

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

過去很少研究討論非致命的自我傷害(non-fatal self-harm)與社會關係(social relationship)的相關性。下面這篇研究以到某醫院急診的自我傷害病人為病例個案，配對年齡性別相同、在相同醫院就醫的非精神科門診個案當作對照個案。利用自填問卷測量過去一年的社交關係。透過條件式邏輯斯迴歸(conditional logistic regression model)，調整社會人口學變項、重要生命事件、生理與心理健康共變項後，探討非致命性自我傷害與社交關係的相關性。下面附上該篇研究的摘要以及研究結果的表 1，請閱讀後回答下列問題：

流行病學題目(共 50 分)

- (1) 請簡述 case-control study、cohort study、randomized control trial 的研究設計及優缺點(15 分)。若你是研究者，欲探討本篇研究時會不會選擇別的研究設計，為什麼？(5 分)
- (2) 若研究者欲進行我國(a)自我傷害的盛行率的估計，以及(b)自我傷害者 5 年內自殺死亡率的估計，請問要怎麼計算？請說明蒐集資料的方式，以及推估的公式(分子分母要說明清楚)(10 分)
- (3) 請問配對(matching)的目的是什麼？(3 分) 該研究配對的變項，有什麼樣的意義？(4 分) 另外配對的變項是否要在迴歸方程式當中進行調整？為什麼？(3 分)
- (4) 該研究可能碰到哪些偏差(bias)？請說明這種偏差的意義，以及這研究為什麼會有這樣的偏差，能否控制。(10 分)

生物統計題目(共 50 分)

- (5) 請問什麼是 p-value (4 分)？其與顯著水準(significant level)在假說檢定(hypothesis testing)的過程中有什麼關係？(4 分)
- (6) 研究者將募集到的病例與對照組的特性，及單變量統計檢定結果，詳列於表 1。請推測研究者分別用哪種統計方法，分析 Marital status 與 Years of education 在病例與對照組間的差異(8 分)？
- (7) 請以分析病例與對照組 Years of education 是否有差異為例，列出研究者的假說(hypothesis)、並根據表 1 解釋其分析結果與推論(8 分)。
- (8) 請問 logistic regression (邏輯斯迴歸)是用來分析什麼樣的資料(3 分)？怎麼解釋所推估的迴歸係數(3 分)？本篇為何採用 Conditional logistic regression (條件式邏輯斯迴歸)而非 logistic regression (邏輯斯迴歸)進行分析？(4 分)
- (9) 摘要中寫到：Higher social isolation score remained significantly associated with self-harm after adjustment (adjusted odds ratio per standard deviation increase 2.92, 95% confidence interval 1.44-5.95)。請解釋這句話的意思。(8 分)
- (10) 請說明信賴區間的功能，並根據上一小題的信賴區間數據，說明其意義。(8 分)

The association between social relationships and self-harm: a case-control study in Taiwan

Chia-Yi Wu, Chin-Kuo Chang, Hui-Chun Huang, Shen-Ing Liu and Robert Stewart

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Abstract

Background

Although suicide has been postulated as a result of social breakdown, relatively little attention has been paid to the association between social relationships and non-fatal self-harm. We sought to investigate the extent to which social factors correlate with self-harm in this case-control study.

Methods

The primary outcome was self-harm with hospital presentation. Cases of self-harm from the Emergency Department in a general hospital in Northern Taiwan were recruited, and individually age-and-gender-matched control participants were recruited from non-psychiatric outpatient clinics at the same hospital. The Close Persons Questionnaire was administered and its social support and social network subscales were used to measure social relationships in the 12 months prior to the interview. Other covariates, comprising sociodemographic factors, major life events, physical and mental health, were adjusted in conditional logistic regression models.

Results

A total of 124 case-control pairs were recruited. The mean (standard deviation) age of the case group was 34.7 (12.8) years and 80.6% were female. Higher social isolation score remained significantly associated with self-harm after adjustment (adjusted odds ratio per standard deviation increase 2.92, 95% confidence interval 1.44-5.95) and household size was negatively associated with the outcome (adjusted odds ratio per unit increase 0.54, 95% CI 0.32-0.94).

Conclusions

More limited social networks were associated with self-harm after adjustment for potential confounders. Enhancing social structure and effective networking of people with self-harm to community resources may be important for self-harm management in Asian societies and elsewhere.

Table 1

Comparisons of sociodemographic characteristics, psychosocial conditions, and physical health between groups of cases and matched controls (N = 248)

Variable	Mean \pm SD / Number (%)		p value
	Controls (n = 124)	Cases (n = 124)	
Age	35.17 \pm 13.59	34.73 \pm 12.81	--
Gender			
Female	100 (80.65%)	100 (80.65%)	--
Male	24 (19.35%)	24 (19.35%)	
Marital status			<0.05*
Single	68 (54.84%)	63 (50.81%)	
Married/cohabitation	51 (41.13%)	43 (34.68%)	
Divorced/separated/widowed	5 (4.03%)	18 (14.52%)	
Years of education	14.28 \pm 3.95	10.90 \pm 3.63	<0.01*
Employment status			
Currently employed	81 (65.32%)	66 (53.23%)	
Housewife/student/retired	40 (32.26%)	35 (28.23%)	<0.01*
Jobless	3 (2.42%)	23 (18.55%)	
Religion			
None	73 (58.87%)	73 (58.87%)	0.32
Any	39 (31.45%)	51 (41.13%)	
Social support subscale (CPQ)			
Confiding support	23.39 \pm 4.91	21.75 \pm 4.20	<0.01*
Practical support	8.10 \pm 2.09	7.45 \pm 2.30	<0.05*
Negative aspects	7.35 \pm 2.36	6.94 \pm 2.43	0.17
Social network subscale (CPQ)			
Isolation	1.77 \pm 1.22	2.57 \pm 1.35	<0.01*
Network beyond the household	10.08 \pm 4.31	8.31 \pm 3.84	<0.01*
Household size	1.40 \pm 0.78	1.40 \pm 0.79	0.94
PHQ-9 score	4.28 \pm 3.99	14.48 \pm 7.07	<0.01*
Number of physical illness	0.86 \pm 0.99	1.41 \pm 0.79	<0.01*
Number of major life events	0.65 \pm 0.98	0.65 \pm 0.82	0.99