JOURNAL OF LONG-TERM CARE

Smith, N, et al. 2019. Quality of Life in Older Adult Care Homes: Comparing Office Hours with Out-of-Office Hours. *Journal of Long-Term Care*, (2019), pp. 153–163.

RESEARCH

Quality of Life in Older Adult Care Homes: Comparing Office Hours with Out-of-Office Hours

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Context: Poorer mortality rates and quality of care in hospitals outside of office hours is well documented. The literature on adult social (long-term) care, and in particular, care homes, is much less developed. There are, however, a few studies that suggest that outside of Monday to Friday between 9.00am and 16.30pm, quality of care in care homes might be lower.
Objective(s): The objective of this study was to compare the social care-related quality of life (SCRQoL) of residents in older adult care homes during office hours (0900 to 16.30) with outside of office hours (evenings and weekends).
Method(s): We conducted a nested, cross-sectional study, collecting SCRQoL data using the Adult Social Care Outcomes Toolkit at two time points, office hours (Monday-Friday between 9.00 and 16.30) and outside of office hours. We did not examine nigh times in the homes. Data were collected for 99 older adult care home residents in 13 care homes (5 residential and 8 nursing) and analysed using a combination of non-parametric and parametric techniques.
Findings: SCRQoL ratings were lower during the weekends and early evenings than during office hours. The differences were most pronounced in the higher order domains of social participation, occupation and control over daily life.
Limitations: The study struggled to explain this variation. This work was both exploratory and small in size. We also did not collect data on levels of staffing.
Implications: Further work is required to both confirm our findings and explore the reasons for the difference. Nonetheless, this study challenges the traditional model of care, in which social activities and meaningful pastimes are mostly organised during 'office hours'. We observed evenings that were very short, as residents tended to return to their room shortly after dinner, and quiet weekends, and this was reflected in residents' quality of life. This is contrary to the rhetoric of care homes being people's own homes, where they would be able to choose to remain active and engaged into the evening and on the weekends, as they may have done throughout their lives.

Keywords: Older people; care homes; quality of life; ASCOT; evenings; weekends

Context

The temporal nature of some health care outcomes is well established. Studies in a range of countries and covering different specialities, have suggested that mortality in hospital settings fluctuates between different times of the week. Specifically, mortality has been shown to increase outside of office hours, such as the weekend and evening, compared to during office hours. Freemantle et al. (2012), using 2009/10 data on admission to English NHS hospitals, found that weekend admission was associated with an increased risk of death within 30 days of admission, while Aylin et al. (2010) calculated from 2005/06 data, that those who had weekend emergency admissions to English hospitals had a 10 per cent higher risk of death compared to those who were admitted during the week. Although there is some evidence challenging the notion of the so called 'weekend effect' (Baldwin et al., 2018; Daugaard et al., 2012), data from Canada (Bell and Redelmeier, 2001), Spain (Barba et al., 2006), Taiwan (Huang et al., 2016) and the United States (Kent et al., 2016) all point to outcomes, as measured by mortality, being worse during weekends compared to during the week. Analysis by Peberdy et al. (2008) of cardiac arrest data from American hospitals between 2000–2007, suggests that mortality is also higher at night, as well as weekends, compared to during office hours.

Interpreting mortality rates as a proxy for quality of care is not without its problems. Not only is it difficult to separate preventable deaths from those which were not preventable, but there is evidence suggesting that quality of care accounts for less than half of variability in mortality (Lilford and Pronovost, 2010; Mant and Hicks, 1995).

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These critiques are most pertinent to the comparison of mortality rates between hospitals, and while they do suggest caution when looking at temporal patterns of mortality in a single institution, the large body of evidence supporting the notion of a 'weekend effect' does suggest that there is something different about hospitals outside of office hours. It has been suggested that higher weekend mortality is a product of the characteristics of patients who are admitted to hospitals at the weekend. Low risk elective admissions are more likely to occur Monday to Friday, while those admitted during the weekend tend to be sicker (Gould et al., 2003).

However, there is also evidence to suggest that the temporal nature of health outcomes in hospitals is associated with quality of care that patients' experience. Becker (2007), looking at the admission of patients with acute myocardial infarction into US hospitals, found that weekend admission was associated with lower levels of receipt of intensive treatments within the first few days of admission. Delays in treatment, it was suggested, led to a higher longer-term mortality rate. Reviews of English hospital settings also point to concerns about quality of care at weekends. The Academy of Medical Royal Colleges (2012) suggested that the temporal nature of health outcomes in hospitals was 'very likely' to be a result of lack of diagnostic support coupled with a lack of skilled and senior staff available to patients at the weekends, a view supported in the NHS review of providing services across the week (NHS England, 2013). A review of the Liverpool Care Pathway (Department of Health and Social Care, 2013) illustrated the poorer quality of care at weekends and made reference to lack of skilled staff, difficulty in accessing equipment and, again, the unavailability of appropriate support (the palliative care team). The report also noted how this affected patient experience, highlighting how patients experienced poorer communication from medical staff, poor decision making and ultimately were less likely to be supported to die at home if they wished to.

Compared with hospital settings, very little is known about the outcomes nor experience outside of office hours of older people living in care homes. For example, despite their importance, the change over from day to night staff in care homes has been, unlike equivalent change overs in hospital settings, the focus of little research (Moriarty et al., 2017). Like hospitals, care homes, both with and without nursing care, support their residents twenty-four hours a day, seven days a week. However, despite approximately 425,000 elderly people living in care homes in England (Laing and Buisson, 2014), most of what we know about these settings is based on research that focuses on life in the home during the daytime (Ellmers et al., 2013). In place of a body of knowledge, there are just a handful of studies which focus on care homes outside of these hours. These studies tend to point to both worse care outcomes and a worse quality of life for residents. For example, Hutt et al. (2002) found increased risk of hospitalisation for urinary tract infections amongst residents of nursing homes in the United States, while two studies, one in Germany (Büchele et al., 2014) and the other in the United States (Weinberg et al., 2002) found there were more falls, at least for some groups, out of office hours.

In addition to the clinical data, there is also evidence that incidences of challenging behaviour amongst residents is temporal, with certain behaviours, such as picking at things, pacing and aggression, being more common during the evening than the daytime (Cohen-Mansfield et al., 1992). There is also a small body of work looking at care homes during the night time (Ellmers et al., 2013; Eyers et al., 2013, 2014; Kerr et al., 2008; Kerr and Wilkinson, 2011; Luff, Ellmers, et al., 2011; Wilkinson, 2011). Luff et al. (2011), in particular, note that residents in care homes for older adults are often unable to control their night-time environment and are, therefore, at risk of poorer quality of life during these hours. However, the strongest evidence of a change in quality of life outside of office hours concerns residents' engagement (or lack thereof) in meaningful activities. Recent cross-national work by Morris et al. (2018) suggests that less than a third of residents in long-term care facilities felt that they 'had something enjoyable to do on the weekends.' This is supported by previous work, which found that levels of activity among residents were lower on weekends (Shore et al., 1995) and that there was an absence of organised activities at the weekends in long-term care facilities for older people (Deutschman, 2005). Eyers et al's (2012) study of organised activity in older adult care homes in England across the day found that rates of engagement in organised activity were much lower during the evening compared to either the morning or the afternoon.

Despite this evidence, which suggests that the outcomes and experience of residents in older adult care homes may differ outside of office hours, there is no evidence that considers quality of life as a whole or aids our understanding of changes in quality of life in older adult care homes during this time.

Objectives

The objective of this study was to compare the care-related quality of life of residents in older adult care homes during office hours (0900–1630) and outside of office hours (evenings [1630–2000] and weekends [0900–1500]).

Methods

Study design and participants

This study was an exploratory work package within a larger study focusing on the quality of life of residents in care homes for older people. The aim of the main study was to examine whether the Care Quality Commission's (CQC) (the care regulator for England) new quality ratings (Care Quality Commission, 2017) are a reasonable indicator of care home residents' care-related quality of life. Using a cross sectional design, researchers spent two to four days during office hours (weekdays, 9am–4.30pm) observing participating residents to assess their quality of life (using the Adult Social Care Outcomes Toolkit (ASCOT) measure, see below) and interviewing them where possible. Additional data were collected via questionnaires completed by staff about the needs and characteristics of residents. Data on staff activities, including personal care, were collected

only in relation to activities undertaken with participating residents. 119 homes were randomly invited to take part from the CQC database in two local authorities in the South East of England. Of these, 34 homes (29%) agreed to participate, 20 of which provided nursing care. Within homes, managers were asked to coordinate resident recruitment, randomly selecting residents from an alphabetical list and inviting them to take part in the research. Exclusion criteria were limited to temporary/short stay residents and those receiving palliative care. In each home, between five and ten residents were recruited. Further details of the methods and the findings of the main study can be found in Towers et al. (2019).

The work reported here employed a within-subjects, repeated measures design with two time points. The first time point was the data collected during office hours as part of the main study. At this time point, researchers carried out observations and interviews to enable a quality of life rating to be derived for all of the participating residents. The second time point involved a subset of these residents and a different researcher carrying out observations outside of office hours to inform a second quality of life rating. For the purposes of this study, office hours were defined as Monday to Friday 09.00 to 16.30. Out of office data was to be collected either between 16.30 and 20.00 Monday to Friday (evenings) or on Saturday/Sunday between 09.00 and 15.00 (weekends).

In the first home where evening data were collected, we began the evening observation at 17.00 but found that the evening meal was already being served and that the home's routines meant that many residents had retired to their bedrooms by 18.30. In subsequent homes our evening observations began at 16.30 to ensure that there was sufficient time to observe the residents' lived experience. Once a resident retired to their room, no further observations were made. This study was not focused on night time within care homes, so no data were collected between 20.00 and 09.00 the following morning when residents were mostly in their rooms. This meant that our evening observations were often undertaken while the day-time staff were still on duty. It also meant that our definition of evening was very much rooted in the routines of care homes in this study.

The length of time between the two time points varied, ranging from data collection later the same day to a gap of eighteen days. The mean time gap between the two measurement times was 5.94 days. Inter-rater reliability between the raters in this study has been shown to be very good to excellent using two-way random, absolute agreement, single-measures ICC (Towers et al., 2016).

In total, a sub-sample of 13 older adult homes (five residential and eight nursing) took part in the evenings and weekends study. These 13 homes were randomly selected from the 34 homes taking part in the main study and only included residents who were participating in the main study. Power analysis indicated that to have an 80% chance of detecting a significant change in SCRQoL at the .05 level between the two time points, with a small to medium effect of time ($\eta^2 = .40$), the study required a minimum of 72 participants with two observations at each time point (office hours and out of office hours) (Faul et al., 2007). This calculation included controlling for between group clustering across 13 homes.

Dependent variable

The quality of life of residents was measured at both time points using the care home version of the Adult Social Care Outcomes Toolkit (ASCOT). ASCOT measures what is referred to as social care related quality of life (SCRQoL). SCRQoL consists of eight domains (described in **Table 1**) found to be sensitive to social care interventions and services.

Table 1: The ASCOT domains.

Domain	Definition
Control over daily life	The service user can choose what to do and when to do it, having control over his/her daily life and activities
Personal cleanliness and comfort	The service user feels he/she is personally clean and comfortable and looks presentable or, at best, is dressed and groomed in a way that reflects his/her personal preferences
Food and drink	The service user feels he/she has a nutritious, varied and culturally appropriate diet with enough food and drink he/she enjoys at regular and timely intervals
Personal safety	The service user feels safe and secure. This means being free from fear of abuse, falling or other physical harm
Social participation and involvement	The service user is content with their social situation, where social situation is taken to mean the sustenance of meaningful relationships with friends, family and feeling involved or part of a community should this be important to the service user
Occupation	The service user is sufficiently occupied in a range of meaningful activities whether it be formal employment, unpaid work, caring for others or leisure activities
Accommodation cleanliness and comfort	The service user feels their home environment, including all the rooms, is clean and comfortable
Dignity	The negative and positive psychological impact of support and care on the service user's personal sense of significance

As with self-complete versions of ASCOT, the care home version has response options reflecting four possible outcome states: ideal state, no (unmet) needs, some (unmet) needs and high (unmet) needs. However, self-report is often not an appropriate method for research with residents of older adult care homes as it tends to exclude the experiences of those who struggle to share their views verbally (Lloyd et al., 2006; Luff et al., 2011; Ward & Campbell, 2013). The care home version of ASCOT uses a multi-methods approach. Researchers collect evidence by carrying out a structured observation of the residents' daily life and supplementing this with interviews with staff (always), residents (where possible) and family members (where available). By triangulating this evidence, the researcher makes a rating for each resident for each of the eight domains. A full account of this multi-methods approach is reported elsewhere (Towers et al., 2016).

The ratings for each domain were weighted to reflect English population preferences (Netten et al., 2012) and entered into an algorithm to calculate a score ranging from 1 to –0.17. A score of one reflects the optimum or 'ideal' SCRQoL, while a score of zero reflects the dead state; a state that population preferences suggest is equal to being dead. Scores below zero indicate a state worse than being dead (Netten et al., 2012).

Independent variables

Resident characteristics

Staff completed questionnaires about participating residents' demographic information (age, gender, ethnicity, marital status), functional abilities and levels of cognitive impairment. Functioning was measured by asking how much help a resident required with nine key activities of daily living taken from the Barthel Index of Daily Living (Mahoney and Barthel, 1965), which have been found to be associated with SCRQoL (Malley et al., 2012). This included activities such as getting washed and dressed, going up and down stairs, and getting around inside the home. Cognitive performance was measured using the Minimum Data Set Cognitive Performance Scale (MDSCPS) (Morris et al., 1994). Scores on this scale range from zero (intact) to six (very severe impairment).

Care home variables

As well as collecting information about individual residents, we also recorded contextual information about the characteristics of the homes that might reasonably affect residents' quality of life. This included the size of the home (number of beds), registration category (residential or nursing), sector (for-profit or not for-profit) and CQC quality rating. No data on staff to resident ratios were collected, but staff shifts were observed to follow a common pattern. We observed that it was usually day shift workers who were present during our collection of evening data, with night time shifts starting once residents had retired to their rooms.

Statistical methods

Data were analysed using a combination of non-parametric and parametric techniques.

For comparisons between groups at time point two (out of office hours), an independent samples t-test was carried out. SCRQoL scores at time one (office hours) were negatively skewed, as found in previous studies (Malley et al., 2012; Netten, Trukeschitz, et al., 2012; Towers et al., 2016), therefore, the Mann Whitney u-test was used to explore differences between groups (e.g. between nursing and residential care homes) at this time. Similarly, when comparing SCRQoL scores during office hours with SCRQoL scores out of office hours a Wilcoxon signed-ranks test was used. The Wilcoxon signed-ranks test was also use to examine differences between the domain-level ratings (ordinal categorical data) during and outside of office hours.

When controlling for co-variates and clustering, a mixed-model analysis of covariance (MANCOVA) was run using the general linear model (GLM) procedure in SPSS version 25. The dependent variable was SCRQoL. The independent variable was time (office hours and out of office hours). As the study employed a nested design, with residents living in care homes, we controlled for clustering by entering dummy codes for the homes into the GLM as a between-subjects factor. The sample size was not large enough for a multi-level model (Maas and Hox, 2005). Other confounding variables were entered into the model as covariates to control for their effect on SCRQoL.

Although SCRQoL scores at time one were negatively skewed, examination of the residuals indicated that these were normally distributed, meaning the assumptions required for GLM were met, and no transformations were required (Tabachnick and Fidell, 2007). Nine cases were excluded from the GLM, due to missing individual level data from variables entered as significant covariates in the model. No homes were excluded.

Results

Descriptive statistics

Thirteen care homes (eight nursing and five residential) from two local authorities in the South East of England took part in this study between April 2016 and November 2017. The homes varied in size between 33 and 120 beds, with a mean of 57 beds (SD = 21.8) thus between 4.2% and 26.6% of the residents in each home participated in this study. In terms of sector, four were not-for-profit homes and nine homes were for-profit. The majority of the homes were rated as outstanding or good by the care regulator (n = 10), with the remaining three rated as requiring improvement. Owing to low numbers of homes in each category, there was limited power to detect meaningful differences in changes in SCRQoL relating to sector and CQC rating, therefore, these variables were excluded from further analysis.

Ninety-nine residents from the main study agreed to take part in the evenings and weekends study. Approximately two thirds of the sample were female (63%) and nearly all were white (96%). Residents ranged in age from 62 to 96 years old, with a mean of 84 (SD = 8.1). We had missing data about the characteristics of some residents, therefore the number of residents is reported in brackets (n). Most residents were widowed (n = 56), followed by married/living as married (n = 24), divorced/separated (n = 6)

and single/never married (n = 5). Fifty-five residents were diagnosed with dementia and 37 were not (missing = 7). The mean number of ADLs that residents could do independently was 3.49 (SD = 3.11; range 0–9; n = 89). Scores on the MDSCPS ranged from zero to six in this sample, with a mean of 2.07 (SD = 1.89; n = 88).

Social care-related quality of life (SCRQoL)

SCRQoL data was collected at two time points (office hours and outside office hours). For 49 residents, the out of office hours observations were conducted during the evenings and for the remaining 50 residents, they were conducted at the weekend. The distribution of residents observed in the evenings or at the weekends by care home are reported in **Table 2**. SCRQoL scores are shown in **Table 3**. As found in previous research (Malley et al., 2012; Netten, Trukeschitz, et al., 2012; Towers et al., 2016), SCRQoL was negatively skewed during time point one, office hours (skewness = –0.64, SE skewness = 0.24). During office hours, some residents had very high levels of quality of life, with seven residents scoring the maximum possible score of 1.00, meaning that their quality of life was ideal across all eight of the ASCOT domains. Interestingly, the data at time point two (out of office hours) was normally distributed because quality of life dropped (from 0.79 in office hours compared with 0.65 outside of office hours) with only one resident having a perfect score (skewness = –0.14, SE skewness = 0.24). The observed difference in SCRQoL between the time points was significant ($z = -7.59$, $p < 0.001$). However, there was no difference in the SCRQoL of residents observed in the evenings or at the weekends ($t(97) = 0.49$, $p = 0.63$), therefore they were treated as a single 'out of hours' group for the purposes of the within subjects analysis.

A comparison of the average domain scores (as a percentage of the maximum possible score in each domain) for out of office hours and in office hours is presented in **Figure 1**. The overall shapes show that quality of life ratings were lower during the weekends and evenings than during office hours. **Table 4** reports the distributions by outcome state for each domain and whether outcomes were significantly worse out of office hours, as indicated by the Wilcoxon Signed-Ranks test for measuring the difference between paired-ordinal variables. Although outcomes were worse in all of the ASCOT domains, the differences were most pronounced in the higher order domains of social participation (51/99 negative differences), occupation (50/99 negative differences) and control over daily life (42/99 negative differences). The smallest difference was found in accommodation cleanliness and comfort (16/99 negative differences), followed by personal cleanliness and comfort (23/99 negative differences), food and drink (25/99 negative differences) and dignity (27/99 negative differences).

Table 2: Distribution of observations of residents' SCRQoL across the two time points.

Home	Out of office hours		Office hours
	Residents observed at the weekend (n)	Residents observed in the evenings (n)	Residents observed (n)
1	5	5	10
2	9	0	9
3	5	0	5
4	5	5	10
5	5	5	10
6	4	4	8
7	5	5	10
8	6	0	6
9	0	5	5
10	0	5	5
11	0	5	5
12	6	4	10
13	0	6	6
Total	50	49	99

General linear model (GLM)

A repeated-measures analysis of variance was conducted to explore the presence of clustering within homes. SCRQoL was the dependent variable, with time being the main predictor (office hours (OH) and out of office hours (OOH)) and a dummy code representing the 13 care homes entered as a between-subjects factor. As indicated by the Wilcoxon signed ranks test, there was a main effect of time ($F(1,75) = 55.29$, $p < 0.001$, $\eta^2 = 0.42$), with residents having significantly better SCRQoL during office hours. There was also a significant interaction between time and the home residents lived in ($F(12, 86) = 2.69$, $p < 0.001$, $\eta^2 = 0.27$). This means that where residents lived (which home) affected how much their SCRQoL changed out of office hours. It was, therefore, necessary to keep this in the model to control for clustering.

Table 3: SCRQoL scores.

	Office hours (n = 99)	Out of office hours (n = 99)	Evenings only (n = 49)	Weekends only (N = 50)
Mean (SE)	.79 (.02)	.65 (.02)	.64 (.03)	.66 (.02)
SD	.17	.19	.22	.16
Min	.36	0	0	.42
Max	1	1	1	.96

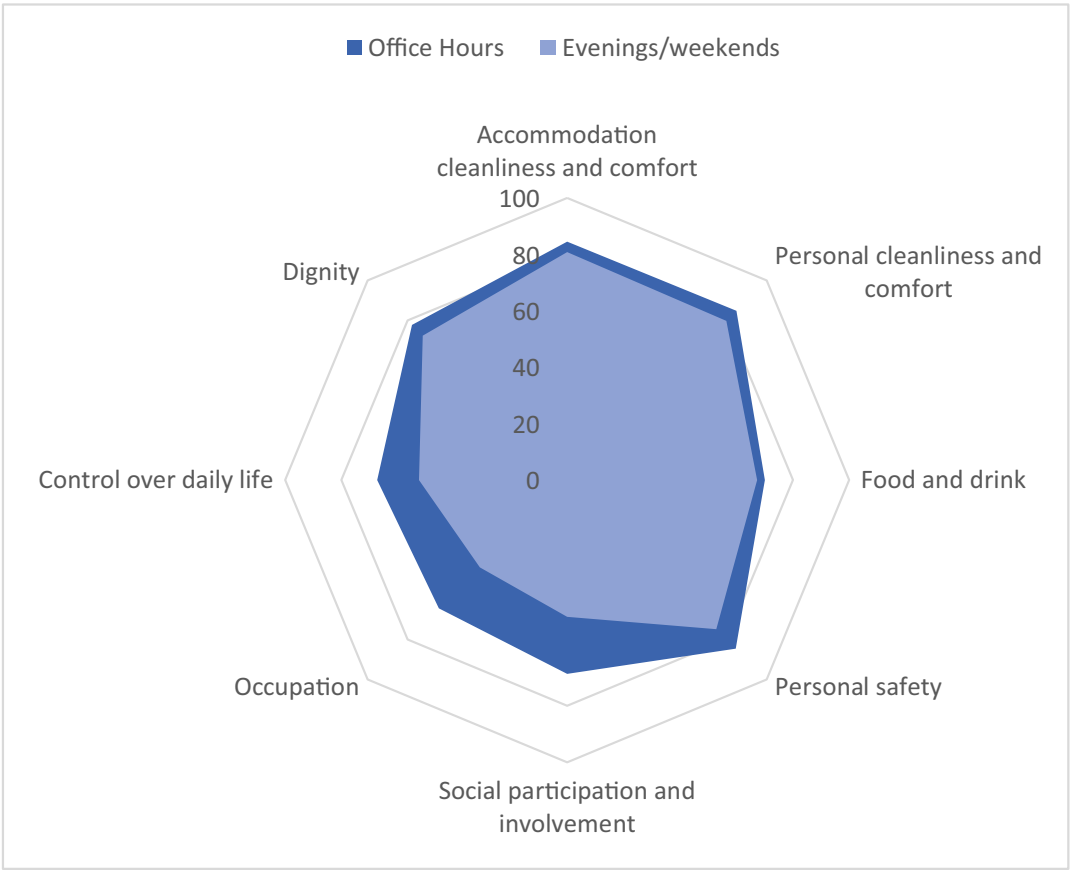


Figure 1: Cobweb plot comparing the average SCRQoL score in each domain as a percentage of the total possible score (unweighted).

The dark blue shaded area represents SCRQoL during office hours and the light blue represents SCRQoL outside of office hours. The further out towards the edge of the plot the shading goes, the better the average score in each domain. 100% would mean that all residents had perfect scores in that domain (ideal state). 0% would mean that all residents had high (unmet) needs in that domain (worst possible score).

As the time two observations were carried out between zero (later the same day) and 18 days after the time one observations, we checked whether time lag had an unintentional impact on the SCRQoL ratings (with longer gaps being associated with bigger differences in SCRQoL). To examine this, a repeated-measures analysis of co- variance was conducted, as before, but including the time lag (in days) between observations as a covariate. The interaction between the time point of observation (office hours and outside of office hours) and the number of days between them (lag) was not significant ($F(1,85) = 1.94$, $p = 0.17$, $\eta^2 = 0.02$), so this was dropped from further models. As this study was exploratory, we did not have an a-priori hypothesis that SCRQoL would decline significantly outside of office hours. To understand what might be contributing to this, we ran non-parametric correlations between both SCRQoL scores and resident characteristics that have been associated with SCRQoL in the past (Netten, Trukeschitz, et al., 2012); age, number of ADLs the person can perform independently (0–9) and cognitive performance (MDS). These are reported in **Table 5**. SCRQoL was significantly related to cognitive performance ($p < 0.01$) and not significantly associated with age at both time points. However, it was only associated with the number of activities of daily living residents could complete without help when SCRQoL was measured outside of office hours ($p < 0.01$). This suggests that people requiring more help had worse quality of life in the evenings and on the weekends, which is something we explored in the general linear model reported below.

At the home-level, there is evidence from previous research (Forder & Allen, 2014; Netten, Trukeschitz, et al., 2012) and data from the care regulator (Care Quality Commission, 2017) that the type and size of home can have an impact on quality, with larger homes and homes registered for nursing often having poorer outcomes for residents. However, correlations revealed no association between size of home and SCRQoL during office hours ($rs = –0.08$, $p = 0.45$) or in the evenings/weekends ($rs = –0.06$, $p = 56$). Furthermore, SCRQoL did not vary by registration category (nursing/residential) during office hours ($U = 1091.5$, $p = 0.76$) or outside of office hours ($t(97) = 0.37$, $p = 0.71$). Therefore, these were not included in the analysis of covariance.

A repeated measures analysis of covariance was conducted with SCRQoL as the dependent variable and ADL count as a covariate. Home ID was included as a between subjects factor to control for clustering in the analysis. Ability to perform ADLs without help was bordering on significance ($F(1, 75) = 3.87$, $p = 0.05$, $\eta^2 = 0.05$) but the

Table 4: Comparing the distribution of quality of life states in each domain during and outside of office hours.

Domain	During office hours (n = 99)	Out of office hours (n = 99)
Food and drink	Z = –2.79, p = .005	
Ideal state (n)	33	21
No (unmet) needs (n)	58	59
Some (unmet) needs (n)	8	19
High (unmet) needs (n)	0	0
Accommodation cleanliness and comfort	Z = –2.05, p = .051	
Ideal state (n)	57	47
No (unmet) needs (n)	38	47
Some (unmet) needs (n)	4	5
High (unmet) needs (n)	0	0
Personal cleanliness and comfort	Z = –2.23, p = .035	
Ideal state (n)	64	45
No (unmet) needs (n)	26	49
Some (unmet) needs (n)	8	4
High (unmet) needs (n)	1	1
Social participation	Z = –6.21, p = .000	
Ideal state (n)	32	15
No (unmet) needs (n)	42	24
Some (unmet) needs (n)	24	51
High (unmet) needs (n)	1	9
Occupation	Z = –6.13, p = .000	
Ideal state (n)	32	12
No (unmet) needs (n)	33	22
Some (unmet) needs (n)	29	50
High (unmet) needs (n)	5	15
Control over daily life	Z = –5.83, p = .000	
Ideal state (n)	23	12
No (unmet) needs (n)	55	37
Some (unmet) needs (n)	21	46
High (unmet) needs (n)	0	4
Safety	Z = –4.53, p = .000	
Ideal state (n)	57	35
No (unmet) needs (n)	38	53
Some (unmet) needs (n)	4	11
High (unmet) needs (n)	0	0
Dignity	Z = –2.32, p = .032	
Ideal state (n)	42	29
No (unmet) needs (n)	48	59
Some (unmet) needs (n)	9	10
High (unmet) needs (n)	0	1

* Results of a Wilcoxon signed-rank test, using 2-tailed exact significance.

Table 5: Correlations between resident characteristics and SCRQoL during and outside of office hours.

Variables	SCRQoL (office hours)	SCRQoL (outside office hours)	Age	ADLs	MDSCPS
SCRQoL (office hours)	1	0.67**	0.08	0.14	–0.31**
SCRQoL (outside office hours)		1	0.01	0.36**	–0.39**
Age			1	.17	–0.32**
ADLs				1	–0.48**
MDSCPS					1

Spearman's rho * $p < 0.05$, ** $p < 0.01$.

effect size was very small. However, including it in the analysis meant the interaction between individual homes and SCRQoL was reduced to non-significance ($F(12, 75) = 1.73$, $p = 0.08$, $\eta^2 = 0.22$). There was still a significant main effect of time ($F(1,75) = 55.29$, $p < 0.001$, $\eta^2 = 0.42$), meaning that even after controlling for ability to perform activities of daily living and clustering within homes, SCRQoL was significantly poorer outside of office hours.

Discussion, limitations and implications

This study is the first to explore the temporal nature of quality of life in care homes for older adults. It compared residents' lives during office hours with their experiences outside of this time, focusing specifically on early evenings and weekends. Our analysis found that residents experienced a worse quality of life outside of office hours compared to during them, even when we controlled for variables known to impact on quality of life. The data also pointed to larger differences in the higher order domains between office hours and outside office hours compared to the more basic domains.

The study struggled to explain this variation and this is perhaps evidence of its limitations. This work was both exploratory and small in size, with data collection encompassing just 99 residents in 13 homes. Further work, with preferably a much larger sample, is required to explore the generalisability of the findings and investigate *why* there might be a difference in the quality of life experienced by residents across the week. Our work suggests a couple of avenues where specific focus may be fruitful. The first of these is the level of impairment of residents. The analysis presented above notes the borderline significance of ADL count to variance in SCRQoL, albeit with a very small effect size. This suggests that residents who struggle to carry out daily activities without help might experience a larger decline in quality of life out of office hours, compared to those who are able to carry out activities of daily living without any difficulties. While our work does not provide robust evidence for this relationship, it does make the case for future work to explore this.

The second area of focus for future work is the people who support care home residents. This is primarily staff in the home, but also extends to the visitors residents may have. Our study did not collect data on either of these groups, but reflections on the observations conducted outside of office hours suggest that they may have explanatory value, especially in the case of care home staff. Reflecting on our own experience of conducting observations outside of office hours, care homes felt much quieter on the evenings and weekends. This was both a combination of feeling that there were fewer staff present and that there were also not many visitors to the home and its residents. Unfortunately, we were not able to quantify any of these observations and were subsequently unable to include this in our analysis. The study did attempt to collect information on staff/resident ratios across the two measurement points, but homes were not able to consistently provide this information. In the few homes that provided ratios, it was evident that while night shifts had lower numbers of staff present, during the daytimes and evenings the ratio of care workers to residents remained fairly consistent.

Homes did, however, report that activity coordinators were active mostly during office hours. Although nowhere near robust enough to include in our analysis, this discovery does seem to reflect the findings of other studies from a range of countries (Cohen-Mansfield et al., 1992; Eyers et al., 2012; Shore et al., 1995; Weinberg et al., 2002) and indeed, one study specifically mentioned the lack of activity co-coordinators at the weekends (Deutschman, 2005). This finding seems to fit with our work on how the individual domains of SCRQoL differ between office hours and out of office hours. Our analysis suggests that the temporal impact on residents' quality of life is greater in the higher order domains (social participation, occupation and control over daily life) compared to the more basic domains. To turn this around, the quality of life experienced by residents in the basic domains fluctuates less over the course of a day or a week. This seems to reflect the staffing patterns we found in the few homes we have data for. Care staff often focus on ensuring that basic needs, such as being kept clean and fed, are met and in their working practices place less emphasis on meeting needs in the higher order domains (Smith et al., 2018). This might be particularly true at times when there are high needs for basic care support such as getting up, mealtimes or going to bed (Eyers et al., 2012). Supporting needs, especially around occupation and social participation, is often the responsibility of activity co-ordinators, who, from our study, are less likely to be employed to work outside of office hours. Future work that explores the temporal nature of residents' quality of life in care homes needs to pay greater attention to the level of support residents receive across the week and

we would advise not just collecting staff/resident ratios, but paying close attention to, and collecting data on, what types of staff are present outside of office hours.

Despite the limitations of this study, this work clearly suggests that there is something different about the experience of residents outside of the usually researched times of Monday to Friday between nine o'clock in the morning and five o'clock in the afternoon, a finding that resonates with the small body of work that looks at night times in care homes (Ellmers et al., 2013; Eyers et al., 2013, 2014; Kerr et al., 2008; Kerr and Wilkinson, 2011; Luff, Ellmers, et al., 2011; Wilkinson, 2011). This finding, albeit tentative, does have a number of implications. Owing to the study's inability to robustly explain the variation between the two measurement time points, we are concentrating on implications for research, but there is clearly a need for homes to address residents' lives at weekends and in the evenings.

Most of what we know about the experience of living in an older adult care home comes from research carried out during office hours (Ellmers et al., 2013), and indeed the same is true of most attempts to inspect and monitor care homes. This study suggests that previous work might only be providing a partial view. The lived experience of those who reside in older adult care homes is not just comprised of what happens on a weekday between nine and five but reflects the whole day and the whole week. If we are to understand and help improve the lives of older people living in care homes, we need studies that reflect their whole experience. This requires researchers to think about how they collect data that reflects residents' entire experience including at the weekends, during the evenings and throughout the night.

Conclusion

This is the first study to compare the care-related quality of life of residents in older adult care homes during office hours and outside of office hours. Specifically, it showed that residents experienced a worse quality of life during weekends and evenings compared to office hours and that much of this difference can be accounted for by differences in the higher order domains. This study challenges the traditional model of care, in which social activities and meaningful pastimes are mostly organised during 'office hours'. We observed evenings that were very short, as residents tended to return to their room shortly after dinner, and quiet weekends and this was reflected in residents' quality of life. This is contrary to the rhetoric of care homes being people's own homes, where they would be able to choose to remain active and engaged into the evening and on the weekends, as they may have done throughout their lives. While the exploratory nature of the study meant that we were unable to explain the variance in quality of life robustly, the study pointed to a few possible explanations, in particular staff ratios and roles, which may guide further work. The study also suggests that future work which focuses on either resident outcomes or the experience of living in a care home, cannot focus solely on what happens during office hours. Work that wishes to understand and improve care homes residents' lives needs to widen its perspective and include weekends, evenings and night times.

Ethics and consent

This paper reports on The Measuring Outcomes of Care Homes (MOOCH) study funded by the National Institute for Health Research (NIHR) School for Social Care Research (SSCR) over three years (2015–2018). Project reference: C088/CM/UKJF-P69.

Ethical approval was granted by the National Social Care Research Ethics Committee (15-IEC08_0061). Informed consent was obtained from participants with capacity. Participants without capacity, under the MCA (2005), were included in the research following agreement from personal consultee.

Acknowledgements

The authors would like to thank all the residents, family members, staff and homes who took part in this research and the local authorities who supported it. Thank you to our advisory group for their valuable advice and support throughout the project. Thank you also to our colleagues Jacinta Babaian and Madeline Naick for their assistance with some of the data collection and entry.

Competing interests

The authors have no competing interests to declare.

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How to cite this article: Smith, N, Towers, A-M, Palmer, S and Collins, G. 2019. Quality of Life in Older Adult Care Homes: Comparing Office Hours with Out-of-Office Hours. *Journal of Long-Term Care*, (2019), pp. 153–163.

Submitted: 04 October 2019 **Accepted:** 04 October 2019 **Published:** 11 November 2019

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Journal of Long-Term Care is a peer-reviewed open access journal published by International Long-Term Care Policy Network based at the London School of Economics and Political Science. OPEN ACCESS