International Journal of Nursing Sciences xxx (2016) 1–4

Contents lists available at ScienceDirect

International Journal of Nursing Sciences

journal homepage: http://www.elsevier.com/journals/international-journal-of-nursing-sciences/2352-0132

ORIGINAL ARTICLE

Common chronic health problems and life satisfaction among Macau elderly people

Sydney X.X. Hu [a, *], Wai In Lei [a], Ka Kei Chao [a], Brian J. Hall [b, c], Siu Fung Chung [a]

[a] Kiang Wu Nursing College of Macau, Macau (SAR), People's Republic of China
[b] Department of Psychology, University of Macau, Macau (SAR), People's Republic of China
[c] Department of Health, Behavior & Society, Johns Hopkins Bloomberg School of Public Health, USA

ARTICLE INFO

Article history:
Received 16 February 2016
Received in revised form
24 October 2016
Accepted 31 October 2016
Available online xxx

Keywords:
Life satisfaction
Elderly
Common chronic medical illness

ABSTRACT

Aim: Most elderly people live with one or more health problems and their quality of life is affected. This study aimed to compare life satisfaction of elderly people living with common chronic medical illness compared with those without these health conditions in order to identify conditions that most affect life satisfaction of elderly people living in the community.
Method: The data was collected by a questionnaire survey of 529 elderly living in community dwellings of Macau using a single measure of life satisfaction and self-reported common chronic medical illness diagnosed by a physician. A purposeful stratified random sampling method was used. Independent sample t-tests were conducted to compare participants who had a health condition to those without a health condition.
Results: Respondents who indicated the lowest life satisfaction were those with fracture after the age of 60, eye illness, chronic bronchitis/emphysema, and metabolic arthritis/arthritis. For men, prostate problems was also significantly related to low life satisfaction.
Conclusion: Lowest life satisfaction was reported among Macau elderly people living with mobility related chronic medical illness. Policies and practices should pay more attention to mobility related health problems or issues of elderly people, such as eye health and neuromuscular weaknesses.

1. Introduction

Over the past two decades, China's population has been aging rapidly. The same as most developed countries, life expectancy in China is lengthening almost linearly with no sign of deceleration. By 2000, China's population aged 65 and older was almost 90 million, and the elderly could number well over 300 million by 2050 [1]. As a result of China's "one-child" policy and low mortality, the proportion of elderly citizens will continue to grow very quickly. A key question is: are functional limitations and chronic illnesses that are often concurrent with increases in life expectancy accompanied by changed life satisfaction, and which illnesses lead to the lowest life satisfaction?

Individuals with chronic diseases usually experienced a decline on their quality of life [2]. For example, daily activities are adversely affected as a result of physical impairment. Also, physical impairments lower patients' psychological condition, making them become more sensitive and more easily offended. They also experience difficulties in expressing complaints and frustrations, which in turn leads to feeling upset and not being understood [3]. If patients also encounter physical pain, their daily functioning can be reduced, for example, studies have found that lower back pain correlated with a decline in cognitive performance [4], thus affecting patient's ability to manage their daily functioning. Most elderly people suffer from one or more health problems and their quality of life is affected [5].

Subjective well-being captures the affective feelings and cognitive judgments people have about the quality of their lives. Life satisfaction is a form of subjective well-being that reflects the perception of whether one is happy with one's life. Life satisfaction is associated with positive life outcomes, such as health and longevity, thus it has increasingly been used public policy, for example, France and the United Kingdom have begun to measure life satisfaction since 2010 and 2011, respectively, to guide policy-making [6]. In the United States, Healthy People 2020 – a federal

* *Corresponding author.*
E-mail address: Sydney@kwnc.edu.mo (S.X.X. Hu).
Peer review under responsibility of Chinese Nursing Association.

http://dx.doi.org/10.1016/j.ijnss.2016.10.004

funded initiative tracks population-level life satisfaction to help promote quality of life [7]. Therefore, in this study of elderly, life satisfaction is used as the indicator of quality of life.

Since resources are always scarce, governments and health care professionals are challenged in providing more effective health promotion services for the elderly to maintain or to enhance their quality of life. It seems logical to assume that patients who experience multiple chronic health problems would also experience lower life satisfaction. Some studies [8] found evidence to support that, yet as patients age, this adverse effect seem reduced [9]. Regardless, most governments have been putting in various resources to help people manage their chronic diseases, it is worth to identify which ones affect life satisfaction the most. In this present study, we wanted to identify chronic medical illness that affect the life satisfaction the most. Results of the study will guide policy makers and health care professionals design more effective health promotion services.

2. Methods

This study is a cross sectional descriptive questionnaire survey. We assumed that there are differences in the level of life satisfaction among the elderly with different health problems or chronic diseases. This study was conducted in Macau, China. Macau is a small city that is a Special Administrative Region of China. The study populations were those living in the community and were members of nonprofit organizations that serve elderly people. This population would be considered socially and physically active and had high desire for higher life satisfaction.

2.1. Participants

Eligible respondents in this study were community dwelling older adults aged 65 years old or over who were ambulatory and agreed to attend an in person interview at an office of a non for profit elderly serving organization. This study used a purposive stratified random sampling method. The respondents were selected from members of a large non for profit elderly serving organization, which had 6300 elderly members. All members who were aged 65 or above were stratified first into categories of the gender groups then four age groups of 65–69, 70–74, 75–79, 80–84, 85 or above. According to the population distribution, 200 of the groups of 65–69 and 70–74 were selected, 150 of the groups of aged 75–79 and 80–84 were selected and 50 of the group of aged 85 and or above were selected randomly using a table of random numbers. All together 1500 members were selected and telephone called to invite to participate in the study. The participants were informed that their participation in the study were voluntary and refusal won't affect their memberships also the data collected would be kept anonymous and confidential.

2.2. The instrument and data analysis

The instrument is a self-reported questionnaire consisting of three parts. Life satisfaction was measured by a single-item measure, which read, “In general, how satisfied are you with your life?” with a 4-point scale from 1 (*Very Dissatisfied)* to 4 (*Very Satisfied*)). The higher values represented higher life satisfaction. This single item is a robust and reliable estimate of life-satisfaction [10–13]. The second part of the instrument is a self-report of health problems or disease that had been diagnosed by doctors. A checklist of 17 chronic medical conditions was used. On the one hand, this sample experiences free regular medical appointments which were part of the Macau primary health care scheme, on the other hand, the checklist were found reliable in a large scale study of health care needs of large number of randomly selected elderly people [14]. The third part was demographics including gender, age, marriage, education, household and finance. Independent sample t-tests were conducted to compare older adults who had a medical condition to older adults who did not report having a condition.

3. Results

When being telephone contacted, some phone numbers were found disconnected, some elderly people indicated being ill, working and or out of town during the study period, at the end totally there were 529 respondents with a response rate of 49%. Slightly more participants were female (56.2%). Most of the participants were married (72.9%), primary school or no education (69%), living with spouse (42.1%), having about or merely adequate income (73%) and having three or more health problems (51.2%). Detail of the participant's characteristic can be seen in this Table 1.

Respondents without any known health problems rated that their life satisfaction 3.16 out of 4. Others with any of the common

Table 1
Demographics of the respondents.

	N (%)		N (%)
Gender		Household	223 (42.1)
Male	230 (43.8)	Living with spouse Living alone	126 (23.8)
Female	296 (56.2)	Living with housework assistant	6 (1.1)
Age		Living with friends	175 (33.0)
65–69	116 (22.0)		
70–74	126 (23.9)		
75–79	112 (21.2)		
80–84	110 (20.8)		
85 or above	60 (12.1)		
Marriage status		**Income**	
Married	385 (72.9)	Inadequate	112 (21.3)
Single	18 (3.4)	Merely adequate	211 (40.0)
Widowed	117 (22.2)	About adequate	174 (33.0)
Divorced	8 (1.5)	More than enough	30 (5.7)
Education			
No formal education	170 (32.6)		
Primary school	190 (36.4)		
Junior high school	107 (20.5)		
Senior high school	36 (6.9)		
University or above	18 (3.5)		

Please cite this article in press as: Hu SXX, et al., Common chronic health problems and life satisfaction among Macau elderly people, International Journal of Nursing Sciences (2016), http://dx.doi.org/10.1016/j.ijnss.2016.10.004

health problems had lower life satisfaction than 3.16. Those with respondents number 30 or above all showed statistical significance when compared with those without known health problems. Respondents who indicated the lowest life satisfaction were whose with fracture after the age of 60 (2.67), Eye illness (2.84), chronic bronchitis/emphysema (2.88), metabolic arthritis/arthritis (2.88), and prostate problems (2.88) (see Table 2).

4. Discussion and conclusion

Chronic diseases affect various aspects of patients' life. Previous literature found that those impacts, include increased risk of depression [15], anxiety [16], loneliness [17], as well as decrease in quality of life [2], life satisfaction [18], and subjective well-being [19]. Findings of our study support that all chronic health problems had impact on life satisfaction. Yet our study identified the health problems that had the greatest impact. These are fracture after the age of 60, eye illness, chronic bronchitis/emphysema, metabolic arthritis/arthritis, and prostate problems. Among these conditions, prostate problems are consistent with the literature. But the other four are more uncommon, as cancer, cardiovascular diseases and diabetes, are most often linked with life satisfaction.

Several factors might be associated with this. First, due to high mortality and morbidity, those more conventional chronic conditions might have been quite well managed that elderly people could live with them. On the one hand, the government and health professionals have emphasized helping patients with these chronic conditions. On the other hand, most of the elderly participants in this study were married and lived with their spouse (42%) or friends (33%) and such supportive environments for elderly patients lead to increase in life satisfaction [20].

Second, mobility seems to be a common theme among the other four chronic medical illness, namely fracture after the age of 60, eye illness, chronic bronchitis/emphysema, and metabolic arthritis/arthritis. The link between mobility and life satisfaction could be social participation [21]. Social participation means involvement in life situations such as work, school, play, sports, entertainment, learning, civic life and religious practice among others. Active participation in social activities help people expand their social network, which can lead to increase in life satisfaction because social networks can improve chance to socialize and to help others [20]. In addition, participation facilitate learning of new coping strategies, new information, and experiences of their chronic medical illness, which can help them to improve their self-efficacy to cope with stressors, protect them from loneliness and emotional distress [17]. Mobility is a pre-requisite condition for many forms of social participation. With the help of medication or other remedies, people with these conventional chronic diseases such as cardiovascular disease would still be able to mobile, therefore have less adverse effects on social participation thus life satisfaction.

This study has three major limitations. Firstly, a cross-sectional study conducted in Macau, a special administrative region of China. So it does not establish causal relationships. Also, some of the living environments such as the economic and political systems of Macau differ from China. However, both places share some common cultures such as the traditional Chinese values, customs and food. The findings would provide some insights about elderly people in China but generalizations should be made with caution. Secondly, participants had to come to a venue to be interviewed in person, so people with restricted motilities might not be able to participate. This is perhaps one of the reasons that less number of participants with some common chronic medical illness such as cancer and stroke, due to inability to mobile either due to ability or energy to walk. Also, the samples was drew from one even though large organization, it is not representative enough especially for those who do not belong to any societies. Thirdly, a single item measure of life satisfaction was adopted in this study. Some aspects of life satisfaction could be missed by brief assessment. However, studies [10,11], suggest that the use single-item life satisfaction measures is strongly reliable. Nevertheless, single-item measures are in nature narrow in focus therefore their validity might be weaker than multiple-item scales. However, based on a representative US sample, a study [12] examined the criterion validity of the single-item life satisfaction measure with the Satisfaction with Life scale (SWLS) and showed that the two correlated strongly ($r = .75$). Using two large samples, one from Washington ($N = 13{,}064$) and Oregon ($N = 2277$) recruited by the Behavioral Risk Factor Surveillance System, and the other from a representative German sample ($N = 1312$) recruited by the Germany Socio-Economic Panel, a recent study [13] found single-item life satisfaction measures performed very similarly compared to the multiple-item SWLS. Thus, evidences suggest that single-item life satisfaction measure is reliable and valid.

In conclusion, life satisfaction of elderly people were adversely affected by all common chronic medical illness especially those restricting mobility. Our study prompts further discussion and research to determine mobility related factors that affect life satisfaction of elderly patients with chronic diseases. In the future research, researchers can increase the representation of participants to deepen understanding of the factors that lead to lower level of life satisfaction, such as eyesight, musculoskeletal weakness and pain

Table 2
Life satisfaction of elderly people without any or with various chronic medical illness.

Health problems	N (%)	Life satisfaction Mean ± SD	95% C.I.	Compare with no known health problems
No known	38 (7.2)	3.16 ± 0.44	3.02–3.30	
Fracture after the age of 60	30 (5.7)	2.67 ± 0.55	2.47–2.86	$p < 0.05$
Parkinson's disease	6 (1.1)	2.67 ± 0.52	2.25–3.08	n.s
Others	53 (10.0)	2.83 ± 0.58	2.67–2.99	$p < 0.05$
Eye problems e.g Cataract/Glaucoma	187 (35.3)	2.84 ± 0.47	2.78–2.91	$p < 0.05$
Cancer	7 (1.3)	2.86 ± 0.38	2.58–3.14	n.s
Stroke	16 (3.0)	2.88 ± 0.34	2.71–3.04	n.s
Chronic bronchitis/emphysema	57 (10.8)	2.88 ± 0.38	2.78–2.98	$p < 0.05$
Metabolic arthritis/arthritis	200 (37.8)	2.88 ± 0.45	2.82–2.94	$p < 0.05$
Prostate problems	51 (9.6)	2.88 ± 0.38	2.78–2.99	$p < 0.05$
Osteophyte/osteoporosis	208 (39.3)	2.90 ± 0.48	2.84–2.97	$p < 0.05$
Kidney problems	25 (4.7)	2.92 ± 0.28	2.81–3.03	n.s
Cardiovascular diseases	371 (70.1)	2.93 ± 0.44	2.88–2.97	$p < 0.05$
Deafness needing hearing aids	62 (11.7)	2.94 ± 0.31	2.86–3.01	$p < 0.05$
Diabetes mellitus	113 (21.4)	2.97 ± 0.28	2.92–3.03	$p < 0.05$
Emotional problems	11 (2.1)	3.00 ± 0.00	3 .00–3.00	$p < 0.05$
Disease of liver-gallbladder	27 (5.1)	3.00 ± 0.55	2.79–3.21	n.s
Dementia	9 (1.7)	3.11 ± 0.60	2.72–3.50	n.s

Please cite this article in press as: Hu SXX, et al., Common chronic health problems and life satisfaction among Macau elderly people, International Journal of Nursing Sciences (2016), http://dx.doi.org/10.1016/j.ijnss.2016.10.004

that relate to mobility. In the chronic disease management system, governments and health professionals should put more attention and efforts into the prevention and following up with mobility related health problems and issues. For example, policy should be examined to enlist eye health as part of regular adult health checkup, also provision of walking and eyesight aids. In addition, as nursing professionals hold more and more health promotion roles in hospitals and communities, they need to not only promote more eye and musculoskeletal health, but also be careful not to hold stereotype about elderly clients' complains such as vision blurriness and weakness, as being normal part of the aging process.

References

[1] Population Reference Bureau. China's rapidly aging population. Today's Res Aging 2010;20:1–5.
[2] Nowakowski ACH. Chronic inflammation and quality of life in older adults: a cross-sectional study using biomakers to predict emotional and relational outcomes. Health Qual Life Outcomes 2014;12:141–53.
[3] Morrison V, Bennett P. An introduction to health psychology. 2nd ed. Spain: Pearson Education Limited; 2009.
[4] Whitbourne SK, Whitbourne SB. Adult development and aging: bio-psychosocial perspective. 5th ed. USA: John Wiley & Sons, Inc.; 2014.
[5] Mukherjee B, Ou H, Wang F, Erickson S. A new comorbidity index: the health-related quality of life comorbidity index. J Clin Epidemiol 2011;64:309–19.
[6] Diener E, Chan MY. Happy people live longer: subjective well-being contributes to health and longevity. Appl Psychol Health Well-Being 2011;3:1–43.
[7] Diener E, Lucas R, Schimmack U, Helliwell J. Well-being for public policy. Oxford: Oxford University Press; 2009.
[8] Jung M, Muntaner C, Choi M. Factors related to perceived life satisfaction among the elderly in South Korea. J Prev Med Public Health 2010;43:292–300.
[9] Piazza JR, Charles ST, Almeida DM. Living with chronic health conditions: age differences in affective well-being. J Gerontol Ser B Psychol Sci Soc Sci 2007;62B:313–21.
[10] Alwin D. Margins of error: a study of reliability in survey measurement. Hoboken, NJ: John Wiley & Sons; 2007.
[11] Lucas RE, Donnellan MB. Estimating the reliability of single-item life satisfaction measures: results from four national panel studies. Soc Indic Res 2012;105:323–31.
[12] Kobauc R, S J, Zack M, Lucas R, Burns A. Well-being assessment: an evaluation of well-being scales for public health and population estimates of well-being among US adults. Appl Psychol Health Well-Being 2010;2:272–97.
[13] Cheung F, Lucas RE. Assessing the validity of single-item life satisfaction measures: results from three large samples. Qual Life Res 2014;23:2809–18.
[14] Social Welfare Bureau. Macau elderly long-term care services needs assessment. Macau Soc Welf Bur 2006.
[15] Nan H, Lee PH, McDowell I, Ni MY, Stewart SM, Lam TH. Depressive symptoms in people with chronic physical conditions: prevalence and risk factors in a Hong Kong community sample. BMC Psychiatry 2012;14:198.
[16] McKercher CM, Venn AJ, Blizzard L, Nelson MR, Palmer AJ, Ashby MA, et al. Psychosocial factors in adults with chronic kidney disease: characteristics of pilot participants in the Tasmania chronic kidney disease study. BMC Nephrol 2013;14:83–93.
[17] Barlow MA, Liu SY, Wrosch C. Chronic illness and loneliness in older adulthood: the role of self-protective control strategies. Health Psychol 2015;34:870–9.
[18] Schilling OK, Wahl H, Oswald F. Change in life satisfaction under chronic physical multi-morbidity in advanced old age: potential and limits of adaptation. J Happiness Stud 2013;14:19–36.
[19] Feller S, Teucher B, Kaaks R, Boeing H, Vigl M. Life satisfaction and risk of chronic diseases in the European Prospective Investigation into cancer and nutrition (EPIC)-Germany study. PLoS One 2013;8:e73462.
[20] Li H, Chi I, Xu L. Life satisfaction of older Chinese adults living in rural communities. J Cross Cult Gerontol 2013;28:153–65.
[21] Anaby D, Miller WC, Jarus T, Eng JJ, Noreau L. Participation and well-being among older adults living with chronic conditions. Soc Indic Res 2011;100:171–83.

Please cite this article in press as: Hu SXX, et al., Common chronic health problems and life satisfaction among Macau elderly people, International Journal of Nursing Sciences (2016), http://dx.doi.org/10.1016/j.ijnss.2016.10.004