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Domains of importance to the quality of life of older people from two Swiss regions

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Abstract

Background: quality of life (QoL) is a subjective perception whose components may vary in importance between individuals. Little is known about which domains of QoL older people deem most important.
Objective: this study investigated in community-dwelling older people the relationships between the importance given to domains defining their QoL and socioeconomic, demographic and health status.
Methods: data were compiled from older people enrolled in the Lc65+ cohort study and two additional, population-based, stratified random samples ($n = 5,300$). Principal components analysis (PCA) was used to determine the underlying domains among 28 items that participants defined as important to their QoL. The components extracted were used as dependent variables in multiple linear regression models to explore their associations with socioeconomic, demographic and health status.
Results: PCA identified seven domains that older persons considered important to their QoL. In order of importance (highest to lowest): feeling of safety, health and mobility, autonomy, close entourage, material resources, esteem and recognition, and social and cultural life. A total of six and five domains of importance were significantly associated with education and

depressive symptoms, respectively. The importance of material resources was significantly associated with a good financial situation ($\beta = 0.16$, $P = 0.011$), as was close entourage with living with others ($\beta = 0.20$, $P = 0.007$) and as was health and mobility with age ($\beta = -0.16$, $P = 0.014$).

Conclusion: the importance older people give to domains of their QoL appears strongly related to their actual resources and experienced losses. These findings may help clinicians, researchers and policy makers better adapt strategies to individuals' needs.

Keywords: *quality of life, importance, older people, population characteristics*

Introduction

In developed countries, today's 65-year-olds are currently expected to live another 15–20 years. Living longer does not necessarily have to mean extending the period of functional dependency. Indeed, recent research suggests that people aged 65–85 years old are managing to maintain their independence for longer than they did in the past [1]. In this context, optimising older people's living conditions and quality of life (QoL) is increasingly important. Consequently, improving measurements of QoL and identifying its associated factors have been the focus of increasing numbers of studies recent decades.

It is commonly accepted that QoL is a subjective issue, whose components are not of equal importance among individuals and cultures [2–6]. In order to best take into account individuals' perceptions of the importance of each item, it has been advocated that multi-item QoL assessment tools should include a weighting procedure [2, 7–9]. However, limitations to such weighting processes have also been pointed out, such as the high correlations between weighted and unweighted QoL scores, the increased non-response rate, or the fact that individuals with very heterogeneous psychological profiles may show similar QoL scores [4, 10, 11]. The perceived importance which individuals give to various domains of QoL may therefore be more usefully considered as a separate QoL assessment [4].

Several studies have investigated which QoL domains older people deem of high importance. Results identified health [12–15], activities of daily living [14, 15], sensory abilities [14, 15], mobility [14, 15], the home environment [12, 14], family [12, 13], finances [13], social life [13], neighbourhood safety [13], living arrangement [13] and energy [15]. However, a specific ranking of QoL domains in order of their perceived importance has never been reported. Significant differences in the importance of various aspects of QoL have been reported on the basis of gender, age and health status [14, 15], as well as the differences between developed and developing countries [16]. However, the relationships with other individual characteristics are lacking. Specifically, to date, there have been no investigations of the relationships between socioeconomic, demographic and health characteristics and the importance that older people give to QoL domains. Better knowledge of which domains of QoL matter to older people should help clinicians, researchers and policy makers focus on the relevant domains of daily life and better adapt strategies to individuals' needs.

This study aimed to determine whether the importance that community-dwelling older persons gave to a variety of domains of their QoL was associated with their socioeconomic, demographic and health status.

Methods

Population

Data used in the present study came from two main sources. First, from the Lausanne cohort 65+ (Lc65+)—a population-based study initiated in 2004 to investigate age-related frailty in old age [17]. Two samples were randomly selected from the community-dwelling population in Lausanne (the capital of canton Vaud). Enrolment in 2004 included 1,564 subjects born from 1934 to 1938, and enrolment in 2009 included 1,486 subjects born from 1939 to 1943. In 2011, 1,107 and 1,351 subjects from each sample were still eligible for the present study, respectively.

The second main source of data was two additional, stratified, random samples selected from population lists in order to extend the study to individuals older than 77 years old, and to cover the entire elderly population in both the cantons of Vaud and Geneva. The first included 2,000 inhabitants of canton Vaud (500 aged 68–72, 500 aged 73–77 and 1,000 aged >77 years old). The second included 3,000 inhabitants of canton Geneva (1,000 aged 68–72, 1,000 aged 73–77 and 1,000 aged >77 years old). In both samples, an equal number of men and women were selected in each stratum and the last age category was further sub-stratified to ensure a sufficient number of the very eldest members of the population. Owing to death, institutionalisation, severe cognitive impairment reported by caregivers or moving away, a total of 1,993 and 2,992 additional participants were eligible from Vaud and Geneva, respectively.

Measures

Quality of life

No validated questionnaire reflecting the convergence of health, social, cultural and economic factors was deemed appropriate for an assessment of the importance which elderly people give to domains of QoL. The World Health Organisation report on social determinants of health [18], and the synthesis of the literature provided by Kelley-Gillespie [19], served as the basis for developing a 28-item list (Supplementary data, Appendix 2 available in *Age and Ageing* online). Respondents were asked to rate each item on its perceived importance to their own QoL (0 = 'very low'; 1 = 'quite low'; 2 = 'quite high'; 3 = 'very high').

An open-ended question prompted participants to mention any additional issue(s) which they felt were important to their QoL.

Socioeconomic status

Two indicators were used to assess socioeconomic status. Participants were asked to indicate the highest level of education that they had achieved ('basic compulsory'; 'apprenticeship'; 'post-compulsory'). A further question investigated participants' financial situation by asking whether they felt that they were experiencing any financial difficulties at the time of the study ('no'; 'yes'; 'don't want to answer').

Demographic status

Data were measured and recorded as follows: sex ('man'; 'woman'), age ('68–72 years'; '73–77 years'; '78–99 years'), citizenship ('Swiss'; 'Swiss plus another'; 'other'), living arrangement ('alone'; 'with others'), children ('no children'; '1 child'; '2 children'; '≥3 children').

Health status

Respondents were asked whether, during the previous 12 months, they were diagnosed by a physician and had suffered from symptoms or received treatment for any of 13 common health conditions: myocardial ischaemia, heart disease, stroke, diabetes, chronic lung disease, asthma, osteoporosis, bone fracture, arthritis, malignant neoplasm, ulcer, Parkinson's disease and Alzheimer's disease. Chronic health problems not on the list could also be added. The number of reported medical conditions was categorised ('0'; '1'; '≥2'). Depressive symptoms were assessed using two questions of the Primary Care Evaluation of Mental Disorders Procedure: 'During the past month, have you often been bothered by (i) feeling down, depressed or hopeless? (ii) Little interest or pleasure in doing things?' A positive answer to either of the two questions had a sensitivity of 96% and a specificity of 57% in diagnosing depression, when compared with a standardised interview [20].

Statistical analysis

Analyses were conducted using Stata 13.1 software (StataCorp, College Station, TX, USA). Sampling weights were used to account for unequal selection probabilities. Weighted percentages of socioeconomic, demographic and health variables were calculated.

Principal components analysis (PCA) with varimax rotation was used to determine the dimensions underlying the 28 items of QoL [21]. The number of useful components was based on Kaiser's criterion (eigenvalues >1), the examination of scree plots and the interpretability of the rotated components. To explore the stability of the component structure, an exploratory PCA was performed on the Vaud sample (n = 3,596), and a validation analysis was then performed on the Geneva sample (n = 1,704). Socioeconomic, demographic and health characteristics were compared between both samples using Pearson's χ^2 test.

The importance of each QoL domain (component) was calculated by summing the constituent items, dividing by the maximum possible score (number of constituent items multiplied by three), and multiplying by 100 to obtain a percentage score. Importance scores for QoL domains with two or more missing constituent items were not calculated and were treated as missing. Multiple linear regression models were calculated to determine the socioeconomic, demographic and health characteristics associated with the domains of importance to QoL. These models were run separately for each domain, and were adjusted for canton and interactions between canton and predictors.

Missing data were imputed using multiple imputations with chained equations, assuming that data were missing at random [22]. Five imputation datasets were created. Repeated P-values of Pearson's χ^2 tests were combined using the procedure described by Li *et al.* [23].

Results

Of 7,443 eligible participants, 5,300 (71.2%) completed the questionnaire. The response rate was higher in participants from the Lc65+ (95%) than in those from the stratified random samples (60%, $P < 0.001$). Small differences were observed according to sex, age and canton (Supplementary data, Appendix 1 available in *Age and Ageing* online). Table 1 displays the characteristics of the total sample, and separately for the exploratory PCA sample (Vaud) and the validation PCA sample (Geneva). Compared with participants from Vaud, those from Geneva had a significantly higher level of education, were younger, more frequently females, and less frequently Swiss, and had fewer children (all $P < 0.001$). In contrast, there was no significant difference between the two samples in terms of their financial situation, living arrangement, number of medical conditions or depressive symptoms. A total of 303 (5.7%) respondents mentioned factors important to their QoL that were not on the 28-item list. The five most frequently addressed aspects were living environment (e.g. neighbourhood, countryside, n = 19), auditory or visual impairments (n = 18), physical environment (e.g. climate, pollution, cleanliness, n = 17), pet animals (n = 14) and lack of time (n = 14).

Figure 1 illustrates the weighted importance of the 28 items of QoL and shows that ratings in the exploratory and validation samples were very similar. In exploratory PCA, the Kaiser–Meyer–Olkin (KMO) coefficient of sampling adequacy was 0.91, and the KMO coefficients for each individual item were >0.85, indicating excellent sampling adequacy. Bartlett's test of sphericity was significant ($\chi^2(378) = 25{,}510$, $P < 0.001$), indicating that the correlation matrix was suitable for PCA. The exploratory analysis resulted in a classification of the 28 QoL items into seven domains (components) (Supplementary data, Appendix 2 available in *Age and Ageing* online). Those components were labelled according to their common underlying features: feeling of safety, health and mobility, autonomy, close entourage, material resources, esteem and recognition, and social and cultural life.

The validation PCA demonstrated similar results for the KMO measure of sampling adequacy index (0.91), and the Bartlett's test of sphericity was also significant ($\chi^2(378) =$

Table 1. Characteristics of study participants (weighted percentages)

Characteristics	Total sample (n = 5,300)	PCA analysis		P[a]
		Exploratory sample (Vaud, n = 3,596)	Validation sample (Geneva, n = 1,704)	
Socioeconomic status				
Education (n = 5,203)				
Basic compulsory	25.0%	28.9%	19.6%	<0.001
Apprenticeship	35.4%	38.0%	31.7%	
Post-compulsory	39.5%	33.1%	48.7%	
Financial situation (n = 4,949)				
No difficulties	81.9%	81.4%	82.7%	0.178
Yes, some difficulties	13.3%	14.1%	12.3%	
Did not wish to answer	4.7%	4.5%	5.0%	
Demographic status				
Sex (n = 5,300)				
Men	42.3%	42.6%	41.8%	<0.001
Women	57.7%	57.4%	58.2%	
Age (n = 5,300)				
68–72 years	32.6%	32.0%	33.3%	<0.001
73–77 years	24.9%	24.5%	25.4%	
78–99 years	42.6%	43.5%	41.3%	
Citizenship (n = 5,230)				
Swiss	73.5%	80.0%	64.4%	<0.001
Swiss plus another	13.1%	9.7%	17.8%	
Other	13.4%	10.3%	17.8%	
Living arrangement (n = 5,228)				
Alone	37.6%	38.0%	37.0%	0.477
With others	62.4%	62.0%	63.0%	
Children (n = 5,190)				
No children	15.3%	13.4%	18.0%	<0.001
1 child	17.3%	16.3%	18.7%	
2 children	42.4%	42.7%	41.9%	
≥3 children	25.0%	27.6%	21.4%	
Health status				
Medical conditions (n = 5,241)				
0	32.0%	33.2%	30.3%	0.089
1	36.6%	35.9%	37.6%	
≥2	31.4%	30.9%	32.1%	
Depressive symptoms (n = 5,163)				
No	73.1%	73.9%	72.1%	0.146
Yes	26.9%	26.1%	27.9%	

[a]Pearson's χ^2 test.

12,450, $P < 0.001$). The number of domains, as well as their constituent items identified in the validation analysis, perfectly corroborated those identified using the exploratory PCA analysis (Supplementary data, Appendix 3 available in *Age and Ageing* online). These two samples were therefore merged for subsequent analyses. Within the seven domains, bivariate correlations between items ranged from 0.30 to 0.70, and Cronbach's *a* scores ranged from 0.67 to 0.83, indicating moderate correlations and adequate internal consistency within each domain, respectively.

As illustrated in Supplementary data, Appendix 4 available in *Age and Ageing* online, the weighted mean scores (95% confidence intervals) for the seven domains of importance to QoL were: feeling of safety 80.7 (80.0–81.4); health and mobility 78.9 (78.1–79.8); autonomy 78.8 (78.1–79.5); close entourage 71.8 (71.0–72.7); material resources 70.7 (70.1–71.3); esteem and recognition 69.6 (68.9–70.4); social and cultural life 56.5 (55.6–57.4). Table 2 shows the results of the multiple regression models predicting each of the seven domains of importance to QoL according to socioeconomic, demographic and health characteristics. The bivariate associations between each domain and characteristics are provided in Supplementary data, Appendix 5 available in *Age and Ageing* online. Two striking observations can be made. First, level of education and depressive symptoms were significantly associated with most QoL domains. Secondly, each QoL domain was most strongly associated with socioeconomic and demographic characteristics sharing common and very specific features with that particular domain. For instance, the importance of material resources was positively associated with a good financial situation ($\beta = 0.16$). Similarly, the importance of close entourage was positively associated with living with others ($\beta = 0.20$). Social and cultural life was prioritised by participants with a high level of education ($\beta = 0.25$). Finally, the importance of health and mobility, which tends to deteriorate with age, was negatively associated with age ($\beta = -0.16$).

Discussion

The present study identified seven domains considered important in determining the QoL of community-dwelling older people in French-speaking Switzerland. The importance of the 28 items proposed, as well as the 7 domains identified using factor analysis, were similar in both the exploratory and validation samples. Significant associations were observed between domains of importance and socioeconomic, demographic and health status.

One original contribution of this study is to reveal that the domains which older persons considered most important to their QoL were those that shared common and very specific features with their socioeconomic and demographic characteristics. These results can be interpreted within the model of selective optimisation with compensation developed by Baltes and Baltes [24]. In the context of adaptation to losses in different life domains, Baltes and Lang [25] posit that people proceed to a selection in the sense that they reduce the number of goals to pursue in order to spare their limited resources for more important goals. Together with optimisation and compensation, this mechanism allows them to reach their goals and maximise the quantity and quality of their life [25, 26]. In the present study, older people gave less importance to specific domains of their QoL that were jeopardised by age-related losses. This could be interpreted as a process of selection. The underlying assumption is that this mechanism permits them to focus on other domains and maintain their overall QoL.

The domains of QoL which were given the highest importance were feeling of safety (81.8%), health and mobility (80.6%) and autonomy (79.8%). Whereas the two latter

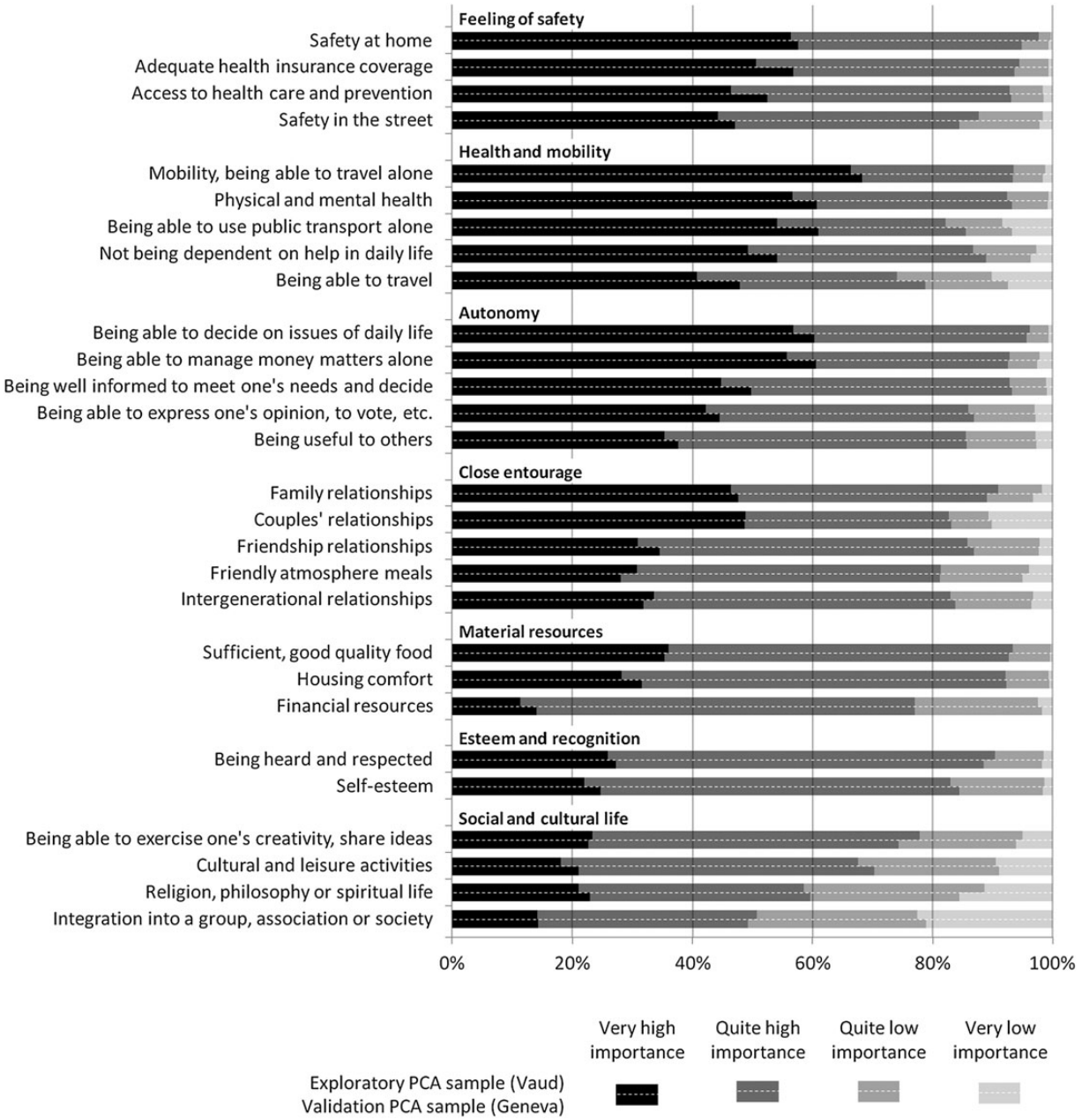

Figure 1. Weighted importance of 28 QoL items, stratified by exploratory and validation PCA samples.

domains have been extensively investigated in the literature on the QoL of older people [14, 15], one important contribution from the current study is that it highlighted the importance which older people give to feelings of safety—a far less studied area. Future investigations into this specific domain should be encouraged.

Some limitations must be considered. First, a higher response rate was reached in participants from the Lc65+ cohort study (95%) than in those from additional stratified random samples (60%). This difference is probably explained by the motivation and adherence of Lc65+ participants who have been followed yearly since 2004. Since the results of the PCA analysis were almost identical between cantons Vaud and Geneva, and because sampling weights were applied to account for unequal selection probabilities, the presence of a strong non-response bias seems unlikely. Secondly, segmented knowledge from various disciplines on domains important to the QoL of older people prompted us to develop a 28-item list. Although it exhibited a robust factorial structure, this tool still needs to be tested for validity and reliability. Thirdly, simple criteria were used to assess socioeconomic status. Given the multidimensional nature of this construct [27], other factors such as neighbourhood socioeconomic characteristics or socioeconomic factors earlier in life could have been considered. Fourthly, the study's cross-sectional design precludes any causal inference. Finally, whether these results could be generalised to include other cultural contexts is questionable. Future studies will need to determine whether psychological and cultural factors might moderate the associations observed within our population.

Table 2. Domains of importance to QoL, as predicted using seven distinct multiple regression models

	Domains of importance to QoL													
	Material resources		Close entourage		Social and cultural life		Esteem and recognition		Health and mobility		Feeling of safety		Autonomy	
	β	*P*	*β*	*P*	*β*	*P*	*β*	*P*	*β*	*P*	*β*	*P*	*β*	*P*
Socioeconomic status														
Education	0.23	<0.001	0.13	0.035	0.25	<0.001	0.05	0.439	0.15	0.007	0.12	0.049	0.20	0.001
Financial situation	0.16	0.011	0.01	0.901	0.03	0.608	0.10	0.156	0.10	0.099	0.16	0.015	0.02	0.702
Demographic status														
Sex	0.01	0.829	0.11	0.078	0.10	0.089	0.04	0.569	−0.04	0.445	0.03	0.677	0.01	0.913
Age	0.00	0.990	0.05	0.459	−0.01	0.895	−0.03	0.603	−0.16	0.014	0.00	0.963	−0.06	0.318
Citizenship	0.06	0.320	−0.01	0.884	0.00	0.991	−0.01	0.874	0.03	0.631	0.00	0.934	0.09	0.129
Living arrangement	0.01	0.835	0.20	0.007	0.02	0.814	0.07	0.344	−0.11	0.142	0.02	0.771	−0.08	0.280
Children	−0.09	0.148	0.11	0.133	0.09	0.114	0.05	0.419	0.04	0.528	−0.02	0.827	0.05	0.434
Health status														
Medical conditions	−0.02	0.697	−0.05	0.443	−0.08	0.201	−0.01	0.819	−0.05	0.371	−0.02	0.800	0.02	0.735
Depressive symptoms	−0.09	0.132	−0.17	0.012	−0.16	0.010	−0.14	0.029	−0.15	0.019	−0.12	0.070	−0.19	0.008

Education [basic/apprenticeship = 0, post-compulsory = 1]; financial situation [yes, some difficulties/did not wish to answer = 0, no difficulties = 1]; sex [men = 0, women = 1]; age [≤77 years = 0, >77 years = 1]; citizenship [other = 0, Swiss/Swiss plus another = 1]; living arrangement [alone = 0, with others = 1]; children [no children = 0, ≥1 child = 1]; medical conditions [0 = 0, ≥1 = 1]; depressive symptoms [no = 0, yes = 1]. Models were adjusted for canton and interactions between canton and predictors.

Conclusion

Some domains of QoL, such as feeling of safety, health and autonomy, appear to be important for a large majority of older people. However, the present findings also suggest that, in addition to individuals' health status, their socio-economic and demographic background further influences their assessment of what matters in their QoL. Older people appear to focus more on the resources they have than on resources they lack. Supporting those who face difficulties in a particular domain which they consider important to their QoL to reconsider its importance could help them to buffer the impact of age-related losses to their QoL.

Key points

- Little is known about which domains of QoL older people deem most important.
- Principal component analysis identified seven domains of importance to QoL.
- The importance older people give to domains of their QoL is strongly related to their actual resources and losses.

Supplementary data

Supplementary data mentioned in the text is available to subscribers in *Age and Ageing* online.

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Dementia priority setting partnership with the James Lind Alliance: using patient and public involvement and the evidence base to inform the research agenda

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Abstract

Background: the James Lind Alliance (JLA) created an approach to elicit the views of those under-represented in research priority exercises. Building on this, the JLA Dementia Priority Setting Partnership was set up as an independent and evidence-based project to identify and prioritise unanswered questions ('uncertainties') about prevention, diagnosis, treatment and care relating to dementia.
Methods: a survey was widely disseminated to stakeholders with an interest in the needs of the older population. Thematic analysis was used to identify themes from the large amount of questions collected from which research questions were developed using