Research Article

A Predictive Model on North Korean Refugees' Adaptation to South Korean Society: Resilience in Response to Psychological Trauma

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Purpose: This study investigated prediction of North Korean refugees' adaptation to the South Korean society and verified the goodness of fit between a hypothetical model and actual data in order to suggest the best model.

Methods: This survey was conducted with 445 North Korean refugees living in a metropolitan area. Data were collected from September 1st to November 20th, 2012, and analyzed using SPSS Windows 18.0 and AMOS 17.0.

Results: Traumatic experiences of North Korean refugees increased self-efficacy and psychological trauma. Acculturation stress decreased self-efficacy and increased passive coping. Self-efficacy affected active and passive coping, decreased psychological trauma, and increased resilience. Resilience is successful adaptation and refers to North Korean refugees' abilities to adapt effectively to stress. In particular, self-efficacy as the main parameter affecting resilience was confirmed.

Conclusions: The results suggest that resilience can be improved through self-efficacy. It was the most significant factor decreasing psychological trauma and increasing resilience. Therefore, we need to develop programs for self-efficacy. The results also provide basic data for policy making for North Korean refugees.

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Introduction

Although the cumulative population of North Korean refugees residing in South Korea was a mere 641 until 1993, the number reached 23,000 by June 2011 as the defection rate accelerated after 2000 [1]. In addition, since over 100,000 North Korean refugees currently living in other countries, such as China, Thailand, Vietnam, Cambodia, Mongolia, and Russia, wish to immigrate to South Korea, the number of North Korean refugees in South Korea is expected to increase continuously [2]. North Korean refugees living in South Korea are assigned socially vulnerable group status due to exposure to discrimination in employment opportunities and socioeconomic activities due to language, culture, and customs differences [3]. Although the central and regional governments as well as private organizations provide support through various specific policies, including initial settlement support, residency protection, and employment training support [1], most North Korean refugees fail to successfully adapt to the South Korean society. The adaptation difficulty is so severe for these refugees that some of them even consider leaving South Korea [1,3].

North Korean refugees experience relentless physical and emotional distress while being subjected to starvation, extreme violence, and torture (including forcible witness of public executions) in concentration camps and prisons prior to defection. They also endure additional psychological distress stemming from the fear of being caught while preparing for the harrowing trip itself. The refugees are exposed to a variety of traumatic experiences during the defection process, which range from severe hunger, thirst, cold, heat, and physical injuries to rape and sexual assault, deportation, separation from family members, death of family members, narrowly escaping death, and life in another country [4,5]. Furthermore, the acculturation process in South Korea exposes them to yet another kind of stress frequently observed in international students, immigrants, and refugees. At the root of this acculturation stress are fundamental differences between the two systems and ideologies, despite shared language, ethnicity, and
North Korean refugees experience a sense of loss while adjusting to their new surroundings through often abrupt and extreme changes. Discrimination, hostility, and fear experienced in the South Korean society, coupled with homesickness and guilt toward family members left in North Korea [4,5] often lead to fear, depression, alienation, high somatization, identity crisis, lethargy, and so forth, which disrupt effective adaptation [6]. North Korean refugees’ healthy adaptation to their new surroundings is impeded by the traumatic events experienced in North Korea both before and during the defection process as well as the acculturation stress experienced in the South Korean society.

Adaptation is the ability to effectively cope with changes through acceptance and appropriate reactions. Successful adaptation of North Korean refugees means assimilating into the South Korean society without experiencing frustration or fear in everyday life [2]. From the integrative viewpoint, adaptation is seen as continuous change, which diverges into adaptation and maladaptation [7]. Resilience signifies successful adaptation to and acceptance of the new South Korean culture; it is a stress coping process whereby surrounding environmental factors influence successful adaptation of North Korean refugees. Degree of resilience is an indicator of comprehensive adaptation [6]. In contrast, North Korean refugees’ maladaptation to the South Korean society manifests as post-traumatic stress disorder [4] from which half of the North Korean refugee population is reported to suffer [9].

Self-efficacy and an effective coping style are considered major factors of successful adaptation [6,7,10–17]. Self-efficacy is personal faith in one’s ability to perform a task successfully to obtain a desired result [10]. It is an important contributor to successful adaptation because refugees renew their self-confidence by testing their abilities and gaining experience [9,12]. In other words, high self-efficacy in North Korean refugees indicates that they will likely adjust to the new environment effectively by being open to challenging new tasks and being committed to success. Coping styles refer to behaviors engaged in to escape from stress and adjust to changes or an active process of responding to dangers to resolve stress. Adaptation levels vary among people depending on the coping style they use under the same circumstances [12]. This means that while those who use effective coping styles can overcome severe stress with minimal effects on mental health, those who use ineffective coping styles may develop psychological symptoms from a less stressful event [13,16,17]. Although not quite sufficient, previous studies on coping styles conducted on North Korean refugees suggest that successful adaptation of North Korean refugees to the South Korean society is dependent on whether they choose an active coping style to solve problems or a passive coping style to avoid or defend against problems.

Previous studies conducted in the West have focused on the causal relationship leading to a comprehensive adaptation process based on a resilience model in response to psychological trauma in refugees and people with traumatic experiences; they have examined the association between adaptation and various variables, such as self-help strategies and response strategies [7,14,15,18–20]. However, existing studies on North Korean refugees are limited to social adaptation status surveys [2,3,5,21], comparative studies on adaptation status and characteristic problems [11,22], and the correlation between some of the variables affecting adaptation [4,6,9,11,16,17,23]. Thus, integrative studies on the adaptation process itself are sorely lacking. As effective adaptation is currently an important international issue, it is necessary to present an adaptation model for North Korean refugees in the South Korean society based on an analysis of successful stress response strategies and verification of other factors contributing to their effective adaptation.

Against this background, this study examined the causal relationship and process by which traumatic experiences and acculturation stress of North Korean refugees influence their adaptation as mediated by self-efficacy and coping styles. This study aimed to find a clearer picture of North Korean refugees’ adaptation in the South Korean society and provide the basic data required to develop effective programs and policies with which to aid their successful assimilation to the South Korean society.

**Conceptual framework and hypothetical model**

This study aimed to identify the causal relationship among the factors influencing the adaptation of North Korean refugees in the South Korean society as well as the influence level of each factor. Analyses of previous studies and a literature review were performed on the basis of the model of resilience in response to psychological trauma. The model of resilience in response to psychological trauma explained the major variables determining a person’s resilience from traumatic life events, and consisted of stress recognition, coping process, and adaptation process [4]. In other words, the model explained how a person recovered from psychological or physical traumas, and which factors were associated with effective coping and adaptation [20]. The recovery process was clarified and the process through which a traumatic event exerted its influence was specified upon examination of the interactions between the variables associated with adaptation. Application of the integrative model was particularly necessary since the process itself was crucial in North Korean refugees’ acceptance of South Korean culture and their ultimate adaptation. The major variables determining one’s resilience from a traumatic life event in the model of resilience in response to psychological trauma were recognition of traumatic life event, coping process, and adaptation. From the integrative viewpoint of adaptation where it was seen as a continuous process of change, adaptation was divided into maladaptation, psychological trauma, and resilience [4]. A traumatic life event is defined by its duration, severity, type, and subjective experience on the traumatic stress source [4], and traumatic experience and acculturation stress were specified for this study. The traumatic life events of North Korean refugees included both the traumatic experiences before migrating to South Korea and the acculturation stress experienced upon migration. Previous studies have shown that each had a different effect [6,23,24]. The ego process in the coping processes concerned the state of the ego, identity, and cognitive structure of the ego [4]. Self-efficacy was selected for this study since it too concerned the ego state, identity, and cognitive structure of ego [4].

Coping styles, distinguished into active and passive coping styles in the stress coping model [12], were verified to affect adaptation within a study conducted on North Korean defectors [16,17,23], refugees [15], and minorities [14,26,27]. Adaptation, the dependent variable, was composed of resilience and psychological trauma in the model of resilience in response to psychological trauma [4]. In this study, therefore, stress situations were categorized into traumatic experience and acculturation stress; the coping process was devided into self-efficacy and coping styles (active and passive); adaptation was categorized into resilience (positive) and psychological trauma (negative). Therefore, this study’s hypothetical model was created with two exogenous variables, three parameters (mediation variables), and two dependent variables based on the abovementioned studies. The exogenous variables include traumatic experience and acculturation stress, parameters include self-efficacy and coping styles (active coping and passive coping), and dependent variables include psychological trauma and resilience (Figure 1).
Methods

Study design

This is a covariance structural analysis study performed with a hypothetical model of traumatic experience, acculturation stress, self-efficacy, coping styles, psychological trauma, and resilience of North Korean refugees to verify the model’s fit and our hypotheses (Figure 1).

Setting and sample

North Korean refugees (N = 445) who were registered at five churches in the Seoul area and four nonprofit organizations in the Seoul and Gyeonggi areas were selected as study participants through written consent. The sample number recommended for structural model studies was 5–10 times the parameters [28]. Based on this figure, the suggested sample size range for this study were 225–450 participants; thus, the sample size of this study was deemed appropriate.

Ethical consideration

This study was approved by the institutional review board of the Kyung Hee University of Korea (IRB 2012-S23). All participants voluntarily agreed to participate in the study. Data confidentiality and survey procedures were reviewed with each participant before the interview, assuring them that all information would be used solely for research purposes. The data were collected after approval of the institutional review board.

Measurements

Most tools used in the studies of North Korean refugees’ adaptation were comparative studies dependent on specific characteristics and limited to measuring the correlations between certain factors only. Additionally, too many questions often led to participants’ difficulties in understanding the tools and responding appropriately. In order to simplify the tools, this study used questions extracted by structural validity and reliability verification via exploratory factor analysis (EFA) with the approval of the tools’ developers.

Traumatic experience

A traumatic experience refers to one’s direct experience with a real or perceived life-threatening event, severe injury, or a threat to physical safety [29]. The final seven questions were extracted through EFA of a traumatic experience tool [29] developed for North Korean refugees. The questions address the severity of traumatic experiences such as food shortages, beatings, torture, and corporal punishment while living in North Korea. The scoring range of each question was 1–3, with a higher score indicating a more severe traumatic experience. Cronbach α was .74 in the original study [29] and .82 in this study.

Acculturation stress

This refers to the phenomenon of what an individual or a group experiences in the process of adapting to a new culture [22]. Of the 36 questions in the acculturation stress tool, 12 questions were extracted via EFA to create a tool suitable for surveying the acculturation stress of North Korean refugees [22]. The 12 questions were distributed among three subordinate factors: 6 questions were on hostility (α = .90), 3 on discrimination (α = .82), and 3 on a sense of belonging (α = .88). The scoring range for each question was 1–5, with a higher score indicating greater acute acculturation stress. Cronbach α was .81 in the study that revised the tool to fit North Korean refugees [22] and .82–.90 in this study.

Self-efficacy

This is the subjective evaluation of one’s capacity to perform a task and produce a desired result [11]. From the tool used on North Korean refugees [30], which was based on a general self-efficacy tool [31] developed from the self-efficacy theory [11], eight questions were extracted for this study via EFA. Cronbach α was .83 in the study that revised the tool to fit North Korean refugees [30] and .82 in this study.

Coping style

This refers to a set of cognitive and behavioral efforts exerted to manage the internal and external demands that exceed one’s adaptation resources [12]. From the 20 questions in the tool used for North Korean refugees [16], which was created based on the original stress coping style tool [12], 13 questions were extracted for this study via EFA. For active coping, there were three questions on problem solving-centered coping (α = .80) and three questions on social support seeking (α = .72). For passive coping, there were three questions on palliative coping (α = .76) and four questions on wishful thinking (α = .79). The scoring range for each question was 1–4, with a higher score indicating a higher coping level. Cronbach α was .85 in the study that revised the tool to fit North Korean refugees [16] and .82–.86 in this study.
α was .83 in the study that revised the tool to fit North Korean refugees [16], and .72–.80 in this study.

Psychological trauma

Psychological trauma refers to sustained anxiety symptoms experienced as a result of severe psychological shock, such as witnessing violence outside the normal range of human experiences, death in the family, sexual assault, child abuse, and so forth [29]. From the psychological trauma scale [29] developed for North Korean refugees, the final 12 questions were extracted for this study via EFA. The 12 questions were distributed among three subordinate factors: 3 questions were on re-experiencing the traumatic event (α = .81), 5 questions were on avoidance and paralysis (α = .91), and 4 questions were on increased arousal (α = .80). The scoring range for each question was 1–4, with a higher score indicating more acute psychological trauma. Cronbach α was .91 in the original study that used this tool [11] and .80–.91 in this study.

Resilience

This is associated with successful adaptation and refers to one’s ability to effectively adapt to stress caused by serious trauma or adversity [8]. From the resilience tool [8] developed for North Korean refugees, 21 questions were extracted for this study via EFA. The 21 questions were distributed among the five subordinate factors: 5 questions were on toughness (α = .93), 5 questions on familiarity (α = .93), 4 questions on dreams and goals (α = .89), 4 questions on existential spirituality (α = .88), and 3 questions on patience (α = .85). The scoring range for each question was 1–5, with a higher score indicating higher resilience. Cronbach α was .90 in the study revised to fit North Korean refugees [8], and .85–.93 in this study.

Data collection procedure

This research was conducted with a preliminary study followed by the main study. A group of experts composed of two professors of nursing, two graduate students, and two experts on North Korean refugees [16], and .72–.80 in this study.

For convergent validity, which verifies the degree of match (homogeneity) between multiple scales measuring the same concept, factor loading, squared multiple correlations, construct reliability, and average variance extracted (AVE) were used. Discriminant validity verifies whether scales (parameters) that measure different concepts are indeed measuring different concepts. Correlation coefficients and √AVE values were used in this study.

To assess the model’s fit, this study used χ², χ²/df (≤ .00), adjusted goodness of fit index (AGFI ≥ .90), goodness of fit index (GFI ≥ .90), comparative fit index (CFI ≥ .90), normal fit index (NFI ≥ .80), and root mean square error of approximation (RMSEA ≤ .10). If NFI and CFI values (the relative compliance indices) are above .90, this is deemed a good fit. The RMSEA index considers parsimony; measurements < .05 indicate a very good fit, < .08 a good fit, < .10 a normal fit, and > .10 a bad fit.

Results

Study participants’ general characteristics

To identify the participants’ demographic characteristics, sex, age, education history, religion, marital status, family status in North Korea (whether there are surviving family members in North Korea), North Korean deportation experience, length of stay in a third country, length of stay in South Korea, occupation type, occupational satisfaction, monthly income, and income satisfaction level were surveyed and analyzed.

Of the study participants, 76.0% were women and 24.0% were men, with an average age of 40 years. The 40–49 age group was the largest at 35.5%; those with a middle school level of education (junior high school graduates) accounted for 70.3% of the participants; and those who identified as Christians accounted for 63.1% of the participants. Participants who were married in North Korea comprised the majority at 56.2%. A total of 64.7% of participants still had family members residing in North Korea. A total of 45.8% had North Korean deportation experiences; while 56.4% stayed in a third country for more than 2 years and 43.6% for less than 2 years; 53.7% of the participants stayed in South Korea for less than 4 years and 46.3% for more than 4 years. The unemployed population accounted for 41.7%, and 15.8% of those who were employed were not satisfied. The majority (64.9%) had a monthly income of less than 1 million Korean won and 60.0% were not satisfied with their income level (Table 1).

Correlations among variables and validity

This study’s first model to which all measurement variables were entered was revised through two tests: the convergent validity test, which removes the measurement questions and factors lacking validity, and the discriminant validity test, which determines whether factors are truly independent without any association.

Construct validity refers to whether a test appropriately measures the construct of interest. Confirmatory factor analysis (CFA) relying on maximum-likelihood estimation was performed to test convergent and discriminant validity. Any question whose factor loading was 0.5 (standard value) or less or whose critical ratio (CR) was less than the standard value of 1.96 was eliminated during the convergent validity analysis. The standardized factor loading was .65–.90 and the CR (t) values were 10.58–23.19. Furthermore, the AVE was 61–.76, which was higher than the standard value of 5; the concept reliability was .84–.93, which was higher than the standard value of .70, confirming convergent validity. In addition, as a result of the discriminant validity test, the correlation
The test of the hypothetical model resulted in the following statistical values: \( \chi^2 = 523.70 \) (df = 88, \( p < .001 \)), \( \chi^2/df = 5.95 \), GFI = .88, AGFI = .82, NFI = .86, CFI = .88, root mean residual (RMR) = .086, and RMSEA = .11. The goodness of fit of the measurement model was examined by CFA to determine if the covariance structure model fit the assumption. Through the first CFA, seven questions were removed. After removal, the concept validity was above .86 and AVE was above .61, indicating that the convergent validity was fit for use. One question appeared generally low in the second CFA and was removed due to insufficient factor loading that is below .50. The results were the following: \( \chi^2 = 213.01 \) (df = 71, \( p < .001 \)), \( \chi^2/df = 3.00 \), GFI = .94, AGFI = .90, NFI = .94, CFI = .96, RMR = .036, RMSEA = .07. Upon analysis, 11 of the 18 hypotheses were accepted (Tables 3 and 4).

Hypothesis 1. “Traumatic experiences will positively affect self-efficacy” was accepted by a path coefficient of .26 (CR = 4.77, \( p = .003 \)).

Hypothesis 2. “Acculturation stress will negatively affect self-efficacy” was accepted by a path coefficient of –.19 (CR = –3.28, \( p = .017 \)).
Hypothesis 3. “Traumatic experiences will positively affect active coping” was rejected due to a path coefficient of .02 (CR = .37, p = .783).

Hypothesis 4. “Acculturation stress will positively affect active coping” was rejected due to a path coefficient of −.08 (CR = −1.62, p = .104).

Hypothesis 5. “Self-efficacy will positively affect active coping” was accepted by a path coefficient of .59 (CR = 8.71, p = .004).

Hypothesis 6. “Traumatic experiences will positively affect passive coping” was accepted by a path coefficient of .20 (CR = 3.12, p = .007).

Hypothesis 7. “Acculturation stress will positively affect passive coping” was accepted by a path coefficient of .18 (CR = 2.78, p = .018).

Hypothesis 8. “Self-efficacy will positively affect passive coping” was accepted by a path coefficient of .52 (CR = 8.73, p = .010).

Hypothesis 9. “Traumatic experiences will positively affect psychological trauma” was accepted by a path coefficient of .32 (CR = 6.22, p = .002).

Hypothesis 10. “Acculturation stress will positively affect psychological trauma” was accepted by a path coefficient of .38 (CR = 7.09, p = .006).

Hypothesis 11. “Self-efficacy will negatively affect psychological trauma” was accepted by a path coefficient of −.21 (CR = −3.82, p = .004).

Hypothesis 12. “Active coping will negatively affect psychological trauma” was rejected by a path coefficient of −.02 (CR = −0.34, p = .817).

Hypothesis 13. “Passive coping will positively affect psychological trauma” was accepted by a path coefficient of .21 (CR = 2.53, p = .046).

Hypothesis 14. “Traumatic experiences will negatively affect resilience” was rejected by a path coefficient of −.05 (CR = −1.21, p = .300).

Hypothesis 15. “Acculturation stress will negatively affect resilience” was rejected by a path coefficient of −.03 (CR = −0.521, p = .613).

Hypothesis 16. “Self-efficacy will positively affect resilience” was accepted by a path coefficient of .56 (CR = 9.19, p = .005).

Hypothesis 17. “Active coping will positively affect resilience” was rejected by a path coefficient of .05 (CR = 0.784, p = .466).

Hypothesis 18. “Passive coping will positively affect resilience” was rejected by a path coefficient of .14 (CR = 1.66, p = .102).

Analysis of direct, indirect, and total effect of the model

The structural equation model has the advantage of easily deriving the direct, indirect, and total effects among the variables. The bootstrapping method was used to identify the significance of the indirect effects, the results of which are as follows (Figure 2, Table 3).

North Korean refugees' traumatic experiences directly increased self-efficacy, and acculturation stress directly decreased self-efficacy; the explanatory power was 5.0%. Looking into the factors influencing active coping style, the direct effect of self-efficacy and the indirect effect of traumatic experiences with self-efficacy as a parameter (γ = −.16, p = .004) enhanced active coping. Acculturation stress (γ = −.11, p = .014) negatively affected active coping as a complete parameter of self-efficacy. Active coping can be explained by 37.0% of the direct effect of self-efficacy and the indirect effects of traumatic experience and acculturative stress. In addition, regarding the factors influencing passive coping, the direct effects of traumatic experiences, acculturative stress, and self-efficacy, and the indirect effect of

### Table 3 Result of Fit Statistics of Measurement Model.

<table>
<thead>
<tr>
<th>Model</th>
<th>χ²</th>
<th>df</th>
<th>p</th>
<th>χ²/df</th>
<th>GFI</th>
<th>AGFI</th>
<th>NFI</th>
<th>CFI</th>
<th>RMR</th>
<th>RMSEA</th>
</tr>
</thead>
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<tr>
<td>Hypothetical</td>
<td>523.70</td>
<td>88</td>
<td>&lt;.001</td>
<td>5.95</td>
<td>.88</td>
<td>.82</td>
<td>.86</td>
<td>.88</td>
<td>.086</td>
<td>.11</td>
</tr>
<tr>
<td>Modified</td>
<td>213.01</td>
<td>71</td>
<td>.001</td>
<td>3.00</td>
<td>.94</td>
<td>.90</td>
<td>.94</td>
<td>.96</td>
<td>.036</td>
<td>.07</td>
</tr>
</tbody>
</table>

Note. AGFI = adjusted goodness of fit index; CFI = comparative fit index; GFI = goodness of fit index; NFI = normed fit index; RMR = root mean residual; RMSEA = root mean squared error of approximation.

### Table 4 Effects of Predictor Variables in Model.

<table>
<thead>
<tr>
<th>Endogenous variables</th>
<th>Exogenous variables</th>
<th>B</th>
<th>SE</th>
<th>CR (t)</th>
<th>Direct effect (p)</th>
<th>Indirect effect (p)</th>
<th>Total effect (p)</th>
<th>Hypothesis</th>
<th>SMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy</td>
<td>Traumatic experience</td>
<td>.34</td>
<td>.07</td>
<td>4.77</td>
<td>.26 (.003)</td>
<td>−</td>
<td>.26 (.003)</td>
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<td>.05</td>
</tr>
<tr>
<td></td>
<td>Acculturative stress</td>
<td>−.17</td>
<td>.05</td>
<td>−3.28</td>
<td>−.19 (.017)</td>
<td>−</td>
<td>−.19 (.017)</td>
<td>Accept</td>
<td></td>
</tr>
<tr>
<td>Active coping</td>
<td>Traumatic experience</td>
<td>.01</td>
<td>.05</td>
<td>0.37</td>
<td>.02 (.783)</td>
<td>−.16 (.004)</td>
<td>.18 (.004)</td>
<td>Reject</td>
<td>.37</td>
</tr>
<tr>
<td></td>
<td>Acculturative stress</td>
<td>−.03</td>
<td>.02</td>
<td>−1.62</td>
<td>−.08 (.104)</td>
<td>−.11 (.014)</td>
<td>−.19 (.006)</td>
<td>Reject</td>
<td></td>
</tr>
<tr>
<td>Passive coping</td>
<td>Traumatic experience</td>
<td>.18</td>
<td>.06</td>
<td>3.12</td>
<td>.20 (.007)</td>
<td>.14 (.004)</td>
<td>.34 (.007)</td>
<td>Accept</td>
<td>.40</td>
</tr>
<tr>
<td></td>
<td>Acculturative stress</td>
<td>.11</td>
<td>.04</td>
<td>2.78</td>
<td>.18 (.018)</td>
<td>−.10 (.014)</td>
<td>.08 (.286)</td>
<td>Accept</td>
<td></td>
</tr>
<tr>
<td>Psychological trauma</td>
<td>Traumatic experience</td>
<td>.37</td>
<td>.06</td>
<td>6.22</td>
<td>.32 (.002)</td>
<td>.01 (.661)</td>
<td>.33 (.033)</td>
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<td>.49</td>
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<tr>
<td></td>
<td>Acculturative stress</td>
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<td>.04</td>
<td>7.09</td>
<td>.38 (.006)</td>
<td>.06 (.028)</td>
<td>.44 (.006)</td>
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<tr>
<td></td>
<td>Self-efficacy</td>
<td>−.19</td>
<td>.05</td>
<td>−3.82</td>
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<td>−.10 (.020)</td>
<td>−.11 (.018)</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Active coping</td>
<td>−.04</td>
<td>.12</td>
<td>−0.34</td>
<td>−.02 (.817)</td>
<td>−</td>
<td>−.02 (.817)</td>
<td>Reject</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Passive coping</td>
<td>.26</td>
<td>.10</td>
<td>2.53</td>
<td>.21 (.046)</td>
<td>−</td>
<td>−.21 (.046)</td>
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<td></td>
</tr>
<tr>
<td>Resilience</td>
<td>Traumatic experience</td>
<td>.06</td>
<td>.05</td>
<td>−1.21</td>
<td>−.05 (.300)</td>
<td>.20 (.004)</td>
<td>.15 (.033)</td>
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<td>.45</td>
</tr>
<tr>
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<td>.04</td>
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<td>−.03 (.615)</td>
<td>.06 (.067)</td>
<td>.03 (.079)</td>
<td>Reject</td>
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</tr>
<tr>
<td></td>
<td>Self-efficacy</td>
<td>.44</td>
<td>.05</td>
<td>9.19</td>
<td>.56 (.005)</td>
<td>.10 (.010)</td>
<td>.66 (.006)</td>
<td>Accept</td>
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<tr>
<td></td>
<td>Active coping</td>
<td>.08</td>
<td>.11</td>
<td>0.78</td>
<td>.05 (.466)</td>
<td>−</td>
<td>.05 (.466)</td>
<td>Reject</td>
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</tr>
<tr>
<td></td>
<td>Passive coping</td>
<td>.15</td>
<td>.09</td>
<td>1.66</td>
<td>.14 (.102)</td>
<td>−</td>
<td>.14 (.102)</td>
<td>Reject</td>
<td></td>
</tr>
</tbody>
</table>

Note. CR = critical ratio; SE = standard error; SMC = squared multiple correlation.
traumatic experiences mediated by self-efficacy ($\gamma = .14, p = .004$), increased passive coping, while acculturation stress mediated by self-efficacy ($\gamma = -.10, p = .014$) decreased passive coping. In particular, the direct and indirect effects of acculturation stress mediated by self-efficacy were offset and thus it did not influence the total effect ($\gamma = .08, p = .286$). Passive coping can be explained by 40.0% of the direct effects of traumatic experiences, acculturation stress, and self-efficacy, as well as with the partial mediating effect of self-efficacy and the indirect effects of traumatic experiences and acculturation stress.

Factors affecting psychological trauma as a negative aspect of North Korean refugees' adaptation in the South Korean society were as follows: the direct effects of traumatic experiences, acculturation stress, and passive coping ($\beta = .21, p = .046$), as well as the indirect effects of acculturation stress with self-efficacy as a complete mediator and self-efficacy with active coping as a complete mediator, increased psychological trauma; self-efficacy directly decreased psychological trauma. Psychological trauma can explain 49.0% of the direct and indirect effects of these factors. Regarding resilience as a positive aspect of North Korean refugees' adaptation in the South Korean society, the direct effect of self-efficacy, the indirect effect of traumatic experiences ($\gamma = .20, p = .004$) with self-efficacy ($\beta = .10, p = .010$) as a complete mediator, and the indirect effect of self-efficacy with active and passive coping as complete mediators increased resilience and can explain 45.0% of the direct and indirect effects of these factors.

In summary, it was confirmed that North Korean refugees' traumatic experiences were associated with increased psychological trauma, while acculturation stress was associated with decreased self-efficacy and increased passive coping. Self-efficacy, on the other hand, was associated with active and passive coping as well as decreased psychological trauma and increased resilience.

**Discussion**

*Causal relationships among factors influencing North Korean refugees' adaptation to South Korean society*

The traumatic experiences of North Korean refugees directly increased self-efficacy, and acculturation stress decreased self-efficacy. This study's findings regarding North Korean refugees' traumatic experiences increasing self-efficacy are consistent with those of previous studies on North Korean refugees [21]. This result is considered unique to North Korean refugees. First, North Korean refugees who already had strong beliefs in his or her own capacity to execute behaviors necessary during the defection process, self-efficacy might be lead to more successful coming to South Korea; as the result, they had experienced all the traumatic events. Second, life in South Korea initially felt relatively easier for North Korean refugees who had extreme traumatic experiences [21], it could also be inferred that the experience of a successful defection increased the refugees' self-efficacy. Repatriation to North Korea was experienced by 45.8% of the study participants. Redefection was attempted a maximum of seven times and 54.6% of the participants stayed in a third country for more than 2 years. This suggests that defection was attempted with the hope of a better life in the South Korean society despite the traumatic experiences. Also, experiencing a better life in a third country is thought to have encouraged them to attempt the defection a second time. Additionally, the expectation and hope for life in the South Korean society is thought to have reinforced their will, which, in turn, resulted in increased self-efficacy temporarily. The results obtained in this study regarding acculturation stress decreasing self-efficacy are consistent with those of the previous studies on minorities [24] and North Korean youth refugees [6]. This suggests that North Korean refugees experience indifference, coldness, discrimination, and hostility in the South Korean society in the same ways that minorities do in the...
system to which they immigrated. In addition, although North Korean refugees defect with the expectation that the South Korean government will provide financial support upon their entrance to Korea, they experience economic hardships due to lack of basic understanding of a capitalist system, which unfortunately results in exploitation in various forms, including funds being stolen by immigration brokers or other large-scale frauds [5]. Considering that 41.7% of the study participants were unemployed and 64.9% of them had a monthly income of less than 1 million Korean won, it can be inferred that they feel a relative sense of poverty. Additionally, acculturation stress including a sense of guilt toward the family members left in North Korea who suffer from one's defection, difficulties caused by unfamiliar individualism and capitalism, and a lack of sense of belonging [4] are all likely to contribute to decreased self-efficacy.

Self-efficacy directly increased active and passive coping, whereas traumatic experience directly increased passive coping only. While traumatic experiences indirectly increased active and passive coping with self-efficacy as a mediator, acculturation stress decreased active and passive coping with self-efficacy as a mediator. The results regarding self-efficacy's direct and indirect effects on increased active and passive coping are similar to those of the previous studies conducted on college students [32] and North Korean refugees [17], which indicated self-efficacy's influence on coping style. Also, the finding that traumatic experiences directly affect only passive coping is consistent with findings from previous studies on minorities [14] and North Korean refugees [17]. This indicates that socially disadvantaged groups, such as minorities and North Korean refugees, use a passive coping style and surrender to stress. In other words, North Korean refugees tend to assume an attitude of compliance as they adjust to the external environment as a socially disadvantaged group and, in their efforts to forget the traumatic experiences of the defection process, they use a passive coping style. In summary, self-efficacy was confirmed as a major factor influencing personal goal setting and action decisions as well as coping styles, with high self-efficacy contributing to effective coping in stressful situations. Although traumatic experiences of the defection process cannot be lessened, it is imperative for the government to develop a systematic program with which to enhance refugees’ self-efficacy by reducing acculturation stress through precise diagnosis and effective intervention.

Factors influencing North Korean refugees’ adaptation in South Korean society

Traumatic experiences, acculturation stress, and passive coping style directly increased psychological trauma, while self-efficacy directly and indirectly decreased psychological trauma. The results of this study regarding the direct effects of traumatic experience and acculturation stress on increased psychological trauma are similar to the results of previous studies [9,23]. In addition, this study's results that passive coping style directly increased psychological trauma, while active coping style did not, is consistent with the results of a previous study on North Korean refugees [16]. This is thought to be attributable to the fact that North Korean refugees have difficulties expressing painful emotions due to the socialistic nature of their country of origin. This fact causes them to readily adopt a passive coping style in a helpless situation, namely suppression or avoidance. Furthermore, this study's finding that active coping style does not affect the psychological trauma of North Korean refugees is thought to be attributable to the fact that North Korean refugees, in general, possess rigidity, closed-mindedness, and hostility that was formed in a vertically uniform society oriented toward collectivism [3]. They also generally lack proactivity and exhibit passivity from conditioning to the free-supply system. However, when North Korean refugees use passive coping strategies, psychological trauma increased and may lead to maladaptation to the South Korean society. Therefore, a measure needs to be developed to decrease the refugees’ passive coping and increase active coping, which would involve helping them put into perspective what they experienced in North Korea as well as providing them with specific skills and techniques through which to properly express their emotions and react appropriately to situations. Furthermore, that self-efficacy had directly and indirectly decreased psychological trauma is consistent with the findings of a previous study on minorities [11], which indicated that an intervention program to increase self-efficacy is effective in reducing psychological trauma in North Korean refugees. Therefore, a self-efficacy oriented intervention program that offers efficient consultation, education, and evaluation is of critical importance.

Resilience refers to the ability, power, and flexibility to regain normal function and to adapt by applying personal coping skills after extreme stress. It is the dynamic capability of an individual to overcome an extremely stressful event (trauma, death, economic loss, natural disaster, political upheaval, or cultural change), maintaining psychological vitality and mental health while showing positive adaptation. Resilience is very important to the North Korean refugees in living and maintaining normal levels of function without causing problems, despite trauma and cultural changes faced during their adaptation process to the South Korean society. Resilience shows important results in methods for evaluating external stress that threatens the individual and responding and adapting to the stress while trying to adapt to a new environment. In the present study, self-efficacy was an important variable for increasing such resilience. Self-efficacy directly increased resilience and traumatic experiences indirectly affected resilience with self-efficacy as a mediator. The direct and indirect effects of self-efficacy on resilience in this study are consistent with the results of previous studies on minorities [33,34] and North Korean refugees [6,8]. Self-efficacy is a very important parameter in North Korean refugees’ adaptation to the South Korean society. Therefore, in order to enhance the self-efficacy of North Korean refugees, it is imperative that they are provided with opportunities to gain successful experiences while accomplishing trivial goals. Additionally, providing them with a proxy experience is equally important through a mentor program connecting the refugees with their predecessors who have successfully assimilated into the South Korean society. Also, emotional support through personal interactions and a variety of other methods, including words of encouragement, compliments, and support, is of paramount importance to reduce psychological trauma and nurture emotional stability. A total of 71.0% of the North Korean refugees who participated in this study were religious and sought encouragement and solace in religion and religious organizations during the defection and settlement process in the South Korean society. As such, church-based support would be highly effective in addition to the support provided at the government and private organization levels. It suggests that, in order to minimize psychological trauma and increase the self-efficacy of North Korean refugees in the South Korean society, multifaceted strategies, methods, and policy support are required.

This study has multiple theoretical and practical implications. First, at the theoretical and academic level, it suggests a path model showing the effects of traumatic experiences and acculturation stress on adaptation mediated by self-efficacy and coping style. Second, at a practical level, this study presents a prediction model for North Korean refugees’ adaptation to the South Korean society and provides useful foundational data on the life of North Korean refugees more accurately and comprehensively. In addition, prioritizing the intervention strategies used to increase the self-efficacy...
of North Korean refugees is expected to decrease psychological trauma and maximize resilience. However, since there is a lack of direct or indirect studies on self-efficacy, coping style, and adaptation of North Korean refugees, multifaceted studies need to be conducted and repeated multiple times to discover the variety of factors influencing North Korean refugees’ adaptation to the South Korean society.

Conclusion

First, the traumatic experiences of North Korean refugees directly increased self-efficacy, acculturation stress directly decreased self-efficacy, and self-efficacy directly increased active and passive coping. In addition, traumatic experiences with self-efficacy as a mediator increased active and passive coping, and acculturation stress decreased active and passive coping. Second, increases in psychological trauma for North Korean refugees were influenced directly by traumatic experiences, acculturation stress, and passive coping, and influenced indirectly by acculturation stress with self-efficacy and self-efficacy as passive coping as mediators. However, only the direct effect of self-efficacy decreased psychological trauma. Third, the increase in resilience of the North Korean refugees was influenced directly by self-efficacy as well as traumatic experiences with self-efficacy as a mediator. Self-efficacy directly influenced both psychological trauma (a negative aspect of adaptation for North Korean refugees to the South Korean society) and resilience (a positive aspect); it was also confirmed as an important parameter. Therefore, this study proposes the development of a program to help North Korean refugees regain their identity, understand their role, discover the meaning of life, and increase their self-efficacy.

Conflicts of interest

The authors have no conflicts of interest to declare.

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