Is Greater Social Support a Protective Factor against Elder Mistreatment?

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Abstract

Background: Elder mistreatment (EM) is a pervasive global health issue and a violation of basic human rights. Our prior study indicates that EM is alarmingly common in an urban Chinese population, yet little is known about risk and/or protective factors for EM. **Objective:** This study's goal was to examine the association of social support with the risk of EM and underlying hypothesis is that greater social support is associated with a lower risk for EM. **Methods:** A cross-sectional descriptive study was performed in a major urban medical center in Nanjing, China. A total of 412 subjects aged 60 years or older who presented to the general medical clinic were surveyed. Social support was assessed using validated instruments Social Support Index (SSI); direct questions were asked about their mistreatment since age 60 using the modified Vulnerability to Abuse Screening Scale (VASS). **Results:** EM was found in 35% of the participants. After adjusting for potential confounding factors, several factors were associated with a lower risk of mistreatment: having someone to listen to and talk to (OR = 0.18, 95% CI, 0.08–0.39), having someone to get you good advice from (OR = 0.15 (0.07–0.34)), having someone to show love and affection to (OR = 0.30 (0.12–0.75)), having someone available who can help with daily chores (OR = 0.43 (0.22–0.85)), having contact with someone they can trust and confide in (OR = 0.08 (0.03–0.23)), and having someone they can count on for emotional support (OR = 0.11 (0.04–0.28)). Regarding total social support scores (range 1–32), every point higher in social support was associated with a 6% lower risk for EM (OR = 0.94 (0.91–0.97)). Greater social support was associated with a 59% lower risk for EM (OR = 0.41 (0.19–0.90)). **Conclusion:** Greater social support may be a protective factor against EM in this population. Prospective studies are needed to confirm this finding. Interventions that improve social support may prevent EM.

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Introduction

Mistreatment of elders is an important public health and human rights issue with an estimated 2 million elders suffering from mistreatment annually in the USA [1]. Recent data from the US Adult Protective Services Agencies suggest an increasing trend in reporting of elder mistreatment (EM) [2]. Prior studies indicate that EM is associated with significant adverse health outcomes [3, 4]. The National Research Council of the USA concluded that rigorous research is needed in all aspects of EM, especially in different racial/ethnic groups [5]. Unfortunately, our current global understanding of EM is limited, especially in Chinese cultures, where traditionally it has been thought that EM is uncommon.

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Unfortunately, recent evidence suggests that EM in China is alarmingly common [6], yet very little research has addressed the issue of how protective factors might reduce the risk of EM in Chinese populations. This gap in our knowledge has inhibited understanding of EM and has hampered development of prevention and intervention strategies to combat the global issues of EM.

One protective factor may be social support. Social support is broadly defined as the existence or availability of people on whom one can rely; people who let one know that one is cared about, valued and loved [7]. Lack of social support is associated with increased morbidity and mortality [8–10]. Recent evidence suggests that lower perceived social support is significantly associated with suicidal ideation [11]. Furthermore, lack of social support may further reflect vulnerability and dependency, which may reflect conditions that strongly contribute to an increased risk for EM. Prior studies in non-Chinese cultures have suggested that lower levels of social support may be a risk factor for EM [12–15]. Other research have suggested that victims of EM who received less social support reported higher levels of psychological distress. However, the relationship between social support and mistreatment of elderly Chinese citizens has not been explored.

China is the most populous country in the world. In recent years, China has also experienced rapid economic growth and increased life expectancy, and the population as a whole is aging rapidly [16]. Population estimates suggest that by the year 2050, 1 out of every 4 of the world's elderly population will be Chinese [17]. Yet, social change brought about by industrialization and mass migration of families into urban cities has posed great challenges to traditional values, and the multigenerational Chinese households are facing incredibly difficult times [18]. Furthermore, the rapidly widening socioeconomic gaps in China have also brought remarkable stresses onto Chinese family, especially the aging population. These challenges fundamentally threaten the already fragile social support system of the elderly, which might further predispose the older adults to higher risk for mistreatment. However, we are not aware of any studies that have explored the associations of social support and the risk for EM in a Chinese population.

The objective of this study was to explore a possible association of social support with risk of EM in an urban community-dwelling Chinese population. The underlying hypothesis was: a higher level of social support is independently associated with reduced risk of EM.

Methods

This study was carried out in 2005 at a major medical center in Nanjing, China. The details of this study have been previously described [6]. In brief, the study population consist of patients 60 years or older who presented to this urban medical center. Subjects were identified in four different medical clinics when they registered with the clinic nurses and were asked if they would like to participate in the study. Research assistants who spoke both Mandarin as well as the Nanjing local dialect then approached the patients and explained in detail the purpose of the study and subjects were asked for consent to participate in this study. A total of 500 subjects were approached and 412 consented to participate. Age ranges of the subjects were from 60 to 90 years. Surveys were consecutively administered in four clinics until 500 subjects were approached. Those who did not complete the survey (n = 88) were due to acute illness, nausea, severe pain and headache, or feeling too sick to participate. This study did not invite patients who lacked the ability to give informed consent, or those with cognitive impairment or diagnosis of dementia (according to family members and/or clinic nurses). The survey was self-administered; it did not involve anyone accompanying the elderly patients, and research assistants were available to answer questions.

Study subjects were asked to complete a survey that had been translated from English into simplified Chinese, and the accuracy of the translation was repeatedly assessed to ensure the capture of the original meaning of the questions. The translation was confirmed by three hospital officials who were translators and by the primary author of this report (X.D.) who is bilingual and bicultural in Chinese and English.

In mainland China, there are currently no governmental agencies designated to accept reports of EM or to investigate EM, and there are no mandatory reporting laws for EM. The EM screening questions used in this study were from the original Vulnerability to Abuse Screening Scale (VASS) developed by Schofield and Mishra [19] who used a modified instrument originally developed by Hwalek and Sengstock [20]. We chose these validated questions based on the available evidence for brief screening suitable to seniors in an outpatient setting without the need for involving caregivers. The questions in the survey were: 'Are you afraid of anyone in your family?' 'Has anyone close to you tried to hurt or harm you recently?' 'Does someone in your family make you stay in bed or tell you that you are sick when you know you are not?' 'Has anyone close to you called you names or put you down or made you feel bad recently?' 'Has anyone forced you to do things you didn't want to do?' or 'Has anyone taken things that belong to you without your OK?' These questions demonstrated high face validity for abuse and moderate to good construct validity [19]. The VASS instrument measured domains of dependence, dejection, vulnerability and coercion and yielded a Cronbach's α of 0.31–0.74, indicating moderate to good internal reliability and appropriateness for a brief screening instrument [15].

The study further considered the issues of EM in Chinese culture and the translational meaning of the previously asked questions. The study investigators felt that it was important to be more specific and to further explore the physical abuse, psychological abuse and financial exploitation screening questions in more detail. The following specific questions were asked: 'Does anyone close to you hit, kick, slap, push, or throw things at you?' 'Is there

anyone who insults you or puts you down?' 'Is there anyone who has taken your money without your OK or stopped you from getting your money or from knowing about it?' 'Has anyone taken your house or apartment away from you?' 'Has anyone taken your assets without your permission, or misused your money, or transferred money from your account; or intentionally prevent you from using your money, or made an unauthorized sale or appropriation or transfer of your property?'

Finally, because there were no direct questions to screen for sexual abuse or abandonment of elders, the following direct questions were added: 'Have you had any non-consenting sexual contact of any kind?' and 'Has any family member ever abandoned you in a clinic, hospital, or any other public place?' The study investigators felt that answering positively to any of these extremely direct questions usefully supplemented the original six screening questions for EM in China. For the purposes of this study, screening positive on any of the above questions on the survey was considered self-reported EM. At the same time, if a subject answered positively to two different questions that assessed a specific type of mistreatment (i.e. financial exploitation), it was only counted as one occurrence of financial exploitation.

Social support was assessed using a validated Social Support Instrument (SSI); this was a 7-item measure derived from questions on the Medical Outcomes Survey and earlier works examining the influences of social support [21–23]. The SSI has demonstrated acceptable internal consistency and was shown to be correlated positively with other SSIs [24–27]. These studies indicate that Cronbach's α was 0.88, and inter-item correlation was significant between all items and item-total scores. The intra-class correlation coefficient was 0.94, reflecting excellent reproducibility. Concurrent and predictive validity have also been assessed by examining the correlation between SSI total score and the scores on the Short Form (SF)-36 Social Functioning, Mental Health Index, Mental Component, and Physical Component subscales [28, 29]. The SSI further demonstrated a statistically significant correlation with the above measures indicating the validity of its measures [27].

SSI questions that were asked included: (1) Is there someone available to you whom you can count on to listen to you when you need to talk? (2) Is there someone available to give you good advice about a problem? (3) Is there someone available to you who shows you love and affection? (4) Is there someone available to help you with daily chores? (5) Can you count on anyone to provide you with emotional support? (6) Do you have as much contact as you would like with someone you feel close to, someone whom you can trust and confide in? (7) Are you currently living with a partner? Questions 1–6 were formatted as a 5-point Likert scale of none = 1, little = 2, sometimes = 3, most times = 4, and all the time = 5. Question 7 was asked in yes or no form (no = 1, yes = 2). Individual items were then summed for a total score, with higher scores indicating greater social support.

Descriptive social support variables were constructed and analyzed for the mistreated and non-mistreated participants. Logistic regression models were used to examine social support variables associated with EM in this population. Social support variables were analyzed in three different ways: by individual questions of social support; by total social support points as a continuous variable, and by tertiles of total social support points as low, medium or high levels of social support. For the individual questions of social support questions, the original Likert scale was com-

bined into three groups: (1) none or little; (2) sometimes; (3) most or all of the time. Group 1 was designated as the reference group and the other two groups were compared to group 1 in order to examine the association of social support with the risk of EM. For each of the approaches of social support, all of the following logistical regression models were performed. The study took a number of potential covariates into consideration in examining the association between social support and EM. In the first step (Model A), the study adjusted for demographic variables of age and sex. Second (Model B), the study added socioeconomic status indicators to the prior model by including education and income. Third (Model C), marital status and number of children were added. Finally (Model D), psychological variables were added as covariates in addition to those already in Model C. Odds ratios (OR), 95% confidence intervals (CI) and significance levels were reported for those analyses. Data analyses were performed using SAS [30].

Results

A total of 412 subjects completed the survey and EM was found for 145 (35.2%) of the participants. The mean age of the mistreated group was 69.0 (SD 6.9) (age range 60–87) and for the non-mistreated group was 70.0 (±6.7) (age range 60–90). In the mistreated group, 40.7% were women; 30.8% were women in the non-mistreated group. The mean education level for the mistreated group was 6.6 ± 5.3 years of schooling; for the non-mistreated group it was 9.5 ± 5.3. The mean income per month for the mistreated group was 1,006 ± 1,221 RMB; for the non-mistreated group it was 1,562 (±1,177) RMB (USD 166/month).

Descriptive information of the mistreated and non-mistreated groups by different questions of social support is summarized in table 1. The mean total social support score for the mistreated group was 7.0 ± 7.3 and for the non-mistreated group it was 11.2 ± 7.7; the total score range was from 1 to 32. We then divided the total social support score into three subcategories to further examine the association between levels of social support and EM. Low social support was found for 75% of the mistreated group while it was 54% for the non-mistreated group. Only 8% of the mistreated group said they had high social support compared to 17% in the non-mistreated group (table 1).

In the multiple logistic regression models, four models were used to test the association between social support and risk of EM (table 2). In the fully-adjusted Model D, having someone to listen to and talk to was associated with an 82% lower likelihood of a report of EM (OR = 0.18 (0.08–0.39)). Having someone to get good advice from was associated with an 85% lower likelihood of a report

Table 1. Social support variables and EM status

Social support questions	Mistreatment: yes (n = 145) n (%)	Mistreatment: no (n = 267) n (%)	p value
Someone available to listen or talk to			
None or little	36 (25.5)	16 (6.2)	
Sometimes	47 (33.4)	47 (18.1)	
Most times or at all times	58 (41.1)	197 (75.7)	0.001
Someone available to give good advice			
None or little	37 (25.5)	18 (6.8)	
Sometimes	52 (35.9)	47 (17.7)	
Most times or at all times	56 (38.6)	201 (75.5)	0.001
Someone available to show you love and affection			
None or little	23 (15.9)	12 (4.5)	
Sometimes	49 (33.8)	34 (12.8)	
Most times or all the times	73 (50.3)	219 (82.7)	0.001
Someone available to help you with daily chores			
None or little	35 (24.1)	25 (9.5)	
Sometimes	32 (22.1)	37 (14.1)	
Most times or all the times	78 (53.8)	200 (76.4)	0.001
Contact with someone you trust and confide			
None or little	32 (22.4)	6 (2.3)	
Sometimes	42 (29.4)	38 (14.3)	
Most times or all the times	69 (48.3)	222 (83.4)	0.001
Someone you count on for emotional support			
None or little	29 (20.4)	10 (3.9)	
Sometimes	55 (38.7)	36 (13.9)	
Most times or all the times	58 (40.9)	213 (82.2)	0.001
Currently living with a partner			
Yes	99 (73.9)	181 (79.0)	
No	35 (26.1)	48 (21.0)	0.259
Social support instrument score, mean (SD)	7.0 (7.3)	11.2 (7.7)	0.001
Social support instrument score tertiles			
Low: 1–10	108 (74.5)	144 (54.1)	
Medium: 11–20	26 (17.9)	77 (29.0)	
High: 21–32	11 (7.6)	45 (16.9)	0.001

of EM (OR = 0.15 (0.07–0.34)). Having someone to show them love and affection was associated with a 70% lower likelihood of a report of EM (OR = 0.30 (0.12–0.75)). Having someone to help with daily chores was associated with a 57% lower likelihood of a report of EM (OR = 0.43 (0.22–0.85)). Having contact with someone they can trust and confide in most of the time was associated with a 92% lower likelihood of a report of EM (OR = 0.08 (0.03–0.23)). Having someone they can count on for emotional support most of the time was associated with an 89% lower likelihood of a report of EM (OR = 0.11 (0.04–0.28)).

Social support total scores were first examined as a continuous variable. In the fully-adjusted model, each increase of 1 point on the social support scale was associated with a 6% lower likelihood of a report of EM (OR = 0.94 (0.91–0.97)). Figure 1 graphically presents the association between higher social support scores and EM. Social support scores were then examined as a categorical variable. Scores were categorized as being in one of three groups: low, medium and high levels of social support. Those with a low level were designated as the reference group. The same covariates were added into the models to test the strength of the association. In the fully-adjusted model, a medium level of social support was associated with a 48% lower likelihood of a report of EM (OR = 0.52 (0.29–0.92)) and a high level of social support was associated with a 59% lower likelihood of a report of EM (OR = 0.41 (0.19–0.90)). This categorical analysis is depicted in figure 2.

Table 2. Logistic regression of social support instrument questions and EM (values are OR (95% CI))

Social support instrument questions	Model A	Model B	Model C	Model D
Someone to listen to talk to				
None/little	1.0	1.0	1.0	1.0
Sometimes	0.44 (0.21–0.90)[+]	0.47 (0.23–0.98)[+]	0.48 (0.23–1.01)	0.57 (0.26–1.22)
Most/all the time	0.13 (0.06–0.26)*	0.17 (0.08–0.33)*	0.16 (0.08–0.32)*	0.18 (0.08–0.39)*
Someone to give you good advice to				
None/little	1.0	1.0	1.0	1.0
Sometimes	0.51 (0.25–1.01)	0.51 (0.25–1.03)	0.51 (0.25–1.03)	0.58 (0.27–1.22)
Most/all the time	0.13 (0.07–0.25)*	0.16 (0.08–0.32)*	0.15 (0.08–0.30)*	0.15 (0.07–0.34)*
Someone to show you love and affection				
None/little	1.0	1.0	1.0	1.0
Sometimes	0.83 (0.35–1.92)	0.93 (0.40–2.18)	0.88 (0.38–2.08)	1.04 (0.42–2.57)
Most/all the time	0.19 (0.09–0.39)*	0.25 (0.12–0.55)*	0.23 (0.10–0.51)*	0.30 (0.12–0.75)[#]
Someone to help you with daily chores				
None/little	1.0	1.0	1.0	1.0
Sometimes	0.62 (0.31–1.26)	0.69 (0.33–1.42)	0.66 (0.31–1.37)	0.86 (0.39–1.85)
Most/all the time	0.29 (0.17–0.53)*	0.38 (0.21–0.69)[#]	0.35 (0.19–0.66)[#]	0.43 (0.22–0.85)[+]
Contact with someone you trust and confide				
None/little	1.0	1.0	1.0	1.0
Sometimes	0.20 (0.08–0.54)[#]	0.24 (0.09–0.65)[#]	0.23 (0.08–0.64)[#]	0.27 (0.09–0.78)[+]
Most/all the time	0.05 (0.02–0.14)*	0.07 (0.03–0.18)*	0.07 (0.03–0.17)*	0.08 (0.03–0.23)*
Someone you count on for emotional support				
None/little	1.0	1.0	1.0	1.0
Sometimes	0.51 (0.22–1.17)	0.53 (0.22–1.25)	0.51 (0.22–1.23)	0.57 (0.23–1.42)
Most/all the time	0.09 (0.04–0.20)*	0.12 (0.05–0.27)*	0.10 (0.04–0.24)*	0.11 (0.04–0.28)*
Currently living with a partner				
No	1.0	1.0	1.0	1.0
Yes	0.72 (0.43–1.20)	0.88 (0.51–1.52)	0.66 (0.22–2.04)	0.92 (0.29–2.93)

Model A: age + sex; Model B: age + sex + education + income; Model C: age + sex + education + income + marital status + number of children; Model D: age + sex + education + income + marital status + number of children + psychological variables.
* $p < 0.001$; [#] $p < 0.01$; [+] $p < 0.05$.

Discussion

This study examined the association of social support with the risk of EM in an urban clinical Chinese population. The results show that higher levels of social support are independently associated with a lower risk of EM.

This information is useful because there is limited systematic information about the relationship between social support and EM in the current literature. Nevertheless, our findings are consistent with what literature there is. In a 2005 study, Fulmer et al. [12] examined 136 older adults (age 81.8 ± 7.5) without caregiver neglect and 29 older adults (age 82.7 ± 6.5) with caregiver neglect. This study suggested that victims of caregiver neglect had lower levels of social support, which was assessed using the Personal Resources Questionnaire [12]. In 2003, Shugarman et al. [13] examined 701 subjects aged 60 and over

(mean 77.8 ± 8.5) seeking home- and community-based services in Michigan. This study found that those with a brittle support system may pose an increased risk for EM (OR = 3.76 (1.58–8.93)). In 1999, Comijs et al. [31] examined 224 subjects with a mean age of 77 ± 5.2 (range 69–89) and found 77 subjects (34.4%) with EM. Social support was measured by means of a Dutch self-reported inventory of social support. This study suggested that victims of EM who received less social support reported higher levels of psychological distress (β = –0.32, p = 0.01).

Current knowledge of social support and EM in Asian cultures has been even more limited, and we are only aware of two published studies examining these associations. In a Korean study, Lee and Kolomer [14] examined 481 older adults with a mean age of 79.9 ± 7.3 (range 65–102). This study suggests that only formal social sup-
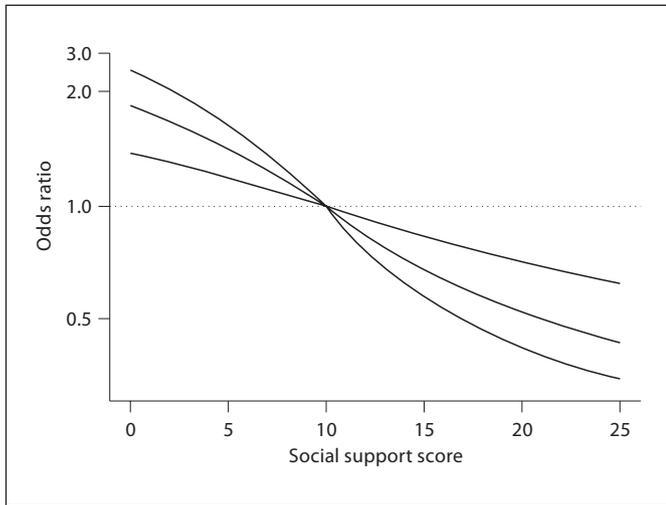
Fig. 1. Continuous social support score and risk for EM. Fully-adjusted OR and associated 95% CI center at the mean social support scores, indicating the higher scores along the social support continuum is associated with a lower risk for EM.
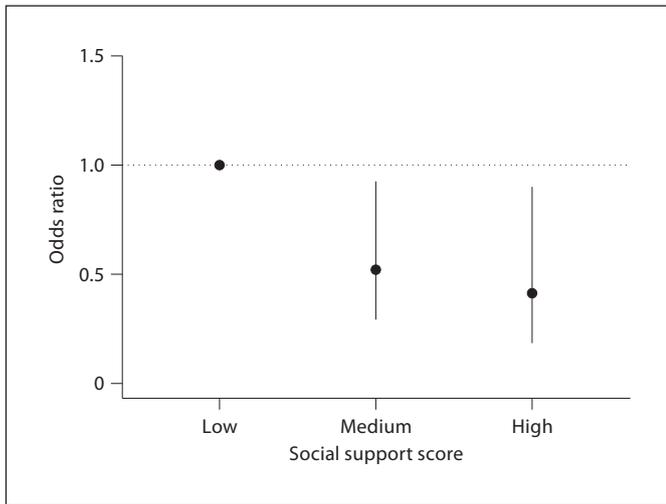
Fig. 2. Categorical social support scores and risk for EM.

port (nursing services, paid home care, day care programs, etc.) (β = –0.174, p < 0.001), but not informal social support (family members, etc.) was associated with a lower level of EM. In an Indian population, Chokkanathan and Lee [15] examined 400 community-dwelling adults aged 65 and over, with 89% of respondents in the age group of 65–79 and 11% in the age group of 80 years and above. In the logistic regression analyses, the study

found that low levels of social support may be associated with an increased risk of EM (Exp [β] = 1.07 (1.04–1.09), p < 0.001). The results of our study are consistent with prior findings in other countries, and further demonstrate that higher levels of social support may be protective against EM in a Chinese population.

The mechanism underlying the ability of higher social support to decrease EM has not been well explored. Social support may influence an individual's appraisal of stressful situations in different ways [32]. First, an individual with a high level of perceived social support is less likely than one with low social support to appraise a particular situation as stressful. If people perceive others as caring for them and willing to help, then they might see a stressful situation as less harmful. Second, social support may intervene between the experience of stress and the individual's response to the stress. When others are available to provide possible solutions to a problem or to help an individual reinterpret the magnitude of a stressful situation, individual responses to a problematic situation are likely to be attenuated. Another possible explanation for the association between social support and EM may be the presence or absence of social control [33]. The older adults with greater social support may also have greater social control, which in turn may reduce the risk for EM. Conversely, those with a lower social support and may have an increased risk for EM because of the lack of social control. Future prospective studies are needed to examine interactions of these potential mediating or modifying factors.

Issues of EM are still very much unexplored in Chinese culture. China is facing enormous challenges as the aging population rapidly increases. It is widely recognized that Chinese society is in a transition phase between urbanization and industrialization, and keeping the traditional values intact. Traditionally, old age was revered and older adults enjoyed support and comfort in a multigenerational system. However, social changes brought about by the country's modernization may have weakened traditional family social support structures, and precipitated value changes, which in turn have placed older adults in economic and psychological distress. Current scientific knowledge of EM in China is still in its infancy, and there is a paucity of literature exploring the relationship between social support and EM in China. This first cross-sectional study found that higher social support was independently associated with a lower risk of self-reported EM in an urban Chinese population. These results emphasize not only the importance of screening for social support among Chinese elderly, but

also the need to further explore the relationship between social support and EM in contributing to our understanding of this topic.

This study also has several limitations that should be noted. First, this is a clinical population of elders presenting at an urban medical center, and may not be representative of the general population in a community-dwelling setting. Thus the results of our findings may not be generalizable to rural Chinese populations, Chinese minority groups, immigration Chinese residents in other countries, as they might be subject to varying degrees of social, economic and Western influence. Second, since this is a self-administered survey, the study excluded elderly with cognitive impairment which further limited the generalizability of the study findings. The study team was concerned that persons with cognitive impairment may not be able to appropriately complete the survey. Third, our study was based on self-reports of elderly participants, which may have been subject to recall bias and limit the generalizability of the study findings. Fourth, this study did not examine the association of social support to specific subtypes of EM. It has set the ground for future work in this area. Fifth, this study did not obtain information about the perpetrators involved or any qualitative information regarding the circumstances in which the mistreatment occurred. Nevertheless, this study will set forth future studies on these issues. Last, this is a cross-sectional study to examine the association of social support with risk of EM, limiting our ability to make inferences regarding cause and effect. A further prospective study is now needed to longitudinally quantify this relationship. Nevertheless, this study does provide deep insights into EM in Chinese populations, and suggest that higher social support is a potential protective factor against EM.

In conclusion, greater social support is associated with a lower risk for self-reported EM. Routine screening for social support and finding ways to build better social support may help maintain and potentially improve the health and functioning of older adults. Community, city and state, as well as family could play important roles in reducing social isolation, and in increasing social support and companionship for aging Chinese individuals. Community-based support groups might be an effective intervention program for caregivers and victims. Primary family caregivers can share their knowledge and experiences regarding care management skills and effective coping mechanisms. Sharing care-giving experiences offers the opportunity to develop and expand support networks and contributes to decreased caregiver burden. Due to the vast geographical area of China, and its skewed economic growth and diverse culture, there is a need for a multi-site study of EM in China. Further in-depth studies need to be conducted on the cultural, familial and psychological factors of both victims and perpetrators. A further prospective study is also needed to quantify the temporal relationships between social support and EM. Future work is also needed to better understand the health impact of EM among Chinese population.

References

1 Tatara T: Summaries of National Elder Abuse Data: An Exploratory Study of State Statistics. Washington, National Aging Resource Center on Elder Abuse, 1990.
2 Teaster PB, Dugar T, Mendiondo M, Abner EL, Cecil KA, Otto JM: The 2004 Survey of Adult Protective Services: Abuse of Adults 60 Years of Age and Older. www.elderabusecenter.org/pdf/research/apsreport030703.pdf. Accessed April 4, 2007.
3 Lachs MS, Williams CS, O'Brien S, Pillemer KA, Charlson ME: The mortality of elder mistreatment. JAMA 1998;280:428–432.
4 Dong X: Medical implications of elder abuse and neglect. Clin Geriatr Med 2005;21:293–313.
5 National Research Council: Elder Mistreatment: Abuse, Neglect and Exploitation in an Aging America. Washington, National Academies Press, 2003.
6 Dong X, Simon MA, Gorbien M: Elder abuse and neglect in an urban Chinese population. J Elder Abuse Negl 2007;19:79–96.
7 Sarason I, Levine H, Basham R, Sarason B: Assessing social support: the Social Support Questionnaire. J Pers Soc Psychol 1983;44:127–139.
8 Penninx BW, van Tilburg T, Kriegsman DM, Deeg DJ, Boeke AJ, van Eijk JT: Effects of social support and personal coping resources on mortality in older age: the Longitudinal Aging Study Amsterdam. Am J Epidemiol 1997;146:510–519.
9 Wilkins K: Social support and mortality in seniors. Health Rep 2003;14:21–34.
10 Temkin-Greener H, Bajorska A, Peterson DR, et al: Social support and risk-adjusted mortality in a frail older population. Med Care 2004;42:779–788.

11 Rowe JL, Conwell Y, Schulberg HC, Bruce ML: Social support and suicidal ideation in older adults using home healthcare services. Am J Geriatr Psychiatry 2006;14:758–766.

12 Fulmer T, Paveza G, VandeWeerd C, et al: Dyadic vulnerability and risk profiling for elder neglect. Gerontologist 2005;45:525–534.

13 Shugarman LR, Fries BE, Wolf RS, Morris JN: Identifying older people at risk of abuse during routine screening practices. J Am Geriatr Soc 2003;51:24–31.

14 Lee M, Kolomer SR: Caregiver burden, dementia, and elder abuse in South Korea. J Elder Abuse Negl 2005;17:61–74.

15 Chokkanathan S, Lee AE: Elder mistreatment in urban India: a community-based study. J Elder Abuse Negl 2005;17:45–61.

16 Woo J, Kwok T, Sze FKH, Yuan HJ: Ageing in China: health and social consequences and responses. Int J Epidemiol 2002;31:772–775.

17 Banister J: Implications of the ageing of China's population. Changing family structure and population aging in China: a comparative approach. Beijing, Peking University Press, 1990.

18 Tam S, Neysmith S: Disrespect and isolation: elder abuse in Chinese communities. Can J Aging 2006;25:141–151.

19 Schofield MJ, Mishra GD: Validity of self-report screening scale for elder abuse: Women's Health Australia Study. Gerontologist 2003;43:110–120.

20 Hwalek MA, Sengstock MC: Assessing the probability of abuse in the elderly: toward development of a clinical screening instrument. J Appl Gerontol 1986;5:153–173.

21 Williams RB, Barefoot JC, Califf RM, et al: Prognostic importance of social and economic resources among medically treated patients with angiographically documented coronary artery disease. JAMA 1992;267:520–524.

22 Berkman LF, Leo-Summers L, Horwitz RI: Emotional support and survival after myocardial infarction. A prospective, population-based study of the elderly. Ann Intern Med 1992;117:1003–1009.

23 Gorkin L, Schron EB, Brooks MM, et al: Psychosocial predictors of mortality in the Cardiac Arrhythmia Suppression Trial-1 (CAST-1). Am J Cardiol 1993;71:263–267.

24 Beck A, Steer R, Garbin M: Psychometric properties of the depression inventory: 25 years of evaluation. Clin Psychol Rev 1981;8:1003–1009.

25 Blumenthal JA, Burg MM, Barefoot J, Williams RB, Haney T, Zimet G: Social support, type A behavior, and coronary artery disease. Psychosom Med 1987;49:331–340.

26 ENRICHD Investigators: Enhancing recovery in coronary heart disease patients. Study design and methods. Am Heart J 2000;139:1–9.

27 Vaglio J Jr, Conard M, Poston WS, et al: Testing the performance of the ENRICHD social support instrument in cardiac patients. Health Qual Life Outcomes 2004;2:24.

28 Berwick DM, Murphy JM, Goldman PA, Ware JE Jr, Barsky AJ, Weinstein MC: Performance of a five-item mental health screening test. Med Care 1991;29:169–176.

29 McHorney CA, Ware JE Jr, Raczek AE: The MOS 36-Item Short-Form Health Survey (SF-36). II. Psychometric and clinical tests of validity in measuring physical and mental health constructs. Med Care 1993;31:247–263.

30 SAS Online Doc, Version 9.1.3. Cary, SAS Institute Inc, 2004.

31 Comijs HC, Penninx BW, Knipscheer KP, van Tilburg W: Psychological distress in victims of elder mistreatment: the effects of social support and coping. J Gerontol B Psychol Sci Soc Sci 1999;54:240–245.

32 Litty CG, Kowalski R, Minor S: Moderating effects of physical abuse and perceived social support on the potential to abuse. Child Abuse Negl 1996;20:305–314.

33 Fagan J: Contributions of family violence research to criminal justice policy on wife assault: paradigms of science and social control. Violence Vict 1988;3:159–186.