


The impact of street clothes among caregivers on residents with dementia in special care units: The STRECLO study

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Abstract

Aims and objectives: To examine the impact of caregivers' street clothes on people living in special care units (SCUs). We hypothesised that caregivers wearing street clothes would improve residents' relationships with other residents and caregivers and, as a consequence, would improve their quality of life.

Background: Environmental factors have been recognised as important elements in the care of people with dementia. Among these factors, the importance of the caregivers' appearance and more particularly their street clothes has been raised.

Design: The Street Clothes study (STRECLO) was designed as a multicentre crossover observational study.

Method: This study was conducted in two volunteer nursing homes. It involved videotaping residents ($N = 24$) over a 6-month period: caregivers wore uniform and then street clothes for two consecutive three-month periods. Three outcome measures were observed as follows: (a) behaviours of residents, (b) contents of conversations and (c) proximal interactions between residents and caregivers. The STROBE checklist was used to ensure quality reporting during this observational study.

Results: When caregivers wore street clothes, we observed the following: (a) greater solicitation and less anxiety in residents, (b) content of conversations between residents and caregivers included more personal and less health information, and (c) more proximal interaction between caregivers and residents.

Conclusion: To our knowledge, this is the first study which investigated the long-term effects on residents of SCU caregivers wearing street clothes. Our study demonstrated the potential benefit of not wearing uniform on the quality of life of institutionalised people with dementia.

Relevance to clinical practice: Given the budgetary constraints faced by nursing homes, wearing street clothes for caregivers could be readily applied to clinical practice and represents a promising way to increase the quality of life of dementia residents and their families.

1 | INTRODUCTION

In recent years, special care units (SCUs) for residents with dementia have gained increasing attention. In France, there were nearly 1,200,000 people with dementia including a growing proportion of women and more than 225,000 new cases of dementia were diagnosed annually (Calvet, & Pradines, 2016). 63% of people with dementia live at home and 37% live in residential care. Of the 8,000 residential care, 3,000 have specific units for people with dementia. The medical and paramedical costs of dementia people (hospitalisation, paramedical services) are around 5.3 billion euro per year, and more than 9 billion euro is necessary for day care placement, nursing home or specific structure for dementia people. In the context of the "Alzheimer Plans" (2008–2012), the French government has encouraged the strengthening of SCUs in nursing homes in order to have units with specific projects adapted to the behavioural problems of residents. Indeed, the management of behavioural problems is the first difficulty facing caregivers (Norman, Asplund, & Norberg, 1999), and SCUs are identified as the most appropriate environment to enhance the quality of care for dementia residents (Teri, Huda, Gibbons, Young, & Leynseele, 2005; Testad, Aasland, & Aarsland, 2005). For older people with dementia, medical treatment alone is no longer sufficient, and the general purpose of SCUs is nondrug treatment of dementia symptoms (Kong, Evans, & Guevara, 2009; Luttenberger, Donath, Uter, & Graessel, 2012) in order to improve the care of older people with dementia by providing a safe and welcoming environment (Holmes et al., 1990; Leon & Ory, 1999; Morgan, Stewart, D'arcy, & Werezak, 2004; Opie, Rosewarne, & O'Connor, 1999; Zeisel et al., 2003). Moreover, studies have shown that nonpharmacological factors, such as aspects of the environment, can help to reduce residents' symptoms and enhance quality of life. However, achieving an appropriate balance between pharmacological and nonpharmacological therapies depends on the trust that residents have in their caregivers, and it has been shown that when care is empathic and humane, residents demonstrated a positive mood, delayed functional dependence and consumed more food (Anderson, Bird, MacPherson, & Blair, 2016).

In SCUs, the staff is specially trained to deal with behavioural symptoms of dementia. Among the staff, the role of caregivers is crucial (Winblad et al., 2016); they represent an important part of the residents' social world, and their interventions can improve the everyday life of residents (see the review by Bird, Anderson, MacPherson, & Blair, 2016). Consequently, residents' well-being depends on the relations and exchanges that are established between them and their caregivers.

2 | BACKGROUND

2.1 | What is the impact of caregivers' street clothes on residents?

Environmental factors have been recognised as important elements in the care of people with dementia (Brawley, 2001). Among these

What does this paper contribute to the wider global clinical community?

- Wearing street clothes for caregivers represents a promising way to increase the quality of life of dementia residents and their families.
- For the residents, living in a social environment in which people do not wear uniform is closer to their home than an institutional environment.
- Given the budgetary constraints faced by nursing homes, this study proposes interesting and inexpensive ideas to increase quality of life of residents which could be readily applied to clinical practice.

factors, the importance of the caregivers' appearance and more particularly their street clothes has been raised (Charras & Gzil, 2013; Mitchell, 2018; Newton & Chaney, 1996). Indeed, a nursing home is not a hospital and residents should feel at home. Most studies have highlighted that street clothes seem to play a role in the perception of staff regarding their professional image, skills and professionalism (Albert, Wocial, Meyer, Na, & Trochelman, 2008; Newton & Chaney, 1996; Thomas et al., 2010). We can assume that not wearing a uniform is less of a reminder of a medical environment (disease, medicine and incapacity) for residents and creates an impression which is closer to what they might experience at home.

Several studies in a psychotherapeutic context have reported that wearing street clothes can facilitate therapeutic involvement of personnel and also empathetic processes. At the same time, they have raised the question as to whether wearing uniforms has a role in facilitating orientation, environmental guidance and body care (Gledhill, Warner, & King, 1997; Nihalani, Kunwar, Staller, & Lamberti, 2006). In an Alzheimer's disease department, Sandman, Norberg, and Adolfsson (1988) reported a higher quality of life for people with dementia during meal times when caregivers were not wearing uniforms. To our knowledge, few studies have investigated the effects of not wearing a uniform in SCUs. In Charras and Gzil's (2013) study, two groups of SCUs were constituted, one serving as an experimental group and the other as a control group. In the experimental group, caregivers removed their uniforms after morning care and wore street clothes. The residents' quality of life was assessed using the Quality of Life in Alzheimer's Disease Scale (QoL-AD; Wolak et al., 2009). In Charras and Gzil's (2013) study, QoL-AD was completed by caregivers at the beginning of the intervention and three months later. The difference between the two measures in the experimental group showed an increase in the overall QoL-AD score, however, only for three out of thirteen items (friends, self as a whole, and ability to do chores around the house). Although this study was assessed as being of good quality in a recent systematic review (Bird et al., 2016), and also by the authors themselves, the use of dementia-specific scales such as QoL-AD is debatable because residents' quality of life is not

evaluated by the residents themselves. Different perspectives are investigated according to the measures used (Crespo, Bernaldo de Quirós, Gómez, & Hornillos, 2012) which makes interpreting results difficult. Moreover, it has been shown that quality of life scores are higher in self-assessments than in hetero-evaluations conducted by caregivers and family members (Anderson et al., 2016). Therefore, investigations that do not utilise dementia-specific scales should be conducted to examine to what extent wearing street clothes positively affects the everyday life of residents, and hence, the nature of relationships they have with caregivers and other residents. Residents in SCUs have higher cognitive limitations that represent an obstacle to self-reported measures but not to observational measures (Abbott, Sefcik, & Van Haitsma, 2017), and more specifically, video-recorded sessions should lead to improved assessment in this population (Algar, Woods, & Windle, 2016).

2.2 | Aim of the study

This study aimed to examine the impact of caregivers' street clothes on people with dementia living in SCUs using direct observational measures. We hypothesised that the fact that caregivers wore street clothes would improve the quality of residents' relationships with other residents and the caregivers themselves and, consequently, their quality of life. Specifically, three outcome measures were observed as follows: (a) residents' behaviours, (b) content of conversations with other residents and between residents and caregivers, and (c) proximal interactions between residents, and between residents and caregivers. According to Hall theory of proximity (1966), proximal interactions refer to physical distance between people, that is to bodily proximity and/or bodily contact between residents, and between residents and caregivers in this study.

3 | METHODS

3.1 | Design

The Street Clothes study (STRECLO) was designed as a multicentre crossover observational study conducted in Tours (an urban centre of 500,000 inhabitants in the Region-Centre Val de Loire, France). Two volunteer nursing homes participated in this study over a 6-month period. The two SCUs are in nursing homes and can accommodate up to 15 residents each. These SCUs belong to the same group (Home care service: "Korian organization") and have the same type of organisation and management. The study involved videotaping residents during teatime (on average teatime lasted from 3:30 p.m.–4:30 p.m.), which represented a collective moment during which communication with caregivers and residents could be established easily. Four cameras in each SCU were used to videotape teatime. In the last week of each month of

the 6-month study period, the residents in both SCUs were filmed for two 15-min periods starting 5 min after tea began (from June 2017–November 2017). For the first three months of the study, caregivers of SCU 1 wore their own clothes while those of SCU 2 wore a uniform of a white coat. Then, for the last three months of the study caregivers of SCU 1 wore a uniform while those of SCU 2 wore their own clothes. Following instructions were given to caregivers: "During the experiment, please not wear your professional clothes but your own clothes that means your everyday life attire: trousers, skirt, shirts, dresses ... whatever color or printed." The time period of three months was used in order to decrease the novelty effect. By the end of the study, we had 12 observations for the first three months and 12 observations for the last three months. In the two SCUs, caregivers wore their own clothes throughout the last three months in the afternoon (i.e. even when they were not being filmed).

The flow chart of the study design is presented in Figure 1. The STROBE checklist (guidelines for reporting cross-sectional studies—see File S1) was utilised to ensure quality reporting (Von Elm et al., 2007).

3.2 | Participants

Residents of the SCUs were eligible to take part in the study according to whether: (a) they themselves, a trusted person (Article L. 1111–6 of the Public Health Code), a family member, or failing that a person maintaining close and stable ties with the person concerned were in a position to refuse participation and did not do so, or (b) consent was given by the legal representative of the residents under tutelage or protection of vulnerable adults. Residents were not eligible: (a) if they were bedridden (and never participated in collective activities) or (b) if they had refused to participate or be filmed. Caregivers were not eligible if they refused to participate or be filmed.

Five residents (or trusted person or legal representative of residents) and two caregivers refused to be filmed. The sample included 24 residents and 2 caregivers who were present every day in the afternoon (SCU 1:11 residents and 2 caregivers, SCU 2:13 residents and 2 caregivers). The sample size was chosen based on the number of patients available in the candidate SCUs during the study period.

3.3 | Data collection

3.3.1 | Measures concerning residents

Before starting the study, demographic data (sex and age), length of time in the SCU, MMSE score and prescription medication (antidepressants and minor tranquilisers) were assessed from medical and caregivers' notes. These data were used to compare similarities or differences between the two SCUs.

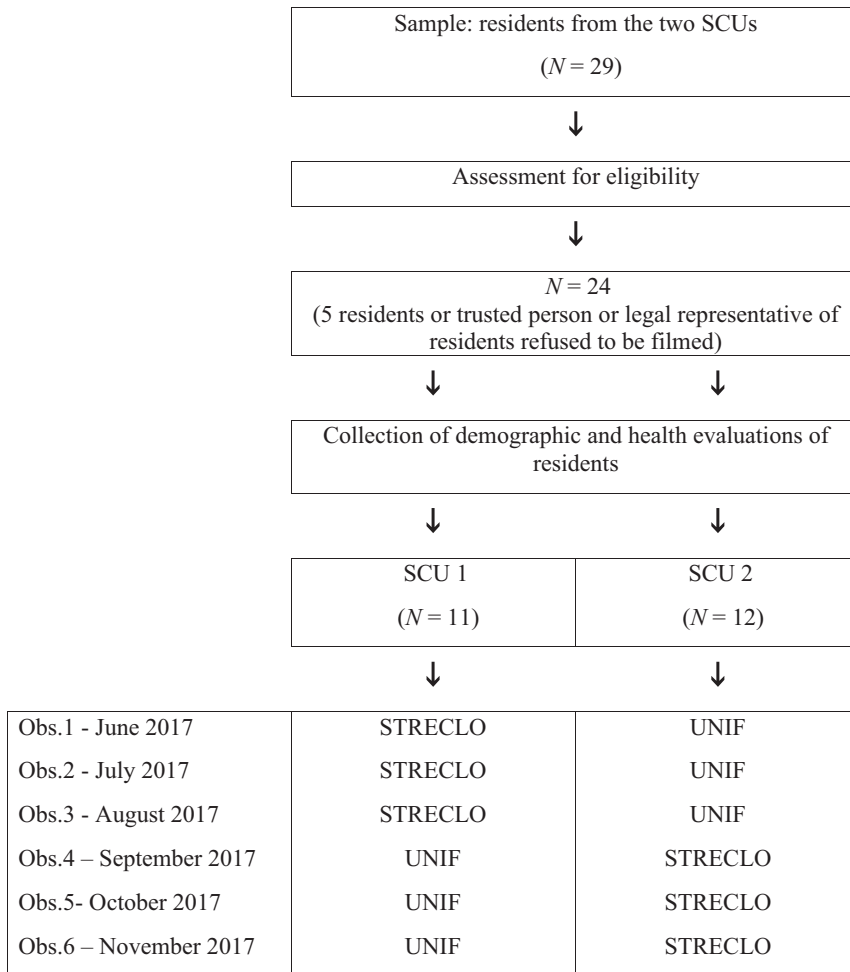


FIGURE 1 Flow chart of the study design. SCU: special care units for people with Alzheimer's disease and related disorders within a nursing home. STRECLO: caregivers wear street clothes during the afternoon. UNIF: caregivers wear a uniform (white coat) during the afternoon

3.4 | Outcome measures

Outcome measures addressed behaviours, conversations and interactions with the other residents and caregivers.

- The occurrence of selected behaviour:
 - a. Solicitation which comprised visual requests (eye contact), hand signals (pointing), smiling (seeking contact) and lateral inclination of the head.
 - b. Aggression which comprised verbal as well as physical aggression.
 - c. Anxiety which comprised restlessness, hand-wringing, pacing and rocking.
- The content of conversations between residents, and between residents and caregivers. Four contents were selected as follows: general information (e.g. "What is the weather like today?" "It is sunny out today?"), health (e.g. "My back hurts"), personal details (e.g. "How's your daughter?") and food ("It's good," "I want some fruit juice").
- The occurrence of proximal interaction between residents, and between residents and caregivers. Two types of proximal interaction were evaluated as follows: interaction with or without (<7.87 inches) touching. The 7.87 inches corresponds to the close phase described by Hall (1966). On average, that corresponds to

the length of a forearm and we used this information for coding proximal interaction.

Occurrences of these measures were counted on the observational grid (see Appendix 1). If a behaviour or an interaction lasted for more than five seconds, it was counted as a new occurrence

3.5 | Ethical considerations

The study protocol was approved by the French Ethics Committee. Informed consent was obtained from caregivers and all participants as well as their relatives, or legal representatives for those under tutelage or protection of vulnerable adults. Participants were also informed that STRECLO was noninvasive and without significant risks.

3.6 | Data analysis

First, prior to experimentation measures about the residents' demographic and health characteristics (age, gender, MMSE score, etc.) were compared for each SCU. For categorical variables such as gender, prescription of antidepressants or minor tranquillisers, Fisher's

exact test was used. For quantitative variables such as age, MMSE and length of time in the SCU, we used the Mann–Whitney U test to compare SCU 1 and SCU 2.

Concerning outcome measurements (behaviours, content of conversations and proximal interactions), aggregate scores per resident and per experimental condition were calculated in each SCU. We had 12 observations for the first three months and 12 observations for the last three months. In order to compare outcome measures when caregivers wore street clothes and when they wore a uniform, we applied Wilcoxon's rank testing for each modality. Wilcoxon rank testing enables multivariate data to be reduced to univariate data while preserving accurate statistical testing.

Statistical significance was defined as a p -Value < 0.05. Data were analysed using IBM® SPSS® Statistics.

3.7 | Validity and reliability

All the video footage sequences were analysed by two independent raters for each SCU. The team of raters consisted of four psychologists specialised in clinical and gerontology psychology. Raters were supervised by a member of the project and trained together for 1 hr twice weekly for 15 weeks to learn the coding system, discuss discrepant cases, review tapes and reach adequate inter-rater reliability (Cohen's κ > 0.60). The raters then independently coded each video footage sequence.

4 | RESULTS

4.1 | Sample characteristics

The sample included 24 residents ranging in age from 77 to 97 ($M = 88.75$; $SD = 5.5$) with a large majority of women (20 women, 4 men). The average length of institutionalisation in the SCU was 36 months ($SD = 20.24$), with a range from 1–132 months for a 95-year-old resident. The mean MMSE score was 7.1 (5.7) with seven residents rated with moderate and seventeen with severe cognitive impairment. Ten residents were receiving antidepressant medication and eight minor tranquillisers. Mann–Whitney U test indicated no differences between the two SCUs concerning age ($U = 69.50$; $p = .93$), MMSE ($U = 64.50$, $p = .99$) or length of institutionalisation in a SCU ($U = 51$; $p = .24$). Fisher's exact test indicated no differences between the two SCUs concerning gender (Fisher's exact test $p = .84$), antidepressants (Fisher's exact test $p = .22$) and minor tranquillisers (Fisher's exact test $p = .15$). The sample characteristics are presented in Table 1.

4.2 | Occurrence of selected behaviours

Overall, the most common behaviour observed during the 15-min period was solicitation ($M = 29.94$, $SD = 13.25$), while anxiety

and aggression were rarely observed. Analysis using Wilcoxon tests revealed that when caregivers wore street clothes, the occurrence of solicitation increased significantly (30.05 vs. 19.84, $Z = 3.34$, $p < .001$), whereas anxiety decreased (0.62 vs. 2.14, $Z = 3.68$, $p < .001$). Regarding aggression, there was a trend towards less aggressive behaviour when caregivers wore street clothes (0.63 vs. 1.85, $Z = 1.68$; $p < .10$). Results are presented in Table 2.

4.3 | Occurrence of the different conversation content

Between the different situations, conversations between residents (Table 2) were to a large extent about general information ($M = 1.5$; $SD = 1.5$). Analysis using Wilcoxon tests revealed no effects of conversation content about general information (1.81 vs. 1.1, $Z = 0.62$; ns) but when caregivers wore street clothes, there was a significant decrease in conversations about health (0.07 vs. 0.43, $Z = 1.75$, $p < .05$), whereas content on personal information and food increased significantly (1.32 vs. 0.30, $Z = -2.85$, $p < .01$; 0.9 vs. 0.71, $Z = 2.57$, $p < .01$, respectively).

Between the different situations, conversations between residents and caregivers (Table 2) were mainly connected to the topic of food ($M = 2.67$, $SD = 2.82$). Results indicate that wearing or not wearing street clothes had no effect on general information and food conversations. However, when caregivers wore street clothes there were fewer conversations about health (0.11 vs. 0.73, $Z = 2.37$; $p < .01$) and more were focused on personal information (1.1 vs. 0.21, $Z = 2.89$; $p < .001$).

4.4 | Occurrence of proximal interactions

Intimate interactions between residents were very infrequent, and wearing street clothes had no effect on this. However, close interaction (with or without contact) between residents and caregivers increased when caregivers wore street clothes (2.53 vs. 0.95, $Z = 3.19$; $p < .001$; 1.44 vs. 0.51, $Z = 3.36$; $p < .001$).

5 | DISCUSSION

As in previous studies conducted on people with dementia, our study demonstrates that people with dementia are aware of and sensitive to their environment. In particular, the appearance of caregivers modifies positively the relationships between residents and caregivers in SCUs. While the pioneer study of Charras and Gzil (2013) already demonstrated the potential benefit of not wearing uniform on the quality of life of institutionalised people with dementia, our study specifies the areas concerned by such a modification of the social environment. When caregivers wore street clothes, we observed the following: (a) greater solicitation

TABLE 1 Sample Characteristics of residents in SCUs

	Total (N = 24)	SCU 1 (n = 11)	SCU 2 (N = 13)	p value
Mean Age	88.75 (5.5) (77–97)	90.64 (6.3) (77–97)	87.15 (4.4) (81–94)	.93
Gender				
Men	4 (16.7%)	2 (18.2%)	2 (15.4%)	
Women	20 (83.3%)	9 (81.8%)	11 (84.6%)	.84
Length of time in SCU (in year)	3 (1 month–11 years)	3.8 (1 month–11 years)	2.2 (1 month–8.5 years)	
MMSE score	7.1 (5.7) (0–22)	6.7 (4.6) (1–15)	7.5 (6.6) (0–22)	.99
MMSE Score				
Between 10–20	7 (29.2%)	3 (27.3%)	4 (30.8%)	
Score below < 9	17 (70.8%)	8 (72.7%)	9 (69.2%)	.85
Prescription medication				
Antidepressants	10 (41.7%)	6 (54.5%)	4 (30.8%)	.22
Minor tranquilisers	8 (33.3%)	2 (18.2%)	6 (46.1%)	.15

and less anxiety in residents, (b) content of conversations between residents and caregivers which included more personal and less health information, and (c) more proximal interaction between caregivers and residents. These findings can be interpreted in several ways. For the residents, living in a social environment in which people do not wear uniform is closer to their home than to an institutional environment. In a literature review about the effect of the physical environment on residents with dementia, Chaudhury, Cooke, Cowie, and Razaghi (2018) highlighted the role of homelike characters on residents' behaviours and well-being. It has been shown that a homelike environment supports informal interactions with increasing resident-directed conversation, reduces aggression and agitation, and increases participation and engagement in everyday activities. In their research, Charras and Gzil (2013) postulated a mirror-image judgement, with residents recognising caregivers as people with whom they could potentially become friends. Regarding not wearing uniforms, our results can be explained by the welcoming environment created for the residents, but its impact on caregivers should not be overlooked. Indeed, wearing street clothes changes attitudes and behaviours of caregivers themselves. Indeed, our results indicate much more proximal interaction between caregivers and residents when caregivers wore street clothes, while no impact on interaction between residents was found. This may indicate that caregivers themselves felt much closer to residents when they wore street clothes, reducing the physical (possibly professional) distance between themselves and residents which in turn benefited the residents. According to Ericsson, Kjellström, and Hellström (2011), when a caregiver is very close to a resident "communicating equality" is promoted, with the caregiver attempting to communicate to the person with dementia, a sense of being an equal. This was interpreted as having a significant effect, encouraging the person to open up and thus making a relationship possible. Finally, this modification of the environment fosters a person-centred approach (Kitwood, 1993; McCormack & McCance, 2006) and promotes social relationships between staff and residents. Our

results suggest that caregivers dress appears to be one way of delivering person-centred care.

From a more general perspective, the effect of the environmental context on residents with dementia was recently investigated by Baurtrant and colleagues (Baurtrant et al., 2019). A set of environmental modifications were carried out in a nursing home: sky-like ceiling tiles were installed in part of the communal areas, light intensity was gradually decreased at night together with soothing streaming music, lighting levels were reinforced during the day, walls were painted light beige, oversized clocks were placed in corridors, and night staff wore different coloured clothes to day staff (dark blue and sky blue, respectively). Results highlighted that the number of episodes of agitation/physical aggression, wandering and screaming were decreased, and the mean duration of wandering episodes was reduced following these environmental rearrangements, confirming that the environmental context is a key factor in improving quality of life of people with complex needs.

5.1 | Limitations

Despite being an innovative exploration of the environmental context in SCUs, this study has some limitations. First, because the size of the sample was small and because we tested only two SCUs, it is difficult to generalise our results. Indeed, the way SCUs are organised may vary across nursing homes in terms of staff composition (activity programs and patient care practices; Lai, Yeung, Mok, & Chi, 2009). In addition, increasing sample size will increase the power of study. Despite this, as a consequence of the sample size, an effect of the intervention could still exist even in cases when the tests did not reach statistical significance at the conventional 0.05 threshold. However, we could ascertain with sufficient confidence that patients were less anxious and more socially engaged in the "post" period, as shown by the increased solicitations ($p < .05$) despite the small sample size. Second, uniforms were only removed for a short period in the afternoon (at teatime) and this could

TABLE 2 Occurrence of outcome measures regarding clothes

	Street clothes	Uniform	Z
Behaviours			
Solicitation	30.05 (16.88)	19.84 (11.94)	3.34***
Anxiety	0.62 (1.02)	2.14(1.61)	3.68***
Aggression	0.63 (0.71)	1.86 (2.48)	1.68 [†]
Content of conversation			
Between residents			
General information	1.81 (2.7)	1.1 (1)	0.62
Health	0.07 (0.15)	0.43 (0.49)	1.75*
Personal information	1.32 (1.80)	0.30 (0.63)	2.85**
Food	0.90 (1.29)	0.71 (0.77)	2.57**
Between residents and caregivers			
General information	1.0 (2.1)	0.83 (1.8)	0.1
Health	0.11 (0.15)	0.73 (0.77)	2.37**
Personal information	1.10 (0.83)	0.21 (0.75)	2.89***
Food	3.11 (2.1)	2.50 (1.81)	0.57
Contact			
Between residents			
Interaction without touching	0.21(0.50)	0.21 (0.35)	0.95
Interaction with touching	0.08 (0.26)	0.15 (0.22)	0.30
Between residents and caregivers			
Interaction without touch	2.53 (1.16)	0.95 (1)	3.19***
Interaction with touch	1.44 (1.81)	0.51 (0.93)	3.36***

[†] $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

minimise the effects of street clothes on residents. Further studies need to explore an environment in which caregivers do not wear uniform over a longer period. Third, although our study highlights some positive effects of street clothes on residents, it is essential that caregivers fully support not wearing a uniform. Some caregivers believe that not wearing a uniform would have a detrimental effect on residents. They think this practice may lead to a greater level of distress due to disorientation and the inability of the resident to identify caregivers when needed (Mitchell, 2018). The questions of hygiene, infection and also financial considerations (cleaning clothes) are further arguments for those against the suppression of uniform. In addition, it has been shown that more interpersonal-oriented caregivers prefer to wear street clothes in order to be considered as a person and not only as a caregiver, whereas those who are more task-oriented dislike removing their uniform which for them constitutes a protective barrier (Sparrow, 1991). The clothing that an individual wears participates in forming an individual and professional identity and serves as a sign of belonging to the group (Albert et al., 2008; Bicchieri, 2006). Therefore, further investigations are required to explore the overall implications of implementing the wearing of street clothes in a nursing home. However, the question of exactly what are street clothes remains:

is it only the absence of uniform or a uniform which is not a white coat? Indeed, several caregivers in our study did not wear a white coat but wore clothes specifically for working (a white tee-shirt and jeans). Fourth, the family's perceptions were not taken into account in our study. They have nevertheless a crucial role in the context of residents' life in SCUs. Finally, several medical and physical factors may have affected our results and more additional information should be considered to improve the study. Indeed, medications like antidepressants or benzodiazepines can cause adverse effects like dizziness, drowsiness, impaired concentration or problems of alertness or lack of coordination (Sithampanathan, Sadera, & Leung, 2012) which in turn can affect our observations. In the same way, hearing and vision impairment could have influenced directly content of conversation as well as behaviours (Bédard, Kergoat, Kergoat, Kergoat, & Kergoat, 2015; Dullard & Saunders, 2016).

6 | CONCLUSION

With no available pharmacological treatment to diminish symptoms, social environments are increasingly recognised as important factors in the quality of life and functional ability of persons

with dementia. To our knowledge, this study is the first to investigate the long-term effects of caregivers wearing street clothes on SCU residents with dementia on various measures of behaviours, and verbal and nonverbal communication. Our study demonstrated the potential benefit of not wearing uniform on the quality of life of institutionalised people with dementia. For the residents, living in a social environment in which people do not wear uniform is closer to their home than an institutional environment. This modification of environment promotes social relationships between staff and residents and enhances a person-centred approach.

7 | RELEVANCE TO CLINICAL PRACTICES

Given the budgetary constraints faced by nursing homes, wearing street clothes for caregivers could be readily applied to clinical practice. It represents a promising way to increase the quality of life of dementia residents and their families and facilitate therapeutic involvement of personnel and empathetic processes.

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CONFLICT OF INTEREST

No conflict of interest.

AUTHOR CONTRIBUTIONS

Study conception: NB, CF and CG; study design and data collection: GS, OA and CG; statistical data analysis and interpretation: NB and SS; and manuscript preparation: NB, GS, CF, SS, OA and CG. All authors critically reviewed and approved the manuscript prior to submission.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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APPENDIX 1

THE STRECLO STUDY OBSERVATION GRID

Center: Resident: Investigator: Date:.....

1.1. Occurrence of selected behaviours (5th to 20th min of teatime)

Behaviours	Frequency
Solicitation: Visual request, Hand signal (pointing), Smiles (seeks contact), Lateral inclination of the head	
Aggression: verbal or physical aggression	
Anxiety: restlessness, hand-wringing, pacing and rocking	

1.2. Occurrence of selected conversation content (5th to 20th min of teatime)

Content of conversation	Resident-Caregivers	Resident-Residents
General information		
Health		
Personal information		
Food		

1.3. Occurrence of proximal interactions (5th to 20th min of teatime)

Interactions	Resident-Caregivers	Resident-Residents
Intimate interaction with touching		
Intimate interaction without touching		

Note: If a behaviour or an interaction lasts more than five seconds, it is counted as a new occurrence.