Research Article

Shinyoung Lee, Seulki Kim, Young-Chul Kim*, and Doojin Ryu*

Social Support and Suicidal Ideation among Children of Cross-Border Married Couples

Abstract: Marriage-related migration by women from less developed to high-income nations has been increasing rapidly in Asia, and the proportion of children born to these foreign-born women is increasing as well. Using a unique dataset based on the Korean Youth Risk Behavior Survey, we investigate the relationship between social support and suicidal ideation among children with foreign-born mothers. We find that both maternal advice and teachers' advice are significantly associated with a reduction in suicidal ideation among these children, with a further decrease of 3.2 and 4.9% points, respectively, compared to children with native Korean mothers. These findings imply that more government attention should be focused on educating and training foreign-born mothers and schoolteachers to improve their capacity to advise these children.

Keywords: cross-border marriage, marriage migration, social support, suicidal ideation

JEL codes: I19, J12, J13, J15

1 Introduction

Many high-income Asian nations, such as Taiwan, Singapore, Hong Kong, and Japan, have experienced a rise in cross-border marriages, wherein female migrants from less-developed Asian nations settle and marry locally-born partners. The intensive economic growth in the late 20th century transformed these once-destitute nations into some of today's richest nations. However, this growth was accompanied by decreases in marriage and fertility rates, creating an urgency to recover these rates through immigration. Urbanization and the migration of domestic women from rural areas to cities have left rural men with a low supply of potential brides. In addition, the drastic improvement in women's labor market opportunities is not cohesive with the cultural norms related to household sharing and marriage, leading to a low net surplus of these educated women willing to marry (Kawaguchi & Lee, 2017). The rise in economic and educational alternatives to marriage among women has continued to contribute to nationwide shortages of brides and a greater demand for foreign brides in high-income Asian nations. The Korean and Japanese governments have encouraged the activity of marriage brokers who facilitate cross-border marriages (Jones & Shen, 2008). In Singapore, one of every three marriages is an international marriage, and in Taiwan and South Korea, the cross-border marriage rate remains at 10%.[1]

In Taiwan, the proportion of schoolchildren in elementary and junior high schools whose parents are cross-border married couples has risen to 10.5% (Li, 2020). In Korea, the number of these schoolchildren has increased 3.4 times since 2012, amounting to 2.2% of all schoolchildren according to data from the Korean Ministry of Education collected in 2021. The presence of these children is increasing, whereas fewer children of native-born parents are attending school because of these countries' low national fertility rates.[2] Despite the East Asian governments' aims of recovering from population decline through cross-border married couples and their children, this specific group of children may potentially face very different challenges than average native children (Yeh, 2010). According to a biennial survey conducted by the

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* Corresponding author: Young-Chul Kim, Department of Economics, Sogang University, Seoul, Korea, e-mail: yckim@sogang.ac.kr
* Corresponding author: Doojin Ryu, Department of Economics, Sungkyunkwan University, Seoul, Korea, e-mail: doojin.ryu@gmail.com
Shinyoung Lee: Cornerstone Research, Chicago, IL, United States of America, e-mail: shinyoung_lee@alumni.brown.edu
Seulki Kim: Graduate School of Education, University at Buffalo (SUNY), Buffalo, NY, United States of America; Department of Economics, Sogang University, Seoul, Korea, e-mail: seulkiki@buffalo.edu
ORCID: Shinyoung Lee 0000-0002-9794-6817; Seulki Kim 0000-0001-5527-0241; Young-Chul Kim 0000-0001-9461-9514; Doojin Ryu 0000-0002-0059-4887

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1 The statistics are obtained from the Ministry of Social and Family Development (Singapore), the Ministry of the Interior (Taiwan), and Statistics Korea.
2 The World Bank statistics at https://data.worldbank.org/indicator/SP.DYN.TFRT.IN for more details.

Korean Ministry of Gender Equality and Family in 2018, 67.6% of Korean high-school students are enrolled in post-secondary education, whereas only 49.6% of students from cross-border marriages or with foreign parents are enrolled in post-secondary education. In addition, the dropout rates of middle- and high-school students from cross-border marriages or with foreign parents are almost twice as high as the national average rates.[3] Studies in Taiwan suggest that toddler-age children of cross-border married couples tend to have lower levels of language and cognitive development (Chen et al., 2012; Wu et al., 2012) and school-aged children display initial poorer educational performances (Jhang & Lee, 2018). Moreover, these children often experience discrimination and bullying by their peers and teachers in school, especially when one of their parents is from a Southeast Asian nation (Yeh, 2010). Many educational and emotional indicators affirm that children of immigrants face greater challenges to assimilation and, thus, impediments to achieving higher socioeconomic statuses (Djajić, 2003; Lüdemann & Schwerdt, 2013). Along similar lines, psychological stress, mental health conditions, and the increasingly concerning issue of youth suicidal behaviors may be in worse condition for this group of youth; however, few studies report findings on this crucial aspect of immigrant youth, especially in ways that are informative for policymaking.

Studies conducted in Western nations extensively consider the mental health and suicidal behaviors of immigrant youth who are second generation or beyond, and they compare the mental health symptoms of youth with immigrant parents to those of youth with domestic-born parents. In the United States and Canada, for example, some studies identify no statistically significant differences between immigrant and non-immigrant groups (Degboe et al., 2012), whereas others find that youth with Latin- and Asian-born parents have increased risks of mental disorders (Belhadj Kouider et al., 2015; Mikolajczyk et al., 2007). Even in Sweden and Finland, whose large immigrant populations are relatively new, the volume of these types of studies is burgeoning. Some of these studies focus specifically on youth and young adults from cross-border marriages and indicate that the mental health of children with one native parent and one foreign-born parent tends to be worse than that of children with two native parents (Ceri et al., 2017; Di Thiene et al., 2015; Loi et al., 2021). It is crucial to expand research on the mental health of children of cross-border couples in the context of marriage migration in Asia because it is vastly different from marriage migration in

Western contexts. A few notable concerns relevant to marriage migration in Asia are their vulnerability to domestic violence (Choi et al., 2012; Kim, 2017a), and their mental stress from difficulty in acclimating to the new society without enough preparation (Li & Yang, 2020).

Furthermore, suicidal behaviors among youth and the mental health conditions that are likely to lead to those behaviors have become major concerns in many advanced societies, including Japan and Korea, as suicide has become the leading cause of death among teenagers and young adults (Park, 2021).[4] In developed Asian nations, where population declines and low fertility rates are grave concerns, deaths by suicide have widespread societal implications. Notably, suicidal behaviors, such as suicidal ideation and attempting suicide, are found to be more prevalent among children with foreign-born mothers, even after adjusting for socioeconomic factors (Bahk et al., 2017). This prevalence has a lasting impact because suicidal ideation and suicide attempts among teenagers and young adults are important predictors of socioeconomic outcomes and mental health conditions during adulthood (Goldman-Mellor et al., 2014; Reinherz et al., 2006).

In response to these issues, we focus on the children of foreign-born mothers and domestic-born fathers in South Korea as a specific type of cross-border marriage.[5] We seek to provide evidence to support potential strategies to prevent mental health issues from turning into suicidal behaviors. According to previous research, the availability of social support is a known preventative and mediating factor in suicidal ideation (Cho & Haslam, 2010; Fredrick et al., 2018; King & Merchant, 2008; Mackin et al., 2017; Miller et al., 2015). Prior studies define social support as access to care from social networks, such as friends and family, which often appears in the form of emotional and instrumental support (House et al., 1988). These studies often measure the availability of social support through responses to statements such as, "[T]here is someone I can talk to about important decisions in my life" and

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[3] These statistics are provided by the Korean Educational Statistics Service and the Central Multicultural Education Center.

[4] For more statistics, refer to the *Japan Today* article titled "Suicide Leading Cause of Death among Young People in Japan, Statistics Show" (2020) and *The Economist* article titled "Young Americans Increasingly End Their Own Lives" (2022).

[5] According to marriage statistics for Korea from 2014 to 2022 provided by Korean Statistical Information Services, 68–75% of cross-border marriages are between foreign-born women and native-born men. When we limit the comparison groups to students with native-born fathers and mothers from various immigrant backgrounds, we can account for the omitted variable bias that comes from fathers from different immigrant backgrounds, and we can focus on the direct association between mothers' immigrant backgrounds and our interest variables.

asking how much they can open up to others around them (Kleiman & Liu, 2013; Scardera et al., 2020). When stressful life events or discontinuities, such as moving, parental unemployment, or parental divorce, occur, social support buffers the effects of these events on adolescents' mental health (De Wilde et al., 1992; Kaltiala-Heino et al., 2001; Rubin et al., 1992). Immigrant mothers in cross-border marriages are known to lack such social support (Kim, 2017b), but little is known about social support for their children, especially in relation to their mental health and suicidal risks.

We utilize the concept of social support to identify effective methods to reduce suicidal behavior among adolescents with foreign-born mothers compared with adolescents with native-born mothers. To measure social support, we use data on whether adolescents have access to the advice of supportive adults (i.e., parents and teachers), siblings, friends, and other individuals, referred to as "advising figures." We analyze a unique dataset, the Korea Youth Risk Behavior Survey (YRBS), which is a large nationwide cross-sectional survey of the health-risk behaviors of middle and high school students. We first identify students with foreign-born and native-born mothers based on demographic and background information, and we identify their fathers' countries of origin as well. Using this categorization, we can compare students with foreign-born mothers and native-born fathers to students with native-born mothers and fathers. The dependent variable reflects whether the student experienced suicidal ideation in the past year, and we use a dummy variable for having a foreign-born mother, dummy variables for advice received from advising figures, and their interaction terms as independent variables. The interaction terms enable us to examine how the relationship between receiving advice and experiencing suicidal ideation varies across students with foreign-born mothers and those with native-born mothers. In addition, we assess the relationship with two other dependent variables relevant to mental health conditions, excessive stress and despair, with the same specifications. The results provide valuable insights into how government interventions can improve the mental health of children with immigrant mothers.

We find that mothers' advice is associated with a 3.2% point further decrease in suicidal ideation among students with foreign-born mothers compared to those with native-born mothers. Furthermore, advice from teachers is associated with a 4.9% point further decrease in suicidal ideation among students with foreign-born mothers compared to those with native-born mothers. Considering that the average rate of suicidal ideation is around 12%, a reduction in suicidal ideation of 3.2–4.9 points among students with foreign-born mothers means that at least a quarter of students who would otherwise have experienced suicidal

ideation do not experience it, and do not have to suffer from its consequences. The association levels of advice from other figures in students' lives, such as fathers, siblings, and friends, with suicidal ideation are similar in magnitude across both groups of students. Additionally, we do not find statistically significant differences in the associations of mothers' and teachers' advice with excessive stress and despair between the two student groups. These findings suggest that advice provided by mothers and teachers may be especially helpful when students with foreign-born mothers suffer from severe mental distress and have suicidal thoughts. Policy efforts to provide resources to foreign-born mothers and teachers to support these adolescents can help prevent mild mental distress from progressing to suicidal ideation and can reduce the potential gap in adult socioeconomic outcomes and mental health conditions.

Our analysis also indicates that policy efforts to encourage advising by foreign-born mothers should be directed preferentially toward mothers of female students. This is highlighted by the finding that advice from foreign-born mothers is associated with about 3% points more reduction in suicidal ideation among female students compared to the full sample. Additionally, when we limit our analysis to students from less affluent family backgrounds, advice from teachers is correlated with approximately 2% points lower suicidal ideation than it is for the full sample. This result suggests that more marginalized students with foreign-born mothers, such as those in less affluent households, should have more access to care and counseling from their schoolteachers.

We expect the results of our study to guide policymakers in alleviating the gap between adolescents from cross-border families and native-born adolescents. Despite the declines in population and fertility rates, developed Asian societies can rely on the growing generation of children from cross-border marriages to contribute to their host countries' societies. The results of our study not only broaden the research on mental health in the cross-border marriage context but also introduce social support and advice as potential solutions to the issue of suicidal behaviors among children from cross-border families.

The remainder of this article is organized as follows. Section 2 presents the relevant literature on suicidal behavior, mental health, and social support. Section 3 describes our sample data. Section 4 illustrates the empirical specifications and presents the main results, and Section 5 discusses the results of a heterogeneity analysis and includes a supplementary analysis utilizing a path analysis model. Finally, Section 6 presents the conclusions and policy implications of this study.

2 Literature on Suicidal Behavior, Mental Health Indicators, and Social Support

Suicidal behavior in youth can be described using three indicators: suicidal ideation, suicidal planning, and suicide attempts, and many studies use at least one of these indicators to measure suicidal behavior (Nock et al., 2008). Owing to the limited number of observations of suicidal planning and attempts in our database, this study focuses on suicidal ideation. Suicidal ideation, the thought of engaging in a suicidal action, can be interpreted in two ways, as it lies between psychological strain and lethal suicidal behavior.

The first explanation of suicidal ideation is that it is a stage that is reached during or after intensified depressive symptoms. Gijzen et al. (2021) suggest that suicidal ideation may be a symptom of depression or even a severe depressive condition. Several studies, including those of Borges et al. (2008) and Nock et al. (2009), state that mood disorders, such as major depression, have direct predictive power for suicidal ideation but not for planning or attempting suicide. In addition, mental stressors from a wide range of sources, including interpersonal, acculturative, and minority stressors, have been known to increase the chances of suicidal ideation through feelings of lack of belongingness and perceived burdensomeness to other people (Buitron et al., 2016; Haboush-Deloye et al., 2015).

Second, suicidal ideation is a significant contributor to future suicide attempts. Not everyone who experiences suicidal ideation commits suicide. Previous studies report that transitions from suicidal ideation to planning or attempting suicide are associated with reductions in the fear of pain, the fear of death, and impulsivity, all of which increase one's capability to attempt suicide (Javdani et al., 2011; Klonsky et al., 2017). However, suicidal ideation in adolescence may increase the chance of attempting suicide in adulthood. Studies show that the frequency of thoughts of suicide is strongly associated with future suicide attempts (Miranda et al., 2014).

In this study, we highlight the role of social support in buffering the progression of stress and depression to suicidal ideation. Fredrick et al. (2018) find that parental and classmate support is effective in buffering depression and suicidal ideation for both sexes, and Mackin et al. (2017) underscore the importance of parental support in protecting adolescent girls from developing suicidal symptoms from external stressors. Social support has also been proven to be more effective among vulnerable groups and those with more severe depressive symptoms (Scardera et al. 2020). Especially for bullied youth and immigrant youth

experiencing acculturative stress, this social support protects against developing thoughts of suicide (Baiden et al., 2019; Hovey, 1999).

3 Data

For our analysis, we utilize Korea's YRBS, a large nationwide cross-sectional survey of the health-risk behaviors of middle and high school students conducted annually by the Korean Centers for Disease Control and Prevention in cooperation with the Ministry of Education. Since the first round of surveys in 2005, the YRBS has gathered information annually from approximately 70,000 students from 400 middle schools and 400 high schools. The YRBS uses stratified sampling and proportional allocation data collection methods to obtain a fair representation of the entire nation. The survey uses a three-stage cluster sampling design that considers i) county size; ii) geographic accessibility, the number of schools, and county population; and iii) random sampling of homerooms for each grade. Students participate via anonymous online surveys that they are required to complete in their school computer labs.

Using this dataset is important because the YRBS includes information about the countries of origin of the mothers and fathers of the surveyed students. The YRBS is the only student or adolescent dataset in South Korea that annually investigates children from both native and immigrant families. For this study, we narrowed the sample to students with native-born fathers and selected observations for the period from 2014 to 2017, during which the survey collected information on students' access to social support, that is, individuals they could talk to in times of difficulty. Thus, the final refined sample used in our analysis comprises 236,849 observations. The data on parents' immigrant backgrounds come from the question, "Was your mother/father born in Korea?" and the available answer choices are "Yes" and "No." In our sample, 23,604 students have two native-born parents (99.05%), and 2,245 students have a foreign-born mother and a Korean father (0.95%).

Table 1 presents the summary statistics of our sample. We look at summary statistics for the full sample, the sample of students with native-born mothers, and the sample of students with foreign-born mothers. The dataset provides a few mental health- and suicide-related variables, including excessive stress, despair, suicidal ideation, suicide planning, and suicide attempts. The suicidal ideation, suicide planning, and suicide attempt variables indicate whether a student has experienced suicidal ideation or thoughts, planned to commit suicide, or attempted

suicide in the past 12 months. However, as Table 1 shows, only 4% of students or fewer responded that they had planned or attempted suicide, and fewer than 100 students with foreign-born mothers responded positively to both variables. Thus, we limit our analysis to three dependent variables: excessive stress, despair, and suicidal ideation.

Excessive stress equals one for students who indicate that they had "a lot" or an "extreme amount" of stress and zero for students who respond that they had "none," "little," or a "moderate amount" of stress. Despair is set equal to one when the student responds "yes" to the question, "In the past 12 months, have you ever felt so sad or hopeless that you couldn't participate in daily life activities for the entire two weeks?" and zero otherwise. Note we label this variable as "despair" instead of "depression," which usually implies a clinical diagnosis of depressive symptoms. Clearly, a yes-or-no question about experiencing despair cannot lead to a clinical diagnosis of depression. The final dependent variable, suicidal ideation, equals one for students who respond "yes" to the question "Have you ever seriously thought about suicide over the last 12 months?" and zero otherwise. Suicidal ideation has a high probability of preceding planning or attempting suicide, as mentioned in the literature section. Each of these dependent variables is a dummy variable for the relevant outcome; that is, they equal one if the individual agrees with the given statement and zero otherwise.

The control variables are sex, height, weight, self-perceived health status, frequency of intense exercise, average

Table 1: Sample means

	All	Native mother	Foreign-born mother
Key variables			
Excessive stress	0.363 (0.48)	0.363 (0.48)	0.380 (0.49)
Despair	0.246 (0.43)	0.246 (0.43)	0.252 (0.43)
Suicidal ideation	0.118 (0.32)	0.118 (0.32)	0.123 (0.33)
Suicide planning	0.038 (0.19)	0.038 (0.19)	0.044 (0.21)
Suicide attempt	0.024 (0.15)	0.023 (0.15)	0.033 (0.18)
Student characteristics			
Male	0.510 (0.50)	0.510 (0.50)	0.480 (0.50)
Middle school	0.502 (0.50)	0.501 (0.50)	0.607 (0.49)
High school	0.498 (0.50)	0.499 (0.50)	0.393 (0.49)
Height (cm)	164.96 (8.44)	164.99 (8.43)	162.16 (8.27)
Weight (kg)	57.33 (11.67)	57.35 (11.67)	54.95 (11.72)
Self-perceived health status	0.72 (0.45)	0.72 (0.45)	0.69 (0.46)
Frequency of intense exercise in the past week	2.11 (1.72)	2.11 (1.72)	2.03 (1.70)
Average hours spent on non-academic internet use (Weekday)	56.00 (95.8)	55.93 (95.7)	63.00 (108.6)
Average hours spent on non-academic internet use (Weekend)	104.41 (143.3)	104.33 (143.1)	113.01 (162.8)
Characteristics of parents			
Father's education (years)	13.79 (1.49)	13.80 (1.48)	12.67 (1.91)
Mother's education (years)	13.58 (1.50)	13.58 (1.50)	13.45 (1.55)
Household characteristics			
Household income: very low	0.024 (0.15)	0.024 (0.15)	0.057 (0.23)
Household income: low	0.121 (0.33)	0.121 (0.33)	0.231 (0.42)
Household income: middle	0.477 (0.50)	0.477 (0.50)	0.503 (0.50)
Household income: high	0.283 (0.45)	0.284 (0.45)	0.166 (0.37)
Household income: very high	0.094 (0.29)	0.094 (0.29)	0.043 (0.20)
Has at least one sibling	0.890 (0.32)	0.888 (0.32)	0.844 (0.36)
Not living with mother	0.042 (0.20)	0.041 (0.20)	0.082 (0.27)
Not living with father	0.090 (0.29)	0.090 (0.29)	0.096 (0.29)
Not living with both parents	0.014 (0.12)	0.014 (0.12)	0.021 (0.14)
Residential status: with family	0.959 (0.20)	0.960 (0.20)	0.949 (0.22)
Residential status: with relatives	0.006 (0.07)	0.006 (0.07)	0.007 (0.08)
Residential status: alone	0.033 (0.18)	0.033 (0.18)	0.040 (0.20)
Residential status: in orphanage	0.002 (0.04)	0.002 (0.04)	0.005 (0.07)
Observations	236,849	234,604	2,245

Notes: This table comprises summary statistics of the YRBS dataset. We consider the full sample, the sample of students with Korean mothers, and the sample of students with foreign-born mothers. We limit the sample to students with Korean fathers. Standard deviations are presented in parentheses.

Table 2: Distribution of students' access to social support

Advising figure	Total sample		Native-born mother		Foreign-born mother	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Father	11,366	4.80	11,223	4.78	143	6.37
Mother	66,365	28.02	65,863	28.07	502	22.36
Sibling	13,587	5.74	13,437	5.73	150	6.68
Friend	85,233	35.99	84,518	36.03	715	31.85
Teacher	4,147	1.75	4,082	1.74	65	2.90
Others	6,135	2.59	6,062	2.58	73	3.25
Nobody	50,016	21.12	49,419	21.06	597	26.59
Total	236,849	100.00	234,604	100.00	2,245	100.00

Notes: This table displays the distribution of advising figures in the full sample, the sample of students with Korean mothers, and the sample of students with foreign-born mothers. The surveyed question regarding advising figures is "Who do you talk to when you are concerned about something or feeling sad?"

hours spent using the Internet on weekdays and weekends, parents' education (i.e., middle-school graduate, high-school graduate, or college or higher), household economic status (i.e., very low, low, middle, high, or very high), the presence of siblings, a dummy variable for living without one's biological father, a dummy variable for living without one's biological mother, a dummy variable for living without both parents, and residential status (i.e., with family, with relatives, alone, or in an orphanage). We incorporate these control variables, which contain information on each student's and their family's background, to provide a more precise depiction of the association between our outcome variable – mental health outcomes – and the treatment interaction term involving the mother's immigrant status and forms of advising.

We observe some differences between students with native and foreign-born mothers in terms of their parents' education levels and household economic statuses.[6] Children with foreign-born mothers have worse health factors (i.e., height, weight, and self-perceived health), their fathers' and mothers' education levels are lower, and they are more likely to have lower household incomes and live apart from their mothers.

In our dataset, we use responses to the survey question "Who do you usually talk to when you are concerned about

something or are sad?" to represent students' access to social support (i.e., advice). The possible responses are father, mother, sibling, friend, teacher, others, or nobody. Each student can choose only one option. In our analysis, we refer to each of these responses as the "advising figure," as shown in Table 2. More students with foreign-born mothers seek out their fathers' advice rather than their mothers' advice compared to students with native-born mothers. Students with foreign-born mothers tend to talk to their teachers more than to their friends, relative to students with native-born mothers. Finally, more students with foreign-born mothers report that they do not discuss their worries or sadness with others.

Consent: We obtained consent for this academic research from the Korea Disease Control and Prevention Agency, which produces the annual survey data for Korea's Youth Risk Behavior Survey.

4 Empirical Method and Results

In our primary analysis, we utilize a probit model, a commonly employed method for analyzing binary outcome variables, to investigate the varying relationships between social support and the occurrence of excessive stress, despair, and suicidal ideation among students with foreign-born mothers compared to those with native-born mothers. In equation (1), $MH_{i,g,t}$ is a binary dependent variable indicating whether individual i in grade g at time t experienced excessive stress, despair, or suicidal ideation in the past year. $IM_{i,g,t}$ is a dummy variable denoting whether the student has a foreign-born mother, where one means having a foreign-born mother, and zero means having a native-born mother.

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6 The YRBS dataset does not record information about parents' education for students who do not live with their biological parents. To mitigate the potential loss of statistical power and inefficiency caused by these missing data, we utilize a conditional replacement approach to approximate the missing values. Following Lavy and Schlosser (2011), we replace these missing values with sample mean values for groups stratified by year, grade, and district. Additionally, data on heights and weights are missing for approximately 3% of the sample. We replace these missing values with sample mean values calculated based on year, grade, and sex. We also incorporate indicators for missing values of these covariates as control variables.

Table 3: Association of advice on excessive stress, despair, and suicidal ideation and social support

	Excessive stress		Despair		Suicidal ideation	
	1	2	3	4	5	6
Immigrant mother (IM)	−0.004	−0.012	0.015	0.014	0.007	0.006
	(0.019)	(0.020)	(0.018)	(0.018)	(0.012)	(0.012)
Father's advice	−0.111***	−0.107***	−0.047***	−0.049***	−0.048***	−0.048***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.002)	(0.002)
IM × Father's advice	0.069	0.078	0.001	0.006	−0.034	−0.030
	(0.050)	(0.051)	(0.040)	(0.041)	(0.026)	(0.027)
Mother's advice	−0.147***	−0.140***	−0.076***	−0.075***	−0.072***	−0.070***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
IM × Mother's advice	0.026	0.021	−0.021	−0.026	**−0.029****	**−0.032****
	(0.030)	(0.030)	(0.024)	(0.023)	**(0.015)**	**(0.014)**
Sibling's advice	−0.113***	−0.108***	−0.043***	−0.040***	−0.049***	−0.047***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.002)	(0.002)
IM × Sibling's advice	0.029	0.025	−0.046	−0.051	−0.010	−0.014
	(0.046)	(0.047)	(0.034)	(0.034)	(0.026)	(0.026)
Friend's advice	−0.065***	−0.060***	0.004*	0.006***	−0.033***	−0.032***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
IM × Friend's advice	−0.008	−0.011	−0.015	−0.018	−0.016	−0.018
	(0.026)	(0.026)	(0.021)	(0.021)	(0.014)	(0.014)
Teacher's advice	−0.005	−0.005	0.061***	0.059***	0.012**	0.011**
	(0.008)	(0.008)	(0.008)	(0.008)	(0.005)	(0.005)
IM × Teacher's advice	−0.034	−0.042	−0.036	−0.042	**−0.046***	**−0.049****
	(0.067)	(0.067)	(0.050)	(0.049)	**(0.027)**	**(0.025)**
Others' advice	−0.035***	−0.036***	0.043***	0.042***	−0.000	−0.001
	(0.007)	(0.007)	(0.006)	(0.006)	(0.004)	(0.004)
IM × Others' advice	0.009	0.003	0.016	0.011	0.027	0.025
	(0.059)	(0.060)	(0.048)	(0.047)	(0.036)	(0.035)
Time and district controls	✓	✓	✓	✓	✓	✓
Student characteristics	✓	✓	✓	✓	✓	✓
Parent background controls		✓		✓		✓
Household characteristic controls		✓		✓		✓
Observations	236,849	236,849	236,849	236,849	236,849	236,849

Notes: The dependent variables are excessive stress, despair, and suicidal ideation among adolescents. We report marginal effects for the average values of the covariates using a probit model. The standard errors, given in parentheses, are clustered at the region–year level. The estimations in Columns 1, 3, and 5 include only time and district controls and student characteristics, whereas the estimations in Columns 2, 4, and 6 include more control variables. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

$$
\begin{aligned}
\mathrm{MH}_{i,g,t} = {} & \beta_0 + \beta_1 \mathrm{IM}_{i,g,t} + \sum_{k=1}^{6} \theta_k \mathrm{ADV}_{k,i,g,t} \\
& + \sum_{k=1}^{6} \lambda_k \times \mathrm{ADV}_{k,i,g,t} \times \mathrm{IM}_{i,g,t} + X'_{i,g,t} + \delta_g + \pi_s \\
& + a_t + \tau_g T_{g,t} + \varepsilon_{i,g,t},
\end{aligned}
\tag{1}
$$

where $\mathrm{ADV}_{k,i,g,t}$ is a dummy variable for access to social support (i.e., advice) and k takes values of one through six to represent the different potential social support providers. In other words, $\mathrm{ADV}_{1,i,g,t}$, $\mathrm{ADV}_{2,i,g,t}$, $\mathrm{ADV}_{3,i,g,t}$, $\mathrm{ADV}_{4,i,g,t}$, $\mathrm{ADV}_{5,i,g,t}$, and $\mathrm{ADV}_{6,i,g,t}$ represent receiving social support from a father, mother, sibling, friend, teacher, or other figure, respectively. We use the interaction term $\mathrm{ADV}_{k,i,g,t} \times \mathrm{IM}_{i,g,t}$ to signify the variations in the associations between advice from each potential social support provider and a mental health outcome

$\mathrm{MH}_{i,g,t}$ among students with foreign-born mothers and those with native-born mothers. $X'_{i,g,t}$ is a vector of student, parent, and household covariates; δ_g is the effect of the student's grade; π_s is the school-area fixed effect; and a_t represents time effects. $\tau_g T_{g,t}$ represents grade-specific linear time trends, which accounts for time-varying unobserved factors among different grade groups, and $\varepsilon_{i,g,t}$ is the error term. We cluster the standard errors at the region–year level.

Table 3 captures the associations between advice from each potential social support provider and three mental health indicators, as well as the disparities in the strength of these associations between students with native-born and foreign-born mothers. In our analysis, MH is a dummy variable; hence, we present marginal effects in Table 3. Given our six different advising variables (ADV_k), that is,

the advice provided by a father, a mother, siblings, friends, teachers, and others, we have six terms representing the interactions between each of the advising variables (ADV_k) and the dummy variable for having a foreign-born mother (IM). These interaction terms are represented as $IM \times ADV_k$. More precisely, the coefficients of the interaction terms in Table 3 represent the differences in the estimated associations of the given form of advice with the mental health outcomes between students with native-born and foreign-born mothers. When this coefficient is statistically significant, we observe a noteworthy difference in the association of advice with mental health outcomes across the two student groups. When the interaction term's coefficient is not statistically significant, but the coefficient of the variable representing the given type of advice (ADV_k) is significant, that type of advice has similar association levels with mental health outcomes across both groups.[7]

In Table 3, we show the results for the three dependent variables (i.e., excessive stress, despair, and suicidal ideation). The estimations in the first columns for each dependent variable (i.e., Columns 1, 3, and 5) include student characteristics, such as sex, weight, height, self-perceived health, internet usage, and physical activity, as control variables. They also include grade, time, and school area controls. The estimations in the second columns for each dependent variable (i.e., Columns 2, 4, and 6) also include parental (i.e., father's and mother's educational background) and household characteristics (i.e., household income level; the existence of one or more siblings; living with a mother, father, or neither; and residential status) in addition to the covariates in the first columns.

For all specifications and dependent variables, we find that the differences in the estimated associations of mental health outcomes with advice from fathers, siblings, friends, and others across the two student groups are not statistically significant. However, the estimated association of mothers' advice with suicidal ideation for students with foreign-born mothers appears to be significantly more negative than that for adolescents with native-born mothers (see Columns 5–6). For adolescents who mainly talk to their mothers about their concerns and have immigrant mothers, the reduction in suicidal ideation is approximately 3% points more than for adolescents who primarily discuss their concerns with their mothers but have native-born mothers. We obtain comparable results for adolescents with immigrant mothers who receive regular counseling from their teachers; teachers' advice is associated with more reduction in suicidal ideation by approximately 5% points among adolescents with foreign-born mothers than among those with native-born mothers.

Conversely, we do not find any significantly stronger association of mothers' or teachers' advice with excessive stress or despair among students with foreign-born mothers, as the coefficients of the interaction terms, $IM \times$ *Mother's Advice* and $IM \times$ *Teacher's Advice*, are not statistically significant (see Columns 1–4). These results suggest that maternal and teacher advising may be associated with more mitigation of suicidal ideation, a concerning symptom of mental health conditions and suicidal risk, among students with foreign-born mothers than among those with native-born mothers. However, students with foreign-born mothers may not benefit more from these types of social support than students with native-born mothers do when it comes to reducing excessive stress or despair.

The above results for all three dependent variables suggest that support from mothers and teachers may be an important factor associated with lowered severe mental health conditions, such as suicidal ideation, for more vulnerable students, such as children of cross-border marriages. A few factors lead us to this conclusion. First, excessive stress is common among adolescents attending public or private schools in Korea. The intense competition to enter one of a few renowned universities perceived as the only opportunity to rise in the socioeconomic ranks places considerable academic pressure on young students. Stress levels are high on average owing to environmental factors that are common among both student groups. We do not expect social support to play different roles in this context depending on the immigrant background of a student's mother. Second, despair is not a good representation of any severe mental health condition, including depression, which is the most relevant mental disorder to this variable. Depressive symptoms are measured using responses to at least nine questions (Javdani et al., 2011; Polanco-Roman & Miranda, 2013). A yes-or-no question asking whether the student has felt despair for two consecutive weeks suggests a definitive problem with feelings of unhappiness but may encompass students with only temporary sadness or hopelessness. The regression results demonstrate that the association between social support and reducing despair does not exhibit a significant difference between the two student groups, which supports the argument that social support may differ in effectiveness across the two groups only for more severe mental health conditions. In conclusion, the relationship between advice and suicidal ideation differs

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7 As part of the robustness check, we conducted the same analysis for the same specifications but included variables representing the interactions of having a foreign-born mother with physical activity, non-academic internet usage on weekdays, and non-academic internet usage on weekends. The significance and directions of the coefficients of the immigrant status (IM) and social support provider variables (ADV) and their interactions were unchanged in these adjusted specifications.

significantly for students with foreign- and native-born mothers only in the case of suicidal ideation.

One limitation of our study is that we use a repeated cross-sectional dataset, meaning that the influence of social support and outreach by suicidal students to specific people, or *vice versa*, are often combined. The positive association observed between teachers' advice and suicidal ideation reflects the latter impact (Columns 5 and 6 in Table 3). In particular, official suicide prevention programs are implemented at South Korean schools, which require a mental health screening called the Students' Emotional and Behavioral Screening Test (SEBT). Compulsory meetings and counseling sessions are scheduled if a student's screening conveys a risk of suicide.[8] Schoolteachers have access to screening test outcomes and often talk to those with suicidal outcomes (Kim et al., 2017), which may explain the significantly positive coefficient of teacher advice.

We still consider the coefficient of the interaction term IM × *Teacher's Advice* to be meaningfully informative. The coefficients in Columns 5–6 of Table 3 are significantly negative and demonstrate that despite the baseline positive association between teachers' advice and suicidal ideation due to the SEBT program, students with foreign-born mothers experience less suicidal ideation when they regularly speak to their schoolteachers. Furthermore, the sum of the coefficients of *Teacher's Advice* and the interaction term IM × *Teacher's Advice* is negative overall (−0.049 in Column 6 of Table 3), clearly indicating that teachers' advice and suicidal ideation have a negative association with children of cross-border marriages.

5 Robust Tests: Heterogeneity and Path Analyses

After confirming the significant results for suicidal ideation, we further examine how the relationship between adolescents' suicidal ideation and the social support provided by mothers and teachers may depend on students' characteristics. We group the dataset into panels, as shown in Tables 4 and 5. Table 4 classifies the dataset into male and female student panels, and Table 5 divides the dataset according to household income level.

In the suicide ideation panel (Columns 7–9) in Table 4, the estimated differential association of mothers' advice with suicidal ideation for female students with foreign-born mothers appears to be more pronounced than the same differential association for students of all sexes. The differential association is amplified to 6% for female students (Column 9), which is almost twice the estimate for the entire sample, that is, 3% (Column 7). Conversely, in Column 8 representing male students, the estimated differential association is close to zero, signifying that mothers' advice is associated with similar levels of reduction in suicidal ideation for male students with foreign-born mothers compared to those with native-born mothers. We observe similar trends in the relationship between teacher support and suicidal ideation among students with foreign-born mothers. Compared to the differential association level for the total sample (5%, as shown in Column 7), the differential association for female students with foreign-born mothers is approximately 2% points greater (7%, as shown in Column 9), whereas it is approximately 2% points less for male students with foreign-born mothers (3%, as shown in Column 8), although the coefficients of the interaction terms are not statistically significant in the male and female samples. The differences in association size by sex suggest the need to further examine and potentially propose policy interventions in strengthening relationships between female students and their foreign-born mothers or teachers.

In the suicide ideation panel (Columns 7–9) in Table 5, we estimate the association of advice with a reduction in mental health outcomes by household income level (i.e., less affluent households and affluent households). The coefficients of the interaction between mothers' advice and suicidal ideation show no significance for both less affluent and affluent households (Columns 8 and 9). However, the coefficient of the interaction between teachers' advice and suicidal ideation (7%) remains significant even after selecting only students from less affluent households (Column 8). This coefficient is approximately 2% points greater than the estimate for the full sample of 5% (Column 7). The findings confirm that teachers' advice may be a meaningful factor associated with lowered suicidal risk for more underprivileged and vulnerable students.

Tables 4 and 5 also report the results of heterogeneity analyses for the other two dependent variables, excessive stress (Columns 1–3) and despair (Columns 4–6). However,

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8 The SEBT has been conducted nationwide annually since 2013 for all first and fourth graders in elementary school, for all students in the first year of middle school (i.e., seventh graders), and for all students in the first year of high school (i.e., tenth graders). This screening test is mandatory unless certain legitimate exceptions, such as physical or cognitive limitations, prevent the student from taking the test. Students with greater mental health risks are monitored, administered additional follow-up tests, regularly counseled while they remain at the institution, and given professional medical resources. For more information, refer to the official website: https://www.smhrc.kr/business/emotiveTest2.

Table 4: Heterogeneity analysis by gender

	Excessive stress			Despair			Suicidal ideation		
	All 1	Male 2	Female 3	All 4	Male 5	Female 6	All 7	Male 8	Female 9
Immigrant mother (IM)	−0.01	−0.02	−0.02	0.01	−0.005	0.02	0.01	−0.004	0.01
	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)	(0.01)	(0.01)	(0.02)
Father's advice	−0.11***	−0.08***	−0.15***	−0.05***	−0.04***	−0.07***	−0.05***	−0.03***	−0.07***
	(0.004)	(0.01)	(0.01)	(0.004)	(0.004)	(0.009)	(0.002)	(0.003)	(0.01)
im × father's advice	0.08	0.04	0.19**	0.006	−0.01	0.05	−0.03	−0.03	−0.01
	(0.05)	(0.06)	(0.09)	(0.04)	(0.04)	(0.09)	(0.03)	(0.03)	(0.06)
Mother's advice	−0.14***	−0.10***	−0.20***	−0.08***	−0.05***	−0.13***	−0.07***	−0.05***	−0.11***
	(0.003)	(0.003)	(0.005)	(0.002)	(0.003)	(0.004)	(0.002)	(0.002)	(0.003)
IM × Mother's advice	0.02	0.03	0.02	−0.03	−0.02	−0.03	**−0.03****	−0.001	**−0.06*****
	(0.03)	(0.04)	(0.05)	(0.02)	(0.03)	(0.04)	**(0.01)**	(0.02)	**(0.02)**
Sibling's advice	−0.11***	−0.08***	−0.16***	−0.04***	−0.01**	−0.09***	−0.05***	−0.02***	−0.08***
	(0.004)	(0.006)	(0.01)	(0.004)	(0.01)	(0.01)	(0.002)	(0.003)	(0.003)
IM × Sibling's advice	0.03	0.09	−0.00	−0.05	−0.04	−0.06	−0.01	−0.04	0.001
	(0.05)	(0.08)	(0.06)	(0.03)	(0.06)	(0.05)	(0.03)	(0.03)	(0.04)
Friend's advice	−0.06***	−0.03***	−0.12***	0.006***	0.04***	−0.05***	−0.03***	−0.01***	−0.07***
	(0.003)	(0.003)	(0.01)	(0.003)	(0.004)	(0.004)	(0.002)	(0.002)	(0.003)
IM × Friend's advice	−0.01	0.03	−0.03	−0.02	0.02	−0.04	−0.02	−0.01	−0.02
	(0.03)	(0.04)	(0.04)	(0.02)	(0.03)	(0.03)	(0.01)	(0.02)	(0.02)
Teacher's advice	−0.01	0.01	−0.04**	0.06***	0.05***	0.07***	0.01**	0.01**	0.01
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
IM × Teacher's advice	−0.04	0.03	−0.17	−0.04	−0.02	−0.07	**−0.05****	−0.03	−0.07
	(0.07)	(0.08)	(0.11)	(0.05)	(0.06)	(0.09)	**(0.03)**	(0.03)	(0.05)
Others' advice	−0.04***	−0.02***	−0.08***	0.04***	0.04***	0.02*	−0.001	0.01	−0.02***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.004)	(0.01)	(0.01)
IM × Others' advice	0.003	0.06	−0.04	0.02	0.03	−0.004	0.03	−0.01	0.06
	(0.06)	(0.09)	(0.09)	(0.03)	(0.08)	(0.07)	(0.04)	(0.04)	(0.06)
Time and district controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Student characteristics	✓	✓	✓	✓	✓	✓	✓	✓	✓
Parent background controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Household characteristic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	236,849	120,779	116,070	236,849	120,779	116,070	236,849	120,779	116,070

Notes: The dependent variables are excessive stress, despair, and suicidal ideation among adolescents. We report the marginal effects for the average values of the covariates using a probit model. Standard errors are shown in parentheses and are clustered at the region-year level. For all samples, the results shown in Columns 1, 4, and 7 are identical to the main results shown in Columns 2, 4, and 6 of Table 3. Columns 2, 5, and 8 show the results for the sample of male students, and Columns 3, 6, and 9 show the results for the sample of female students. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

we observe no significant differential association between mothers' (or teachers') advice and these dependent variables among students from cross-border marriages, compared to those from native-born parents, even when the sample is stratified by sex or household income level.

For further robustness checks, we employ a path analysis approach for the outcome of suicidal ideation. The path analysis model is illustrated in Figure 1, with detailed estimates provided in Table 6. Path analyses were run using the program stata and the command *pathreg* (Gravseth et al., 2008). The utilized structural equation model permits the simultaneous and multiple relationships between independent variables and the dependent variable (Medsker et al., 1994; O'Brien, 2022). Specifically, we establish paths between all covariates and each type of social support, as well as the indicator of foreign mothers, to account for the various determinants of advising figures and immigrant status. We find a negative correlation between socioeconomic variables (father's education and household income level) and the presence of a foreign-born mother. For instance, results from Panel A of Table 6 demonstrate that the likelihood of having an immigrant mother increases as the father's educational attainment decreases, across different samples (full sample, by gender, and by household income level), and when

**Table 5:** Heterogeneity analysis by household income level

	Excessive stress			Despair			Suicidal ideation		
	All 1	Less affluent 2	Affluent 3	All 4	Less affluent 5	Affluent 6	All 7	Less affluent 8	Affluent 9
Immigrant mother (IM)	−0.01	−0.01	0.01	0.01	0.02	−0.01	0.01	0.01	−0.01
	(0.02)	(0.02)	(0.04)	(0.018)	(0.02)	(0.04)	(0.01)	(0.01)	(0.025)
Father's advice	−0.11***	−0.13***	−0.09***	−0.05***	−0.06***	−0.04***	−0.05***	−0.06***	−0.04***
	(0.004)	(0.01)	(0.01)	(0.004)	(0.01)	(0.01)	(0.002)	(0.003)	(0.003)
IM × Father's advice	0.08	0.08	0.06	0.006	0.01	0.009	−0.03	−0.02	−0.04
	(0.05)	(0.06)	(0.08)	(0.04)	(0.05)	(0.07)	(0.03)	(0.04)	(0.04)
Mother's advice	−0.14***	−0.15***	−0.14***	−0.08***	−0.09***	−0.07***	−0.07***	−0.08***	−0.07***
	(0.003)	(0.004)	(0.01)	(0.002)	(0.003)	(0.004)	(0.002)	(0.002)	(0.002)
IM × Mother's advice	0.02	0.03	0.01	−0.03	−0.03	0.001	**−0.03****	−0.03	−0.04
	(0.03)	(0.04)	(0.06)	(0.02)	(0.03)	(0.06)	**(0.01)**	(0.02)	(0.03)
Sibling's advice	−0.11***	−0.12***	−0.10***	−0.04***	−0.05***	−0.03***	−0.05***	−0.05***	−0.04***
	(0.004)	(0.005)	(0.01)	(0.004)	(0.01)	(0.01)	(0.002)	(0.003)	(0.003)
IM × Sibling's advice	0.03	−0.01	0.18	−0.05	−0.04	−0.10	−0.01	0.01	
	(0.05)	(0.05)	(0.11)	(0.03)	(0.04)	(0.07)	(0.03)	(0.03)	
Friend's advice	−0.06***	−0.07***	−0.06***	0.006***	−0.001	0.01	−0.03***	−0.04***	−0.03***
	(0.003)	(0.003)	(0.01)	(0.002)	(0.003)	(0.004)	(0.002)	(0.002)	(0.003)
IM × Friend's advice	−0.01	−0.01	−0.00	−0.02	−0.04*	0.09	−0.02	−0.02	−0.003
	(0.03)	(0.03)	(0.06)	(0.02)	(0.02)	(0.06)	(0.01)	(0.02)	(0.04)
Teacher's advice	−0.01	0.001	−0.01	0.06***	0.06***	0.05***	0.01**	0.02***	−0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
IM × Teacher's advice	−0.04	−0.03	−0.08	−0.04	−0.035	−0.06	**−0.05****	**−0.07****	0.01
	(0.07)	(0.08)	(0.13)	(0.05)	(0.06)	(0.10)	**(0.03)**	**(0.03)**	(0.08)
Others' advice	−0.04***	−0.03***	−0.04***	0.04***	0.04***	0.03***	−0.001	0.001	−0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.004)	(0.01)	(0.01)
IM × Others' advice	0.003	−0.04	0.26	0.02	0.02	−0.04	0.03	0.03	−0.02
	(0.06)	(0.06)	(0.17)	(0.05)	(0.05)	(0.13)	(0.04)	(0.04)	(0.09)
Time and district controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Student characteristic	✓	✓	✓	✓	✓	✓	✓	✓	✓
Parent background controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Household characteristic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	236,849	147,650	89,199	236,849	147,650	89,199	236,820	147,650	89,170

Notes: The dependent variables are excessive stress, despair, and suicidal ideation among adolescents. We report the marginal effects for the average values of the covariates using a probit model. Standard errors are shown in parentheses and are clustered at the region-year level. For all samples, the results shown in Columns 1, 4, and 7 are identical to the main results shown in Columns 2, 4, and 6 of Table 3. Columns 2, 5, and 8 show the results for the sample of male students, and Columns 3, 6, and 9 show the results for the sample of female students. Note that the coefficients of the interactions between immigrant mothers and siblings' advice are not reported because the number of observations for which the interaction term equals one is very small ($n = 29$). *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

household income levels are lower, across various samples (full sample, by gender). This suggests a close association between having an immigrant mother, lower paternal educational attainment, and less affluent economic status. Panel A further highlights gender-specific disparities in the choice of social support.[9] Male students exhibit a greater tendency to seek advice from fathers (by approximately 4.6–6.5%

points) or teachers (by about 1.5–1.6% points) compared to their female counterparts. Conversely, they are less inclined to seek advice from mothers (by approximately 2.1–6.0% points). Moreover, socioeconomic status influences the selection of advising figures, with the probability of seeking a teacher's advice increasing by about 0.1% point when a father's educational attainment decreases by 1 year. Additionally, students from lower income households are more likely to seek their teachers' advice. After accounting for these potential mediating correlations, Panel B of Table 6 presents the results from the structural equation model. The estimated coefficients of interaction terms involving a foreign-born

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9 Panel A of Table 6 presents the outcomes of the father's, mother's, and teacher's advice. The authors' outcomes related to other advising figures are available upon request.
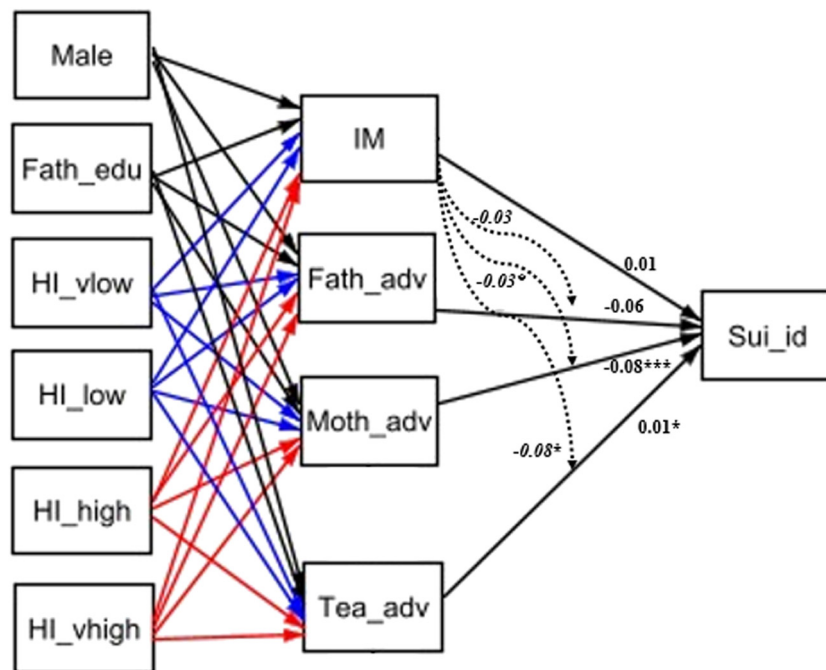
Figure 1: Model for path analysis. *Notes:* Fath_edu: Father's Education (years); HI_vlow: Household Income: Very Low; HI_low: Household Income: Low; HI_high: Household Income: High; HI_vhigh: Household Income: Very High; IM: Immigrant Mother; Fath_adv: Father's Advice; Moth_adv: Mother's Advice; Tea_adv: Teacher's Advice; Sui_id: Suicidal Ideation. Dotted lines indicate moderation (e.g., IM × *Father's Advice*; IM × *Mother's Advice*; IM × *Teacher's Advice*). Due to space constraints, we excluded advice from siblings, friends, and others from the figure. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

mother and each type of social support closely align with our main findings in terms of both magnitude and significance. In essence, this path analysis approach reinforces robust conclusions regarding the negative associations between a mother's or a teacher's social support and suicidal ideation among students with foreign-born mothers.

6 Conclusion and Policy Implications

The findings of this study show that regular advice from one's mother is associated with a 3.2% point further decrease in suicidal ideation among students with foreign-born mothers compared to those with native-born mothers. Likewise, regular advice from teachers is associated with a 4.9% point further decrease in suicidal ideation among students with foreign-born mothers compared to those with native-born mothers. However, no significant differential associations of social support with less severe mental health conditions such as excessive stress and despair are found between students with foreign and native-born mothers. These results align with the general findings of previous research that social support plays an important role in reducing suicidal behavior

(Clara et al., 2003). Nevertheless, this study uncovers additional implications of social support for the children of cross-border families in Asia, offering valuable insights into the cross-border marriage literature and broader research on immigrant children. Additionally, we find that among students with foreign-born mothers, female students who receive regular advice from their teachers and mothers are associated with an even greater reduction in suicidal ideation. These results are aligned with previous findings that social support is perceived differently based on sex; that is, female adolescents have higher interpersonal stress levels, and, thus, social support is both more important to and generally more sought out by girls (Camara et al., 2017). Finally, our research highlights that among students with foreign-born mothers, regular counseling from teachers is correlated with a more pronounced reduction in suicidal ideation for students from less affluent family backgrounds.

Students whose parents are in cross-border marriages may require a more consistent and involved approach from individuals in their lives, such as family members and teachers, who may provide advice or mentoring as a form of social support to improve their mental health. In this respect, our research provides a basis for policy efforts to educate and train teachers at schools with sizeable cross-border marriage children and foreign-born mothers

Table 6: Path analysis results

	All	Sex		Household Income Level	
		Male	**Female**	**Less Affluent**	**Affluent**
Panel A. Immigrant mother and social support					
Outcome: Immigrant Mother					
Male	0.002***			0.003***	0.001
	(0.0005)			(0.0007)	(0.001)
Father's education level	−0.006***	−0.005***	−0.006***	−0.007***	−0.003**
	(0.0007)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Household income level: very low	0.011***	0.007***	0.015***		
	(0.001)	(0.002)	(0.002)		
Household income level: low	0.007***	0.007***	0.007***		
	(0.0006)	(0.0002)	(0.0009)		
Household income level: high	−0.002***	−0.002***	−0.002***		
	(0.0005)	(0.0007)	(0.007)		
Household income level: very high	−0.004***	−0.003***	−0.005***		
	(0.0007)	(0.0009)	(0.001)		
Outcome: Father's Advice					
Male	0.053***			0.046***	0.065***
	(0.001)			(0.001)	(0.002)
Father's education level	0.002***	0.001**	0.001***	0.001***	0.002**
	(0.003)	(0.0006)	(0.0003)	(0.0003)	(0.001)
Household income level: very low	−0.005*	−0.008	0.0002		
	(0.003)	(0.005)	(0.003)		
Household income level: low	−0.002*	−0.004	−0.0006		
	(0.001)	(0.002)	(0.001)		
Household income level: high	0.009***	0.014***	0.003***		
	(0.001)	(0.002)	(0.0009)		
Household income level: very high	0.044***	0.058***	0.022***		
	(0.001)	(0.003)	(0.002)		
Outcome: Mother's Advice					
Male	−0.036***			−0.021***	−0.060***
	(0.002)			(0.003)	(0.004)
Father's education level	0.0008	−0.0008	0.002**	0.001	0.0002
	(0.0007)	(0.001)	(0.001)	(0.001)	(0.001)
Household income level: very low	−0.054***	−0.055***	−0.055***		
	(0.006)	(0.008)	(0.009)		
Household income level: low	−0.035**	−0.028***	−0.041***		
	(0.003)	(0.004)	(0.004)		
Household income level: high	0.043***	0.030***	0.055***		
	(0.002)	(0.003)	(0.003)		
Household income level: very high	0.075***	0.043***	0.124***		
	(0.003)	(0.004)	(0.005)		
Outcome: Teacher's Advice					
Male	0.016***			0.015***	0.016***
	(0.0006)			(0.0009)	(0.001)
Father's education level	−0.001***	−0.001***	−0.0002	−0.001***	−0.001*
	(0.0002)	(0.0004)	(0.0002)	(0.0002)	(0.0004)
Household income level: very low	0.015***	0.015***	0.014***		
	(0.002)	(0.003)	(0.002)		
Household income level: low	0.003***	0.004***	0.002**		
	(0.0009)	(0.001)	(0.001)		
Household income level: high	0.0008	0.001	0.0001		
	(0.001)	(0.001)	(0.0007)		
Household income level: very high	0.0005***	0.005***	0.005***		
	(0.001)	(0.002)	(0.001)		
Observations	236,849	120,779	116,070	147,650	89,170

(Continued)

Table 6: *Continued*

	All	Sex		Household Income Level	
		Male	Female	Less Affluent	Affluent
Panel B. Suicidal ideation outcome					
Immigrant mother (IM)	0.01	−0.008	0.02	0.01	−0.01
	(0.01)	(0.02)	(0.02)	(0.01)	(0.03)
Father's advice	−0.06***	−0.04***	−0.11***	−0.07***	−0.05***
	(0.003)	(0.003)	(0.008)	(0.005)	(0.005)
IM × Father's advice	−0.03	−0.02	−0.02	−0.03	−0.03
	(0.03)	(0.03)	(0.06)	(0.04)	(0.05)
Mother's advice	−0.08***	−0.05***	−0.14***	−0.08***	−0.08***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
IM × Mother's advice	**−0.03***	−0.005	**−0.06***	−0.04	−0.02
	(0.02)	(0.02)	**(0.03)**	(0.02)	(0.04)
Sibling's advice	−0.06***	−0.03***	−0.12***	−0.06***	−0.06***
	(0.003)	(0.004)	(0.005)	(0.004)	(0.005)
IM × Sibling's advice	−0.01	−0.02	0.007	0.003	
	(0.03)	(0.04)	(0.04)	(0.03)	
Friend's advice	−0.04***	−0.01***	−0.09***	−0.04***	−0.04***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)
IM × Friend's advice	−0.02	−0.003	−0.03	−0.03	−0.003
	(0.02)	(0.02)	(0.03)	(0.02)	(0.04)
Teacher's advice	0.01**	0.01**	0.01	0.03***	−0.01
	(0.005)	(0.006)	(0.01)	(0.01)	(0.01)
IM × Teacher's advice	**−0.08***	−0.03	−0.13	**−0.11****	0.01
	(0.04)	(0.05)	(0.08)	**(0.05)**	(0.09)
Others' advice	0.002	0.01	−0.03***	0.005	−0.01
	(0.004)	(0.005)	(0.007)	(0.05)	(0.01)
IM × Others' advice	0.04	−0.004	0.07	0.03	−0.03
	(0.04)	(0.04)	(0.06)	(0.04)	(0.10)
Observations	236,849	120,779	116,070	147,650	89,170

Notes: This table presents the results of path analyses. Panel A illustrates correlations between covariates (gender, father's education level, and household income level) and each type of social support, as well as the mother's immigrant status. In the panel, we specifically report outcomes for the mother's immigrant status, the father's advice, the mother's advice, and the teacher's advice. Panel B estimates the impact of each type of social support on the outcome variable of suicidal ideation. We consider simultaneous and multiple paths between all covariates and each form of social support, as well as whether a student has a foreign-born mother. Standard errors are displayed in parentheses. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

whose children are approaching adolescence to help them provide better mentoring and advising. Mothers, especially in highly competitive Asian societies, bear a significant responsibility in overseeing their children's welfare and academic progress amid the demanding educational landscape (Hsu et al., 2011; OECD, 2019). Therefore, it is imperative to assist foreign-born mothers in understanding various aspects of student life, of which they may be unaware because of language barriers and their lack of experience in a new society (Li, 2020). Recognizing the significance of maternal influence, our findings advocate for increased resources and support for foreign-born mothers, which could contribute to student mental health outcomes.

One notable finding from our study underscores the significant association of teacher-provided social support with reducing suicidal ideation, particularly among students with immigrant mothers. In such cases, where maternal support may be limited, teachers often emerge as the primary source of guidance and support outside the family structure. As evidenced by the distribution of social support in Table 2, a significantly higher proportion of students with foreign-born mothers seek advice from teachers compared to those with native-born mothers. Moreover, it's worth noting that in many Asian societies, enduring gender roles results in fathers being less involved in their children's school lives compared to mothers (OECD, 2019; Shao & Lee, 2023). Given this context, enhancing teacher support systems, possibly through greater government assistance and training programs, could further contribute to student well-being, especially for those from immigrant backgrounds.

Further research on the mental health of children from cross-border marriages can potentially study children who have dropped out of school, as dropping out is more common among children of cross-border marriages, yet very little is understood about their experiences. If more recent surveys on student health, including social support data, become available, it would enable a larger sample size for analysis, particularly considering the growing population of middle- and high-school students with foreign-born mothers in recent years. Moreover, extending this research to encompass students who navigated middle and high school during the COVID-19 pandemic may yield valuable insights into the intersection of education and mental health. Given predictions that the gap between socioeconomically privileged and disadvantaged children will widen, especially in the wake of the pandemic (Dorn et al., 2021), it's plausible that maternal support may become even more crucial for students with foreign-born mothers compared to the findings of our current study. Conversely, we anticipate that the significance of teacher support may diminish for these students due to limited access to remote learning settings. This underscores the potential need for fathers to step in with additional resources and to address the barriers that East Asian parenting gender norms may pose for students born into cross-cultural marriages, hindering their access to necessary support systems. By shedding light on these dynamics, future research can contribute to more inclusive and effective strategies for supporting the mental health and educational success of children of cross-border married couples.

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