Two hundred and thirteen Chinese adolescents (103 females; mean age = 12.18 years) completed a survey one year before (Wave 1) and five months after the COVID-19 outbreak (Wave 2). Path analysis revealed that after controlling for adolescents’ emotional maladjustment at Wave 1, perceived parental supportive reactions to adolescents’ negative emotions at Wave 1 predicted adolescents’ greater use of approach coping and less use of avoidance coping at Wave 2, which in turn, was associated with less emotional maladjustment at Wave 2; conversely, perceived parental nonsupportive reactions at Wave 1 predicted adolescents’ greater use of avoidance coping at Wave 2, which in turn, was associated with greater emotional maladjustment at Wave 2. The findings were similar for mothers and fathers.

Key words: COVID-19 pandemic – coping – emotional maladjustment – parental reactions to adolescents’ negative emotions

INTRODUCTION
The COVID-19 outbreak was declared as a global pandemic on March 11, 2020 due to its severity and rapid spread around the world (World Health Organization, 2021). In China, by the end of May 2020, 83,000 individuals were diagnosed with COVID-19 and 4,634 individuals passed away due to this disease (National Health Commission, 2020). Besides pandemic-related stressors such as worrying about being infected, certain challenges such as worrying about not getting good grades due to the new mode of online learning or having heightened conflicts with parents when confined at home may be particularly salient for Chinese adolescents (Magson et al., 2021), as Chinese parents are typically highly involved and likely controlling in their children’s life, especially in the academic domain (Pomerantz, Ng, Cheung, & Qu, 2014). Indeed, a study among 8,079 adolescents in China during the pandemic in March 2020 found the prevalence of depression and anxiety to be 43.7% and 37.4%, respectively (Zhou et al., 2020).

However, there are various intrapersonal and interpersonal factors such as coping and parenting that may contribute to individual differences in adolescents’ psychological functioning during the pandemic (Magson et al., 2021; Zhang et al., 2020), which have yet to be investigated systematically. To address this gap, using a two-wave longitudinal design that spanned before and after the COVID-19 outbreak in China, this study examined how adolescents’ coping was related to their emotional maladjustment during the pandemic, adjusting for their emotional maladjustment before the outbreak, and how their coping was foreshadowed by their perceptions of their parents’ reactions to their negative emotions before the outbreak. The findings may help point to concrete areas for intervention to safeguard and foster adolescent’s well-being during and after the pandemic (e.g., cultivating adaptive coping in adolescents themselves and educating parents on conducive parenting).

Adolescents’ Coping and their Emotional Maladjustment
Coping, defined as one’s “efforts to regulate emotion, cognition, physiology, behavior, and the environment in reaction to stressful events or situations” (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001, p. 89), and conceptualized usually as a relatively stable trait-like construct (Valiente, Eisenberg, Fabes, Spinrad, & Sulik, 2015), has long been studied as a critical intrapersonal factor directly affecting individuals’ emotional maladjustment. Coping efforts or strategies have been typically researched in two distinct categories: approach versus avoidance coping (for a
Approach coping (also known as active or engagement coping) involves cognitive or behavioral coping efforts oriented toward stressors (e.g., positively reappraising the problem, solving the problem, or seeking support). In contrast, avoidance coping (also known as passive or disengagement coping) involves cognitive or behavioral efforts oriented away from stressors (e.g., denying, ignoring, expressing negative feelings to others, or wishful thinking; Ebata & Moos, 1991). Numerous cross-sectional and longitudinal studies have shown that approach coping negatively relates, whereas avoidance coping positively relates to emotional maladjustment (e.g., anxiety and depression) among adolescents (for a review, see Compas et al., 2017). There are also initial findings showing that during the COVID-19 pandemic, Chinese adolescents' approach coping may be a protective factor against emotional maladjustment, whereas avoidance coping may be a risk factor (Zhang et al., 2020). Interestingly, it has been argued that in the context of uncontrollable stressful events, avoidance coping might protect rather than undermine adolescents' mental health (Dempsey, Overstreet, & Moely, 2000). Given that the COVID-19 pandemic may bring about a multitude of stressors that vary in controllability (e.g., home confinement itself may be less uncontrollable than having conflicts with family members during confinement), it is worth additional research to further pinpoint relationships between coping and emotional maladjustment during the pandemic.

Parents' Reactions to Adolescents' Negative Emotions and Adolescents' Coping

Parenting in general has long been recognized as a key interpersonal factor pervasively influencing child and adolescent development, including adolescents’ use of coping strategies (Kliwer, Fearnow, & Miller, 1996; Modecki, Zimmer-Gembeck, & Guerra, 2017). In particular, parenting practices in terms of reactions to adolescents’ negative emotions (Eisenberg, Cumberland, & Spinrad, 1998; Power, 2004) may directly shape adolescents' coping. When adolescents express negative emotions, parents may react in supportive ways, such as accepting and encouraging adolescents' emotional expression (termed as expressive encouragement), comforting adolescents to help them feel better (termed as emotion-focused reactions), or helping adolescents solve the problem that causes their negative emotions (termed as problem-focused reactions). These supportive reactions (Fabes & Eisenberg, 1998) allow adolescents to learn effective means (e.g., seeking social support) to deal with stressful situations and in turn feel confident to cope, thereby facilitating their use of approach coping (Eisenberg et al., 1998; Smith et al., 2006). Parents may also react in nonsupportive ways, such as verbally or physically punishing adolescents’ emotional expression (termed as punitive reactions), discounting or devaluing the seriousness of children’s emotions or the problems that cause the emotions (termed as minimization reactions), or becoming distressed themselves (termed as distress reactions). These nonsupportive reactions (Fabes & Eisenberg, 1998) may lead to adolescents' use of avoidance coping (e.g., hiding emotions) when dealing with future stressful events because they are shown that expressing negative emotions is unacceptable, instead of having opportunities to acquire effective strategies to regulate their emotions and solve problems (Eisenberg, Fabes, & Murphy, 1996; Morris, Silk, Steinberg, Myers, & Robinson, 2007). Indeed, empirical research (Eisenberg et al., 1996; Smith et al., 2006) has found that mothers' supportive reactions to their school-aged children's negative emotions are associated positively with children's approach coping (e.g., positive thinking and problem solving), whereas mothers' nonsupportive reactions are associated positively with children's avoidant coping (e.g., ignoring the problem).

Nonetheless, there has been limited research among adolescents to link parents’ reactions to their negative emotions and their coping. This is a notable lacuna given that coping may differ significantly during adolescence versus childhood in “structure, organization, and flexibility” (Skinner & Zimmer-Gembeck, 2007). Moreover, the findings among European-Americans regarding parents' reactions to children’s negative emotions and its implications for children’s psychological functioning may not readily generalize to other cultural groups, such as among Asians (Tao, Zhou, & Wang, 2010; Yang, Song, Doan, & Wang, 2020), thereby calling for further research in non-Western cultures. In addition, most prior studies have focused exclusively on mothers. A small body of research comparing maternal and paternal practices among European-Americans have found that mothers are more likely to engage in supportive reactions to children’s negative emotions, whereas fathers are more likely to engage in nonsupportive reactions (specifically, punitive and minimization reactions; Eisenberg et al., 1996; Klimes-Dougan...
et al., 2007). Also, mothers (versus fathers) are typically more involved in children’s emotion socialization (Garside & Klimes-Dougan, 2002), and thus may play a greater role in children’s subsequent functioning (Kliewer et al., 1996). Exploring variations among non-Western mothers versus fathers in their reactions to adolescents’ negative emotions and the implications for adolescents’ psychological functioning remains an important endeavor (Han, Qian, Gao, & Dong, 2015).

**Testing the Mediating Role of Adolescents’ Coping in the Relationship between Parents’ Reactions to Adolescents’ Negative Emotions and Adolescents’ Emotional Maladjustment during the COVID-19 Pandemic**

Taken together, existing theory and research (e.g., Eisenberg et al., 1998; Morris et al., 2007) suggests a mediation model integrating intrapersonal and interpersonal influencing factors and adolescents’ emotional maladjustment that may point to viable avenues to uphold adolescents’ mental health during and after the COVID-19 pandemic. As shown in Figure 1, parental reactions to adolescents’ negative emotions as an interpersonal factor may predict adolescents’ coping as an intrapersonal factor, which in turn, may predict adolescents’ emotional maladjustment. Specifically, supportive reactions may facilitate adolescents’ use of approach coping while prevent them from using avoidance coping when faced with stressors (Eisenberg et al., 1996; Power, 2004), and more use of approach coping and less use of avoidance coping may, in turn, be associated with dampened emotional maladjustment such as less experience of negative emotions, anxiety, and depression (Compas et al., 2017; Zhang et al., 2020); in contrast, nonsupportive reactions may hinder adolescents’ use of approach coping while intensify their use of avoidance coping (Eisenberg et al., 1996; Power, 2004), and less use of approach coping and more use of avoidance coping may in turn be associated with heightened emotional maladjustment (Compas et al., 2017; Ebata & Moos, 1991). Indeed, such a mediation model has been examined and supported preliminarily in a cross-sectional study in the context of children’s coping with routine stressors (Smith et al., 2006).

Distinguishing itself from and moving beyond this early study, the current study situated the aforementioned mediation model in the context of Chinese adolescents coping with the COVID-19 pandemic. This would allow exploration of several important theoretical and practical issues. Theoretically, how may the proposed medicating role of coping vary across different situations (e.g., in the face of routine stressors versus atypical stressors such as those encountered during the pandemic), and across different cultural settings (e.g., in European-American versus Chinese culture)? And practically, which areas of intervention may be worth concerted efforts to protect and promote adolescents’ mental health during and after the pandemic (e.g., adolescents’ coping as an intrapersonal factor and parental reactions to adolescents’ negative emotions as an interpersonal factor)? Furthermore, the current study spanned longitudinally before and during the COVID-19 outbreak in China, capturing initially parental reactions and adolescents’ emotional maladjustment before the outbreak (Wave 1), and subsequently adolescents’ coping and emotional maladjustment during the pandemic (Wave 2). It also captured maternal and paternal reactions separately through adolescents’ reports, allowing comparisons of maternal versus paternal roles that are still quite lacking in the literature.

**METHOD**

**Participants and Procedure**

This research was part of the project titled “Parental emotion socialization: Implications for early adolescents’ socioemotional adjustment, the role of parents’ socialization goals, and the role of gender” that was approved by the Survey and Behavioral Research Ethics Committee at the Chinese University of Hong Kong. Participants were recruited from two secondary schools in Shanghai, China, a major city in which 98.8% of the population are of Han decent (The Sixth National Population Census, 2010). Adolescents from randomly selected classes in Grade 6 and Grade 7 in the two schools were invited, and for 65.4% of these adolescents, their parents provided written consent for them to participate. Also with their own written assent, adolescents from randomly selected classes in Grade 6 and Grade 7 in the two schools were invited, and for 65.4% of these adolescents, their parents provided written consent for them to participate. Also with their own written assent, adolescents completed an online survey in December 2018 (Wave 1) and again in May 2020 (Wave 2), spanning around 17 months. Wave 1 took place approximately one year before the COVID-19 outbreak in China, following the first confirmed case in December 2019 (World Health Organization, 2021). Wave 2 took place about four months after the outbreak when pandemic control measures including school closure were observed strictly in Shanghai; while economic also started to recover
The attrition rate from Wave 1 to Wave 2 was 8.6%, with a total of 213 participants (103 girls and 110 boys; mean age = 12.18 years, SD = 0.60) having completed the survey at both waves. According to adolescents’ report on parental educational attainment, 2.2% of their mothers and 0.9% of their fathers have not completed high school; 8.9% of their mothers and 11.7% of their fathers have completed high school or vocational school: 16% of their mothers and 13.6% of their fathers have an associate degree; 56.8% of their mothers and 52.1% of their fathers have a bachelor’s degree; 10.8% of their mothers and 16.4% of their fathers have a masters’ degree; and 4.2% of their mothers and 5.2% of their fathers have a PhD degree.

Measures
At Wave 1, adolescents reported on perceived maternal and paternal reactions to their negative emotions and their emotional maladjustment; and at Wave 2, they reported on their emotional maladjustment again and also their use of coping strategies to deal with stressors related to the COVID-19 pandemic. Established measures that are originally in English and have been widely employed in prior research were adopted in the current study. A team of bilingual researchers followed the standard procedures of translation and back-translation (Brislin, 1970) to create the Chinese versions of the measures used in the current study.

Perceived maternal and paternal reactions to adolescents’ negative emotions (Wave 1). Adolescents’ perceived maternal and paternal reactions to their negative emotions were assessed using the Coping with Children’s Negative Emotions Scale—Adolescents’ Perceptions of Parents (CCNES; Fabes & Eisenberg, 1998). With a total of 54 items, CCNES has six subscales tapping into different types of parental reactions across nine hypothetical scenarios that resemble typical stressful situations and events in adolescents’ daily life (e.g., becoming angry at a close friend). Adolescents indicated how likely (1 = “very unlikely” to 7 = “very likely”) their mothers and fathers, respectively, would engage in each of the six types of reactions under each of the nine scenarios: (a) Expressive Encouragement (EE; e.g., “encouraging me to express my anger”); (b) Emotion-Focused Reactions (EFR; e.g., “trying to help me calm down”); (c) Problem-Focused Reactions (PFR; e.g., “helping me think of things to do to solve the problem”); (d) Punitive Reactions (PR; e.g., “getting angry at me for losing my temper”); (e) Distress Reactions (DR; e.g., “becoming uncomfortable and uneasy in dealing with my anger”); (f) Minimization Reactions (MR; e.g., “telling me that I really have nothing to be sad about”). All of the six subscales were internally reliable in the current sample: $a_s = 0.78$ to 0.90 for perceived maternal reactions, and $a_s = 0.79$ to 0.92 for perceived paternal reactions. For each subscale (i.e., each type of reactions), the mean of the nine items corresponding to the nine scenarios was taken, with higher scores representing greater perceived maternal and paternal use of that type of reactions.

Consistent with prior findings among Asians (Han et al., 2015; Raval, Li, Deo, & Hu, 2018), in the current sample of Chinese adolescents,
perceived maternal (rs = .36 to .43, ps < .001) and paternal MR (rs = .33 to .54, ps < .001) were correlated positively with all the other five subscales. Such patterns are unlike prior findings among European-Americans (Fabes & Eisenberg, 1998) that MR was clearly a type of nonsupportive reactions, with positive correlations with PR and DR but negative correlations with supportive types of reactions (i.e., EE, EFR, and PFR). Following the decisions and the practices in prior studies among Asians (Han et al., 2015; Raval et al., 2018), MR was excluded in subsequent analyses given its ambiguous nature of being supportive versus nonsupportive. Thus, for perceived maternal and paternal reactions, respectively, a composite of Perceived Supportive Reactions (i.e., M-PSR for maternal reactions and F-PSR for parental reactions) was computed by averaging the three supportive types of reactions (i.e., EE, EFR, and PFR) for parental reactions) was computed by averaging the three supportive types of reactions (i.e., EE, EFR, and PFR); rs = .84 to .92, ps < .001 for maternal reactions, and rs = .88 to .94, ps < .001 for paternal reactions), and a composite of Perceived Nonsupportive Reactions (i.e., M-PNR for maternal reactions and F-PNR for parental reactions) was computed by averaging the two nonsupportive types of reactions other than MR (i.e., PR and DR; r = .80, p < .001 for maternal reactions, and r = .82, p < .001 for paternal reactions).

Emotional maladjustment (Wave 1 and Wave 2). Three aspects of adolescents’ emotional maladjustment (i.e., experience of negative emotions, anxiety, and depression) were assessed at both waves. Adolescents reported on their feelings in the past month using a Likert scale ranging from 1 = “never” to 7 = “always.” Experience of negative emotions was assessed with 8 items (e.g., angry, shamed) that have been used in prior research among Chinese adolescents (Wang, Pomerantz, & Chen, 2007). The mean of the 8 items was taken, with higher scores indicating more frequent experience of negative emotions (zs = .94 at Wave 1 and .92 at Wave 2). Anxiety was assessed with 6 items (e.g., “I am tense.”) from the short-form of the Spielberger State-Trait Anxiety Inventory (STA-I; Marteau & Bekker, 1992). The mean of the 6 items was taken (after rescoring 3 reverse-keyed items), with higher numbers indicating greater anxiety (zs = .78 at Wave 1 and .82 at Wave 2). Depression was assessed with 10 items (e.g., “I felt depressed”) from the Boston short-form of The Center for Epidemiological Studies Depression (CES-D; Kohout, Berkman, Evans, & Cornoni-Huntley, 1993). The mean of the 10 items was taken (after rescoring two reverse-keyed items), with higher numbers indicating greater depression (zs = 0.79 at Wave 1 and 0.85 at Wave 2). Consistent with conceptualizations and findings in prior research (Eisenberg et al., 1998; Wang et al., 2007), the three aspects of emotional maladjustment were positively correlated with each other (rs = .56 to .65, ps < .001 at Wave 1; rs = .64 to .75, ps < .001 at Wave 2). Thus, a composite of emotional maladjustment was created at each wave, by averaging the scores of the experience of negative emotions, anxiety, and depression.

Coping strategies (Wave 2). At Wave 2, to assess adolescents’ use of coping strategies to deal with stressors that are specifically related to the COVID-19 pandemic (including both acute events such as the death of an infected family member and daily hassles due to the pandemic such as difficulty with online learning during school closure, and increased conflicts with family members during home confinement), they were first instructed to indicate whether or not they had been distressed by these stressors since the outbreak. Indeed, adolescents had all been affected by at least some of the stressors, particularly daily hassles due to home confinement and school closure. Next, in responding to the Chinese version of the Coping Scale for Children and Youth (CSCY; Brodzinsky et al., 1992) created for the current study, adolescents rated the extent to which they used each of fourteen coping strategies to deal with the pandemic-related stressors they had encountered (1 = “not at all true of me” to 7 = “very true of me”). The original English version of CSCY has four subscales tapping into four types of coping strategies: (a) assistance seeking (e.g., “I got advice from someone about what I should do”); (b) cognitive-behavioral problem solving (e.g., “I thought about the problem and tried to figure out what I could do about it”), (c) cognitive avoidance (e.g., “I went on with things as if nothing was wrong”), and (d) behavioral avoidance (e.g., “I tried not think about the problem.”). Items that may not be applicable during the COVID-19 pandemic and items that tend to read repetitive when being translated into Chinese were excluded. For example, the item that “I stayed away from things that reminded me of the problem” may not be applicable because staying away from certain things may indeed be an effective preventive measure against the contagious disease.

Guided by the approach versus avoidance model of coping (Ebata & Moos, 1991), a Confirmatory Factor Analyses (CFA) in the framework of
Structural Equation Modeling (SEM) was performed to test if the 14 items loaded on two factors of approach and avoidance coping, respectively. The model achieved acceptable goodness of fit, $\chi^2(73) = 176.19, p < .001$, CFI = 0.93, TLI = 0.91, RMSEA = 0.08, SRMR = 0.07 (Kline, 2011), supporting CSCY being used as two subscales. Specifically, a composite of approach coping ($x = 0.91$) was computed by taking the mean of seven items originally from the subscales of assistance seeking and problem solving, and a composite of avoidance coping ($x = 0.81$) was computed by taking the mean of seven items originally from the subscales of cognitive avoidance and behavioral avoidance.

**RESULTS**

Two sets of analyses were conducted. The preliminary analyses examined descriptive statistics and bivariate correlations of the key variables under study, and explored how several demographic factors (i.e., adolescents’ gender, age, and parental educational attainment) may make a difference in the key variables, potential changes in adolescents’ emotional maladjustment from Wave 1 to Wave 2, and potential differences in perceived maternal versus paternal reactions. The central analyses consisted of a two-group path analysis in the framework of SEM to test the proposed mediation model (see Figure 1), with particular attention to potential differences in the hypothesized paths for perceived maternal versus paternal reactions.

**Preliminary Analyses**

For the key variables under study (i.e., adolescents’ perceived maternal and paternal reactions to their negative emotions at Wave 1, their emotional maladjustment at both waves, and their coping at Wave 2), skewness and kurtosis values ranged from −0.82 to 1.12 and −0.20 to 1.54, respectively, indicating that all these variables were normally distributed based on the cutoff values of 2 for skewness and 7 for kurtosis (Curran, West, & Finch, 1996). Table 1 presents the means, the standard deviations, and the bivariate correlations of these variables. As expected, perceived maternal and paternal supportive reactions at Wave 1 were positively correlated with adolescents’ approach coping, and negatively correlated with their avoidance coping at Wave 2 as well as emotional maladjustment at both Waves; in contrast, adolescents’ perceived maternal and paternal nonsupportive reactions at Wave 1 were unrelated to their approach coping but positively correlated with their avoidance coping at Wave 2 as well as emotional maladjustment at both Waves; moreover, adolescents’ approach coping at Wave 2 was negatively correlated with their emotional maladjustment at both Waves, whereas adolescents’ avoidance coping at Wave 2 was positively correlated with their emotional maladjustment at both Waves.

Independent $t$-tests revealed that compared with girls, boys reported greater use of nonsupportive reactions by both mothers ($p = .02$, Cohen’s $d = .33$) and fathers ($p = .02$, Cohen’s $d = .39$) at Wave 1, and there was no significant gender difference in the other key variables under study. Also, there was no significant correlation between either adolescents’ age or parental educational attainment and the key variables under study. Thus, only adolescents’ gender was included in the central analyses as a covariate. On average, the current sample of Chinese adolescents did not experience significant changes in their emotional maladjustment from Wave 1 (approximately one year before the COVID-19 outbreak) to Wave 2 (about four months after the outbreak, $p = .28$, Cohen’s $d = .07$). Consistent with prior findings among European-Americans (Klimes-Dougan et al., 2007), adolescents perceived less use of supportive reactions ($p = .01$, Cohen’s $d = .25$) and greater use of nonsupportive reactions ($p = .04$, Cohen’s $d = .13$) by their fathers than by their mothers at Wave 1.

**Central Analyses**

Because perceived maternal and paternal reactions were both reported by adolescents and thus interdependent with rather than independent from each other, a Maximum Likelihood estimation with robust standard errors and Satorra-Bentler scaled statistics (MLM; see Duineveld, Parker, Ryan, Ciarrochi, & Salmela-Aro, 2017) was adopted in conducting the two-group path analysis comparing perceived maternal versus paternal reactions in the proposed mediation model (see Figure 1). The Lavaan package in R software were used to conduct this analysis (Rosseel, 2012). Following the procedures employed by Duineveld and colleagues (2017), structural invariance of the model was tested to detect potential differences in the hypothesized paths between perceived maternal versus paternal reactions. Specifically, a model allowing the hypothesized paths to vary for perceived maternal versus paternal reactions (i.e., the unconstrained model) was compared with a model
constraining the hypothesized paths to be equal for perceived maternal versus paternal reactions (i.e., the constrained model). A nonsignificant difference in the chi-square statistic between the two models would indicate that the hypothesized paths were statistically similar for perceived maternal versus paternal reactions. Indirect effects in the proposed mediation model were estimated with 95% Confidence Intervals (CI) from 1000 bootstrapping samples generated from the original data (N = 213) by random sampling (Hayes, 2009). CIs that did not include zero would indicate significant indirect effects.

The unconstrained model fit the data excellently, \(\chi^2(4) = 0.81, p = .94\), CFI = 1.00, TLI = 1.00, RMSEA = .00, and SRMR = .01 (Kline, 2011). The constrained model also fit the data very well, \(\chi^2(18) = 2.87, p = 1.00\), CFI = 1.00, TLI = 1.00, RMSEA = .00, and SRMR = .02. Chi-square difference test revealed that compared with the unconstrained model, there was no significant decrease in the model fit of the constrained model, \(\Delta\chi^2(14) = 2.04, p = 1.00\), suggesting that the hypothesized paths were similar for perceived maternal versus paternal reactions. Thus, estimates of the path coefficients from the constrained model were presented to indicate the similar hypothesized paths (see Figure 1) for perceived maternal and paternal reactions, which were subsequently referred to as perceived parental reactions. As shown in Table 2, consistent with expectations, after controlling for adolescents’ emotional maladjustment at Wave 1 and accounting for the role of adolescents’ gender, perceived parental supportive reactions to adolescents’ emotions at Wave 1 predicted adolescents’ greater use of approach coping and less use of avoidance coping at Wave 2, both of which in turn were associated with adolescents’ dampened emotional maladjustment at Wave 2. The indirect effect of “perceived parental supportive reactions at Wave 1 → approach coping at Wave 2 → emotional maladjustment at Wave 2” (unstandardized coefficient B = -.04, standard error SE = .01, p = .001, 95% CI [-.007, -.023]), and the indirect effect of “perceived parental supportive reactions at Wave 1 → avoidance coping at Wave 2 → emotional maladjustment at Wave 2 (B = .05, SE = .01, p < .001, 95% CI [0.03, 0.08]) were both significant. Also, consistent largely with expectations, perceived parental nonsupportive reactions to adolescents’ negative emotions at Wave 1 predicted adolescents’ greater use of avoidance coping at Wave 2, which in turn was associated with adolescents’ heightened emotional maladjustment at Wave 2. The indirect effect of “perceived parental nonsupportive reactions at Wave 1 → avoidance coping at Wave 2 → emotional maladjustment at Wave 2” was significant, B = .06, SE = .02, p = .003, 95% CI [0.02, 0.11]. Perceived parental nonsupportive reactions at Wave 1 did not relate significantly to adolescents’ approach coping at Wave 2 as hypothesized, and thus there was no significant indirect effect of “perceived parental nonsupportive reactions at Wave 1 → approach coping at Wave 2 → emotional maladjustment at Wave 2” as hypothesized either. Notably, the two direct effects from perceived parental supportive and nonsupportive reactions at Wave 1, respectively, to adolescents’ emotional maladjustment at Wave 2 were both nonsignificant, suggesting that over time, the links from perceived parental reactions to adolescents’ emotional maladjustment were mediated completely by adolescents’ coping.

| Variable | M  | SD  | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------|----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. M-PSR (W1) | 5.37 | 1.36 |     |     |     |     |     |     |     |
| 2. M-PNR (W1) | 2.50 | 1.31 | -.18** |     |     |     |     |     |     |
| 3. F-PSR (W1) | 5.13 | 1.56 | .79*** | -.24*** |     |     |     |     |     |
| 4. F-PNR (W1) | 2.58 | 1.19 | -.13 | .88*** | -.08 |     |     |     |     |
| 5. Approach coping (W2) | 4.82 | 1.20 | .32*** | -.11 | .30*** | -.11 |     |     |     |
| 6. Avoidance coping (W2) | 2.83 | 1.14 | -.15* | .29*** | -.22** | .18* | -.07 |     |     |
| 7. Emotional maladjustment (W1) | 2.41 | 0.99 | -.37*** | .36*** | -.36*** | .25*** | -.30*** | .16* |     |
| 8. Emotional maladjustment (W2) | 2.48 | 0.80 | -.28*** | .32*** | -.34*** | .21** | -.44*** | .51*** | .45*** |

Note. M-PSR = perceived maternal supportive reactions; M-PNR = perceived maternal nonsupportive reaction; F-PSR = perceived paternal supportive reactions; F-PNR = perceived paternal nonsupportive reaction; W1 = Wave 1; W2 = Wave 2; M = mean; SD = standard deviation.

*p < .05; **p < .01; ***p < .001.

TABLE 1
Descriptive Statistics and Bivariate Correlations
TABLE 2
Coefficients Estimated in the Two-group Path Analysis Testing the Mediating Role of Adolescents’ Coping (W2) between Perceived Parental Reactions to Adolescents’ Negative Emotions (W1) and Adolescents’ Emotional Maladjustment (W2)

| Outcome variable | Predictors | R² | B     | SE  | β    | z    | 95% CI        |
|------------------|------------|----|-------|-----|------|------|--------------|
| Approach coping (W2) | Adolescents’ gender | .16 | .32  | .11 | .13  | 2.92** | [0.11, 0.53] |
|                  | Emotional maladjustment (W1) | –.25 | .07  | –.21 | –3.70*** | [–0.39, –0.12] |
|                  | PSR (W1)   | .18 | .04  | .23 | 4.36*** | [0.10, 0.26] |
|                  | PNR (W1)   | –.04 | .05  | –.04 | –.71   | [–0.14, 0.07] |
| Avoidance coping (W2) | Adolescents’ gender | .10 | –.35 | .10 | –.15 | –3.37** | [–0.56, –0.15] |
|                  | Emotional maladjustment at (W1) | .02 | .06  | .01 | 0.26   | [–0.11, 0.13] |
|                  | PSR (W1)   | –.11 | .04  | –.15 | –2.72** | [–0.19, –0.03] |
|                  | PNR (W1)   | .22 | .07  | .23 | 3.28**  | [0.09, 0.35] |
| Emotional maladjustment (W2) | Adolescents’ gender | .52 | –.08 | .06 | –.05 | –1.35  | [–0.19, 0.04] |
|                  | Emotional maladjustment (W1) | .20 | .03  | .26 | 6.38*** | [0.14, 0.27] |
|                  | PSR (W1)   | –.02 | .02  | –.03 | –.66   | [–0.06, 0.03] |
|                  | PNR (W1)   | .04 | .03  | .06 | 1.33    | [–0.02, 0.09] |
|                  | Approach coping (W2) | –.22 | .03  | –.33 | –6.94*** | [–0.27, –0.16] |
|                  | Avoidance coping (W2) | .29 | .04  | .43 | 7.56*** | [0.22, 0.37] |

Notes. Coefficients were from the model constraining all the paths (see Figure 1) to be equal for perceived maternal and paternal reactions, and thus the predictors were labeled perceived parental reactions. PSR = perceived parental supportive reactions; PNR = perceived parental nonsupportive reactions; W1 = Wave 1; W2 = Wave 2; R² = percentage of explained variance; B = unstandardized coefficients; SE = standard error; β = standardized coefficients; CI = confidence interval; adolescents’ gender: 0 = female, 1 = male.

*p < .05; **p < .01; ***p < .001.

DISCUSSION
The main goal of this two-wave longitudinal study was to examine the mediating role of Chinese adolescents’ coping with the COVID-19 pandemic in the relationship between parental reactions to adolescents’ negative emotions before the pandemic and adolescents’ emotional maladjustment during the pandemic. As expected, adolescents who perceived more supportive parental reactions to their negative emotions before the pandemic used more approach coping and less avoidance coping when managing pandemic-related stress. This, in turn, was associated with less emotional maladjustment in these adolescents during the pandemic. In contrast, adolescents who perceived more parental nonsupportive reactions before the pandemic used more avoidance coping during the pandemic, which was associated with more emotional maladjustment. Notably, there was no significant difference in how maternal versus paternal reactions predicted adolescents’ coping. To our knowledge, the current study was the first that tested the integrative model of adolescents’ coping mediating the relationship between parental reactions to adolescents’ negative emotions and adolescents’ maladjustment longitudinally and in a non-Western sample (specifically, among Chinese adolescents before and after the COVID-19 outbreak in China). The findings may shed light on a number of key issues theoretically about research on coping, parental socialization and adolescents’ psychological functioning, and practically about adolescents’ mental health during and after the COVID-19 pandemic.

The current findings regarding the CFA of the CSCY supported, for the first time empirically, the approach versus avoidance model of coping (Ebata & Moos, 1991) in a sample of Chinese adolescents. More importantly, it was found that during the COVID-19 pandemic, Chinese adolescents’ use of approach coping to manage pandemic-related stress was associated with their dampened emotional maladjustment, while their use of avoidance coping was associated with their heightened emotional maladjustment. This is consistent with prior research conducted mostly in the context of routine stressors (Liu, Tein, & Zhao, 2004), rather than with the arguments that avoidance coping may be adaptive in the face of uncontrollable events such as a pandemic (Dempsey et al., 2000; Main, Zhou, Ma, Luecken, & Liu, 2011). Although the COVID-19 pandemic may bring about both acute (e.g., the death of an infected family member) and relatively lasting uncontrollable stressful events (e.g., home confinement), as individuals gradually adapt during the pandemic, daily hassles due originally to
the uncontrollable events (e.g., increased conflicts with family members during home confinement) may become more like routine stressors in nonpandemic contexts. Indeed, the most frequently acknowledged stressors by the adolescents in the current study were daily hassles due to the pandemic (e.g., difficulty with online learning during school closure, and increased conflicts with family members during home confinement), and this may be why the current findings showed similar patterns to prior findings about coping in nonpandemic contexts. These findings suggest that to at least some extent, coping may be trait-like and nonspecific, such that across somewhat different situations (e.g., when encountering conflicts with family members in nonpandemic versus pandemic contexts), not only may individuals use similar coping strategies, but also the effects of the coping strategies on individuals' mental health may be similar. However, to provide a refined picture regarding the questions of the extent to which coping is trait- versus state-like, and whether there are unique features of coping with pandemic-related stressors, future research is needed to differentiate coping with specific stressors (e.g., school closure versus home confinement; unlike the current study asking adolescents to report on their coping in response to multiple stressors altogether). Notably, the current findings also suggest generalizability of prior findings among European-Americans about the adaptiveness of approach (versus avoidance) coping to adolescents in China, a non-Western culture.

The current findings pertaining to parenting practices generally support expectations based on prior theory and research. Specifically, parental supportive reactions to adolescents' negative emotions before the pandemic predicted adolescents' greater use of approach and less use of avoidance coping to manage pandemic-related stressors, which mediated fully the negative association from parental supportive reactions to adolescents' emotional maladjustment during the pandemic. In contrast, parental nonsupportive reactions before the pandemic predicted adolescents' greater use of avoidance coping with the pandemic, which mediated fully the positive association between prepandemic parental nonsupportive reactions and adolescents' emotional maladjustment during the pandemic. Intriguingly but in line with prior research among Chinese families (Tao et al., 2010), according to Chinese adolescents' reports in the current study, parental minimization reactions were not clearly found to be (and thus excluded as) a nonsupportive (versus supportive) type of parenting practices. Further research will be worthwhile to disentangle the mixed nature of parental minimization reactions in Chinese culture. Of particular note, the current study compared directly perceived maternal versus paternal reactions to adolescents' emotions. Despite that compared with mothers, fathers were perceived by adolescents as less supportive and more nonsupportive in reaction to their negative emotions, the links from perceived parental supportive and nonsupportive reactions to adolescents' coping and in turn emotional maladjustment were similar for mothers and fathers. On the one hand, these findings may support the traditional Chinese case of “strict father and kind mother,” where fathers are responsible mainly for disciplining children and mothers are responsible mainly for nurturing children (Li & Lamb, 2015). On the other hand, these findings suggest similar influences on children's development by contemporary Chinese mothers and fathers, likely resulting from changes in family structures and gender roles as parents (e.g., fathers becoming increasingly involved in parenting) that have taken place in China in the past decades (Li & Lamb, 2015).

Importantly, the current findings provide feasible directions for practical endeavors to safeguard and foster adolescents' mental health, especially during and after unusual stressful global events such as the COVID-19 pandemic that cause intensified negative emotions. Cultivating adolescents' use of approach (versus avoidance) coping will be key to such endeavors, which may be achieved by training programs coaching adolescents on concrete strategies (e.g., reappraising the event to think positively and seeking advice for problem solving, rather than denying and doing nothing; Botvin & Griffin, 2015). Moreover, parents play a vital role through their reactions to adolescents' negative emotions. This may be a long-time socialization process that has started to taken effects before major events like the pandemic happen, as shown in the current study capturing parental reactions before the pandemic. Nonetheless, it has been demonstrated that parents of adolescents still benefit significantly from training programs for conducive reactions to children's emotions (e.g., supporting rather than punishing adolescents' expression of negative emotions or becoming distressed themselves; Kehoe, Havighurst, & Harley, 2014), which in turn contributes favorably to adolescents' well-being. Fathers may be particularly targeted in such interventions given their relatively
greater use of nonsupportive and less use of supportive practices.

The current study was not free of limitations, warranting caution in interpreting the findings. Despite being longitudinal and after controlling for adolescents' emotional maladjustment before the pandemic, the current findings may be somewhat inflated by shared method variance and report bias, due to sole reliance on adolescents' reports without addressing social desirability. The current study did not assess adolescents' coping before the pandemic and leaves open the question that the link from parental reactions before the pandemic to adolescents' coping with the pandemic may be due partly to the stability of adolescents' trait-like coping. And the current study took only a single snapshot of adolescents' functioning during the pandemic (i.e., about five months after the outbreak) and may have missed revealing features of adolescents' coping that may be unique to other stages of the pandemic (e.g., the initial stage in the first one or two months before adolescents adapted to school closure and home confinement).

**CONCLUSION**

Although the COVID-19 pandemic may pose great challenges to adolescents' mental health, there are intrapersonal and interpersonal protective factors. Chinese adolescents who perceived their parents to be supportive in reaction to their negative emotions before the pandemic used more approach and less avoidance coping during the pandemic and, in turn, were less maladjusted emotionally, whereas adolescents who perceived their parents to react nonsupportively to their negative emotions were more likely to cope with the pandemic in an avoidant manner and in turn experienced greater emotional maladjustment. Two-folded interventions that both cultivate adaptive coping in adolescents and optimize parents' reactions to adolescents' negative emotions are suggested for endeavors to uphold adolescents' well-being during and after the pandemic.

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