Neighbour relationship, community cohesion, crime cognition, and quality of life of older Taiwanese

ORIGINAL ARTICLE

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ABSTRACT

Purpose. To measure the effects of community cohesion and crime cognition on overall quality of life (QOL) and its four domains (physical, psychological, social, and environmental) and to determine whether these effects are mediated by neighbour relationship among community-dwelling old adults.

Methods. A cross-sectional survey of 176 community-dwelling older Taiwanese and path analyses were conducted. Neighbour relationship was assessed using a 5-item, 5-point Likert scale; community cohesion using an 8-item, 5-point Likert scale; crime cognition using a 20-item, 10-point Likert scale; and QOL using the 28-item WHOQOL-BREF (Taiwan version). All were self-report questionnaires; higher scores indicated higher levels.

Results. Neighbour relationship as a mediator had a good fit in the four domains and overall QOL. The predictors (community cohesion and crime cognition) explained 23.3% of the variance in the physical domain, 30.7% in the psychological domain, 33.2% in the social domain, 38.5% in the environmental domain, and 39.3% in the overall QOL. Community cohesion had a greater effect on four domains of QOL than crime cognition. The effect of community cohesion on QOL was largely directly rather than indirectly (through mediation by neighbour relationship).

Conclusion. Both community cohesion and crime cognition affect QOL of older adults. Neighbour relationship only mildly mediated community cohesion and crime cohesion.

Key words: Aged; Community participation; Crime; Quality of life

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INTRODUCTION

Increasing life expectancy is one of humanity's greatest accomplishments,¹ but it is associated with population ageing. Maintaining quality of life (QOL) is one challenge of population ageing. According to the World Health Organization, QOL is defined as "an individual's perception of his/her position in life in the context of the culture and value systems in which he/she lives, and in relation to his/her goals, expectations, standards, and concerns".² QOL involves both physical and psychological health and

is determined by a number of factors.³

Neighbour relationship is one determinant of QOL and is associated with well-being, as its characteristics can modulate friendships and participation in social activities.⁴⁻⁶ Neighbourhood satisfaction is an indicator of social relationships (social contact, community dynamics, feeling of support, and positive orientation) and has considerable effects on QOL.^{7,8} In addition, total environmental factors of community cohesion and crime cognition are also determinants of QOL.^{9,10}

According to collective efficacy theory,¹¹ community cohesion among neighbours and the willingness to take action for the common good may improve QOL in older people.¹² Community cohesion enables community leaders to effectively extract, combine, and activate resources, which can then be used to help members of the community to improve their physical, psychological, and social health.¹³ It may also enable realisation of common constructive values among its residents and maintenance of healthy social controls so as to decrease the level of violence within neighbourhood. Thus, community cohesion may improve QOL in community-dwelling older people by improving health and well-being and decreasing neighbourhood violence. Usually the association between community cohesion and QOL is stronger in older people.¹⁴ Nonetheless, urban dwellers have more neighbourhood problems than their rural counterparts who have more informal social support from neighbours.¹⁵ Both real and perceived measures of neighbourhood disorder are negatively related to QOL.¹² Perception of neighbourliness partially acts as a buffer against the effects of neighbourhood distress, including housing foreclosures, on QOL.

Neighbourhood is one of the most common settings where residents forge attachments and create meaning, significance, and coherence in their lives. Resilient and stable neighbourhood is vital to the sustainability of healthy community. Residents who are satisfied with their neighbourhood report a greater sense of attachment to the local community, higher overall life satisfaction, greater political participation, and more likelihood to invest in building healthy and stable communities.¹² Conversely, when community stability and sustainability are compromised, criminal activities within neighbourhood may increase. For instance, if residents migrate frequently, the community becomes unstable, leading to disintegration of mutual trust and group cohesion and making it difficult to sustain community development.¹⁶ When the community shows signs of deterioration, older community members may experience an increased fear of criminal activities.¹⁷ A fear of crime may cause older people to avoid certain individuals within the community who are perceived as dangerous. Reduced interactions with neighbours decrease the opportunity to interact in social events. Individuals who spend more time alone experience increased

social isolation and decreased QOL.^{13,18}

Neighbour relationship is a key factor influencing QOL in older people.¹⁹ It is also associated with community cohesion and crime cognition. To effectively measure QOL in older people, it is necessary to determine what factors have the greatest effect on QOL, and whether these factors are mediated by any variable. One study argued that neighbourhood problems were a weak moderator because previous studies focused on neighbourhood crime and disorder.¹⁵ Neighbourhood problems govern the type of interactions neighbours engage and may result in cordial relationships but inhibit development of intimate friendships and limit discussion. However, the impact of neighbourhood problems on QOL is unclear. Thus, this study aimed (1) to measure the effects of community cohesion and crime cognition on overall QOL and its four domains (physical, psychological, social, and environmental) and (2) to determine whether these effects are mediated by neighbour relationship among community-dwelling old adults. The researcher hypothesised that greater community cohesion and crime cognition correlated with higher QOL, and that neighbour relationship mediated the effects of community cohesion and crime cognition on QOL.

METHODS

This study was approved by the office of Research and Strategic Development of Kainan University (Ref.: KNU201213). Informed consent was obtained from each participant; participants were informed that participation was voluntary and that data collected would be used in research publications.

A purposive sample of community-dwelling Taiwanese aged ≥ 65 years were recruited from a community in northern Taiwan between April and June 2011. Those with severe physical impairment or mental retardation were excluded. Data were collected through a face-to-face interview using a questionnaire.

Sociodemographic data including age, sex, marital status, education, religion, and living arrangement were collected. Independent variables were neighbour relationship, community cohesion, and crime cognition; these were developed by a

dissertation on 995 residents in southern Taiwan.²⁰ Scales of these variables performed very well in psychometric tests. The fear of crime scale had a reasonable model fit in this sample in terms of relative Chi squared, comparative fit index (CFI), incremental fit index (IFI), and parsimony goodness of fit index (PGFI), although the Chi squared and the root mean square error of approximation (RMSEA) were below expectation.²¹

Neighbour relationship was assessed using a 5-item, 5-point Likert scale from strongly disagree (1) to strongly agree (5). Total scores ranged from 5 to 25; higher scores indicated better neighbour relationship; the internal consistency reliability was 0.724.

Community cohesion was assessed using an 8-item, 5-point Likert scale from strongly disagree (1) to strongly agree (5). Total scores ranged from 8 to 40; higher scores indicated greater community cohesion; the internal consistency reliability was 0.977.

The crime cognition score measured participants' evaluation of the seriousness of a crime. It was assessed using a 20-item, 10-point Likert scale from not at all serious (1) to very serious (10). Total scores ranged from 20 to 200; higher scores indicated higher level of crime cognition. Its internal consistency was high, with a Cronbach's alpha of 0.889.

Quality of life was assessed using the 28-item WHOQOL-BREF (Taiwan version) for physical, psychological, social relationships, and environmental domains.^{22,23} Scores for each item ranged from 1 (least favourable condition) to 5 (most favourable condition); total scores ranged from 28 to 140; higher scores indicated higher level of QOL.²⁴

The two hypotheses were tested using a mediated path analysis. Neighbour relationship must correlate with both predictors (community cohesion and crime cognition) and outcome (each and overall domain of QOL) to be a mediator. The Sobel test was used to determine whether neighbour relationship was a mediator (with significant influence of an independent variable), and two-tailed probability values were used.²⁵ The criteria for a good fit index was predefined: (1) a relative Chi squared criterion

for acceptance of <2 to <5 ,²⁶ (2) CFI of >0.9 ,²⁷ (3) IFI of >0.9 ,²⁶ (4) PGFI of >0.5 ,²⁸ and (5) RMSEA of ≤ 0.05 (0.05–0.07 as an adequate fit, 0.08–0.10 as a mediocre fit, and >0.1 as not acceptable).²⁹ Data were analysed using PASW Statistics (Windows version 18.0; SPSS Inc, Chicago [IL], US) and AMOS 19.0 software.

RESULTS

Of 200 participants, four were excluded because of incomplete questionnaire and 176 (89 men and 87 women) aged 65 to 73 (mean, 70.73) years were analysed (TABLE 1).

Neighbour relationship as a mediator had a good fit in the physical domain ($\chi^2=3.067$, $df=1$, $p=0.08$, CFI=0.976, GFI=0.91, AGFI=0.914, IFI=0.978, NFI=0.967, and RMSEA=0.109; all paths $p<0.05$), psychological domain ($\chi^2=3.067$, $df=1$, $p=0.08$, CFI=0.981, GFI=0.991, AGFI=0.914, IFI=0.982, NFI=0.973, and RMSEA=0.11; all paths

TABLE 1
Demographics of participants (n=176)

Variables	Value*
Age, y	70.7±3.8
Marital status	
Unmarried	79 (44.9)
Married	97 (55.1)
Education	
Illiterate	52 (29.5)
Literate	124 (70.5)
Religion	
No	16 (9.1)
Yes	160 (90.9)
Living arrangement	
Alone	17 (9.7)
With others	159 (90.3)
Neighbour relationship	9.06±2.07
Community cohesion	28.74±7.55
Crime cognition	141.82±19.43
Quality of life	53.13±8.20
Physical domain	11.83±1.72
Psychological domain	12.96±2.20
Social domain	14.22±2.60
Environmental domain	14.12±2.58

* Data are presented as mean ± standard deviation or No. (%) of participants

TABLE 2
Decomposition of effects using path analysis

Dependent variable	Independent variable	Standardised coefficient (95% confidence interval)	T	p Value	R ²
Physical domain	Community cohesion	0.299 (0.167-0.420)	4.221	<0.001	0.233
	Crime cognition	0.238 (0.088-0.356)	3.466	<0.001	
	Neighbour relationship	0.173 (0.015-0.356)	2.366	<0.05	
Neighbour relationship	Community cohesion	0.344 (0.176-0.514)	5.039	<0.001	
	Crime cognition	0.254 (0.100-0.387)	3.710	<0.001	
Psychological domain	Community cohesion	0.379 (0.260-0.508)	5.626	<0.001	0.307
	Crime cognition	0.271 (0.154-0.393)	4.154	<0.001	
	Neighbour relationship	0.161 (-0.004-0.311)	2.314	<0.05	
Neighbour relationship	Community cohesion	0.344 (0.176-0.514)	5.039	<0.001	
	Crime cognition	0.254 (0.100-0.387)	3.710	<0.001	
Social domain	Community cohesion	0.401 (0.298-0.539)	6.065	<0.001	0.332
	Crime cognition	0.163 (0.026-0.296)	2.542	<0.05	
	Neighbour relationship	0.241 (0.072-0.373)	3.528	<0.001	
Neighbour relationship	Community cohesion	0.344 (0.176-0.514)	5.039	<0.001	
	Crime cognition	0.254 (0.100-0.387)	3.710	<0.001	
Environmental domain	Community cohesion	0.424 (0.300-0.560)	6.684	<0.001	0.385
	Crime cognition	0.234 (0.090-0.373)	3.806	<0.001	
	Neighbour relationship	0.233 (0.089-0.355)	3.558	<0.001	
Neighbour relationship	Community cohesion	0.344 (0.176-0.514)	5.039	<0.001	
	Crime cognition	0.254 (0.100-0.387)	3.710	<0.001	
Overall quality of life	Community cohesion	0.426 (0.318-0.549)	6.766	<0.001	0.393
	Crime cognition	0.249 (0.116-0.371)	4.070	<0.001	
	Neighbour relationship	0.230 (0.078-0.367)	3.534	<0.001	
Neighbour relationship	Community cohesion	0.344 (0.176-0.514)	5.039	<0.001	
	Crime cognition	0.254 (0.100-0.387)	3.710	<0.001	

$p < 0.05$), social domain ($\chi^2 = 3.067$, $df = 1$, $p = 0.08$, CFI=0.982, GFI=0.991, AGFI=0.914, IFI=0.982, NFI=0.974, and RMSEA=0.109; all paths $p < 0.05$), environmental domain ($\chi^2 = 3.067$, $df = 1$, $p = 0.08$, CFI=0.984, GFI=0.991, AGFI=0.914, IFI=0.984, NFI=0.977, and RMSEA=0.109; all paths $p < 0.05$), and overall QOL ($\chi^2 = 3.067$, $df = 1$, $p = 0.08$, CFI=0.984, GFI=0.991, AGFI=0.914, IFI=0.985, NFI=0.978, and RMSEA=0.109; all paths $p < 0.001$).

In terms of the proportion of the variance explained in each QOL domain, the predictors (community cohesion and crime cognition) explained 23.3% of the variance in the physical domain, 30.7% in the psychological domain, 33.2% in the social domain, 38.5% in the environmental domain, and 39.3% in the overall QOL (TABLE 2).

Direct and indirect effects of community cohesion and crime cognition on the four domains and overall QOL are shown in the FIGURE. Community cohesion had a strong direct effect on the environmental domain and overall QOL (total effect=5.039), whereas crime cognition and neighbour relationship had a modest direct effect (TABLE 3). Community cohesion affected the environmental domain directly (0.42) and indirectly (through neighbour relationship) [0.08]. Similarly, crime cognition affected the environmental domain directly (0.23) and indirectly (0.06). The total effect of community cohesion and crime cognition on the environmental domain was 0.50 and 0.29, respectively. The total effect of community cohesion, crime cognition, and neighbour relationship on overall QOL was 0.51, 0.31, and 0.23, respectively. Community cohesion

FIGURE. (a) Direct and (b) indirect effects of community cohesion and crime cognition on four domains and overall quality of life.

affected overall QOL indirectly (0.09), which was significant among all indirect effects (through neighbour relationship).

DISCUSSION

Community cohesion had a greater direct effect on all four domains and overall QOL, compared with crime cognition and neighbour relationship, whereas crime cognition had a greater direct effect on the physical and psychological domains, compared with neighbour relationship. Community cohesion had the greatest direct effect on overall QOL than on any of the four domains. Neighbour relationship had a greater direct effect on the social domain than crime cognition. Neighbour relationship had a small indirect effect (through community cohesion and crime cognition) on all four domains and overall QOL, whereas community cohesion and crime cognition had a direct effect on neighbour relationship.

This study showed that community cohesion is important for improving QOL in community-

dwelling older people. Older people who are aware of physical, psychological, social, or environmental issues of their neighbourhood may receive better care in the community. Neighbourhood is crucial to older people's sense of community³⁰ and safety. Indeed, service or care provided by informal networks in the community may supplement informal care by family members or friends and even replace formal services to some degree. The association between care provided by family or friends and that by community-based health and personal social services has important consequences for QOL and policy (in terms of effectiveness, efficiency, equity, and cost containment).

The aetiological association between QOL and community cohesion is multifactorial. The greater collective efficacy in the community may be due to increased cohesion of its members. Community residents can accomplish more agreed-upon tasks if they foster common values and trusting relationships. Mutually beneficial human behaviours are promoted in the process of making common recreational areas safe for all. Close-knit communities promote

TABLE 3
Direct and indirect effects on four domains and overall quality of life

	Direct effect	Indirect effect	Total effect
Physical domain			
Community cohesion	0.30	0.06	0.36
Crime cognition	0.24	0.04 (p<0.05)	0.28
Neighbour relationship	0.17	-	0.17
Neighbour relationship			
Community cohesion	0.34	-	0.34
Crime cognition	0.25	-	0.25
Psychological domain			
Community cohesion	0.38	0.06 (p<0.05)	0.43
Crime cognition	0.27	0.04 (p<0.05)	0.31
Neighbour relationship	0.16	-	0.16
Neighbour relationship			
Community cohesion	0.34	-	0.34
Crime cognition	0.25	-	0.25
Social domain			
Community cohesion	0.40	0.08 (p<0.01)	0.48
Crime cognition	0.16	0.06 (p<0.01)	0.22
Neighbour relationship	0.24	-	0.24
Neighbour relationship			
Community cohesion	0.34	-	0.34
Crime cognition	0.25	-	0.25
Environmental domain			
Community cohesion	0.42	0.08 (p<0.01)	0.50
Crime cognition	0.23	0.06 (p<0.01)	0.29
Neighbour relationship	0.23	-	0.23
Neighbour relationship			
Community cohesion	0.34	-	0.34
Crime cognition	0.25	-	0.25
Overall quality of life			
Community cohesion	0.43	0.09 (p<0.01)	0.51
Crime cognition	0.25	0.02 (p<0.01)	0.31
Neighbour relationship	0.23	-	0.23
Neighbour relationship			
Community cohesion	0.34	-	0.34
Crime cognition	0.25	-	0.25

healthy emotions among members. Older members expect to experience both mental and physical health advantages in such cohesive environment.³¹ Increasing community cohesion, knowledge of criminal activities, and trust in neighbourhood interactions was shown to directly improve the

social and environment domains and overall QOL in community-dwelling older people.

Limitations of this study were: (1) the convenience sample from northern Taiwan may have resulted in selection bias; (2) the sample size was

too small to be representative of the population or to generalise results; (3) data were self-reported and may have been biased because of selective memory and telescoping; and (4) using outcome measures from a dissertation may have reliability, concurrent, and construct validity problems. Nonetheless, the reliability was definitively established in community-dwelling older people. Changes of variables over time were not tracked; future research should include larger sample for long-term tracking. Quantitative analysis of a large amount of data in short period is not sufficient to measure complex human behaviour.

CONCLUSION

Both community cohesion and crime cognition affect QOL of older adults. Neighbour relationship only mildly mediated community cohesion and crime cohesion.

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