Psychological capital and mental health problems among the unemployed in Vietnam: Self-esteem as a moderator

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Research Article

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Abstract

Background

Since the COVID-19 pandemic outbreak, unemployment has become a widespread phenomenon in society, with notable consequences including the emergence of mental health problems. This study examined the influence of psychological capital on mental health issues among unemployed people in Vietnam as well as the moderating role of self-esteem in this relation.

Methods

The study adopted a quantitative, cross-sectional approach with 468 recently unemployed office workers in 2023. The participants ranged from ages 22 to 49 years and worked in different fields including technology, finance, consumer services, and infrastructure services.

Result

The results indicated severe to extremely severe mental health symptoms, with 54.5%, 50.8%, and 38.9% of respondents reporting symptoms of depression, anxiety, and stress, respectively. Our results have shown that psychological capital can significantly predict mental health issues including depression, anxiety, stress, and suicidal ideation. Self-esteem was found to play a moderating role in the relation between psychological capital and stress, depression, and suicidal ideation but not anxiety.

Conclusion

Businesses or government agencies should provide mental health support for unemployed workers. Employees should realize that they must improve their psychological capital and self-esteem to propose mental well-being in the post-COVID-19 period.

1. Background

In the post-COVID-19 era, the world has entered a socioeconomic crisis with many notable events such as bankruptcy among the top banks, the continuous increase in the inflation index, and recession in some countries [1, 2]. In Vietnam, notably, the government has issued a resolution on policies and solutions to support businesses in adapting, recovering quickly, and developing sustainably [3]. In particular, the State Bank has updated its policy by reducing operating interest rates in the first half of 2023 to recover the economy [4]. However, in the post-COVID-19 era, companies have to face numerous new challenges, which force them to resort to mass layoffs or reduce the number of employees to maintain operating costs. In 2023, more than 260,000 employees from over 1,100 technology companies experienced layoffs, an increase of nearly 58% compared with 2022 [5]. In Vietnam, the wave of layoffs started in early 2023 in diverse fields such as manufacturing, finance, real estate, and technology [6]; for instance, several leading
real estate businesses cut their headcount by 70% in the first quarter [7]. Notably, the Ministry of Labor reported that 280,000 Vietnamese workers lost their jobs in the first 6 months of the year [8].

Layoffs can be a traumatic event with negative impacts on workers’ mental health. Specifically, high layoff rates have been linked to serious mental health issues such as major depressive disorders, dysthymia [9], anxiety [10], posttraumatic stress disorder [11], and even suicide [12]. Accordingly, more studies must be conducted on the protective factors against mental health issues among unemployed workers.

One factor that could serve as a buffer against psychological issues in unemployed individuals is their personal resources [13] as confirmed by Bakker and Demerouti’s job demands–resources (JD-R) model [14], which proposes that individuals with strong personal resources will be more resistant to mental health symptoms. JD-R theory, an overarching occupational stress model that has been applied to various occupational environments, proposes that stress reflects an imbalance between demands on employees and the resources they have to meet those demands [14].

**Psychological capital and mental health**

Psychological capital has been considered a personal resource that has been strongly observed among employees in different business environments [15, 16]. Psychological capital is defined as “a state of positive psychological development of an individual” characterized by four components: hope, resilience, optimism, and self-efficacy [15]. Based on positive psychology constructs and empirical research, psychological capital refers to an individual’s ability to manage and react to difficult situations, facilitating the development of healthy individuals [15]. In other words, psychological capital, as highlighted by Luthans and Youssef-Morgan [15], is instrumental in preventing mental health issues by fostering adaptive coping strategies and empowering individuals to confront life’s challenges with resilience and optimism. Although it is a relatively new concept, psychological capital has had a significant positive impact on many fields. Rani (17) found that psychological capital has a positive influence on the psychological well-being of unemployed youth. Many studies have demonstrated the decisive role of psychological capital in helping workers fight negative symptoms associated with mental health [18]. Conversely, a study in the general population demonstrated that low psychological capital is confirmed to have negative effects on one’s mental health [19]. Meanwhile, losing a job or experiencing a layoff is a traumatic experience, since it can not only disrupt the individual’s sources of income, but it can also lead to a sudden loss of social status and changes in family relationship dynamics [20, 21]. This could mean that people with low psychological capital who are unemployed may even suffer more serious mental health problems compared to the general population. Although there have been previous investigations into the mental health of unemployed people, there is a lack of evidence on this in the new context- post-COVID-19 and global chaos. To fill the research gap, it is necessary to explore the relationship between mental health problems and psychological capital. Furthermore, academic interest in psychological capital topics has steadily increased over the past decade [22], confirming that psychological capital is making a significant contribution to the scientific foundation in diverse fields. Thus, this study will continue to emphasize the importance of psychological capital in the turbulent post-COVID-19 era by focusing on the context of layoffs and involuntary unemployment.
Additionally, according to World Health Organization statistics since the COVID-19 pandemic outbreak in Vietnam, the prevalence of common mental health problems is 14.9%, which corresponds to nearly 15 million people [23]. However, we have not found studies on the mental health of unemployed people in the post-COVID-19 context in Southeast Asian countries. Therefore, investigating mental health in the post-COVID-19 era would contribute to theory and provide more practical information.

The moderation of self-esteem

Self-esteem is defined as one’s positive or negative attitude toward the self [24]. Linn et al. [25] found that men with high self-esteem experienced less stress from job loss than men with low self-esteem. High self-esteem could serve as a protective factor against the mental health effects of job loss because people with higher self-esteem engage in more intensive job-search efforts and possess a greater ability to emotionally distance themselves from the distress of involuntary job loss [26]. As a result, laid-off employees with high self-esteem can usually find a new job within three months of losing their previous job [26]. Scholars have investigated self-esteem in different roles to determine its impact on mental health factors. Recent studies have shown that self-esteem can moderate the relation between mental health difficulties and related factors [27, 28]. Therefore, self-esteem may play a moderating role in the relation between psychological capital and mental health problems.

Drawing from the literature, this study aims to investigate the level of depression, anxiety, and stress among employees experiencing job loss. It also seeks to examine the buffering effects of psychological capital and self-esteem in the relation between job loss and mental health issues. The results of this study may positively contribute to the current social context as well as encourage businesses and the government to develop policies to support employees. Moreover, it provides a comprehensive perspective for employees to have more solutions to overcome obstacles during crises. Since the COVID-19 pandemic began, scholars have increasingly examined factors related to personal resources, especially psychological capital. In summary, from the standpoint of the literature, we hypothesize the following:

H1: Psychological capital significantly predicts mental health problems among unemployed people in Vietnam.

H2: Self-esteem has a significant negative association with mental health problems and moderates the relation between psychological capital and mental health problems among unemployed people.

2. Methods

Samples and procedure

This study followed a cross-sectional design. Participants were office employees in the fields of technology, finance, consumer services, and infrastructure services who have been laid off from May to August 2023. Data were collected using Google Survey and social networking platforms such as LinkedIn and Facebook. In addition, the questionnaire was also distributed through groups and social support forums for laid-off employees.
Instruments

**Psychological capital**: This was measured using the 12-item Psychological Capital Questionnaire - Short form (PCQ) [29], which was standardized in Vietnamese by Hà and Trung [30]. It consists of four subscales: hope (4 items), resilience (3), optimism (2), and self-efficacy (3). All items are rated on a six-point Likert scale from 1 (strongly disagree) to 6 (strongly agree). Each of the four PCQ subscale scores is calculated by taking the mean (average) of all items in the scale. The overall psychological capital score is then calculated by taking the mean of all PCQ items. The internal consistency of the scale was 0.92.

**Self-esteem**

This was measured using the 10-item Rosenberg Self-Esteem Scale (RSES) [24]. All items are rated on a four-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). Scoring for items 2, 5, 6, 8, and 9 will be reversed. Higher total scores indicate a higher sense of self-esteem. Nguyen et al.’s [31] Vietnamese version of the RSES was used, with a reliability of 0.9.

**Mental health problems**: These were measured using the 21-item Depression Anxiety Stress Scales - Short Form (DASS-21) [32], which has been standardized in Vietnamese by Le et al. [33]. It is composed of three subscales with seven items each: depression (DE), anxiety (AN), and stress (ST). All items are rated on a three-point Likert scale from 0 (Did not apply to me at all) to 3 (Applied to me very much or most of the time). Total scores are multiplied by 2 to reflect the original 42-item scale. Higher scores indicate high levels of depression, anxiety, and stress. The internal consistencies of the three subscales were 0.76 (depression), 0.79 (anxiety), and 0.91 (stress).

**Suicidal ideation**

This was measured using item 9 of the Patient Health Questionnaire-9 (PHQ-9) [34], which states “Thoughts that you would be better off dead or of hurting yourself in some way.” This has been standardized in Vietnamese by Nguyen et al. [35]. This measure was selected because the item has demonstrated a high degree of reliability in predicting suicidal ideation across different community contexts [36, 37]. This item is rated on a three-point Likert scale from 0 (not at all) to 3 (nearly every day). Higher scores indicate high levels of suicidal ideation. The reliability found in this study was 0.89.

**Statistical analysis**

We used SPSS 25.0 software (SPSS Inc., Chicago, IL) to calculate descriptive statistics of the main variables (i.e., psychological capital, mental health problems, and self-esteem), Pearson correlations, and reliability coefficients. Finally, we performed hierarchical regression analysis and used the SPSS PROCESS macro, Model 1 (version 3.0), to test the moderating function of self-esteem between psychological capital and mental health problems.

3. Result

**Sociodemographic characteristics of the study population and descriptive analysis of the variables**
A total of 468 participants were recruited for this study. Their ages ranged from 22 to 49 years (mean of 28.14 ± 3.84 years). Table 1 shows the other descriptive statistics of the sample and summarizes the results of the analysis comparing variables on factors associated with mental health problems. The findings showed that gender is linked to anxiety (p < 0.05). Marital status, education, and age were all significantly associated with depression, anxiety, stress, and suicidal ideation (p < 0.05). Therefore, demographic variables were selected for adjustment when testing the moderation model.
### Table 1: Sociodemographic characteristics of the study population

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%)</th>
<th>Depression (mean ± SD)</th>
<th>Anxiety (mean ± SD)</th>
<th>Stress (mean ± SD)</th>
<th>Suicidal (mean ± SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>236 (50.4%)</td>
<td>11.19 ± 5.01</td>
<td>7.46 ± 4.37</td>
<td>11.41 ± 3.78</td>
<td>.15 ± .36</td>
</tr>
<tr>
<td>Female</td>
<td>194 (41.5%)</td>
<td>10.60 ± 4.42</td>
<td>7.76 ± 3.97</td>
<td>11.06 ± 3.56</td>
<td>.15 ± .35</td>
</tr>
<tr>
<td>Others</td>
<td>38 (8.1%)</td>
<td>9.89 ± 5.87</td>
<td>5.89 ± 4.79</td>
<td>10.84 ± 4.46</td>
<td>.16 ± .37</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>278 (59.4%)</td>
<td>9.57 ± 4.70</td>
<td>6.63 ± 4.07</td>
<td>10.48 ± 3.71</td>
<td>.12 ± .32</td>
</tr>
<tr>
<td>Married</td>
<td>165 (35.3%)</td>
<td>12.32 ± 4.55</td>
<td>8.39 ± 4.11</td>
<td>12.08 ± 3.53</td>
<td>.21 ± .42</td>
</tr>
<tr>
<td>Divorce</td>
<td>25 (5.3%)</td>
<td>15.16 ± 3.11</td>
<td>10.56 ± 4.85</td>
<td>13.76 ± 3.29</td>
<td>.16 ± .37</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>21 (4.5%)</td>
<td>6.14 ± 4.36</td>
<td>4.00 ± 3.28</td>
<td>8.00 ± 3.47</td>
<td>.00 ± .00</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>401 (85.7%)</td>
<td>11.00 ± 4.59</td>
<td>7.52 ± 4.12</td>
<td>11.35 ± 3.51</td>
<td>.14 ± .35</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>46 (9.8%)</td>
<td>11.54 ± 6.16</td>
<td>8.52 ± 5.13</td>
<td>11.50 ± 5.08</td>
<td>.28 ± .45</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 30 years old</td>
<td>380 (81.2%)</td>
<td>10.66 ± 4.68</td>
<td>7.41 ± 4.06</td>
<td>11.07 ± 3.56</td>
<td>.16 ± .37</td>
</tr>
<tr>
<td>Over 30 years old</td>
<td>88 (18.8%)</td>
<td>11.59 ± 5.54</td>
<td>7.67 ± 5.08</td>
<td>11.85 ± 4.45</td>
<td>.10 ± .30</td>
</tr>
<tr>
<td>Total</td>
<td>468 (100%)</td>
<td>10.84 ± 4.86</td>
<td>7.46 ± 4.27</td>
<td>11.22 ± 3.75</td>
<td>0.15 ± 0.36</td>
</tr>
</tbody>
</table>

Table 1: **Sociodemographic characteristics of the study population**

Table 2: **Levels of stress, anxiety, and depression among unemployed people**
Table 2
Levels of stress, anxiety, and depression among unemployed people

<table>
<thead>
<tr>
<th>Level</th>
<th>Depression N (%)</th>
<th>Anxiety N (%)</th>
<th>Stress N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>60 (12.8)</td>
<td>108 (23.1%)</td>
<td>75 (16.0%)</td>
</tr>
<tr>
<td>Mild</td>
<td>20 (4.3%)</td>
<td>25 (5.3%)</td>
<td>71 (15.2%)</td>
</tr>
<tr>
<td>Moderate</td>
<td>133 (28.4%)</td>
<td>97 (20.7%)</td>
<td>140 (29.9%)</td>
</tr>
<tr>
<td>Severe</td>
<td>130 (27.8%)</td>
<td>112 (23.9%)</td>
<td>174 (37.2%)</td>
</tr>
<tr>
<td>Extremely Severe</td>
<td>125 (26.7%)</td>
<td>126 (26.9%)</td>
<td>8 (1.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>468 (100%)</td>
<td>468 (100%)</td>
<td>468 (100%)</td>
</tr>
</tbody>
</table>

Table 2 is statistically based on the average scores of the 468 samples and compares levels of depression, anxiety, and stress according to DASS-21 cut-off points [32]. Generally, the percentage of laid-off employees experiencing severe or extremely severe symptoms of depression, anxiety, and stress is remarkably high. Specifically, 54.5%, 50.8%, and 38.9% of unemployed people have “severe” to “extremely severe” symptoms of depression, anxiety, and stress, respectively.

Descriptive statistics and Pearson correlation

Table 3 presents the correlations between psychological capital, self-esteem, and mental health problems (depression, anxiety, stress) as well as their means and standard deviations.

Table 3
Correlations, means, and standard deviations among variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
<th>PSY</th>
<th>SELF</th>
<th>DE</th>
<th>AN</th>
<th>ST</th>
<th>SI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY</td>
<td>3.48</td>
<td>0.76</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SELF</td>
<td>24.70</td>
<td>5.40</td>
<td>.809*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DE</td>
<td>10.84</td>
<td>4.86</td>
<td>.668**</td>
<td>.700**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AN</td>
<td>7.46</td>
<td>4.27</td>
<td>.551**</td>
<td>.540**</td>
<td>.819**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>11.22</td>
<td>3.75</td>
<td>.574**</td>
<td>.562**</td>
<td>.824**</td>
<td>.800**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>SI</td>
<td>0.15</td>
<td>0.36</td>
<td>.371**</td>
<td>.339**</td>
<td>.317**</td>
<td>.367**</td>
<td>.273**</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: PSY = psychological capital, SELF = self-esteem, DE = depression, AN = anxiety, ST = stress, SI = suicidal ideation

** p < 0.01

Table 3: Correlations, means, and standard deviations among variables
Table 3 shows a significant positive correlation between psychological capital and self-esteem ($r = .809$, $p < .01$). The results also indicate that psychological capital had significant negative correlations with depression ($r = .668$, $p < .01$), anxiety ($r = .551$, $p < .01$), and stress ($r = .574$, $p < .01$).

**Moderating effect analyses**

Table 4: *Moderation analyses of self-esteem between mental health problems and psychological capital*
Table 4
Moderation analyses of self-esteem between mental health problems and psychological capital

<table>
<thead>
<tr>
<th>Stress</th>
<th>Variables</th>
<th>$R^2$</th>
<th>$R^2$ Change</th>
<th>$p$</th>
<th>SE</th>
<th>$β$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 PSY</td>
<td>.383</td>
<td>.305</td>
<td>.000</td>
<td>.682</td>
<td>.367</td>
<td>5.717</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>SELF</td>
<td></td>
<td></td>
<td></td>
<td>.314</td>
<td>.238</td>
<td>3.719</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Step 2 PSY</td>
<td>.402</td>
<td>.018</td>
<td>.000</td>
<td>.313</td>
<td>1.611</td>
<td>5.149</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>SELF</td>
<td></td>
<td></td>
<td></td>
<td>.044</td>
<td>.147</td>
<td>3.326</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>PSY × SELF</td>
<td></td>
<td></td>
<td></td>
<td>.027</td>
<td>.102</td>
<td>3.746</td>
<td>.000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Anxiety</th>
<th>Variables</th>
<th>$R^2$</th>
<th>$R^2$ Change</th>
<th>$p$</th>
<th>SE</th>
<th>$β$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 PSY</td>
<td>.360</td>
<td>.270</td>
<td>.000</td>
<td>.364</td>
<td>.329</td>
<td>5.030</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>SELF</td>
<td></td>
<td></td>
<td></td>
<td>.051</td>
<td>.240</td>
<td>3.690</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Step 2 PSY</td>
<td>.360</td>
<td>.000</td>
<td>.736</td>
<td>.368</td>
<td>1.848</td>
<td>5.017</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>SELF</td>
<td></td>
<td></td>
<td></td>
<td>.052</td>
<td>.192</td>
<td>3.701</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>PSY × SELF</td>
<td></td>
<td></td>
<td></td>
<td>.032</td>
<td>.011</td>
<td>3.37</td>
<td>.736</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Depression</th>
<th>Variables</th>
<th>$R^2$</th>
<th>$R^2$ Change</th>
<th>$p$</th>
<th>SE</th>
<th>$β$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 PSY</td>
<td>.567</td>
<td>.430</td>
<td>.000</td>
<td>.341</td>
<td>.311</td>
<td>5.766</td>
<td>.000</td>
<td></td>
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<tr>
<td>SELF</td>
<td></td>
<td></td>
<td></td>
<td>.048</td>
<td>.408</td>
<td>7.614</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Step 2 PSY</td>
<td>.577</td>
<td>.010</td>
<td>.001</td>
<td>.341</td>
<td>1.787</td>
<td>5.241</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>SELF</td>
<td></td>
<td></td>
<td></td>
<td>.048</td>
<td>.349</td>
<td>7.271</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>PSY × SELF</td>
<td></td>
<td></td>
<td></td>
<td>.030</td>
<td>.099</td>
<td>3.353</td>
<td>.001</td>
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</table>

<table>
<thead>
<tr>
<th>Suicidal Ideation</th>
<th>Variables</th>
<th>$R^2$</th>
<th>$R^2$ Change</th>
<th>$p$</th>
<th>SE</th>
<th>$β$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 PSY</td>
<td>.154</td>
<td>.120</td>
<td>.000</td>
<td>.036</td>
<td>.248</td>
<td>3.296</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>SELF</td>
<td></td>
<td></td>
<td></td>
<td>.005</td>
<td>.131</td>
<td>1.751</td>
<td>.081</td>
<td></td>
</tr>
<tr>
<td>Step 2 PSY</td>
<td>.185</td>
<td>.031</td>
<td>.000</td>
<td>.035</td>
<td>.140</td>
<td>3.964</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>SELF</td>
<td></td>
<td></td>
<td></td>
<td>.005</td>
<td>.011</td>
<td>2.244</td>
<td>.025</td>
<td></td>
</tr>
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</table>
### Model 1: Stress as an independent variable

The results showed that psychological capital ($\beta = .367, p < 0.001$) and self-esteem negatively predicted stress ($\beta = .238, p < 0.001$). In addition, the moderation model was implemented through the SPSS PROCESS macro with Model 1, and the moderating effect was determined based on 5,000 bootstrap samples in generating 95% bias-corrected bootstrap confidence intervals. The interaction (psychological capital × self-esteem) also negatively predicted stress ($\beta = .102, p < 0.05$). Overall, these results suggest that self-esteem can moderate the relation between psychological capital and stress among unemployed people.

To examine how self-esteem moderates the relation between psychological capital and stress, simple slopes were plotted for values of high self-esteem (1 SD above the mean) and low self-esteem (1 SD below the mean), as shown in Fig. 1. The results indicated that, for the group with low self-esteem, a significant negative relation was observed between psychological capital and stress ($\beta = 1.063, SE = 0.365, t = 2.908, p < 0.05, 95\%$ CIs: $1.781 \sim 0.345$). This relation was also significant for the group with high self-esteem ($\beta = 2.160, SE = 0.324, t = 6.659, p < 0.001, 95\%$ CIs: $2.798 \sim 1.523$).

### Model 2: Anxiety as an independent variable

The results showed that psychological capital negatively predicted anxiety ($\beta = .311, p < 0.001$). Self-esteem also negatively predicted anxiety ($\beta = .240, p < 0.001$). The interaction (psychological capital × self-esteem) did not negatively predict anxiety ($p > 0.05$). Overall, these results indicate that self-esteem cannot moderate the relation between psychological capital and anxiety among unemployed people.

### Model 3: Depression as an independent variable

The results showed that psychological capital negatively predicted depression ($\beta = .292, p < 0.001$). Self-esteem negatively predicted depression as well ($\beta = .408, p < 0.001$). The interaction (psychological capital × self-esteem) also negatively predicted depression ($\beta = .099, p < 0.05$). Overall, these results suggest that self-esteem can moderate the relation between psychological capital and depression among unemployed people.

To examine how self-esteem moderates the relation between psychological capital and depression, simple slopes were plotted for values of high self-esteem (1 SD above the mean) and low self-esteem (1 SD below the mean), as shown in Fig. 2. The results indicated that, for the low-self-esteem group, a significant negative relation was found between psychological capital and depression ($\beta = 1.252, SE = 0.398, t = 3.145, p < 0.05, 95\%$ CIs: $2.034 \sim 0.470$). Also, this relation was significant for the high-self-esteem group ($\beta = 2.322, SE = 0.353, t = 6.570, p < 0.001, 95\%$ CIs: $3.016 \sim 1.627$).
Model 4: Suicidal ideation as an independent variable

The results showed that psychological capital negatively predicted suicidal ideation ($\beta = .248, p < 0.001$). Self-esteem did not predict suicidal ideation ($p > 0.05$). However, the interaction (psychological capital × self-esteem) positively predicted suicidal ideation ($\beta = .013, p < 0.05$). Overall, these results suggest that low self-esteem can moderate the relation between psychological capital and depression among unemployed people.

To examine how self-esteem moderates the relation between psychological capital and suicidal ideation, simple slopes were plotted for values of high self-esteem (1 SD above the mean) and low self-esteem (1 SD below the mean), as shown in Fig. 3. The results indicated that, for the group with low self-esteem, a significant negative relation was observed between psychological capital and suicidal ideation ($B = .209, SE = 0.041, t = 5.076, p < 0.001, 95\% CIs: .208 ~ .618$), but this relation was not significant for the group with high self-esteem ($p > 0.05$).

4. Discussion

To the best of our knowledge, this study was the first to investigate the relation between psychological capital and mental health issues while also examining the moderating role of self-esteem in such a relation. It yielded several notable findings.

First, the exploratory results showed that recently unemployed individuals in Vietnam suffered from high psychological distress. Specifically, based on the DASS-21 cut-off scores, more than 50% of the participants experienced severe to extremely severe depression and anxiety, and approximately 40% suffered from severe to extremely severe stress. Our study was similar to a Swedish study that suggested a higher level of mental disorders experienced by recently unemployed people as opposed to the employed sample [38]. Our results generally suggest that more attention be paid to the mental health problems of the unemployed.

Our results also demonstrated a significant relation between psychological capital and the dependent variables; that is, psychological capital was negatively associated with depression, anxiety, stress, and suicidal ideation. Accordingly, our findings support H1. These results were also consistent with studies conducted among nurses [39], international students [40], and mental health professionals [41], which found that low psychological capital is a significant risk factor for depression, stress, and anxiety.
Furthermore, psychological distress has also been identified as an important predictor of suicidal ideation among Chinese employees [42], with individuals with higher levels of psychological capital are less likely to be affected by mental health problems. Psychological capital could also foster a positive perspective of negative events, leading to improved mental well-being and mitigating the perception of job insecurity among employees [18]. Additionally, Chen and Lim [43] also suggested that unemployed individuals with high psychological capital tend to have faith in their skills and abilities as well as hold a positive view of future outcomes, thus showing more perseverance in their job-search instead of falling into despair.

H2, which states that self-esteem plays a moderating role in the relation between psychological capital and mental health issues, was partially supported by the current findings. Moderation analysis results showed that self-esteem significantly moderated the relation between psychological capital and stress, depression, and suicidal ideation but not the one between psychological capital and anxiety. Simply put, a high level of self-esteem may act as a buffer between lower psychological capital and depression, stress, and suicidal ideation. These results were consistent with other reports on the moderating role of self-esteem in predicting mental health issues [27, 44, 45]. Our findings were also consistent with behavioral plasticity theory [46], which states that high-self-esteem individuals are less susceptible to environmental events (i.e., being unemployed) than low-self-esteem individuals. The plasticity hypothesis also proposes that high-self-esteem individuals are less affected by organizational events because they tend not to regard social cues and environmental stimuli as guides for their behavior like those with low self-esteem; thus, they are less likely to develop psychological symptoms in response to these environmental stressors. This theory is also supported by Mäkikangas and Kinnunen [47], who showed that self-esteem significantly moderated work stressors and well-being among employees.

Contrary to our hypothesis, self-esteem did not moderate the relation between psychological capital and anxiety. There may be several reasons for this finding. First, a meta-analysis indicated that while low self-esteem contributes to the development of depression and not vice versa, the link between low self-esteem and anxiety is symmetric reciprocal in nature in that low self-esteem influences anxiety as much as anxiety influences low self-esteem [48]. Thus, in the current study, the moderating effect of self-esteem on anxiety may be not as strong as that on depression, stress, and suicidal ideation. Additionally, general anxiety levels among the unemployed may remain unchanged even though they are suffering from high work-related anxiety. This theory is partially supported by Wang et al. [9], who found no changes in the prevalence of anxiety among the Canadian working population after an economic recession. Because the anxiety subscale in the DASS-21 only measures general anxiety and not work-related anxiety [49], the relation between the independent variable, moderator with anxiety might be weaker in comparison with other outcomes for the present sample.

Clinical implications

Our findings indicate that low psychological capital is a significant risk factor for mental health problems among the unemployed. Thus, enhancing one's psychological capital should be a main focus in improving their mental health during an economic crisis. This may be done through psychological capital intervention (PCI), a novel intervention program developed by Luthans et al. [50] and expanded upon by Dello Russo and
Stoykova [51]. PCI is a microintervention that typically consists of a one- to four-hour group session designed to adopt various methods to improve all four psychological capital components among participants (i.e., efficacy, hope, resilience, and optimism) [50]. Additionally, PCI has shown effectiveness in improving mental well-being [52] and reducing depression [53].

These findings also suggest that interventions for unemployed people incorporate self-esteem enhancement to foster a greater sense of mental well-being after a layoff. Indeed, interventions that include self-esteem enhancement have been suggested to be effective in reducing suicidal ideation [54]. To improve self-esteem, cognitive behavior therapy and compassion-focused therapy have demonstrated efficacy in treating individuals with low self-esteem [55, 56].

**Limitations**

This study has several limitations that must be addressed. First, it implemented a cross-sectional study design, which makes it difficult to derive causal relations between study variables. Second, the study variables were measured using self-report instruments, possibly causing response bias and affecting the results. Finally, we only collected data from unemployed individuals with permanent employment. Bjarnason and Sigurdardottir [57] suggested that employees under temporary employment suffer from more severe psychological distress than those under permanent employment. Hence, future studies could offer a deeper understanding of types of employment by comparing mental well-being between unemployed individuals with temporary employment and those with permanent employment.

**5. Conclusion**

The results showed extremely high rates of depression and anxiety among unemployed workers. This study also demonstrated that psychological capital is negatively associated with mental health problems including depression, anxiety, stress, and suicidal ideation. Furthermore, self-esteem can moderate the relation between psychological capital and depression, stress, and suicidal ideation but not anxiety. Overall, this study provided new perspectives regarding the unemployment situation of the labor market in Vietnam during the post-COVID-19 period. It has also provided knowledge by highlighting the importance of psychological capital and self-esteem to help workers overcome mental health difficulties during crises. Considering this, companies and governmental organizations ought to implement policies that offer psychological support to jobless workers to ensure socioeconomic development. Finally, employees should understand that in order to build resilience in the post-COVID-19 era, they must enhance their psychological capital and self-esteem.

**Abbreviations**

COVID-19
Corona Virus Disease 2019
DASS
Depression, Anxiety, and Stress Scale
JD-R
Declarations

Ethics approval and consent to participate

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Ethics Committee of the University of Social Sciences and Humanities, Vietnam National University, Ho Chi Minh City (ERB 03-23). All participants provided informed consent before completing the online questionnaire. They were informed that the study was voluntary and that they could discontinue participation at any time. In addition, they were informed that their answers would remain anonymous and were invited to ask questions regarding the study. After the study was completed, random participants received gifts as tokens of gratitude.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

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Authors' contributions
CTTT conceptualized and organized the research, collected data, and performed statistical analyses, interpreted the findings, wrote the manuscript, and revised the manuscript. NTD conceptualized the research, oversaw data collection, interpreted the findings, revised and reviewed the manuscript. CJT and PKT supervised the implementation of the research and reviewed the final manuscript. All authors read and approved the final manuscript.

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References


Figures
Figure 1

The plot of simple slopes for self-esteem in the relation between stress and psychological capital
Figure 2

The plot of simple slopes for self-esteem in the relation between depression and psychological capital.
Figure 3

The plot of simple slopes for self-esteem in the relation between suicidal ideation and psychological capital