

## Research Letter

### Health-related quality of life and depression among older people in Yerevan, Armenia: a comparative survey of retirement home and household residents aged 65 years old and over

#### Background

SIR—For older people (adults aged 65 and older), health-related quality of life (HRQoL) is more than rating their physical health status; emotional and social health are also recognised as very important factors for their well-being [1–4]. Ageing studies show that depressive symptoms among older people are associated with reduced levels of functioning across all the domains in HRQoL [5–9]. Current geriatric research emphasises the importance of improved HRQoL of older people.

The rate of depression in this age group is most likely underestimated because many studies of depression leave out institutionalised patients, including nursing home residents, although they are twice at risk of being depressed than those living with their families [9–11].

About 10.2% of the population in Armenia is 65 or older [12]. Living conditions for the majority of older people have deteriorated since the collapse of the Soviet Union because of ongoing socio-economic transition and malfunctioning of the social support systems. Some older people in Armenia, who are no longer able to care for themselves, rely on public retirement homes (RHs) to get minimal supportive care [13].

In 2004, household (HH) surveys in two provinces of Armenia revealed that the majority of women aged 60 years and over were depressed (about 76% for mainly urban areas and 94% for mainly rural areas) [14, 15]. No studies concerning the HRQoL and/or depression among residents of RHs were previously conducted in Armenia. The experience of other countries and the relevant literature suggested the need to conduct the current study and assess the rate of depression and HRQoL in the older population in Yerevan, including people living in RHs and HHs, and to make comparisons between the two groups.

#### Methods

About 104,000 people aged 65 and older reside in Yerevan, the capital city of Armenia [12]. There are only two public RHs in Yerevan, which provide some social services and limited health care and serve as home to about 450 older people; 28% of them are refugees and 27% from rural areas of Armenia (F. Mushegyan, personal communication) [16]. Simple random sampling was used to select participants for the RH and HH groups in this cross-sectional survey. The study recruited those men and women 65 years old and

older who were residents of Yerevan living in HH or RH and who agreed to participate. Older people with psychiatric diagnoses or those who lived alone were excluded.

The HRQoL of older people was measured by the Short Form 36 (SF-36) questionnaire recognised suitable for use with an older population in a face-to-face interview setting [17–19]. The International QoL Assessment project confirmed the Armenian translation of the SF-36 as pre-publication version in 2001 [20].

The Geriatric Depression Scale (GDS 30) was used to measure the depression score; this self-reported questionnaire was developed and validated for use in the older population as a screening tool for depression [21, 22]. Scores from 0 to 10 were considered as an indication of absence of depressive symptoms, scores from 11 to 20 indicated presence of symptoms of mild depression and scores from 21 to 30 indicated presence of symptoms of severe depression [21, 22]. The authors translated the GDS 30 into Armenian and pre-tested it among 12 older people.

Information on gender was also collected. Data analysis was performed using the SPSS 11.0 and STATA 7.0 statistical software.

#### Results

A total of 205 older people participated in the study, including 104 from RHs and 101 from HHs. The response rate in the RH and HH groups were 83 and 51%, respectively. Since the number of randomly selected participants in the HH group was low (64), an additional 37 participants, selected non-randomly through snowball sampling, were included in the study. The *t*-test analysis did not indicate statistically significant differences in characteristics of randomly selected participants from those selected by snowball sampling. Therefore, the study combined randomly and non-randomly selected participants from HHs into one HH group throughout the study.

The mean age of participants in the RH group was 75.5 (SD 6.3; median 74.3), while in the HH group it was 73.6 (SD 6.4; median 73.1). Male participants comprised 31.0% of the RH group and 33.0% of the HH group. Unlike the HH group, the RH group included refugees and older people who moved to the RHs from rural areas.

#### Quality of life

Independent *t*-test was performed to detect any significant differences in mean scores related to eight domains of SF-36 between the two groups (Table 1). The mean score for physical functioning was statistically significantly higher for the residents of the RHs, while the mean scores for bodily pain, general health, vitality, social functioning and mental health were significantly higher for older people living in the HHs. The current article did not find statistically significant

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differences between the two groups in mean scores for role, physical and emotional.

To reduce the SF-36 summary measures from 8 to 2 without substantial loss of information, the physical component summary (PCS) and mental component summary (MCS) scores were calculated for both groups following the method of Ware *et al.* [18, 23].

The mean PCS score for the RH group was statistically significantly lower than that for the HH group ( $P < 0.01$ ), and the mean MCS score for the RH group was statistically significantly higher than that for the HH group ( $P < 0.001$ ) (Table 1).

### Depression

In the RH group, 24.0% of older people did not have depressive symptoms, 48.1% had symptoms of moderate depression and 27.9% had symptoms of severe depression. In the HH group, only 18.8% did not have depressive symptoms; the rates of people indicating presence of symptoms of moderate and severe depression were 41.6 and 39.6%, respectively. The odds ratio for reporting symptoms of any level of depression in RH group was 0.73 (95% confidence interval 0.37, 1.43).

The associations between dimensions of HRQoL (PCS and MCS) and place of living persisted after adjusting for depression score and gender (Table 2). The risk of having low PCS scores was statistically significantly associated with living in an RH, having symptoms of depression and being a woman.

Living in an HH, having symptoms of depression and being a male were statistically significantly associated with higher risk of having low MCS score among the older population (Table 2).

## Discussion

The assessment of the physical component of the HRQoL revealed that the PCS score was significantly worse in RH group. Despite better physical functioning, older people in RH reported more bodily pain and perceived themselves to be in poor health.

One of the interesting findings of this study was that older people living in RHs reported better MCS score than those living with their families in HHs. Depression-related situation was also better in the RH group: the prevalence of people with symptoms of depression was slightly lower in the RH group compared to the HH group.

Additionally, this study compared the main components of the HRQoL of older people in Yerevan with the US national norms for the population of age 65–74 [18]; this comparison should be treated with caution, as the characteristics of the older population in Yerevan and the US might be different.

The average older person in the US had significantly higher MCS score than the average older resident of Yerevan HHs or RHs ( $P < 0.05$ ). The US national norm for the PCS score was similar or significantly worse than that for the average resident of Yerevan RH or HH, respectively.

**Table 1.** Comparison of eight domains and two summary domains of Short Form 36 (SF-36) between household and retirement home groups

Domains of SF-36	Household	Retirement home	Difference <sup>a</sup>	95%CI <sup>b</sup>	P-value <sup>c</sup>
Physical functioning	45.48	67.28	-21.80	-28.21, -15.37	<0.001
Role – physical	46.87	50.99	-4.11	-11.21, 2.98	0.253
Bodily pain	66.25	50.70	15.54	10.22, 20.87	<0.001
General health	48.79	38.57	10.21	5.09, 15.33	<0.001
Vitality	62.60	34.31	28.29	23.21, 33.36	<0.001
Social functioning	73.56	68.44	5.12	0.31, 9.92	<0.01
Role – emotional	42.63	45.54	-2.91	-11.64, 5.81	0.509
Mental health	58.65	35.80	22.85	18.08, 27.62	<0.001
Physical component summary score	42.67	39.34	-3.32	-5.49, -1.15	<0.01
Mental component summary score	34.09	45.26	11.16	8.93, 13.39	<0.001

<sup>a</sup>Difference between the mean scores for the household group and the retirement home group.

<sup>b</sup>95% confidence interval for the score difference.

<sup>c</sup>P-value of the independent *t*-test (two-tailed).

**Table 2.** Linear regression estimates of associations between summary scores and independent variables

Models	Place of living (95% CI)	Gender (95% CI)	Depression (95% CI)	Coefficient of determination (R <sup>2</sup> )
Model for physical component summary score	5.2** (2.69, 7.76)	-3.1* (-5.83, -0.41)	-0.8** (-0.96, -0.58)	0.33
Model for mental component summary score	-8.6** (-10.79, -6.43)	2.6* (0.29, 4.96)	-1.1** (-1.22, -0.91)	0.58

\* $P < 0.05$ ; \*\* $P < 0.01$ .

The prevalence of people reporting about the presence of depressive symptoms among older residents of Yerevan HHs and RHs was much higher than the prevalence of depression in nursing homes in the US (about 20%) [24]. These high rates among the older people living in RHs and HHs of Yerevan are similar to the numbers reported for two provinces of Armenia [14, 15] and suggest a possibility that there are serious problems with the well-being of this group of population.

These findings should be treated with caution, taking into consideration the limitations of the study. Because of time and resource constraints, a cross-sectional study design was used; a longitudinal assessment with clinical support would be preferable for evaluating changes over time (e.g. before and after entering RHs) and the trajectory of HRQoL outcomes for the older people. The Armenian version of the GDS 30 was only pre-tested and not validated. Not all potential factors were explored that could affect the HRQoL or depression status of older people. Additionally, the RH and HH groups did not have similar demographic characteristics.

Similar studies in the regions of Armenia would be helpful in identifying potential differences between the HRQoL and depression status of rural and urban older population and better understanding of the differences between older people living in HHs and institutions.

#### Key points

- Despite better physical functioning, older people living in RHs of Yerevan, Armenia report more bodily pain and perceive themselves to be in poor health (much lower physical component summary score) than those older people who live in households.
- RH residents' mental performance was significantly better: this group had better mental component score and lower depression rate in Yerevan, Armenia.
- Differences in the health-related quality of life between two groups by place of living persisted even after adjusting for the depression score and gender.
- High depression rates among the older people living in retirement homes and households of Yerevan, Armenia suggest a possibility that there are serious problems with the well-being of this group of population.

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#### Conflicts of interest declaration

All the authors assure that there are no conflicts of interest and therefore have nothing to declare.

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This research was not funded from outside. All the authors devoted their personal time to complete the study.

#### Details of ethics approval

The Departmental Institutional Review Board within the College of Health Sciences at the American University of Armenia approved the research plan prior to implementation of the study. An oral consent was obtained from each respondent after reading a disclosure statement in Armenian, which contained necessary information about the title of the research project, its purpose, procedures, risks and benefits to participants, confidentiality of obtained information and voluntariness of participation.

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