Routes Out of Child Abuse to School Adjustments: A Comparison Between North Korean Adolescent Refugees and Native South Korean Adolescents

Hee Jin Kim1 · Sejung Yang2,4 · Daejun Park3

Accepted: 18 September 2022 © The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2022

Abstract
This study aimed to examine pathways from child abuse to school adjustment and the roles of self-control and academic stress on the link among North Korean adolescent refugees living in South Korea and native South Korean adolescents. A total of 610 students (adolescents from South Korea = 325 and adolescents from North Korea = 285) living in South Korea, from juniors in middle schools to seniors in high schools, were interviewed in 2017. Multigroup structural equation modeling was used to examine differences in the country of origin on the pathways from abuse to school adjustment via self-control and academic stress. North Korean adolescent refugees were less likely to adjust to their school life than South Korean adolescents. Academic stress was found as a significant mediator between self-control and school adjustment in both South Korean and North Korean adolescents. Child abuse was associated with self-control of South Korean adolescents. Childhood abuse from parents can have an overall influence on individual characteristics and school life for adolescents. By paying attention to this process, comprehensive solutions are urgently required not only to intervene in the problem of abusive parenting behaviors but also to block the path of the expanding negative consequences among both groups of adolescents.

Keywords North Korean adolescent refugees · Child abuse · School adjustment · Self-control · Academic stress · Path analysis

Human rights violations by the Democratic People’s Republic of Korea (DPRK or North Korea) government have persisted for three generations. To date, numerous North Koreans have suffered from unlawful or arbitrary killings by the government, violence, torture, severe restrictions on free expression, and government control under a decades-long dictatorship (Bureau of Democracy, Human Rights and Labor, 2021; Fahy, 2019). Consequently, many North Koreans have tried to escape their country. Those who escaped from North Korea and live in South Korea are defined as “North Korean refugees” (North Korean Refugees Foundation, 2020). Since the mid-1990s, the number of North Korean refugees entering South Korea has suddenly increased due to North Korea’s severe food shortage, and since the early 2000s, more than 1,000 people have entered South Korea every year, reaching 33,834 as of June 2022. However, since 2020, the number of entrants has been extremely low due to the COVID-19 pandemic (Ministry of Unification, 2022). As the number of North Korean refugees continuously increased before the COVID-19 pandemic, there has been a growing body of research on adolescent North Korean refugees (Baek, 2020; Kim & Shin, 2015; Kim et al., 2021; Lee et al., 2021; Lee et al., 2012; Lee et al., 2021; Myeong et al., 2020; Park et al., 2017; Park, 2020; Yang et al., 2017; Yu & Kim, 2021). Numerous empirical studies have investigated the post-traumatic stress disorders, mental health, and psychological problems among North Korean adolescent refugees considering the North Korean refugees’ potential multiple traumatic experiences (Kim &

Published online: 11 October 2022
School adjustments indicate child and adolescent positive psychosocial development (Schachner et al., 2014). For North Korean adolescent refugees, school adjustments may be a crucial indicator reflecting their overall adaptation state to South Korean society (Yu & Kim, 2021). The dropout rates that can serve as a measure of school adjustments among North Korean adolescent refugees from junior high school and high school were approximately three times higher than the rates of South Korean adolescents (1.8% and 4.3%; Kim et al., 2018). These relatively higher dropout rates among North Korean adolescents indicate their potential challenges and barriers adjusting to school (Yu & Kim, 2021). A few recent studies have investigated school adjustment patterns and risk and protective factors among North Korean adolescent refugees (Baek, 2020; Joo, 2020; Park, 2020; Yu & Kim, 2021). Most of the studies have used a qualitative approach partly due to difficulties recruiting study participants (Park, 2020; Yu & Kim, 2021). Despite the several strengths of research using qualitative approach, utilizing quantitative methods to examine factors associated with school adjustment among North Korean adolescent refugees can inform practice and policy efforts. Thus, this study examines the relationships among individual, familial, and school-related factors on school adjustment among North Korean adolescent refugees using path analysis.

Gaps in the Literature

Although a family is one of the most influential contexts that shape adolescents’ daily lives, fewer studies on North Korean adolescent refugees have investigated the relationship between familial factors and school adjustment compared to other traumatic experiences outside the home (Yu & Kim, 2021). There has been a lack of studies that examine whether and how child abuse relates to school adjustment among North Korean adolescent refugees although child abuse has been well known for its enduring negative influences on various developmental outcomes among children and adolescents (Berber Çelik & Odacı, 2020; Hagborg et al., 2018; Manly et al., 2001). Research indicates that North Korean refugee children suffered from physical and emotional abuse and neglect at relatively higher rates than South Korean children (Kim et al., 2012a). Specifically, 53% of North Korean refugees’ caregivers reported past minor physical child abuse, and 22% of them reported past severe physical abuse. Compared to 28% and 8% of South Korean caregivers, respectively, the child abuse rates are even higher (Kim et al., 2012b). Thus, it is crucial to investigate child abuse among North Korean adolescent refugees and how it relates to their school adjustment.

Self-control is a key element of positive adjustment and is related to essential aspects of adolescents’ daily life and positive development (e.g., interpersonal relationship, academic achievement; Li et al., 2019; Tangney et al., 2004; Willems et al., 2019). While research often indicates the linkages between child abuse, self-control, and various adolescent outcomes across disciplines (Bunch et al., 2018; Hay, 2001; He & Xiang, 2021; Jo & Zhang, 2014; Kort-Butler et al., 2011), to our best knowledge, no study to date has investigated the role of self-control on the link between child abuse and school adjustment among North Korean adolescent refugees. Additionally, there has been a limited comparative research on North Korean adolescent refugees. A few comparative studies on North Korean adolescent refugees and native South Korean adolescents indicate that North Korean adolescent refugees showed poor outcomes with respect to the level of post-traumatic stress disorders or academic stress compared to their counterparts (Kim & Shin, 2015; Lee et al., 2012). Taken together, the current study adds to the literature by examining the pathways from child abuse to school adjustment, particularly investigating the roles of self-control and academic stress among North Korean adolescent refugees and native South Korean adolescents.

North Korean Adolescent Refugees

North Korean adolescent refugees in this study refer to adolescents residing in South Korea, more than one of whose parents were refugees from North Korea, and who was born outside South Korea, such as in North Korea or China, Mongolia, and Vietnam, subsequently entered South Korea. According to the Ministry of Unification in South Korea, a North Korean refugee adolescent is a person between the ages of 10 and 18 born in North Korea and who currently resides in South Korea (North Korean Refugees Foundation, 2020). Nevertheless, due to various escape routes from North Korea to South Korea and the significant amount of time that the trip often takes, there are many children born en route in the third country, of which the proportion has been gradually increasing (Joo, 2020; Yang et al., 2017). Currently, about 34% (n = 860) of the North Korean adolescent refugees were born in North Korea, and 66% (n = 1,670) of North Korean adolescent refugees were born in a third country (North Korean Refugee Youth Education Support Center, 2021). Despite the high percentage of North Korean adolescent refugees born in the third country, they are not officially included in the “refugees” category by the Ministry of Unification. However, they are classified as North Korean refugee students and included in some of the educational support policies by the Ministry of Education (North Korean Refugee Youth Education Support Center, 2021). Furthermore, there are also cases when North Korean refugees who
have settled in South Korea give birth to children, adding another category of refugees to the conversation. Although some metropolitan/provincial offices of education do include children of North Korean refugees born in South Korea as the target of educational support, children of North Korean refugees born in South Korea are not eligible for the Ministry of Unification settlement support.

School Adjustment Among North Korean Adolescent Refugees

There are various individual, familial, school-level, and societal factors that make it difficult for North Korean adolescent refugees to adapt to school in South Korea. Similar to North Korean refugee adults, North Korean adolescent refugees often have various traumatic experiences, such as escaping a life-threatening situation and witnessing death, torture, or sexual assault of family members or close people, and need special care to address post-traumatic stress disorders (Lee et al., 2012, 2017). Furthermore, North Korean adolescent refugees encounter a number of barriers in adjusting to the South Korean school system. First, language difficulties are frequently described among North Korean adolescent refugees (Myeong et al., 2020; Yang et al., 2017). For instance, North Korean adolescent refugees report that they feel ashamed and embarrassed when South Koreans do not understand their Northern accents or word usage (Myeong et al., 2020). The differences in school culture between the school systems may be another barrier. Students born and raised in North Korea frequently feel overwhelmed when asked to express their ideas, as they never had the opportunity to freely express themselves at school under the oppressive North Korean regime (Myeong et al., 2020). Furthermore, North Korean adolescent refugees experience difficulties catching up with the educational program, not only because the national curriculum is different, but also because they lacked access to education during their escape from North Korea, often for a period of two to three years (Lee, 2007). Between their initial escape from the North and their final arrival in the South, North Korean adolescent refugees often spend time in China and other countries, where they usually do not have the same access to the school system as they do in South Korea.

Moreover, the South Korean education environment is infamous for being very competitive, reflecting the overall society atmosphere (Choi et al., 2019; Jarvis et al., 2020; Myeong et al., 2020). This competitive societal atmosphere makes it even harder for atypical students to adjust. Research shows that North Korean refugees experience adaptation difficulties and various psychosocial adjustment problems (Myeong et al., 2020). In particular, numerous international reports indicate that students in South Korea generally show fair academic achievement but suffer from a relatively high level of academic stress and have low levels of life satisfaction (Choi et al., 2019). These findings suggest a need to examine the role of academic stress in school adjustment among North Korean adolescent refugees.

Child Abuse and School Adjustment Among North Korean Adolescent Refugees

Child abuse is well known for constituting a toxic environment that militates against sound child development across the physical and psychological domains (Cicchetti & Toth, 2005). In particular, child abuse was linked with low self-esteem as well as a high level of depression, anxiety, and stress (Berber Çelik & Odacı, 2020). Additionally, children who experienced abuse were more likely to evidence lower educational outcomes (Hardner et al., 2018) as well as high absenteeism (Hagborg et al., 2018). In particular, exposure to violence was a crucial risk factor for children’s psychological functioning among displaced and refugee children who are resettled in higher-income countries (Fazel et al., 2012). Notably, North Korean refugee children often report experiences of violence within the family. This is consistent with research on children in countries with armed conflicts indicating relatively high levels of child abuse through multiple exposures to traumatic events (Catani et al., 2008). Experiencing trauma and severe stress may lead to family-related violence among refugee families (Timshel et al., 2017). Prevalent child abuse can result from these multiple stressors (e.g., war-related adverse events and economic hardship) that might have influenced parents predisposed to abusive parenting (Catani et al., 2008). Relatively higher child abuse rates among North Korean refugee families may be partially explained by traumatic experiences in North Korea and during the escape. Furthermore, direct or indirect exposure to human rights abuses committed by the North Korean government (Ulferts & Howard, 2017) and life-threatening experiences during their escape adds to high levels of post-traumatic stress disorder among North Korean refugee adults (Lee et al., 2017). Therefore, the relatively high level of child abuse in North Korean refugee families can be understood, in part, in the context of the experiences of North Korean refugees and their unique circumstances. North Korean parents reported emotional difficulties from past traumas and acculturative stress that subsequently led to abusive parenting (Ryu & Yang, 2021).
Linkages among Self-Control, Academic Stress, and School Adjustment Among North Korean Adolescent Refugees

Self-control is a significant predictor of positive adjustments across the lifespan (Li et al., 2021; Tangney et al., 2004; Willems et al., 2019). In particular, self-control is linked to numerous important outcomes during adolescence, such as academic achievement, self-esteem, mental well-being, and interpersonal skills (Tangney et al., 2004). Students with high self-control tended to display better adjustment to school settings as a higher level of self-control implies a greater capacity for altering their responses to pursue goals in the long run (Baumeister et al., 2007). Research often links familial factors to self-control among children and adolescents (Bunch et al., 2018; Hay, 2001; Jo & Zhang, 2014; Kort-Butler et al., 2011; Li et al., 2019; Malatras & Israel, 2013). While family stability may foster the development of self-control, which can lead to positive adjustment (Malatras & Israel, 2013), child abuse is associated with a lower level of self-control. General strain theory explains that repeated exposure to strains may lower self-control, which plays a crucial role in leading to delinquent behaviors (Agnew et al., 2011). Agnew (2011) indicated that anger from the victimization (e.g., child abuse) can reduce the awareness of the consequences of their non-desirable behaviors (e.g., youth delinquency) and lowers tolerance for further stressful events. Specifically, since child abuse is a serious adverse childhood experience, child abuse can deteriorate self-control which possibly have a negative impact on capacity of dealing with stressors among adolescents.

An individual with high self-control is likely to perceive stressful events as more controllable or manageable (Bowlin & Baer, 2012). Research indicates that higher levels of self-control are associated with experiencing relatively fewer stressful life events (Park et al., 2016). Conversely, the lack of self-control may result in an increased likelihood of experiencing stressful events due to disturbances in emotional regulation or impulsive decision-making (Galla & Wood, 2015). In particular, research indicates the link between self-control and academic stress. For instance, self-control was found to be negatively associated with academic stress among school-age children in South Korea (Min, 2016). As for the North Korean refugee students, they experience double hardship as they need to adjust to a new school system and academic curriculum as well as face highly competitive academic environments in South Korea, which may cause extreme levels of academic stress (Jarvis et al., 2020). Given that academic stress is negatively associated with school adjustment (Kim et al., 2017), it is necessary to identify and understand the role of academic stress in the impact of abuse experiences and self-control on school adjustment among North Korean refugee children.

Considering the relatively prevalent child abuse (Kim et al., 2012a) and numerous challenges and barriers of school adjustment among North Korean refugee children and adolescents (Kim et al., 2018), as well as the significance role of self-control from child abuse to school adjustment based on general strain theory, an examination of the risk factors of school maladjustment, with the inclusion of self-control and academic stress, would provide insights to support better adjustment among North Korean refugee students. Thus, this exploratory study investigated the relationship between child abuse and school adjustment and the roles of self-control and academic stress on the link among North Korean adolescent refugees and their counterparts, native South Korean adolescents.

Method

Participants

A total of 610 adolescents (adolescents from South Korea = 325 and adolescents from North Korea = 285) living in Seoul and Gyeonggi-do Province in South Korea, from juniors in middle schools to seniors in high schools, participated in the study in 2017. The survey of South Korean adolescents was conducted by random sampling based on a survey company’s database containing vast amounts of data on South Korean adolescents. For North Korean adolescent refugees, snowball sampling was employed due to the relatively small population size and the confidentiality issue. In this study, adolescent North Korean refugees were identified by either both or one of their parents being from North Korea and having been born in North Korea or the third country. South Korean adolescents were recruited mainly from regular schools, and adolescent North Korean refugees were recruited from either regular schools or alternative schools. After being introduced to adolescent North Korean refugees or their parents by their teachers, if they agreed, we met them and received their consent to participate in the survey. The survey was conducted with the help of a survey company, but the researchers accompanied them to explain the research and to participate in the process of obtaining consent. The survey was administered between September 2017 and January 2018. Research activities in the study were permitted by the institutional review boards (IRB) of Myongji University in Seoul, South Korea.
Measures

Country of Origin

In the current study, the country of origin was put into two categories—North Korea and South Korea. Adolescents born in South Korea, where neither of their parents came from North Korea, were defined as South Korean adolescents. North Korean adolescent refugees refer to those more than one of whose parents were refugees from North Korea and born in North Korea or the third country and subsequently entered South Korea. Although the North Korean adolescent refugees born in China and other third countries are not officially included in the “refugees” category by the Ministry of Unification, they are included in some of the educational support policies as they need special academic consideration as children of North Korean refugees (Yang et al., 2017). From this point of view, in this study, we employed a broader definition of adolescent North Korean refugees to include not only those who were born in North Korea but also those who were born in China or third countries as long as at least one of their parents is a North Korean refugee.

Child Abuse

The Conflict Tactics Scale, Parent–Child (CTSPC; Straus et al., 1998) translated in Korean was used to measure child abuse. Among 22 items of the scale, five items on physical and psychological abuse were used as indicators of child abuse in this study. Adolescents were asked how often the children’s parents acted on each of the following items to respondents when they were around ten years old. The five items are “Hit you with a fist or kicked you hard,” “Grabbed you around the neck and choked you,” “Beat you up, that is, hit you over and over as hard as they could,” “Hit you on some parts of the body besides the bottom with something like a belt, hairbrush, stick, or some other hard objects,” and “Threw or knocked you down.” The original CTSPC was scored with eight-point scale (0 = no lifetime at all, 1 = not the age of 10, 2 = once, 3 = twice, 4 = 3–5 times, 5 = 6–10 times, 6 = 11–20 times, and 7 = more than 20 times). In the current research, the scale was scored with a seven-point scale (0 = no lifetime at all or not the age of 10, 1 = once, 2 = twice, 3 = 3–5 times, 4 = 6–10 times, 5 = 11–20 times, and 6 = more than 20 times). Respondents were given a questionnaire regarding their mother and father separately based on the literature identifying the differences in specific types of child maltreatment between fathers and mothers in an East Asian country (Cui et al., 2016). The internal consistency coefficients for paternal and maternal child abuse in this study were 0.92 and 0.87, respectively.

Self-control

The Self-Control Scale from Tangney et al. (2004) was used to measure adolescents’ self-control. Of the original 20 questions on the scale, 11 questions that were suitable for both South Korean and North Korean adolescents were selected and translated in Korean. The response categories for each question consisted of a five-point Likert scale from “not at all” to “very much.” The sum of each response score was used, and the higher the score is, the lower is the self-control. Cronbach’s alpha in this study was 0.81.

Academic Stress

To measure academic stress, ten questions of the Korean Academic Stress Scale were used (Park, 2006). The scale was a modification of the stress scale of the academic field among the daily stresses of children as described by Min and Yoo (1998). The scale is classified into “school class stress,” “school grades stress,” and “school pressure stress.” The response categories are a four-point Likert scale from “not at all” to “very much.” In this study, Cronbach’s alpha was found to be 0.90.

School Adjustment

The School Adjustment Scale was used to measure the school adjustment of adolescents (Lim, 1993). The measure consisted of 20 questions, including understanding class content, discipline problem, satisfaction with school life, relationships with peers and teachers, and reflections on school activities. Each item on the questionnaire comprised a statement regarding a school experience; for instance, “I stayed out of trouble with teachers and disciplinarians at school.” The student chose the response that estimated how each statement truly reflected their experiences in the past year. The response categories for each question consisted of a five-point Likert scale from “not at all” to “very much.” Scores range from 20 to 100, with high scores representing better school adjustment. The internal consistency of the analyzed sample in this study was relatively high ($\alpha=0.86$).

Data Analysis

Descriptive statistics were analyzed to identify the participants’ demographic characteristics as well as their status in terms of child abuse, self-control, academic stress, and school adjustment. Chi-square tests and t-tests were used to explore bivariate associations between each independent
variable and demographic variables. We also examined path analysis models separately for North Korean and South Korean adolescents using our baseline model (see Fig. 1). Finally, we evaluated differences in coefficients on each path based on the results from a multigroup path analysis. Composite scores of survey items were used in estimating path coefficients among the constructs as the structural path models in the study were based on the relationship between observed variables. We used SPSS Statistics 28.0 (IBM Corp, 2021) to perform descriptive and bivariate analyses and AMOS 28.0 (Arbuckle, 2021) to conduct a multigroup analysis.

Invariance tests were performed for multigroup analysis to examine if the measure across the country of origin has the same path construct. Invariance tests in the study consisted of configural invariance and metric invariance, and structural invariance based on guidelines for testing invariance of a causal structure (Byrne, 2016). First, we tested configural invariance to examine if each path had similar directions and properties by fitting each path model separately without restriction on the path coefficients. Next, we tested metric invariance by comparing a baseline model used for the configural invariance test with a constrained model that places invariance constraints on the coefficients of observed and latent variables. Finally, we tested structural invariance by comparing the constrained model above with a constrained model that added invariance constraints to the path coefficients. The structural invariance test identifies the equivalence of path coefficients in each model across the two groups.

We used the model chi-square statistics with its degrees of freedom and p-value, the root mean square error of approximation (RMSEA) and its 90% confidence interval (CI), the comparative fit index (CFI), and the standardized root mean square residual (SRMR) as the estimation methods and fit indices for the test of invariance according to the suggestion from Byrne (2016). The desired values of the fit indices are less than 0.07 for RMSEA, greater than 0.92 for CFI, and less than 0.08 for SRMR, respectively (Byrne, 2016; Hair et al., 2013). The maximum likelihood (ML) method was also used to estimate fit indices and parameters.

**Results**

**Sample Characteristics**

In the total sample of 610 adolescents, 46.7% were from North Korea, and roughly half were female (51.6%) and middle school students (51.8%). A majority of the respondents were from middle- or lower-income families (53.8% and 33.0%, respectively), and around 13% of them were from higher-income families. As for family structure, a quarter of students lived with single parents (25.1%). In terms of academic achievement, 42.2% of students reported a very high or high level of achievement (within the top 40%), 32.6% reported an average level (top 40–60%), and 25% indicated a low or very low level of achievement (top 60% or less). Additionally, child abuse scored averages of 0.32 for paternal abuse and 0.33 for maternal abuse, denoting the low incidence of violence. Academic stress \( (M = 2.37, SD = 0.67) \) was slightly lower than the midpoint of 2.50. However, the average scores of self-control \( (M = 3.25, SD = 0.61) \) and school adjustment \( (M = 3.65, SD = 0.56) \) were above the midpoint of each scale (3.00, 2.50, and 3.00, respectively).

The results from the bivariate analyses indicated significant differences in household income, academic achievement, and family structure between North Korean and South Korean adolescents. Additionally, South Korean respondents reported higher occurrences of maternal abuse at home. Respondents who were from North Korea had significantly higher levels of self-control compared to their South Korean counterparts. However, North Korean adolescents were less likely to adjust well to their schools in South Korea. No statistical differences were found in the level of academic stress (see Table 1).

**Test of Invariance**

The fit indices for the unconstrained models of South Korean and North Korean groups were reported in Table 2, which showed an acceptable model fit (South Korean, \( \chi^2/df = 4.139, CFI = 0.946, \) and RMSEA = 0.098 [0.052, 0.150]; North Korean, \( \chi^2/df = 2.187, CFI = 0.982, \) RMSEA = 0.065 [0.000, 0.124]). The result suggested that

---

**Fig. 1** Proposed model for the associations between child abuse, self-control, academic stress, and school adjustment
Table 1  Sample sociodemographic characteristics by country of origin

| Characteristics          | Total (n = 610) | North Korean (n = 285) | South Korean (n = 325) | $\chi^2$ tests |
|--------------------------|-----------------|------------------------|------------------------|----------------|
| **Country of origin**    |                 |                        |                        |                |
| North Korea              | 46.7 (285)      | –                      | –                      |                |
| South Korea             | 53.3 (325)      | –                      | –                      | .21            |
| **Gender**               |                 |                        |                        |                |
| Female                   | 51.6 (315)      | 52.6 (150)             | 50.8 (165)             |                |
| Male                     | 48.4 (295)      | 47.4 (135)             | 49.2 (160)             |                |
| **School**               |                 |                        |                        | .15            |
| Middle                   | 51.8 (316)      | 52.6 (150)             | 51.1 (166)             |                |
| High                     | 48.2 (294)      | 47.4 (135)             | 48.9 (159)             |                |
| **Household income**     |                 |                        |                        | 37.98***       |
| Lower                    | 33.0 (201)      | 44.6 (127)             | 22.8 (74)              |                |
| Middle                   | 53.8 (328)      | 47.7 (136)             | 59.1 (192)             |                |
| Higher                   | 13.3 (81)       | 7.7 (22)               | 18.2 (59)              |                |
| **Academic achievement** |                 |                        |                        | 51.21***       |
| Very high (within the top 20%) | 15.2 (93)    | 7.7 (22)               | 21.8 (71)              |                |
| High (top 20–40%)        | 27.0 (165)      | 21.4 (61)              | 32.0 (104)             |                |
| Average (top 40–60%)     | 32.6 (199)      | 37.2 (106)             | 28.6 (93)              |                |
| Low (top 60–80%)         | 16.2 (99)       | 19.3 (55)              | 13.5 (44)              |                |
| Very low (top 80% or less) | 8.9 (54)     | 14.4 (41)              | 4.0 (13)               |                |
| **Family structure**     |                 |                        |                        | 51.17***       |
| Both parents             | 67.9 (414)      | 58.0 (145)             | 84.9 (269)             |                |
| Single parents           | 25.1 (153)      | 42.0 (105)             | 15.1 (48)              |                |
| Paternal child abuse     | .32 (.87)       | .28 (.98)              | .35 (.75)              | −.98           |
| Maternal child abuse     | .33 (.76)       | .23 (.73)              | .42 (.78)              | −3.15**        |
| Self-control             | 3.25 (.61)      | 3.42 (.57)             | 3.10 (.61)             | 6.68***        |
| Academic stress          | 2.37 (.67)      | 2.35 (.66)             | 2.39 (.69)             | −.72           |
| School adjustment        | 3.65 (.56)      | 3.60 (.54)             | 3.70 (.57)             | −2.16*         |

Chi-squares and t-tests were conducted by comparing North Korean and South Korean adolescents

*p < .05, **p < .01, ***p < .001

Table 2  Summary of Goodness-of-fit statistics for invariance tests

| Invariance                  | $\chi^2$ | df | RMSEA (90% CI) | CFI | SRMR | $\Delta \chi^2 (\Delta df)$ | $\Delta$RMSEA | $\Delta$CFI | $\Delta$SRMR |
|-----------------------------|----------|----|----------------|-----|------|-----------------------------|----------------|------------|--------------|
| North Korean                | 8.749    | 4  | .065 (.000, .124) | .982 | .053 | –                          | –              | –          | –            |
| South Korean                | 16.554** | 4  | .098 (.052, .150) | .946 | .062 | –                          | –              | –          | –            |
| **Cross-group model**       |          |    |                |     |      |                            |                |            |              |
| Model 1: Baseline (configural invariance) | 25.303** | 8  | .060 (.034, .087) | .965 | .053 | –                          | –              | –          | –            |
| Model 2 (metric invariance) | 29.225** | 13 | .045 (.023, .067) | .967 | .061 | 3.922 (5)                  | .015           | .002       | .008         |
| Model 3 (structural invariance) | 59.548*** | 16 | .067 (.049, .085) | .912 | .062 | 30.323 (3)                | .022           | .055       | .001         |

RMSEA root mean square error of approximation, CI confidence interval, CFI comparative fit index, SRMR standardized root mean square residual

*p < .05, **p < .01, ***p < .001
configural invariance should be identified so that the proposed model may be appropriate for the South Korean and North Korean groups. In the first model (baseline model), no restrictions were put on the parameters. The goodness-of-fit statistics were a CFI of 0.965, an RMSEA of 0.060 [0.034, 0.087], and an SRMR of 0.053, suggesting an adequate model fit. In the second model to test metric invariance, we had the coefficients for observed variables uniformly constrained in both the South Korean and North Korean models, and it yielded a CFI of 0.967, an RMSEA of 0.045 [0.023, 0.067], and an SRMR of 0.061. Because the difference in fit indices between the two models was small, metric invariance could be obtained so that both might measure the variables for the South Korean and North Korean groups at a uniform level. In the last model, we tested structural invariance. The result of the fit indices indicated a CFI of 0.912, an RMSEA of 0.067 [0.049, 0.085], and an SRMR of 0.062. The poorer model fit with the significant difference in the change in chi-square values \( p < 0.001 \) imply the associations between variables may be moderated by country of origin (Sass & Schmitt, 2013).

**Path Coefficient Comparison by Country of Origin**

Table 3 showed the path coefficients that were compared by country of origin. The likelihood of being abused by mothers was higher for South Koreans (\( B = -0.11, p = 0.029 \)). Self-control and academic stress were negatively associated for both South Korean and North Korean adolescents (South Korean, \( B = -0.35, p < 0.001 \); North Korean, \( B = -0.36, p < 0.001 \)). In terms of school adjustment, academic stress for both South Korean and North Korean students had a negative association (South Korean, \( B = -0.21, p < 0.01 \); North Korean, \( B = -0.22, p < 0.01 \)). However, self-control for both groups were positively associated with school adjustment (South Korean, \( B = 0.31, p < 0.001 \); North Korean, \( B = 0.40, p < 0.001 \)). Thus, academic stress had partial mediating effects on the path from self-control to school adjustment (see Fig. 2). Regarding the path coefficients, we found no significant differences between the two groups from the results of the multigroup analysis.

**Discussion**

Although child abuse has been well known for its negative influence on school adjustment, there is still a paucity of studies examining the relationship among adolescent North Korean refugees. Thus, this study adds to the literature by examining the pathways between child abuse and school adjustment via self-control and academic stress among South Korean adolescents and North Korean adolescent refugees. Multivariate analysis between sociodemographic variables and outcome variables showed that North Korean adolescents were less likely to adjust to their school life than South Korean adolescents. The influence of child abuse and the role of self-control and academic stress on school adjustment showed the need to address child abuse and self-control simultaneously. However, there was no significant association between child abuse and self-control in the case of North Korean adolescents.

The result of this study demonstrates that experiences of child abuse are associated with self-control, and this had a multidimensional effect on academic stress and school adjustment among adolescent North Korean refugees. This means that childhood abuse from parents has an overall

| Paths | North Korean | South Korean | \( \Delta \chi^2 \) |
|-------|--------------|--------------|------------------|
| 1. Paternal child physical abuse → Self-control | -.04 | .04 | .06 | .05 | 2.00 |
| 2. Maternal child physical abuse → Self-control | -.06 | .06 | -.11* | .05 | .47 |
| 3. Self-control → Academic stress | -.36*** | .07 | -.35*** | .06 | .01 |
| 4. Academic stress → School adjustment | -.22*** | .04 | -.21*** | .04 | .06 |
| 5. Self-control → School adjustment | .40*** | .05 | .31*** | .05 | 1.49 |

\* \( p < .05 \), \*\* \( p < .01 \), \*\*\* \( p < .001 \)

![Fig. 2 Path analysis models and standardized structural coefficients. Coefficients for South Korean adolescents are in parentheses. \( * p < .05, ** p < .01, *** p < .001 \)](image-url)
Routes Out of Child Abuse to School Adjustments: A Comparison Between North Korean Adolescent…

Influence on individual characteristics and school and social life. By paying attention to this process, comprehensive solutions are urgently required to address abusive parenting behaviors as well as to block the path of the expanding negative consequences. Comparing experiences of child abuse, South Korean adolescents had higher experiences of child abuse than North Korean adolescents. This is a different result from previous studies, in which North Korean refugees’ families showed far higher levels of child abuse than South Korean families (Kim et al., 2012a). Unlike previous studies that conducted surveys among parents, this study assessed adolescents’ self-reported child abuse experiences retrospectively. Accordingly, there is a possibility that the number of incidents was underreported due to social desirability bias and recall bias. As such, future research should investigate further on child abuse among North Korean refugees’ families. The finding still highlights the needs of continuous child abuse prevention and intervention efforts. For both groups, adolescents should learn to recognize what constitutes child abuse and where they can find support. Equally importantly, to prevent child abuse from its occurrence and reoccurrence, ensuring that basic needs (e.g., physical, psychological, and relational needs) be met particularly among North Korean refugee families as these are prerequisites of quality parenting to their children and many North Korean adult refugees reported less favorable physical conditions (e.g., physical, health, employment) compared to their counterpart (Yoon, 2019). Further, given research indicates the challenges and potential PTSD among many North Korean adult refugees (Lee et al., 2017), it is crucial to implement trauma-informed practice when working with parents of North Korean adolescent refugees to support and improve their parenting.

In terms of the degree of adaptation to school life, North Korean adolescents were statistically significantly lower at adapting successfully than South Korean adolescents. These results can be taken to indicate that it is more difficult for North Korean adolescents throughout their overall school lives, including their studies, relationships with teachers and peers. This is where a more practical intervention is needed as these difficulties can lead to academic suspension and even school dropout. One of the possible reasons why North Korean adolescent refugees have difficulties in school adaptation including establishing relationships with teachers and peers is that there has not been enough mutual trust between North Korean refugees and South Koreans overall (Yoon, 2019). North Korean adolescent refugees reported lack of confidence in communicating actively with South Koreans due to language barriers and cultural differences (Myeong et al., 2020; Yang et al., 2017), so it may be challenging to build deep trusting relationships with teachers and friends. Further, after entering South Korea, grade assignments are made for North Korean adolescent refugees through academic background deliberation by city and provincial offices of education. Therefore, they may not have enough time to adjust to new environment in South Korea but be given learning goals based on South Korean standards. Also, because they may be accustomed to North Korea’s coercive ideological education, it can be difficult to freely share their opinions even in the private sector (Institute of Korea Democracy, 2016). Taken together, continuous support measures for all North Korean adolescent refugees should be created and implemented based on rigorous research evidence on various familial, interpersonal, and school factors to enhance their school adjustments.

This study also showed that academic stress and self-control were associated with school adjustment. In particular, the finding that South Korean adolescents’ academic stress is higher than that of North Korean adolescents is in line with previous studies reporting that the academic stress problem is a result of South Korea’s competitive academic environment centered on entrance exams (Jarvis et al., 2020). As North Korean adolescents gradually move from their specialized schools to regular South Korean schools and spend more time in South Korea, their academic stress levels are likely to increase. It is, therefore, necessary to create an overall inclusive and caring community and to alleviate academic stress for both groups of adolescents for promoting the better adjustment of North Korean adolescent refugees to South Korean schools. To that end, along with the strategies for lowering academic stress at the school level, interdisciplinary research is needed to derive various methods for effectively and culturally sensitively supporting study, improving self-control capacity to regulate negative emotions and manage such stress among North Korean adolescent refugees.

The findings imply a need for targeted intervention, especially for North Korean refugee children and adolescents, to enhance school adjustment.

Currently, various policies and interventions for North Korean adolescent refugees are being implemented by public and private institutions such as the Korea Hana Foundation and the Support Foundation for Migrant Youth, but they are somewhat insufficient in terms of systematization and continuity (Institute of Korea Democracy, 2016). The results of this study on the pathways and factors of school adjustment offer empirical evidence to inform relevant policies and practices. For instance, increasing the number of full-time coordinators for North Korean refugee students may be helpful. These coordinators are selected among North Korean refugee adults who used to be teachers in North Korea. After a certain period of professional training, the coordinators are assigned as assistant teachers to schools that have more than 15 North Korean refugee students (Kim et al., 2015). The coordinator’s experience as a North Korean refugee and expertise as a teacher may...
play a key role in the process of parental counseling and home visits by connecting schools and families.

Limitations and Recommendations for Future Studies

This study has several limitations. Previous studies reported that comparative studies of children and adolescents in countries that accepted migrants or refugees, and migrant children, and adolescents who moved to those countries should consider various characteristics of individuals such as race/ethnicity, socioeconomic status, cultural background, and country of origin (Stevens & Volleberg, 2008; Zhou, 1997). Likewise, depending on the place of birth (e.g., born in North Korea, the third country, and South Korea), length of stay, the timing of migration, the type of school (e.g., regular school or specialized school), and the traumatic experiences and levels of stress among North Korean refugee peers among South Korean adolescents. In this context, this is an area that requires continuous and long-term accumulation of research, and future comparative studies should consider heterogeneity among North Korean adolescent refugees.

The generalizability of this study is limited to South Korean and North Korean adolescent refugees living in Seoul and Gyeonggi-do Province. Future research should expand its sample to be nationally representative. The retrospective approach in the survey and the cross-sectional design of the study might not explain the causal relationship accurately. A longitudinal study would help verify the sequential pathways from child abuse to school adjustment. Using a qualitative approach, future research can offer insight into the experiences of child abuse and other familial risk and protective factors and the school adjustment of North Korean adolescent refugees. Additionally, future studies in this field should examine other crucial factors promoting adolescents’ resilience (e.g., neighborhood effects) which may influence adolescents’ school adjustment and be a target to prevent child abuse and enhance positive parenting practices. Finally, future studies should examine multicultural acceptance including attitudes toward North Korean refugee peers among South Korean adolescents. Efforts should be made to improve the multicultural acceptance among South Korean peers as enhancing individual capacity among the North Korean refugees alone does not achieve social integration where both parties understand and respect each other (Yoon, 2019).

Declarations

Conflict of interest The authors have no known conflict of interest to disclose.

References

Agnew, R., Scheuerman, H., Grosholz, J., Isom, D., Watson, L., & Thaxton, S. (2011). Does victimization reduce self-control? A longitudinal analysis. Journal of Criminal Justice, 39(2), 169–174. https://doi.org/10.1016/j.jcrim jus.2011.01.005
Arbuckle, J. L. (2021). Amos (Version 28.0) [Computer Program]. Chicago: IBM SPSS.
Baek, I. (2020). A study on the non-adaptation pattern of school for North Korean refugee: Focused on Daejeon and Gongju area. Korean Journal of Reunification Education, 17(1), 53–80.
Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. Current Directions in Psychological Science, 16(6), 351–355. https://doi.org/10.1111/j.1467-8721.2007.00534.x
Berber Çelik, Ç., & Odaci, H. (2020). Does child abuse have an impact on self-esteem, depression, anxiety and stress conditions of individuals? International Journal of Social Psychiatry, 66(2), 171–178. https://doi.org/10.1177/0020764019894618
Betts, L. R., & Rotenberg, K. J. (2007). Trustworthiness, friendships and self-control: Factors that contribute to young children’s school adjustment. Infant and Child Development: An International Journal of Research and Practice, 16(5), 491–508.
Bowlin, S. L., & Baer, R. A. (2012). Relationships between mindfulness, self-control, and psychological functioning. Personality and Individual Differences, 52(3), 411–415. https://doi.org/10.1016/j. pad.2011.10.050
Bunch, J. M., Iratzoqui, A., & Watts, S. J. (2018). Child abuse, self-control, and delinquency: A general strain perspective. Journal of Criminal Justice, 56, 20–28. https://doi.org/10.1016/j.jcrim jus.2017.09.009
Bureau of Democracy, Human Rights and Labor. (2021). 2020 Country reports on human rights practices: Democratic People’s Republic of Korea. Retrieved from https://www.state.gov/reports/2020-country-reports-on-human-rights-practices/north-korea/
Byrne, B. M. (2016). Structural equation modeling with AMOS: Basic concepts, applications, and programming (3rd ed.). Routledge.
Catani, C., Schauer, E., & Neuner, F. (2008). Beyond individual war trauma: Domestic violence against children in Afghanistan and Sri Lanka. Journal of Marital and Family Therapy, 34(2), 165–176. https://doi.org/10.1111/j.1752-0606.2008.00062.x
Choi, C., Lee, J., Yoo, M. S., & Ko, E. (2019). South Korean children’s academic achievement and subjective well-being: The mediation of academic stress and the moderation of perceived fairness of parents and teachers. Children and Youth Services Review, 100, 22–30.
Cicchetti, D., & Toth, S. L. (2005). Child maltreatment. Annual Review of Clinical Psychology, 1(1), 409–438. https://doi.org/10.1146/annurev.clinpsy.1.102803.144029
Cui, N., Xue, J., Connolly, C. A., & Liu, J. (2016). Does the gender of parent or child matter in child maltreatment in China? Child Abuse and Neglect, 54, 1–9. https://doi.org/10.1016/j.chiabu.2016.01.003
Dubow, E. F., & Ullman, D. G. (1989). Assessing social support in elementary school children: The survey of children’s social support. Journal of Clinical Child Psychology, 18(1), 52–64. https://doi.org/10.1207/s15374424jccp1801_7

Funding This study was supported by UniKorea Foundation, 2017-31 to Heejin Kim.
Fahy, S. (2019). Dying for rights: Putting North Korea’s human rights abuses on the record. Columbia University Press.

Fazel, M., Reed, R. V., Panter-Brick, C., & Stein, A. (2012). Mental health of displaced and refugee children resettled in high-income countries: Risk and protective factors. The Lancet, 379(9812), 266–282. https://doi.org/10.1016/S0140-6736(11)60051-2

Galla, B. M., & Wood, J. J. (2015). Trait self-control predicts adolescents’ exposure and reactivity to daily stressful events. Journal of Personality, 83(1), 69–83. https://doi.org/10.1111/jopy.12083

Hagborg, J. M., Berglund, K., & Fahlke, C. (2018). Evidence for a relationship between child maltreatment and absenteeism among high-school students in Sweden. Child Abuse and Neglect, 75, 41–49.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2013). Multivariate data analysis (7th ed.). Pearson.

Hardner, K., Wolf, M. R., & Rinfrette, E. S. (2018). Examining the relationship between higher educational attainment, trauma symptoms, and internalizing behaviors in child sexual abuse survivors. Child Abuse and Neglect, 86, 375–383. https://doi.org/10.1016/j.chiabu.2017.10.007

Hay, C. (2001). Parenting, self-control, and delinquency: A test of self-control theory. Criminology, 39(3), 707–736. https://doi.org/10.1111/j.1475-9125.2001.tb00938.x

He, N., & Xiang, Y. (2021). How child maltreatment impacts internalized/externalized aggression among Chinese adolescents from perspectives of social comparison and the general aggression model. Child Abuse and Neglect, 117, 105024.

IBM Corp. (2021). IBM SPSS statistics for windows, version 28.0. Armonk, NY: IBM Corp.

Institute of Korea Democracy. (2016). Democratic citizenship education program for North Korean adolescent refugees. Annual Report, 2016, 1–84.

Jarvis, J. A., Corbett, A. W., Thorpe, J. D., & Dufur, M. J. (2020). Too young adults: Consequences for negative social outcomes. Criminal Justice and Behavior, 38(12), 1244–1264. https://doi.org/10.1177/0093854814523480

Lee, E. S., Lee, M., Jun, J. Y., & Park, S. (2021). Reciprocal prediction between impulsivity and problematic internet use among North Korean Refugee youths in South Korea by gender and adverse childhood experience. Psychiatry Investigation, 18(3), 225.

Lee, H. (2007). North Korean students in the South Korean school system. Journal of Human Studies, 12, 7–32.

Lee, Y., Lee, M., & Park, S. (2017). Mental health status of North Korean refugees in South Korea and risk and protective factors: A 10-year review of the literature. European Journal of Psychotraumatology, 8(2), 1–13.

Lee, Y. M., Shin, O. J., & Lim, M. H. (2012). The psychological problems of North Korean adolescent refugees living in South Korea. Psychiatry Investigation, 9(3), 217–222. https://doi.org/10.4306/pi.2012.9.3.217

Li, B. J., Leung, I. T. Y., & Li, Z. (2021). The pathways from self-control at school to performance at work among novice kindergarten teachers: The mediation of work engagement and work stress. Children and Youth Services Review, 121, 105881. https://doi.org/10.1016/j.childyouth.2020.105881

Li, J. B., Willems, Y. E., Stok, F. M., Deković, M., Bartels, M., & Finkenauer, C. (2019). Parenting and self-control across early to late adolescence: A three-level meta-analysis. Perspectives on Psychological Science, 14(6), 967–1005.

Lim, J. S. (1993). Relationships between dependence and school adjustment among school children. Korea National University of Education.

Malatras, J. W., & Israel, A. C. (2013). The influence of family stability on self-control and adjustment. Journal of Clinical Psychology, 69(7), 661–670.

Manly, J. T., Kim, J. E., Rogochy, F. A., & Cicchetti, D. (2001). Dimensions of child maltreatment and children’s adjustment: Contributions of developmental timing and subtype. Development and Psychopathology, 13(4), 759–782.

Min, H. Y. (2016). The mediating effect of covert narcissism on the relationship between self-control and academic stress in school aged children. Korean Journal of Human Ecology, 25(4), 399–408. https://doi.org/10.5934/kjhe.2016.25.4.399

Min, H. Y., & Yoo, A. J. (1998). Development of a daily hassles scale for school age children. Korean Journal of Child Studies, 19(2), 77–96.

Ministry of Unification (2022). Policy for North Korean refugees. Retrieved from https://www.unikorea.go.kr/unikorea/business/NKDdefectorPolicy/status/lately/

Myeong, H., Lee, A., Park, E. A., Gong, Y. E., Kim, M., & Jo, H. (2020). Psychosocial-adjustment needs of North Korean refugee youth from the perspectives of alternative-school members. Journal of Refugee Studies, 34(2), 2200–2219. https://doi.org/10.1093/jrs/feaa008

North Korean Refugees Foundation (2020). Settlement survey of North Korean refugee children in South Korea. Retrieved from https://www.hub4u.or.kr/webmdl/sub4uStudent/MenuHtmlDetail.do?cmkey=11146

Park, C. L., Wright, B. R., Pais, J., & Ray, D. M. (2016). Daily stress and self-control. Journal of Social and Clinical Psychology, 35(9), 738–753. https://doi.org/10.1521/jscp.2016.35.9.738
Park, E. H. (2020). Keyword network analysis of North Korean youth adaptation papers. *Korean Journal of Social Welfare Education, 50*, 53–73. https://doi.org/10.31409/KJSWE.2020.50.53

Park, S. H. (2006). A study on the relationship between academic stress and children’s helpfulness. Pusan National University.

Park, S., Lee, M., & Jeon, J. Y. (2017). Factors affecting depressive symptoms among North Korean adolescent refugees residing in South Korea. *International Journal of Environmental Research and Public Health*, 14(912), 1–11. https://doi.org/10.3390/ijerph14080912

Ryu, W., & Yang, H. (2021). A qualitative case study on influencing factors of parents’ child abuse of North Korean refugees in South Korea. *Healthcare*, 9(49), 1–10. https://doi.org/10.3390/healt9010049

Sass, D. A., & Schmitt, T. A. (2013). Testing measurement and structural invariance: Implications for practice. In T. Teo (Ed.), *Handbook of quantitative methods for educational research* (pp. 315–345). Sense Publishers.

Schachner, M. K., Van de Vijver, F. J., & Noack, P. (2014). Family-related antecedents of early adolescent immigrants’ psychological and sociocultural school adjustment in Germany. *Journal of Cross-Cultural Psychology, 45*(10), 1606–1625.

Stevens, G. W., & Vollebergh, W. A. (2008). Mental health in migrant children. *Journal of Child Psychology and Psychiatry, 49*(3), 276–294. https://doi.org/10.1111/j.1469-7610.2007.01848.x

Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the parent-child conflict tactics scales: Development and psychometric data for a national sample of American parents. *Child Abuse and Neglect, 22*(4), 249–270. https://doi.org/10.1016/s0145-2134(97)00174-9

Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality, 72*(2), 271–324. https://doi.org/10.1111/j.0022-3506.2004.00263.x

Timshel, I., Montgomery, E., & Dalgaard, N. T. (2017). A systematic review of risk and protective factors associated with family related violence in refugee families. *Child Abuse and Neglect, 70*, 315–330. https://doi.org/10.1016/j.chiabu.2017.06.023

Tyler, K. A., Johnson, K. A., & Brownridge, D. A. (2008). A longitudinal study of the effects of child maltreatment on later outcomes among high-risk adolescents. *Journal of Youth and Adolescence, 37*(5), 506–521. https://doi.org/10.1007/s10964-007-9250-y

Ulferts, G., & Howard, T. L. (2017). North Korean human rights abuses and their consequences. *North Korean Review*, 13(2), 84–92.

Willems, Y. E., Boesen, N., Li, J., Finkenauer, C., & Bartels, M. (2019). The heritability of self-control: A meta-analysis. *Neuroscience & Biobehavioral Reviews, 100*, 324–334.

Yoon, I. J. (2019). A social integration model of North Korean migrants and their current state of integration. *Culture and Politics*, 6(1), 61–92.

Yu, J., & Kim, W. (2021). North Korean defector parent’s depression, directly and indirectly, affected all paths, including children’s depression, social relationships, and school adjustment. *Korean Journal of Social Welfare, 73*(4), 173–205.

Zhou, M. (1997). Growing up American: The challenge confronting immigrant children and children of immigrants. *Annual Review of Sociology, 23*(1), 63–95. https://doi.org/10.1146/annurev.soc.23.1.63

**Publisher’s Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.

@Springer