

Psychological Health of Older Women in Hong Kong: Do Demographic Characteristics Make a Difference?

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Abstract

Background: The aging population of Hong Kong is rapidly growing. Although older adults enjoy a relatively long life expectancy, their psychological health is ranked near the bottom in the world.

Objectives: This study assessed the psychological health of older women in Hong Kong and compared it with that of older men. It also aimed to examine if demographic characteristics have similar effects on the psychological health of older women and men.

Methods: A standardized questionnaire was administered in face-to-face interviews with 554 participants (288 women and 266 men), aged 70 years or above. Psychological health was measured by the general health questionnaire-30 (GHQ-30), center for epidemiologic studies-depression (CES-D) scale, and life satisfaction index (LSI). Chi square test was performed to examine gender differences in psychological health and determine the relationship between demographic characteristics and psychological health of the elderly.

Results: Compared with older men, a greater proportion of older women were at risk of mild psychiatric problems (22.1% vs. 12.3%, $P < 0.001$), depression (38.6 vs. 18.8%, $P < 0.001$), and dissatisfaction with life (38.5% vs. 21.5%, $P = 0.002$). The correlation of psychological health with age, marital status, and educational attainment was not similar among older women and men.

Conclusions: Health promotion programs should be implemented to reduce health inequalities among men and women. Effectiveness of programs can be enhanced by targeting the elderly whose psychological health is most vulnerable.

Keywords: Aged, Health Status Disparities, Mental Health, Socioeconomic Factor, Women's Health

1. Background

Hong Kong has witnessed a tremendous industrialization and population growth in the past 5 decades. In 1991, life expectancy at birth in Hong Kong was 79.8 years for women and 75.2 years for men and seemed favorable in comparison with the United States and Japan (1). More recently, according to the statistics released by the Japan health and welfare ministry (July 2016), women and men in Hong Kong enjoy the longest life expectancy in the world. The average lifespan for women is 87.3 years in Hong Kong, and men on average can expect to live up to 81.2 years (2).

Ironically, using the global age watch index, the institute of ageing at the Chinese University of Hong Kong showed that Hong Kong was near the bottom of world's ranking in terms of psychological health of the elderly (ranked 79 among 90 countries and territories) (3). Poor psychological health of the elderly, despite the long life expectancy, has become a great concern of health policymakers, particularly in the fast-growing aging population of Hong Kong.

The elderly population is commonly divided into 3 different age groups, viz, the young-old, the old-old, and the

oldest-old, which are arbitrarily defined as age ranges of 60 - 69, 70 - 79, and ≥ 80 years, respectively. In the aging population of Hong Kong, the old-old and the oldest-old are growing more rapidly than the young-old. The population of these 2 groups increased from 38% to 50% between 1981 and 1999. Also, older adults, aged 70 years or above, will constitute 70% of the aging population by 2017 (4). Despite the fact that the old-old and oldest-old populations are growing rapidly in Hong Kong, less is known about their psychological health status, compared to other age groups.

According to a report by the centre for suicide research and prevention at the University of Hong Kong, suicide rate has increased sharply in people aged 65 years or above. In 2012, this rate was 4 times higher than that of younger adults aged 15 - 24 years and 2 times higher than that of adults aged 25 - 64 years. Researchers found that about 70% of suicides among the elderly are related to depression and psychological health problems (5, 6). Therefore, the psychological health of older adults deserves the attention of health professionals.

Research conducted in other countries (eg, Sweden, Spain, and Korea) indicates that older adults generally suf-

fer from health problems. Also, older women experience significantly more health problems than older men (7-9). Therefore, it is necessary to determine if such health inequalities exist among the elderly in Hong Kong.

2. Objectives

The aim of this study was to examine the psychological health of older women, aged 70 years or above, and compare it with that of older men in Hong Kong. The association of psychological health with demographic characteristics was also analyzed in older women and men.

3. Methods

This study was approved by the ethics committee of the University of Hong Kong, where the first author was affiliated to when this research was conducted. A cross sectional design was applied through which data were collected using a standardized questionnaire, administered in individual face-to-face interviews. Participation was voluntary and anonymous.

3.1. Sampling of the Participants

The participants were recruited through stratified sampling among the recipients of old-age or disability allowance. In Hong Kong, 93% of the elderly, aged 70 years or above, receive at least 1 of the mentioned allowances. Therefore, older adults, receiving old-age allowance and/or disability allowance, constituted the sampling frame of this study, which was more efficient than other frames in the local context. Subjects were stratified in terms of age and sex. Finally, a total of 2500 older adults were contacted and invited to participate in this study.

3.2. Measurement Instruments

Psychological health status was measured by the Chinese version of the following tools: general health questionnaire-30 item (GHQ-30) (10), center for epidemiological studies-depression (CES-D) scale (11), and life satisfaction index (LSI) (12). GHQ-30 and CES-D are tools employed to evaluate negative psychological wellbeing, whereas LSI is used to assess positive psychological wellbeing.

3.2.1. GHQ-30

GHQ-30 is a screening test, developed for the detection of mild psychiatric problems among individuals in a community. Each of the items ($n = 30$) describes a condition or an aspect of a mild psychiatric problem (eg, loss of sleep over anxiety, constant feeling of being strained, and

considering oneself as worthless). Respondents are asked to indicate whether they have encountered the problem more or less than usual over the past month. The greater number of mild psychiatric problems, encountered more than usual, indicates weaker psychological health status.

3.2.2. CES-D Scale

CES-D is a 20-item scale, developed to measure the current level of depressive tendencies in the general population. The items are statements of depressive symptoms, eg, depressive moods, feelings of guilt and worthlessness, feelings of hopelessness, sleep disturbances, and appetite loss. Respondents are asked to show how frequently they have experienced each symptom in the past week on a 4-point scale (0, none; 1, 1 - 2 days; 2, 3 - 4 days; and 3, 5 - 7 days). Higher scores represent greater depressive tendencies.

3.2.3. LSI

LSI consists of 18 items and evaluates 5 different components, viz, zest, resolution and fortitude, congruence between desired and achieved goals, mood tone, and positive self-concept. It is an overall life review, which is widely used as a measure of quality of life among the elderly. Respondents answer the items (eg, "As I look back on my life, I am fairly well satisfied" and "I would not change my past life even if I could") on a 2-point scale (1, agree; 0, disagree); higher total scores represent greater life satisfaction.

The reliability and validity of the mentioned tools of psychological health (Chinese versions) have been well established in the elderly population of Hong Kong and have been reported elsewhere (13). In the present study, these measures were incorporated in a standardized questionnaire, which included items on sociodemographic characteristics and several short attitude scales for other research purposes.

3.3. Data Collection Procedure

A group of 15 postgraduate social work students were recruited to conduct the individual face-to-face interviews with each respondent. Intensive training and close supervision were provided to ensure proper data collection. In case the respondent was inaccessible, the researcher would try to visit him/her 3 times at different times of the day on different days before his/her name was removed from the interview list.

Informed consents were obtained before conducting the interviews during which the questionnaire was administered. Bivariate analysis via Chi square test was performed, using SPSS version 20. P value less than 0.05 was considered statistically significant.

4. Results

In the present study, about half of the older adults responded to our invitation letter. A total of 554 eligible subjects (288 older women and 266 older men) were successfully interviewed. Demographic characteristics of these interviewees are presented in Table 1. Older women had lower educational levels, compared to older men ($P < .001$) and were slightly older than their male counterparts, although the difference was not statistically significant ($P = 0.321$). While the majority of older women were widows, a relatively greater proportion of older men were living with their spouse ($P = 0.000$).

Table 1. Demographic Characteristics of the Participants^{a,b}

Characteristics	Older Women (N = 288) Frequency	Older Men (N = 266) Frequency	χ^2
Age, y			
70 - 74	123 (42.7)	130 (48.9)	$\chi^2 = 2.27$
75 - 79	86 (29.9)	74 (27.8)	df = 2
≥ 80	79 (27.4)	62 (23.3)	$P = 0.321$
Marital status			
Married	73 (25.5)	193 (74.2)	$\chi^2 = 130.09$
Widowed	180 (62.9)	60 (23.1)	df = 2
Never married	33 (11.5)	7 (2.7)	$P < 0.001$
Education			
No schooling	222 (77.1)	106 (39.8)	$\chi^2 = 83.60$
Primary	47 (16.3)	88 (33.1)	df = 2
Secondary or above	19 (6.6)	72 (27.1)	$P < 0.001$

^aValues are expressed as No. (%).

^bMarital status does not include the category of divorce, given its low frequency. Pearson's χ^2 values are based on frequency; the total frequency of χ^2 tests varies slightly because of missing data.

For the purpose of data analysis, scores on each measure of psychological health were divided into 3 levels of low, moderate, and high. High scores on GHQ-30 (≥ 6) and CES-D scale (≥ 17) were the cutoff scores, indicating the high risk of mild psychiatric problems and significant depressive tendencies, respectively. Scores ≥ 13 on LSI were the cutoff scores, representing the high level of life satisfaction.

As shown in Table 2, a greater proportion of older women were at risk of mild psychiatric problems ($P < 0.001$) and depression ($P < 0.001$), compared with older men. Also, a greater proportion of older women reported

low life satisfaction in comparison with older men ($P < 0.001$). In terms of gender differences, as shown in Table 1, analysis of demographic characteristics (as predictors of psychological health) was performed separately for older women and men. The independent analysis was based on the assumption that demographic characteristics would correlate differently with psychological health among older women and men.

Table 2. Mental Health of Older Women in Comparison with Older Men^{a,b}

Psychological Health	Older Women (N = 288) Frequency	Older Men (N = 266) Frequency	χ^2
Mild psychiatric problems (GHQ-30)			
None	105 (37.4)	143 (55.0)	$\chi^2 = 22.49$ df = 3
Low (1 - 2)	61 (21.7)	57 (21.9)	
Moderate (3 - 5)	54 (19.2)	29 (11.2)	
High (≥ 6)	61 (21.7)	31 (11.9)	$P < 0.001$
Depression (CES-D)			
Low (0 - 9)	67 (23.3)	107 (40.2)	$\chi^2 = 31.78$ df = 2
Moderate (10 - 16)	111 (38.5)	110 (41.4)	
High (≥ 17)	110 (38.2)	49 (18.4)	
Life satisfaction (LSI)			
Low (0 - 7)	104 (36.5)	57 (21.5)	$\chi^2 = 18.42$ df = 2
Moderate (8 - 12)	100 (35.1)	95 (35.8)	
High (≥ 13)	81 (28.4)	113 (42.7)	
			$P < 0.001$

^aValues are expressed as No. (%).

^bPearson's χ^2 values are based on frequency; the total frequency of χ^2 tests varies slightly because of missing data.

To evaluate the effect of age on psychological health, the participants were divided into 3 age groups, ie, 70 - 74, 75 - 79, and ≥ 80 years. The psychological health of the 3 age groups was compared. The results of the comparison indicated that age was predictive of psychological health among older men in terms of mild psychiatric problems ($P = 0.029$), depression ($P = 0.007$), and life satisfaction ($P = 0.006$) (Table 3). However, advanced age was not associated with deterioration of psychological health among older women.

While age was not related to any of the 3 measures of psychological health in older women, marital status

Table 3. Age and Psychological Health of Older Men^{a,b}

Psychological health	70 - 74 (N = 112)	75-79 (N = 93)	≥ 80 (N = 48)	χ^2
	Frequency	Frequency	Frequency	
Mild psychiatric problems (GHQ-30)				
None	69 (61.6)	52 (55.9)	20 (42.5)	
Low (1-2)	23 (20.5)	23 (24.7)	7 (14.8)	$\chi^2=14.07$
Moderate (3-5)	9 (8.0)	8 (8.6)	11 (23.4)	df = 6
High (≥ 6)	11 (9.8)	10 (10.8)	9 (19.1)	P = 0.029
Depression (CES-D)				
Low (0-9)	53 (47.3)	39 (41.9)	8 (16.7)	$\chi^2 = 13.83$
Moderate (10-16)	42 (37.5)	36 (38.7)	28 (58.3)	df = 4
High (≥ 17)	17 (15.2)	18 (19.4)	12 (25.0)	P = 0.007
Life satisfaction (LSI)				
Low (0-7)	14 (12.5)	23 (24.7)	17 (35.4)	$\chi^2 = 14.58$
Moderate (8-12)	42 (37.5)	30 (32.3)	19 (39.6)	df = 4
High (≥ 13)	56 (50.0)	40 (43.0)	12 (25.0)	P = 0.006

^aValues are expressed as No. (%).

^bOlder men with missing values are not included. Pearson's χ^2 values are based on frequency; the total frequency of χ^2 tests varies slightly because of missing data.

played a significant role in psychological health (Table 4). In fact, older married women enjoyed the highest level of psychological health, and those who had never married were found to have the poorest level of psychological health in terms of mild psychiatric problems ($P = 0.018$), depression ($P = 0.034$), and life satisfaction ($P < 0.001$).

On the other hand, marital status played a less significant role among older men. The only significant finding was that those who were living with their wife found life more satisfactory than widowers ($\chi^2 = 16.44$; $df = 2$; $P < 0.001$). Also, education had no significant effect on the psychological health of older men, whereas it exerted a significant impact on the psychological health of older women. In fact, higher education was associated with a higher level of psychological health among older women (Table 5).

Based on the findings, older women with primary or higher education were significantly less likely to report mild psychiatric problems on GHQ-30, compared with older women with no formal education ($P = 0.005$) and showed a weaker tendency towards depression on CES-D ($P = 0.002$). Also, older women with primary education or above had slightly higher levels of life satisfaction than older women with no schooling (measured by LSI); based on the findings, the difference was marginally significant ($P = 0.096$).

5. Discussion

The results of the present study indicated that older women have significantly poorer psychological health, compared with older men. This finding is consistent with the results reported in other Asian countries. For instance, in Korea, a higher prevalence of psychological health problems (depressive symptoms and suicidal ideations) was reported among older women in comparison with older men (9). Older women in Singapore also had a poorer health status (self-reported health, chronic illness, and functional disability) in comparison with older men (14). Apparently, gender inequalities in health among the elderly in Asia are similar to Western countries, eg, Sweden, Spain, and Italy (7, 8, 15).

Many factors (eg, socioeconomic status, family characteristics, and living arrangement) have been proposed to explain the health inequality among the elderly (7, 9, 14). In the present study, widowhood of older women might account for the gender differences in psychological health. As shown in Table 1, compared with older men, a greater proportion of older women were widows. Older women, who had lost their spouse, had in fact experienced the most stressful event one has to endure in life (16, 17). This event is detrimental to both physical and psychological wellbeing (18-20). The grieving process, loss of intimate companionship and emotional support, financial burden because of the spouse's fatal illness, and disturbance of daily rou-

Table 4. Marital Status and Mental Health of Older Women^{a,b}

Psychological health	Married (N = 70)	Widowed (N = 173)	Never married (N = 32)	χ^2
	Frequency	Frequency	Frequency	
Mild psychiatric problems (GHQ-30)				
None	36 (51.4)	58 (32.9)	9 (28.1)	
Low (1 - 2)	12 (17.1)	44 (25.4)	4 (12.5)	$\chi^2 = 15.43$
Moderate (3 - 5)	12 (17.1)	35 (19.7)	7 (18.8)	df = 6
High (≥ 6)	10 (14.3)	38 (22.0)	13 (40.6)	P = 0.018
Depression (CES-D)				
Low (0 - 9)	24 (33.3)	37 (20.6)	3 (9.1)	$\chi^2 = 10.41$
Moderate (10 - 16)	24 (33.3)	75 (41.7)	12 (36.4)	df = 4
High (≥ 17)	24 (33.3)	68 (37.8)	18 (54.5)	P = 0.034
Life satisfaction (LSI)				
Low (0 - 7)	19 (26.4)	68 (37.8)	68 (51.5)	$\chi^2 = 23.16$
Moderate (8 - 12)	17 (23.6)	69 (38.3)	69 (36.4)	df = 4
High (≥ 13)	36 (50.0)	40 (23.9)	40 (12.1)	P < 0.001

^aValues are expressed as No. (%).

^bOlder women with missing values are not included. Pearson's χ^2 values are based on frequency; the total frequency of χ^2 tests varies slightly because of missing data.

tines are psychological stressors, associated with the widowhood of older women.

The stress experienced by widowed women exerts a negative impact on their psychological health (21). Furthermore, the resultant depression may last for many years after widowhood, which prolongs the adverse effects in older women (22, 23). Therefore, compared with older married women, older widowed women experience a greater number of mild psychiatric problems, more depressive symptoms, and a lower level of life satisfaction.

Another factor which may account for the gender differences in psychological health among the elderly in Hong Kong is educational attainment. Higher educational attainment is associated with better psychological health through various mechanisms. For instance, individuals with higher education are more likely to have larger supportive social networks, greater access to resources, and more effective coping skills when experiencing stress (24, 25); therefore, the elderly with higher education are psychologically healthier. In the present study, compared with older men, older women had significantly lower levels of education (Table 1). The difference in educational attainment between older women and men might account for the inequality in psychological health, as shown in Table 2.

The mentioned findings are consistent with reports from Spain where older women scored lower than older men on 3 health measures, viz, (1) self-perceived health, (2) functional limitation (eg, limitations in hearing and see-

ing and mobility problems), and (3) restrictions in activities of daily living. Similarly, researchers in Spain observed that educational attainment accounted for the gender difference in health status among the elderly (26).

The abovementioned findings focus on gender differences in psychological health among older adults. Now, we will consider the correlation of demographic characteristics (ie, age, marital status, and education) with psychological health among the elderly. We also look at the correlations separately among older women and men. Researchers agree that it is essential to perform independent analyses in terms of gender, as some factors do not necessarily correlate with psychological health in the same manner among older women and men (27, 28).

In this regard, it has been found that social network integration is more closely related to life satisfaction of older women, whereas socioeconomic status is more important for the life satisfaction of older men (27). In other words, the source of life satisfaction varies for older women and men. Researchers also observed that functional ability and social relations are important for quality of life in older women but are less important for older men (28). In view of these findings, data analysis on the correlates of psychological health was performed separately for older women and men.

The independent analysis showed that age had differential effects on the psychological health of older men and women. Psychological health of older men was found

Table 5. Education and Mental Health of Older Women^{a,b}

Psychological Health	No Schooling (N = 210) Frequency	Primary or Above (N = 65) Frequency	χ^2
Mild psychiatric problems (GHQ-30)			
None	69 (31.9)	36 (53.8)	
Low (1-2)	53 (24.8)	9 (12.3)	$\chi^2 = 12.74$
Moderate (3-5)	46 (21.0)	8 (12.3)	df = 3
High (≥ 6)	47 (22.4)	14 (21.5)	P = 0.005
Depression (CES-D)			
Low (0-9)	41 (18.4)	26 (39.4)	$\chi^2 = 12.60$
Moderate (10-16)	92 (41.4)	19 (28.8)	df = 2
High (≥ 17)	89 (40.1)	21 (31.8)	P = 0.002
Life satisfaction (LSI-A)			
Low (0-7)	87 (39.5)	17 (26.2)	$\chi^2 = 4.69$
Moderate (8-12)	76 (34.5)	24 (36.9)	df = 2
High (≥ 13)	57 (25.9)	24 (36.9)	P = 0.096

^aValues are expressed as No. (%).

^bOlder women with missing values are not included. Pearson's χ^2 values are based on frequency; the total frequency of χ^2 tests varies slightly because of missing data.

to deteriorate with advancing age, but no such changes were found among older women. The present findings are consistent with those reported in Western countries (29, 30). In a longitudinal study conducted in Copenhagen, Denmark on gender differences in depressive symptoms among adults, aged 50-80 years, older men showed increased depressive symptoms at the age of 60 - 80 years, but no such increase was found among older women (29).

Based on a survey in the US on a representative sample of 2727 subjects, aged 25 - 74 years, a negative linear relationship was found between age and negative affect among male subjects, whereas no systematic association was reported between age and negative affect among female subjects (30). It should be noted that although the US study was conducted on a younger sample, the findings were similar to the present study on older adults. Apparently, the differential predictability of age in psychological health is applicable to young and old adults across different cultural backgrounds.

It has been suggested that men experience more drastic changes in lifestyle and social networks by advancing age, which may account for the increase in depressive symptoms upon aging. The social role of women, on the other hand, remains relatively unchanged, and their psychological health is less susceptible to changes caused by increasing age (31). The differential effect of age on the psychological health of the elderly in Hong Kong might be also accounted for by similar mediating mechanisms.

With regard to the effect of marital status, the present data showed that widowhood had an adverse effect on positive psychological wellbeing (life satisfaction) in both older women and men. However, widowhood had significant effects on negative wellbeing (mild psychiatric problems and depression) only for older women and was not associated with negative psychological wellbeing among older men. Apparently, the influence of widowhood on negative wellbeing was greater among older women than older men.

The mentioned findings are contrary to most studies, which showed that widowhood has more adverse effects on men than women (31-33). Nonetheless, the current findings are consistent with other reports, indicating that widowed women are more distressed than widowed men (34-36). It is noteworthy that participants in the present study were in the old-old age range (70 years or above). A great proportion of older women (77.1%) had no schooling, and only 6.6% received secondary education (or above). Also, among widowed women, 80.0% had no schooling, and only a minority (4.4%) had received secondary education (or more).

Older widowed women with low educational attainment may have very limited coping resources to confront the ordeal following their spouse's death; as a result, their psychological health is seriously compromised under such circumstances. Notwithstanding the cause of differential effect of widowhood on older women and men, the present findings support the contention that psychological health is not predicted similarly for older women and men. Evidence supporting this argument is also presented in our analysis of the relationship between educational attainment and psychological health in older women and men.

The results of the present analysis indicated that educational attainment is significantly correlated with negative wellbeing (mild psychiatric symptoms and depression; $P = 0.005$ and 0.002 , respectively), and its correlation with positive wellbeing (life satisfaction) was marginally significant ($P = 0.096$) among older women in Hong Kong. However, educational attainment was not significantly correlated with any of the measures of psychological health among older men.

The mentioned findings are in contrast with the results

reported in Italy (15), which showed that high educational level is positively related to life satisfaction in older men, but not older women. It should be noted that the study performed in Italy included a relatively younger sample, aged 65 years or above, whereas the sample in the current study consisted of older adults, aged 70 years or more. Furthermore, educational attainment in the study performed in Italy covered a wider range of education (4 categories), ie, no schooling, primary school, junior high school, and secondary school or above. In contrast, education in the present analysis was dichotomized into “no schooling” vs. “primary or above”, as the educational attainment of older women in Hong Kong is generally very low.

In Hong Kong, a great number of older women receive no formal education. Educated women (albeit primary education) have a different psychological health status, compared with older women who receive no schooling. The present findings are consistent with a study on the elderly, which used Limiting Long-standing Illness (LLI) as a health indicator (8). This study was conducted in Spain and the researchers reported the following: “Low educational attainment was not significantly associated with LLI among men, whilst a positive relationship with a gradient was found for women.” (p. 633). Findings reported by other investigators also indicate that educational attainment is a better predictor of health inequality for women than men (37).

5.1. Conclusion and Implications

Consistent with the findings reported in other Asian and Western countries, psychological health of older women in Hong Kong compared unfavorably with that of older men. The poorer psychological health can be accounted for by the greater proportion of older women being widows or never married. The difference in educational attainment is another factor which contributes to the inequality of psychological health among older women and men in Hong Kong. Nevertheless, the psychological health inequality among the elderly is certainly an issue, which warrants the attention of health policymakers. In fact, health promotion programs should be implemented to reduce health inequalities. As the findings revealed, age, marital status, and educational attainment did not predict psychological health in the same manner among older women and men. Therefore, caution should be taken when predicting the psychological health of the elderly, based on demographic characteristics. In view of the differential impact of demographic characteristics on the psychological health of older women and men, health promotion programs need to consider the individual characteristics of older adults. Also, vulnerability of the least privileged elderly should be given prior consideration. Effectiveness of health promotion programs would be en-

hanced by targeting specific groups of older adults whose psychological health is most vulnerable.

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