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Exposure to Violence in Social Unrest, Resilience, and Mental Health of Older People in Hong Kong

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ABSTRACT

Objective: *Older adults are prone to the negative effects of exposure to violence on their mental health. This study aimed to examine the impact of exposure to violence during social unrest and the role of resilience in the mental health of older people.* ***Design:*** *A total of 1,203 people aged 65 years or older were randomly selected for a telephone survey using the random digit dialing numbering method in Hong Kong.* ***Measurements:*** *A 13-item scale was developed to measure exposure to violence. The Chinese versions of the Connor-Davidson Resilience Scale and the Startle, Physiological Arousal, Anger, and Numbness scales for measuring mental health status were adopted in the survey.* ***Results:*** *The results showed that the more frequently older people were exposed to information, the more negative mental health status they had. However, exposure to witnessing and experiencing violence was not significantly associated with mental health status. Older adults' level of resilience had a moderating effect between exposure to information and mental health, whereas the effect of exposure to information on mental health was stronger for respondents with lower resilience.* ***Conclusion:*** *This study showed that emotional problems caused by exposure to related information among older people should be properly addressed during massive social unrest and conflict. Their resilience capacity is an important moderating factor. Future interventions and support*

Editorial accompaniment, please see page 1100.

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services should focus on enhancing the resilience of older people to better equip them with overcoming problems related to macro-social issues. (Am J Geriatr Psychiatry 2023; 31:1091−1099)

Highlights

- **What is the primary question addressed by this study?**
  We aimed to examine the impact of exposure to violence on social unrest and the role of resilience in the mental health of older people.
- **What is the main finding of this study?**
  The more frequently older people were exposed to information during social unrest and conflict events, the more negative mental health status.
  Resilience levels in older people moderated the relationship between exposure to information and mental health status.
- **What is the meaning of the finding?**
  Identifying the role of resilience in the relationship between exposure to information and mental health status could provide more targeted interventions.

BACKGROUND

Exposure to violence and conflict has been found to detrimentally affect people's health from different aspects.[1] It can increase people's risk of having chronic conditions and functional impairment because exposure to violence and conflicts usually delays transportation, infrastructure, and other medication services, which can instantly be a barrier to people's access to public health services.[2] Exposure to violence and conflicts is also linked to a higher prevalence of mental health illnesses since these experiences can be viewed as traumatic events and increase people's mental health burden.[3] International research has shown the detrimental effects of conflict on individuals' mental health. Tremblay et al.[4] demonstrated that prolonged exposure to political violence has a significant impact on the mental health of young individuals, leading to post-traumatic stress disorder, anxiety, and depression. A recent meta-analysis revealed a similar finding that 22% of conflict-affected populations experienced mental disorders (e.g., depression, post-traumatic stress disorder [PTSD], and anxiety),[5] and "mental suffering" has been identified as a proxy of the influence of chronic political and social effects on mental health.[6] In addition to the direct psychological effects, social unrest could also contribute to trauma through social disruption and economic strain. Interruptions of social services could lead to disruptions in daily routines and financial instability. These stressors could exacerbate existing mental health issues and contribute to the development of new ones.[7]

Older adults have less physical strength and may be more easily injured in any form of conflict than younger adults.[8] A meta-analysis found a higher prevalence of depression and anxiety in older people than in younger people affected by political conflict.[5] Unrest causes challenges and delays in infrastructure, transportation, and community and government services. Older adults are likely to have additional worries and experience lower social and personal safety, which have been shown to cause depressive symptoms among older people in the Chinese context.[9] Trauma-focused and psychosocial approaches are used to understand the mental health needs of people affected by conflicts. The former emphasizes the influence of direct exposure to conflict (e.g., physical assault, destruction of property, loss of life) on mental health, while the latter emphasizes the influence of conflicts on everyday living conditions, including enduring or chronic threats to wellbeing (e.g., poverty, disrupted social relations, family changes).[10] Guided by a trauma-focused approach,

research focuses heavily on veterans and refugees with direct experiences of conflict, with less attention paid to civilians and the general public.[11] However, indirect exposure has detrimental effects on mental health.[12] The assumption that conflict exposure is a major determinant of mental health means that the chronic influence of daily stressors is overlooked. Direct exposure to violence explains only the limited variance in PTSD,[13] illustrating the need to study daily disruptions triggered by conflict. Everyday tensions (e.g., economic difficulties) triggered by conflict are associated with increased levels of depression, anxiety, and other mental health issues.[14] Additionally, older adults may experience flashbacks, nightmares, avoidance of triggers, changes in mood, and difficulty sleeping after experiencing or witnessing a traumatic event, such as a war, abuse, or a natural disaster, which are the common symptoms of PTSD.[15–17] During social unrest, it may be difficult for older people to maintain community connections, which are key to mental health.[18] This study aimed to examine the impact of exposure to violence during social unrest on older people's mental health.

Eggerman and Panter-Brick[19] indicated that humans could deal with chaos, including conflicting environments and challenges. In previous studies on older people, they were described as weak or powerless, and research on their mental health tended to focus on pathological outcomes and overlook other strength factors such as resilience. A comprehensive review by MacLeod et al.[20] identified a certain degree of resilience in older people, even when their physical skills have declined, and their socioeconomic status or personal experiences have changed. Resilience is positively associated with successful aging and mental health.[20] In this regard, the role of resilience, particularly during difficult, challenging, and critical events, should be further examined. In this context, this study aimed to examine the role of resilience in the relationship between exposure to violence and the mental health of older adults.

Social and political unrest in Hong Kong provided a natural research opportunity to address this matter in the Hong Kong Chinese context. In early 2019, the Hong Kong Government proposed amendments to the Fugitive Offenders Ordinance, which triggered protests and opposition incidents across Hong Kong. Since mid-June 2019, many transport facilities, government buildings, businesses, banks, and even university facilities have been severely damaged due to protests, confrontations, and conflicts among opposition groups and law and order authorities. The destruction and suspension of transport facilities have undoubtedly affected the daily lives of the public.[21] In this case, the public and media have focused on the impact of social and political conflicts involving younger people,[22] often ignoring older people. Therefore, this study aimed to examine the impact of exposure to social and political unrest and the role of resilience on older people's mental health using Hong Kong as the data collection site.

METHODS

Sampling and Data Collection

A large-scale quantitative survey with a representative sample of older adults in Hong Kong was conducted from June to July 2020, which is nearly half year after the social unrest had begun. The random digit dialing numbering method was also used. Telephone numbers were randomly generated with known prefixes assigned to telecommunication service providers under the Office of the Communications Authority numbering scheme. Once telephone contact was successfully established with the target household, an eligible participant was selected from among the household members using the "next birthday rule" to eliminate potential bias. If the participants refuse to answer, no information would be recorded. For all interviewed participants, the research team expects the participants to provide complete answers to all the questions in the questionnaire Ultimately, 1,203 Hong Kong residents aged 65 years or above were successfully interviewed. As data collection was conducted via telephone interviews, all participants provided verbal consent before the interview following the procedures set out in the Helsinki Declaration. This study was approved by the Human Subjects Ethics Sub-Committee of the Project Hosting University (HSEARS 20191205001-01).

Measurements

The structured questionnaire covered demographic variables, such as gender, age, marital status, education level, financial status, employment, exposure to social

unrest, resilience, and mental health. Demographic variables were considered confounding variables.

Exposure to violence during social and political unrest was measured using 13 items assessing the frequency of exposure to different types of unrest events in two major domains using a 5-point Likert-type scale ranging from 1 (never) to 5 (always). The first domain of the scale contained eight items related to exposure to witnessing and experiencing social unrest such as having experienced or witnessed a social unrest (α = 0.799). The second domain contains five items covering exposure to information on social unrest incidents, i.e., have been informed about the conflict on-site through radio/TV/social media/newspapers/messages, and have been informed of the death on-site through radio/TV/social media/newspaper/message (α=0.845) (Appendix 1). The scale was developed by a research team for this study. Exploratory Factor Analysis was used to test the factorial validity of this scale, while confirmatory factor analysis (CFA) was used to test construct validity. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.834, which is above the commonly acceptable threshold of 0.6. Bartlett's Test of Sphericity was significant with $X^2(5717.528) = 78$, $p < 0.001$. Two factors were loaded by using principal components analysis, with an eigenvalue of 2.547 and a total common variance of 6.629, explaining a total variance of 50.99%. Cronbach's alpha of the scale indicated good internal consistency (α = 0.808) between items. The results of the CFA showed that the two-factor scale had a good model fit ($\chi 2/df = 1.34$, RMSEA= 0.032, CFI = 0.985, TLI = 0.982, SRMR = 0.078). The items in each domain were added together, and the higher the score, the more frequently the participant was exposed to various types of social unrest incidents.

The Chinese version of the Connor-Davidson Resilience Scale[23] was adopted to measure resilience using two 5-point Likert-type questions ranging from 1 (very bad) to 5 (very good), including questions on being able to adapt to changes and recover easily from illness and injury. The higher the score, the better the recovery ability.

Mental health was measured using the Chinese version of the 4-item Startle, Physiological arousal, Anger, and Numbness (SPAN) scale.[24] Some researchers have argued that the scale has shown a high diagnostic accuracy for PTSD.[24,25] Participants were asked to rate on 5-point Likert-type items ranging from 0 (not painful or disturbance) to 4 (extreme painful or disturbance), including "becoming easily frightened," "feeling uncomfortable when recalling the social unrest," "becoming irritable or agitated," and "unable to have feelings of sadness or joy." Although the items may not necessarily show the specific PTSD symptoms, they were adopted in this study to illustrate the general mental health status of the participants with higher scores indicating a more negative mental health status.

Data Analysis

According to the population aged 65 or above in Hong Kong and the distribution of their gender, age, and education, the raw data were rake-weighted to adjust for any imbalances in the sample's demographics.[26] A descriptive analysis was conducted to analyze the demographic information of the participants. Hierarchical linear regression analysis was conducted to test the association between exposure to social unrest and mental health. The moderating role of resilience in the relationship between exposure to stress and mental health status was also tested. All confounding variables were entered in block one of the models, whereas the two variables in exposure to violence were entered in block two. To test the moderating role of resilience, resilience was included in the second step, and two variables of exposure to violence were entered separately. The interaction terms of resilience with the two variables in exposure to violence were entered in block three. A simple slope analysis was further performed to suggest an association between exposure to violence and mental health status at different levels of resilience. All analyses were performed using SPSS version 26.0.

RESULTS

In total, 1,203 valid questionnaires were collected for this study. Table 1 presents the participants' demographic information.

Factors Associated With Mental Health Status

The effects of exposure to witnessing, experiencing, and information in social unrest on the severity of mental health status were examined using hierarchical linear regression in Table 2. The first model, which

TABLE 1. Demographic Information (N=1203)

	N/Mean	%/SD
Gender		
Female	625	52
Male	578	48
Age	74	6.51
Marital status		
Married	835	69.4
Single	368	30.6
Born in Hong Kong		
Yes	554	46.1
No	649	53.9
Residential years in Hong Kong	60.39	14.34
Previous experience in social or political unrest (number of times)	2	1.61
Number of Children	2	1.26
Education level		
Primary school or below	331	27.5
Secondary school	575	47.8
Diploma or above	297	24.7
Financial status		
Average and below	914	76
Good and very good	289	24
Employment		
Yes	56	4.7
No	1147	95.3
Living arrangement (live alone)		
Yes	253	21
No	950	79

TABLE 2. Effect of Exposure to Witnessing and Experiencing, and Exposure to Information on Mental Health Status

	Model 1		Model 2	
	β	SE	β	SE
Gender	−0.135[b]	0.057	−0.158[b]	0.056
Age	−0.257[b]	0.004	−0.209[b]	0.004
Marital status (Ref: single) Married	−0.091[a]	0.075	−0.082[a]	0.074
Educational (Ref: Primary school or below) Secondary school	0.058	0.058	0.043	0.058
Diploma or above	0.042	0.093	0.013	0.092
Financial status (Ref: poor and worst) Good and very good	−0.018	0.064	−0.024	0.063
Employment (Ref: not working) Working	−0.056	0.07	−0.047	0.069
Living arrangement (Ref: not living alone) Living alone	−0.069	0.082	−0.067	0.08
Exposure to witnessing and experiencing			0.054	0.095
Exposure to information			0.166[b]	0.077
Constant	3.564[b]	0.321	2.299[b]	0.371
△F	14.382[b]		21.297[b]	
Degrees of freedom	8,1194		2,1192	
Adj R2	0.082		0.112	
△ R2	0.088		0.031	
p	<0.001		<0.001	

Note: Hierarchical multiple regression was conducted. *β*: Standardized beta; SE: standard error.

[a] $p < 0.05$.

[b] $p < 0.001$.

contained only demographics, gender, age, financial status, and living arrangements, significantly predicted the severity of negative mental health symptoms. Model one explained 8.8% of the variance (R^2 = 0.088, $\triangle R^2$ = 0.088, $\triangle F = 14.382$ (8,1194), $p < 0.001$). The two exposure variables, exposure to witnessing and experiencing and exposure to information, were then entered in block two. The level of exposure to witnessing, experiencing, and information explained an additional 3% of the variance in the severity of mental health status, with R^2 = 0.119, $\triangle R^2 = 0.031$, $\triangle F = 21.297$ (2,1192), $p < 0.001$. After controlling for demographic variables, exposure to information (β = 0.166, t = 5.748, $p < 0.001$) was a significant predictor of mental health status, whereas exposure to witnessing and experiencing (β = 0.054, t = 1.862, p = 0.063) was not. The higher frequency of exposure to information was associated with more negative mental health status.

Moderating Role of Resilience

Table 3 shows the effects of resilience and exposure to information on the severity of mental health status using hierarchical regression. The moderating role of resilience was found to be significant in the relationship between the severity of mental health status and "exposure to information"(R^2 = 0.124, $\triangle R^2 = 0.006$, $\triangle F = 8.761$ (3,1191), $p < 0.001$). The results of the simple slope test showed a positive relationship between exposure to information and the severity of mental health status in both the high (β = 0.307, t = 3.242, $p < 0.05$) and low (β = 0.619, t = 6.923, $p < 0.001$) resilience groups, as shown in Figure 1. The higher the level of exposure to information by all participants during social unrest, the more negative mental health status. However, for participants with low resilience, the impact of "exposure to information" on the severity of mental health status was stronger than for those with high resilience. However, a moderating effect of resilience on the relationship between exposure to witnessing and experiencing and the severity of mental health status was not found (R^2 = 0.098, $\triangle R^2 = 0.002$, $\triangle F = 3.006$ (3,1191), p = 0.083).

DISCUSSION

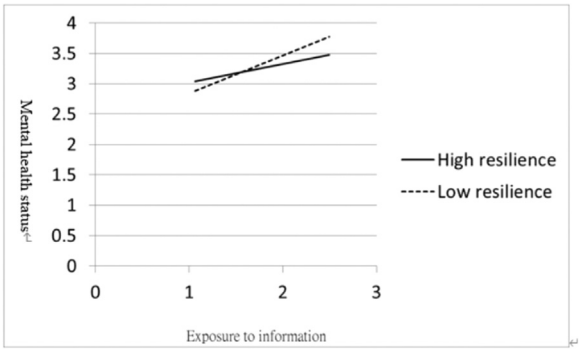
Exposure to information related to temporary uprisings and popular protests and exposure to

TABLE 3. Moderation Role of Resilience in the Relationship between Exposure to Information and Mental Health Status

	Model 1		Model 2		Model 3	
	B	SE	β	SE	β	SE
Gender	−0.135[b]	0.057	−0.152[b]	0.056	−0.149[b]	0.056
Age	−0.257[b]	0.004	−0.223[b]	0.004	−0.224[b]	0.004
Marital status (Ref: Single) Married	−0.091[a]	0.075	−0.082[a]	0.074	−0.092[a]	0.074
Educational (Ref: Primary school or below) Secondary school	0.058	0.058	0.04	0.058	0.037	0.057
Diploma or above	0.042	0.093	0.019	0.092	0.027	0.092
Financial status (Ref: poor and worst) Good and very good	−0.018	0.064	−0.024	0.063	−0.027	0.063
Employment (Ref: not working) Working	−0.056	0.07	−0.049	0.069	−0.055	0.069
Living arrangement (Ref: not living alone) Living alone	−0.069	0.082	−0.066	0.08	−0.079[a]	0.081
Resilience			−0.027	0.013	−0.038	0.013
Exposure to information			0.179[b]	0.076	0.174[b]	0.075
Interaction term (resilience x exposure to information)					−0.083[a]	0.025
Constant	3.564[b]	0.321	2.46[b]	0.377	2.546[b]	0.377
△F	14.38[b]		19.99[b]		8.76[a]	
Degrees of freedom	8,1194		2,1192		3,1191	
Adj R2	0.082		0.110		0.116	
△ R2	0.088		0.03		0.006	
p	<0.001		<0.001		<0.001	

Note: Hierarchical multiple regression was conducted. *β*: Standardized beta; SE: standard error.
[a] $p < 0.05$.
[b] $p < 0.001$.

FIGURE 1. Simple slope of exposure to information and mental health status in high and low resilience group.



witnessing or experiencing this social event could have a significant impact on the mental health and daily life of older adults. The emotional impact of such events can be particularly devastating for older adults, who may already be coping with a range of age-related mental health challenges. Feelings of fear, anxiety, and uncertainty could be intensified by the sense of powerlessness and vulnerability that many older adults experience in the face of social unrest.

In addition to the emotional impact, social unrest can also have practical consequences that negatively affect older adults' daily lives. Disruptions to public transportation, healthcare services, and other essential resources could make it difficult or even impossible for older adults to access the support they need. This could lead to increased isolation and feelings of helplessness, which in turn can exacerbate existing mental health challenges.

This study has demonstrated the effects of exposure to different types of violence during social unrest on the severity of mental health status in older adults. The results showed that exposure to witnessing and experiencing violence did not increase the severity of mental health status among older adults. However, the higher the exposure to information related to reporting violence and conflicts, the more negative mental health status. Our study also found that resilience was a significant moderator in the relationship between exposure to information and the severity of mental health status. The impact of exposure to information on the severity of mental health status was

higher in the low-resilience group than in the high-resilience group.

These findings are not entirely consistent with those of the previous studies. Findings have suggested that the higher the participants' exposure to witnessing and experiencing social unrest, the more negative mental health status.[27] Similarly, exposure to information affects the severity of mental health status. In the social unrest study, exposure to witnessing and experiencing was mainly related to the age of the participants. One probable reason for the difference is that the previous study[27] focused on participants of young and middle-aged groups, while all participants in the current study were older people aged 65 years and above. A second reason could be that people involved in the 2019 social and political unrest in Hong Kong were mainly younger.[28] Thus, for older people, the impact of receiving information, such as being informed by others, the media, and other means of obtaining relevant information, is higher than when participating in person or as a witness.

In addition, damage to transport facilities during social unrest creates further uncertainty that hinders the mobility of older people. In this regard, the media is the primary way for them to receive information about unrest and other social information. Blanchard et al.[29] pointed out that the traumatic stress caused by indirect exposure, such as through the media, is short-lived compared with direct exposure from personal involvement or experience. Our study, conducted shortly after the disturbance, found a positive effect of information exposure on the severity of mental health status. The promotion of information and the contagion of culture are largely driven by social media and other forms of mass communication. When the ideas and messages disseminated are negative, they tend to have a negative impact on older adults.

A study on armed conflict found that resilience did not directly contribute to the overall change in mental health condition such as PTSD in vulnerable groups, such as women, but other pathways of resilience to change in PTSD were identified.[30] These findings are similar to those of the current study, with resilience playing a moderating role. For older people, the protective effect of resilience was relatively obvious. For instance, resilience protects older people from the effects of anxiety.[31] Even with differences in social background, personal experiences, and declining health, older adults still have high levels of resilience.[20] Similarly, the Ribeiro-Gonçalves[32] study found that resilience was an important protective factor for mental health against the effects of age discrimination and was also a factor that partially reduced loneliness in older people. In the groups with low resilience, exposure to information had a more significant impact on mental health status. Although exposure to information also increased the scores on mental health status in the high-resilience group, the effect was relatively small compared to the low-resilience group. This result suggests that resilience is a vital resource for older people, who could have a protective effect during major upheavals. Therefore, in addition to focusing on older adults' exposure to violence in social events, future practice and policy interventions should focus on enhancing their resilience to cope with not just personal but societal challenges and chaos.

However, some limitations of this study should be noted. This cross-sectional study was implemented shortly after the period of active social unrest. For this reason, it is not possible to determine whether social unrest events have a long-term impact on older people's mental health, particularly in terms of traumatic stress. The regression model was significant but with a small adjusted R-squared. This may be due to the presence of unmeasured variables that are important predictors of the outcome variable. Even so, the results of the model give us a hint about the impact of the media and the effect of resilience on older adults. This study examined only the factors affecting older people's mental health mainly on the severity of PTSD symptoms in the context of social unrest. Other mental health conditions, such as anxiety and depression, should be explored in future studies. Apart from that, the SPAN scale adopted in this study contains only four items, so it is difficult to meet the conditions of measuring clinical PTSD symptoms. For this reason, we only used the instrument to measure the general mental health status of the participants. Additionally, this study was correlational. The existence of a definitive causal relationship between the variables could not be fully established due to insufficient evidence or data, which makes it difficult to draw a conclusive determination regarding causality. In addition, data collection relied mainly on the participants' self-reports. Therefore, it was impossible to

ascertain whether the participants had a mental illness. Finally, since the data were collected through a telephone survey and the target population was older adults, we kept the questionnaire relatively short to better control the time and quality of the answers. The telephone survey provided limited in-depth information compared to in-depth interviews. However, it did offer valuable insights into the needs of older adults in the context of the social unrest. To obtain a more comprehensive understanding, future research may consider utilizing a mixed methods approach.

AVAILABILITY OF DATA AND MATERIALS

Supporting data and data analysis materials are available from the corresponding author upon request.

ETHICS APPROVAL AND CONSENT TO PARTICIPANT STATEMENT

The protocol for the research project was approved by the Human Subjects Ethics Sub-Committee of The Hong Kong Polytechnic University (HSEARS20191205001-01).

AUTHORS' CONTRIBUTIONS

DL designed and supervised the entire study and was involved in drafting the manuscript and making critical recommendations. XO was involved in data analysis and drafting of the manuscript. VL was involved in project implementation, data analysis, and drafting of the manuscript. EY, JL, EL, and WY were involved in the design of the study and made critical comments for the manuscript.

DATA STATEMENT

The data has not been previously presented orally or by poster at scientific meetings.

DISCLOSURES

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SUPPLEMENTARY MATERIALS

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