

# Variations in user-oriented elderly care: a multilevel approach

Ali Kazemi and Petri Kajonius

*School of Health and Education, University of Skövde, Skövde, Sweden*

Received 2 June 2016  
Revised 10 August 2016  
Accepted 6 October 2016

## Abstract

**Purpose** – National Board of Health and Welfare claims that the quality of elderly care services differ considerably between municipalities in Sweden. This study aims to analyze to what extent these variations can be accounted for by the older person's municipality affiliation (i.e. receiving elderly care in a certain municipality).

**Design/methodology/approach** – Addressing this issue, national survey data from 78,538 older respondents receiving elderly care services in Sweden were analyzed using multilevel modeling (MLM).

**Findings** – The results showed that municipality affiliation only marginally explained the variance in satisfaction with care, i.e. its variations were larger within than between municipalities. Instead, user-oriented care accounted for the variation in satisfaction with care. Specifically, the way the care workers behave toward the older person proved to be much more crucial for satisfaction with care than municipality affiliation. Moreover, random effects analyses revealed that the effects of user-oriented care on satisfaction with care varied across municipalities. Care setting (i.e. home care or nursing home) only marginally accounted for its variance.

**Practical implications** – Developing care quality should start and primarily be discussed at the interpersonal care level, and not, as is customary, at the municipality level.

**Originality/value** – The present research is the first in its kind to quantitatively investigate the sources of variation in perceived quality of Swedish elderly care using MLM.

**Keywords** Quality of care, Home care, Client satisfaction, Nursing home, Elderly care, User-oriented care, Person-centred care, Individualized care

**Paper type** Research paper

In a majority of Western welfare states, the dominant and growing approach in contemporary elderly care is user-oriented care, also called individualized care (National Board of Health and Welfare, 2007, 2012). This care ideology is characterized by a focus on being service-minded and responsive to clients' needs and preferences in everyday life, ultimately aiming at increasing the older clients' satisfaction (Stewart, 2001; Tellis-Nayak, 2007). Sweden is known for being one of the most successful European countries in providing elderly care services, which besides other indicators is evident in the number of satisfied older persons using these services (Genet *et al.*, 2011; Statistics Sweden, 2013). The National Board of Health and Welfare in Sweden, a government agency under the Ministry of Health and Social Affairs, is responsible for supervising



municipalities to ensure high-quality care without regional variations in the country. Occasionally, media highlight anecdotes of failure in some municipalities concerning their quality of elderly care. This has led policymakers and citizens to believe that quality of care to a large extent is determined by living in a certain municipality. The debate on inter-municipality differences has gained momentum since the launch of the annual surveys of elderly care services in 2007 by the National Board of Health and Welfare in Sweden. The present research is the first systematic attempt to investigate the sources of variation in perceived quality of Swedish elderly care (i.e. satisfaction with care and indicators of user-oriented care) using a multilevel approach. That is, to the extent that there are variations in perceived quality of elderly care, at what level can we best explain these variations, i.e. at the interpersonal care process level or at the municipality level?

The elderly care sector in Sweden, which consists of home care and nursing home care, is growing and currently covers more than 20 per cent of the population aged 65 years or over. The proportion of older persons in the coming years is expected to further rise, and this entails challenges in providing and maintaining high-quality elderly care (Bergman *et al.*, 2012). Because of this, it is crucial to identify the predictors of successful elderly care and to study variations in quality of care.

Quality of care has, in previous research, been defined in various ways. A widely used conceptualization is the one advanced by Donabedian (1988). Donabedian provides a tripartite view of quality of care, according to which, quality of care may be decomposed into structure, process and outcome. Structure pertains to the defining features of the context of care and affects as such the conditions of caregiving. Examples of structural factors are budget resources, staff training and facilities. Process refers to various acts of caregiving and how these acts are enacted. Outcome denotes all the results of acts of caregiving as well as structural resources. In the present study, care process is operationalized in terms of indicators of what has been called user-oriented care (Kazemi and Kajonius, 2015), and outcome of care is assessed in terms of older person's satisfaction with care.

### User-oriented care and satisfaction with care

In Sweden, user-oriented care denotes an emerging ideology in elderly care (National Board of Health and Welfare 2008). Adopting this approach means putting the needs, wants, preferences and limitations of the older person (i.e. user) instead of the demands and administrative routines of the care system at the center of care planning and caregiving (Kajonius and Kazemi, 2016a; Kazemi and Kajonius, 2015). Concepts of individualized care or person-centered care (McCormack, 2004), quality of life (Terada *et al.*, 2013), user participation and user control (Stewart, 2001), autonomy (Custers *et al.*, 2012), encouragement (Dewar and Nolan, 2013), fair treatment (voice), personal worth and social status (Lind and Tyler, 1988) and empowerment (Ghayle *et al.*, 2000) are, therefore, highly essential to the user-oriented care approach.

In analyses of national elderly care surveys in Sweden, structural variables such as budget per older person and care personnel certification have revealed no relationships with satisfaction, whereas staffing and budget per capita have been shown to be weakly associated with satisfaction. More importantly, this previous research has convincingly demonstrated that satisfaction with care is mainly predicted by the experience of the care process at the interpersonal level (Kajonius and Kazemi, 2016c). Care process was tapped by ratings of how the older person perceived information sharing, respect from the care workers

and influence in the care planning process. These variables were in the present study used as indicators of user-oriented care. Furthermore, [Kajonius and Kazemi \(2016d\)](#) reported positive effects of two other user-oriented care indicators, namely, treatment and safeness (also used in the present research), in mitigating the effect of loneliness on satisfaction with care. The relationship between interpersonal process quality care indicators and satisfaction with care has been confirmed by a number of empirical studies conducted in different countries and settings ([Berglund, 2007](#); [Murphy et al., 2007](#)).

### The present research

It is reasonable to assume that some municipalities are more successful than others in providing user-oriented care, as seen from the older person's perspective. Thus, we ask, in this research, whether receiving care in a certain municipality accounts for older persons' satisfaction and their perceptions of quality of care. All older persons responding to national surveys belong to and receive care in a certain municipality. All older persons also belong to one of two care settings, i.e. they either receive home care or live in a nursing home. These affiliations could potentially have an impact on perceptions of user-oriented care. The present study aims to analyze whether the variations in perceived quality of care are larger between than within the municipalities. Gaining knowledge about this should prove to have a large impact on future quality developments.

### Methods

Data were retrieved from the [National Board of Health and Welfare \(2012\)](#). These data were collected in collaboration with the Swedish Association of Local Authorities and Regions. The national survey was administered by Statistics Sweden and sent out by mail to a sample of persons aged 65 years and older, using elderly care services in 324 Swedish municipalities and districts. A letter accompanying the survey explained to the respondents that partaking in the study was voluntary. This letter explained that if the older person was not able to fill out the questionnaire herself/himself, s(he) could ask for assistance from a trustee or an acquaintance. The survey was approved by the National Committee for Ethics. All the responses were read by machine, and participants were guaranteed confidentiality and anonymity.

The survey included 31 questions. The items analyzed in the present study asked the participant to evaluate quality of care in terms of satisfaction with care and interpersonal/process care. The selected variables were deemed adequate in describing user-oriented care ([Kajonius and Kazemi, 2016c, 2016d](#)) – “Overall, how satisfied are you with your nursing home/home care?” (Satisfaction with care), “Do the staff usually inform you beforehand about changes?” (Information), “Do the staff respect your wishes and opinions about the care you receive?” (Respect), “Can you usually influence the time for receiving care?” (Influence), “Do the staff treat you in a good way?” (Treatment) and “How safe do you feel at your nursing home/with your home-based care?” (Safeness). All questions were answered on 5-point rating scales, ranging from (1) indicating the lower end of the scale to (5) indicating the higher end of the scale.

Only municipalities with  $N > 100$  respondents were included in the analyses to enable meaningful comparisons between the municipalities and to avoid spurious fluctuations due to some extremely small and heterogeneous samples. The total number of municipalities and districts and the total number of participants analyzed were 189 and 78,538, respectively.

In home care, the response rate was 70 per cent, and in nursing homes, 54 per cent. In home care, 24 per cent reported that they had received help in responding to the questionnaire. In nursing homes, the corresponding rate was 61 per cent.

### *Analytical approach*

First, analysis of variance (ANOVA) was used to investigate the effect of municipality affiliation on satisfaction with care and indicators of user-oriented care. Total variance in ANOVA is partitioned into within- and between-subjects variance. Second, as older persons' ratings of quality of care (Level 1) can be conceived as nested in a municipality (Level 2), multilevel modeling (MLM) was conducted using IBM SPSS Statistics. MLM can be understood as a series of nested regression analyses in which the coefficients are estimated at different levels (Field, 2013). Besides being an alternative to ordinary least squares (OLS) regression analysis when assumptions of linearity, normal distribution and dependency of observations are violated, MLM allows for a detailed analysis of sources of variance in which both fixed and random coefficients are estimated.

All predictors were grand mean centered in the MLM analyses. This procedure refers to transformation of raw scores into deviations around a fixed point which, in our case, was the grand mean (Enders and Tofghi, 2007). This procedure is undertaken to combat multicollinearity and potentially skewed variables. Besides these aims, centering predictors on their mean changes the meaning of intercept in that the value of the outcome equals the value of the intercept when all the predictors in the model are at the value of their respective mean.

In addressing the question of whether municipality can explain variance in quality of care, the MLM analyses were conducted in several steps. Restricted maximum likelihood was used as estimation method. First, a null model was estimated with satisfaction at Level 1 and municipality affiliation at Level 2. A null model does not include any independent or explanatory variables and aimed in this case to provide an estimate of how much satisfaction with care varied within and between municipalities. In this model, the intercept was set to vary across municipalities (i.e. the random intercept model). This estimate provides an indication of the older persons' level of satisfaction depending on where they receive elderly care services. From this analysis, intraclass correlation coefficient (ICC) was calculated. The ICC measures the percentage of similarity between observations belonging to the same cluster (i.e. a municipality in the current case). Expressed differently, ICC can be defined as the proportion that the group level or cluster contributes to the total variance. The smaller the variance is within the groups, the larger is the ICC.

Subsequent to the estimation of the null model, indicators of user-oriented care (i.e. information, respect, influence, treatment and safeness) were entered as fixed effects predictors (Level 1) of satisfaction with care. Another advantage of MLM as compared to OLS regression is the possibility of estimating random slopes instead of one fixed regression line for a certain predictor. Thus, next, random effects analysis (i.e. allowing the slopes of the predictors to vary across Level 2) was conducted to explore whether user-oriented care indicators had differential effects on satisfaction with care across the municipalities.

Finally, as an attempt to explain the variation of user-oriented care indicators across the municipalities, care setting (i.e. home care vs nursing home) was entered into the analysis as a Level 2 predictor. Specifically, an interaction term between care setting and user-oriented care was specified. Prior to this, the five indicators of user-oriented care were averaged into a user-oriented care index (Cronbach's  $\alpha = 0.77$ ).

## **Results**

Six one-way ANOVAs with municipality as independent variable and the indicators of user-oriented care and satisfaction with care as dependent variables were conducted. The results are reported in Table I, each row presents the results of each ANOVA. Municipality affiliation accounted for a very small amount of variance in the dependent variables, ranging from 1 to 3 per cent as indicated by partial  $\eta^2$ .

**Table I.**  
Effects of municipality  
affiliation on user-  
oriented care  
indicators

Another potential source of variation was care setting. Thus, differences between home care and nursing home concerning perceptions of user-oriented care and satisfaction with care were tested using independent samples *t*-tests. The results are reported in Table II. Information showed the largest difference between the care settings, and influence showed the smallest difference. All differences were statistically significant and Cohen's *ds*[1] indicated small to medium effect sizes.

Given the hierarchical nature of the data, that is, the individual older persons being nested within various municipalities, the data were further analyzed using MLM. Thus, a two-level model was constructed with older persons at Level 1 (*N* = 78,538) and municipalities and districts with more than 100 respondents at Level 2 (*N* = 189).

First, a null model was estimated with satisfaction at Level 1 and municipality affiliation at Level 2. This analysis revealed that the average satisfaction with care varied significantly across municipalities (0.01, *Wald Z* = 7.84, *p* < 0.001). The residual variation (i.e. variation in satisfaction with care within municipalities) was also significant (0.67, *Wald Z* = 191.36, *p* < 0.001). The minus two times the restricted log of the likelihood of the model (*-2RLL*) was 179,555.15. ICC was 0.02, indicating that the inter-municipality variation in satisfaction was very small. Values below 0.05 are generally considered small (Field, 2013). Thus, older persons reported different levels of satisfaction depending on where they lived, but this effect

Variables	Sum of squares	Mean square	df	<i>F</i>	Residuals	Eta <sup>2</sup>
Information	3307.37	9.70	188	17.59	119532	0.03
Respect	981.00	7.02	188	5.22	50298	0.02
Influence	2027.30	6.85	188	10.78	105311	0.02
Treatment	466.01	7.26	188	2.48	25674	0.02
Safeness	668.73	3.56	188	3.56	47903	0.01
Satisfaction	1219.44	6.49	188	9.65	49214	0.02

**Note:** *N* = 78,538. All *F*-values were significant at *p* < 0.001

**Table II.**  
Differences in user-  
oriented care  
indicators and  
satisfaction with care  
across care settings

Indicators	Care setting	Means	SD	df	<i>t</i>	Cohen's <i>d</i>
Information	Home care	3.79	1.33	66102	55.52***	0.62
	Nursing home	3.14	1.33			
Respect	Home care	4.23	0.85	67816	30.87***	0.32
	Nursing home	4.00	0.91			
Influence	Home care	3.44	1.27	67048	5.39***	0.06
	Nursing home	3.38	1.25			
Treatment	Home care	4.71	0.55	75336	46.37***	0.44
	Nursing home	4.49	0.64			
Safeness	Home care	4.24	0.82	72260	-10.56***	-0.10
	Nursing home	4.31	0.83			
Satisfaction	Home care	4.31	0.79	73427	33.18***	0.26
	Nursing home	4.09	0.89			

**Notes:** \*\*\**p* < 0.001. The standard error mean was below 0.01 for all variables. Cohen's *d* is a measure of effect size and indicates the size of difference in means between care settings in standard deviation units in a normal distribution. For instance, a value of 0.62 is equivalent to an approximate of 73% in home care to have scored higher on information than the average in nursing homes. Safeness was the only indicator that was rated higher in nursing homes

was too weak. In other words, there were much more variance to be explained within than between the municipalities.

Next, as the variation within than between municipalities was much larger, user-oriented care indicators were entered as fixed effects predictors of satisfaction into the analysis. Intercepts were estimated as random parameters in this analysis. The regression coefficients for all user-oriented care indicators are shown in the upper part of Table III. The results showed that safeness and treatment accounted for most of the variation in satisfaction with care, while influence accounted for the least. In this model, the residual variation (i.e. unexplained variance) decreased from 0.67 in the null model to 0.30, indicating that these Level 1 predictors were effective in accounting for a considerable amount of unexplained variance in satisfaction with care ( $-2RLL = 88,239.79$  as compared to 179,555.15 in the null model).

Previous analyses showed that satisfaction with care varied only to a small extent across municipalities, and that all user-oriented care indicators significantly accounted for the variation in satisfaction. Next, we conducted a random effects analysis (i.e. setting the slopes to vary across Level 2) to test whether the effects of user-oriented care varied across municipalities. Fixed effects were also estimated. In this way, the fixed effects estimates in this model could be compared with the estimates in the previous model. As the effects of the predictors were allowed to vary across municipalities, the fixed effects estimates in the random model can be interpreted as the average effect of a particular predictor[2]. The results are shown in the lower part of Table III;  $-2RLL$  was 88,099.88, indicating a small decrease compared to the previous fixed effects model. Moreover, the results showed that the effects of all indicators, except for influence ( $p = 0.078$ ), varied significantly across municipalities.

As the random effects model revealed that the effects of user-oriented care varied across municipalities, an additional analysis was conducted. Specifically, care setting was entered into the analysis as a dummy coded predictor. Home care was coded 0 (i.e. the reference category) and nursing home 1 (i.e. the comparison group). Prior to this analysis, the five indicators of user-oriented care were averaged to build a user-oriented care index. This analysis made it possible to explore the effects of another source of variation, but also to study the interaction between a Level 1 variable (user-oriented care) and a Level 2 variable (care setting) in accounting for the variation in satisfaction with care. Results of this analysis

Model parameters	Estimate	SE	<i>t</i>
<i>Fixed effects</i>			
Intercept	4.26	0.00	1017.06***
Information	0.07	0.00	32.14***
Respect	0.21	0.00	55.85***
Influence	0.03	0.00	12.83***
Treatment	0.33	0.01	63.32***
Safeness	0.35	0.00	97.70***
<i>Random effects (variance estimates)</i>			<i>Wald Z</i>
Residual	0.3013	0.00	162.03***
Intercept	0.0018	0.00	5.04***
Information	0.0003	0.00	2.49*
Respect	0.0008	0.00	2.46*
Influence	0.0002	0.00	1.76
Treatment	0.0018	0.00	2.72**
Safeness	0.0019	0.00	3.83***

**Notes:** \*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$ .  $N = 78,538$  (Level 1).  $N = 189$  (Level 2)

**Table III.**  
MLMs with user-oriented care indicators as predictors of satisfaction with care



are shown in Table IV;  $-2RLL$  was 96,480.64, indicating an increase compared to the previous analysis. The fixed effects part of the analysis revealed a positive and significant relationship between user-oriented care and satisfaction. This coefficient shows the effect of user-oriented care for older persons in home care (home care was coded 0, i.e. the reference category, in the analysis). The coefficient for care setting was significant and shows the difference in satisfaction between home care and nursing home when user-oriented care is at its average in the sample. Interestingly, the size of the difference in satisfaction between the two care settings, as reported previously (0.22) (Table II) was reduced to 0.08. This indicates that when user-oriented care is at its average level the differences between the care settings diminish. This difference was reversed in favor of nursing home, as indicated by the negative sign of the coefficient for care setting. The random effects part of the analysis showed that the residual had increased to 0.35 (from 0.30 in the previous analysis) and that the main effects of user-oriented care and care setting as well as their interaction varied across municipalities. In particular, although the variance estimate of user-oriented care had decreased from 0.0053 to 0.0045 it still was significant. In summary, adding care setting to the analysis did not explain much of the variation in user-oriented care.

Discussion

Analyses of research results usually use traditional approaches to data analyses, such as ANOVA and/or OLS-based regression analyses in that they focus on differences in group means or relations between variables. In contrast, modeling *variability* of the data as a function of a number of predictor variables is less common and known to researchers (Kuppens and Yzerbyt, 2014). The present research modeled variability in perceived quality of care using multilevel analysis. The results showed that variations in satisfaction with care and user-oriented care were marginally accounted for by municipality affiliation. This finding is at odds with reports from the National Board of Health and Welfare as well as the media and the public opinion often claiming that differences between municipalities are large and that the elderly care sector struggles with disquieting regional inequality in care (Kajonius and Kazemi, 2014).

Because of the exaggeration of inter-municipality differences in elderly care and an erroneous overestimation of the role of municipalities in this regard, organizational and structural changes have been carried out. Implementation of these changes has incurred costs which could have been put into other more meaningful and impactful quality improvement measures (cf. Barends *et al.*,

Table IV.  
MLM with user-oriented care index (Level 1) and care setting (Level 2) as predictors of satisfaction with care

Model parameters	Estimate	SE	t
<i>Fixed effects</i>			
Intercept	4.28	0.01	764.00***
UCI	0.73	0.01	102.79***
Care setting	-0.08	0.01	-0.8.64***
Care setting × UCI	0.07	0.01	6.58***
<i>Random effects (variance estimates)</i>			<i>Wald Z</i>
Residual	0.3526	0.00	162.55***
Intercept	0.0034	0.00	6.06***
UCI	0.0045	0.00	4.84***
Care setting	0.0036	0.00	3.57***
Care setting × UCI	0.0034	0.00	2.23*
<b>Notes:</b> UCI = user-oriented care index. Care setting as dummy coded (Home Care = 0, Nursing Home = 1); *** $p < 0.001$ , ** $p < 0.01$ , * $p < 0.05$ , $N = 78538$ (Level 1), $N = 189$ (Level 2)			

2013). Using MLM offers a scientific basis for guiding decisions about the level at which changes aiming at quality improvements should be carried out. This is important as every change and measure to be taken incurs monetary costs. Our results suggest that the interpersonal level (i.e. the relationship and the interaction between the care workers and the older person) appears to be crucial for providing user-oriented care and seem to increase the older persons' satisfaction with care. As such, our results to some extent disconfirm the usefulness of changes at organizational levels, which has received the most attention by policymakers. Overall, considering the small ICCs reported in our research, it appears that satisfaction with care does not easily let itself to be controlled at the municipality level.

### *Explaining differences*

Why do municipalities show some, although small, differences in their quality of elderly care? Inter-municipality differences may, to some extent, depend on how municipalities organize their work and implement their care policies (Kajonius and Kazemi, 2016b). To the extent that these differences are stable over time, other factors may also be important to consider. According to recent field studies (Kajonius and Kazemi, 2016a), it seems far-fetched to suggest that care workers in some municipalities would provide less good care than their colleagues in some other municipalities. Instead, we suggest that these differences to some extent could be explained by psychological processes involved in making evaluations. Specifically, what apart from the actual experiences of care recipients could possibly influence their evaluations of the municipality or the care setting providing care? All types of evaluations require an object of comparison (Jylhä, 2009), and it is likely that a range of individual and relational factors are at play in making evaluations about one's satisfaction, mental well-being, and health (Aartsen, and Jylhä, 2011). The lower ratings obtained in nursing homes, for instance, could depend on poorer health status among the residents. Similarly, reading the news, overhearing stories about one's municipality or even pride of one's hometown might influence the evaluation of care. This is nicely illustrated in the quality agents model described in Kajonius and Kazemi (2016a). The point is that the systematic differences in user-oriented care between the municipalities might not only depend on actual quality differences in interpersonal care, but also on circumstances and random variations beyond the control of the care worker or the care organization. This interpretation confirms the experiences of many elderly care workers (Öhlen *et al.*, 2013).

### *Limitations*

The low response rate among the older persons could potentially be regarded as a problem for the representativeness and the interpretation of the results. However, there is some evidence that non-responders do not differ from responders (Lasek *et al.*, 1997). A second concern is whether the opinions of the older persons are being truly expressed. Combined with a low response rate, this could potentially skew the representativeness of the results. A third issue is the use of single items in the questionnaire, which could be systematically misunderstood by individuals or groups of individuals, and adversely affect the reliability and validity of the measures. However, using single items has in some cases proven to be successful in psychological inquiries (Yarkoni, 2010).

### *Concluding remarks*

The strength of the present research was the large nationwide sample. Given the size of the sample, the probability of finding spurious relationships was substantially reduced, thus, lending credibility to the obtained results. A conclusion is that differences between municipalities and the importance assigned to ranking municipalities based on these differences are exaggerated and that this trend, as such, may encourage misdirected quality improvement efforts. We believe that



the present study has significantly contributed to our understanding of variability in the perceived quality of elderly care and how it can be explained.

### Notes

1. Cohen's  $d$  is a measure of effect size and complements the independent samples  $t$ -test when means of two groups are compared (Cohen, 1992). It is based on the normal distribution and is measured in standard deviation units. Cohen's  $d$  is determined by calculating the mean difference between the two groups, and then dividing the result by the pooled standard deviation. Effect size is an aggregate measure of the size of difference between two groups ( $d = 0.20$  [small effect],  $d = 0.50$  [medium effect] and  $d = 0.80$  [large effect]; Cohen, 1992). For instance, a difference of one standard deviation ( $d = 1$ , i.e., a large effect) indicates that 85 per cent of people in one of the two groups have scored above the average for the other group.
2. As the fixed effects estimates were shown to be nearly identical in size and effect, they are not reported.

### References

- Aartsen, M. and Jylhä, M. (2011), "Onset of loneliness in older adults: results of a 28 year prospective study", *European Journal of Ageing*, Vol. 8 No. 1, pp. 31-38.
- Barends, E., Janssen, B., ten Have, W. and ten Have, S. (2013), "Effects of change interventions: what kind of evidence do we really have?", *The Journal of Applied Behavioral Science*, Vol. 50 No. 1, pp. 5-27.
- Berglund, A.L. (2007), "Satisfaction with caring and living conditions in nursing homes: views of elderly persons, next of kin and staff members", *International Journal of Nursing Practice*, Vol. 13 No. 1, pp. 46-51.
- Bergman, M.A., Lundberg, S. and Spagnolo, G. (2012), *Public Procurement and Non-contractible Quality: Evidence from Elderly Care*, Umeå University, Department of Economics, Umeå.
- Cohen, J. (1992), "A power primer", *Psychological Bulletin*, Vol. 112 No. 1, pp. 155-159.
- Custers, A.F.J., Westerhof, G.J., Kuin, Y., Gerritsen, D.L. and Riksen-Walraven, M. (2012), "Relatedness, autonomy and competence in the caring relationship: the perspective of nursing home residents", *Journal of Aging Studies*, Vol. 26, pp. 319-326.
- Dewar, B. and Nolan, M. (2013), "Caring about caring: developing a model to implement compassionate relationship centred care in an older people care setting", *International Journal of Nursing Studies*, Vol. 50 No. 9, pp. 1247-1258.
- Donabedian, A. (1988), "The quality of care: how can it be assessed", *JAMA*, Vol. 260 No. 12, pp. 1743-1748.
- Enders, C.K. and Tofighi, D. (2007), "Centering predictor variables in cross-sectional multilevel models: a new look at an old issue", *Psychological Methods*, Vol. 12 No. 2, pp. 121-138.
- Field, A. (2013), *Discovering Statistics Using SPSS*, 4th ed., Sage Publishing, London.
- Genet, N., Boerma, W.G., Kringos, D.S., Bouman, A., Francke, A.L., Fagerström, C., ... & Devillé, W. (2011), "Home care in Europe: a systematic literature review", *BMC Health Services Research*, Vol. 11, 207.
- Ghaye, T., Gillespie, D. and Lillyman, S. (2000), *Empowerment Through Reflection: The Narratives of Healthcare Professionals*, Mark Allen Publishing Group: Quay Books Division.
- Jylhä, M. (2009), "What is self-rated health and why does it predict mortality? Towards a unified conceptual model", *Social Science & Medicine*, Vol. 69 No. 3, pp. 307-316.
- Kajonius, P.J. and Kazemi, A. (2014), "Rankning av Sveriges kommuners äldreomsorg i Öppna jämförelser", *Socialmedicinsk tidskrift*, Vol. 91 No. 4, pp. 323-331.
- Kajonius, P.J. and Kazemi, A. (2016a), "Advancing the Big Five of user-oriented care and accounting for its variations", *International Journal of Health Care Quality Assurance*, Vol. 29 No. 2, pp. 162-176.

- Kajonius, P.J. and Kazemi, A. (2016b), "Organizing principles and management climate in high-performing municipal elderly care", *Leadership in Health Services*, Vol. 29 No. 1, pp. 82-94.
- Kajonius, P. and Kazemi, A. (2016c), "Structure and process quality as predictors of satisfaction with elderly care", *Health & Social Care in the Community*, Vol. 24 No. 6, pp. 699-707.
- Kajonius, P. and Kazemi, A. (2016d), "Safeness and treatment mitigate the effect of loneliness on satisfaction with elderly care", *The Gerontologist*, Vol. 56 No. 5, pp. 928-936.
- Kazemi, A. and Kajonius, P. (2015), "User-oriented elderly care: a validation study in two different settings using observational data", *Quality in Ageing and Older Adults*, Vol. 16 No. 3, pp. 140-152.
- Kuppens, T. and Yzerbyt, V.Y. (2014), "Predicting variability: using multilevel modelling to assess differences in variance", *European Journal of Social Psychology*, Vol. 44 No. 7, pp. 691-700.
- Lasek, R.J., Barkley, W., Harper, D.L. and Rosenthal, G.E. (1997), "An evaluation of the impact of nonresponse bias on patient satisfaction surveys", *Medical Care*, Vol. 35 No. 6, pp. 646-652.
- Lind, E.A. and Tyler, T.R. (1988), *The Social Psychology of Procedural Justice*. Plenum, New York.
- McCormack, B. (2004), "Person-centeredness in gerontological nursing: an overview of the literature", *Journal of Clinical Nursing*, Vol. 13 No. 3, pp. 31-38.
- Murphy, K., Shea, E.O. and Cooney, A. (2007), "Quality of life for older people living in long-stay settings in Ireland", *Journal of Clinical Nursing*, Vol. 16 No. 11, pp. 2167-2177.
- National Board of Health and Welfare (2008), *Brukarinflytande inom Äldreomsorgen*. Socialstyrelsen, Stockholm.
- Öhlén, A., Forsberg, C. and Broberger, E. (2013), "Documentation of nursing care in advanced home care", *Home Health Care Management & Practice*, Vol. 25 No. 4, pp. 169-175.
- Statistics Sweden (2013), Statistiska Centralbyrån, *Befolkningspyramiden för Sverige: Andelen äldre fördubblad på 100 år*, SCB, Stockholm.
- Stewart, M. (2001), "Towards a global definition of patient centred care: the patient should be the judge of patient centred care", *British Medical Journal*, Vol. 322 No. 7284, pp. 444-445.
- Swedish National Board of Health and Welfare (2007), *Vård och Omsorg om Äldre 2007*, Socialstyrelsen: Stockholm.
- Swedish National Board of Health and Welfare (2012), *Vård och Omsorg om Äldre 2012*, Socialstyrelsen, Stockholm.
- Tellis-Nayak, V. (2007), "A person-centered workplace: the foundation for person-centered caregiving in long-term care", *Journal of the American Medical Directors Association*, Vol. 8 No. 1, pp. 46-54.
- Terada, S., Oshima, E., Yokota, O., Ikeda, C., Nagao, S., Takeda, N., Sasaki, K. and Uchitomi, Y. (2013), "Person-centered care and quality of life of patients with dementia in long-term care facilities", *Psychiatry Research*, Vol. 205 Nos 1/2, pp. 103-108.
- Yarkoni, T. (2010), "The abbreviation of personality, or how to measure 200 personality scales with 200 items", *Journal of Research in Personality*, Vol. 44 No. 2, pp. 180-198.

### Corresponding author

Ali Kazemi can be contacted at: [ali.kazemi@his.se](mailto:ali.kazemi@his.se)