



# Adverse Experiences in Late Adolescence and Young Adulthood Disadvantages

Wei-Lin Chen <sup>1</sup>

Received: 12 March 2022 / Accepted: 22 November 2022 / Published online: 30 November 2022  
© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2022

## Abstract

Despite extensive research documenting associations between adverse early-life experiences and negative outcomes in later life, little is known about how adverse experiences in late adolescence relate to young adulthood disadvantages. This study examines the role of adverse experiences during late adolescence on young adults' education and work trajectories in Taiwan. Drawing theories and research from human development and sociology, the study links indicators of disadvantages in young adulthood to measures of adverse experiences in late adolescence using data from the Taiwan Youth Project data ( $n = 1221$ ; median ages 18, 20, and 22; 49.4% female). The analysis found that running away from home was associated with instability in education or employment and that having cumulative adverse experiences was associated with graduating with debt and instability in education or employment. Some associations were explained by financial pressure, however, taken together, the findings suggest that certain adverse experiences in late adolescence have a significant impact on disadvantaged education and work trajectories in young adulthood.

**Keywords** East Asia · Longitudinal analysis · Adverse experiences · Education and work trajectories · Young adulthood

## Introduction

Young adulthood is a crucial developmental period that has important implications for lifelong well-being. At the same time, this dynamic period is also marked by many life transitions and uncertainty that can derail individuals (Arnett, 2014; Settersten, 2012). Young adulthood and the outcomes in this period have been an important area for study. Research has made clear that young adults' developmental outcomes are influenced by aspects of previous life stages, including family resources, circumstances, and life events in childhood and adolescence (Heinz, 2009; Settersten, 2012). However, the literature has largely focused on how experiences in childhood affect young adults' well-being, with little attention to the adolescent period and how it may affect outcomes, particularly outcomes in education and employment. This study will fill a gap in the literature by turning the attention to late adolescence and examining

the ways in which certain adverse experiences in that period affect educational and employment outcomes in young adulthood—through the mediator of parents' provision of material and psychosocial resources.

The focus of this study is on certain young adult outcomes that research has identified as disadvantages that meaningfully affect long-term trajectories: instability in education or employment, not obtaining a college degree, and college loan debt. Instability in education or employment is important because it may be an early signal that young adults are not adjusting well to education or work institutions and may not have the resources in place to complete a college degree (Gottfried & Plasman, 2018; Ishitani & DesJardins, 2002). If young adults do not obtain a college degree, they put themselves at a distinct disadvantage for later life because they cannot access better paid professional jobs that require specialized knowledge and professional training from postsecondary educational institutions (Arnett, 2014; Settersten, 2012), and they lose access to other benefits of a college degree, which include a higher level of economic well-being, more stable employment, better physical health, and greater happiness and life satisfaction (Mayhew et al., 2016). Note that, although the many benefits over the life course of a college degree are well documented, the recently rising college loan debt that

---

✉ Wei-Lin Chen  
chenw@mail.nsysu.edu.tw

<sup>1</sup> Center for Teacher Education, National Sun Yat-sen University, No. 70 Lien-hai Rd., Kaohsiung 804, Taiwan

accompanies it may reduce some of these benefits. Depending on the amount, college loan debt can be a financial burden in young adulthood for many years (Addo et al., 2019; Despard et al., 2016), and can ultimately lower net worth, slow asset accumulation, and delay marriage and homeownership (Elliott & Lewis, 2015).

Prior studies point to three factors that help explain these disadvantages in young adulthood: family socioeconomic status (SES), individual mental health, and adverse experiences (Rodwell et al. 2018; Suglia et al. 2022). Family SES matters for educational outcomes because high SES families have more resources to invest in their children's education and can also offer better advice and psychological support, making it more likely that their children enroll in college, receive a college degree (Entwisle et al. 2005; Linver et al. 2002), and graduate without college loan debt (Houle 2014). Conversely, individuals with mental health issues are less likely to achieve stable work trajectories and complete a bachelor's degree (Rodwell et al. 2018; Veldman et al. 2014). Their employment is often interrupted due to unclear career goals, lower work-related self-perceptions, and weaker work commitment (Rodwell et al. 2018) and they are less likely to attain a degree due to irregular class participation, lower class involvement, and persistent absenteeism in school (Veldman et al. 2014).

The third factor—adverse experiences—is a special focus of this study because it is highly relevant for educational and work outcomes in adulthood but has been largely overlooked in the adolescent period. A strong body of research has demonstrated that traumatic experiences that disrupt the normal functions of a family, such as parental violence, parental incarceration, or running away from home (Negriff 2020; Tucker et al. 2011), and experiences that decrease parental resources, such as abuse or economic hardship (Wolitzky-Taylor et al. 2017), are linked to negative outcomes in later life, such as poor health, mental health issues, delinquent behaviors, and a lower probability of career success. However, the focus of adverse experiences has been in early life, i.e., before the age of 16 (Wolitzky-Taylor et al. 2017; Struck et al. 2021). For example, in a review of the literature, Mitchell et al. (2021) summarizes that individuals with adverse experiences in early life have a lower probability of receiving a college degree because these experiences have disturbed their developmental context. There are other, distinct reasons to suspect that adverse experiences in late adolescence might also be associated with young adults' work and educational outcomes.

### Why Can Adverse Experiences in Late Adolescence Produce Disadvantages in Young Adulthood?

Drawing on perspectives and research from human development and sociology, this study provides a conceptual framework for how adverse experiences in late adolescence

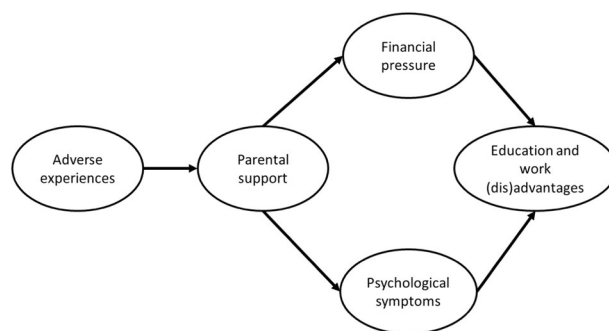


Fig. 1 Conceptual framework

can influence disadvantage in young adulthood, specifically education and work trajectories, through the important mediator of parental support. Figure 1 illustrates the conceptual framework graphically.

The human capital perspective highlights how parents' ability to deploy a range of material resources can benefit adolescents' development (Linver et al., 2002). From this it follows that a negative event in late adolescence that disrupts family functioning and resources can significantly change the developmental context for late adolescents. During adolescence, individuals still rely on parents to meet their basic needs and pay for activities and programs, such as extracurricular activities, that they use to explore their world and build capacities (Settersten, 2012; Zarrett & Eccles, 2006). Parents who experience economic hardship may suddenly find it difficult to make ends meet or consistently meet their adolescents' needs, with important implications for development. Adolescents who become food insecure may have less energy and focus for learning activities at school, which leads to poor academic performance and low educational attainment (Cady, 2014). Adolescents who have housing insecurity, i.e., live in poor quality housing or are homeless, have greater financial burdens, poorer grade retention in school, and behavior problems in class, all of which are associated with poorer school performance and worse educational attainment during young adulthood (Cutts et al., 2011; Broton & Goldrick-Rab, 2018). Given recent economic and social changes, individuals now need more years to complete their education and establish their own financial lives (Arnett, 2014; Settersten, 2012), which makes the provision of parental financial resources even more impactful.

The family stress model highlights how parents' ability to maintain a warm and supportive home environment can benefit adolescents' psychological development (Masarik & Conger, 2017). Parents' emotional support fulfills adolescents' basic need to feel secure and safe. Parents provide emotional support through listening to problems, discussing problems and issues, sharing companionship, and having a strong parent-child attachment (Fingerman et al., 2012; Scully

et al., 2020). Through their advice and emotional support, parents provide a safety net when late adolescents and young adults feel vulnerable, as well as support and care when adolescents or young adults feel depressed or lonely. Serious negative experiences put pressure and stress on parents, which can significantly lower their psychological well-being and disrupt their ability to continue providing a warm and caring environment (Masarik and Conger, 2017; Scully et al., 2020). Parents in distress may also have more difficulty monitoring and managing children's activities and opportunities. Extreme adverse events, such as domestic violence, may not only create an environment with significantly less material and psychosocial support from parents (Bancroft et al., 2011), but also create a toxic environment that damages the parent-child relationship and limits the adolescent's development. Mental health issues are not uncommon among adolescents and young adults (Arnett et al., 2014), and parental emotional support is an important factor. Research finds that parental emotional support lowers their children's probability of having psychological symptoms (Masarik & Conger, 2017) and its absence increases the likelihood of such symptoms (e.g., loneliness, depression, isolation).

These theoretical lenses provide an explanation for how adverse experiences in late adolescence can diminish parents' provision of material and psychosocial resources—which the author argues has implications not only for adolescence but for longer-term trajectories in young adulthood. Prior research has already demonstrated material and psychosocial support from parents remains influential in one's adjustment and well-being through adolescence and until young adulthood (Masarik & Conger, 2017; Zarrett & Eccles, 2006). Based on this review of the prior literature and the conceptual model displayed in Fig. 1, the analysis in this study will extend the implications such adverse experiences in late adolescence have through young adults' later work and college success.

### Young Adulthood in Taiwan

Taiwan offers a unique context to investigate adverse experiences in late adolescence and their influence on disadvantageous trajectories in young adulthood. Unlike young adults in the United States, young adults in East Asian societies more often attend and complete college, and throughout that process they rely more fully on parental support (Mok & Jiang, 2018). In Taiwan, over 80% of high-school graduates attend college immediately (Taiwan Ministry of Education, 2021), significantly higher than in the United States where 41% of young adults aged 18–24 attend college (National Center for Education Statistics, 2021a). Whereas in the United States the six-year graduation rate is 63%, i.e., 37% drop out before graduation (National Center for Education Statistics, 2021b), less than 15% of college students in Taiwan drop out of college before graduation

(Taiwan Ministry of Education, 2020). In the context of such high college attendance and college completion rates among Taiwanese young adults, not having a college degree is considered a significant disadvantage.

Like other East Asian parents, Taiwanese parents provide more substantial, long-term support to their children throughout the college-going process than parents in many other countries. Parental support may include the provision of private supplementary education (e.g., private tutors, private learning centers), advice on extracurriculars, and gathering information from prospective higher education institutions (Byun & Park, 2012). After entering college, parental support may include providing advice on choosing a college major and finding internship opportunities, which helps graduates successfully secure decent employment and stabilize their lives after graduation. Living with parents is also common for Taiwanese college students, especially in metropolitan areas with a high cost of living, such as Taipei (Chen, 2020). Living with parents releases students from the economic pressures of room and board, while parents provide a safe and warm environment. In this way, parental support is a critical factor in East Asian young adults' educational and employment development (Lowe & Dotterer, 2018; Fingerman et al., 2016).

### Current Study

This study uses a longitudinal lens to examine the association between adverse experiences in late adolescence that affect the parental provision of resources, and disadvantages in education and work trajectories in young adulthood. Drawing from a longitudinal, population-based survey of Taiwanese youth and their families, the first aim of this study is to extend the current understanding of adverse experiences into late adolescence (Aim 1). The second aim is to examine the association of these adverse experiences with disadvantageous trajectories in young adulthood (ages 18–22), a crucial developmental period for a person's life-long well-being (Aim 2). The third aim is to provide a comprehensive understanding of adverse adolescent experiences in the Taiwanese context (Aim 3). The hypothesis is that adverse experiences that Taiwanese youth experience in late adolescence will have negative effects on education and work trajectories in young adulthood.

### Methods

#### Participants

The data was drawn from the Taiwan Youth Project (TYP), a longitudinal, population-based survey of Taiwanese youth

conducted by the Institute of Sociology at Taiwan's Academia Sinica. The TYP began in 2000 with two cohorts from Northern Taiwan, the first cohort of 7th grade youth (age 13 in 2000) and the second cohort of 9th grade youth (age 15 in 2000). The TYP collected information from youth and their parents and teachers. The purpose of the TYP was to examine how social contexts, i.e., family, school, community, and the interplay of these institutions, affect young people's lives and development during key transitions such as middle school, high school, and young adulthood. The TYP was approved by its Institutional Review Board, with consent obtained from respondents' parents (Yi, 2012). The TYP used a combination multistage stratified and school-based, cluster random sampling design to draw representative respondents from Northern Taiwan, including metropolitan areas (i.e., Taipei City, New Taipei City) and rural areas (i.e., Yilan County). After the first wave, the TYP collected information annually from respondents until they were 22 years old, except for respondents' year 21 when data was not collected. The TYP is restricted-use data and available for worldwide researchers through an online application. Full details of the TYP design, sampling, and data collection process can be found in Yi (2012).

This study utilized data only from the first cohort in 2000 when respondents were 13 years old and in 7th grade. The first cohort tracked respondents for the longest time, from middle school to young adulthood. Because participants in the first cohort were asked about adverse experiences in both 7th grade and 12th grade, data from the first cohort allows the study to differentiate between adverse experiences happening before late adolescence (7th grade) and during late adolescence (12th grade). The first cohort contained 2696 respondents in 2000 (Yi, 2012). Because the focus of this study is adverse experiences happening in late adolescence and their relationship to disadvantages in young adulthood, this study analyzed data from wave six (age 18, 12th grade), wave eight (age 20), and wave nine (age 22). Note that the first cohort had no information on young adulthood disadvantages at wave seven. At wave six, there were 1826 respondents in the study, with a retention rate of 68% from the first wave. From this group, respondents that had adverse experiences at both age 13 and age 18 were removed (26 respondents). Next, respondents who had missing information on adverse experiences (81 respondents) and young adulthood disadvantages at any wave of the survey (498 respondents) were excluded. An attrition test was used to examine whether adverse experiences in late adolescence (at age 18) and before late adolescence (at age 13) were associated with missing data on young adulthood disadvantages. The results of the attrition test show there is no statistically significant association between adverse experiences and data attrition in the

analyzed data (result available upon request). The final analytic sample contained 1221 respondents.

## Measures

### Adverse experiences in late adolescence

This study defined adverse experiences as negative events that either disrupted family functioning or decreased family resources (Negriff, 2020; Tucker et al., 2011; Wolitzky-Taylor et al., 2017) and from that, constructed two measures of adverse experiences in late adolescence: type of adverse experience and degree of exposure to the adverse experience. First, four types of adverse experiences were identified in late adolescence, i.e., in wave 6 when respondents were in 12th grade and aged 18: (1) domestic violence, (2) parental unemployment, (3) parental death, and (4) running away from home. At wave six, participants were asked, "Did any of the following happen in the past year? (1) My parents ever violently hit other family members, (2) My father/mother was unemployed, (3) My father/mother passed away, and (4) I ran away from home." Second, to measure degree of exposure to adverse experiences, a continuous indicator was created by adding the four dichotomous indicators (range of 0 to 3). Note that this approach of using a summed indicator to measure the degree of exposure to adverse experiences has been widely utilized in previous studies (e.g., Park et al., 2021).

### Young adulthood disadvantages in education and work trajectory

Recall that this study focuses on three aspects of young adulthood disadvantage: instability in education or employment, not obtaining a college degree, and college loan debt. As such, a measure was constructed and four education and work trajectories in young adulthood were specified: (1) graduation without debt, (2) graduation with debt, (3) unable to attend college with stable work, and (4) instability in education or employment. At wave six, wave eight, and wave nine, participants were asked whether they were in school or work from age 18 to age 22. Also, for participants attending college, they were asked if they had a student loan in the fourth year of college (senior year). Graduation includes both on-time graduation and delayed graduation. Based on these education and work questions, respondents were assigned to one of the four education and work trajectories.

### Psychological symptoms

Psychological symptoms in young adulthood were measured by 16 items that were then compiled into a composite

score. The TYP adopted the Symptom Checklist-90-Revised (SCL-90-R, Derogatis 1983; 2000) to measure psychological well-being. At every wave participants were asked, “In the past week, did you experience any of the following symptoms? (1) headache, (2) dizziness, (3) loneliness, (4) depression, (5) excessive worrying, (6) muscle pain/sore, (7) insomnia, (8) numbness and tingling pain in certain parts of the body, (9) feeling like my throat is clogged, (10) weakness in certain parts of the body, (11) desire to hit or hurt somebody, (12) waking up too early in the morning and not falling asleep, (13) not sleeping well or waking up constantly throughout the sleep, (14) arguing frequently with others, (15) yelling or throwing things, and (16) losing the will to live.” The answer to each item ranged from 1 (no) to 5 (very serious), with higher scores indicating more frequent psychological symptoms. The SCL-90-R and the Brief Symptom Inventory (the short version of the SCL-90-R) have high validity in measures of psychological symptoms (Derogatis, 2000; Lancaster et al., 2016) and are widely used to measure psychological symptoms in adolescence and young adulthood populations (Bebes et al., 2015; Berman et al., 2006; Lancaster et al., 2016). Using the 16 items, a composite score (range of 1 to 5) was created to measure psychological symptoms. The Cronbach’s alpha for the psychological symptoms measure was 0.87 at wave six (age 18), 0.90 at wave eight (age 20), and 0.89 at wave nine (age 22), indicating strong reliability across waves. This study used the mean of the composite score over three waves to capture the status of each individual on psychological symptoms, with higher scores indicating more psychological symptoms.

### Financial pressure

Financial pressure was measured by participants’ response to the following question in the TYP: “Do you worry about not being able to afford the university you want to attend even though you are accepted?” The response ranged from 1 (not at all worried) to 4 (very worried), with higher scores indicating more financial pressure.

### Parental support

Parental support was measured by 16 items that were then compiled into a composite score (Mersky et al., 2013). Participants were asked, “What did you do when you spent time with your parents in the past year? (1) asking for an opinion on important matters, (2) listening carefully to his/her opinion and ideas, (3) caring about him/her, (4) having a bad attitude towards him/her, (5) yelling angrily at him/her, (6) arguing with him/her when failing to reach a consensus, (7) showing him/her thoughtful and sweet behaviors, and (8) imitating him/her as her/his role model.” The questions

about father and mother were asked separately. Each item ranged from 1 (almost never) to 5 (almost always), with higher scores indicating stronger parental support. The composite score of parental support ranged from 1 to 5. The Cronbach’s alpha was 0.85, which indicates strong reliability.

### Demographic features

A series of demographic variables were included in the analysis, including gender (male or female); residence (metropolitan or rural); highest level of mother’s education (elementary and less, junior high school, high school, some college, and BA/Advanced degree); family structure (two parents, single parent, and other); and family income. Family income was coded as equal and less than \$29,999, \$30,000–49,999, \$50,000–59,999, \$60,000–69,999, \$70,000–79,999, \$80,000–89,999, \$90,000–99,999, \$100,000–109,999, \$110,000–119,999, \$120,000–129,999, \$130,000–139,999, \$140,000–149,999, and \$150,000 and more. Family income was measured in New Taiwan dollars and treated as a categorical variable.

### Analytic Approach

To begin, descriptive statistics were used to describe the distribution of adverse experiences in late adolescence, young adult disadvantages in education and work trajectories, mediators, and demographic characteristics for the analytic sample (Table 1). Importantly, 88% of late adolescents (12th grade, age 18) reported no adverse experience during late adolescence. The most common type of adverse experience was domestic violence, with 5.8% of late adolescents reporting that experience. Parental unemployment was also a common type of adverse experience among late adolescents (5.2%). Less than 1.5% of late adolescents experienced running away from home, and less than 1% experienced parental death. Regarding cumulative adverse experiences, more than 10% of late adolescents experienced one type of adverse experience, 1.2% experienced two types of adverse experiences, and less than 0.2% experienced three types of adverse experiences. Looking at education and work trajectories in young adulthood (ages 18–22), “graduation without debt” was the most common outcome (49.5%), followed by “instability in education or employment” (26.6%), and “graduation with debt” (22.4%); these frequencies are consistent with prior data on student loan debt in Taiwan (Taiwan Legislative Yuan, 2019). Less than 1.5% of young adults reported being “unable to attend college and stable work.” The mean of financial pressure was 2.07, with a range from 2 (not really worried) to 3 (somewhat worried). The mean of psychological symptoms during ages 18 to 22 was 1.51, with a range from 1 (never)

**Table 1** Characteristics of the respondents in Taiwan youth project

	Percentage/Mean (S.D.)
<b>Adverse experiences in late adolescence</b>	
Domestic violence	5.81%
Parental unemployment	5.16%
Parental death	0.82%
Running away from home	1.39%
Cumulative adverse experiences	
0	88.45%
1	10.24%
2	1.15%
3	0.16%
<b>Disadvantaged trajectories in young adulthood</b>	
Graduation without debt	49.47%
Graduation with debt	22.44%
Unable to attend college with stable work	1.47%
Instability in education or employment	26.62%
<b>Mechanisms</b>	
Financial pressure	2.074 (.822)
Psychological symptoms	1.506 (.373)
Parental support	2.819 (.604)
<b>Demographic characteristics</b>	
Female	49.39%
Residence	
Metropolitan area	70.02%
Rural area	29.98%
Highest level of mother's education	
Elementary and less	21.80%
Junior high school	26.81%
High school	38.03%
Some college	5.90%
BA/Advanced degree	7.46%
Family structure	
Two parents	84.28%
Single parent	10.89%
Other	4.83%
Family income (TWD)	
Equal and less than \$29,999	13.62%
\$30,000–49,999	28.17%
\$50,000–59,999	14.18%
\$60,000–69,999	11.58%
\$70,000–79,999	8.25%
\$80,000–89,999	5.00%
\$90,000–99,999	3.24%
\$100,000–109,999	7.04%
\$110,000–119,999	1.95%
\$120,000–129,999	2.04%
\$130,000–139,999	0.65%
\$140,000–149,999	0.83%
\$150,000 and more	3.43%

$N = 1221$

to 2 (mild). The mean of parental support was 2.82, with a range from 2 (rarely) to 3 (half and half).

Two different models were conducted to assess the association between adverse experiences in late adolescence and disadvantages in young adulthood and the mechanisms

through which that association occurs. First, financial pressure and psychological symptoms were examined as separate outcomes in ordinary least squares (OLS) models that included variables for gender, residence, the highest level of mother's education, family structure, family income at age 18, and parental support. Second, given that the measure of education and work trajectories is a categorical measure, multinomial logistic regression models were conducted to examine the relationship between adverse experiences in late adolescence and education and work trajectories in young adulthood. Each type of adverse experience and cumulative adverse experiences were analyzed in a separate multinomial logistic regression model. Per the study's definition of disadvantage in young adulthood and the understanding that postsecondary education is essential to secure employment and a decent standard of living (Arnett 2014; Settersten 2012), graduation without debt was the reference group in the analysis. Both covariates and mechanisms were added to the models gradually. The mechanisms in the multinomial logistic regression models included parental support, financial pressure, and psychological symptoms. Covariates in the multinomial logistic regression model included gender, residence, the highest level of mother's education, family structure, and family income at age 18.

All data analysis was conducted using Stata 16.1. Multivariate imputation by chained equations (MICE) was applied to address missing values for both the OLS models and the multinomial logistic regression models. This study has reported how to determine sample size, all data exclusions, all manipulations, and all measures.

## Results

Table 2 presents longitudinal results from the OLS regressions that predict the association between adverse experiences in late adolescence and financial pressure and psychological symptoms. All regressions controlled for the full set of covariates (i.e., gender, residence, the highest level of mother's education, family structure, and family income at age 18) and included parental support as a mediator. Type of adverse experience and cumulative adverse experiences were analyzed in separate analyses that predict financial pressure and psychological symptoms as two different outcomes.

Parental unemployment in late adolescence was positively associated with both financial pressure ( $B = 0.378$ ,  $P < 0.001$ ) and psychological symptoms ( $B = 0.140$ ,  $P < 0.01$ ). Two types of adverse experiences, including domestic violence ( $B = 0.129$ ,  $P < 0.01$ ) and running away from home ( $B = 0.372$ ,  $P < 0.001$ ) in late adolescence were positively associated with psychological symptoms. For the

**Table 2** Longitudinal results of adverse experiences predicting financial pressure and psychological symptoms

	Financial pressure			Psychological symptoms		
	Coefficient	S.E.	(95% CI)	Coefficient	S.E.	(95% CI)
<i>Type of adverse experiences</i>						
Domestic violence	0.062	0.101	(−0.137, 0.260)	0.129**	0.045	(0.040, 0.217)
Parental unemployment	0.378***	0.106	(0.171, 0.585)	0.140**	0.047	(0.047, 0.233)
Parental death	−0.063	0.273	(−0.599, 0.473)	0.078	0.117	(−0.152, 0.308)
Running away from home	0.327	0.217	(−0.099, 0.752)	0.372***	0.092	(0.192, 0.552)
Parental support	−0.162***	0.038	(−0.237, −0.086)	−0.081***	0.017	(−0.115, −0.047)
<i>Cumulative adverse experiences</i>						
Cumulative adverse experiences	0.205**	0.062	(0.083, 0.326)	0.159***	0.027	(0.105, 0.213)
Parental support	−0.164***	0.038	(−0.239, −0.088)	−0.083***	0.017	(−0.117, −0.049)

All models control for gender, residence, highest level of mother's education, family structure, and family income as covariates

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

models with each type of adverse experience, parental support was negatively associated with financial pressure ( $B = -0.162$ ,  $P < .001$ ) and psychological symptoms ( $B = -0.081$ ,  $P < 0.001$ ). The models with cumulative adverse experiences presented a similar pattern, with associations between cumulative adverse experiences and high financial pressure ( $B = 0.205$ ,  $P < 0.01$ ) as well as more psychological symptoms ( $B = 0.159$ ,  $P < 0.001$ ). Parental support was negatively associated with both financial pressure ( $B = -0.164$ ,  $P < 0.001$ ) and psychological symptoms ( $B = -0.083$ ,  $P < 0.001$ ) in the analysis.

Table 3 presents longitudinal results from the multinomial logistic regressions that modeled the association between type of adverse experience in late adolescence and education and work trajectories in young adulthood. All regressions controlled for the full set of covariates (i.e., gender, residence, the highest level of mother's education, family structure, and family income at age 18) and parental support. Panel A shows that running away from home in late adolescence is positively associated with disadvantages in young adults' education and work trajectories. In particular, the analysis indicated that running away from home was strongly related to instability in education or employment ( $RRR = 21.899$ ,  $P < 0.01$ ). Panel B shows the results with financial pressure and psychological symptoms as mediators, the full set of covariates, and parental support. Running away from home ( $RRR = 19.055$ ,  $P < 0.01$ ) was positively associated with instability in education or employment, although financial pressure ( $RRR = 1.555$ ,  $P < 0.001$ ) was significantly associated with instability in education or employment while psychological symptoms was non-significant. Financial pressure was significantly associated with disadvantages in young adult education and work trajectories, including graduation with debt ( $RRR =$

1.414,  $P < 0.01$ ) and being unable to attend college with stable work ( $RRR = 2.717$ ,  $P < 0.01$ ).

Table 4 presents longitudinal results from the multinomial logistic regressions that modeled the association between cumulative adverse experiences in late adolescence and education and work trajectories in young adulthood. All regressions controlled for the full set of covariates and parental support. Panel A reports that a positive association was found between cumulative adverse experiences in late adolescence and young adults' education and work disadvantages. Individuals with more adverse experiences were more likely to graduate with debt ( $RRR = 1.597$ ,  $P < 0.05$ ) and have instability in education or employment ( $RRR = 1.488$ ,  $P < 0.05$ ). Panel B shows the results when financial pressure and psychological symptoms were included as mediators. In this analysis, the estimate of cumulative adverse experiences became non-significant, with financial pressure significantly associated with young adults' education and work disadvantages and psychological symptoms non-significant in the analyses. More specifically, financial pressure was significantly associated with graduating with debt ( $RRR = 1.410$ ,  $P < 0.01$ ), being unable to attend college with stable work ( $RRR = 2.657$ ,  $P < 0.01$ ), and instability in education or employment ( $RRR = 1.542$ ,  $P < 0.001$ ).

The analysis included a series of control variables while predicting the association between adverse experiences in late adolescence and education and work disadvantages in young adulthood. For all full models, a higher level of maternal education level was negatively associated with young adults' education and work disadvantages, including graduation with debt, unable to attend college with stable work, and instability in education or employment. Family structure instability was associated with instability in education or employment in all full models.

**Table 3** Longitudinal results of associations between type of adverse experience in late adolescence and education and work trajectories in young adulthood

	Ref: Graduation without debt					
	Graduation with debt		Unable to attend college with stable work		Instability in education or employment	
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)
<b>A. No mechanism included</b>						
Domestic violence	1.743	(0.934, 3.253)	1.340	(0.157, 11.443)	1.124	(0.582, 2.172)
Parental unemployment	1.333	(0.701, 2.535)	No observation		0.960	(0.489, 1.885)
Parental death	0.576	(0.054, 6.143)	No observation		1.840	(0.389, 8.702)
Running away from home	7.887	(0.841, 73.965)	No observation		21.899**	(2.670, 179.582)
<b>B. Mechanism included</b>						
Domestic violence	1.724	(0.915, 3.249)	1.339	(0.153, 11.700)	1.095	(0.560, 2.141)
Parental unemployment	1.144	(0.593, 2.205)	No observation		0.796	(0.401, 1.580)
Parental death	0.553	(0.051, 5.954)	No observation		1.797	(0.378, 8.534)
Running away from home	7.262	(0.761, 69.327)	No observation		19.055**	(2.279, 159.326)
Financial pressure	1.414**	(1.162, 1.721)	2.717**	(1.300, 5.682)	1.555***	(1.287, 1.879)
Psychological symptoms	1.062	(0.693, 1.626)	0.833	(0.181, 3.827)	1.142	(0.763, 1.711)

All models control for gender, residence, highest level of mother’s education, family structure, family income, and parental support as covariates

\**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001

**Table 4** Longitudinal results of associations between cumulative adverse experiences in late adolescence and education and work trajectories in young adulthood

	Ref: Graduation without debt					
	Graduation with debt		Unable to attend college with stable work		Instability in education or employment	
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)
<b>A. No mechanism included</b>						
Cumulative adverse experiences	1.597*	(1.079, 2.364)	0.486	(0.066, 3.555)	1.488*	(1.013, 2.186)
<b>B. Mechanism included</b>						
Cumulative adverse experiences	1.486	(0.993, 2.222)	0.420	(0.057, 3.070)	1.344	(0.906, 1.993)
Financial pressure	1.410**	(1.160, 1.714)	2.657**	(1.278, 5.526)	1.542***	(1.278, 1.861)
Psychological symptoms	1.069	(0.699, 1.637)	0.831	(0.180, 3.840)	1.185	(0.795, 1.766)

All models control for gender, residence, highest level of mother’s education, family structure, family income, and parental support as covariates

\**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001

**Sensitivity Analyses**

This study included a series of sensitivity analyses to examine selection bias. Results were compared using listwise deletion instead of imputed data (i.e., the main analysis); the results of this analysis were very similar to the results in the main analysis. The analysis also applied inverse probability weighting to address the selection bias of adverse experiences; the analysis found that the association between adverse experiences in late adolescence and disadvantages in young

adulthood continued to be significant. In the main analysis, the study removed respondents who had adverse experiences at both age 13 and age 18. The main analysis had 38 respondents (3%) who had adverse experiences at age 13 but not at age 18. A separate analysis was conducted to examine whether adverse experiences at age 13 only (i.e., not at age 18) were associated with young adults’ disadvantages, finding that adverse experiences at age 13 only were not significantly associated with young adults’ disadvantages in education and work trajectories.



## Discussion

Late adolescence and young adulthood are crucial periods when individuals make decisions for the rest of their lives and develop their capacities for lifelong well-being. During this period, individuals still rely heavily on parental support to provide basic needs and a supportive emotional environment. Adverse experiences may break up parental resources, support, and relationships within the household, and as such, may have negative effects on developmental outcomes in later life. Drawing on theories and research from human development and sociology (Linver et al., 2002; Masarik & Conger, 2017), this study proposed an integrated framework to examine the association between adverse experiences in late adolescence and disadvantages in education and work trajectories in young adulthood, and whether the association can be explained by the mechanisms of parental support, financial pressure, and psychological symptoms. Using longitudinal, population-based data on Taiwanese youth, the study has three main findings.

Specific types of adverse experiences in late adolescence, including domestic violence, parental unemployment, and running away from home, as well as cumulative adverse experiences, are positively associated with disrupted parental support and, in turn, increased financial pressure or psychological symptoms in young adulthood. This finding aligns with previous studies showing that adverse experiences disrupt parents' ability to provide financial and emotional support (Masarik & Conger, 2017; Scully et al., 2020), as well as studies showing that domestic violence and running away from home are risk factors for psychological symptoms (Meltzer et al., 2009; Tucker et al., 2011). The study also finds a positive association between parental unemployment in late adolescence and psychological symptoms in later life, something that has been rarely examined in previous research on adverse experiences. This result confirms the family stress model in which unemployment can create serious economic hardship at home that limits available financial and economic resources, thus increasing stress in the home and worsening parents' mental health (Masarik & Conger, 2017). Parents with mental health issues or financial stress are more likely to have difficulty caring for their children and providing emotional support, which leads to more psychological symptoms among household members.

Cumulative adverse experiences in late adolescence are positively associated with disadvantaged education and work trajectories, specifically graduation with debt and instability in education or work, but this association is fully explained by financial pressure. This finding supports the notion that individuals with more adverse experiences in late adolescence experience higher financial pressure, which has a two-part effect. Financial pressure likely narrows

individuals' educational and career choices (McKenzie et al., 2004; Settersten, 2012), which may affect their ability to secure an adequate standard of living and reasonable socioeconomic status. Such financial pressure may also increase the probability of having student loans for young adults, which lowers the value of their college degree in terms of their net worth and asset accumulation in later life (Elliott & Lewis, 2015). The finding that financial pressure also increases young adults' chances of being unstable in education or work status indicates that financial resources are important to help young adults complete postsecondary education, without which they may lack the essential skills to find a permanent job and settle down.

The results indicate that a specific type of adverse experience, i.e., running away from home, is related to instability in education or work in young adulthood. This finding is consistent with prior research that finds that runaways have worse mental health issues and delinquency behaviors (Tucker et al., 2011) and that an adverse experience like running away from home lowers individuals' likelihood of college success (Hinojosa et al., 2019; Mitchell et al., 2021). Importantly, the results go further than prior research by demonstrating that the associations around running away from home and young adult disadvantage cannot be fully explained by parental support, financial pressure, or psychological symptoms. There are a few possible explanations. First, given that runaways are more likely to be homeless (Tucker et al., 2011), running away from home diverts attention from education and work trajectories. Instead of developing productive and proactive plans for education or employment (McKenzie et al., 2004) during late adolescence, runaways must prioritize survival, conserving their resources to secure food and find a safe place to stay (Chen et al., 2015; Hobfoll et al., 2018). The second explanation could be a measurement issue. Due to the design of Taiwan Youth Project, the study includes college affordability and a measure of financial pressure in the analysis, but lacks a more comprehensive measures of financial pressure in terms of the basic needs for food, shelter, and emotional security that runaways face.

This study's approach and its findings extend the previous work on adverse experiences and life trajectories. Prior research has found that adverse experiences in childhood and adolescence lead to more psychological symptoms in young adulthood (Loxton et al., 2021; Watt et al., 2020), such as anxiety, depression, and loneliness. This study confirms those findings in the East Asian context, but with stronger data. Previous studies have relied solely on young adults who are college attendees or have used only cross-sectional data (Kim, 2017; Loxton et al., 2021; Watt et al., 2020). This study confirms the positive association between adverse experiences and psychological symptoms in young adulthood by examining both college and non-

college attendees and tracing them from late adolescence to young adulthood. This study also broadens the understanding of how adverse experiences affect later life beyond college success or health, which have been almost the entire focus of prior research (Park et al., 2021; Struck et al., 2021). Prior research has demonstrated that individuals with adverse experiences have poorer academic performance and a lower probability of college retention and graduation (Hinojosa et al., 2019; Mitchell et al., 2021). By examining how adverse experiences relate to broader work and educational outcomes in young adulthood, this study provides a more comprehensive understanding of how adverse experiences are associated with the development of young adults, including the role of a key explanatory mechanism i.e., financial pressure. By examining East Asian youth, this study also extends the current understanding of adverse experiences to a global context.

The study adds greater specificity to the understanding of outcomes in young adulthood by investigating both specific types of adverse experiences and cumulative adverse experiences. For example, the study finds that the experience of running away from home is associated with disadvantages in education and work trajectories in young adulthood, and that experiences of parental unemployment and cumulative adverse experiences are associated with worse financial pressure and more psychological symptoms in young adulthood. This approach and findings exceed previous research that has taken only a cumulative approach by summing adverse experiences (Hinojosa et al., 2019; Watt et al., 2020). For example, like other studies on adverse experiences, Loxton et al. (2021) indicate individuals with higher scores on cumulative adverse experience measures have more physical and mental health problems in later life. The approach and findings also exceed other studies that have investigated only limited subcategories of adverse experiences, such as Huber-Krum et al. (2022), which used cross-sectional data from children aged 13–24 to explore how various types of early-life adverse events lead to the gender difference in contraceptive use, and Tucker et al. (2011), which indicated runaways have more substance use behaviors and mental health issues. By analyzing both specific adverse experiences and cumulative adverse experiences, this study expands the current understanding of adverse experiences and extends it into the development of late adolescents and young adults.

A few limitations of this study must be discussed. The adverse experience questions in the Taiwan Youth Project are not comprehensive. The Taiwan Youth Project does not include questions about sexual and psychosocial abuse or neglect. Future studies with a comprehensive set of adverse experiences, including sexual abuse, psychosocial abuse, physical abuse, neglect, and economic hardship are necessary to better understand how adverse experiences affect

young adults' development and their transition to adulthood. At a broader level, the Taiwan Youth Project does not address concerns faced by unique subpopulations, such as immigrants, racial and ethnic minorities, and individuals who are lesbian, gay, bisexual, transgender, or queer. Given that these subpopulations are more likely to be victims that have adverse experiences (Crouch et al., 2019; McGeough & Sterzing, 2018), the estimates of the impact of adverse experiences are likely underestimated. Further studies are also needed to understand the problems faced by unique subpopulations. Although the Taiwan Youth Project is a population-based, longitudinal survey of Taiwanese youth, it collected information only from Northern Taiwan. As such, the results of the Taiwan Youth Project may generalize only to Northern Taiwan, not to all Taiwanese youth. Future studies that include data from diverse regions and a national population-based youth sample would eliminate this limitation.

The findings of this study point to implications for research in young adulthood. Findings from this study indicate that more research on mediators/pathways between adverse experiences and young adults' development is needed. This study highlights financial pressure as a key mediator rather than psychological symptoms. Previous studies have indicated adverse experiences disrupt individual development through increasing psychological symptoms (Higgen et al. 2021), but this study identifies financial pressure as a salient mediator in the East Asian context. Studies on South Korean and Chinese young adults have indicated financial support as parental responsibility in East Asian societies. For example, Nelson et al. (2013) present that most Chinese children and parents consider financial independence as the criteria for adulthood, and young adult children are yet considered as full adults, hence needing financial support from parents for smooth transitions from children to adulthood. Influenced by Confucianism, Hwang and Kim (2016) show filial responsibility as an explanation for how South Korean young adults compensate for parental financial support, and You and Nesteruk (2022) also point to similar results from South Korean American mothers for supporting their young adult children financially. Since East Asian young adults consider parental financial support as parental responsibility (Hwang & Kim, 2016), adverse experiences disrupt the process of fulfilling responsibility for parents. While this study highlights that financial pressure jeopardizes East Asian young adults' successful transition to adulthood, it will be critical to explore how family adversity disrupts parental financial support and affects young adults across Asian and other countries. This study also indicates that specific types of adverse experiences (i.e., parental unemployment, domestic violence, and running away from home) are associated with different developmental challenges in young adulthood. More research is

needed to explore unique or multiple pathways in the relationship between each adverse experience and developmental disadvantages in young adulthood. In terms of policy implications, family-based prevention programs for adverse experiences are a promising approach (Masarik & Conger, 2017; Murphey & Bartlett, 2019), as well as more specific programs and policies that aim to disrupt the disadvantaged trajectory that can unfold from prior adverse experiences. For example, adding college and work information and advising support for young adults experiencing economic hardship.

## Conclusion

A clear picture of how adverse experiences in late adolescence may create disadvantages in young adulthood is necessary to justify social spending on policies and programs that support young adults in their transition to adulthood, and to inform how programs are targeted. This study has extended prior research by proposing an integrated framework from human development and sociology and focusing on specific types of adverse experiences and cumulative adverse experiences and their association with disadvantages in young adulthood. Results of the present study suggest running away from home is related to instability in education or work in young adulthood. Cumulative adverse experiences are associated with disadvantaged education and work trajectories, but this association is fully explained by financial pressure. As a longitudinal analysis that extends from childhood into late adolescence and young adulthood, and that includes disadvantages in education and work trajectories, the present results provide useful information for policymakers, administrators, and social service providers on the early detection of adverse experiences or the risk of adverse experiences, as well as direction for long-term economic and social support efforts that limit the negative career and developmental outcomes of those experiences. The results of this study can inform policies, services, and programs that support youth as they transition to adulthood, with the aim of ultimately empowering young adults with the resilience, skills, and capacities they need during their these most critical years of transition.

**Acknowledgements** The author thanks scholars at the Graduate Institute of Social Work and the Department of Sociology, National Chengchi University for their comments and suggestions. The author also thanks Dr. Miriam Linver (Montclair State University) for the valuable comments.

**Funding** This study was supported by the Taiwan Ministry of Science and Technology (Grant numbers: MOST 109-2410-H-110-002-MY2, MOST 110-2420-H-002-003-MY3-V11004).

**Data Sharing and Declaration** The datasets generated during the current study are not publicly available but are available on reasonable request.

## Compliance with Ethical Standards

**Conflict of Interest** The author declares no competing interests.

**Ethical Approval** The study received ethical approval from the National Cheng Kung University Human Research Ethics Committee (Approval number: NCKU HREC-E-108-484-2).

**Informed Consent** Informed consent was provided by respondents' parents in the Taiwan Youth Project.

## References

- Addo, F. R., Houle, J. N., & Sassler, S. (2019). The changing nature of the association between student loan debt and marital behavior in young adulthood. *Journal of Family and Economic Issues*, 40(1), 86–101.
- Arnett, J. J. (2014). *Emerging adulthood: The winding road from the late teens through the twenties*. Oxford University Press.
- Arnett, J. J., Žukauskienė, R., & Sugimura, K. (2014). The new life stage of emerging adulthood at ages 18–29 years: Implications for mental health. *The Lancet Psychiatry*, 1(7), 569–576.
- Bancroft, L., Silverman, J. G., & Ritchie, D. (2011). *The batterer as parent: Addressing the impact of domestic violence on family dynamics*. Sage publications.
- Bebes, A., Samarova, V., Shilo, G., & Diamond, G. M. (2015). Parental acceptance, parental psychological control and psychological symptoms among sexual minority adolescents. *Journal of Child and Family Studies*, 24(4), 882–890.
- Berman, S. L., Weems, C. F., & Stickle, T. R. (2006). Existential anxiety in adolescents: Prevalence, structure, association with psychological symptoms and identity development. *Journal of youth and adolescence*, 35(3), 285–292.
- Broton, K. M., & Goldrick-Rab, S. (2018). Going without: An exploration of food and housing insecurity among undergraduates. *Educational Researcher*, 47(2), 121–133.
- Byun, S. Y., & Park, H. (2012). The academic success of East Asian American youth: The role of shadow education. *Sociology of Education*, 85(1), 40–60.
- Cady, C. L. (2014). Food insecurity as a student issue. *Journal of College and Character*, 15(4), 265–272.
- Chen, S., Westman, M., & Hobfoll, S. E. (2015). The commerce and crossover of resources: Resource conservation in the service of resilience. *Stress and Health*, 31(2), 95–105.
- Chen, W. L. (2020). Living arrangements and health-related lifestyle among Taiwanese college students. *Journal of American College Health*, 70, 1–9.
- Crouch, E., Probst, J. C., Radcliff, E., Bennett, K. J., & McKinney, S. H. (2019). Prevalence of adverse childhood experiences (ACEs) among US children. *Child Abuse & Neglect*, 92, 209–218.
- Cutts, D. B., Meyers, A. F., Black, M. M., Casey, P. H., Chilton, M., Cook, J. T., & Frank, D. A. (2011). US housing insecurity and the health of very young children. *American Journal of Public Health*, 101(8), 1508–1514.
- Derogatis, L. R. (1983). *SCL-90-R: Administration, scoring, and procedures manual – II (2nd ed.)*. Towson: Leonard R. Derogatis.
- Derogatis, L. R. (2000). *Brief Symptom Inventory-18 (BSI-18) [Database record]*. APA PsycTests. <https://doi.org/10.1037/t07502-000>.

- Despard, M. R., Perantie, D., Taylor, S., Grinstein-Weiss, M., Friedline, T., & Raghavan, R. (2016). Student debt and hardship: Evidence from a large sample of low-and moderate-income households. *Children and Youth Services Review*, *70*, 8–18.
- Elliott, W., & Lewis, M. (2015). Student debt effects on financial well-being: Research and policy implications. *Journal of Economic Surveys*, *29*(4), 614–636.
- Entwisle, D. R., Alexander, K. L., & Olson, L. S. (2005). First grade and educational attainment by age 22: A new story. *American Journal of Sociology*, *110*(5), 1458–1502.
- Fingerman, K. L., Cheng, Y. P., Tighe, L., Birditt, K. S., & Zarit, S. (2012). Relationships between young adults and their parents. In *Early adulthood in a family context* (pp. 59–85). Springer, New York, NY.
- Fingerman, K. L., Cheng, Y. P., Kim, K., Fung, H. H., Han, G., Lang, F. R., & Wagner, J. (2016). Parental involvement with college students in Germany, Hong Kong, Korea, and the United States. *Journal of Family Issues*, *37*(10), 1384–1411.
- Gottfried, M. A., & Plasman, J. S. (2018). Linking the timing of career and technical education coursetaking with high school dropout and college-going behavior. *American Educational Research Journal*, *55*(2), 325–361.
- Heinz, W. R. (2009). Youth transitions in an age of uncertainty. In Furlong, A. (Ed.), *Handbook of youth and young adulthood: New perspectives and agendas* (pp. 19–29). Routledge.
- Higgen, S., Mueller, J. T., & Mösko, M. (2021). Universal mental health interventions for young students in adverse environments—a systematic review of evaluated interventions. *Child and Adolescent Mental Health*, *27*, 281–293.
- Hinojosa, R., Nguyen, J., Sellers, K., & Elassar, H. (2019). Barriers to college success among students that experienced adverse childhood events. *Journal of American college health*, *67*(6), 531–540.
- Hobfoll, S. E., Halbesleben, J., Neveu, J. P., & Westman, M. (2018). Conservation of resources in the organizational context: The reality of resources and their consequences. *Annual Review of Organizational Psychology and Organizational Behavior*, *5*, 103–128.
- Houle, J. N. (2014). Disparities in debt: Parents' socioeconomic resources and young adult student loan debt. *Sociology of Education*, *87*(1), 53–69.
- Huber-Krum, S., Miedema, S. S., Shortt, J. W., Villaveces, A., & Kress, H. (2022). Associations between adverse childhood experiences and contraceptive use among young adults in Honduras. *Child Abuse & Neglect*, *123*, 105381.
- Hwang, W., & Kim, I. (2016). Parental financial support and filial responsibility in emerging adulthood: A comparative study between the United States and South Korea. *Journal of Youth Studies*, *19*(10), 1401–1418.
- Ishitani, T. T., & DesJardins, S. L. (2002). A longitudinal investigation of dropout from college in the United States. *Journal of College Student Retention: Research, Theory & Practice*, *4*(2), 173–201.
- Kim, Y. H. (2017). Associations of adverse childhood experiences with depression and alcohol abuse among Korean college students. *Child Abuse & Neglect*, *67*, 338–348.
- Lancaster, M. A., McCrea, M. A., & Nelson, L. D. (2016). Psychometric properties and normative data for the Brief Symptom Inventory-18 (BSI-18) in high school and collegiate athletes. *The Clinical Neuropsychologist*, *30*(2), 321–333.
- Linver, M. R., Brooks-Gunn, J., & Kohen, D. E. (2002). Family processes as pathways from income to young children's development. *Developmental Psychology*, *38*(5), 719–734.
- Lowe, K., & Dotterer, A. M. (2018). Parental involvement during the college transition: A review and suggestion for its conceptual definition. *Adolescent Research Review*, *3*(1), 29–42.
- Loxton, D., Forder, P. M., Cavenagh, D., Townsend, N., Holliday, E., Chojenta, C., & Melka, A. S. (2021). The impact of adverse childhood experiences on the health and health behaviors of young Australian women. *Child Abuse & Neglect*, *111*, 104771.
- Masarik, A. S., & Conger, R. D. (2017). Stress and child development: A review of the Family Stress Model. *Current Opinion In Psychology*, *13*, 85–90.
- Mayhew, M. J., Rockenbach, A. N., Bowman, N. A., Seifert, T. A., & Wolniak, G. C. (2016). *How college affects students: 21st century evidence that higher education works (Vol. 3)*. John Wiley & Sons.
- McGeough, B. L., & Sterzing, P. R. (2018). A systematic review of family victimization experiences among sexual minority youth. *The Journal Of Primary Prevention*, *39*(5), 491–528.
- McKenzie, V., Frydenberg, E., & Poole, C. (2004). What resources matter to young people: The relationship between resources and coping style. *The Educational and Developmental Psychologist*, *19*(2), 78–96.
- Meltzer, H., Doos, L., Vostanis, P., Ford, T., & Goodman, R. (2009). The mental health of children who witness domestic violence. *Child & Family Social Work*, *14*(4), 491–501.
- Mersky, J. P., Topitzes, J., & Reynolds, A. J. (2013). Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the US. *Child Abuse & Neglect*, *37*(11), 917–925.
- Mitchell, J. M., Becker-Blease, K. A., & Soicher, R. N. (2021). Child sexual abuse, academic functioning and educational outcomes in emerging adulthood. *Journal of Child Sexual Abuse*, *30*(3), 278–297.
- Mok, K. H., & Jiang, J. (2018). Massification of higher education and challenges for graduate employment and social mobility: East Asian experiences and sociological reflections. *International Journal of Educational Development*, *63*, 44–51.
- Murphey, D., & Bartlett, J. D. (2019). Childhood adversity screenings are just one part of an effective policy response to childhood trauma. *Child Trends*. Retrieved from [https://www.cmhnetwork.org/wp-content/uploads/2019/07/ACESScreening\\_ChildTrends\\_July2019.pdf](https://www.cmhnetwork.org/wp-content/uploads/2019/07/ACESScreening_ChildTrends_July2019.pdf)
- National Center for Education Statistics (2021a). *College enrollment rates*. Retrieved from <https://nces.ed.gov/programs/coe/indicator/cpb>
- National Center for Education Statistics (2021b). *Graduation rates*. Retrieved from [https://nces.ed.gov/fastfacts/display.asp?id=40#:~:text=The%206%2Dyear%20graduation%20rate,at%20both%20public%20\(65%20vs.](https://nces.ed.gov/fastfacts/display.asp?id=40#:~:text=The%206%2Dyear%20graduation%20rate,at%20both%20public%20(65%20vs.)
- Nelson, L. J., Duan, X. X., Padilla-Walker, L. M., & Luster, S. S. (2013). Facing adulthood: Comparing the criteria that Chinese emerging adults and their parents have for adulthood. *Journal of Adolescent Research*, *28*(2), 189–208.
- Negriff, S. (2020). ACEs are not equal: Examining the relative impact of household dysfunction versus childhood maltreatment on mental health in adolescence. *Social Science & Medicine*, *245*, 112696.
- Park, E., Lee, J., & Han, J. (2021). The association between adverse childhood experiences and young adult outcomes: A scoping study. *Children and Youth Services Review*, *123*, 105916.
- Rodwell, L., Romaniuk, H., Nilsen, W., Carlin, J. B., Lee, K. J., & Patton, G. C. (2018). Adolescent mental health and behavioural predictors of being NEET: a prospective study of young adults not in employment, education, or training. *Psychological Medicine*, *48*(5), 861–871.
- Scully, C., McLaughlin, J., & Fitzgerald, A. (2020). The relationship between adverse childhood experiences, family functioning, and mental health problems among children and adolescents: A systematic review. *Journal of Family Therapy*, *42*(2), 291–316.
- Settersten, R. A. (2012). The contemporary context of young adulthood in the USA: From demography to development, from

- private troubles to public issues. In Booth, A., Brown, S. L., Landale, N. S., Manning, W. D., & McHale, S. M. (Eds.), *Early adulthood in a family context* (pp. 3–26). Springer Science & Business Media.
- Struck, S., Stewart-Tufescu, A., Asmundson, A. J., Asmundson, G. G., & Afifi, T. O. (2021). Adverse childhood experiences (ACEs) research: A bibliometric analysis of publication trends over the first 20 years. *Child Abuse & Neglect, 112*, 104895.
- Suglia, S. F., Saelee, R., Guzman, I., Elsenburg, L. K., Clark, C. J., Link, B., & Koenen, K. C. (2022). Child socioeconomic status, Childhood adversity and adult socioeconomic status in a nationally representative sample of young adults. *SSM-Population Health, 18*, 101094.
- Taiwan Legislative Yuan (2019). *Report on education budget 2020*. Retrieved from <https://www.ly.gov.tw/Pages/Detail.aspx?nodeid=33516&pid=187841>
- Taiwan Ministry of Education (2020). *Percentage of college enrollment and dropout*. Retrieved from <https://depart.moe.edu.tw/ED4500/News.aspx?n=B31EC9E6E57BFA50&sms=0D85280A66963793>
- Taiwan Ministry of Education (2021). *High school graduate statistics 2021*. Retrieved from [https://www.edu.tw/News\\_Content.aspx?n=829446EED325AD02&sms=26FB481681F7B203&s=1547C271DEDAE960](https://www.edu.tw/News_Content.aspx?n=829446EED325AD02&sms=26FB481681F7B203&s=1547C271DEDAE960)
- Tucker, J. S., Edelen, M. O., Ellickson, P. L., & Klein, D. J. (2011). Running away from home: A longitudinal study of adolescent risk factors and young adult outcomes. *Journal of Youth and Adolescence, 40*(5), 507–518.
- Veldman, K., Bültmann, U., Stewart, R. E., Ormel, J., Verhulst, F. C., & Reijneveld, S. A. (2014). Mental health problems and educational attainment in adolescence: 9-year follow-up of the TRAILS study. *PloS One, 9*(7), e101751.
- Watt, T., Ceballos, N., Kim, S., Pan, X., & Sharma, S. (2020). The unique nature of depression and anxiety among college students with adverse childhood experiences. *Journal of Child & Adolescent Trauma, 13*(2), 163–172.
- Wolitzky-Taylor, K., Sewart, A., Vrshek-Schallhorn, S., Zinbarg, R., Mineka, S., Hammen, C., & Craske, M. G. (2017). The effects of childhood and adolescent adversity on substance use disorders and poor health in early adulthood. *Journal of Youth and Adolescence, 46*(1), 15–27.
- Yi, C. C. (Ed.). (2012). *The psychological well-being of East Asian youth (Vol. 2)*. Springer Science & Business Media.
- You, S. B., & Nesteruk, O. (2022). “It Is Not the End of Parenting”: Extended parenthood and child launching experiences among middle-aged Korean American Mothers. *Emerging Adulthood, 10*(3), 712–724.
- Zarrett, N., & Eccles, J. (2006). The passage to adulthood: Challenges of late adolescence. *New Directions for Youth Development, 2006*(111), 13–28.

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

Springer Nature or its licensor (e.g. a society or other partner) 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.

**Wei-Lin Chen** is an Assistant Professor in the Center for Teacher Education at National Sun Yat-sen University. His major research interests are focused on how family, education systems, and the interplay of these institutions affect young people’s lives and development.