

Gender Differences in Resilience Among Older Taiwanese Adults

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Abstract

Objectives

The aim of this study was to determine whether gender impacts potential associations between social relationships, sociodemographic, health and behavioural factors with resilience among older Taiwanese adults.

Methods

High and low resilience of older adults was determined based on the median value of the Friborg's Resilience Scale. An independent sample t -test, χ^2 , and multivariate logistic regression were used to examine predictors for resilience which were then stratified by gender.

Results

Older women were less likely to be resilient than older men. Marital status, age, financial stress, and satisfaction with one's living environment were only significant in women. Traditional gender roles in the wider Taiwanese context can be attributed to these differences.

Conclusions

The relationships between gender, sociodemographics, health, and social and behavioural factors with resilience provide unique insights into how culture shapes trends in data.

Introduction

Many countries have observed an increase in their population of older adults (1). These rapidly ageing populations have brought many of the problems unique to older adults to the forefront, such as decreasing productivity and financial income, empty nests, and increasing susceptibility to both infectious and non-communicable diseases. Combinations of these conditions are very common (2). However, there are some individuals who are more resilient against these later life course challenges than others.

Resilience is described as a process of adapting well to adversity, trauma, tragedy, threats, or significant sources of stress (3). It can also be referred to as a person's ability to resist the negative effects of life stresses on their mental and physical health (4). Therefore, resilience can be viewed as a key factor in mitigating challenges faced by older adults which promotes healthy ageing. Consequently, it is important to investigate factors associated with resilience.

In the literature, it was observed that sociodemographic factors can influence resilience. In Singapore it was found that nurses who were older, married, and highly educated were more likely to have higher resilience (5). A Chinese study found that family income and education positively influenced resilience (6); however, age was found to have a negative impact. In Spain, it was found that spirituality was associated with higher levels of resilience (7). However, it was found that many resilience studies did not explore these factors in older populations and rarely with gender as a focus.

Declining health is a general concern among older Taiwanese adults (8). In the literature, better health was observed to be associated with greater resilience (9). However, it is not known if gender impacts this association. It was reported that men and women have marked differences in health with regards to disease prevalence and severity (10). Thus, it is important that differences in gender be considered in resilience studies using a valid, objective marker for health such as a self-rated health tool (9).

Behavioural factors such as community participation in social activities were found to be associated with resilience as seen in a North American study (11). Similarly, social relationships such as family relationships are often conducive to providing caring relationships, assistance, goods, services, and helpful information (12) which was observed to promote resilience (6). The role of family and the nature of family relationships vastly differ across cultures; thus, it would be interesting to determine if Taiwanese family relationships impact resilience and to what extent this is experienced by men and women as they often play different roles in families.

Men and women have different life experiences and face different challenges, and thus they may have different underlying factors associated with resilience. Subsequently, the study of gender is vital in highlighting potential inequalities (13), as they may in turn affect how men and women respond to challenges and predict differences in resilience.

This paper addressed the research gap that exists in exploring gender differences in resilience, specifically among older adults. It was aimed at determining whether there are associations of sociodemographics, health, social relationships, and behavioural factors with resilience in a Taiwanese population of older adults according to gender. Taiwan is described as one of the world's more rapidly ageing societies as its ageing rate is twice that of Europe and the US (8). In Taiwan, the population of individuals ≥ 65 years was 13.2 percent in 2016, and it is predicted that by 2025 Taiwan will transition into a super-aged society (20% ≥ 65 years) (8). Consequently, Taiwan is ideal for resilience studies among older adults due to their notable population size, thus providing a benchmark for countries that have not yet transitioned into an ageing society. Its geographical position and cultural similarities with its Asian neighbours suggest that this study could provide relatable literature for much of Asia.

Methods

Study Design

Data was sourced from the 2016 Taiwan Mental Health Survey of Older Adults. The sample (n = 2286) was nationally representative and derived from multi-stage proportional probability sampling. The districts on the main island of Taiwan (98.9% population) were used as the sampling frame. Districts were classified as one of seven levels of urbanisation and selected according to probability based on the population size of older adults. Census blocks were randomly selected from districts. Government household registries were used to identify households in each census block with individuals ≥ 55 years. Households were randomly selected to determine eligible participants. Eligible participants were capable of proving informed consent and ≥ 55 years. Face-to-face interviews were conducted at the residence of a respondent. For this research, only those aged ≥ 65 years were included in the analysis.

Measurements

Resilience was measured using the personal strength/ perception of self-dimension of Friborg's Resilience Scale for Adults (14). Six items were scored one to five to correspond with the participants' chosen response of strongly disagree, disagree, neutral, agree, and strongly agree. Scores were totalled to generate a resilience score, with a higher score indicating a higher level of resilience. The median value of resilience scores was determined and was used to categorize respondents into 'low' and 'high' resilience (9).

Independent variables included sociodemographic, health-related, social relationships, and behavioural factors. Sociodemographic factors included gender, age, educational level, marital status, religious beliefs, employment, financial stress, and living environment.

Marital status was categorised as married or non-married (divorced, separated, widowed, or single). Religious beliefs and employment variables were dichotomised (yes/no). Financial stress was assessed with the question 'Do you have difficulty in meeting your household expenses?' Those who responded, 'very difficult', and 'with some difficulty' were deemed as having high financial stress, and those who responded, 'no difficulty at all', and 'little difficulty' were deemed as having low financial stress. Satisfaction with one's living environment was assessed with the question 'Overall, how satisfied are you with your living environment?'; the original 5-point scale was dichotomised into 'satisfied' and 'unsatisfied'.

Health-related factors included self-reported health and quality of sleep. Self-reported health and sleep quality were respectively assessed by the questions, 'In general, how is your health?' and 'How is your sleep quality in the past week?' The original five response categories (very good, good, fair, bad, and very bad), were recoded into 'poor', 'fair', and 'good'.

Social relationship factors included interactions with neighbours and family relationships. Respondents were asked to rate the frequency of daily personal contact with neighbours (none, little, some, and fairly often) which was later recoded to 'often' and 'not often'.

Family relationship strength was measured by allocating a score of one to five for each of the three items assessing family relationships (15). It consisted of three questions: 'How frequent is your interaction?';

'How is the quality of your relationship?'; and 'How well do you get along?' with family members. Each question had a range of one to five. The final score was the sum of the three questions, with a higher score indicating a better relationship.

Behavioural factors included participation in community activities, time spent on leisure activities, and internet use. Respondents were asked if they participated in community activities, including professional organizations, religious groups, clubs, community social functions, political functions, charity work, or other social functions. Time spent on leisure activities assessed the amount of time spent on hobbies or other personal interests. For internet use, respondents were asked how much time they spent on the internet each day and were recoded to 'yes' and 'no'.

Data Analysis

Descriptive characteristics of the study sample are presented as numbers and percentages, and bivariate analyses of respondent characteristics and the resilience level were conducted with Pearson's χ^2 test and an independent-sample *t*-test. A multivariate logistic regression analysis was performed to determine factors associated with resilience. Analyses were conducted for the overall sample as well as stratified by gender. A 95 percent confidence interval (CI) was used to report the percentage of the odds ratio (OR). All analyses were performed using SPSS for Windows vers. 22 (SPSS, Chicago, IL, USA).

Ethical considerations

This research was approved by the ethical clearance committee of Taipei Medical University no.: N201608036. Before each interview, the aim of this research and the content of data collection were explained to respondents, and written informed consent was obtained from all respondents. All methods were performed in accordance with the regulations and guidelines of the declaration of Helsinki and the ethical clearance committee of Taipei Medical University.

Results

Table no. 1 shows that the 1553 respondents were mainly married (65.2%), educated at a primary level (47.0%), practitioners of religion (84.2%), unemployed (85.6%), and satisfied with their living environment (72.2%). Most household financial stress was low (76.2%), and most participants spent a fair amount of time on leisure activities (60.5%). Generally, subjects did not participate in community activities (60.8%) nor did they use the internet (83.2%). The sleep quality was mostly good (42.9%) and self-reported health fair (42.9%). Study participants did not often interact with neighbors daily (63.7%). The mean age of the sample was 74.0 ± 6.8 years, and the mean family relationship and resilience scores were 12.3 ± 1.9 and 16.3 ± 3.8 , respectively.

In table no. 2, most predictors, including gender were significantly associated with resilience. Comparisons between older men and women showed that age and satisfaction with one's living environment were significantly associated with resilience among women, but not among men, while employment and financial stress were significant factors among men but not among women.

In table no. 3, multivariate logistic regression showed that after controlling for other factors, women were less likely to have high resilience compared to men (OR=0.519; CI: 0.400~0.675). When stratified by gender, men and women differed in factors that were significantly associated with resilience. Marital status was a significant factor among older women, but not among men. Education was a significant predictor for both older men and women. However, any level of increase in education was statistically significant among women, while only the tertiary level of education was statistically significant in its association with high resilience among men. Financial stress and satisfaction with one's living environment were significantly associated with resilience among older women, but not among men. For both older men and women, religion, family relationships, time spent on leisure activities, and self-reported health were significantly associated with resilience.

Discussion

This study provides a profile of the level of resilience among older Taiwanese adults and identified factors associated with resilience, while also comparing gender differences in those factors. Although resilience research has recently garnered more attention, it has been difficult to conduct any international comparisons due to the limited number of articles, and variations in measurements and study population. This study revealed that older men were more resilient than women in Taiwan, similar to another study conducted in Pakistan (16). Such a finding is not surprising, since resilience can be influenced by social norms or values. In this study, participants were raised in a traditional society in which Taiwanese men were likely to have a higher social status than women (17), and they inherit the family name and wealth. Frequently, women are often seen as less valuable (18). Hence, women, with fewer resources and lower self-esteem, would likely to have lower resilience compared to men. However, with changes in social norms in recent years, women have been given greater opportunities and resources compared to women in earlier years. The difference in resilience between older man and women will likely decrease in the near future.

Consistent with previous findings (9), higher self-rated health was associated with higher resilience in the overall sample, as well as in the stratified sample. This points to the fact that resilience is associated with one's self-perception of health. Although self-rated health is highly associated with resilience in both men and women, it may play a more-influential role among women, since older women tend to report worse self-rated health than men. Since men tend to over-report their health (19), this can possibly explain why the 'fair' health group did not statistically differ from the 'poor' health group among older men.

For both older men and women, education was positively associated with resilience. For older women, any increase in education was associated with higher resilience, while only the highest level of education was associated with higher resilience among older men. In Taiwan, older women traditionally had fewer socioeconomic resources, such as power, authority, and earnings compared to men (20). A large proportion of the older women had no formal education, and only a few had a secondary level or higher education. Thus, any increase in the level of education for older women would go a long way to

improving their socioeconomic status. However, the association between education and resilience will likely to decrease in future studies, as education has become more accessible regardless of gender.

For both men and women, other factors such as family relationships, religion, and time spent on leisure were all positively associated with resilience. In the literature, this trend was observed for hobbies (21, 22), family relationships (23), and religion (7, 24). However, one study suggested that the relationship between religion and resilience is more pronounced in women (25). Family relationships and religion can possibly be sources of happiness, gratitude, social support, and a sense of purpose; all of which are also characteristic of resilience (26).

When stratified by gender, it appeared that older men and women showed very different profiles of resilience. Marriage was associated with lower resilience among older women but was not associated with resilience among older men. More research is needed to assess the underlying association between marriage and resilience. The nature of spousal relationships within the culture, and the expectations placed upon marriage could play roles in how gender moderates the relationship between marriage and resilience. Some research indicated that women, who provide most of the caregiving within the family in Taiwan, were under greater social pressure, and their health needs could be easily neglected (27). Thus, it is possible that older Taiwanese women, in trying to fulfil the traditional roles of wife/caregiver, are more likely than men to face social isolation due to housework, as well as increased familial responsibilities and stress (28), and hence are more likely to have lower resilience.

Similarly, financial stress was associated with resilience among older women, but not among men in this study. This is supported by a previous study in women which showed that a higher income was associated with higher resilience (6). The association between household income and resilience in women can be attributed to traditional roles of women in Taiwan, where women often do much of the household shopping and bookkeeping (29). Thus, it is possible that women may be more sensitive to financial stresses of the household.

Satisfaction with one's living environment was also associated with resilience among olderwomen, but not among men. Little information is available regarding satisfaction with one's living environment and resilience. However, previous research indicated that women tend to internalize issues such as environmental security more than men (30) and probably would be more likely to be influenced by the environment than men would. Age also had a negative association with resilience among older women, consistent with the previous literature (6), but not among older men. Several pieces of literature pointed out increasing challenges of life events for older women, more so than for older men. Phenomena such as 'feminization of poverty' (31–33) and 'feminization of caregiving' (33) indicate that older women face significant challenges as they age (34). Poverty and caregiving stresses were reported to be associated with resilience (6, 35).

This study used cross-sectional data, and hence the results should be interpreted accordingly; we are unable to imply a causal relationship between the various factors and resilience. Restricted by the length of the questionnaire, we were unable to include the full-length version of the resilience questions; however,

the personal strength/perception of the Resilience Scale for Adults was seen to be reliable and valid (36, 37). Only those who were able to communicate verbally and provide written consent were included in this study, and hence, we may overestimate the resilience level since older adults with severely poor health were excluded.

To sum up, older women were more likely to have low resilience than men. Self-rated health, education, religion, leisure time, and family relationships were significant factors in resilience for both older men and women, while the marital status, age, financial stress, and satisfaction with one's living environment were significant factors only for older women. Older women are at a higher risk of negative influences of low resilience, especially those with lower education and lower financial security. From the perspective of policymaking, interventions featuring optimism, problem solving, coping, positive emotions, and establishing and maintaining strong positive relationships may prove successful in bolstering resilience in vulnerable groups. More research is needed to understand how contextual factors, such as male-preference social norms in Asia and marriage relationships and obligations, influence resilience as women age.

Declarations

Ethics approval and consent to participate

This research was approved by the ethical clearance committee of Taipei Medical University no.: N201608036. Before each interview, the aim of this research and the content of data collection were explained to respondents, and written informed consent was obtained from all respondents. All methods were performed in accordance with the regulations and guidelines of the declaration of Helsinki and the ethical clearance committee of Taipei Medical University.

Consent for publication

Not applicable

Availability of data and materials

The data that support the findings of this study are available from Taiwan Ministry of Health and Welfare, but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of Taiwan Ministry of Health and Welfare.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

D.N.F- data analysis and manuscript drafting

Y.H.C- study design and data collection

Y.C.C- study design and data collection

A.H.M- study design

K.Y.C- study design, data collection and data analysis

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Tables

Table 1. Descriptive characteristics of the study sample of older Taiwanese adults

Variable	<i>n</i> (<i>N</i> =1533) / Mean ± SD	%
Gender		
Male	632	41.2
Female	901	58.8
Age (years)		
	74.0 ± 6.8	
Education		
No education	364	23.7
Primary	720	47.0
Secondary	329	21.5
Tertiary	120	7.8
Marital Status		
Not married	534	34.8
Married	999	65.2
Religious beliefs		
None	242	15.8
Yes	1291	84.2
Employment		
Unemployed	1313	85.6
Employed	220	14.4
Financial stress		
High	365	23.8
Low	1168	76.2

Satisfaction with one's living environment		
Unsatisfied	426	27.8
Satisfied	1107	72.2
Self-reported health		
Poor	366	23.9
Fair	657	42.9
Good	510	33.3
Sleep quality		
Poor	411	26.8
Average	435	28.4
Good	687	44.8
Neighbour interactions		
Not often	976	63.7
Often	557	36.3
Family relationship score		
	12.3 ± 1.9	
Participation in community activities		
No	932	60.8
Yes	601	39.2
Time spent on leisure activities		
Little	517	33.7
Fair	927	60.5
A lot	89	5.8

Internet use		
No	1276	83.2
Yes	257	16.8
Resilience score	16.3 ± 3.8	

SD, standard deviation.

Table 2. Differences in social factors between low- and high-resilience groups of the study sample stratified by gender

Variable	Overall <i>n</i> (%) / Mean \pm SD		Men <i>n</i> (%) / Mean \pm SD		Women <i>n</i> (%) / Mean \pm SD	
	Low	High	Low	High	Low	High
Gender						
Male	263 (41.6)	369 (58.4)				
Female	533 (59.2)	368 (40.8) §				
Age (years)						
	74.8 \pm 6.9	73.3 \pm 6.6 §	74.6 \pm 7.1	73.7 \pm 7.0	74.8 \pm 6.6	72.8 \pm 6.0 §
Education						
No education	248 (68.1)	116 (31.9)	34 (52.3)	31 (47.7)	214 (71.6)	85 (28.4)
Primary	402 (55.8)	318 (44.2)	151 (50.7)	147 (49.3)	251 (59.5)	171 (40.5)
Secondary	115 (35.0)	214 (65.0)	57 (30.6)	129 (69.4)	58 (40.6)	85 (59.4)
Tertiary	31 (25.8)	89 (74.2) §	21 (25.3)	62 (74.7) §	10 (27.0)	27 (73.0) §
Marital status						
Not married	312 (58.4)	222 (41.6)	46 (47.9)	50 (52.1)	266 (60.7)	172 (39.3)
Married	484 (48.4)	515 (51.6) §	217 (40.5)	319 (59.5)	267 (57.7)	196 (42.3)
Religion						
None	150 (62.0)	92 (38.0)	61 (52.6)	55 (47.4)	89 (70.6)	37 (29.4)
Yes	646 (50.0)	645 (50.0) §	202 (39.1)	314 (60.9) §	444 (57.3)	331 (427) §

Employment						
Unemployed	705 (53.7)	608 (46.3)	222 (43.5)	288 (56.5)	483 (60.1)	320 (39.9)
Employed	91 (41.4)	129 (58.6) §	41 (33.6)	81 (66.4) *	50 (51.0)	48 (49.0)
Financial stress						
High	583 (49.9)	585 (50.1)	70 (49.3)	72 (50.7)	143(63.8)	287(36.2)
Low	213 (58.2)	152 (41.8) §	193 (39.4)	297 (60.6) *	390 (57.6)	81(42.4)
Satisfaction with one's living environment						
Not satisfied	248 (58.2)	178 (41.8)	84 (46.9)	95 (53.1)	164 (66.4)	83 (33.6)
Satisfied	548 (49.5)	559 (50.5) §	179 (39.5)	274 (60.5)	369 (56.4)	285 (43.6) §
Self-reported health						
Poor	265 (72.4)	101 (27.6)	83 (61.5)	52 (38.5)	182 (78.8)	49 (21.2)
Fair	344 (52.4)	313 (47.6)	115 (42.9)	153 (57.1)	229 (58.9)	160 (41.1)
Good	187 (36.7)	323 (63.3) §	65 (28.4)	164 (71.6) §	122 (43.4)	159 (56.6) §
Sleep quality						
Poor	260 (63.3)	151 (36.7)	69 (50.0)	69 (50.0)	191 (70.0)	82 (30.0)
Average	232 (53.3)	203 (46.7)	73 (46.8)	83 (53.2)	159 (57.0)	120 (43.0)
Good	304 (44.3)	383 (55.7) §	121 (35.8)	217 (64.2) §	183 (52.4)	166 (47.6) §

Neighbour interactions						
Not often	550 (56.4)	426 (43.6)	183 (46.7)	209 (53.3)	367 (62.8)	217 (37.2)
Often	246 (44.2)	311 (55.8) §	80 (33.3)	160 (66.7) §	166 (52.4)	151 (47.6) §
Family relationships						
	12 ± 2.0	12.7 ± 1.9§	11.7 ± 2.0	12.6 ± 2.0§	12.1 ± 6.9	12.8 ± 1.7§
Participation in community activities						
No	540 (57.9)	392 (42.1)	178 (48.0)	193 (52.0)	362 (64.5)	199 (35.5)
Yes	256 (42.6)	345 (57.4) §	85 (32.6)	176 (67.4) §	171 (50.3)	169 (49.7) §
Time spent on leisure activities						
Little	352 (68.1)	165 (31.9)	118 (58.4)	84 (41.6)	234 (74.3)	81 (25.7)
Fair	413 (44.6)	514 (55.4)	132 (33.8)	259 (66.2)	281 (52.4)	255 (47.6)
A lot	31 (34.8)	58 (65.2) §	13 (33.3)	26 (66.7) §	18 (36.0)	32 (64.0) §
Internet use						
No	717 (56.2)	559 (43.8) §	228 (45.6)	272 (54.4) §	489 (63.0)	287 (37.0) §
Yes	79 (30.7)	178 (69.3)	35 (26.5)	97 (73.5)	44 (35.2)	81 (64.8)

* $p < 0.05$, § $p < 0.01$. SD, standard deviation.

Table 3. Associations between variables and resilience of men and women under study using logistic regression

	Overall	Men	Women
Variable	Odds ratio (95% CI)	Odds ratio (95% CI)	Odds ratio (95% CI)
Gender			
Male	1.000		
Female	0.519 (0.400~0.675) §		
Age			
	0.994 (0.975~1.013)	1.017 (0.988~1.047)	0.973 (0.948~0.999) *
Education			
No education	1.000	1.000	1.000
Primary	1.366 (1.010~1.846) *	0.962 (0.523~1.769)	1.524 (1.064~2.184) *
Secondary	2.363 (1.615~3.457) §	1.801 (0.919~3.531)	2.596 (1.568~4.299) §
Tertiary	3.371 (1.932~5.880) §	2.301 (1.026~5.163) *	4.579 (1.876~11.173) §
Marital status			
Not married	1.000	1.000	1.000
Married	0.769 (0.588~1.006)	0.810 (0.475~1.382)	0.697 (0.505~0.961) *
Religious beliefs			
None	1.000	1.000	1.000
Yes	1.987 (1.440~2.743) §	2.061 (1.306~3.254) §	1.974 (1.244~3.132) §
Employment			

Unemployed	1.000	1.000	1.000
Employed	1.358 (0.969~1.903)	1.281 (0.799~2.054)	1.624 (0.999~2.640)
Financial stress			
High	1.000	1.000	1.000
Low	1.225 (0.925~1.621)	0.991 (0.641~1.531)	1.474 (1.015~2.319) *
Satisfaction with one's living environment			
Unsatisfied	1.000	1.000	1.000
Satisfied	1.373 (1.056~1.784) *	1.134 (0.763~1.687)	1.645 (1.148~2.356) §
Self-reported health			
Poor	1.000	1.000	1.000
Fair	1.692 (1.235~2.317) §	1.489 (0.919~2.412)	1.860 (1.216~2.844) §
Good	2.798 (1.983~3.949) §	2.434 (1.432~4.138) §	3.249 (2.041~5.171) §
Sleep quality			
Poor	1.000	1.000	1.000
Average	1.158 (0.846~1.585)	0.965 (0.576~1.616)	1.264 (0.844~1.895)
Good	1.100 (0.817~1.480)	0.991 (0.622~1.580)	1.138 (0.768~1.687)
Neighbourhood interactions			
Not often	1.000	1.000	1.000
Often	1.086 (0.852~1.384)	1.246 (0.849~1.830)	1.014 (0.736~1.395)

Family relationship score			
	1.182 (1.109~1.259) §	1.161 (1.054~1.278) §	1.206 (1.103~1.319) §
Participation in community activities			
No	1.000	1.000	1.000
Yes	1.287 (1.008~1.621) *	1.163 (0.797~1.698)	1.360 (0.993~1.861)
Time spent on leisure activities			
Little	1.000	1.000	1.000
Fair	2.141 (1.662~2.758) §	2.257 (1.525~3.339) §	2.174 (1.545~3.060) §
A lot	2.756 (1.645~4.592) §	2.501 (1.147~5.451) *	2.997 (1.509~5.954) §
Internet use			
Yes	1.000	1.000	1.000
No	0.777 (0.544~1.110)	0.802 (0.480~1.342)	0.762 (0.462~1.256)

* $p < 0.05$, § $p < 0.01$. CI, confidence interval.