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# Psychosocial Risk and Protective Factors Related to Psychological Problems among Widows from the Civil Unrest in Southern Thailand

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**Abstract**

Psychosocial factors have a high influence on both the risk and protective factors leading to psychological problems such as post-traumatic stress disorder (PTSD), complicated grief (CG), and depression in those who have lost loved ones in violent situations. This study aimed to develop and validate a model of the relationships among psychosocial risk and protective factors on psychological problems of bereaved widows from the civil unrest in the southernmost provinces of Thailand. This cross-sectional study involved 350 widows who were asked to join voluntarily prior to participating in this research. The psychologist-volunteers conducted preliminary interviews and assessment using questionnaires between September 2019 and February 2020 in the three provinces of Thailand, Pattani, Yala, and Narathiwat. Data were analyzed using structural equation modeling. The results indicated that the psychosocial risk factors (interpersonal conflicts, family problems, and external stressors) showed high positive effects, while the protective factors (resilience, self-efficacy, and quality of life) revealed low positive effects on psychological problems ($\chi^2 = 14.92$, *df*=13, *p* = .31, RMSEA = .02, SRMR = .02, CFI = 1.00, TLI = 1.00). Both psychosocial risk and protective factors could explain as 61% of the variance of the psychological problems. Due to the high impact of the psychological problems on both PTSD and CG, protective factors may not be able to function, while risk factors had a high impact to develop psychological problems. Therefore, in order to reduce PTSD and CG among widows, risk factors should be considered to guide the development of psychosocial support programs. However, protective factors should be further studied.

In the deep south provinces of Thailand, the unrest events have occurred since 2004, resulting in 13,466 injuries and 7,021 deaths, caused bereavement among the victims, with 3,132 women becoming bereaved widows (Buranajaroenkij, 2021). However, there has been no overall study of the factors and psychological effects of these widows after the loss of their loved people. As a result, understanding of mental health problems and guidelines on helping are unclear. As Djelantik et al. (2022) reported that post-traumatic stress disorder (PTSD), complicated grief (CG), and depression are common psychological problems and often occur among people having bereavement. Fifty-three percent of widows, survivors of Rwandese genocide, had lifetime PTSD, while 28% reported current PTSD that was significantly associated with their depression (Ngamije, 2009). Similarly, 16.50% of widows reported CG, with the average of 12 years post-loss and their grief-related loss was 70% due to violent death, and this highly

significant CG was also related with PTSD (Schaal et al., 2010). Furthermore, psychological problems arising from PTSD, CG, and depression were reported as co-occurrence phenomena (Djelantik et al., 2022; Komischke-Konnerup et al., 2021; Simon et al., 2007). Therefore, the co-occurring psychological problem factors in this study consisted of PTSD, CG, and depression.

The psychosocial factors that affected the psychological problems of survivors of violent deaths of loved ones were reviewed. Although empirical evidence showed a variety of factors affecting psychological problems such as socio-economic-demo factors, trauma event factors, psychosocial factors, and others, these factors are often separated into risk factors, meaning they cause to develop psychological problems, and protective factors, referred to factors that act as resistance to psychological problems (Ford et al., 2015; Hibberd et al., 2010; Maier et al., 2021; Mason et al., 2020). In addition, psychosocial factors have been found to have a greater influence on psychological problems than other factors. Psychosocial factors that can also be applied and developed into practical innovations to protect and promote for the well-being of those who have lost loved ones in the context of the southern border provinces. Therefore, psychosocial factors were selected, but only significant factors which affected psychological problems among PTSD, CG, and depression were chosen. These factors were then divided into two dimensions, psychosocial risk factors namely, interpersonal conflicts, family problems and external stressors; and psychosocial protective factors, namely resilience, self-efficacy and quality of life.

Therefore, the objectives of this research were to develop and examine a model of psychosocial risk factors and psychosocial protective factors affecting the psychological problems of bereaved widows from the civil unrest in the deep south of Thailand. It was anticipated that the results of the present study would offer an overview on how the psychosocial risk and protective factors impact upon the psychological problems, leading to better understanding, on both a theoretical and empirical basis, of the widows' problems and their causes. This should allow for more possibilities to develop a guideline for more practical and efficient assistance.

## Literature Review

There are three major types of psychological problems that can occur after losing a loved person in a traumatic event: posttraumatic stress disorder (PTSD), complicated grief (CG) and depression (Djelantik et al., 2022; Komischke-Konnerup et al., 2021; Simon et al., 2007). Posttraumatic stress disorder can arise after witnessing or encountering extremely traumatic events. This leads to certain typical psychiatric symptoms including re-experiencing the trauma both during sleep and whilst being awake, avoiding stimuli relating to such traumatic events, and hyperarousal. Other potential symptoms include an exaggerated startled response, helplessness, depression, anxiety, and problems with concentration. They can last longer than a month and impair how individuals perform their duties in society, their relationship and so on (American Psychiatric Association, 2013). In particular, experiences after being involved in man-made fatal incidents can trigger PTSD at 2.30%-17% of the time (Neria et al., 2008). Complicated grief is an emotional reaction after loved people have passed away. Its typical symptoms include yearning and longing, persistent preoccupation, intense emotional pain, and significant psychosocial impairment. Such intense pain can manifest itself in a form of sorrow, guilt, anger, denial, blaming, problems accepting the death, a feeling like having lost part of themselves, an inability to think positively, numbness or difficulty in socializing with others. These symptoms can last longer than 6 months, ailing sufferers' personal matters, family, social environment, education, occupations and other major functions (World Health Organization, 2018). It has been discovered that around 10%–15% of individuals that lost a loved one suffered from CG (Boelen & Lenferink, 2020). It is also possible that they can suffer from depression. In fact, CG is associated with suicidal ideation (American Psychiatric Association, 2013) and provokes depression, together with incurring a risk of suicide (Lindemann, 1944).

It can be seen that losing a close or loved person can cause all three aforementioned psychological problems. These three problems occur among widows who have lost their husbands in a pattern of unrest in three southernmost provinces during the past 15 years. The three problems occur after the sudden loss of loved people in violent incidents. Moreover, empirical evidence demonstrates that they are co-occurrence (Djelantik et al., 2017; Komischke-Konnerup et al., 2021). Komischke-Konnerup et al. (2021) mentioned the published prevalence estimates of the co-occurrence of CG and clinically relevant levels of symptoms of depression, anxiety, and PTSD which vary considerably, with findings ranging from 10% to 100%. It was also reported that the co-occurrence in bereaved individuals who experienced CG concurrently relevant levels of symptoms of depression, or PTSD, generally showed more severe grief symptoms, lower quality of life, and more functional impairment than individuals with relevant levels of only one of these reactions. Moreover, co-occurrence is important for development and optimization of efficacious grief interventions. For example, individuals with CG and co-occurring depression might benefit from different interventions compared to those with CG alone. Plus, parents who have lost their only child, with CG had higher comorbidity of PTSD or depression compared with those without CG (Zhang et al., 2020). These three psychological problems faced by widows can be a combination of causal factors. The factors affecting psychological problems are reviewed. In particular, the psychosocial aspect of those factors is synthesized. It can be divided into two dimensions: psychosocial risk factors and protective factors (Ford et al., 2015; Hibberd et al., 2010; Maier et al., 2021; Mason et al., 2020).

The psychosocial risk factors exacerbated the psychological problems based on both the concept of co-occurrence phenomena ( Djelantik et al., 2022; Komischke-Konnerup et al., 2021; Simon et al., 2007) and previous empirical findings (Ford et al., 2015; Hibberd et al., 2010; Maier et al., 2021; Mason et al., 2020). It is sub-divided into three aspects. First, interpersonal conflicts pertain to conflicts with colleagues and surrounding people. Melhem et al. (2004) supported that interpersonal conflicts and factors contributing to the three psychological problems had a positive correlation. Second, family problems pertain to awareness of conflicts among family members and it is a risk factor of CG (Mason et al., 2020). Moreover, despite not being the sole factor, it can increase the risk of PTSD (Ford et al., 2015). Regarding depression, Campbell et al. (1996) supported that family socialization might be associated with a level of depression relating to genetics, a medical history of depression and domestic violence. Third, external stressors pertain to the awareness of an external environment which can cause stress such as rules and regulations, financial problems, physical health, a burden of debt, a lawsuit or a concern about one's current health or an illness. Notably, individuals who are easily provoked by external circumstances can experience higher stress. Stressful life incidents can possibly cause PTSD and CG (Melhem et al., 2004) and are the most important predictor of depression (Campbell et al., 1996). To sum up, interpersonal conflicts, family problems and external stressors each has a negative correlation with good mental health (Prohmpetch & Naraongard, 2009).
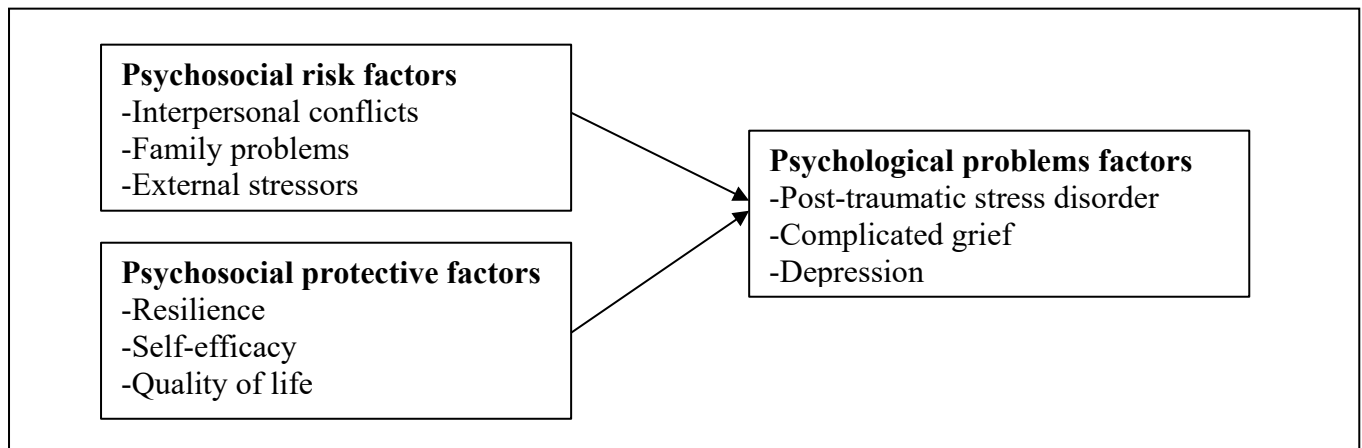
The psychosocial protective factors combat, prevent, resolve and alleviate psychological problems. These factors are also based on both theory and previous empirical findings (Ford et al., 2015; Hibberd et al., 2010; Maier et al. 2021; Mason et al., 2020). They consist of three sub-variables: resilience, self-efficacy and quality of life. First, resilience is emotional strength which individuals have regarding an ability to adapt and rebound from a setback so that they can continue their daily activities on a sane basis. Horn and Feder (2018) reported that resilience constituted protective and remedial factors for handling PTSD sufferers. It had a negative correlation with CG (King & Delgado, 2021) and increased the likelihood of not suffering from depression (Edward, 2005). Second, self-efficacy is self-awareness of how to handle a wide range of stress competently. Hibberd et al. (2010) discovered that when compared to social support, self-efficacy resulting from positive interaction was likely to produce more positive results in protecting individuals against the three psychological problems. Third, quality of life is awareness of well-being with respect to the body, the mind, the society and the environment. It had a negative correlation with the three psychological problems (Hansson, 2002; Songwathana et al., 2018),

signifying that low quality of life was associated with CG (Mason et al., 2020). To sum up, resilience, self-efficacy, and quality of life have negative effects on CG and depression (Boelen & Prigerson, 2007).

In this study, psychosocial risk and protective factors, and psychological problems were considered latent variables derived from observed variables. A measurement model of each variable was re-verified using confirmed factor analysis (CFA). The model was tested based on two research hypotheses: 1) it was tested whether it was related to empirical data, and 2) it was verified to what extent exogenous variables whether psychosocial risk and hypothesized protective factors had effects on endogenous variables, which is the psychological problems. Because of a relationship among exogenous and endogenous variables, multiple regression with latent variables were used, which are two common modeling approaches. One is structural equation model (SEM) to form the model of the relationship among psychosocial risk factors and protective factors on the psychological problems and to evaluate the measurement model by CFA. Moreover, SEM uses maximum likelihood estimation, allows relating error terms, let accuracy for regression coefficients because latent variable does not have measurement errors, and the normal distribution of the data is not required (Mai et al., 2018; Schumacker & Lomax, 2016; Thanakarnpanich, 2013).

It was anticipated that the results of the present study would offer an overview on how the psychosocial risk and protective factors impact upon the psychological problems, leading to better understanding, on both a theoretical and empirical basis, of the widows' problems. Figure 1 shows conceptual framework. This should allow for more possibilities to develop a guideline for more practical and efficient assistance.

**Figure 1**
*Conceptual Framework*



**Psychosocial risk factors**
-Interpersonal conflicts
-Family problems
-External stressors

**Psychosocial protective factors**
-Resilience
-Self-efficacy
-Quality of life

**Psychological problems factors**
-Post-traumatic stress disorder
-Complicated grief
-Depression

## Method

### Participants and Procedure

This study had a cross-sectional design. A sample group consisted of widows who had lost their husbands in the unrest in the southernmost provinces between 2004 and 2020 and lived in Pattani, Yala and Narathiwat. They were contacted through a name list in a female volunteer network. Some of them were informed about this project through public relations campaigns launched by a female volunteer network in each province or a district hospital network. All of them consented to complete questionnaires and attended interviews on an individual basis. The questionnaires and the interviews were conducted by district hospitals' volunteer psychologists. The recruitment and data collection period were between September 2019 and February 2020.

Regarding our literature review about the sample size determination in SEM, a sample of 200–400 is recommended for maximum likelihood (ML) estimation. In addition, the gold standard for calculating sample size in chi-square tests was used (Faul et al., 2014). The medium effect size is 0.3, the desired α level is 0.05, power of the test is 0.80, and the degree of freedom (*df*) is 45 (*df* = ni(ni+1)/2 where, ni is the number of observed valuables). The G*Power software version 3.1 was used. The results indicated a minimum sample size of 322 widows, but this was subsequently expanded to 350.

**Instruments**

A general questionnaire consisted of questions about demographic characteristics, namely ages, marital status, levels of education, residence, occupations, incomes, and duration of loss. The PTSD symptom scale interview (PSS–I) (Foa & Tolin, 2000), the inventory of complicated grief (ICG) (Prigerson et al., 1995), and the employee assistance program inventory (EAPI) (Anton & Reed, 2004) were translated into Thai. The Hamilton rating scale for depression (HRSD-17) Thai version (Lotrakul et al., 1996), the Thai resilience quotient screening test (Department of Mental Health, 2009), the general self-efficacy scale (Phoosuwan & Chaimongkol, 2020), and the World Health Organization's quality of life brief–Thai (WHOQOL–Brief–Thai) (Department of Mental Health, 2005) were used. All instruments in Thai were reviewed by five experts in the fields of languages, psychology, social and cultural contexts in the southern border provinces, demonstrating content validity. The revised questionnaire from the experts was then piloted in a closed group for the samples. There were 40 widows from the unrest situation and those who were in the volunteer women's network group in Pattani. All instruments had a Cronbach's alpha coefficient between .72 and .92.

The PTSD symptom scale interview (PSS–I) was developed by Foa and Tolin (2000). It was used to assess three PTSD symptoms which were re-experiencing, avoidance, increased arousal. A 17–item semi–structured questionnaire was developed for the interview process. The rating scales were aimed to reflect a combination of frequency and severity (from 0 = "not at all" to 3 = "5 or more time per week/very much"). The PSS-I ranges between 0 and 51 whereby more than 15 score was considered as a cut of point for PTSD diagnosis. Its ranges of item-total correlation were at .76 – .85, and very high reliability (α = .97).

Inventory of complicated grief (ICG) (Prigerson et al., 1995) was used to measure the complicated grief symptom, comprising of 19 items. This rating scale contained five levels: never, rarely, sometimes, often, and always. The ICG score ranged between 0 and 76 whereby more than score 25 was considered as having CG. Its ranges of item-total correlation were at .64 – .83, and very high reliability (α = .97).

Hamilton rating scale for depression (HRSD-17) Thai version (Lotrakul et al., 1996) was used to measure depression symptoms, comprising of depression and anxiety, sleep, physical, and cognitive domains. A 17–items semi–structured questionnaire was developed and its rating scales contained five levels: absent or none or no difficulty=0, mild=1, moderate=2, severe=3 and incapacitating=4. The HRSD–17 Thai version score ranged between 0 and 31 whereby more than 8 score was considered as having depression. Its ranges of item-total correlation were at .38 – .57, and high reliability (α = .84).

Employee assistance program inventory (EAPI) by Anton and Reed (2004) was used to measure psychosocial problems involving perception of emotions, feeling, and behavior to family, colleagues, and environment. These rating scales included four levels (not true=1 and always true=4). Three aspects were just selected in this study: 1) Interpersonal conflicts included 10 items, and the score ranged from 10-40 whereby the high score was considered as having high psychosocial problems. The ranges of item-total correlation were at .74 –.86, and very high reliability (α = .93); 2) Family problems covered 10 items, and the score ranged from 10-40, and the study had ranges of item-total correlation at .61-.77, and very high reliability (α = .96); 3) External stressors consisted of 10 items, and the score ranged from 10 – 40. The ranges of item-total correlation were at .40 –.64, and high reliability (α = .85).

Thai resilience quotient screening test by Department of Mental Health (2009) was used to assess resilience, comprising of aspects of security and emotions (bearing), motivation (resolving), and coping (fighting). A 20-item test contained the four-level rating scales (not true=1 and always true=4), and the scores ranged from 20-80 whereby the scores lower than 55 was considered as low resilience, the scores between 55 and 69 was normal resilience, and the scores above 69 meant high resilience. The ranges of item-total correlation were at .19 – .59 and high reliability ($\alpha$ = .85).

General self-efficacy scale (Schwarzer et al., 1997) was used to measure self-esteem, having 10 items with 4 levels (not at all true=1 and exactly true=4), and the scores ranged from 10-40 whereby the scores lower than 29 showed low self-efficacy, the scores between 29 and 34 were determined as moderate efficacy, and the scores above 34 revealed high efficacy (Phoosuwan & Chaimongkol, 2020). The ranges of item-total correlation were at .57-.75 and very high reliability ($\alpha$ = .91).

The WHOQOL-Brief-Thai developed by the Department of Mental Health (2000) was used to measure Thai quality of life, including 26 items with 5 levels (never=1 and always=5), and the scores ranged from 26-130 whereby the scores below 61 was "not good", the scores from 61 to 95 was "fair", and the scores from 96 to 130 meant "good". The ranges of item-total correlation were at .40-.80 and very high reliability ($\alpha$ = .95).

**Procedures**

The name list of all the widows resided in districts was available from three districts in each province, and approximately 30-40 widows were selected from the list. Notifications and appointments for the interviews were informed in advance. Prior to conducting the interviews, psychologist-volunteers asked the participants with regard to their preferred language (either Thai or Yawi), and collected data in the mentioned language. The interviews were carried out at the district hospitals by 9 psychologists (one from each hospital). The majority of the widows are bilingual. They speak "Thai" and "Yawi" dialect of Malayan, which should mutually be comprehensible with Malaysia Bahasa. These local psychologists are bilingual Muslims, who fluently speak both "Thai" and "Yawi" and have experienced of using measurement tools. Before the interviews, all participants were provided with an information sheet explaining the aims of the study, and verbal consents were received from the participants.

**Statistical Analysis**

The demographic characteristics of the samples were explicated using descriptive statistics: frequency and percentage. In particular, mean, standard deviation, t-test, and F-test were used to consider the demographic characteristics of the samples to figure out their psychological problems: the total scores of PTSD, CG, and depression. The association among 9 observed variables which comprised of 6 predictors (the total scores of interpersonal conflicts, family problems, external stressors, resilience, self-efficacy, and quality of life) and 3 outcome variables (the total scores of PTSD, CG, and depression) were tested by multiple correlation analysis. In addition, skewness and kurtosis index of the total scores of PTSD, CG and depression were used to test normal distribution (Kline, 2011). Skewness index, Kurtosis index, Variance Inflation Factor (VIF). The method to estimate the parameter used in the study was maximum likelihood (ML). Barlett's test of sphericity, and Kaiser-Mayer to measure sampling adequacy were also used to consider factor analysis (Schumacker & Lomax, 2016). Construct reliability (CR) should be .70 or higher and average variance extracted (AVE) should be more than 0.5 to indicate adequate convergence or internal consistency (Hair et al., 2014).

To develop and test the model, a two-step model-building approach was applied (Anderson & Gerbing, 1988). In the first step, the measurement model specified the relationships among observed variables underlying the latent variables which were used for confirmatory factor analysis. The adequacy of these models was assessed based on the following criteria: $\chi^2$ should not be significant, $\chi^2/df$ should

not exceed 2, the root mean square error of approximation (RMSEA) value was lower than .05, the goodness of fit index (GFI), the comparative fit index (CFI) values were greater than .95, and the largest standardized residual did not exceed 2 (Angsuchoti et al., 2009; Hair et al., 2014).

In the second step, the structural model, specified the relationships among the latent variables using multiple regression with the latent variables. Consideration of the appropriately model was verified based on the following criteria: $\chi^2$ should not be significant, $\chi^2/df$ should not exceed 2, the RMSEA and the standardized root mean square residual (SRMR) values were lower than .05 and Tucker-Lewis Index (TLI), GFI and adjusted GFI (AGFI) CFI and Tucker-Lewis Index (TLI) values were greater than .95 (Hair et al., 2014; Schumacker & Lomax, 2016). The effects of the latent variables including the direct effects, indirect effects and the total effects were also investigated. Overall, the data analysis was conducted by LISREL programs.

**Ethical Considerations**

The current study was approved by the Research Ethics Committee for Science, Technology and Health Science, PSU, Pattani Campus, REC Number: psu.pn.1-008/62, dated August 7, 2019.

<div align="center">

**Results**

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Among 350 questionnaires, not more than 5% had incomplete data, which were replenished by a matching response pattern to make the size and direction more accurate. The demographic data of the widows in the current study showed that 33.70% of them were at aged 50-59, 73.40% were in widow status (73.40%), 81.70% were Muslim, 46% received secondary schooling, 48.30% resided in Narathiwat, and 77.10% were employed. Twenty nine percent had lower than 4,000 baht of monthly incomes, and 30.60% had lost their husbands for 11-13 years as shown in Table 1.

Differences among age groups revealed significantly different PTSD, CG, and depression scores. Both PTSD and CG scores were significantly different, which were divided by different living provinces, incomes per month, and duration of loss. Only depression score was significantly different, which were divided by different religions and occupation status. There was only CG score which was significantly different in education levels as shown in Table 1.

In Table 2, the analysis of the correlation among the 9 observed variables revealed that all of them have significant correlations. A correlation coefficient value ranged from -.24 to .90; the highest value was due to the relationship between CG and PTSD variables while the lowest value was the relationship between depression and CG, and between resilience and depression variables.

The mean of the nine observed variables was between 5.48 and 84.19, with the standard deviation between 5.65 and 19.69. The skewness index ranged from .08 to 1.59, not exceeding 3, and the kurtosis index ranged from -4.49 to 2.57, not exceeding 10 (Kline, 2011). This indicated that the skewness and the kurtosis were likely in a normal distribution. Therefore, the chosen method to estimate the parameters was maximum likelihood (ML) (Schumacker & Lomax, 2016); it could produce more robustness in the model's estimation.

Meanwhile, the data suitability was measured by Kaiser-Meyer-Olkin measures of sampling adequacy (MSA), providing a value of 0.79 an overall MSA value must above .50 (Hair et al., 2014). Moreover, the value of Bartlett's test of sphericity was 2075.68, signifying a statistical significance level of .001. Overall, it could be construed that the data in the current study were suitable for factor analysis, opening a reasonable possibility for the subsequent analysis of the structural equation model.

**Table 1**
*Demographic Characteristics of the Samples (n = 350)*

| Characteristics | | n (%) | Psychological problems | | |
|---|---|---|---|---|---|
| | | | PTSD (Mean±SD) | CG (Mean±SD) | Depression (Mean±SD) |
| Age (years old): | Less than 40 | 83(23.7) | 22.42±11.83 | 31.82±18.76 | 6.98±6.88 |
| | 40-49 | 107(30.6) | 23.31±14.82 | 30.20±20.15 | 5.26±5.56 |
| | 50-59 | 118(33.7) | 20.85±14.69 | 27.61±20.92 | 4.71±5.01 |
| | 60 and over | 42(12.0) | 13.29±9.78 | 20.67±14.17 | 5.26±4.84 |
| | F(p) | | 5.84(<.001***) | 3.42(<.017*) | 2.74(.043*) |
| Marital status: | Widow | 257(73.4) | 21.71±14.28 | 29.65±19.80 | 5.27±5.67 |
| | Newly married | 93(26.6) | 19.28±12.60 | 25.56±19.15 | 6.06±5.75 |
| | t(p) | | 1.45(.147) | 1.72(.086) | -1.15(.251) |
| Religions: | Buddhist | 64(18.3) | 19.31±15.27 | 28.30±20.38 | 3.17±4.12 |
| | Islam | 286(81.7) | 21.46±13.54 | 28.63±19.56 | 6.00±5.88 |
| | t(p) | | -1.12(.264) | -0.12(.904) | 3.65(<.001***) |
| Levels of education: | Uneducated | 16(4.6) | 17.38±11.15 | 23.94±18.13 | 5.56±4.19 |
| | Primary | 140(40.0) | 19.39±13.89 | 25.81±18.52 | 6.05±6.17 |
| | Secondary | 161(46.0) | 22.80±14.28 | 31.71±20.81 | 5.34±5.45 |
| | Bachelor & higher | 33(9.4) | 21.51±12.20 | 27.18±17.95 | 3.76±5.20 |
| | F(p) | | 1.93(.125) | 2.67(.047*) | 1.51(.210) |
| Residence: | Pattani | 46(13.1) | 20.30±6.17 | 29.89±10.78 | 6.78±7.71 |
| | Yala | 135(38.6) | 29.52±16.63 | 40.31±23.69 | 4.73±5.46 |
| | Narathiwat | 169(48.3) | 14.51±8.26 | 18.82±10.94 | 5.73±5.17 |
| | F(p) | | 58.50(<.001***) | 59.58(<.001***) | 2.54(.080) |
| Occupations: | Unemployed | 80(22.9) | 19.55±12.31 | 26.55±18.42 | 7.10±6.12 |
| | Employed | 270(77.1) | 21.51±14.30 | 29.16±20.04 | 5.00±5.48 |
| | t(p) | | 1.24(.267) | 1.09(.298) | 8.54(.003**) |
| Incomes/Month (Baht): | < 4,000 | 103(29.4) | 15.46±12.97 | 20.88±17.89 | 5.70±5.94 |
| | 4,000-4,500 | 76(21.7) | 16.63±9.40 | 21.03±13.35 | 5.06±4.45 |
| | 4,501-6,000 | 91(26.0) | 26.87±13.56 | 37.53±20.01 | 5.69±6.03 |
| | >6,000 | 80(22.9) | 25.90±14.75 | 35.42±20.05 | 5.36±6.11 |
| | F(p) | | 19.39(<.001***) | 21.76(<.001***) | .24(.871) |
| Duration of loss (years) | <8 | 82(23.4) | 20.72±10.43 | 29.17±16.87 | 6.52±5.66 |
| | 8-10 | 81(23.1) | 20.73±13.95 | 26.65±19.60 | 5.97±6.511 |
| | 11-13 | 107(30.6) | 26.27±16.05 | 35.83±22.27 | 4.71±5.55 |
| | >13 | 80(22.9) | 14.80±10.94 | 20.16±14.79 | 4.95±4.89 |
| | F(p) | | 11.43(<.001***) | 10.84(<.001***) | 2.02(.110) |

*Note.* *p* < .05, **p* < .01, ***p* < .001, PTSD = Post-traumatic stress disorder, CG = Complicated grief

The confirmatory factor analysis was conducted to test the relationship among each latent variable which was constructed from the observed variables including the risk factors, the protective factors and the psychological problem factors. The results are explained further.

1) Regarding the relationship of the psychosocial risk factors, the results were $\chi^2$ =.00, *df*=1, *p* = 1.00, RMSEA = .00, SRMR = .00, GFI = 1.00, and AGFI = 1.00. It can be concluded that the model had a relationship with the empirical data. In other words, the latent variable of the risk factor, which was constructed from the three observed variables X1 – X3, had a factor loading (β) between .72 and .94 and a coefficient of determination ($R^2$) between .51 and .88. Overall, all values differed from zero on a statistically significant basis at a level of .01. In particular, the X1 variable (interpersonal conflicts) had the highest factor loading and coefficient of determination (β =.94, *p*<.01; $R^2$= .88). The subsequent one was the X2 variable, or family problems, of which the values were β =.87, *p*<.01; $R^2$= .75. The last

variable was X3, or external stressors, of which the values were β =.72, $p$<.01; $R^2$= .51. There was high construct reliability (CR= .88) and average variance extracted AVE= .72.

**Table 2**
*Correlation Matrix of Predictor and Outcome Variables (n = 350)*

| Variables | Psychological problems | | | Risk factors | | | Protective factors | | |
|---|---|---|---|---|---|---|---|---|---|
| | Y1 | Y2 | Y3 | X1 | X2 | X3 | X4 | X5 | X6 |
| Y1: PTSD | 1 | | | | | | | | |
| Y2: Complicated Grief | .90** | 1 | | | | | | | |
| Y3: Depression | .15** | .12* | 1 | | | | | | |
| X1: Interpersonal Conflict | .60** | .61** | .20** | 1 | | | | | |
| X2: Family Problems | .45** | .45** | .28** | .81** | 1 | | | | |
| X3: External Stressors | .51** | .52** | .30** | .67** | .62** | 1 | | | |
| X4: Resilience | .45** | .47** | -.12* | .37** | .32** | .31** | 1 | | |
| X5: Self-efficacy | .23** | .27** | -.14* | .23** | .17** | .23** | .74** | 1 | |
| X6: Quality of life | .49** | .53** | -.24** | .38** | .23** | .30** | .65** | .57** | 1 |
| Mean | 21.07 | 28.57 | 5.48 | 16.02 | 17.59 | 20.02 | 55.18 | 27.43 | 84.19 |
| *SD* | 13.88 | 19.69 | 5.70 | 7.27 | 7.21 | 5.92 | 8.21 | 5.65 | 15.81 |
| Skewness index | 0.59 | 0.71 | 1.59 | 1.29 | 0.99 | 0.86 | 0.08 | 0.35 | 0.69 |
| Kurtosis index | -4.49 | -0.39 | 2.57 | 1.10 | 0.39 | 0.53 | 0.34 | 0.10 | 0.50 |
| VIF | 8.33 | 12.50 | 1.02 | 4.76 | 1.75 | 2.27 | 2.44 | 1.23 | 3.70 |

Barlett's Test of Sphericity = 2075.68, *df* = 36, *p* = .001, Kaiser-Mayer Measure of Sampling Adequacy = .790

*Note.* *p* < .05, **p* < .01, Y = Observed variables of endogenous variables, X = Observed variables of exogenous variables

2) Regarding the relationship of the hypothesized psychosocial protective factors, the results were $\chi^2$=0.00, *df*=1, *p* =1.00, RMSEA=.00, SRMR=.00, GFI=1.00 and AGFI=1.00. It can be concluded that the model had a relationship with the empirical data. In other words, the latent variable of the protective factors, which was constructed from the three observed variables X4 – X6, had a factor loading (β) between .71 and .92 and a coefficient of determination ($R^2$) between .50 and .84. Overall, all values differed from zero on a statistically significant basis at the level of .01. In particular, the X4 variable (resilience) had the highest factor loading and coefficient of determination (β =.92, *p*<.01; $R^2$= .84). The subsequent one was the X5 variable, or self-efficacy, of which the values are β =.81, *p*<.01; $R^2$= .65 and the last one is the X6 variable, or quality of life, of which the values were β =.71, *p*<.01; $R^2$= .50. There was high construct reliability (CR= .85) and average variance extracted AVE= .67.
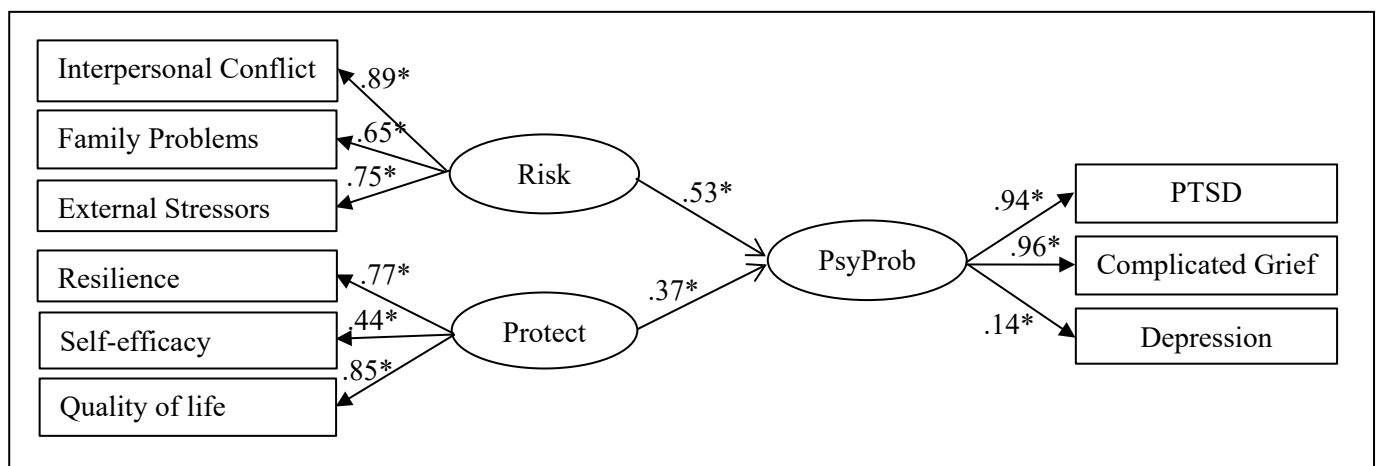
3) Regarding the relationship of the psychological problem factors, the results were $\chi^2$=2.00, *df*=1, *p* =.16, RMSEA=.05, SRMR=.01, GFI=1.00 and AGFI=.98. It can be concluded that the model had a relationship with the empirical data. In other words, the latent variable of the psychological problem factors, which was constructed from the three observed variables Y1 – Y3, had a factor loading (β) between .14 and .96 and a coefficient of determination ($R^2$) between .02 and .92. Overall, all values differed from zero on a statistically significant basis at the level of .01. In particular, the Y2 variable (complicated grief) had the highest factor loading and coefficient of determination (β =.96, *p*<.01; $R^2$= .92). The subsequent one was the Y1 variable, or PTSD, of which the values were β =.94, *p* < .01; $R^2$= .88 and the last one was the Y3 variable, or depression, of which the values were (β =.14, *p* < .05; $R^2$= .02. There was high construct reliability (CR= .78) and average variance extracted AVE= .74.

The results of multiple regression analysis with the latent variables to investigate the effects of the psychosocial risk and protective factors on the psychological problems revealed that the model had a relationship with the empirical data. This was based on the values of $\chi^2 = 14.92$, $df = 13$, $\chi^2/df = 1.15$, $p = .31$, RMSEA=.02, SRMR=.02, GFI=.99, AGFI=.97, CFI=1.00, and TLI=1.00. In other words, the latent variables of the psychosocial risk and protective factors were able to describe the variance of the latent variables of the psychological problems by 61%. Since the model developed in the current study was related to the empirical data, the first hypothesis was confirmed. The model results of the psychological problems (PsyProb) directed that the psychosocial risk factors (Risk) had positive direct effects on the psychological problems on a statistically significant basis at the level of .01. The path coefficient was .53. Concerning the hypothesized psychosocial protective factors (Protect), positive direct effects were shown on the psychological problems on a statistically significant basis at the level of .01. The path coefficient was .37. Since both the psychosocial risk and protective factors had positive direct effects on the psychological problems, the second hypothesis was confirmed, as shown in Figure 2.

The correlation coefficient of the latent variables was between .50 and .71. The psychological problems had the closest relationship with the risk factors ($r = .71$). Meanwhile, the psychological problems had a relationship with the protective factors ($r = .64$). Lastly, the risk factors were related to the protective factors ($r = .50$).

**Figure 2**
*The Model of the Risk and Protective Factors of Psychological Problems Model among Widows in the Southernmost Thai Provinces*



*Note.* PsyProb = psychological problems

## Discussion and Conclusion

This finding of the study provides important insights about the relationships between the psychosocial risk and protective factors and the psychological problems of widows living under the long civil unrest in Thailand. The results confirmed that the hypothesized model of psychosocial factors and psychological problems fitted with the empirical data. The other hypotheses are discussed further.

The finding revealed that the widows showed a high level of PTSD and CG, with the lowest observed in depression. All the structural factors, the psych-social risk factors (interpersonal conflicts, family problems and external stressors) and the hypothesized psychosocial protective factors (resilience, self-efficacy and quality of life) were related to the psychological problems (PTSD, CG, and depression). However, the relationships between psychosocial protective factors (resilience, self-efficacy and quality of life) and the psychological problems (PTSD, CG, and depression) were very complicated with the positive direction related to the psychological problems especially PTSD and CG.

This signified that the widows continued to be primarily beset with CG and PTSD, whereas the impact of depression was less profound. This finding resonated with the study of Djelantik et al. (2017) which indicated that PTSD was associated with CG, but not with depression. Wortman and Pearlman (2016) mentioned that "for survivors of traumatic loss, grief symptoms are overlaid with symptoms of PTSD such as flashbacks, disturbed sleep, and avoidance of reminders of the loss". Meanwhile, Boelen and Prigerson (2007) argued that CG was different from depression; for instance, CG heightens the risk of suicidal thoughts even beyond the influence of depression. The psychological problems in the current study were mainly caused by PTSD and CG rather than depression. In particular, they were chiefly exacerbated by the risk factors of the interpersonal conflicts, followed by the external stressors and the family problems, respectively. This squared with what Melhem et al. (2010) discovered in that PTSD, CG and depression had certain common risk factors, but each of them still had a unique predictor. Furthermore, the findings in the present study resonated with what Prohmpetch and Naraongard (2009) argued that interpersonal conflict, external stressors, family problems and other psychosocial problems had a negative correlation with mental health. In a similar vein, interpersonal conflicts were associated with PTSD, CG and depression, but financial problems and stressful situations in life were associated with only PTSD and CG (Melhem et al., 2004).

The hypothesized psychosocial protective factors had direct positive effects on the widows' psychological problems. The most psychosocial positive effect was in the sub-variable of quality of life, followed by resilience and self-efficacy respectively. Hence, it can be understood that the hypothesized psychosocial protective factors still could not combat, prevent and alleviate PTSD, CG and depression. This was attributable to the fact that the widows' psychological problems, particularly PTSD and CG, remained grave.

Based on the mean of PTSD and CG (21.07 and 28.57, respectively), Foa and Tolin (2000) proposed that a PSS-I score at greater than 15 indicated PTSD. Meanwhile, Prigerson et al. (1995) proposed an ICG score at greater than 25 clearly indicated CG. In the Thai context, a HRSD-17 (Thai version) score below 8 signified the absence of depression (Lotrakul et al., 1996). Consequently, the widows' psychological problems were mainly caused by PTSD and CG.

The aforementioned discussion about the hypothesized psychosocial protective factors, consisting of resilience, self-efficacy and quality of life, and being inadequate to function effectively was based on the following evidence. Compared to the criterion, the resilience score between 55–66 (Department of Mental Health, 2009) was normal resilience. The resilience score in this study was normal (mean = 55.18) which was the lowest of the normal score. Therefore, it was almost unqualified. Regarding the self-efficacy, the mean was 27.43; whereas the criterion was 29 (Phoosuwan & Chaimongkol, 2020). As for the quality of life, the mean was 84.19; whereas a score between 61 and 95 indicated moderate quality of life (Mahatnirunkul et al., 1998). This was inconsistent with what Boelen and Prigerson (2007) discovered that CG was associated with reduced quality of life among adults who lost loved people. In a similar vein, self-efficacy was found to be at a very low level, following an earthquake in China, but this was not applicable to PTSD (Wang et al., 2016), and perceived self-efficacy had a statistically significant positive relationship (r = .24, $p < .05$) with grief among nurses after experiencing a child's death in the pediatric intensive care unit (Wangsila et al., 2020). Besides, resilience was observed to decrease after being involved in violent or perilous incidents (Mancini & Bonanno, 2006). Make et al. (2022) found the resilience (β = .20, $p < .05$) significantly predicted depression in the elderly in the trouble area Pattani province.

## Limitations
Although this study presents informative findings, it does have few limitations. First, the psychosocial risk and protective factors were deliberately selected from a psychosocial aspect. This was based on the literature reviews and the statistical methods which indicated that these factors were

significantly associated with PTSD, CG and depression. Second, the selection of the sample did not take into consideration of the medical history pertaining to the presence of depression and other psychiatric problems before and after the loss of their husbands in the unrest. Third, the screening of PTSD, CG and depression sufferers was conducted based on the indication from a research instrument, not medical diagnosis.

**Implications for Behavioral Science**

The structural equation model of the relationships among the psychosocial risk factors and the protective factors on the psychological problems of the widows in the southernmost provinces indicated that the widows were still confronted by the psychological problems, particularly PTSD and CG in the study. Knowledge about co-occurrence suggested that bereaved individual who experience CG concurrently with clinically relevant levels of symptoms of depression, or PTSD, generally report more severe grief symptoms, lower quality of life, and more functional impairment than individual with clinically relevant levels of only one of these CG reactions (Komischke-Konnerup et al., 2021). They were mostly exacerbated by interpersonal conflicts, followed by external stressors and family problems, respectively. Meanwhile, the psychosocial protective factors were unable to alleviate the problems as manifested in its lower values. The findings here could be a guideline for concerned agencies, especially for the department of mental health in Thailand, to introduce appropriate remedial measures and improve widows' mental health. Additionally, the findings of the present study should be beneficial to personnel responsible for psychosocial healing such as psychologists, social workers, health promotion officers, scholars and other concerned parties to devise methods for addressing the psychological problems, for example, psychosocial support programs, etc., particularly PTSD and CG, along with reducing the psychosocial risk factors, strengthening the protective factors, and considering context of the unrest situation, individuals and cultures, for instance: working age, living in a risky area, and time after the loss 11-13 years. In addition, knowledge about co-occurrence also suggested that different type of CG reaction do not necessarily respond equally well to the same intervention, moreover, individuals with CG and co-occurring PTSD might benefit from different intervention as compared to those with CG alone (Komischke-Konnerup et al., 2021). This could be useful in efforts to ensure that the psychological problems of widows in the southernmost provinces can be solved.

**Conclusion**

The psychological problems of the widows in the southernmost provinces in Thailand mainly arose from PTSD and CG. They were considerably exacerbated by interpersonal conflicts, followed by external stressors and family problems, respectively. The psychosocial protective factors reflected minimal positive impacts on these problems probably due to the relatively low level of resilience, self-efficacy and quality of life as opposed to the level of PTSD and CG, which remains high. As a result, the psychosocial protective factors were incapable of combating, preventing and alleviating the psychological problems. Future studies are recommended to expand the variables so that diversity and efficiency will be enhanced. In particular, protective factors, healing factors and mental health promotion factors should be emphasized. Moreover, more innovations to address psychological problems, especially PTSD and CG, should be developed. This should also include reducing the risk incurred mostly by interpersonal conflicts, followed by external stressors and family problems, respectively.

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