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## **Life-space mobility and quality of life among community-dwelling older people**

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Running head: Life-space mobility and quality of life

## **LETTER TO THE EDITOR**

### **RESEARCH**

#### **Life-space mobility and quality of life among community-dwelling older people**

*To the Editor:* Ability to go where and when a person wants to go is a key determinant of wellbeing in old age.<sup>1</sup> The concept of life-space mobility<sup>2</sup> reflects how much people actually move in the community and exploit community amenities as well as maintain social relationships and roles, and participate in meaningful activities. Life-space mobility correlates e.g. with age, gender, physical functioning, depressive symptoms,<sup>2,3</sup> frailty and mortality,<sup>4</sup> and the physical and mental components of quality of life (QoL).<sup>2</sup> However, QoL is a multidimensional concept which reflects the total wellbeing of a person, and thus also includes social and environmental components. Few studies have focused on life-space mobility and overall QoL among older community-dwelling people, and we are unaware of studies on the association between life-space mobility and the social and environmental domains of QoL. The aim of this study was to examine the association between life-space mobility and different domains of QoL among community-dwelling people.

This paper is based on the baseline data of a project entitled “Life-space mobility in old age” (LISPE). The study design and methods have been reported in detail elsewhere.<sup>5</sup> A total of 848, community-dwelling, 75- to 90-year-old people (mean age 80.1 years, 62% women) were interviewed in their homes. The Ethical Committee of the University of Jyväskylä, Finland, approved the project and all participants signed a written informed consent.

QoL was assessed with the World Health Organization QoL Assessment short version, WHOQOL-BREF.<sup>6</sup> Scores were calculated separately for physical, psychological, social, and

environmental domains. The total QoL score comprising all domains ranges from 0 to 130; higher scores indicate better QoL.<sup>6</sup>

Life-space mobility was measured with the Life-Space Assessment (LSA).<sup>2,5</sup> Four indicators of life-space mobility were calculated: 1) maximal life-space (LSA-M), indicating the greatest distance attained with the help of assistive devices and/or another person if needed; 2) independent life-space (LSA-I), indicating the life-space attained without help from any assistive devices or another person; 3) life-space using assistive devices (LSA-A), indicating the life-space attained using the help of assistive devices if needed but not the help of another person; and 4) a composite score (LSA-C) reflecting distance, frequency and independency of movement (range 0-120); higher scores indicate larger life-space.<sup>2</sup>

Complete QoL data were available for 845 participants. The mean total QoL score was 100.3 ( $\pm$ SD 11.8). The mean LSA-C score was 64.0 ( $\pm$ 20.6). The LSA-C score correlated with all domains of QoL with the strongest correlation observed for the total QoL score (Table 1.) Linear regression analysis was used to assess the strength of the association between life-space indicators and the total QoL score. When adjusted for age and sex, the standardized  $\beta$  was 0.467 ( $p < .001$ ) for LSA-C and the total QoL score. The model explained 23 % of the variation in QoL. For LSA-M, LSA-I and LSA-A the corresponding values were  $\beta = .172$ ;  $\beta = .393$ ,  $\beta = .281$ , for all associations  $p > .001$ . Further adjustment for education, perceived financial position, number of self-reported physician-diagnosed chronic conditions and cognitive impairment slightly reduced the  $\beta$ -coefficients, but all associations remained statistically significant ( $p < .001$ ).

Life-space mobility is associated with all QoL domains and overall QoL. Since a life-space assessment<sup>2</sup> also takes into account the environment in which a person moves, it

is understandable that an association was observed between the environmental QoL and life-space mobility. Environmental factors may support or restrict the ability to move outdoors<sup>7</sup> and to take part in social activities.<sup>8</sup> However, the association between life-space mobility and social QoL was rather weak. It is possible that satisfaction with social life and social contacts are not fully dependent on ability to meet people in person,<sup>9</sup> and presumably, social interaction does also take place within the home. Thus, the size of life-space is not likely to have considerable effect on social QoL.

Of the life-space indicators, LSA-M had the weakest association with overall QoL. Since the measurement of LSA-M does not take into account how or why participants have attained their life-space level, it is possible a participant has been taken by another person, for example to see a doctor. This appears as a larger life-space, despite the fact that the participant has not actively travelled outside home. An increase in life-space of this kind is not likely to improve QoL. It is important that the individual is satisfied with the level and quality of participation.<sup>10</sup>

In conclusion, larger life-space and good QoL coincide among older people, regardless of their health situation. Guaranteeing the possibility to go where and when one wants may promote QoL among older people.

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## **Author Contributions**

The authors are justifiably credited with authorship, according to the authorship criteria.

MR: conception, design, data collection, analysis and interpretation of the data, writing the article; EP: conception, design, data collection, critical revision of the article; AV: conception, design, data collection, critical revision of the article. SI: conception, design, critical revision of the article; TR: conception, design, data collection, critical revision of the article, PI for the LISPE project. All the authors approved the final manuscript.

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Table 1. Spearman Correlation Coefficients between Quality of Life and Life-Space Mobility among Community-Dwelling Older People, N=845.

LSA indicator	QoL total score	QoL domain			
		Physical	Psychological	Social	Environmental
LSA-C	.464**	.490**	.279**	.100**	.373**
LSA-M	.220**	.238**	.111**	.014	.181**
LSA-I	.393**	.449**	.198**	.038	.311**
LSA-A	.308**	.346**	.162**	-.003	.250**

\*\* p < .001

QoL = Quality of Life<sup>6</sup>

LSA= Life-Space Assessment<sup>2</sup>

LSA-C= Life-Space Assessment, Composite score

LSA-M= Life-Space Assessment, Maximal life-space score

LSA-I= Life-Space Assessment, Independent life-space score

LSA-A= Life-Space Assessment, Assisted with mobility device life-space score