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FRAILTY AND QUALITY OF ELDERLY LIVING IN A CONTEXT OF SOCIAL VULNERABILITY[1]

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ABSTRACT

Objetive: to evaluate the level of frailty and its relation with the quality of life of elderly people enrolled in Reference Centers of Social Care in a city in the interior of the state of São Paulo, Brazil.

Method: descriptive, correlational and quantitative approach study. An individual interview was conducted with the application of a sociodemographic characterization tool, the Edmonton Frail Scale, Whoqol-bref and the Whoqol-old, in the period between 2012 and 2016. Data were submitted to statistical analysis and correlation verified by the Kruskal-Wallis test and by the Levin and Fox tests.

Results: 217 elderly peopleparticipated in the study, with anaverage age of 68.5 (±7.35) years old, married (n=91), and with one to four years of schooling (n=112). As to the level of frailty, 89 (41%) did not present frailty, 46 (21.2%) were vulnerable, and 82 (37.7%) were frail. Regarding the relationship between the frailty and the quality of life of the elderly, a negative correlation was observed, from weak to moderate magnitude, with statistical significance with all the Whoqol-bref and old domains.

Conclusion: considering the relationship between the level of frailty and the quality of life scores, indicating that the more frail elderly had worse quality of life, health practices and public policies can be subsidized for prevention actions as way to eradicate, prevent and delay risk conditions.

DESCRIPTORS: Frail elderly. Quality of life. Delivery health care. Social vulnerability. Elderly.

FRAGILIDADE E QUALIDADE DE VIDA DE IDOSOS EM CONTEXTO DE VULNERABILIDADE SOCIAL

RESUMO

Objetivo: avaliar o nível de fragilidade e sua relação com a qualidade de vida de idosos cadastrados em Centros de Referência de Assistência Social em um município do interior do estado de São Paulo, Brasil.

Método: estudo descritivo, correlacional e de abordagem quantitativa. Foi realizada entrevista individual com a aplicação de um instrumento de caracterização sociodemográfica, a Escala de Fragilidade de Edmonton, Whoqol-bref e o Whoqol-old, no período entre 2012 e 2016. Os dados foram submetidos à análise descritiva e de correlação com testes de Kruskal-Wallis e Levin e Fox.

Resultados: participaram do estudo 217 idosos, com média de idade de 68,5 (±7,35) anos, casados (n=91) e com escolaridade de um a quatro anos (n=112). Quanto ao nível de fragilidade, 89 (41%) não apresentaram fragilidade, 46 (21,2%) se apresentaram vulneráveis e 82 (37,7%) estavam frágeis. Quanto à relação da fragilidade com a qualidade de vida dos idosos avaliados, observou-se correlação negativa, de fraca à moderada magnitude, com significância estatística com todos os domínios do Whoqol-bref e old.

Conclusão: diante da relação entre o nível de fragilidade e os escores da qualidade de vida, indicando que os idosos mais frágeis apresentaram pior qualidade de vida, pode-se subsidiar práticas em saúde e políticas públicas para ações de prevenção como forma de erradicar, prevenir e retardar condições de risco.

DESCRITORES Idoso fragilizado. Qualidade de vida. Assistência à saúde. Vulnerabilidade social. Idoso.

FRAGILIDAD Y CALIDAD DE VIDA DE LOS ANCIANOS EN EL CONTEXTO DE VULNERABILIDAD SOCIAL

RESUMEN

Objetivo: evaluar el nivel de fragilidad y su relación con la calidad de vida de los ancianos registrados en Centros de Referencia de Asistencia Social en un municipio del interior del estado de São Paulo, Brasil.

Método: estudio descriptivo, correlacional y de abordaje cuantitativo. Se realizó una entrevista individual con la aplicación de un instrumento de caracterización sociodemográfica, la Escala de Fragilidad de Edmonton, Whoqol-bref y el Whoqol-old entre los años 2012 y 2016. Los datos fueron sometidos al análisis descriptivo y de correlación con pruebas de Kruskal-Wallis y Levin y Fox.

Resultados: participaron del estudio 217 ancianos con un promedio de edad de 68,5 (±7,35) años, casados (n=91) y con escolaridad de un a cuatro años (n=112). En relación al nivel de fragilidad, 89 (41%) no presentaron fragilidad, 46 (21,2%) se mostraron vulnerables y 82 (37,7%) estaban frágiles. En relación a la fragilidad con la calidad de vida de los ancianos evaluados, se observó una correlación negativa de débil a moderada magnitud y con significancia estadística en todos los dominios del Whoqol-bref y old.

Conclusión: ante la relación entre el nivel de fragilidad y los resultados de la calidad de vida, que indican que los ancianos más frágiles presentaron la peor calidad de vida, es posible subsidiar prácticas de salud y políticas públicas para las acciones de prevención como forma de erradicar, prevenir y retardar las condiciones de riesgo.

DESCRIPTORES Anciano fragilizado. Cualidad de vida. Prestación de atención de la salud. Vulnerabilidad social. Anciano.

INTRODUCTION

The populational aging is one of the most important phenomena that impact the world scene and it represents a challenge for the society. Demands reflect the public policy scenario when there is a need to work on frailty and maintain the quality of life of this population.[1] This condition can become complex when the elderly, people aged 60 or over,[2] in a situation of frailty, present outcomes that contribute to a poor quality of life, which may be due to the area of social vulnerability where they live.

Social vulnerability is multidimensional because it affects individuals in different ways and intensities. It is a result of the combination of how the individual obtains information, material resources, schooling, as well as cultural boundaries and violent impositions.[3] Vulnerability is related to the structural factors of society, regarding income inequality, education and access to services.[4]

Social factors, such as the fact of living in contexts of greater social vulnerability, with worse financial conditions, less access to services and lack of social support, can contribute to the increase of vulnerability, which may be noticeable in the elderly when the liabilities of social support get bigger.[4-5] The concept of social vulnerability stems from the accumulation of multiple and varied social problems and has bidirectional importance as a risk factor for care and service planning.[6]

Aging is closely associated with the process of frailty that has become a silent epidemic that affect older people. Frailty is a syndrome highlighted in the world literature because it is associated with aging and presents heterogeneity of concepts with cultural, economic and clinical influences.[5-7] Frailty can be defined as a condition resulting from adverse effects, absence of disease, comorbidities, disabilities, and other factors that make people vulnerable.[8-9]

In this context, quality of life is a construct of different definitions because it is related to cultural, ethical, religious and personal aspects, and it can be subjective, understood as personal or objective accomplishment, understood as the satisfaction of basic needs in a given social structure.[10] The quality of life was defined by The World Health Organization Quality of Life Group (The Wholqol Group)[11] in 1995 as the individual's perception of his/her position in life, in the context of his/her culture, and in the value system in which he/she lives regarding expectations, standards and concerns. Therefore, quality of life can be influenced by internal and external factors.

Studies on frailty and quality of life in a context of social vulnerability are relevant because they are scarce in the literature. In this way, knowing the scenario can contribute to intervention actions and replanning the policies, redirecting the monitoring to the vulnerable population and with multiple needs. Among the diversity that influences the frailty, there is a need to be seen and studied through an integrated and comprehensive perspective of social influences, the social context being the key to understand health and illness and interfere in the quality of life.[12-13] The goal of the study was to evaluate the level of frailty and its relation with the quality of life of elderly people enrolled in Reference Centers of Social Care in a city in the interior of the São Paulo state, Brazil.

METHOD

This is a descriptive, correlational, cross-sectional study with a quantitative research approach carried out with elderly people enrolled in four Reference Centers of Social Care in the city of São Carlos (SP), located in urban areas of social vulnerability, according to the Paulista Social Vulnerability Index. These locations corresponded to very low, medium and high vulnerability rate.[14]

The procedure for collecting data was performed as it follows: the residences of all the elderly registered in the physical records were located and visited from August 2012 to August 2016. The interviews were conducted from Mondaysto Saturdays, during business hours. After previous training of the instruments, the evaluators visited the houses of the elderly and, after consent, started the individual interview in the participant's own place. The average time spent for each interview was 45 minutes.

The Reference Centers of Social Care had 1355 elderlies registered, 1138 were not evaluated for the following reasons: change of address (25%); not present at the time of the visit (28%); refusal (20%); death (12%); registration address was not existent (8%); elderly alone with no understandingto answer the questions (7%). The convenience sample consisted of 217 elderly people enrolled in the equipment, who met the following inclusion criteria: being 60 yearsold or more, having a record in one of the equipment and having verbal communication and comprehension skills. The exclusion criteria were: the presence of language or comprehension problems that could interfere with the veracity of the answers.

The following instruments were used to collect data: sociodemographic questionnaire, Edmonton Frail Scale, Whoqol-bref and Whoqol-old. The sociodemographic questionnaire contained information on gender, age, race, marital status and schooling, constructed by the researchers. The Scale of Frail of Edmonton for identification of frailty, this instrument was translated and validated in 2009.[15]

The Scale evaluates nine domains: cognition (through the Clock Drawing Test), general health status, functional independence, social support, use of medications, nutrition, humor, continence and functional performance, comprising 11 items. The maximum score is 17 points, which represents the highest level of frailty. Individuals who have from 0 to 4 points are considered "non-frail", from 5 to 6 "apparently vulnerable", 7 to 8 "slight fragility", 9 to 10 "moderate fragility" and 11 or more "severe fragility". In order to assess quality of life, the following questionnaires were used: Whoqol-bref and Whoqol-old, instruments developed by The Whoqol Group in 1998 and already validated in 2000.[16] The first is a questionnaire with 26 questions assessed in four domains: physical, psychological, social and environmental, which can reach up to 100 points. The second is evaluated by 24 questions divided into six domains: sensorial functioning; autonomy; past, present and future activities; social participation; death and dying; intimacy, being 100 points the highest score.

For the analysis of the data, a spreadsheet was elaborated using the Microsoft Excel® software, and the statistical analysis was conducted through the Statistical Package for Social Sciences SPSS® for Windows®, version 22.0. In descriptive statistics, frequencies, means and standard deviations were calculated for the categorical variables: gender, race, marital status, schooling, current occupation and level of frailty. After verificating the absence of normality of the variables by the Shapiro-Wilk test, the coefficient was calculated between the Scores of the Edmonton Frail Scale and the scores of the domains of Whoqol-bref and Whoqod-old.The comparison of the fragility average between the groups was then verified by the Kruskal-Wallis test. The magnitude of the correlations was checked by the Levin and Fox test,[17] in which the magnitude <0.3 (weak) was adopted, from 0.3 to 0.5 (moderate) and 0.6 to 0.9 (strong). It was adopted p value <0.05.

The research was approved by the Human Research Ethics Committee of the *Universidade Federal de São Carlos* (UFSCar), Opinion No. 72.182/2012 under CAAE 00867312.8.0000.5504.

RESULTS

When it comes tosociodemographic data, the distribution of the elderly according to gender, age, race, marital status, education and current occupation are described in table 1.

The participants' average age was 68.5 years old, with a standard deviation of 7.3. The highest age was 94 years old. Among the interviewers, 176 (81.1%) were women, 125 (57.6%) were white, 91 (41.9%) were married, and 112 (51.6%) had one to four years of education. Regarding their current occupation, 120 (55.3%) were retired and 97 (44.7%) were not retired.

Table 1 - Distribution of the elderly enrolled in Reference Centers of Social Care, according to gender, age, race, marital status, schooling and vulnerability. São Carlos, SP, Brazil, 2016. (n=217)

Variable	n	%
Gender		
Female	176	81.1
Male	41	18.9
Age		
60-69	140	64.5
70-79	56	25.9
80-89	17	7.8
> 90	4	1.8
Race		
White	125	57.6
Black	63	29
Brown	28	12.9
Yellow	1	0.5
Marital status		
Married	91	41.9
Single	5	2.3
Widow(er)	85	39.2
Separated	19	8.8
Divorced	17	7.8
Current Occupation		
Retired	120	55.3
Not Retired	97	44.7
Schooling		
Illiterate	38	17.5
Literate without schooling	22	10.1
1-4 years of study	112	51.6
5- 8 years of study	34	15,7
9 years ormore	11	5.1
Vulnerability		
RCSC* I e III (High)	114	52.5
RCSC IV(Medium)	56	25.8
RCSC II(Very low)	47	21.7
Total	217	100

*Reference Centers of Social Care

Regarding the vulnerability of the Reference Centers of Social Care region, there were 114 elderly people enrolled in regions of high vulnerability, 56 of medium vulnerability and 47 of low vulnerability.

Regarding the level of frailty, Table 2 indicates that 82 (37.7%) of the elderlyshow some level of frailty (light, moderateou severe).

Table 2 -Distribution of the elderly according to scores to identify the frailty level of the Edmonton Frailty Scale. São Carlos-SP, 2016. (n=217)

Variable	n	%
Does not show frailty (0-4)	89	41
Apparently vulnerable (5-6)	46	21.2
Light frailty (7-8)	46	21.2
Moderate frailty(9-10)	27	12.4
Severe frailty (>11)	9	4.2
Total	217	100

Table 3 indicates that, in theWhoqol-bref,the social relation domain had the highest average score (67.6,±14.3), and the environment domain had the lowest average score (56±12.9). As for the application of the Whoqol-old, it is observed that the death and dying domain reached a higher average score (72,±26.1), and the domain past, present and future activities had the lowest average score (61.7,±13.9).

Table 3 - Distribution of the elderly according to the domains of the Whoqol-brefandWhoqol-old. São Carlos, SP, Brazil, 2016. (n=217)

	Average (±SD)	Median	Minimum	Maximum
Whoqol-bref				
Physical domain	60.4 (±18)	67.9	0	103.6
Social participation domain	64.3(±14.6)	62.5	4.2	95.8
Social relation domain	67.6(±14.3)	75	0	100
Environment domain	56.1(±12.9)	56.3	15.6	90.6
Wholqol-old				
Sensorial functioning domain	64.9(±22.4)	69	6	100
Autonomy domain	64.7(±15.5)	69	19	100
Present, past, future activities domain	61.7(±13.9)	63	25	94
Social participation domain	64(±15.6)	69	13	100
Death and dying domain	72(±26.1)	81	0	100
Intimacy domain	64.4(±18.8)	75	0	100

Table 4 – Spearman's correlation analysis between the Edmonton Frail Scale and the Whoqol-bref and Whoqol-old domains. São Carlos, SP, Brazil, 2016. (n=217)

Edmonton Fragility Scale	r*	p-value†
Whoqol-bref		
Physical domain	-0.392	<0.001
Social participation domain	-0.151	0.026
Social relation domain	-0.199	0003
Environment domain	-0.226	0.001
Whoqol-old		
Sensorial functioning domain	-0.282	<0.001
Autonomy domain	-0.251	<0.001
Present, pastand future activities domain	-0.192	0.005
Social participation domain	-0.43	<0.001
Death anddying domain	-0.153	0.024
Intimacy domain	-0.231	0.001

*Spearman's correlation coefficient; †p-value<0.005.

Regarding the relationship between the frailty and the quality of life of the elderly enrolled in the Reference Centers of Social Care, it can be observed in table 4 that the scores of the Edmonton Frail Scale correlate negatively with the score of the Whoqol-bref domains and Whoqol-old in a statistical significance. When it comes to the magnitude of the correlations, it can be observed in Table 4 that there was a magnitude from low to moderate.

It can be seen in Table 5 that the non-frail elderly had better life quality scores. In the comparison of the life quality scores according to the levels of frailty, the highest scores were the sensorial functioning, autonomy, social participation and intimacy. It is noticed that there was a correlation of the frailty levels regarding the evaluated domains of life quality.

Table 5 - Comparison of the fragility level of the Edmonton Frail Scale and Whoqol-bref and Whoqol-old domains. São Carlos, SP, Brazil, 2016. (n=217)

	Whoqol-bref					Whoqol-old				
Fragility level	**PD†**	**SPD‡**	**SRD§**	**ED||**	**SFD¶**	**AD****	**PPFAD††**	**SPD‡‡**	**DDD§§**	**ID||||**
Does not show frailty	71.3	58.8	67	583	63.8	72.7	68.8	64	69.1	73.8
Apparently vulnerable	66.7	55	61.4	55.5	59.6	60.2	65.5	62.6	65.5	74.7
Light frailty	63.1	56.2	59.4	52.6	57.8	59.6	63.9	53.3	64.3	73.2
Moderate frailty	51.8	57.6	53	51.5	53.5	58	54.7	56.5	51.8	63.6
Severe frailty	33.3	45.8	65.7	51	49	61.8	57.6	61.1	41.8	57.6
p-value*	**<0.001**	0.052	**0.04**	**0.012**	**0.001**	**0.002**	0.110	**0.000**	0.367	**0.028**

*p-value<0,005; †physical domain, ‡social participation domain, §social relation domain, ||environment domain, ¶sensorialfunctioning domain, **autonomy domain, ††present, pastand future activities domain, ‡‡social participation domain, §§death, dying domain, ||||intimacy domain.

DISCUSSION

In the present study, the predominance of the female gender, with anaverage age of 68.5 years old, white, married, with low schooling and retired was observed. This average was found in other studies that used the Edmonton Frail Scale, Whoqol-bref, and Whoqol-old to assess the elderly community in the Brazilian context.[18-21]

The prevalence of the female gender in this study corroborates the concept of feminization of the advanced age. As a matter of fact, women have the longest life expectancy, lower death rates from external causes, less exposure to occupational hazards, lesser consumption of tobacco and alcohol, and they seek more health and social services compared to men.[22]Regarding schooling, evidence indicates that the years of study are a predictor of adverse effects on the health of the elderly, which can lead to problems of mental health and chronic conditions.[23]In addition, the elderly with low educational levels can suffer social exclusion and have less access to information, which are unfavorable conditions that consequently worsen the quality of life.[24]

When it comes to the current occupation, pensions and government benefits are the main sources of income and support for the elderly in the Brazilian population,[25] which corroborates the results of the present study. It is emphasized that in vulnerable contexts there is a reality in which the elderly are the source of income of their family nucleus.[26]

In this study, there was a prevalence of non-frail elderly (41%), similar to the one found in a survey conducted with elderly people in the interior of the São Paulo State, in a basic care service that presented 48.5% of non-frail elderly individuals and

anaverage age of 68.9 years old.[13] Another study carried out with 686 elderly people in the community indicated that 58.7% of the interviewees did not present frail, with an average age of 74 years old.[27]

Although the elderly did not present frail, in this study they had an average of not advanced age, had one to four years of study and were mostly women – factors that can prevent the risk to frailty. The frailty relationship with associated factors has been a subject for researchers to foster studies in an attempt to plan immediate interventions for adverse effects on public services.[6,28] In addition, in the present study the frailty was verified through the Edmonton Frail Scale, a questionnaire that evaluates clinical and social conditions, most frequently used in Brazilian studies, being a suitable scale for the researched population because it is objective and in accordance with the studied context, differently from when assessing the frailty through theFried's Phenotype, which depends on physiological and functional measures.[29]

Investigating the life quality in this study, it was obtained higher scores in the social relation domain, with an average of 67.6 points in the Whoqol-bref, and a better score in the death and dying domain, 72 points in the Whoqol-old. A study involving 76 elderly people in the community with an average age of 76.5 years old, the highest score in Whoqol-bref, was the social relation, with an average of 67.8 points.[30] Another study carried out with 238 elderly people, with an average age of 69.1 years old, found a better score in the Whoqol-bref in the social relation domain, with an average of 68.7 points.[31]

The social relation domain evaluates the satisfaction of the elderly with friends, relatives, acquaintances, colleagues and sexual activity.[16]This domain comprehends the support and social help that the elderly receive internally and externally, which enables an active network of contacts. Through this questionnaire it is evident that the elderly evaluated in the present study had a good perception of their internal and external relations in the context in which they live, promoting life quality.

A survey involving 239 elderly people in the community, with anaverage age of 64 years old, found a better domain punctuated for death and dying, an average of 17 points in the Whoqol-old.[32] A multicenter study of 100 elderly people, with average age of 84 years old, obtained a better score in the death and dying domain, an average of 72.7 points in the Whoqol-old.[33] The death and dying domain evidences the coping ability regarding death, with greater concern about the risk of suffering that precedes it.[16] In this study, the investigated population showed fear of death, perhaps due to the social vulnerability in which they live. It emphasizes the importance of investigating the quality of life in populations living in vulnerable areas, considering that it can be influenced by indicators of housing, violence rates, access to health services, educational level and leisure activities.[34-35]These conditions are from regions of high vulnerability in which deprivation relates to the structural factors of society and is an adequate concept for thedynamic understanding of the process of social inequality in developing countries.[4]

In the present study, it was analyzed the correlation of the Edmonton Frail Scale with domains of life quality. For the psychological domain of Whoqol-bref and present, past and future activities of the Whoqol-old, they have a strong correlation. The psychological domain deals with positive, negative, memory and spirituality feelings, and presented a correlation with fragility.[16]It is evident that the psychological domain in the study population elucidated the positive perception of life and the subjective perception of theerderly's health in psychological terms. Present, past, and future activities may have inference on the satisfaction of the elderly in accomplishments, achievements, and goals in life.[16]In this study, such subjectivity shows that older people still have the prospect of achieving what they want.

A systematic review with prospective studies in the international context verified the association between frailty and the life quality of the elderly in the community. Different instruments were used to verify frailty and life quality, and the study was based on the analysis of 11 articles. There was an association between frailty and poorer life quality for the pre-frail and frail for the physical and mental domains, regardless of the instruments used,[36] which confirms the results of this study in which the non-frail elderly had better scores on the instruments that evaluated the life quality.

When comparing the average between the frailty levels with the Whoqol-bref and Wholqol-old domains, it can be seen that the elderly who did not present frailty had better scores in the environment and sensorial functioning domain. The environment comprehends questions regarding satisfaction with the place in which it lives, health care, participation in community events, in other words, contexts that can demonstrate the perception and autonomy of the elderly when it comes to the place where they

reside.[37] In this study, the elderly participants had a positive perception of safety, financial resources, physical environment and transportation. Regarding the functioning of the sensorial domain, it had a correlation with frailty, which, in fact, to sensorial losses (smell, touch, taste, sight and hearing), can affect daily life, participation in activities and interaction with others people, which can make the elderly dependent – a risk factor to become fragile.[38-39]

Considering the context, it should be highlighted that in the short and medium term there may be changes in the status of frailty and overload of the public services. There is a need to readjust primary care equipment that assist vulnerable populations to the issues that involve care, becausewith aging, demands can be transformed and cause adverse events to health conditions.[40,41] It is suggested by the care service guidance to all the actors involved in the process of aging and fragilization, with the intention to improve thelife quality in an advanced age.

The present study has some limitations. The transversal cut does not allow establishing causality between the variables. The sample size may limit the generalization of the results. It is suggested new studies in areas of social vulnerability with elderly people that correlate frailty with life quality.

CONCLUSION

This study's goal was to evaluate the level of frailty and its relation with the life quality of the elderly enrolled in Reference Centers of Social Care. Most of the interviewees did not present frailty and the relationship between the level of frailty and the life quality scores was verified, indicating that the frail elderly had worse life quality.

Searching for frailty and life quality in the elderly may lead to prevention actions as a way to eradicate, prevent and delay risky conditions. Due to the systematic interaction of different factors that help to determine the situation, it is suggested that interventions are promoted through health care services and assistance to the elderly through multidisciplinary teams, including nurses, gerontologists, social workers and psychologists. There is a need to focus attention on the elderly, considering their peculiarities and based on basic care and protection, so as to intensify community services as a form of strategy for approaching care in the long term, focusing especially on elderly residents in regions of social vulnerability.

The development of new studies regarding this subject is necessary, considering the importance of the early detection of frailty, not to mention fomenting discussions and reformulations in the public policies and the adoption of integrated and continuous strategies, as a way to promote better life quality in an advanced age.

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