

Social support against depression in young adults' group during COVID-19 pandemic

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Summary

Aim. The present study aimed at analyzing the prevalence of depressive symptoms in a group of learning young adults, as well as the social support as a predictor of depression in late adolescence during the COVID-19 pandemic

Method. An online national survey of young adults attending schools was conducted. The semi-structured questionnaire, including a section on sociodemographic data, stressors, needs and sources of support, as well as brief version of the Kutcher Adolescent Depression Scale, was distributed to young Poles. The final sample consisted of 1,500 students aged 18–23. Multivariable logistic regression assessed the relationships between support needs and sources and depressive symptoms.

Results. The support needs that are most commonly reported by young adults are support from loved ones (family, friends) ($n = 843$; 56.2%) and teachers (e.g., care, appreciation) ($n = 603$; 40.2%). Fifty-six per cent of Polish young adults are experiencing significant depressive symptoms (95% confidence interval [CI]: 1.82–13.96). Young adults with no social support had higher KADS score than participants reporting some form of support ($b = 1.794$; 95% BCa CI = 0.659, 2.947). Participants receiving support from mother, both parents and siblings had a lower severity of depressive symptoms, while young people receiving support from father had more severe symptoms.

Conclusions. This study provides initial findings in terms of depressive symptoms and support needs of young adults during the COVID-19 pandemic. It is imperative for mental health services, communities and schools to provide the necessary support to young adults.

Key words: COVID-19, young adults, depression

Introduction

The COVID-19 pandemic has pushed hundreds of millions of pupils and students worldwide out of schools, isolating them from friends and their sources of support. Many young people spent months in a distance learning environment. Young adulthood is a critical developmental period neurobiologically, socially and emotionally. The COVID-19 pandemic is increasing mental health problems of the global population and has influenced the wellbeing of young adults in several ways, with changes concerning daily routines, online learning (so far absent in Poland), experienced loss of social contacts and personal relationships, decreasing the range of coping strategies. Young adults are still depending on close relationships with parents, and their social interactions play a crucial role in their coping strategies and self-regulation [1]. Many authors [2–4] suggest the importance of training young adults to develop individual resilience, flexibility and coping skills that can help offset the psychological effects of pandemic lifestyle changes now and in the future.

The current evidence concerning the effects of the COVID-19 pandemic on mental health shows an increase in depressive and anxiety symptoms [5]. Research indicates that high percentage of young adults reported clinical cut-off symptoms of depression, anxiety and PTSD. An important role in mental health outcomes is attributed to such factors as: loneliness, personal coping strategies, resilience, distress tolerance, and family support [4, 6–10]. Ye et al. [11] collected responses from 7,800 college students (61.53% women, mean age was 20.54 years). The findings indicated that in young adult group, the relationship between COVID-19-related stressful experiences and acute stress disorder could be mediated by resilience ($\beta = 0.01$, $p < 0.001$), adaptive coping strategies ($\beta = 0.02$, $p < 0.001$) and social support ($\beta = 0.01$, $p < 0.001$). Horigian et al. [8] conducted a cross-sectional study which evaluated relations between loneliness and depression, anxiety, alcohol use and drug use. The study sample consisted of 1,008 US young adults aged 18–35 recruited through social media. 80% of the population reported significant depressive symptoms, 61% reported moderate to severe anxiety, while 30% disclosed harmful levels of drinking. Furthermore, loneliness was associated with higher levels of mental health symptomatology [5].

Researchers are focused on the young adults' social support as a factor decreasing prevalence of mental health problems. Qi et al. [12] indicated that low support was associated with higher prevalence of depression ($OR = 4.24$, 95% CI: 3.38–5.33). Hou et al. [13] demonstrated that the association of COVID-19 infection risk with depressive symptoms was not significant in people who reported higher levels of social support. Ghafari et al. [14] indicated that general health score (measured by the GHQ-28) decreased significantly with increasing social support score (measured by the PRQ-85-Part 2) ($b = 0.26$; 95% CI = -0.32 to -0.20 ; $p < 0.001$). But still, we do not know what the components of an effective social support for young adults are.

Central questions of our research were: (1) to which extent do the pandemic and online learning influence the mental health of the young adult population, (2) what are the protective and risk factors within the social support factors? The identification of both risk and protective factors can play a crucial role in the development of a pandemic-related support system of young adults. The present study focuses on young adults' population aged 18–23. Our findings can be useful for the design of possible solutions to prevent negative consequences of the COVID-19 pandemic and online education for the young adults' mental health.

Methods

This observational, cross-sectional study covers young adults aged 18–23. It was conducted in winter, at the turn of 2020 and 2021 in Poland. The research was aimed at analyzing the mental health status, stress and coping strategies of young adults. This study focuses on the analysis of support and its predictive value for depression, elsewhere (in print) we collectively discuss protective factors and risks for depression in the study population. Invitations to participation in the study were disseminated among principals of vocational schools, general secondary schools and technical secondary schools. This study was conducted in accordance with the Declaration of Helsinki. The Maria Grzegorzewska University Ethics Committee approved the study procedures. All participants provided their informed consent to the participation in the study. The procedures were clearly explained, and participants could quit the survey at any point as well as withdraw consent after its completion without explaining their reasons for doing so. Confidentiality was maintained by omitting personal identifiers.

The online semi-structured questionnaire was developed using Google forms. For epidemiological reasons, the entire study was conducted online. The questionnaire included sections concerning sociodemographic data, depressive symptoms, pandemic and distance learning stressors, and needs of support. Sociodemographic data covered the general health (both mental and somatic). Specifically, participants were asked if they had had any critical life events during last three months, any problems concerning distance learning or worries about COVID-19 and how they were coping with them. Depressive symptoms were measured using the Polish 6-item version of the Kutcher Adolescents Depression Scale (KADS) [15, 16]. Studies showed that the KADS is a reliable and valid measure for assessing depressive symptoms with regard to young adults population [15, 16]. It should be emphasized that the KADS is a screening scale, which is a useful tool but is not substitute for clinical diagnosis. The statements are assigned a score of 0–3, where 0 – hardly ever, 1 – sometimes, 2 – most of the time, 3 – all the time. Respondents indicated the most suitable answer that most accurately described their feelings. Score of 6 points or higher indicated the risk of depression and suggested the need to contact a psychiatrist in order to undertake further clinical diagnosis.

The study sample consisted of 1,500 young adults aged 18–23 years ($M = 18.30$; $SD = 0.56$). The vast majority of the group were females ($n = 987$; 65.8%). 61.1% of the participants ($n = 916$) were secondary school students, 61.5% lived in a town ($n = 923$), 10.5% ($n = 158$) had mental health disorders. 30.6% of participants had an immediate experience of COVID-19 – they got infected themselves or their close relative got infected ($n = 459$), whereas 51.1% had an experience of a classmate or class teacher getting infected with COVID-19 ($n = 766$) (see Table 1).

Table 1. Sociodemographic and health characteristics of the study sample ($n = 1,500$)

Variables	Category	Frequency
Gender	Female	987 (65.8%)
	Male	499 (33.3%)
	Other	14 (0.9%)
School level	Gap year	1 (0.1%)
	General secondary school	916 (61.1%)
	Technical secondary school	545 (36.3%)
	Tertiary school	12 (0.8%)
	Post-secondary school/vocational secondary school	26 (1.7%)
Place of residence	Village	577 (38.5%)
	Small town (<20,000 inhabitants)	166 (11.1%)
	Medium-sized town (20,000–100,000 inhabitants)	270 (18%)
	Large town (100,000–350,000 inhabitants)	131 (8.7%)
	Large city (>350,000 inhabitants)	177 (11.8%)
	Capital of Poland (Warsaw, 1,789,620 inhabitants)	179 (11.9%)
Age	Mean (SD)	18.30 (0.56)
	Median	18
	Min–max	18–23
	Q1; Q3	18; 19
Health status		
Chronic illnesses	Healthy	1,077 (71.8%)
	Disabled	10 (0.7%)
	Physical illness	101 (6.7%)
	Mental disorder/illness	158 (10.5%)
	In the process of diagnosis	101 (6.7%)
	Both physical and mental illnesses	53 (3.5%)

Statistical analysis

Categorical variables were presented in the form of frequencies (n) and percentages (%). The means (M) and standard deviations (SD) were computed for continuous variables. We used the multiple regression analysis to investigate the unique contribution of the various sources of social support in the explanation of the severity of depressive symptoms measured by general scores of the KADS. The following sources of social support were introduced to the regression analysis as explanatory variables: nobody, mother, father, both parents, siblings, grandmother and/or grandfather, aunt and/or uncle, other relatives, teacher/coach/priest, tutor, school counsellor/school psychologist, doctor/therapist, closest friend, boyfriend/girlfriend, classmates, friends outside the class, church/community/God, pet, psychological care, psychiatric care. All statistical analyses were done with SPSS version 25 for Windows [17]. The level of significance was set at $p < 0.05$ in all statistical tests.

Results

Depression, needs and sources of support

The score of 848 participants (56.5%) suggests possible depression and the need for in-depth testing (these participants scored 6 or higher on the KADS). The average KADS score is 6.82 ($SD = 4.69$). Among participants, 19.1% ($n = 286$) answered that they had at least fairly frequent experience of suicidal and self-harm thoughts, plans or behaviours.

The support needs that are most commonly reported by young adults are support from loved ones (family, friends) ($n = 843$; 56.2%) and teachers (e.g., care, appreciation) ($n = 603$; 40.2%). As many as 519 (34.6%) persons indicated the need to meet their basic needs (food, sleep, calm, money). The total of 824 (54.93%) young people needed professional support: psychological consultation/support ($n = 270$; 18%), workshops on relaxation, stress management/coping ($n = 261$; 17.4%) and medication for severe symptoms (e.g., insomnia, exhaustion, sadness) ($n = 293$; 19.5%). Almost eleven percent of participants reported a need for information support about psychological coping ($n = 130$; 8.7%) and places where young people can get help (e.g., helplines, help centres for victims of violence) ($n = 31$; 2.1%) (see Table 2).

Table 2. The needs and sources of support of young people ($n = 1,500$)

Reported needs	Frequency
Support not needed	66 (4.4%)
Fewer requirements at school/work/ more rest	11 (0.7%)
Closeness/sensitivity	10 (0.7%)
Providing for basic needs at home (food, sleep, calm, money)	519 (34.6%)

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Information materials on:		
Psychological coping		130 (8.7%)
Places for young people to get help (e.g. helplines, help centres for victims of violence)		31 (2.1%)
Support from:		
Loved ones (family, friends)		843 (56.2%)
Teachers (e.g., care, appreciation)		603 (40.2%)
Friends, classmates (e.g., care, appreciation)		331 (22.1%)
Psychological consultation/support		270 (18%)
Workshops on relaxation, stress management/coping		261 (17.4%)
Medication for severe symptoms (e.g., insomnia, exhaustion, sadness)		293 (19.5%)
Other needs		22 (1.5%)
Support received from:		
Nobody		105 (7%)
Mother		479 (31.9%)
Father		166 (11.1%)
Both parents		475 (31.7%)
Siblings		356 (23.7%)
Grandmother and/or grandfather		306 (20.4%)
Aunt and/or uncle		86 (5.7%)
Other relatives		7 (0.5%)
Teacher/coach/priest		52 (3.5%)
Tutor		89 (5.9%)
School counsellor/school psychologist		24 (1.6%)
Doctor/therapist		58 (3.9%)
Closest friend		825 (55%)
Boyfriend/girlfriend		96 (6.4%)
Classmates		222 (14.8%)
Friends outside the class		359 (23.9%)
Church/community/God		3 (0.2%)
Pet		2 (0.1%)
Psychological/psychiatric support		
Do you have access to psychological care at school?	Yes	852 (56.8%)
	No	126 (8.4%)
	I do not know	522 (34.8%)

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Did you receive psychological care during the pandemic?	Yes	223 (14.9%)
	No	1,277 (85.1%)
Did you receive psychiatric care during the pandemic?	Yes	149 (9.9%)
	No	1,351 (90.1%)
Was the reason for seeking psychological/psychiatric support related to the pandemic?	Yes	73 (12.6%)
	No	508 (87.4%)

The results of multiple regression analysis

Risk and protective sociodemographic factors of depression (KADS)

First, logistic regression analysis was performed to verify the possibility of predicting depression among young adults based on the following predictors: sex, age, school type, and place of residence. The overall model was statistically significant when compared to the null model, ($\chi^2(11) = 86.75, p < 0.001$), explained around 7.5% of the variation of depression (*Nagelkerke R2* = 0.075) and correctly predicted 61.2% of depression cases.

Males are at about half of the risk of depressive symptoms (≥ 6 points on the KADS) in comparison to females (*OR* = 0.47; *b* = - 1.57; 95% BCa CI: - 0.995; - 0.550). The risk is significantly higher among general secondary school students than among technical secondary school students (*OR* = 0.60; *b* = - 0.52; 95% BCa CI: - 0.774; - 0.254) and tertiary school students (*OR* = 0.14; *b* = - 1.99; 95% BCa CI: - 21.896; - 0.718). Young adults living in a very big city are at about 50% higher risk of depression than those living in the countryside (*OR* = 1.57; *b* = 0.45; 95% BCa CI: 0.082-0.816) (see Table 3).

Table 3. Summary of logistic regression analysis with bootstrap method (1,000 samples) for sociodemographic characteristics predicting depression among young people in Poland (KADS) (*n* = 1,500)

Depression (KADS)								
	b	SE	Wald	df	p	Exp(B)	95% BCa CI	
							lower	upper
(constant)	-1.566	2.449	0.480	1	0.500	0.209	-6.914	3.120
Sex								
Female (ref.)								
Male	-0.764	0.117	44.553	1	<0.001	0.466	-0.995	-0.550
Other	0.017	1.449	0.001	1	0.966	1.017	-1.353	1.773
Age	0.123	0.136	0.958	1	0.360	1.130	-0.131	0.408

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School level								
General secondary (ref.)								
Technical secondary	-0.517	0.148	12.774	1	<0.001	0.596	-0.774	-0.254
Tertiary	-1.992	4.455	7.049	1	0.009	0.136	-21.896	-0.718
Post-/vocational secondary	-0.383	0.455	0.866	1	0.389	0.682	-1.267	0.507
Place of residence								
Village (ref.)								
Small town (<20k inhabitants)	-0.113	0.194	0.389	1	0.529	0.893	-0.537	0.280
Medium-sized town (20–100k inhabitants)	0.022	0.155	0.021	1	0.891	1.023	-0.274	0.317
Large town (100–350k inhabitants)	0.047	0.206	0.054	1	0.813	1.048	-0.342	0.471
Large city (>350k inhabitants)	0.453	0.186	5.940	1	0.013	1.573	0.082	0.816
Capital of Poland (Warsaw, 1,789,620 inhabitants)	0.120	0.190	0.396	1	0.517	1.127	-0.248	0.533

BCa CI – Bootstrap Bias-Corrected confidence interval;

Hosmer & Lemeshow test: $\chi^2(8) = 6.048$; $p = 0.642$; Classification accuracy: 61.2%;

Nagelkerke $R^2 = 0.075$; $\chi^2(11) = 86.748$; $p < 0.001$

The sources of social support predicting severity of depression (KADS)

A multiple regression was carried out to investigate whether various social support sources could significantly predict severity of depressive symptoms (KADS score). The results of the regression indicated that the model explained 12.1% of the variance and that the model was a significant predictor of depression severity, $F(20, 1,479) = 10.16$; $p < 0.001$; $R^2 = 0.12$. The results of regression analysis are presented in Table 4.

Young adults with no social support had a higher KADS score than participants reporting some form of support ($b = 1.79$; 95% BCa CI = 0.659; 2.947). Participants receiving support from mother ($b = -0.80$; 95% BCa CI = -1.347; -0.220), both parents ($b = -0.20$; 95% BCa CI = -2.592; -1.404) and siblings ($b = -0.77$; 95% BCa CI = -1.302; -0.257) had a lower severity of depressive symptoms on the KADS, while young people receiving support from father ($b = 0.90$; 95% BCa CI = 0.176; 1.686) had more severe symptoms. Among sources of support in the school environment, only persons supported by a tutor declared lower depressive symptoms than participants not receiving support from a tutor ($b = -1.24$; 95% BCa CI = -2.243; -0.220). Young people finding support in doctor/therapist ($b = 2.09$; 95% BCa CI = 0.864; 3.406), church/community/God ($b = 2.13$; 95% BCa CI = 0.217; 4.033) and pet ($b = 5.07$; 95% BCa CI = 3.593; 6.819) had more severe symptoms of depression than participants not

reporting support from these sources. People getting professional help (psychological/psychiatric care) had more severe symptoms of depression than young adults who did not seek this kind of support ($b = 1.39$; 95% BCa CI = 0.587; 2.287; $b = 1.07$; 95% BCa CI = 0.043; 2.143, respectively) (see Table 4).

Table 4. Summary of regression analysis with bootstrap method (1,000 samples) for sources of support as predictors of depression (KADS) ($n = 1,500$)

Depression (KADS)						95% BCa CI	
	b	SE	beta	t	p	lower	upper
	7.038	0.288		24.526	0.001	6.407	7.581
Support from:							
Nobody	1.794	0.588	0.098	3.559	0.004	0.659	2.947
Mother	-0.796	0.289	-0.079	-2.739	0.004	-1.347	-0.220
Father	0.903	0.381	0.060	2.232	0.025	0.176	1.686
Both parents	-2.000	0.294	-0.198	-6.809	0.001	-2.592	-1.404
Siblings	-0.766	0.274	-0.070	-2.618	0.005	-1.302	-0.257
Grandmother and/or grandfather	-0.052	0.281	-0.004	-0.165	0.850	-0.590	0.497
Aunt and/or uncle	-0.172	0.473	-0.009	-0.328	0.702	-1.061	0.829
Other relatives	-1.093	1.657	-0.016	-0.650	0.475	-4.234	2.329
Teacher/coach/priest	0.406	0.486	0.020	0.802	0.391	-0.570	1.391
Tutor	-1.236	0.527	-0.048	-1.890	0.009	-2.243	-0.220
School counsellor/school psychologist	0.670	1.067	0.018	0.707	0.524	-1.462	2.767
Doctor/therapist	2.092	0.662	0.086	3.146	0.002	0.864	3.406
Closest friend	0.394	0.250	0.042	1.542	0.112	-0.093	0.857
Boyfriend/girlfriend	0.290	0.568	0.015	0.547	0.614	-0.743	1.569
Classmates	0.152	0.326	0.012	0.452	0.640	-0.497	0.798
Friends outside the class	-0.016	0.284	-0.001	-0.056	0.963	-0.552	0.560
Church/community/God	2.132	0.974	0.020	0.821	0.018	0.217	4.033
Pet	5.065	0.916	0.039	1.612	0.001	3.593	6.819
Professional help during the pandemic							
Psychological care	1.392	0.431	0.106	3.199	0.001	0.587	2.287
Psychiatric care	1.072	0.530	0.068	2.141	0.045	0.043	2.143

BCa CI – Bootstrap Bias-Corrected confidence interval
 $F(20, 1,479) = 10.156$; $p < 0.001$; $R^2 = 0.121$; $_{adj}R^2 = 0.109$

Discussion

This survey examines the social support predictors of young adults' depression during the COVID-19 pandemic. Although the KADS scale was used, which is a screening tool that does not replace a clinical diagnosis, it became possible to assess the depressive symptoms among the respondents. Polish research on the prevalence of depression in the middle and late stage of adolescence conducted before the pandemic showed that up to 29.5% of respondents from the non-clinical population presented depressive symptoms [18]. In other Polish survey, Bomba and Modrzejewska found following point prevalence of depression: 27.27% for 17-year-olds, 27.43% for 18-year-olds and 26.69% for 19-year-olds [19]. According to the authors, these results support the hypothesis of a developmental character of depressiveness in adolescence.

This study is one of the very first European studies relating to the general population of very young adults during the pandemic and distance learning [20–23]. This study focuses on younger adults – the majority of respondents were 18-year-olds who are still at school.

It should be noticed that the results of high percentage of respondents (56.5%) suggest probability of clinical depression. However, 20.7% of the study group had diagnosis of mental disorder, somatic illness or both, which could be related to both the decrease of psychological well-being and coping with stress. The results of this study are very similar to the ones obtained in other European studies in terms of depression ratios. In Belgium, 56% of young adults (aged 18–30) presented depressive symptoms due to COVID-19 [20]. Greek students ($n = 1,000$; age: 22.07 ± 3.30 years; 68.01% female) reported a change with an increase in depression (60.9%) and overall suicidality (20.2%) [21]. The French study [22] indicates that depression is observed in 43% of the student participants. At the same time, 14.86% of respondents reported self-harm or suicidal thoughts. Unlike the above-mentioned study, another French study [23] conducted in a large group of students ($n = 69,054$, aged 18–22, 72.8% women) showed that the prevalence of suicidal thoughts was 11.4% and severe depression – 16.1%. Delmastro and Zamariola [24] assessed the psychological impact of COVID-19 on 6,700 Italian individuals, representative of the Italian population. The young adults (aged 16–24) are confirmed to be more exposed to negative mood indicative of mental distress and so are women.

In contrast to European studies, Chinese studies show significantly lower rates of depression during the COVID-19 pandemic. In the study conducted by Wang et al. [25] the prevalence of depressive symptoms was 12.2% (95%CI: 11.9%, 12.5%). Ma et al. [26] showed that 21.1% of college students ($n = 746,217$; 55.6% female) had probable depressive symptoms. The following factors could play an important role in explaining the differences in the cited studies: (1) the range of implemented mental health preventive strategies, (2) the regional differences in mental health services availability, (3) the national economy and government preparedness to cope with the

pandemic, (4) the degrees of outbreak severity and the stage of the outbreak, as well as proper dissemination of COVID-related information, (5) sample size (usually bigger in Chinese research) and selection bias.

The present research indicated that a lack of social support is a significant predictor of depression compared to receiving some form of support. Furthermore, participants receiving support from mother, both parents and siblings had a lower severity of depressive symptoms, while young people receiving support from father only had more severe symptoms. So far, very few studies have been carried out on social support as a predictor of depression in this age group. Hou et al. [13] involved a total sample of 1,251 young adults (62.6% female, aged 18–25; 91.5% of the group were Chinese). The results showed that the association of COVID-19 infection risk with depressive symptoms was not significant in people reporting higher levels of social support. In contrast, in the case of people reporting lower levels of social support, the association between COVID-19 infection risk and depressive symptoms was positively associated in young adults exhibiting lower levels of perseverance [$b = 2.99$, $SE = 0.76$, $95\% \text{ CI} = (1.50, 4.49)$, $t = 3.92$, $p < 0.001$], but not in those showing higher levels of perseverance [$b = 0.39$, $SE = 1.14$, $95\% \text{ CI} = (-1.84, 2.64)$, $t = 0.34$, $p = 0.72$] [13]. Ghafari et al. [14] indicated that better general functioning (measured by the GHQ-28) was associated with higher social support (measured by the PRQ-85-Part 2) [$b = 0.26$; $CI 95\% = -0.32 \text{ to } -0.20$; $p < 0.001$]. The study of Zhuo et al. [25] was conducted in a sample of $n = 940$, 53.3% female, 92.8% aged 18–25) of back-to-school college students from different universities in Wuhan in August and September 2020. The team indicated that the interaction effect between intolerance of uncertainty and social support on depression was significantly negative ($\beta = -0.06$, $p < 0.001$). Furthermore, social support turned out to be a moderating factor that influences readaptation to school and the range of the pandemic stressors' impact [26–29].

There are some limitations to our study that should be noted. The results cannot be extrapolated to the entire population of young adults in Poland, since we used a non-probabilistic sample. In particular, the sampling technique which relies on digital infrastructure and voluntary participation could increase selection bias. Another limitation is the cross-sectional design of the survey, which does not allow to track changes in the mental state of the respondents.

The associated risk and protective factors indicated in this study shed light on the policy targeting young adults. First of all, more attention should be paid to the very young adult population mental health (through depression screening, psychoeducational and preventive campaigns). Secondly, local governments should ensure easily accessible mental health services for young adults during and after the pandemic. Thirdly, schools should implement long-term mental health programs focusing on strengthening mental resilience, which should include the training of social support seeking and coping with stress.

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