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School Burnout and Depression Symptoms of Polish High School Graduates in the Context of COVID-19 Pandemic

Wypalenie szkolne i symptomy depresji u polskich maturzystów w kontekście pandemii COVID-19

Abstract. High school graduates usually suffer from stress one month before the final exams. The research's aim was to compare the depression and burnout symptoms measured in April 2019 (before the pandemic) and in April 2020 (during the pandemic) in the Polish high school students. The results showed that the COVID-19 pandemic affected adolescent girls more than boys, leading to higher rates of depression, student burnout, and imbalanced time perspective. Females perceived lower family acceptance than boys. Males were less depressed and more burned out during the pandemic than before, while girls not only were more burned out but were also more depressed, were imbalanced in their time perspective, and perceived lower family acceptance during the COVID-19 pandemic than before the outbreak.

Keywords: high school graduates; final exam, depression, time perspective, school burnout

Słowa kluczowe: depresja, wypalenie szkolne, matura, pandemia COVID-19

INTRODUCTION

On 30 January 2020, the WHO officially declared the COVID-19 epidemic a public health emergency of international concern, and on 11 March 2020, it was declared a global pandemic (DiGennaro et al., 2020). The changes in daily life across the world were rapid and unprecedented, associated with significant psychological burdens and severe psychological consequences among citizens of countries around the world (Długosz, Kryvachuk, 2021). The risk factors for psychological problems in the population included age and time spent focusing on COVID-19-related information. For adolescents the time immediately after the closure of schools (in Poland, the second half of March 2020) was especially aggravating and threatening to people's well-being, as this measure was associated with experiencing a strong crisis. In teachers' perception depression was considered the most serious student problem, usually associated with difficulties experienced at home (difficult relationships with loved ones, feelings of a lack of privacy, and fatigue from excess responsibilities) (Szwarc, 2020; Chodkowska et al., 2021). Unfavorable educational conditions during online education also increase the school burnout syndrome in students (Lacombe et al., 2023). This phenomenon is a long-term reaction to experiencing chronic stress in situations where a student depletes their personal resources alongside simultaneous excessive demands from the environment (Parker, Salmela-Aro, 2011; Aypay, Sever, 2015; Tomaszek, Muchacka-Cymerman, 2018). The developmental approach to student school burnout was proposed by Aypay (2011, 2012). According to this theory, the structure of this phenomenon varies depending on the stage of education and the specificity of the developmental period (immaturity of certain mental structures). Specifically, four – dimensions were distinguished in late childhood and early adolescence, and seven components of school burnout were found in late adolescents. It is worth noticing that Aypay's approach also highlights the importance of family and peer environments for coping with stressful school situations.

The experience of school burnout is associated with low self-esteem, discouragement, helplessness, a sense of loneliness (Wilsz, 2009; Mehdinezhad, 2011), pathological perfectionism (Tomaszek, Muchacka-Cymerman, 2018), a lack of self-development, a lack of motivation to act, a sense of self-incompetence, procrastination, a lack of life satisfaction, and aggressiveness (Muchacka-Cymerman, Tomaszek, 2017), as well as higher vulnerability to depression and a high risk of suicidal tendencies (Tomaszek, 2020). A broader analysis of this phenomenon is also important from the point of view of remedial interventions, because, as numerous research results show, a student's experience of burnout related to their educational functioning is a significant predictor of social maladjustment and problematic behaviors (Dolzan et al., 2015).

Depression and problematic behaviours are also influenced by the deviations from a balanced time perspective (DBTP) (Stolarski et al., 2014) due to the fact that human behavior always remains related to timeline segments (past, present, or future) (Zimbardo, Boyd, 1999) and human represents the attitude to time called the "time perspective" which is the frame for organizing experiences and individual decisions. The balanced time perspective is optimal for a person's functioning due to the fact that it is characterized by: strong past positive rooted memories (past positive temporal perspective), with a slight tendency to remember negative past events (past negative temporal perspective), a moderately enhanced tendency to engage in behaviors motivated by hedonistic pleasure (present hedonistic temporal perspective), and a weak tendency to perceive and interpret current experiences in "minor tones" (present fatalistic temporal perspective), as well as a strongly expressed tendency to build rational plans for the future (future temporal perspective).

Patterns of temporal perspectives affect students' educational achievements and engagement in school activities. Individuals with higher rates of past negative temporal perspective are characterized by shyness, anxiety, aggression, lower self-esteem, and vulnerability to depression, as well as low academic achievement (Simons et al., 2004; Stolarski et al., 2014).

However, present perspective has been shown to be a predictor of procrastination (Ferrari, Díaz-Morales, 2007) which is followed by school burnout syndrome (Balkis, 2013). Positive and fruitful family relationships protect students from exhaustion syndrome, whereas students who rate the quality of their family relationships as worse experience significantly higher levels of school burnout (Muchacka-Cymerman, Tomaszek, 2017).

Studies on the educational burnout and mental health of high school graduates during a pandemic COVID-19 are scarce (e.g. Kochuchakalackal, 2021; Gundogan, 2022; Yukhymenko-Lescroart, 2022), so it is important to fill the gap. Moreover, analyzes of student burnout, depression, and time perspective among adolescents and sociodemographic variables, which interact with these psychological characteristic, are also rarely in the literature. This study has its sub-goals, which were expressed in research questions: (1) What are the differences in depression and school burnout symptoms experience in Polish high school graduates in the context of COVID-19; (2) What is the perceived family acceptance and deviation from a balanced time perspective impact on depression and school burnout symptoms during COVID-19 pandemic? (3) Do the perceived family acceptance, deviation from a balanced time perspective, and student burnout within the gender significantly predict adolescent depression in the context of COVID-19 experience?

Due to the above questions the following hypothesis were made:

1. The depression symptoms in Polish high school graduates one month before school final exams are more intensive during COVID-19 pandemic than in control group (taking exams the year before pandemic).
2. The school burnout symptoms in Polish high school graduates one month before school final exams are more intensive during COVID-19 pandemic than in control group (taking exams the year before pandemic).
3. The deviation from a balanced time perspective in Polish high school graduates

one month before school final exams are more intensive during COVID-19 pandemic than in control group (taking exams the year before pandemic).

4. The perceived family acceptance is the significant factor regulating the intensity of depression and burnout symptoms in high school graduates.
5. The gender is significant factor mediating the intensity of depression and burnout symptoms in high school graduates.

MATERIAL AND METHOD

Sample

The sample included 668 high school students, with 253 males (38%) and 415 females (62%) aged 18–19 years, all from the 3rd classes of lyceum. These students were from different schools and different areas in the South of Poland. The inclusion criteria was educational level (being Polish high school graduate at third class in lyceum). Sample 1 included 355 participants (53%), with 140 males and 215 females tested before the COVID-19 pandemic outbreak in April 2019 (one month before the final exams) via paper-and-pencil data collection.

Sample 2 included 313 adolescents (47%) tested in April 2020 (analogically to the former – one month before the final exams). Due to the COVID-19 pandemic, this part of the survey was conducted online via the Google forms platform. The calls to participate in the study with links to the web-based surveys were distributed via social media. The recipients of the message were also requested to share the survey with their friends. A combination of convenience and snowball sampling was used. The study was anonymous and conducted according to the guidelines of the Declaration of Helsinki and was approved by the appropriate institutional Research Ethics Board from Pedagogical University of Krakow. The data were consistent, with all participants filling the survey based on a set of methods that allowed depression, student burnout, deviation from a balanced time perspective, and perceived family acceptance

to be measured. The study was voluntary, and there was no remuneration for participation.

Instruments

The subjects were administered several tests. The Polish adaptation of the Kutcher Adolescents Depression Scale (KADS) is an extensively used screening test to assess the risk of depression in young individuals (Mojs et al., 2015). The KADS is a 6-item scale consisting of questions or statements regarding everyday experiences with (1) sadness, (2) hopelessness, (3) tiredness, (4) difficulties of life, (5) worry, and (6) suicidal symptoms and self-harm. Respondents selected the most suitable answer on a 0–3 scale (0 – hardly ever, 1 – sometimes, 2 – most of the time, and 3 – all the time). A score of 6 points or higher indicated a risk of depression. The reliability of the Polish scale, calculated using Cronbach's α coefficient, was found to be .82. This tool is widely used in North America as a screening test for depression in adolescents (LeBlanc et al., 2002).

Aypay's Secondary Burnout Scale (SSBS) (Aypay, 2011) (Polish adaptation by Tomaszek, Muchacka-Cymerman, 2019) consists of 34 questions on total level of burnout, with its 7 dimensions of reliability calculated using Cron-

bach's α : .83 (BFS – Burnout from Studying), .82 (BFF – Burnout From Family), .86 (LIS – Loss of Interest in School), .67 (BFH – Burnout from Homework), .75 (BFTA – Burnout from Teacher Attitudes), .72 (NRTF – Need to Rest and Time for Fun), and .72 (FIS – Feeling of Insufficiency at School). Respondents selected the most suitable answer on a 4-point Likert scale.

The Zimbardo Time Perspective Inventory (Zimbardo, Boyd, 1999) (Polish adaptation by Przepiórka, 2011) contains 56 statements on five subscales: Past Positive Temporal Perspective (PP), Past Negative Temporal Perspective (PN), Present Fatalist Temporal Perspective (PF), Present Hedonistic Temporal Perspective (PH), and Future Time Perspective (F). Respondents selected the most suitable answer on a 5-point Likert scale. The Cronbach's α reliability coefficients for the individual subscales in the Polish version are .80 (F), .72 (PF), .72 (PH), .61 (PP), and .85 (PN).

Deviation from a balanced time perspective (DBTP) was measured based on Stolarski, Bitner & Zimbardo (2011). This deviation was calculated for every individual and as the Euclidean distance between the ideal (i) and the empirical (e) levels of the time perspective:

$$\sqrt{\text{DBTP}} = \sqrt{(i\text{PN} - e\text{PN})^2 + (i\text{PP} - e\text{PP})^2 + (i\text{PF} - e\text{PF})^2 + (i\text{PH} - e\text{PH})^2 + (i\text{F} - e\text{F})^2}$$

Respondents also completed the Perceived Family Acceptance (PFA) measure consisting of a single statement "I feel safe and accepted in my family", which was rated on a 5-point Likert scale from 1 (no) to 5 (yes), as well as a demographics survey. Participants were also informed that they could withdraw from the study at any time.

Statistical Analysis

An independent-sample Student's *t*-test and one-way ANOVA were applied to conduct a comparative analysis using SPSS v.22.0 (IBM, IBM

House, Shelbourne Road, Ballsbridge, Dublin, Ireland). For a theoretical model of the interactions between the examined variables, the macro-PROCESS 4.0 Model 3 by Hayes (2017) package for SPSS 22 was used.

RESULTS

The Effects of Gender and the COVID-19 Pandemic

A comparative analysis using an independent-sample Student's *t*-test was performed to exa-

mine the overall effect of gender and COVID-19 pandemic experience on depression (KADS), student burnout (SSBS), deviant from a balanced time perspective (DBPT), and perceived family acceptance (PFA). The findings revealed statistically significant higher levels for KADS ($t_{666} = -7.306, p < .0001$, medium effect size $d \text{ Cohen} = .58$) and DBPT ($t_{666} = -5.88, p < .0001$, medium effect size $d \text{ Cohen} = .47$) among girls compared to boys, with lower results for PFA ($t_{666} = 4.47, p = .035$, small effect size $d \text{ Cohen} = .17$) (see supplementary Table

A). The results also confirmed statistically significant higher level of SSBS ($t_{666} = -10.22, p < .0001$, high effect size $d \text{ Cohen} = .82$), higher DBPT ($t_{666} = -3.06, p = .002$, low effect size $d \text{ Cohen} = .24$), and lower PFA ($t_{666} = 4.33, p < .0001$, medium effect size $d \text{ Cohen} = .37$) among the population with COVID-19 experience compared to students tested before the COVID-19 pandemic outbreak. The level of depression was similar in both samples ($t_{666} = -1.12, p = .262$, low effect size $d \text{ Cohen} = .09$) (see Table 1).

Table 1. Student *t*-test comparative analysis results

Variables	Sample 1 (N1 = 355)	Sample 2 (N2 = 313)	Student <i>t</i> -Test	<i>p</i>	Cohen's <i>d</i>
Sex distribution					
Females	215	200			
Males	140	113			
KADS M (SD)	5.14 (4.19)	5.53 (4.78)	-1.12	.262	.09
SSBS M (SD)	87.32 (13.00)	101.26 (20.81)	-10.22	.0001	.82
DBPT M (SD)	76.30 (7.26)	78.09 (7.85)	-3.06	.002	.24
PFA M (SD)	4.52 (.50)	4.25 (.99)	4.33	.0001	.37

A series of one-way ANOVA tests with Bonferroni correction using gender and COVID-19 experience as independent variables revealed statistically significant effects of gender for the KADS scores ($F_{(1, 664)} = 54.00, p < .0001$) and the interaction between COVID-19 experience and gender ($F_{(1, 664)} = 13.03, p < .0001$). However,

no effect was observed for COVID-19 experience ($F_{(1, 664)} = .00, p = .986$). These results indicate that COVID-19 experience is important for experiencing depression, and that its effect on depression differs depending on the sex of the respondents (see Table 2).

Table 2. One-way ANOVA of the effect of gender and COVID-19 experience on the level of depression

	Sum of squares	df	Mean square	F	<i>p</i>	partial η^2
Gender	990.36	1	990.36	54.00	.000	.075
COVID-19 experience	.01	1	.01	.00	.986	.000
Gender x COVID-19 experience	238.88	1	238.88	13.02	.000	.019
Error	12178.15	664	18.34			

Note: R² square = .089 (Adj. R² = .085).

The findings for the SSBS scores revealed the statistical significance of COVID-19 ex-

perience ($F_{(1, 664)} = 92.85, p < .0001$) and the interaction between gender and COVID-19

experience ($F_{(1,664)} = 4.58, p = .033$), but no effect of gender. These results indicate that when analyzing the level of school burnout, we must

take into account both gender differences and the experience of the pandemic COVID-19 (see Table 2 and Table 3).

Table 3. One-way ANOVA of the effect of gender and COVID-19 experience on the student burnout

	<i>Sum of squares</i>	<i>df</i>	<i>Mean square</i>	<i>F</i>	<i>p</i>	<i>partial η^2</i>
Gender	715.87	1	715.87	2.46	.117	.004
COVID-19 experience	26993.20	1	26993.20	92.85	.000	.123
Gender x COVID-19 experience	1331.06	1	1331.06	4.58	.033	.007
Error	193043.25	664	290.73			

Note: R^2 square = .151 (Adj. R^2 = .147).

The analysis of variance with DBPT scores showed statistically significant effects of gender ($F_{(1,664)} = 35.08, p < .0001$) and COVID-19 experience ($F_{(1,664)} = 5.99, p = .015$) but statistically insignificant effects for the interaction between gender and COVID-19 experience

($F_{(1,664)} = 2.53, p = .112$). These findings suggest that although both, sex differences and the experience of COVID-19 are important in deviation from a balanced time perspective, these characteristics should be analyzed separately (see Table 4).

Table 4. One-way ANOVA of the effect of gender and COVID-19 experience on the deviation from balanced time perspective

	<i>Sum of squares</i>	<i>df</i>	<i>Mean square</i>	<i>F</i>	<i>p</i>	<i>partial η^2</i>
Gender	1897.37	1	1897.37	35.08	.000	.050
COVID-19 experience	324.17	1	324.13	5.99	.015	.009
Gender x COVID-19 experience	136.91	1	136.91	2.53	.112	.004
Error	35911.20	664	54.08			

Note: R^2 square = .065 (Adj. R^2 = .061).

The statistics for perceived family acceptance revealed statistically significant effects of gender ($F_{(1,664)} = 5.11, p = .024$), COVID-19 experience ($F_{(1,664)} = 12.27, p = .015$), and the interaction between gender and COVID-19 experience ($F_{(1,664)} = 11.19, p = .001$). These results suggest that males and females perceived acceptance from their family members in a different ways. Similarly, the level of

subjective feeling of parents' acceptance was different among students with the pandemic COVID-19 experience and without such experience. Moreover, the statistically significant interaction effect means that when analyzing the perception of parental acceptance, we must take into account both gender differences and the experience of the pandemic (see Table 5).

Table 5. One-way ANOVA of the effect of gender and COVID-19 experience on perceived family acceptance

	Sum of squares	df	Mean square	F	p	partial η^2
Gender	2.92	1	2.92	5.11	.024	.008
COVID-19 experience	7.00	1	7.00	12.27	.000	.018
Gender x COVID-19 experience	6.39	1	6.39	11.19	.001	.017
Error	379.03	664	.57			

Note: R^2 square = .051 (Adj. R^2 = .047).

A deeper insight into interaction effects using a series of post hoc Student's *t*-tests with all possible pairwise comparisons revealed the following: (1) *Females vs. Males before the COVID-19 pandemic* – Females scored statistically significant higher level in KADS ($t_{353} = -2.85, p = .005$) and DBPT ($t_{353} = -3.28, p = .001$) than males, but the differences in PFA and SSBS were statistically insignificant; (2) *Females vs. Males during the COVID-19 pandemic* – Females scored statistically significant higher level in KADS ($t_{311} = -8.23, p < .0001$), SSBS ($t_{311} = -2.08, p = .038$), and DBPT ($t_{311} = -4.97, p < .0001$) but lower in PFA ($t_{311} = 2.98, p = .003$); (3) *Males before the COVID-19 pandemic vs. Males during the COVID-19 pandemic* – Males tested before COVID-19 scored statistically significant higher level in KADS ($t_{251} = -2.78, p = .006$) and lower in SSBS ($t_{251} = 4.66, p < .0001$) than males tested during COVID-19. The levels of PFA and DBPT were similar in both samples; (4) *Females before the COVID-19 pandemic vs. Females*

during the COVID-19 pandemic – Females tested before COVID-19 scored statistically significant lower level in KADS ($t_{413} = 2.68, p = .008$), SSBS ($t_{413} = 9.30, p < .0001$), and DBPT ($t_{413} = 3.36, p = .001$) and higher in PFA ($t_{251} = -5.24, p < .0001$) compared to females tested during COVID-19; (5) *Females before the COVID-19 pandemic vs. Males during the COVID-19 pandemic* – Females tested before COVID-19 scored statistically significant higher level in KADS ($t_{326} = -6.13, p < .0001$) and DBPT ($t_{326} = -2.46, p = .014$) but lower in SSBS ($t_{326} = 5.21, p < .0001$) compared to males tested during COVID-19. The level of PFA was similar in both samples; (6) *Males before the COVID-19 pandemic vs. Females during the COVID-19 pandemic* – Males tested before COVID-19 scored statistically significant lower level in KADS ($t_{251} = 5.23, p < .0001$), SSBS ($t_{338} = 8.35, p < .0001$), and DBPT ($t_{251} = 5.93, p < .0001$) but higher in PFA ($t_{251} = -4.20, p < .0001$) compared to females tested during COVID-19 (see Figures 1–4).

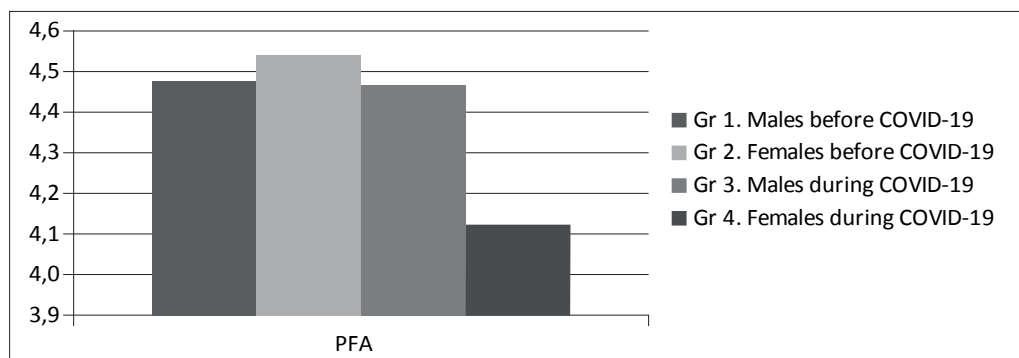


Figure 1. Graphical representation of differences in perceived family and acceptance (PFA) in regards to the interaction between gender and COVID-19 experience

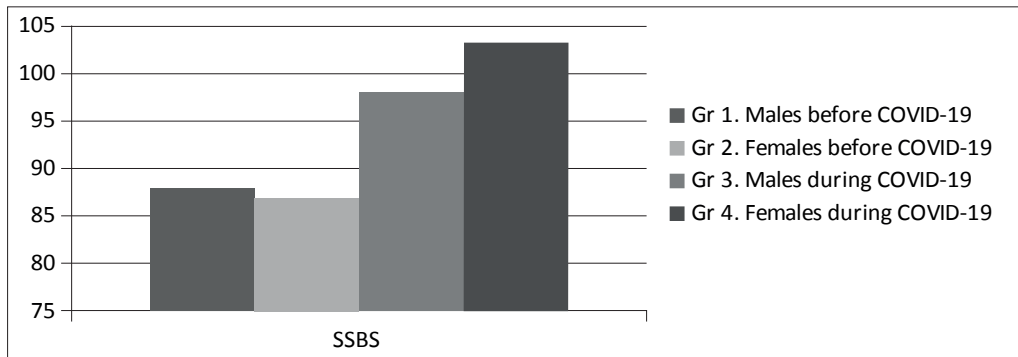


Figure 2. Graphical presentation of differences in student burnout (SSBS) in regards to the interaction between gender and COVID-19 experience

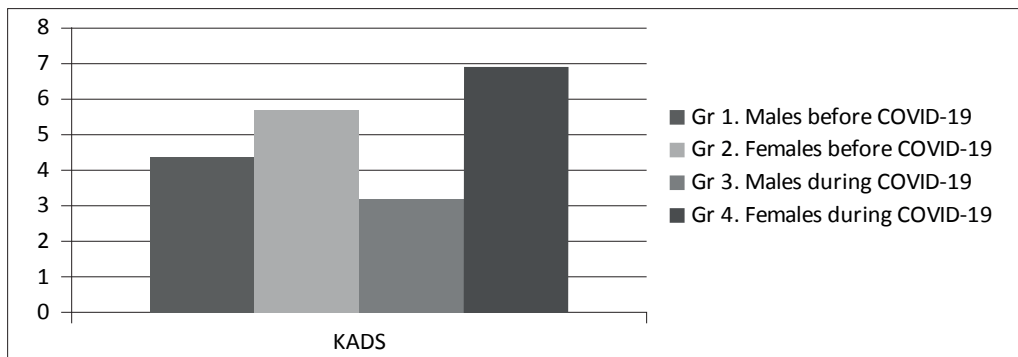


Figure 3. Graphical presentation of differences in depression (KADS) in regards to the interaction between gender and COVID-19 experience

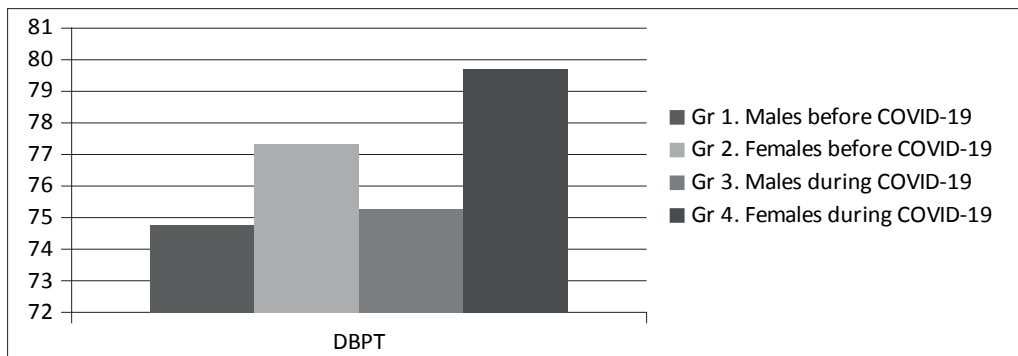


Figure 4. Graphical presentation of differences in deviation from a balanced time perspective (DBPT) in regards to the interaction between gender and COVID-19 experience

Moderation Analysis

The findings confirmed the statistically significant moderating effects of gender and COVID-19 experience only on the association between student burnout and depression (Model 1). The statistically significant interactions were as follows: (1) student burnout x gender; (2) student burnout x COVID-19 experience, and (3) student burnout x gender x COVID-19 experience. Higher student burn-

out was related to higher depression, and this association was much stronger in the female group both before and during the COVID-19 pandemic. Conversely, in the male sample, the positive relationship between student burnout and depression was much weaker and observed only in males examined before the COVID-19 pandemic outbreak. Interestingly, in the sample examined during COVID-19, higher student burnout was related to lower depression (see Table 6, Figure 5).

Table 6. Moderation analysis of gender and COVID-19 experience on the association between depression and student burnout, deviation from a balanced time perspective, and perceived family acceptance

Paths	Unstandardized Coefficient		SE	95% CI	
				LL	UL
Model 1					
Direct effects					
SSBS→KADS	-.31**		.11	-.53	-.09
Gender→KADS	-19.05**		5.96	-30.75	-7.35
COVID-19 experience→KADS	-22.18**		5.98	-33.93	-10.43
Interaction effects					
SSBS & Gender→KADS	.22**		.07	.09	.35
SSBS & COVID-19→KADS	.21**		.06	.08	.33
Gender & COVID-19→KADS	10.26**		3.53	3.33	17.18
SSBS & Gender & COVID-19→KADS	-.10**		.04	-.17	-.03
Model summary (F, p, R, R ²)	F _(7,660) = 43.57; p < .0001; R = .56; R ² = .32				
Model 2					
Direct effects					
DBPT→KADS	.05	.24		LL	UL
Gender→KADS	-10.19	10.88		-42	.09
COVID19 experience→KADS	10.99	11.56		-31.56	11.17
Interaction effects					
DBPT & Gender→KADS	.11	.14		-11.71	33.69
DBPT & COVID-19→KADS	-.20	.15		-.17	.39
Gender & COVID-19→KADS	1.73	6.99		-.50	.10
DBPT & Gender & COVID-19→KADS	.02	.09		-11.99	15.45
Model summary (F, p, R, R ²)	F _(7,660) = 13.20; p < .0001; R = .35; R ² = .12				
Model 3					
Direct effects					
PFA→KADS	-5.33	2.89		LL	UL
Gender→KADS	-7.62	7.77		-11.00	.35
				-22.87	7.64

COVID19 experience→KADS	-16.14*	7.33	-30.53	-1.76
Interaction effects				
PFA & Gender→KADS	1.75	1.72	-1.62	5.12
PFA & COVID-19→KADS	3.07	1.62	-.13	6.24
Gender & COVID-19→KADS	9.59*	4.31	1.13	18.06
PFA & Gender & COVID19→KADS	-1.87	.95	-3.75	.002
Model summary (F, p, R, R ²)	F _(7,660) = 39.04; p < .0001; R = .54; R ² = .29			

Note: ** p < .01; * p < .05. Notes: SSBS – Student school burnout; DBTA – deviation from balanced time perspective; PFA – perceived family acceptance; COVID-19 – COVID-19 pandemic experience.

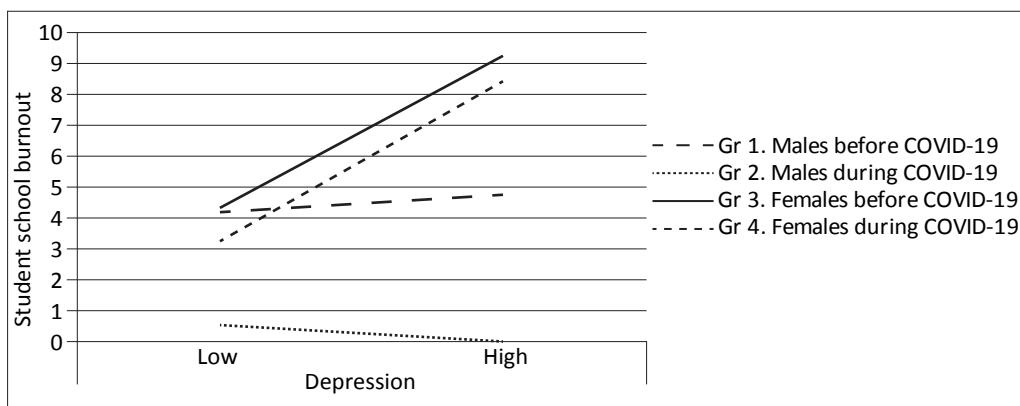


Figure 5. Moderating effect of gender and COVID-19 experience on the association between student burnout and depression

DISCUSSION

The differences observed in the current study suggested that COVID-19 pandemic more strongly affected adolescent girls than boys, which was related to higher depression, student burnout, and an imbalanced time perspective. Girls also perceived lower family acceptance than boys during the pandemic. The COVID-19 pandemic experience was also related to significant differences in levels of depression and student burnout regardless of gender. Interestingly, boys were less depressed and more burned out during the pandemic than before, while girls were not only more burned out but also more depressed, imbalanced in their time perspective, and perceived lower family ac-

ceptance during the COVID-19 pandemic than before the outbreak. The present study showed similar results in terms of increased depressive symptoms between Polish, European (Werling et al., 2022), and Chinese adolescents and high school graduates (Hawes et al., 2021). A meta-analysis of 29 studies conducted in East Asia, Europe, North America, the Middle East, and Central and South America with a total of more than 80,000 participants globally showed that the pandemic and lockdown were very harmful environmental factors, followed by an increase in empirical clinical data on depression and anxiety (Yu et al., 2022). The results of our study indicate that symptoms of depression and burnout occurred frequently among students in the last year of high school (especially in girls).

These results agree with the results of studies conducted in Ireland during the pandemic, in which women also presented higher rates of anxiety and depression (Racine et al., 2021). Many adolescents reported decreased mood, concentrating difficulty, and a sense of loss. For some adolescents, however, staying at home also meant positive consequences, as they did not have to commute to a school far away from home. Some students also reported being able to get more sleep and increase their time for rest. Students also noted that they stopped experiencing the peer violence of real-world school and emphasized an increased sense of security, validation of their relationships and friendships, and the development of personal interests for which they previously had no time, as well as improved relationships with their families (Tomaszek, Muchacka-Cymerman, 2018).

The moderation analysis confirmed significant interactions between gender and COVID-19 experience on the association between student burnout and depression. An increase in student burnout was related to an increase in depression, and this association was much stronger in the adolescent female sample examined before and during the COVID-19 pandemic. These findings confirmed a higher vulnerability to existential crises caused by the COVID-19 pandemic among girls compared to boys. Specifically, experiences connected with finality (e.g., death), loneliness, and isolation amid the COVID-19 pandemic seemed to be more devastating to the emotional functioning (depression) of adolescent girls than boys. This emotional vulnerability may be associated with different factors, both environmental and psychological. Kessler and McLeod (1984) stated that female vulnerability to undesirable life events is largely confined to a “network”, which indicates greater involvement in the lives of surrounding people. Moreover, as social support was limited due to isolation during the COVID-19 pandemic, the emotional costs of caring for the problems or deaths of other people and family members were not alleviated by face-to-face contacts with one’s close social network. Such difficulties might have increased distress and depressive symptoms. In addition, sex differences indi-

cated that females of all ages and educational grades were more vulnerable than males to the COVID-19 pandemic crisis, which was already reported by several studies (Brooks et al., 2020; Giudice et al., 2022). In our study, student burnout was an additional stressor that was much more disruptive for females than males. These results are also in line with studies conducted by Tomaszek and Muchacka-Cymerman in 2022, in which students experienced an accumulation of stressors, indicated by a higher risk of PTSD symptoms when they were burnout, in addition to existential anxiety and academic fears.

Studies conducted during the COVID-19 pandemic indicate that the stressful living conditions during the COVID-19 pandemic increased school burnout among students (Hyland et al., 2020; Fernández-Castillo, Fernández-Prados, 2021). In addition, studies conducted before the start of the COVID-19 pandemic found that stress is a positive predictor of school burnout. To our knowledge the present study seems to be currently the only research that expresses the COVID-19 pandemic’s importance to school-burnout, although a relationship with deviation from a balanced time perspective was found also before the pandemic (Macalka et al., 2022). During the pandemic, the stress was out of each individual’s control and led to emotional exhaustion, as well as a sense of inadequacy as a student due to long-distance learning, which increased the expectations of high school graduates; this factor also increased school burnout (Gundogan, 2022). The school burnout experienced by students may lead to increase negative short- and long-term psychosocial consequences, such as depression (Tang et al., 2021). Previous studies concluded that school burnout triggers depression and is a positive predictor of depression. Depression negatively affects school functioning by reducing cognitive functions, significantly contributing to poorer academic performance and a decline in activity. Adolescents suffering from burnout are usually more exposed to depressive disorders, which leads to poor academic achievement, difficulties at school, and behavioral problems. Conversely, the pandemic decreased perceived family acceptance, which is a very significant

factor for student well-being and feelings of safety (Salmela-Aro, Read, 2017).

STUDY LIMITATION SAND FUTURE DIRECTIONS

The study has some limitations. First, the incoherence between the procedure before COVID-19 (paper–pencil data collection) and that during the pandemic (online) might have introduced some uncontrolled side effects. For example, distributing an online questionnaire using social media increases the risk that participants were from other schools or municipal areas, which might not have been comparable to the baseline data collected before the pandemic. Secondly, there is a possibility that other factors beyond pandemic-related difficulties influenced the results. Finally, there were only two groups tested: one in 2019 before the pandemic and one in 2020 after the lockdown began. Finally, the study sample consisted of students from high schools in the South of Poland, which causes the generalization of the results to the entire high school graduates population in Poland to be limited. In addition, we also did not control such factors as the size of the settlement, family background, family structure, past mental health problems, or educational goals, which may be important factors contributing to the results. Taking into account all limitations and being aware of possible uncontrolled influence the results seem to be interesting and fruitful for filling the knowledge gap. In future studies, it will be important to assess emotional symptoms several times in a longitudinal manner since it is possible that symptoms of depression and burnout may relate to the amount of time spent in lockdown and may change under the influence of other inconveniences.

CONCLUSIONS

Early interventions against the environmental risk factors of school burnout offer a great opportunity to stop the development of this syn-

drome. Our results confirmed the importance of considering sex differences, COVID-19 pandemic experiences, and family acceptance in professional programs, with a focus on minimizing this serious educational problem. Specifically, the findings answered the research questions: (1) on the differences in depression, student burnout, and deviation from a balanced time perspective in relation to COVID-19 experience, and (2) on perceived family acceptance, student burnout, and deviation from a balanced time perspective interaction with gender in predicting the adolescent depression related to COVID-19 experience. The results showed the following:

1. The COVID-19 pandemic affected more adolescent girls than boys, which was related to higher depression, student burnout, and imbalanced time perspective.
2. Females also perceived less family acceptance than boys during the pandemic.
3. Student's COVID-19 pandemic experience was also related to significant differences in levels of depression and student burnout regardless of gender.
4. Males were less depressed and more burned out during the pandemic than one year before, while girls were not only more burned out but also more depressed, imbalanced in their time perspective, and perceived less family acceptance during the COVID-19 pandemic than before the outbreak.

INFORMED CONSENT

Informed consent was obtained from all study participants through their acceptance of voluntary, autonomous and anonymous participation in the online research. The online survey was preceded by a cover letter in which the purpose of the study was presented, the possibility of resigning from participation in the study at any time and the intention of collective results to be published.

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