

## **Pandemic-Related Strain, Negative Emotions and Delinquent Copings among Chinese Adolescents: Public High Schools VS. Vocational High Schools**

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### **Abstract**

*COVID-19 has profound influences on human life. It causes multiple kinds of strain which may cause negative emotions and in turn lead to delinquent copings. Children are among the most vulnerable groups during the disaster. However, children from disadvantaged backgrounds may be even more adversely affected by this crisis. Using data from a survey on students at vocational and public high schools in China, this study analyzed the influences of pandemic-related strain and negative emotions on delinquent copings. Findings suggested that the distribution of pandemic risks was differential among vocational/public high school students. Adolescents from these two types of schools experience different kinds of pandemic-related strain. Vocational high school students are more likely to have delinquent copings. Pandemic-related strain has significant impacts on delinquent copings, while negative emotions are not significantly associated with both strain and delinquent copings. The pandemic might have more behavioral influences on adolescents instead of psychological ones.*

**Keywords:** Strain, Negative emotions, COVID-19, Delinquency

### **1. Introduction**

The COVID-19 pandemic is an unprecedented global disaster, bringing “mega risks” to human societies. Social scientists have argued that the pandemic might permanently change human life and human behaviors, and there would be no return to the “old normal” (Turkle, 2020). Scholars from different social science disciplines have recognized the adverse effects of the COVID-19 pandemic on our mental health. Specific stressors include fear of being infected (Bitan et al., 2020), lack of supplies and information (Brooks et al., 2020), disruptions of lives and work, financial worries (Tull et al., 2020), social isolation (Liu et al., 2020), and limited access to important services/resources etc. All these stressors or strains contribute to people’s negative emotions and need to be coped with various strategies.

However, humans are unequally affected by pandemic-related risks across race/ethnicity/migration groups, gender, age, and social class. Prior studies have revealed that children are particularly vulnerable during such disasters due to physical, psychological, and social vulnerabilities (Peek, 2008). Children have little experience of disasters and are less capable of dealing with risks and the associated psychological influences, which may cause psychological disorders and delinquent behaviors. In China, Rural-to-urban migrant children are perceived as one of the most vulnerable groups. Although living in the same city, they have much fewer opportunities to enter

better urban schools than their urban counterparts (Wu 2017). Among them, those in high school usually go to vocational high schools instead of normal public high schools. In China, vocational high schools are likely to have more deviant school subculture, less effective school management, fewer school resources, and more disruptive student behaviors than public high schools. Concurrent with this aspect of disadvantages, due to disadvantaged family socioeconomic status, which usually links to limited parental resources, inferior housing conditions, and deprivation of social support, compared with public high school students, those at vocational high school are likely to face more challenges during the pandemic, such as technical problems associated with the online-study mode, family conflicts, domestic violence, and therefore they experience more pandemic-related strain and cope with non-conventional ways.

Existing research on the associations between pandemic-related strain, negative emotions, and delinquent copings among adolescents remained scanty. This research hence attempts to fill this research gap. Adopting the theoretical framework of General Strain Theory (GST, Agnew, 1992), this study aims to examine the strain-coping mechanism among Chinese adolescents during this special pandemic period, addressing the relationships among the newly-emerged pandemic-related strain, strain-led negative emotions, and delinquent copings. In particular, we examine whether vocational high school students and public high school students vary in the levels of pandemic-related strain, negative emotions, and delinquent copings.

## ***2. Theoretical Framework and Hypotheses***

Agnew's (1992) GST hypothesizes that crime and delinquency result from certain adaptations to strain. GST extends traditional strain theory (Merton, 1938) by defining strain as events and conditions disliked by individuals (see Agnew 2006 for an overview). Three major sources of strain exist as follows: failure to achieve valued goals, loss of positively valued stimuli, and presentation of negative stimuli (Agnew, 1992). The valued goals are not just monetary success. Other goals valued by culture are also included. The latter two types of strain are related to individualistic negative life events. Strain may trigger negative emotions ranging from anger to anxiety and depression, which, in turn, prompt crime and delinquency as one of the coping strategies in the process of alleviating those negative emotions and/or stressors (Agnew, 1992). However, delinquency is only one of the possible coping strategies the individual may choose. Whether individuals choose delinquent or non-delinquent adaptations to strain lean on varieties of conditioning factors including coping resources and skills, conventional social support, the costs and benefits of engaging in delinquency, social control, criminal associates, beliefs regarding criminal coping, and attributions of the causes of one's adversity (Agnew, 1992).

The pandemic produces multiple kinds of strain. Health-related strain is one of the most prominent types. People fear being infected, worry about the capability of the medical system in providing effective treatment, and they are also afraid of the shortage of masks and disinfection supplies (Taylor et al., 2020). Moreover, people tend to be overwhelmed by amounts of news and information and surrounded by misleading or false information, finding themselves in a state of constant uncertainty and anxiety. An infodemic is exerting huge influences on individuals (Islam et al., 2020). Furthermore, social distancing measures that led to social isolation put direct mental pressure on people. They lose opportunities to spend time with friends or family. There are also financial stressors induced by unstable employment during the pandemic. In short, the pandemic produces various strains, which fall into the second or the third categories of strain raised by Agnew.

Students may be even more vulnerable to suffer from the additional source of strains, particularly the strain from e-learning (Primdahl et al., 2020). During the pandemic, offline classes were switched to online classes, and online classes will be resumed if the pandemic becomes a little serious in the cities. Online classes require a stable internet connection, and students need to master the skills to complete the online learning process and deal with possible problems, such as technical problems and difficulties of energy concentration. Therefore, the online-studying mode presents negative stimuli to students. It may even block the realization of their academic goals because of the reduced study efficiency and communication opportunities with teachers and classmates. Moreover, adolescents are also likely to experience relational strain during the pandemic due to possibly more time spent with parents, leading to more quarrels or even parental abuses.

These pandemic-related stressors can induce negative emotions, anxiety, and depression in particular, and in turn, they may lead to offline or digital delinquent copings depending on those conditioning factors. Delinquent

copings include self-destructive behaviors, such as substance use and internet addiction, and other-directed delinquent behaviors, such as endangering others' safety, violence, and bully perpetration (Agnew, 2013).

Vocational high school students are likely to have higher levels of pandemic-related strains than their counterparts in public high schools. First, vocational high school students, mainly rural-to-urban migrant children, have fewer family/school resources and support, which helps reduce the worries about the shortage of medical services or insufficient supplies. Hence, they are likely to have higher levels of health-related strain. Similarly, since many vocational high school students are from rural families, they could hardly afford high-performance e-devices or have very limited access to fast Internet. Their parents may also be incapable of helping them solve technical problems due to their limited education level. The crowded living environment may also impede their learning efficiency at home and thus be outperformed by their better-off peer counterparts. Thus, a higher level of e-learning strain is expected among vocational high school students. Lastly, vocational high school students might have higher possibilities of experiencing family relational strain amid the pandemic. To illustrate, the parents of the vocational high school students are usually migrant workers working in service sectors, such as catering and domestic work, and the industrial sectors, with a lower-income and precarious job nature (Zhong et al., 2017). However, the COVID-19 pandemic and anti-pandemic policies engendered an unprecedented financial crisis worldwide, which pushed millions of migrant workers in China further into unemployment and economic fragility. Hence, the financial hardship might further generate additional stressors for low-income parents despite the escalated level of stress in taking care of their children. As a result, more parent-child conflicts are expected for economically disadvantaged families, which puts the vocational high school students at a higher risk of victimization experience (Prime, Wade, & Browne, 2020). These predicaments make vocational high school students more likely to experience family conflicts, thus leading to a higher level of family relational strains than public high school students, whose parents usually have urban hukou, higher education level, and better economic conditions.

In short, we propose our hypotheses:

- H1: Compared to public high school students, adolescents at vocational high schools might experience more pandemic-related strains, have more strain-led negative emotions, and are more likely to take delinquent copings during the pandemic.
- H2: The pandemic-related strains are positively associated with delinquent copings, and such associations are mediated by negative emotions.

### **3. Methods**

#### **3.1 Data**

The International Self-Report Delinquency Study (ISRD) is a large, international, collaborative study of victimization and delinquency among adolescents. The fourth sweep of ISRD will be conducted in 35 countries in 2021-2022. It uses a standardized survey instrument while still allowing additional sections containing questions related to the COVID-19. The third author of this paper is the team leader of the fourth wave of ISRD in China. The formal survey began in November 2021 and is still ongoing. It includes a representative student sample in two cities of China. One is Shenzhen, an economically developed city, while another is a city in Anhui province, a less developed place. It will include at least 900 students aged 12-19 in each of the cities. Data for this research was drawn from our pilot survey in one public high school and one vocational high school in Shenzhen. In the pilot survey, we randomly selected one class in 10th or 11th grade in each school and reached a sample of 101 adolescents.

#### **3.2 Measures**

##### **Dependent variable**

Delinquency. As students of these two high schools have very few delinquent behaviors, we can only choose some minor delinquent acts related to the pandemic as our dependent variables, i.e., skipping online class (0 = never, 1 = once a month or below, 2 = at least once a week, 3 = every day) and non-compliance with Covid regulations. Respondents were asked whether they had violated preventive measures, such as wearing masks and keeping social distancing, during the past 12 months (0 = never, 1 = yes).

##### **Independent variables**

Pandemic-related strains. Pandemic-related strains include health-related strain, e-learning strain, information strain, and coercive parenting during the pandemic (or family relational strain), and the measure of negative emotions. Health-related strain was a summed index of 13 items asking whether the respondents had worries about infection, the capability of the medical system, and the shortage of supplies of disinfectant supplies and medicines, etc. Each item was rated on a 5-point scale (1 = not worried at all, 5 = very worried). Higher scores indicate high levels of health-related strain. E-Learning strain was measured by two questions: comparing with studying in school normally, whether you think staying at home and taking online classes is harder or easier in terms of study (1 = much harder, 2 = harder, 3 = no difference, 4 = easier, 5 = much easier); compared with senior students who did not experience online-study mode due to the school closure, whether you think the school closure would reduce or increase your chances of success in life (1 = reduced a lot, 2 = reduced, 3 = no difference, 4 = increased, 5 = increased a lot). Both items were recoded as three-category variables. Responses 3 to 5 were recoded as 0 (no strain), while the first and the second responses were reversely coded. E-Learning strain was the summed score of these two items, with higher values indicating higher strain levels. Information strain was measured with one question: to what extent do you feel overwhelmed by news related to the COVID-19 pandemic (1 = not at all, 5 = very much). Higher values represent higher levels of information strain. Coercive parenting was measured by two items with both related to beating by parents. These two items were recoded as binary (0 = no, 1 = yes) and then summed together. As there were very few cases on the value 2, we combined value 1 and value 2. Hence, the variable coercive parenting is binary.

Negative emotion. Negative emotion is the mediating variable and was measured by 6 items inquiring into respondents' feelings like nervousness, anxiety, and depression during the past month. Each item is on a 4-point scale.

We also controlled for gender, age, mother education level, type of schools (0 = public high school, 1 = vocational high school), and self-control.

### 3.3 Statistical analysis

Statistical analysis was performed using Stata 15. First, to test our Hypothesis 1, we conducted the t-test/chi-square test of dependent and independent variables by school type, examining whether vocational high school students have higher levels of pandemic-related strains and negative emotions and are more likely to take delinquent copings. We also performed the correlation results of all the variables. Then, Hypothesis 2 was tested via generalized structural equation modeling, probing whether pandemic strains are associated with delinquent copings and whether negative emotions mediate such associations. After listwise deletion, 83 observations remained for our analysis.

## 4. Results

Table 1 shows the descriptive statistics of the full sample and the sub-samples of vocational/public high school students. 71.1% of the respondents are female. The mean age of the full sample is 16. The sample size of vocational high school students is nearly equal to that of public high school. Table 1 also shows the results of the t-test/chi-square test. Compared with public high school students, more vocational high school students skipped online classes ( $p < 0.05$ ). No significant difference was found for non-compliance with Covid regulations among these two groups of students. For the four variables of pandemic-related strain, we only found the two groups differed in information strain. Public high school students have higher levels of information strain ( $p < 0.05$ ). For negative emotions, no significant differences were found. We also found vocational high school students have lower mother education level ( $p < 0.001$ ) and lower self-control ( $p < 0.05$ ).

**Table 1.** Descriptive statistics (N = 83).

	The full sample	Vocational high school	Public high school	
	Mean (SD) / Percent	Mean (SD) / Percent	Mean (SD) / Percent	$\chi^2/t$ (p value)
Skip online classes				
Never	39.8%	32.5%	46.5%	$\chi^2 = 9.44$ (0.024)
Once a month or	19.3%	12.5%	25.6%	
At least once a week	30.1%	35.0%	25.6%	

Every day	10.8%	20.0%	2.3%	
Non-compliance with Covid regulations				
Never	77.1%	70.0%	83.7%	$\chi^2 = 2.21 (0.137)$
Yes	22.9%	30.0%	16.3%	
Health-related strain	11.75 (4.30)	11.58 (0.78)	11.91 (0.56)	t = 0.35 (p>0.1)
Elearning strain	0.93 (1.03)	0.95 (0.18)	0.91 (0.14)	t = -0.19 (p>0.1)
Information strain	2.43 (0.86)	2.23 (0.15)	2.63 (0.12)	t = 2.17 (p<0.05)
Coercive parenting				
No	89.2%	85.0%	93.0%	$\chi^2 = 1.38 (0.24)$
Yes	10.8%	15.0%	7.0%	
Negative emotions	14.12 (4.49)	13.9 (0.69)	14.33 (0.71)	t = 0.43 (p>0.1)
Gender				
Female	71.1%	50.0%	90.7%	
Male	28.9%	50.0%	9.3%	
Age	16.02 (0.64)	16 (0.09)	16.05 (0.11)	
Mother education level	3.33 (1.27)	2.78 (0.16)	3.84 (0.2)	t = 4.21
High school				
Public	51.8%			
Vocational	48.2%			
Self-control	20.41 (4.33)	19.33 (0.63)	21.42 (0.68)	t = 2.26 (p<0.05)

Table 2 is the correlation table of our analytical variables. It indicates that vocational high school students may experience more e-Learning strain and coercive parenting, while public high school students are more likely to have health-related strain and information strain. The correlations between vocational high school and the two delinquent behaviors are positive. Vocational high school students tend to have lower levels of negative emotions.

**Table 2.** Correlation table.

	1	2	3	4	5	6	7	8	9	10	11	12
1 Skip online class	1											
2 Non-compliance with Covid regulations	0.29	1										
3 Health-related strain	0.06	-0	1									
4 Elearning strain	0.23	0.15	0.17	1								
5 Information strain	-0.1	-0	-0.1	-0.1	1							
6 Coercive parenting	-0	0.09	-0.1	0.1	0.14	1						
7 Negative emotions	-0.1	-0.1	0.05	0.02	-0	0	1					
8 Male	0.13	0.16	-0.1	-0.1	-0.2	-0.1	-0.2	1				
9 Age	0.05	-0.1	0.24	0.09	0	-0.1	-0.1	0.02	1			

10	Mother education level	-0.1	-0.1	-0	-0.1	0.09	-0.1	0	-0.3	0.21	1		
11	Vocational school	0.28	0.16	-0	0.02	-0.2	0.13	-0.1	0.45	-0	-0.4	1	
12	Self-control	-0.4	-0.2	0.15	0.01	0.19	-0	0.07	-0.3	-0.1	0.1	-0.2	1

Table 3 displays the model estimates of our two dependent variables. We found that e-Learning strain is positively associated with both skipping online classes and non-compliance with Covid regulations. Coercive parenting is negatively associated with skipping online classes. However, in contrast with the notion of GST, negative emotions did not exert statistically significant influences on the two delinquent copings. On the other hand, in line with Hypothesis 1, vocational high school students are more likely to skip online classes than their counterparts in public high school. Finally, self-control is negatively associated with both of the two delinquent copings.

**Table 3.** Generalized structural equation model estimates of delinquent copings.

Independent variables	Skip online class		Non-compliance with Covid regulations	
	b	(SE)	b	(SE)
Health-related strain	0.056	0.054	0.022	0.071
ELearning strain	0.588***	0.225	0.453*	0.283
Information strain	0.316	0.262	0.198	0.343
Coercive parenting	-1.313*	0.844	0.048	0.939
<b>Mediating variable</b>				
Negative emotions	-0.040	0.050	-0.022	0.070
<b>Control variables</b>				
Male (ref. female)	-0.056	0.550	0.606	0.686
Age	-0.335	0.355	-0.534	0.494
Mother education level	0.110	0.192	0.007	0.262
Vocational high school (ref. public)	1.150**	0.517	0.384	0.683
Self-control	-0.201***	0.056	-0.134*	0.074
Observations		83		83
Log likelihood		-335.01		-281.72

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4.** Generalized structural equation model estimates of negative emotions.

Independent variables	Negative emotions	
	b	(SE)
Health-related strain	0.054	0.117
ELearning strain	0.045	0.489
Information strain	-0.056	0.584
Coercive parenting	0.055	1.608
Observations		83
Log likelihood		-335.01

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4 presents the relationship between pandemic-related strain and negative emotions. It is somewhat surprising that there were no significant associations between them. Considering this and the insignificant effect of negative emotions on delinquent copings, we did not perform the mediation analysis further.

### 5. Conclusions

This research examined the differential distribution of pandemic risks among vocational and public high school students. Findings revealed that adolescents at vocational high schools experienced more e-Learning strain and coercive parenting during the pandemic, whereas students at public high schools may have more health-related and information-related strain. This mega COVID-19 crisis does reallocate certain sources of strain between disadvantaged children and more advantaged children instead of simply reproducing the previous social

inequality. Furthermore, this study discovered that vocational high school students are more likely to have delinquent behaviors during the pandemic, such as skipping online classes and violating pandemic-related regulations than their public high school peers counterparts. But their psychological well-being seems better than students at normal public schools. Therefore, Hypothesis 1 is not fully supported.

Among four pandemic-related strains examined in this study, only the e-Learning strain was a significant risk factor associated with delinquent behaviors. On the other hand, it is worth highlighting that coercive parenting plays a protective role in reducing the probability of skipping online classes. Possibly, a higher level of coercive parenting implies stronger parental supervision when children take online classes. On the other hand, more importantly, this study lends limited support to Hypothesis 2, indicating that negative emotions neither significantly correlated with pandemic-related strain nor with delinquent copings. Negative emotions may not necessarily be related to delinquency. Conditioning mechanisms, e.g., cognitive abilities and social support, between strain and delinquency may play a more important role than this mediation. This study may warrant more attention on the research examining the conditioning factors of strain-coping during the disaster.

This research contributes to a fresh understanding of the impacts of pandemic-related strains and negative emotions on delinquent copings among Chinese high school students in the age of COVID-19. As an analysis of pilot survey data, several limitations are worthwhile to mention. First, the sample size is small. Only a very small proportion of students committed delinquent acts during the pandemic, which limited our selection of dependent variables in this study. According to the notion of GST, the moderation effects between strain and conditioning variables, such as self-control, association with delinquent peers, and social support, need to be examined to apply this theory fully. However, no significant moderation effects were found from the statistical analysis. This may be due to the limited sample size (little variation in those variables) as well. Finally, the measures of pandemic-related strains in this study only include several aspects of stressors. Future research can explore more pandemic-specific stressors, e.g., economic and relational, and their associations with delinquent behaviors during the pandemic, particularly digital delinquency, as the lockdown of many places and other Covid regulations may stimulate more online delinquent behaviors.

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