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Youth Emotional Experiences during COVID-19: Relations with Internalizing Problems and Social Support

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Abstract

The COVID-19 pandemic affected youth positively and negatively through regulations related to social distancing and remote learning. The current study aimed to understand youth's positive and negative emotional experiences of COVID-19 and how emotions were associated with internalizing problems and social support from teachers and classmates. Seven hundred and fifteen students in fourth to twelfth grade from a suburban school district in the Northeast (53.4% female; 93.3% White) were asked to complete a survey from March to May 2021 assessing their emotional experiences, internalizing problems, and sense of social support during COVID-19. Data were analyzed and interpreted using descriptive statistics and regression analyses, including moderation. Results indicated that students experienced more positive emotions (M=7.47) than negative emotions (M=6.99) during COVID-19, and females experienced more negative emotions compared to males and gender non-conforming students. Negative emotions were significantly and positively related to internalizing problems and positive emotions were significantly and negatively related to internalizing problems for females. Additionally, high teacher and classmate support moderated, or buffered, the relation between negative emotions and internalizing behaviors. Further research is needed to better understand the positive and negative emotional experiences of COVID-19 among racially and ethnically diverse youth.

Keywords COVID-19 · Youth · Emotions · Social support · Internalizing Problems

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Individuals experience emotions on a daily basis ranging from an array of positive to negative emotions depending on the situation. Emotion is defined as "a process of registering the significance of a physical and mental event as an individual construes that significance" (Campos et al., 2004, p.379). As individuals we all react to events differently due to our own past experiences and self-esteem that can play a factor in emotionally reacting to an event (Campos et al., 2004). Positive emotions (e.g., happiness, excitement, curiosity, etc.) often come from experiencing a pleasant experience (e.g., graduation, a birthday party, etc.) while negative emotions (e.g., sadness, anger, frustration, etc.) often come from experiencing an event that causes distress (e.g., death of a loved one, bad grades at school, etc.; King, 2013).

Much of our understanding of emotions tie with cognitive, social, and biological concepts of development. During the early years of life, children use the world around us (e.g., parents' facial expressions, vocal tones, etc.) to understand and react to emotions, behaviors, and coping through difficult emotions, as they are learning to understand their own emotions (Zeman et al., 2006). Importantly, children learn that the emotions that someone expresses openly is not always the same emotions that the person feels internally. In adolescence, youth are better able to regulate their emotions, are more aware of how they act emotionally in front of peers and parents, and learn to build support systems around them to allow them to disclose their emotions (Zemen et al., 2006). Although it is normal to fluctuate from positive to negative emotions throughout the day, research has found that those who experience a greater number of positive emotions are able to recognize a range of coping strategies to deal with the adverse or stressful event, which would then increase resilience (Gloria & Steinhardt, 2014). In addition, those who reported experiencing pessimistic mood and depressed mood, overtime will lead to even worsen mood and clinical levels of depression; therefore, creating this downward spiral effect between emotions and psychopathology (Fredrickson, 2001).

1 Association among Positive and Negative Emotions and Youth Mental Health

Mental health challenges (e.g., internalizing problems such as depression and anxiety) are on the rise among youth (Center for Disease Control and Prevention [CDC], 2023). In 2021, more than 4 in 10 (42%) students felt persistently sad or hopeless and nearly one-third (29%) experienced poor mental health (CDC, 2023). Schools are an ideal setting for the promotion of positive mental health, since youth spend most of their day at school and are required to be there (Moon et al., 2017). A key aspect of mental health prevention includes emotional awareness and regulation (Menefee et al., 2022). As such, emotions are particularly important to consider in school-based prevention and intervention practices related to youth mental health and the prevention of mental health challenges.

Prior studies have found that individuals who report lower levels of positive emotions are more likely to report symptoms of—or be diagnosed with—mood disorders and report lower well-being (Heininga & Kuppens, 2021). A recent meta-analysis and systematic review found that adolescents were more likely to report sadness and

more variable positive emotions compared to children, and youth with more variable and less intense positive emotions were more likely to also report mental health problems (i.e., psychopathology) (Reitsema et al., 2022a). Notably, Reitsema et al. (2022a) found that intensity of positive emotions (but not negative emotion intensity) was particularly important in distinguishing youth with and without mental health problems. Reitsema et al. (2022b) also found that positive emotions were more strongly associated with fewer depressive symptoms compared to negative emotions. Thus, both positive and negative emotions are particularly important to consider in child and adolescent development, especially as they relate to events which cause global disruption and societal change (i.e., Big Events theory; Friedman et al., 2021), such as the COVID-19 pandemic.

2 Youth Emotional Experiences during COVID-19

The COVID-19 pandemic caused many stressors which created disruptions in children and adolescents' normal routine such as, the sudden change to remote learning, social isolation from peers, financial distress, and much more (de Figueiredo et al., 2021; Jones et al., 2021). These stressors caused many children and adolescents to be at an increased risk of negative mental health (e.g., internalizing problems). A systematic review from around the world found that during the pandemic 59.6% of youth reported increased rumination, 13.4% experienced severe anxiety, severe depression increased from 10 to 27%, and non-suicidal self-injury, suicide ideation, suicide planning, and suicide attempts increased after lockdown, with females and older adolescents more likely to experience these psychopathology symptoms (Panchal et al., 2021). However, in another systematic review of 21 studies, Kauhanen and colleagues (2022) found five studies that showed that there was a positive effect or no effect on children and adolescents' well-being during COVID-19. Specifically, studies found that youth had general improvements or no differences in psychopathology symptoms (e.g., anxiety or depression; Marques &Braidwood, 2021; Xiang et al., 2020) before, during, or even after the pandemic (Bernasco et al., 2021; Knowles et al., 2022). Though research on COVID-19 has emphasized the negative mental health associated with the COVID-19 pandemic (Ellis et al., 2020; Heidrich et al., 2022; Panchal et al., 2021), it is clear that this may not be true for all youth (Ravens-Sieberer et al., 2021a; Xiang et al., 2020).

Further, while prior research has focused on mental health (e.g., depression, anxiety) of youth during and following the COVID-19 pandemic, limited prior research has focused on the emotional experiences of youth during COVID-19. As positive and negative emotions are separate and often predictive of psychopathology symptoms (e.g., internalizing problems; Heininga & Kuppens, 2021), it is especially important to investigate emotions within a school context, as there were major disruption and changes to students' school routines and experiences. A mixed method study that was based in Austria focused on positive and negative emotions in 263 adolescents (65% female; 34.2% male; 21.7% in primary school; 77.6% in secondary school) in relation to distance learning (Heidrich et al., 2022). The researchers found that students were not negatively affected by the change to distance learning and that

there was an increase in relaxation, calmness, feelings of being more awake, but also boredom (Heidrich et al., 2022). Two multi-wave quantitative studies using a variation of the Positive and Negative Affect Schedule for Children (PANAS-C; Ebesutani et al., 2012) form, looked at positive emotions (e.g., joyful, cheerful, happy, lively, proud, etc.) and negative emotions (e.g., miserable, mad, afraid, scared, sad, etc.) and found that youth experienced more negative emotions and a decrease in positive emotions during COVID-19 than before the pandemic (Deng et al., 2021; Romm et al., 2021). However, qualitative studies found more a mix of positive and negative emotions related to COVID-19. Adolescents reported that they felt more anguish and loss due to loss of contact with relatives and friends, especially those who passed away; limitations with personal space due to an increase in family time; COVID-19 related stressors (e.g., worried about family or themselves getting sick); and school stress (e.g., school more as an educational space than recreational or lack of a schedule; Fioretti et al., 2020; Rogers et al., 2021). However, adolescents did report some positive emotions from feeling less social stress, feeling team spirit from distance learning from other classmates, and reported feeling safe, relaxed, and happy being with their families during lockdown (Heidrich et al., 2022; Panchal et al., 2021). Although positive emotions were reported from adolescents, researchers found that adolescents that perceived higher changes in negative affect led to depressive symptoms and anxiety a few months later during the pandemic (Rogers et al., 2021). Given the strong association among emotional experiences and internalizing problems (e.g., depressive symptoms and anxiety), research is needed to examine variables which may moderate this association. In particular, it is important to examine variables which may buffer the association among emotions and internalizing problems during stressful events.

3 Social Support as a Moderator

Social support, whether from friends, siblings, parents, or other personal relationships, has been an important factor in childhood and adolescence that is often associated with psychological well-being and mental health (Cooper et al., 2021). Social support can be defined as youth having knowledge that they are cared, respected, and have a network of people who are concerned about their well-being (Davidson & Demaray, 2007; Holt & Espelage, 2006). The COVID-19 pandemic caused a decrease in social support among friends and increased time with family due to the lockdown restrictions that each country enforced, which caused many adolescents to feel distressed from not seeing their friends (Bernasco et al., 2021; Magson et al., 2020). Despite the decrease in certain social supports, researchers found that social supports were still a protective factor against psychopathology symptoms during COVID-19 for children and adolescents (Ravens-Sieberer et al., 2021b; Shoshai & Kor, 2021; Wang et al., 2021) and that being socially connected during the lockdown significantly decreased symptoms of depression and anxiety, while increasing life satisfaction and positive affect (Kiss et al., 2022; Magson et al., 2022). Studies in the United States and United Kingdom found that high levels of parental support were associated decreased psychological distress and fewer reports of psychopathology symptoms (e.g., depres-

sion; Campione-Barr et al., 2021; Cooper et al., 2021; Knowles et al., 2021). Similar results were seen with friend support, in the Netherlands, adolescents who reported more friend support reported fewer internalizing behaviors, especially with females who tend to report more positive friend support than males (Bernasco et al., 2021). These results are consistent with the stress buffering theory of social support, which posits that social support can decrease feelings of stress from situations and lead to more positive coping behaviors and decreased psychopathology, such as depression and anxiety (Cohen & Wills, 1985).

Youth can also gain social support through school from classmates, teachers, and other school personnel which can be associated with a variety of positive academic, social, and emotional outcomes for youth (Aldrup et al., 2018; Fredrick et al., 2016). Previous studies have found that social support from classmates and teachers led to a decrease in anxiety and depression among students (Colarossi & Eccles, 2003; Rueger et al. 2008). Although teachers are one of the important relationships in youth's life that can provide emotional support, some might not feel qualified to provide emotional support to youth due to their educational background. However, they recognize that they are an important part of youth's support system since they see students daily for the full year, which would lead students to want to confide with them (Marque & Braidwood, 2021; O'Reilly et al., 2018). Recent research found that teacher support was a buffer against suicidal ideation, non-suicidal self- harm, health complaints (e.g., feeling irritable, difficulties sleeping, etc.), depression, and mental health difficulties associated with cyberbullying for children and adolescents during the COVID-19 pandemic (Wright & Wachs, 2021; Ye et al., 2021). However, further research is needed which investigates teacher support and other school-based sources of support (i.e., classmate support) in relation to COVID-19 experiences, and specifically examining how social support may impact the relation between positive and negative emotions and internalizing problems.

4 Current Study

Despite the amount of research that has focused on mental health outcomes of COVID-19 on youth, more research needs to examine the varying (i.e., positive and negative) emotional experiences related to COVID-19 among youth, as previous research has found that both positive and negative emotions are closely associated with the development of psychopathology symptoms, such as anxiety and depressive disorders (Heininga & Kuppens, 2021; Reitsema et al., 2022a, b). Additionally, it has been found that females and older adolescents are more likely to experience psychopathology symptoms (e.g., rumination, severe anxiety, severe depression, and suicidal ideation; Panchal et al., 2021). Social support, overall, has been an important buffer against traumatic experiences that youth may face from their own experiences of COVID-19 (Bernasco et al., 2021). Previous studies have focused on parent and peer support during COVID-19 as a buffer against psychopathology. However, as school-based support is an important source of support (Aldrup et al., 2018; Fredrick et al., 2016), further research is needed which examines how school-based sources

of support may impact the relationship between emotions and internalizing problems during the COVID-19 pandemic.

The aim of the current study was to address the following research questions: (1) what are the reports of positive (e.g., relaxed, hopeful) and negative (e.g., hopeless, angry) emotions during COVID-19 and do levels of reported emotions vary by grade level and gender, (2) what is the relation between positive and negative emotions and internalizing problems and do these relationships differ by grade level and gender, and (3) does social support (teachers and classmates) moderate the relationships between positive and negative emotions and internalizing problems? We hypothesized that overall, youth will report more positive emotions than negative emotions during COVID-19 (Heidrich et al., 2022; Ravens-Sieberer et al., 2021a). However, females and students in older grade levels will report more negative emotions than positive emotions (Ellis et al., 2020; Panchal et al., 202; Reitsema et al., 2022a). Additionally, we hypothesized that youth who experience more negative emotions will report more internalizing problems than youth who experience positive emotions (Heininga & Kuppens, 2021; Rogers et al., 2021). Lastly, we hypothesized that teacher and classmate support will moderate the relationship between positive and negative emotions and internalizing problems, such that students with higher negative emotions and lower positive emotions and higher internalizing problems will report lower teacher and classmate support. Students with lower negative emotions and higher positive emotions and lower internalizing problems will report higher teacher and classmate support (Wright & Wachs, 2021; Ye et al., 2021).

5 Methods

5.1 Participants

Seven hundred fifteen students in fourth to twelfth grade from a suburban school district in the Northeast of the United States participated in the study. Out of the 715 students who participated in the study, 37.5% were in fourth to sixth grade, 27.4% were in seventh and eighth grade, and 35.1% were in ninth to twelfth grade. The current study consisted of 93.3% White, 1% Black, 1% Hispanic, 2.1% Asian, 0.8% American Indian or Alaskan Native, 0.3% Native Hawaiian or other Pacific Islander, and 4.3% chose not to answer. There were 53.4% of participants who identified as female, 43.6% identifying as male, 2.9% identifying as transgender, none of these, or preferred not to answer. The school district had four buildings, one building for students from Kindergarten to 3rd grade (who were not asked to participate in the current study), 4th to 6th graders in another building, 7th and 8th graders in another building (i.e., middle school), and lastly, 9th to 12th graders in another building (high school).

5.2 Measures

5.2.1 COVID-19 Adolescent Symptom and Psychological Experience Questionnaire (CASPE)

A modified version of the CASPE (Ladouceur, 2020) was utilized in the study to assess the impact of COVID-19. The original CASPE consists of 42 questions on general, emotional, cognitive, and social experiences related to COVID-19 and physical distancing. Items addressed students' perceptions of events that have been negative and positive for them, worries or concerns, and their emotions related to the pandemic. The CASPE has been utilized in prior research and validated for use with fourth to twelfth grade students (Demaray et al., 2021; Styck et al., 2021). Only the pandemic-related emotion items were utilized for the purpose of the current study, and these items were modified to only address eight emotions (relaxed, hopeful, confident about the future, hopeless, anxious/stressed, cheerful, angry, and sad) out of the 19 emotions that were listed in the original survey. In addition, the question was modified to ask students how much they felt more of the certain emotion in the past few months before the pandemic compared to the original survey that only focused on the past seven days during the pandemic. All modifications were made as part of the university-school district partnership and in collaboration with the school district's administration and school climate committee. Two subscales for positive and negative emotions were computed. The positive emotion variable was computed by adding all the variables from the positive emotion subscale in the CASPE together (relaxed, hopeful, confident about the future, and cheerful), this was done similarly with the negative emotions variable (hopeless, anxious/worried, angry, and sad; Ladouceur, 2020). In this study, the positive ($\alpha = 0.77$) and negative emotion ($\alpha = 0.73$) subscales had good internal consistency. The current study also utilized two questions regarding the child's experience during COVID-19 and if the experience affected them in a positive or negative way ("Overall, how much has the COVID-19 outbreak, and the resulting changes in daily life affected your life in a negative/positive way?"), which was rated on a five-point Linkert scale (1 = *Not at all* to 5 = *A great deal*).

5.2.2 Child and Adolescent Social Support Scale (CASSS)

The CASSS (Malecki & Demaray, 2001) measured students' perceptions of support they feel from their classmates, teachers, close friends, parents, and school support. For the purpose of this study the classmate and teacher support subscales were only used. Each subscale had 12 items for classmate support (My classmates "…treat me nicely" "…give me good advice" "…spend time doing this with me") and 12 items for teacher support (My teachers "…care about me." "…treat me fairly." "…nicely tell me when I make mistakes."), which were rated on a six-point Likert scale (1 = *Never* to 6 = *Always*) with higher scores indicating higher levels of perceived support. The scale has been validated for use with students in third to twelfth grade (Malecki & Demaray, 2001). In the current study, teacher ($\alpha = 0.99$) and classmate support ($\alpha = 0.97$) were found to have good internal consistency. Teacher and classmate support variables were computed by summing the questions for each type of support.

5.2.3 Youth Internalizing Problem Screener (YIPS)

The YIPS (Renshaw & Cook, 2018) measured students' perception of their depressive and anxiety symptoms, including somatic complains, in the past month. There were 10 items in the questionnaire using a four-point Likert scaled (1 = *Almost Never* to 4 = *Almost Always*) with higher scores reflecting higher levels of internalizing distress. Some of the items include "I feel nervous or afraid.", "I find it hard to relax and settle down", and "I have uncomfortable and tense feelings in my body." Prior research has found the YIPS to demonstrate a single-factor model with good internal consistency reliability (Renshaw & Cook, 2018). In this study, the internalizing problems scale ($\alpha = 0.92$) was found to have good internal consistency.

5.3 Procedure

The study was conducted as part of an ongoing university-school partnership, in which the school requested assistance in gathering school-wide data on student, parent, and teacher perceptions of school climate and well-being during the COVID-19 pandemic. As such, convenience sampling was utilized based on the university-school partnership. Before the survey was administered, all parents of students in 4th to 12th grade were sent information about the survey and parents were asked to return an electronic parent permission form if they wished for their child to participate. Students who received permission were sent the survey via Google classroom to complete between March to May 2021. At the beginning of the survey, there was information provided about the general purpose of the survey and a statement that all information provided from the student would be confidential and that the survey was voluntary. Students answered items related to demographics, positive and negative impact of COVID-19, media use, cyberbullying, social support from teacher and classmates, school climate, school engagement, and well-being, which was part of the larger study. Students were allowed to skip any items that they did not want to answer. The sample in the current study was representative of the larger suburban school population. This research study was conducted retrospectively from data obtained as part of a school-university partnership; IRB determined it did not need ethical approval.

5.4 Data Analysis

Data were analyzed using IBM SPSS (Version 27) to examine the descriptive and regression analyses and the PROCESSv4.1 macro (Hayes, 2022) was utilized for all moderation analyses. Due to students being allowed to skip items, between 21 and 36% of data were missing. Based on Little's Missing Completely at Random (MCAR) test, these data were missing completely at random ($X^2 = 350.39$, $df = 328$, $p = .19$). Therefore, expectation maximization was utilized to address the data that were missing.

To answer research question one, a two-way ANOVA was utilized to examine grade level and gender differences in reports of positive and negative emotions. Grade level and gender were recoded into three groups. Since the school district was

separated into three buildings, one building for fourth to sixth graders (elementary school students), another for seventh and eighth graders (middle school students), and the last with ninth through twelfth graders (high school students), we coded the grade level based off how the school district separated the grades. For gender, the groups were coded into female, male, and gender non-conforming (which included students who answered as transgender, none of these, or preferred not to answer).

To address research question two, a regression was conducted to examine the relationship between positive and negative emotions and internalizing problems. Then, grade level and gender were examined as moderators in the relation between positive and negative emotions and internalizing problems. Since the moderating variables (grade level and gender) were multicategorical (i.e., three categories), the multicategorical option was selected in PROCESSv4.1 (Hayes, 2022) to assist in analyzing the results within the three categories (Hayes & Montoya, 2017). Four analyses were conducted (i.e., two for positive emotions and two for negative emotions) and references groups were generated. For grade level, the reference group were elementary school students, while for gender the reference group were males.

To answer research question three, classmate and teacher support were examined as moderators in the relation between positive and negative emotions and internalizing problems using PROCESSv4.1 (Hayes, 2022). Four moderation analyses were conducted (i.e., two for positive emotions and two for negative emotions) to look at teacher and peer support separately.

6 Results

Means, standard deviations, and correlations among all variables are presented in Tables 1 and 2. Skewness and kurtosis for the variables (positive emotions, negative emotions, and internalizing problems) were within the recommended ranges (0.87/0.51, 1.11/0.90, 1.44/0.09, respectively; Kline, 2011). It was found that 7.8% of participants stated that COVID-19 did not affect them in a negative way, 25.7% stated it affected them negatively a little, 41.9% stated it affected them negatively somewhat, 18.5% stated it affected them negatively a lot, and 6.0% stated it affected them negatively a great amount. While 6.9% of participants stated that COVID-19 did not affect them in a positive way, 29.2% stated it affected them positively a little, 44.5% stated it affected them positively somewhat, 15.0% stated it affected them positively a lot, and 4.5% stated it affected them positively a great deal.

Regarding specific positive emotions that students felt in the prior few months, 68% of students reported feeling relaxed, 56.9% reported feeling hopeful, 62% reported feeling confident about the future, and 58.2% reported feeling cheerful a little, some, or a lot more compared to before the COVID-19 pandemic. Regarding negative emotions, 40.5% of students reported feeling hopeless, 69.5% reported feeling anxious or stressed, 51.9% reported feeling angry, and 57.3% reported feeling sad a little, some, or a lot more. A paired samples *t*-test indicated a significant difference in mean levels of reported positive emotions and negative emotions ($t=3.35$, $p<.001$), with students reporting a higher mean level of positive emotions ($M=7.47$, $SD=2.72$) compared to negative emotions ($M=6.99$, $SD=2.72$).

Table 1 Mean and standard deviation by grade level, gender, and total

Variables	Elementary			Middle			High			Male			Female			Non-Conforming			Total		
	M	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*
Positive Emotions	7.99	2.85	268	7.28	2.69	196	7.06	2.53	251	7.55	2.79	312	7.42	2.66	382	7.21	2.99	21	7.47	2.72	715
Negative Emotions	7.28	2.86	268	6.39	2.26	196	7.16	2.82	251	6.56	2.53	312	7.35	2.80	382	7.05	3.06	21	6.99	2.72	715
Internalizing Problems	16.46	5.37	268	16.54	4.98	196	18.26	5.87	251	16.23	4.97	312	17.78	5.81	382	18.32	5.75	21	17.12	5.51	715
Teacher Support	60.69	10.69	268	58.22	10.28	196	55.01	10.94	251	57.97	11.15	312	58.21	10.63	382	55.10	12.96	21	58.02	10.93	715
Classmate Support	59.29	16.23	268	54.49	16.45	196	51.97	14.81	251	54.94	15.80	312	56.19	15.99	382	48.10	20.91	21	55.41	16.10	715

6.1 Grade Level and Gender Differences

To examine the first question, a two-way ANOVA was conducted to examine grade level and gender differences in levels of reported positive and negative emotions. For positive emotions, results revealed that there was not a significant main effect of grade level, F (2, 706) = 0.24, p = .79 or gender, F (2, 706) = 0.36, p = .70, and the interaction between grade level and gender was also not significant, F (4, 706) = 0.51, p = .73. However, Tukey's post hoc test revealed significant differences between elementary school students compared to middle school students (p = .01) and high school students (p < .001). Elementary school students (M = 7.99, SD = 2.85) reported more positive emotions compared to both middle school students (M = 7.28, SD = 2.69), and high school students (M = 7.06, SD = 2.53). No significant differences were found among gender groups.

For negative emotions, results revealed that there was a significant main effect of grade level, η^2 = 0.012, F (2, 706) = 4.20, p = .02, and gender, η^2 = 0.020, F (2, 706) = 7.09, p < .001. There was no significant interaction between grade and gender on negative emotions, η^2 = 0.012, F (4, 706) = 2.13, p = .08. Tukey's post hoc test revealed significant differences between middle school students compared to elementary school students (p = .001) and high school students (p = .007). Middle school students (M = 6.39, SD = 2.26) reported fewer negative emotions compared to elementary school students (M = 7.28, SD = 2.86) and high school students (M = 7.16, SD = 2.82). In addition, significant differences were found between males and females (p < .001). It was found that females (M = 7.35, SD = 2.80) reported higher negative emotions than males (M = 6.56, SD = 2.53). Our first hypothesis was partially supported.

6.2 Positive and Negative Emotions and Internalizing Problems

To examine the second question, a multiple linear regression was conducted first to examine the relationship among positive and negative emotions and internalizing problems. Positive emotions were significantly and negatively associated with internalizing problems, $\beta = -0.12$ b = -0.24 (SE = 0.06), p < .001, and negative emotions were significantly and positively associated with internalizing problems, β = 0.57, b = 1.16 (SE = 0.06), p < .001. Our second hypothesis was supported. Positive and negative emotions explained 36% of the variance in internalizing problems (R^2 = 0.36).

Further, we examined whether grade level (elementary, middle, high school) and gender (female, male, gender non-conforming) moderated the relationship between positive and negative emotions and internalizing problems. Results revealed that gender, specifically the interaction with females, was a significant moderator in the relationship between positive emotions and internalizing problems, b = -0.36 (SE = 0.12), p = .003, ΔR^2 = 0.01. When examining conditional effects with males being the reference group, it was found that the relationship between positive emotions and internalizing problems was significant and negative for females (-0.40, p < .001), but not for males (-0.04, p = .65) or gender non-conforming (-0.32, p = .33) students (see Fig. 1). Gender was not a significant moderator in the relationship between negative emotions and internalizing problems, for both female, b = 0.082 (SE = 0.127), p = .522 and gender non-conforming students, b = 0.288 (SE = 0.337), p = .392. In other words, the

Table 2 Correlations of all variables

Variables	1	2	3	4	5
1. Positive Emotions	--				
2. Negative Emotions	−0.15***	--			
3. Internalizing Problems	−0.20***	0.59***	--		
4. Teacher Support	0.17***	−0.19***	−0.33***	--	
5. Classmate Support	0.14***	−0.18***	−0.33***	0.60***	–

***$p < .001$

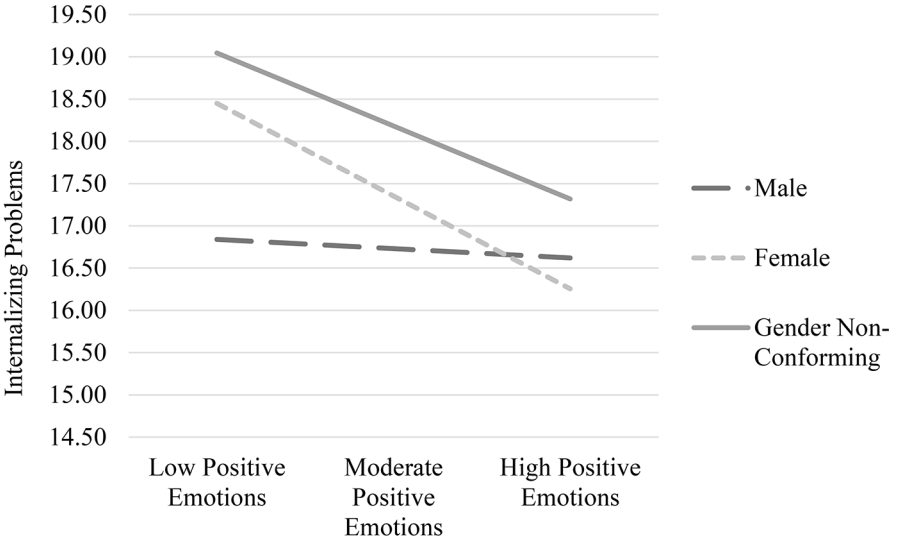

Fig. 1 Gender as a moderator in the relationship between positive emotions and internalizing problems

relationship between negative emotions and internalizing problems was significant and positive across male, female, and gender non-conforming students (See Table 3).

Grade level, with elementary school students being the reference group, was not a significant moderator in the relationship between positive emotions and internalizing behaviors, specifically with middle school students, b = -0.133 (SE=0.149), p=.371, and high school students, b = -0.196 (SE=0.144), p=.178. Similar results were seen with the relationship between negative emotions and internalizing behaviors and grade level as a moderator, with middle school students, b = -0.136 (SE=0.167), p=.935, and high school students, b=0.89 (SE=0.135), p=.507. In other words, there was a significant negative relation between positive emotions and internalizing problems and a significant positive relation between negative emotions and internalizing problems for all grade levels (See Table 4).

Table 3 Gender as a moderator on the relationship between emotions and internalizing problems

Model		b (S.E.)	t	p	95% CI
1	Positive Emotions	−0.04 (0.09)	−0.45	0.65	[-0.22, 0.13]
	Female [a]	0.62 (0.34)	1.85	0.07	[-0.04, 1.29]
	Gender Non-Conforming [a]	1.45 (0.99)	1.47	0.14	[-0.49, 3.40]
	Positive Emotions*Female	−0.36 (0.12)	-2.96	0.00	[-0.60, −0.12]
	Positive Emotions*Gender Non-Conforming	−0.28 (0.34)	−0.81	0.42	[-0.94, 0.39]
	Negative Emotions (covariate)	1.14 (0.06)	18.53	0.00	[1.02, 1.26]
2	Negative Emotions	1.09 (0.10)	10.96	0.00	[0.89, 1.28]
	Female [a]	0.63 (0.34)	1.86	0.06	[-0.04, 1.30]
	Gender Non-Conforming [a]	1.47 (0.99)	1.48	0.14	[-0.48, 3.42]
	Negative Emotions*Female	0.08 (0.13)	0.64	0.52	[-0.17, 0.33]
	Negative Emotions*Gender Non-Conforming	0.29 (0.34)	0.86	0.39	[-0.37, 0.95]
	Positive Emotions (covariate)	−0.23 (0.06)	-3.82	0.00	[-0.35, −0.11]

Note[a] Reference category was males

6.3 Social Support as a Moderator

To examine the third question, two separate regressions were conducted to examine whether teacher and classmate support moderated the relationship between positive and negative emotions and internalizing problems. Teacher support was a significant moderator in the relationship between negative emotions and internalizing problems, $\Delta R^2 = 0.012$, $b = -0.02$ ($SE = 0.00$), $p = .001$. In addition, classmate support was a significant moderator in the relationship between negative emotions and internalizing problems, $\Delta R^2 = 0.007$ $b = -0.01$ ($SE = 0.00$), $p = .004$ (See Table 5). Conditional effects indicated that the relation between negative emotions and internalizing problems was significant across high (0.84, $p < .001$), moderate (1.04, $p < .001$), and low (1.23, $p < .001$) levels of teacher support (See Fig. 2). A similar relation was found with classmate support; the relation between negative emotions and internalizing problems was significant across high (0.89, $p < .001$), moderate (1.06, $p < .001$), and low (1.22, $p < .001$) levels of classmate support (See Fig. 3). This means that when teacher and classmate support is high, the positive association between negative emotions and internalizing behaviors is less robust than when teacher and classmate support is low. Teacher support was not a significant moderator between positive emotions and internalizing problems, $\Delta R^2 = 0.002$ $b = 0.01$ ($SE = 0.01$), $p = .132$, as well as classmate support was not a significant moderator between positive emotions and internalizing problems, $\Delta R^2 = 0.003$ $b = 0.01$ ($SE = 0.00$), $p = .09$. Our third hypothesis was partially supported.

Table 4 Grade level as a moderator on the relationship between emotions and internalizing problems

Model		b (S.E.)	t	p	95% CI
1	Positive Emotions	−0.10 (0.09)	-1.02	0.31	[-0.28, 0.09]
	Middle School Students[a]	1.03 (0.42)	2.46	0.01	[0.21, 1.84]
	High School Students [a]	1.77 (0.39)	4.57	0.00	[1.01, 2.54]
	Positive Emotions*Middle School Students	−0.13 (0.15)	−0.89	0.37	[-0.43, 0.16]
	Positive Emotions*High School Students	−0.19 (0.14)	-1.35	0.18	[-0.48, 0.09]
	Negative Emotions (covariate)	1.17 (0.06)	19.09	0.00	[1.05, 1.29]
2	Negative Emotions	1.14 (0.09)	12.22	0.00	[0.96, 1.33]
	Middle School Students [a]	0.95 (0.42)	2.25	0.02	[0.12, 1.78]
	High School Students [a]	1.75 (0.39)	4.50	0.00	[0.98, 2.51]
	Negative Emotions*Middle School Students	−0.01 (0.17)	−0.08	0.93	[-0.34, 0.31]
	Negative Emotions*High School Students	0.09 (0.14)	0.66	0.51	[-0.18, 0.35]
	Positive Emotions (covariate)	−0.19 (0.06)	-3.12	0.00	[-0.31, −0.07]

Note[a] Reference category was elementary school students

7 Discussion

The current study examined the positive and negative emotional experiences of COVID-19 among youth and whether these experiences varied by grade level and gender. In addition, we examined the relationship between positive and negative emotions and internalizing problems and if this relationship differed by grade level and gender. Lastly, we explored whether teacher and classmate support buffered the relationship between positive and negative emotions and internalizing problems.

7.1 Emotional Experiences of COVID-19

The first question examined the positive and negative emotional experiences of COVID-19 on youth and whether there were differences based on grade level and gender. Approximately 66% of students in our sample reported that COVID-19 affected them in a negative way somewhat, a lot, or a great deal, while approximately 64% of students reported that COVID-19 impacted them in a positive way somewhat, a lot, or a great deal. This indicates that COVID-19 impacted youth in our study in both positive and negative ways, as a similar percentage of students reported both positive and negative impact of COVID-19. We also found that students reported

Table 5 Teacher and classmate support as moderators between emotions and internalizing problems

Model		b (S.E.)	t	p	95% CI
1	Positive Emotions	−0.18(0.06)	-3.05	0.00	[-0.30, −0.07]
	Teacher Support	−0.11(0.02)	-7.07	0.00	[-0.14, −0.08]
	Positive Emotions*Teacher Support	0.01(0.01)	1.51	0.13	[0.00, 0.02]
	Negative Emotions (covariate)	1.08(0.06)	17.87	0.00	[0.96, 1.20]
2	Negative Emotions	1.04(0.06)	17.05	0.00	[0.92, 1.16]
	Teacher Support	−0.11(0.01)	-7.18	0.00	[-0.14, −0.08]
	Negative Emotions*Teacher Support	−0.02(0.00)	-3.89	0.00	[-0.03, −0.01]
	Positive Emotions (covariate)	−0.16(0.06)	-2.77	0.01	[-0.28, −0.05]
3	Positive Emotions	−0.19(0.06)	-3.16	0.00	[-3.04, −0.07]
	Classmate Support	−0.08(0.01)	-7.76	0.00	[-0.10, −0.06]
	Positive Emotions*Classmate Support	0.01(0.00)	1.70	0.09	[0.00, 0.01]
	Negative Emotions (covariate)	1.08(0.06)	17.89	0.00	[0.96, 1.19]
4	Negative Emotions	1.06(0.06)	17.61	0.00	[0.94, 1.18]
	Classmate Support	−0.08(0.01)	-8.06	0.00	[-0.10, −0.06]
	Negative Emotions*Classmate Support	−0.01(0.00)	-2.88	0.00	[-0.02, 0.00]
	Positive Emotions (covariate)	−0.16(0.06)	-2.75	0.01	[-0.28, −0.05]

higher levels of positive emotions compared to negative emotions, which supports our hypothesis that overall youth would report more positive emotions than negative emotions during COVID-19 (Heidrich et al., 2022). Further, we found that females experienced more negative emotions than males, which is consistent with previous studies (Ellis et al., 2020; Panchal et al., 2021).

Regarding grade level differences, we found that elementary and high school students reported higher levels of negative emotions compared to middle school students and elementary students reported higher positive emotions compared to middle and high school students. Even though our results did not support our hypothesis that older adolescents would report more negative emotions compared to younger youth (Ellis et al., 2020; Panchal et al., 2021), these results were consistent with theory on emotions. Adolescents tend to be better at regulating their emotions, aware of how they emotionally act in front of peers and parents, and are able to build sup-

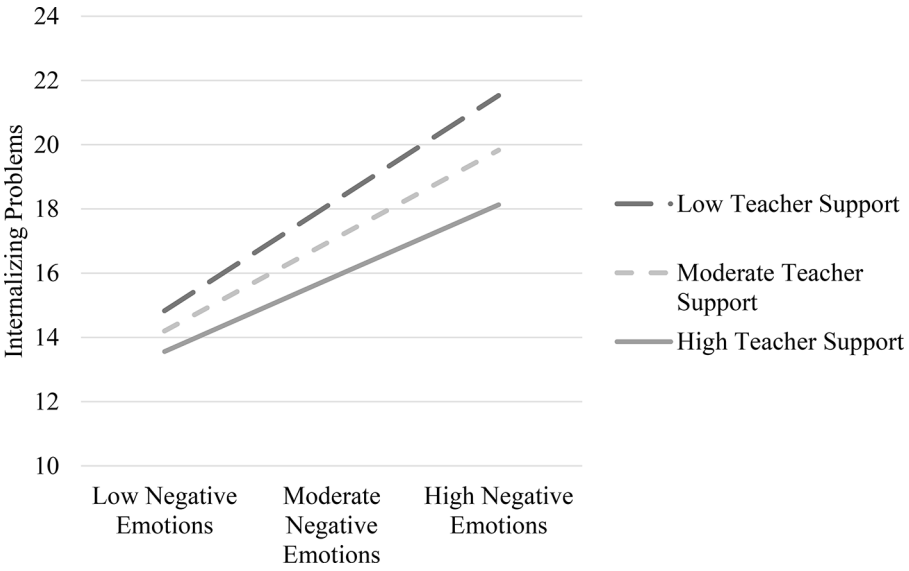

Fig. 2 Teacher support as a moderator in the relationship between negative emotions and internalizing problems

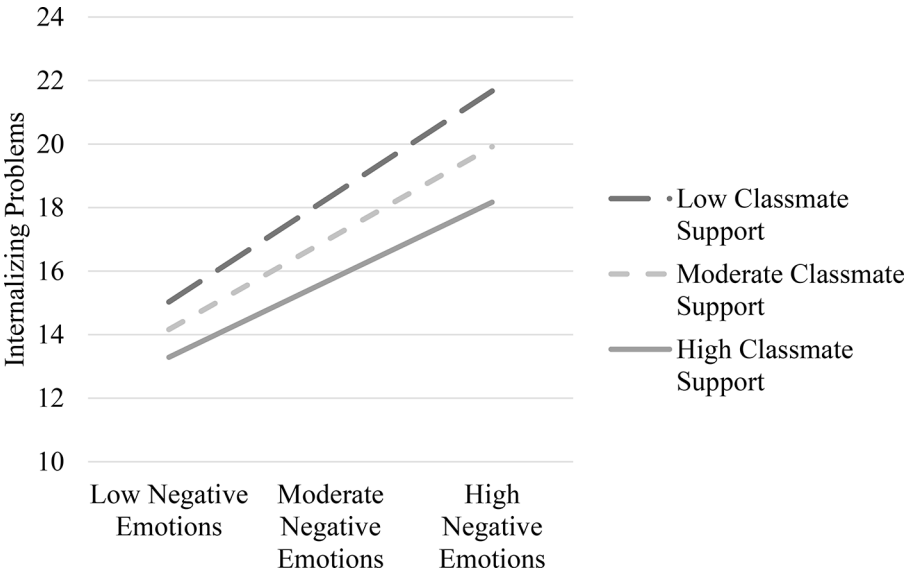

Fig. 3 Classmate support as a moderator in the relationship between negative emotions and internalizing problems

port systems that allow them to disclose on their emotions (Zeman et al., 2006). Due to this awareness of self and ability to regulate and find support for their emotions, this could be the reason why our results found that elementary school students had higher negative emotions compared to middle school students. High school students also reported higher negative emotions compared to middle school students, which is likely due to development of mental health problems during this developmental period, as well as special events high school students likely missed out on due to COVID-19 safety measures (e.g., prom, graduation, sporting events).

Our second question investigated the relationship between positive and negative emotions and internalizing problems. Our study found consistent results that experiencing more negative emotions and less positive emotions is associated with more internalizing problems, which was consistent with previous studies and theory (Fredrickson, 2001; Heininga & Kuppens, 2021; Rogers et al., 2021). People who tend to experience more pessimistic or depressed mood can overtime lead to an even worse mood and clinical levels of depression, which in turn can cause the downward spiral effect between emotions and psychopathology. Hypothesis two was supported by our study.

Additionally, we examined whether grade level and gender would moderate the relationship between positive and negative emotions and internalizing problems. The negative relation between positive emotions and internalizing problems was significant for females, but not for males or gender non-conforming students. Gender may play a role in how emotions are regulated, as prior research has found that females tend to substitute their emotion for a different emotion while males tend to have neutral emotional expressions (Zeman et al., 2006). Positive emotions may not be as strongly associated with internalizing problems for males as they may be more neutral in their emotions and are less likely to have internalizing problems (Rosenfield et al., 2000; Schlack & Petermann, 2013). For females, positive emotions may be more strongly associated with internalizing problems as they might try to substitute how they truly feel regarding situations. With grade level, we found that the relation between positive and negative emotions and internalizing problems was similar across all grade levels. Thus, despite there being differences across grade levels in mean levels of reported positive and negative emotions, the association between emotions and internalizing problems was consistent across these developmental groups.

7.2 Social Support as a Moderator

Our third question examined whether teacher and classmate support moderated the relationship between positive and negative emotions and internalizing problems. Our results found that teacher and classmate support were a significant moderator, or acted as a buffer, in the relationship between negative emotions and internalizing problems, but was not a significant moderator in the relationship between positive emotions and internalizing problems. These results partially supported hypothesis three. Prior studies have found similar results indicating that adolescents who reported more friend support had fewer internalizing problems and psychopathology symptoms (Bernasco et al., 2021). Teacher support was also seen as a buffer against suicidal ideation, depression, and other mental health difficulties during COVID-19

(Wright & Wachs, 2021; Ye et al., 2021). Additionally, the university-school partnership and school climate committee that the school created could be a reason why social support was a buffer since the school was focused on strengthening relationships with students. Our study adds to the literature by examining how support from school-based sources (i.e., classmate and teacher) may impact the relation between emotions experienced during COVID-19 and internalizing problems. Findings suggest that support from school sources are an important buffer against internalizing problems for youth across elementary, middle, and high school.

7.3 Implications

Teachers and other school personnel should provide more support to younger students to aid in understanding their emotions during stressful times and allowing a space to regulate their emotions with an adult or other peers as a group. Social support from teachers and other school personnel could be considered with older students as well, to create a positive school environment. Additionally, teachers and school personnel can build relationships and encourage students through asking how students are doing, having their rooms open for students to discuss personal matters, and reminding students to seek help when necessary.

Social emotional learning programs (SEL) could be considered for younger and older student to understand more about their emotions and provide skills to regulate better emotionally. SEL focuses on five components, which are self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (Lawson et al., 2019). The ability to address these components allow youth and adults to develop healthy identities, manage emotions, achieve personal goals, show empathy to others, establish and maintain healthy relationships, and make responsible and caring decisions (Lawson et al., 2018). Specific SEL programs that tailors to grades K-12 are Second Step (Committee for Children, 2011), Move This World (Move this World, 2018), and 7 Mindsets (Seven Mindsets, n.d.). Schools implementing SEL programs will allow youth to be aware of their emotions, regulate when stressful or traumatic situations occur, and be able to create healthy coping mechanisms to work through the negative emotions (Durlak et al., 2011). Additionally, many school professional do not believe that their school has adequate mental health resources available; additionally, some professionals, specifically teachers and support staff, might not feel confident carrying out roles related to mental health indicating that there is a need for more training related to mental health, specialized skills (e.g., emotion awareness and regulation, social skills), crisis management, etc. (Moon et al., 2017).

7.4 Limitations and Future Directions

This study added to the literature on how COVID-19 affected our youth's emotions in a positive and negative way; however, it is not without its limitations. A major limitation is that this study was cross-sectional, which only provided an understanding of participants' COVID-19 experiences in a short time span compared to having pre-COVID-19 data and post lockdown data. This also limits our ability to interpret the direction of the relations examined in the study. It is quite possible that internaliz-

ing problems could impact emotional experiences and perceptions of social support. Another limitation of the study is that the majority of the sample consisted of students who identified as White (93.3%) and cisgender (97.1%), which does not make this generalizable to other racial and ethnic identities, and those who identify as gender non-conforming which could have been impacted by COVID-19 in more significant ways. Additionally, our study only looked at teacher and classmate support, other supports should have been considered since youth could have interacted more with parents, siblings, and peers outside of their school due to lockdown. Lastly, all the data were self-reported which could lead to biases in the results.

Future research should consider conducting a longitudinal study with more racial diversity to better understand longitudinal associations among emotional experiences, internalizing problems, and perceptions of social support related to COVID-19. Future studies should examine other types of social support (e.g., parents, siblings, online friends) that could buffer against negative impacts of COVID-19 safety measures. Lastly, future research could consider utilizing qualitative data to provide a more nuanced understanding of youth's COVID-19 positive and negative emotional experiences, especially since positive and negative emotions may be associated with externalizing behaviors, given that males are more likely to exhibit externalizing behaviors compare to females (Rosenfield et al., 2000; Schlack & Petermann, 2013).

8 Conclusion

The COVID-19 pandemic has impacted youth in a variety of ways including increases in psychopathology symptoms (e.g., depression, anxiety; Ellis et al., 2020; Panchal et al., 2021) or increased family time and time for themselves. Past research focused on psychopathology symptoms as opposed to how emotions could have been affected by COVID-19; however, both research on psychopathology symptoms and emotions have found inconsistent results from the effects of COVID-19 and there was limited research on teacher support and its impact on youth during COVID-19. Our study expanded prior literature by examining emotional experiences of youth during COVID-19 and how teacher and classmate support moderated or buffered these emotional experiences. We found that COVID-19 emotional experiences differed by grade level and gender, specifically that females experienced more negative emotions compared to males and gender non-conforming students and that middle school students experienced fewer negative emotions than elementary and high school students. Additionally, youth that experienced more negative emotions and less positive emotions during COVID-19 are at risk of having more internalizing problems. Lastly, teacher and classmate support both acted as a buffer in the relationship between negative emotions and internalizing problems.

Declarations

Conflict of Interest The authors did not receive support from any organization for the submitted work and have no conflict of interest to disclose. This study was part of a school-university partnership and IRB

determined it did not need ethical approval. Informed consent was obtained by participants of this study. Data and related materials are not publicly available and may be available upon request.

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