scale during both the pre-intervention and post-intervention phases [28]. Statistical procedures were used to determine the influence of the CARE intervention on ethical self-efficacy across the full sample and separately for the subset of healthcare professionals who began with low scores.

Intervention

The CARE intervention included two workshop sessions guided by a detailed manual. Each session lasted about 4 hours, and the two workshops were separated by a 14-day gap. It was created by the National Institute of Public Health at the University of Southern Denmark in partnership with the Danish Alzheimer Association and Rudersdal Municipality.

The program took place in Rudersdal Municipality and was aimed at professional caregivers supporting people with dementia. Since ethical problems frequently arise from conflicting values, the CARE approach used a workshop setting to bring healthcare staff together to examine and collectively work through these tensions [9]. Sessions were arranged for personnel from multiple long-term care sites. The main objective was to build participants' confidence in handling ethical matters in dementia care through structured group conversations moderated by an expert in dementia care ethics. One standout element involved presenting ethical dilemmas through literary examples—such as made-up stories or personal accounts—in a balanced, engaging format.

Influenced by narrative medicine practices, we suggested that these literary materials could improve recognition of collective experiences and principles in dementia care [29-31]. In the sessions, the moderator shared and read selected passages from literary works that depicted challenging dementia care scenarios, then led discussions with targeted questions. This strategy helped healthcare professionals consider ethical dilemmas, cultivate greater empathy, and explore alternative viewpoints without being tied to their immediate situations.

Overall, the CARE intervention prepared caregivers to recognize, evaluate, and respond appropriately to ethical challenges in dementia care. During the program, staff learned basic bioethical principles and the foundations of sound ethical reasoning, which were directly connected to the ethical situations they encounter regularly. The core concept held that exposing healthcare professionals to ethical guidelines and encouraging open dialogue with colleagues about their daily ethical choices would sharpen their moral awareness and ultimately reinforce their confidence and self-efficacy when confronting ethical questions. A full explanation of the CARE intervention's development can be found in Lauridsen *et al.* [9].

Intervention participants

The group consisted of various healthcare professionals with diverse training and professional backgrounds, all actively involved in supporting people with dementia (Table 1). Participation requirements included working as a caregiver in one of the four selected nursing homes during day or night shifts, having regular direct interaction with residents with dementia, and demonstrating sufficient proficiency in Danish to join group conversations effectively. In total, 113 healthcare professionals participated in the intervention.

Table 1. Descriptive statistics. From: Ethical self-efficacy among healthcare professionals caring for people with dementia: a brief pre- and post-report on the CARE intervention

Category	Subgroup	Full sample (N)	Full sample (%)	Low baseline	Low baseline
				score group (N)	score group (%)
Sex	Female	77	93.9	22	95.7
	Male	5	6.1	1	4.3

Professional experience					
8+ years	41	50.0	10	43.5	
6–8 years	8	9.8	3	13.0	
3–5 years	13	15.9	5	21.7	
0–2 years	20	24.4	5	21.7	
Job role	Social and healthcare aide	32	39.0	8	34.8
Social and health assistant	21	25.6	5	21.7	
Unskilled worker	7	8.5	3	13.0	
Pedagogical staff	10	12.2	3	13.0	
Registered nurse	6	7.3	3	13.0	
Nursing assistant	2	2.4	0	0	
Other roles	4	4.9	1	4.3	
Continuous measures	Metric	Mean (full sample)	SD (full sample)	Mean (low score group)	SD (low score group)
Age	—	47.9	11.4	45.8	10.2
DemESE score (pre-intervention)	—	28.3	6.8	19.2	3.7
DemESE score (post-intervention)	—	27.4	7.6	21.8	6.0

Data collection

Recruitment of intervention participants was conducted through targeted outreach at four distinct care centers in Rudersdal Municipality. A local organizer managed the process by working closely with the directors of the various nursing homes. These directors then invited staff members from their own organizations to join the program through convenience sampling. Even though convenience sampling was used, care was taken to select nursing homes that varied in scale, care delivery styles, and workforce makeup. The goal was to create a group that better reflected the full range of dementia care environments across the municipality. This selection closely matches the wider population of healthcare staff, since men make up only 3% of Danish nurses and 5% of healthcare assistants [32].

All participants completed questionnaires both before and after the program. The workshop leader distributed printed forms right at the start of the opening session

(pre-intervention) and directly upon completion of the closing session (post-intervention). The opening questionnaire collected basic personal details and recorded participants' initial level of ethical confidence. The closing questionnaire explored any shifts in their ethical self-efficacy and their overall satisfaction with the program. Information was gathered between December 2021 and November 2022.

Measurements and variables

We measured the primary outcome — healthcare professionals' sense of assurance when ethical principles or duties come into conflict — using the validated Dementia-Specific Ethical Self-Efficacy (DemESE) scale [28]. The scale consists of six questions and gauges confidence in ethical situations on a 7-point Likert scale, with possible integer responses ranging from 1 to 7. Its items examine how frequently healthcare professionals feel unsure or hesitant when faced with ethical choices. The DemESE produces a single overall score ranging from 6 to 42; higher scores reflect stronger perceived ethical self-efficacy. Low starting scores were defined as totals of 0-24, indicating median or below-average responses on each item. This threshold was selected because it highlights individuals whose confidence is inconsistent or limited, pointing to possible difficulties in ethical decision-making, and because it aligns directly with the study's focus on helping those who stand to benefit most.

Statistical analysis

Paired t-tests were applied to the full dataset once normality had been verified through the Shapiro-Wilk test and inspection of Q-Q plots. Normality was checked for the complete group at both the pre-intervention and post-intervention stages. An F-test confirmed that variances were equal, supporting the suitability of the data for analysis of the whole sample. Because the next step focused on the subgroup with low scores, this smaller group received its own normality check to ensure test assumptions remained intact. Given that the distribution in this subgroup was non-normal, a nonparametric Wilcoxon test was used for participants with low initial scores. Statistical computations were carried out in R [33]. The study adopted a significance level of 0.05.

Ethical considerations and funding declarations

The present work formed one component of the broader DEMENS ID research initiative. Ethical approval was granted by the Research Ethics Committee (REC) of the University of Southern Denmark, together with the legal representatives of the Research and Innovation Organization (RIO). Every participant provided informed consent before participating in the evaluation. The survey introduction explicitly stated that involvement was optional and that choosing not to participate would bring no negative repercussions or bar anyone from attending the workshops. Participants received complete information about the study aims and how their data would be handled.

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Results and Discussion

Descriptive statistics

This section offers a thorough summary of the key descriptive characteristics of the collected data.

The DemESE scale was embedded in a wider questionnaire distributed to 113 healthcare professionals enrolled in the intervention. Out of this total, 86 individuals returned the initial survey for the evaluation. Of those, 82 also returned the follow-up survey, producing an overall response rate of approximately 72.6% of the original 113 eligible participants. The final analyzed sample, therefore, consisted of 82 people, with an average age of 47.9 years (SD = 11.4). These participants (**Table 1**) displayed a broad range of educational qualifications, from support staff without formal training to registered nurses, and varied in professional experience.

Nevertheless, longer experience was common, with 41 participants (50%) reporting more than eight years of work with people who have dementia. Regarding gender, 6.1% identified as male and 93.9% as female. The low-initial-score subgroup contained 23 individuals with an average age of 45.8 years. In this subgroup, the percentage with more than 8 years of experience was slightly lower at 43.5%.

Test results

The overall sample showed a mean score of 28.3 (SD = 6.8) before the intervention and 27.4 (SD = 7.6) after it. Both pre- and post-intervention datasets met the conditions for normality. No statistically significant shift

in the pre- and post-intervention means was observed ($P=0.19$) when the full group was examined. This finding indicates that the CARE intervention did not lead to a meaningful improvement in average ethical self-efficacy across all participants.

In the subgroup with low pre-intervention scores, the mean score rose from 19.2 ($SD=3.7$) to 21.8 ($SD=6.0$) post-intervention. Normality could not be confirmed for this smaller group. Among healthcare professionals with lower self-efficacy, a statistically significant increase was observed ($P=0.04$).

This research examined whether the CARE intervention—a tailored program focused on strengthening healthcare professionals' ethical decision-making confidence—would yield meaningful gains in ethical self-efficacy. Although the full sample showed no notable shift in average scores after the program, participants who started with low self-efficacy showed a statistically significant increase in confidence. This improvement appears linked to participation in the CARE intervention.

Drawing from prior research, the present work highlights the central importance of self-efficacy within dementia care. Existing studies have repeatedly highlighted the perceived complexity of ethical choices and the moral distress that often accompanies them. At the same time, findings on the effectiveness of educational programs in boosting self-efficacy remain mixed, which highlights the value of more focused approaches [3-5]. This mixed picture is especially relevant given that many caregivers still describe feeling unprepared when dealing with difficult behaviors displayed by people with dementia [6, 7]. By directly addressing this confidence shortfall in demanding situations, the CARE intervention shows promise for helping healthcare professionals feel more capable when navigating ethical decisions.

The absence of significant change across the entire sample may stem from participants already reporting fairly strong baseline confidence (mean of 28.3 out of a possible 42). Considering the widespread moral distress documented among staff in dementia care [20], the recognized need for better ethics education in healthcare [34], and the frequent exposure to intricate ethical issues [15, 35], it is understandable that confidence levels might remain somewhat restrained by these persistent pressures. It is therefore plausible that the regular occurrence of complex ethical dilemmas in dementia care creates a natural upper limit on professionals' confidence. Another possibility is that the intervention's

benefits diminish as participants approach the maximum of the scale. While a high overall mean was not anticipated, we did predict that individuals who began with strong self-efficacy would show little or no improvement. In some cases, their existing sense of moral competence — including their views on appropriate ethical choices — may even have been unsettled by the workshop discussions, potentially leading to a slight drop in self-efficacy. Although we cannot confirm that this occurred, the full sample showed a small, non-significant decline in average self-efficacy scores.

A detailed analysis of the processes that drove the significant improvement among participants who started with low confidence falls outside the scope of this paper. Nevertheless, it is worth noting that several features of the CARE intervention correspond with the methods described by Rasmussen *et al.* [36]. Their work showed that dementia education programs combining classroom instruction with practical, behavior-focused, and communication-oriented elements can enhance self-efficacy among healthcare staff. The current study adds an example of a dementia education initiative that used person-centered teaching strategies to influence self-efficacy—an area where supporting evidence had previously been limited. Our findings suggest that targeted programs can improve self-efficacy among healthcare professionals with lower confidence.

Clinical implications

The outcomes of this study carry notable practical consequences for dementia care environments. By concentrating on building ethical self-efficacy, the CARE intervention offers a way to ease moral distress and strengthen decision-making confidence, especially among professionals who start with lower levels of assurance. Introducing similar focused programs into everyday clinical settings could equip caregivers to manage intricate ethical challenges more effectively. This, in turn, may lead to better care results and greater well-being for both healthcare staff and the people with dementia they support, particularly if higher confidence translates into sounder ethical choices. These results emphasize the importance of identifying and supporting healthcare professionals who stand to gain the most from such interventions — a priority in workplaces that face frequent ethical pressures and demanding care situations. Embedding comparable training within standard professional development activities could foster a more

robust, self-assured workforce better prepared to address the ethical demands of dementia care.

Limitations

Although the study applied sound methodological standards, several important limitations still deserve close attention. First, there is the possibility that key assumptions underlying the statistical tests — such as equal variance and normality — may have been breached. Second, the significant intervention effect must be interpreted carefully, as the number of participants who started with low scores was relatively small.

Before running the analyses, we checked for potential violations of these assumptions and accounted for them where possible. Nevertheless, several notable weaknesses remain in the overall study design. The absence of random assignment represents a key drawback of this non-experimental pre-post approach. Studies of this type involve only one group and therefore lack a comparison or control arm. While the timing of the intervention (preceding the outcome measurement) satisfies one basic requirement for causality, the lack of a control group makes it difficult to confidently establish a direct causal link between the program and any observed changes [37].

It is important to note that a statistically significant improvement appeared among healthcare professionals who began with low self-efficacy. However, when interpreting this modest but significant gain, the possible role of regression toward the mean must be considered. Consequently, it would be unwise to credit the improvement entirely to the intervention itself.

Another limitation concerns the timing of the post-intervention measurement. Although the ideal follow-up period depends on the specific nature of the program and the expected duration of its effects, we believe our post-measurement was taken too soon for the full benefits to become apparent. Because self-efficacy was assessed immediately after the final workshop module ended, any delayed effects of the intervention may not yet have been detectable. At the same time, it is equally plausible that the program produced only a modest measurable impact and that this impact represents the maximum possible gain. This pattern is consistent with earlier findings showing that the benefits of educational programs often fade over time [2].

We were also unable to reject our first null hypothesis, as no significant difference in mean ethical self-efficacy scores emerged between the pre-intervention and post-

intervention assessments for the full sample. This, however, does not mean that participants with higher initial scores gained nothing from the experience.

Certain benefits for those who started with strong self-efficacy may be difficult to measure within the current design. These could include greater satisfaction with the educational content, strengthened existing beliefs about their own moral competence, or appreciation of peer discussions as a way to keep conversations about ethical decision-making alive when caring for people with dementia.

Given these limitations — particularly the relatively small number of participants with low initial scores — future studies should aim to recruit a larger sample within this important subgroup. Doing so would improve the generalizability of the results and offer a clearer picture of how the CARE intervention affects ethical self-efficacy. In addition, investigations into long-term outcomes and repeated follow-up assessments would help clarify whether the observed gains are sustained and how they may evolve.

Conclusion

The present findings highlight the value of targeted programs such as the CARE intervention in closing confidence gaps among healthcare professionals who face ethical challenges in dementia care. Although the intervention did not raise overall confidence levels across the entire sample, it produced a statistically significant improvement among those who began with low self-efficacy. This suggests that the CARE intervention may be particularly helpful for this specific group of health professionals.

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Conflict of Interest: None

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Ethics Statement: This study was part of the DEMENS ID research project, which was approved by the Research

Ethics Committee (REC) of the University of Southern Denmark and the legal representatives of the Research & Innovation Organization (RIO). The intervention participants provided informed consent before participating in the study. In the survey introduction, we clarified that participation in this evaluation was voluntary, emphasizing that non-participation would not result in any consequences or exclusion from the intervention. Participants were fully briefed on the study's objectives and on the handling of their data.

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