ABSTRACTS OF THE SCIENTIFIC PUBLICATIONS

of Assoc. Prof. Anna Alexandrova-Karamanova, PhD,

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1. Scientific monograph

Alexandrova-Karamanova, A., Dimitrova, E., Yordanova, T., Kotzeva, T., Mineva, K., Paunova-Markova, E. (2026). *COVID-19 and adolescents: growing up during a pandemic.* 296 p. (380 standard pages). Sofia: Professor Marin Drinov Publishing House of BAS. ISBN 978-619-245-643-6 (print), ISBN 978-619-245-644-3 (e-book).

This monograph focuses its research on adolescents as a vulnerable group with regard to the negative effects of the Covid-19 pandemic. The developmental period of adolescence itself creates normative prerequisites for vulnerability in terms of physical and mental health and well-being. The crisis situation caused by Covid-19 creates prerequisites for the intensification of existing normative challenges to the health and development of adolescents through significant changes in the experienced levels of stress and through changes in key daily activities such as learning (going online), communication with peers (increasingly online), restrictions on sports, walks and entertainment outside the home, increased time spent in front of screens, more time within the home in the company of parents, with whom communication during adolescence is often difficult.

The monograph is structured in 10 chapters and a conclusion.

The first chapter includes several theoretical reviews conducted at different points in the course of the pandemic and the accumulation of empirical evidence on the research questions. The initial literature review (2021) shows analyses of the effects of the pandemic on adolescents in several directions: general effects, effects on mental health, effects on health behaviours (physical activity, nutrition, screen time, sleep, alcohol and cannabis use), effects on social interactions, effects on school performance. The following two literature reviews analyze the balance between negative and positive effects and the change in effects over the course of the pandemic, as well as identify risk and protective factors related to the pandemic effects on adolescents.

The second chapter formulates, based on the theoretical analyses, the theoretical framework and theoretical premises of the study, and presents its methodological approach, theoretical model, aim and hypotheses, research design and procedure, sample and methods. The general framework of the study is the biopsychosocial model, suitable for studying the complex biological, psychological and social effects of the Covid-19 pandemic on adolescents. The overall aim of the study is to examine the impact of the changes that have occurred in the lives of Bulgarian adolescents as a result of the Covid-19 pandemic (dimensions such as illness of

the adolescent or a family member, public health measures, online life, financial insecurity) on their health and well-being, and more specifically on their mental health, their risk health behaviours, their social interactions and their coping at school, taking into account the moderating effects of socio-demographic characteristics and the personality characteristics of the adolescents. The study uses a mixed methodology - a quantitative-qualitative approach, which includes a nationally representative survey of 3523 adolescents in early and middle adolescence (11-17 years old, 50.8% boys and 49.2% girls) conducted through schools, as well as a qualitative component (4 open-ended questions). The study has a modular structure, including 6 thematic modules, respectively relating to the dimensions of the pandemic crisis, the mental health of adolescents, their health behaviour, their social interactions, their coping at school and socio-demographic characteristics and personality characteristics. Both existing psychometric questionnaires were used, and original methodologies were developed to study specific aspects of the effects of the pandemic (perceived difficulty of compliance with anti-epidemic measures, academic motivation and achievement in online education, financial instability of the family, etc.). Based on the conducted study, guidelines for prevention and intervention of problems of adolescent health and development were developed.

Chapter three contains descriptive results on the studied dimensions of the pandemic crisis: exposure to Covid-19 (encounter with the virus: illness, quarantine), perceived difficulty of compliance with measures, family financial instability, life online, complex impact of the pandemic on 12 areas of adolescents' lives (life in general, health, relationships with family, friends and romantic partner, mental health, coping at school, physical activity, sleep, food and drink, expectations for the future, family financial situation).

Chapter four focuses on the effects of the pandemic on the mental health of adolescents, which it examines through two scientific analyses: effects of illness with Covid-19 and quarantine/self-isolation on anxiety and loneliness in adolescents and effects of difficulties in complying with public health and social measures against Covid-19 on perceived stress, psychosomatic complaints and general self-efficacy of adolescents (analyzed as a resource for coping with stress).

Chapter five discusses the effects of the pandemic on adolescent risk health behaviours (substance use: smoking, vaping/e-cigarettes, use of alcohol, drunkenness, cannabis use), again within the framework of two scientific analyses: a study of the influence of a wide range of biopsychosocial factors on risk health behaviours, based on the biopsychosocial model and the socio-ecological model (individual, interpersonal, community and societal factors), and a study of the relationship between individual characteristics, family dynamics and socio-economic difficulties experienced by families during the pandemic and risk behaviours.

Chapter six presents the impact of the pandemic on adolescents' social interactions within their family, with friends and a romantic partner. Factors such as family dynamics (family conflicts, family cohesion and time with family) were analyzed; also the factors lack of face-to-face meetings with extended family, with friends, with teachers and classmates, with a romantic partner; technology-mediated communication with extended family, with friends and classmates, with online friends, loneliness, life satisfaction.

Chapter seven analyzes the effects of the pandemic on adolescents' coping at school, with a focus on academic motivation and academic achievement. The factors examined are perceived difficulty of online learning, feeling of lack of personal contact with classmates and teachers at school, total screen time, reduced stress when studying from home, more educational support from parents, and the impact of Covid-19 on expectations for the future (regarding education and work).

Chapter eight focuses on the role of personality characteristics (the Big Five) as moderators of the impact of the pandemic on the studied areas of adolescent functioning. The independent variable is the complex impact of Covid-19 on 11 areas of adolescents' lives (excluding relationships with a romantic partner), and interactions with dependent variables in the areas of mental health (perceived stress, anxiety, psychosomatic complaints and mental well-being), risk behaviour (smoking, vaping/e-cigarettes and binge drinking), social interactions: family dynamics, in-person and technology-mediated meetings with friends, and coping at school (academic motivation and academic achievement) were examined.

Chapter nine presents results from the qualitative module of the study, in which, using four open-ended questions, the subjective experiences of adolescents regarding the changes in their lives as a result of the pandemic, the effect of these changes, the emotional response to the changes and ways of coping were examined. The qualitative data analysis method is thematic reflexive analysis.

Based on the results of the research, Chapter ten develops guidelines for the prevention and intervention of adolescent health and well-being problems in the areas of mental health, substance use and academic motivation, which would be useful for practitioners in the fields of health, education and social work, as well as for parents and adolescents themselves.

The monograph ends with a conclusion that summarizes the results of the comprehensive study. The predominantly negative effects of the pandemic in the areas of mental health and coping at school, the mixed effects in terms of substance use, the demonstrated adaptive potential and coping strategies of adolescents in the area of their social interactions, the identified risk and protective socio-demographic and personality factors, as well as the positive effects of the pandemic, found within the qualitative module and in the comprehensive assessment of adolescents about the impact of the pandemic on their lives, are discussed. The results have applications both within the usual social context of adolescent development and in subsequent pandemics or health crises, which many experts believe are likely in the relatively near future.

2. Published chapter of a collective monograph

Alexandrova-Karamanova, A. (2026). Bulgaria. In J. S. Hong, R. Thornberg, V. J. Llorent, & Z. Han (Eds.), *Bullying: Global Case Studies in Policy and Prevention for Young People* (pp. 531–539). Edward Elgar Publishing, Ltd. eISBN: 9781035348329.
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This chapter is part of a book that explores the phenomenon of bullying around the world, aiming to provide a comprehensive overview of the prevalence and response to bullying globally. The book includes 110 chapters on bullying in 110 countries/societies/territories. Each chapter explores the definitions and prevalence, analyzes the complexity of bullying, the importance of cultural context, the existence (or lack) of anti-bullying prevention and intervention programs, as well as anti-bullying laws and policies.
In Bulgaria, bullying is defined according to Olweus' conceptualization, and physical, psychological, sexual, and cyberbullying forms are recognized. Bullying is highly prevalent, especially among boys, with an increasing trend in cyberbullying. Scientific research has provided a comprehensive analysis of the phenomenon, its types and manifestations, prevalence and trends, motives, factors, coping strategies, and effects. Over the past ten years, a targeted anti-bullying state policy has been developing and consistently implementing through the prevention and intervention programs in schools, training and support for professionals, raising awareness among students, parents, teachers, and society, and providing specialized services.

3. Studies published in scientific journals, referenced and indexed in world-renowned databases of scientific information

1. **Alexandrova-Karamanova, A.,** Mineva, K., Dimitrova, E., & Kotzeva, T. (2025). Perceived Difficulties in Compliance with COVID-19 Public Health Measures: Associations with Adolescent Mental Health. *Child & Youth Care Forum, 54,* 1047-1070. https://doi.org/10.1007/s10566-024-09850-4 SJR (Scopus):0.858, JCR-IF (Web of Science):1.6

During pandemics, implementing Public Health and Social Measures (PHSM) by governments and compliance with PHSM by individuals is paramount. However, adolescents have been less compliant in performing COVID-19 preventive behaviors, and PHSM have been associated with deterioration of adolescent mental health. The study aims to explore perceived difficulties in compliance with COVID-19 PHSM and their associations with adolescent mental health (perceived stress, psychosomatic complaints, and general self-efficacy) in Bulgaria. A cross-sectional nationally representative school-based survey of early to middle adolescents was conducted in 2022/2023 (N = 3326, mean age – 14.0 years, 49.2% girls). Methods comprised the Perceived Difficulties in Compliance with COVID-19 Public Health Measures Scale, Cohen Perceived Stress Scale—4, Psychosomatic Complaints Scale, and General Self-Efficacy—short scale. Adolescents differentiated between Health Measures and Social Measures, both being more difficult for younger adolescents. Social Measures were more difficult for girls and the general sample. Perceived difficulty of Health Measures was expectedly associated with worse adolescent mental health, while perceived difficulty of Social Measures was associated with greater psychosomatic complaints but lower perceived stress and higher self-efficacy (adjusted for experienced quarantine/self-isolation, adolescent or family member COVID-19 infection, gender, and age). The findings have implications for increasing preparedness for future pandemics of health experts and health, school, and social systems, as well as parents, youth, and society members. Adolescents' specific perceived

difficulties and needs to maintain significant social bonds should be addressed to facilitate understanding and compliance with PHSM, while ensuring adolescents' psychosocial development and maintaining their mental health.

2. **Alexandrova-Karamanova, A.,** Paunova-Markova, E., Mineva, K., & Yordanova, T. (2025). The Mental Health of Adolescents: Pandemic Challenges and Protective/Risk Factors. *Archives of Psychiatry Research, 61*(3), 255-274. https://doi.org/10.20471/dec.2025.61.03.07 SJR (Scopus):0.142

Adolescent mental health has been negatively affected by the COVID-19 pandemic, and aggravated or mitigated by risk and protective factors. This study aims to analyze the risk and protective factors of adolescent mental health and well-being in the context of the COVID-19 pandemic based on review of the scientific literature. A literature review was conducted, including 46 articles with reported research data on adolescent populations across all 6 continents. Analysis was based on the criteria risk or protective factor, individual (I) or environmental (E) level factor, and general (G) or specific (S) to COVID-19 factor. Risk factors included: female sex, older age, negative coping, and prior mental health diagnosis or chronic condition (IG factors); COVID-19 fear, and excessive information about COVID-19 (IS factors); low socioeconomic status, single-caregiver family, poor family functioning, family and domestic violence, excessive online time, and prior adversities (EG factors); COVID-19 exposure, and school closure and remote education (ES factors). Protective factors included: male sex, younger age, resilience and positive coping, physical activity, and consistent routine (IG factors); knowledge and in-formation about COVID-19 (IS factor); positive family relationships, and social support (EG factors). The findings support future pandemic preparedness and mental health interventions aimed at mitigating negative effects on adolescent mental health by focusing on general risk and protective factors early in crises, while building on COVID-19-specific insights into adolescents' emotional and cognitive responses to identify and address challenges posed by novel pathogens or other types of crises.

3. Paakkari, L., Kulmala, M., Lahti, H., Boberová, Z., Valentic, M., Kleszczewska, D., **Alexandrova-Karamanova, A.,** Rouquette, A., & Torppa, M. (2025). Equality in adolescents' opportunities for health information through the lens of health literacy - Results from HBSC Study 2018 and 2022. *Journal of Adolescent Health, 77*(5), 938-946. https://doi.org/10.1016/j.jadohealth.2025.06.022 SJR (Scopus):1.638, JCR-IF (Web of Science):3.6

Access to health information, a critical component of health literacy (HL), empowers individuals to make informed decisions about their well-being. Adolescents need to have information on health and abilities to find information one understands, to compare information from different sources, and to judge if information is right or wrong (referred here as HL-Info). Recent studies suggest significant gaps in these competencies, exacerbated by socioeconomic and contextual factors. The study aimed to (1) evaluate HL-Info levels and changes over time,

(2) assess socio-demographic and social support factors linked to low HL-Info and their changes, and (3) analyze the relationship between HL-Info and SRH. Data from the Health Behaviour in School-aged Children study surveys conducted in 2018 and 2022 were analyzed. Participants included 13- and 15-year-olds from 11 European countries (N = 46,008 in 2022). HL-Info was measured using four items from the Health Literacy for School-Aged Children instrument (having, finding, comparing and judging health information). Socio-demographic factors, social support, and SRH were examined using probit regression models to identify changes and associations over time. In 2022, 26.1% of adolescents exhibited low HL-Info, with significant national variation. Low HL-Info was more prevalent among younger adolescents, those from less affluent families, and those with lower social support. Low HL-Info was consistently associated with poor SRH. Compared to 2018, low HL-Info prevalence increased significantly in Poland and Slovakia. Adolescents' HL-Info remains uneven across Europe, with significant disparities linked to age, socio-economic status, and social support. Targeted interventions in education and health systems are necessary to promote HL-Info equitably and improve adolescents' health outcomes.

4. Berchialla, P., Canale, N., Kilibarda, B., Comoretto, R. I., **Alexandrova-Karamanova, A.,** Baška, T., ter Bogt, T., Vieno, A., & Charrier, L. (2025). Self-perceived impact of COVID-19 and risk behaviors among adolescents: Results from the HBSC 2021/22 study in 21 European countries. *Addictive Behaviors, 163,* 108238. https://doi.org/10.1016/j.addbeh.2024.108238 SJR (Scopus):1.527, JCR-IF (Web of Science):4,5

The study aims to investigate adolescents' perception of the impact of the COVID-19 pandemic on several aspects of their lives (mental health, well-being, family situation, peers, school, dieting, and physical activity) in relation to risk behaviors such as smoking, alcohol use, drunkenness, and cannabis use. Data were used from the Health Behaviour in School-aged Children (HBSC) study conducted in 2021/ 2022, comprising 106,221 adolescents aged 11–15 (50.9% females) from 21 European countries. The data analysis plan involved Multilevel Generalized Latent Class Analysis (GLCA) models, latent class membership, and substance use behaviors, with alcohol consumption, smoking, drunkenness, and cannabis use as distal outcomes. Findings: GLCA identified 14 % of the adolescents as negatively or very negatively impacted by the pandemic and 42 % with a positive or very positive impact. The remaining 44 % of adolescents were not attributed with either a negative or positive impact. In the first group, girls, older adolescents, and adolescents from less affluent families were overrepresented. The negatively impacted group was particularly prevalent (>25 %) in countries such as Hungary, Cyprus, Greece, and Poland. Negatively impacted adolescents exhibited a higher risk of smoking, drunkenness, and cannabis use compared to their peers in the positively impacted group after adjusting for sex, age, and family wealth. Results of the 2021/22 HBSC study highlighted an elevated level of substance use among adolescents who perceived a stronger negative impact of the COVID-19 pandemic on their lives. These findings indicate that the pandemic has put a particular strain on girls, older and less wealthy adolescents. They highlight

the need for special attention and tailor-made interventions to deal with stressful future events that may impact on the life and mental health of these adolescents.

5. **Alexandrova-Karamanova, A.,** Lauri Korajlija, A., Halama, P., & Baban, A. (2024). Long-Term Post–COVID-19 Health and Psychosocial Effects and Coping Resources Among Survivors of Severe and Critical COVID-19 in Central and Eastern Europe: Protocol for an International Qualitative Study. *JMIR Research Protocols, 13,* e57596. http://dx.doi.org/10.2196/57596 SJR (Scopus):0.533, JCR-IF (Web of Science):1.5

There is a strong need to determine pandemic and postpandemic challenges and effects at the individual, family, community, and societal levels. Post–COVID-19 health and psychosocial effects have long-lasting impacts on the physical and mental health and quality of life of a large proportion of survivors, especially survivors of severe and critical COVID-19, extending beyond the end of the pandemic. While research has mostly focused on the negative short- and long-term effects of COVID-19, few studies have examined the positive effects of the pandemic, such as posttraumatic growth. It is essential to study both negative and positive long-term post–COVID-19 effects and to acknowledge the role of the resources available to the individual to cope with stress and trauma. This knowledge is especially needed in understudied regions hit hard by the pandemic, such as the region of Central and Eastern Europe. A qualitative approach could provide unique insights into the subjective perspectives of survivors on their experiences with severe COVID-19 disease and its lingering impact on their lives.
The aim of the study is to qualitatively explore the experiences of adult survivors of severe or critical COVID-19 throughout the acute and postacute period in 5 Central and Eastern European countries (Bulgaria, Slovakia, Croatia, Romania, and Poland); gain insight into negative (post–COVID-19 condition and quality of life) and positive (posttraumatic growth) long-term post–COVID effects; and understand the role of survivors' personal, social, and other coping resources and local sociocultural context and epidemic-related situations.
This is a qualitative thematic analysis study with an experiential reflexive perspective and inductive orientation. The analytical approach involves 2-stage data analysis: national analyses in stage 1 and international analysis in stage 2. Data are collected from adult survivors of severe and critical COVID-19 through in-depth semistructured interviews conducted in the period after hospital discharge. The total international sample includes 151 survivors of severe and critical COVID-19: Bulgaria (n=33, 21.8%), Slovakia (n=30, 19.9%), Croatia (n=30, 19.9%), Romania (n=30, 19.9%), and Poland (n=28, 18.5%).
This research emphasizes the importance of a deeper understanding of the ongoing health and psychosocial challenges survivors face and what helps them cope with these challenges and, in some cases, thrive. It has implications for informing holistic care and improving the health and psychosocial outcomes of survivors of COVID-19 and will be crucial for evaluating the overall impact and multifaceted implications of the pandemic and for informing future pandemic preparedness.

6. Dimitrova, E., & **Alexandrova-Karamanova, A.** (2024). Family Dynamics, Socioeconomic Hardships, and Health Risk Behaviours of Bulgarian Adolescents during the COVID-19 Pandemic. *Children, 11*(8), 1016. https://doi.org/10.3390/children11081016 SJR (Scopus):0.748, JCR-IF (Web of Science):2.1

This study aims to explore family dynamics and the economic hardships experienced by families during the COVID-19 pandemic and their associations with adolescents' health risk behaviours (HRBs). Based on a representative study of adolescents aged 11–16 conducted in Bulgaria during the COVID-19 pandemic and HBSC data from the pre-pandemic period, logistic regression models were applied, assessing cigarette smoking, vaping, alcohol use, drunkenness, and cannabis use. The independent variables included demographics, Family Affluence Scale (FAS III), family structure, ease of communication with parents, and the authors' developed questions on parents' income and economic status change, family conflicts, and missing contact with extended family due to the pandemic. Material status of the family showed increasing differentials in adolescents' HRBs during the pandemic. Parental unemployment, income reduction, and temporary lay-offs were associated with a higher risk of substance use. Family conflicts, missing contact with extended family, and difficulties in communication with the mother were related to a higher risk of substance use. Communication with the father was significantly associated with alcohol use and drunkenness. Boys had lower odds of vaping and higher odds of alcohol use, drunkenness, and cannabis use. Higher age and minority status were associated with an increase in adolescents' HRBs. Conclusions: This study highlights the need for special family-focused interventions in times of health and economic crises.

7. Miteva, P., **Alexandrova-Karamanova, A.,** Antonova, N., & Dimitrova, E. (2024). Biopsychosocial determinants of glycemic control and microvascular health: An interdisciplinary approach. *Series on Biomechanics, 38*(4), 116-126. https://doi.org/10.7546/SB.16.04.2024 – SJR (Scopus):0.247

The objective of the paper is to describe a theoretical model of the biopsychosocial determinants of diabetes self-management and microvascular health. This is a theoretical study based on review and analysis of biomedical and psychological literature on diabetes, its chronic effects and complications, and determinants of diabetes self-management and microvascular health. The main psychosocial factors associated with diabetes are identified. A biopsychosocial model of diabetes self-management and microvascular health is proposed, including biomedical (type of diabetes, time since diagnosis, type and severity of complications, comorbidities), psychological (diabetes distress, depression, anxiety, type D personality, coping styles, self-efficacy), and social factors (social support, environmental stressors, socioeconomic status, access to medical service) as determinants of diabetes self-management (blood glucose monitoring, diet, exercise, weight management, adherence to medication, adherence to medical visits), that predict the peripheral microvascular activity (endothelial function and

vasodilation). Based on the proposed model, an empirical interdisciplinary study and a development of a prototype of non-invasive personalized home system for monitoring and predicting complications in the peripheral vascular system are planned. Interdisciplinary biomedical and psychological approach has the potential to integrate and address the most important diabetes-related determinants to support effective diabetes self-management and prevention and mitigation of complications, through the development of personalized and accessible digital solutions.

8. Dimitrova, E., & **Alexandrova-Karamanova, A.** (2023). Biopsychosocial Factors of Adolescent Health Risk Behaviours during the COVID-19 Pandemic-Insights from an Empirical Study. *Societies, 13(7),* 169. https://doi.org/10.3390/soc13070169 SJR (Scopus):0.535, JCR-IF (Web of Science):1.6

The paper focuses on the association between Bulgarian adolescents' health risk behaviours (cigarette smoking, vaping, alcohol use and drunkenness) and biopsychosocial factors at individual and interpersonal levels, using data from the pre-pandemic and the pandemic periods, i.e. Health Behaviour in School-aged Children (HBSC) study (2018) and the study of adolescent health and well-being in the context of the COVID-19 pandemic (2022/2023). Logistic regression models reveal a positive association with age in both periods, decreasing gender difference in smoking, persistent effect of family structure, strengthened effect of the material status of the family and a differentiating effect of ethnicity at the end of the pandemic. Family support is positively associated with substance (mis)use in both periods. At the end of the pandemic generalized anxiety is positively associated with substance (mis)use, loneliness has a negative association with drunkenness, and limited social interaction and vaping are in a positive relationship. The experience of COVID-19 infection in the family is associated with higher risk of smoking, while treatment in hospital for COVID-19 of the adolescent or a family member is associated with a higher risk of vaping and drunkenness. Interactions with COVID-19 experience and psychosocial variables reveal a divergence in health risk behaviours, including also engagement in substance (mis)use. Effective interventions, targeting the identified risk factors and risk groups, are needed for promotion of healthy lifestyles among adolescents.

9. Paunova-Markova, E., **Alexandrova-Karamanova, A.,** Yordanova, T., & Mineva, K. (2023). Impact of the Covid-19 Pandemic on Adolescent Mental Health and Well-being. *Central European Journal of Paediatrics, 19(1),* 54-64. https://doi.org/10.5457/p2005-114.338 SJR (Scopus):0.136

The present study aimed to obtain a comprehensive view of the up-to-date global evidence on the impact of the CO-VID-19 pandemic on adolescent mental health and well-being. A great deal of concern has been raised about the negative impact of the current health crisis on adolescents. Electronic literature searches were conducted in July 2022 in the Google Scholar database. A total of 57 original research articles and review articles that met the criteria were

selected and reviewed. They comprised studies with adolescent populations from more than 20 countries across 5 continents. The impact of the COVID-19 pandemic on adolescent mental health was identified as negative, positive, and fluctuating over the course of the pandemic. The accumulated evidence supports the assertion that there has been a considerable and wide-ranging negative impact. However, the long-term and short-term effects differ. Some positive effects of the current pandemic have also been reported: a small number of adolescents seemed to thrive overall, and the majority of them even seemed to have experienced positive changes in some specific aspects. Even so, the positive impact can hardly outweigh the negative. The fluctuating trajectories of adolescent mental health during the pandemic could be attributed to infection rates, quarantine, the severity of containment measures, the accumulation of stressors, etc. Conclusion – There is evidence for both negative and positive impacts of the COVID-19 pandemic on adolescent mental health and well-being. Further research is needed to study the complex impact of a health crisis of such magnitude.

10. **Alexandrova-Karamanova, A.** (2022). Bullying and violence among adolescents in Bulgaria: The impact of Positive Youth Development. *Anthropological Researches and Studies, 12(1),* 291-303. http://doi.org/10.26758/12.1.22 SJR (Scopus):0.140

Bullying and physical fighting are prevalent among adolescents and have negative health and psychosocial effects for both perpetrators and victims. Risk and protective factors for bullying and violence have been identified, including the protective role of the characteristics of Positive Youth Development. According to Lerner's 5Cs model these include Competence, Confidence, Connection, Character, and Caring. The aim of the study was to explore the impact of Positive Youth Development characteristics on adolescent bullying and cyberbullying perpetration and participation in physical fighting.
Data from the 2017/2018 Bulgarian Health Behaviour in School-Aged Children [HBSC] study were used. The national representative sample comprised 1517 adolescents aged 15 years. Measures included the Positive Youth Development Scale – short form and single-item measures of bullying, cyberbullying and physical fighting.
Bullying, cyberbullying, and physical fighting were prevalent among Bulgarian adolescents, more often in boys. The proportion of explained variance by the 5 Positive Youth Development characteristics was 3% for bullying, 11% for cyberbullying and 4% for fighting. Bullying and cyberbullying were both significantly negatively associated with Character, with bullying also significantly negatively associated with Confidence. Physical fighting was significantly negatively associated with Confidence and Caring and positively associated with Competence. These associations remained significant after being adjusted for gender and socioeconomic status, except for the association between fighting and Caring.
Findings suggest the development of the characteristics of Positive Youth Development (especially Character and Confidence) through various youth programs can contribute to the reduction of bullying and violence in young people.

11. Dimitrova, E., Kotzeva, T., & **Alexandrova-Karamanova, A.** (2020). Psychosocial school environment and health risk behaviours of adolescents in Bulgaria: results from multilevel analysis. *International Journal of Public Health, 65(8),* 1331–1344. https://doi.org/10.1007/s00038-020-01482-4 SJR (Scopus):0.890, JCR-IF (Web of Science):2.4

The paper aims to study the relationships between psychosocial school environment and health risk behaviours (cigarette smoking, alcohol consumption, drunkenness, bullying perpetration and early start of sexual life) in a representative sample of Bulgarian adolescents. Multilevel analysis is applied, using data from the Bulgarian 2017/2018 ''Health Behaviour in School-aged Children (HBSC)'' Study. There is a significant variation between schools in Bulgaria in the proportions of students who smoke cigarettes, drink alcohol, get drunk and have an early start of sexual life. Lower school satisfaction is significantly associated with higher odds of smoking and drunkenness. The effect of school pressure differs for smoking and bullying perpetration. The effect of student support also differs for certain types of health risk behaviours. Higher student support is positively associated with frequent alcohol consumption and drunkenness. The relationship between teacher support and alcohol abuse is negative.
Conclusions. There is a significant association between characteristics of psychosocial school environment and Bulgarian adolescents' risk health behaviours (cigarette smoking, alcohol consumption, drunkenness, bullying perpetration). Comprehensive and effective health promotion policies in Bulgarian schools are needed in order to facilitate healthy lifestyles.

12. **Alexandrova-Karamanova, A.** (2020). Appearance self-attitudes and health and well-being of Bulgarian adolescents. *Central European Journal of Paediatrics, 16(1),* 69-82. https://doi.org/10.5457/p2005-114.258 SJR (Scopus):0.136

The study aims to explore the associations between adolescents' appearance self-attitudes and their self-rated health, psychosomatic complaints and psychological well-being. A number of covariates known to impact health and well-being are also being investigated. The study utilizes data from the Bulgarian 2013/2014 Health Behaviour in School-Aged Children (HBSC) study. The national representative sample included 3204 adolescents aged 13 and 15. The methods used were the Body image feelings and attitudes subscale of the Body Investment Scale (BIS), the HBSC psychosomatic complaints scale, the KIDSCREEN-10 index as a measure of psychological well-being, and single-item measures for appearance satisfaction and self-rated health. Adolescents' appearance satisfaction and positive feelings and attitudes towards body and appearance were significantly associated with better self-rated health, absence of or little psychosomatic complaints and better psychological well-being. These associations remained significant after the addition of a large number of covariates, including socio-demographic characteristics (gender, age, and family affluence); chronic health conditions; health behaviours (healthy eating, physical activity, smoking, alcohol consumption, and dieting to lose weight); overweight/obesity; and peer victimization. Adolescents' appearance self-attitudes explained the largest proportions of the variances in self-rated health, psychosomatic complaints and

psychological well-being, compared to the other groups of independent variables. The results demonstrate the great significance of appearance self-attitudes for physical and mental health and well-being in adolescence. They are important for medical practice, health education and health promotion among adolescent populations, where appearance self-attitudes should be considered as crucial risk factors for health.

4. Studies published in non-referenced peer-reviewed journals or published in edited collective volumes

1. Yordanova, T., Mineva, K., & **Alexandrova-Karamanova, A.** (2025). Impact of the Covid-19 Pandemic on the Health and Well-Being of Adolescents. Guidelines for Prevention and Intervention. *Proceedings of Knowledge, Science, Innovations, Technology Conference 2025*, 143-181.

The article presents results on the health and well-being of Bulgarian adolescents in the context of the Covid-19 pandemic, with a focus on their mental health and risk health behaviors. The study includes a nationally representative sample of 3,326 adolescents aged 11-17 years. The analysis reaveals considerable levels of anxiety, stress and loneliness, as well as high prevalence of risk behaviors such as alcohol use and abuse, smoking, vaping and cannabis use, with most behaviors having increased compared to the pre-pandemic period. Based on these data, prevention and intervention guidelines regarding mental health problems and substance use in adolescents during pandemics and other prolonged crises are proposed. The need for a comprehensive, interdisciplinary approach, including educational, family, psychological and social strategies to improve mental health and reduce risk behaviors among young people is emphasized as well as the use of digital information resources, digital interventions, psychological counseling, telemedicine.

2. **Alexandrova-Karamanova, A**., Kotzeva, T., Paunova-Markova, E., Mineva, K., Dimitrova, E., & Yordanova, T. (2023). COVID-19 exposure and COVID-19 disease in the family: effects on adolescent mental health. *Bulgarian Journal of Psychology, 1-4,* 267–284.

COVID-19 pandemic has had an unprecedented impact on all spheres of life. The unclear nature of the virus, the complications and mortality associated with it, and the restrictive pandemic measures provoke an experience of uncertainty and fear and threaten not only the physical state, but also the mental health of people. Adolescents are one of the most vulnerable groups in terms of the negative psychological effects of the COVID-19 pandemic. The aim of the study is to examine the effects of exposure to COVID-19, COVID-19 disease in the family, and quarantine or self-isolation of the adolescent or a family member on adolescent mental health. Data were collected in June 2022 in a sample of 1130 adolescents aged 11-16 years. Methods include authors' method on exposure to COVID-19 and COVID-19 disease in adolescents or their family members and on frequency of quarantine or self-isolation, GAD-7 generalized anxiety

disorder scale, loneliness scale. According to the results, in half of the families there were members infected with COVID-19, infected adolescents were 16%. One in five adolescents experienced moderate or severe anxiety, and one in seven - chronic loneliness. The negative impact of the COVID-19 pandemic on the mental health of adolescents has been confirmed. Anxiety and loneliness among adolescents were associated with their COVID-19 disease and quarantine or self-isolation in the family. Anxiety was also associated with the absence of COVID-19 infection in a family member. The results point to the need of efforts to address increased stress due to the pandemic and its negative consequences for adolescent mental health.

3. **Alexandrova-Karamanova, A.** (2022). Positive Youth Development and mental health among Bulgarian adolescents: the protective role of Confidence and Connection. *Psychological Research (in the Balkans), 25(1).* https://doi.org/10.7546/PsyRB.2022.25.01.01

Positive Youth Development (PYD) focuses on the strengths and positive qualities and outcomes in young people. Lerner's 5Cs model defines positive development by five aspects: Competence, Confidence, Connection, Character, and Caring. Research has demonstrated that the 5 Cs and other PYD dimensions are positively associated with positive mental well-being and negatively associated with mental health problems in adolescents. The aim of the study is to examine the levels of the 5Cs of Positive Youth Development and indicators of mental health (depression, perceived stress, and psycho-somatic complaints) and to explore their relationships in a representative sample of Bulgarian middle adolescents (N=1517). Data from the Bulgarian 2017/2018 Health Behaviour in School-Aged Children (HBSC) study were utilized. Measures included the Positive Youth Development Scale – short form, the Center for Epidemiologic Studies Short Depression Scale (CES-D-R-10), the Cohen Perceived Stress Scale (PSS-4), and the HBSC-Symptom Checklist. High prevalence of depression (35,6%), perceived stress (70,2%), and multiple recurrent psychosomatic complaints (57,5%) was found among Bulgarian adolescents, all being more prevalent in girls compared to boys. Depression, perceived stress, and psychosomatic complaints were significantly negatively associated with Confidence and Connection and these associations remained significant after being adjusted for gender and socioeconomic status. The proportion of explained variance by the 5Cs was 10% for depression, 14% for perceived stress and 16% for psychosomatic complaints. The identified protective effect of Confidence and Connection has important implications for implementing the 5Cs of PYD as an approach for promoting youth mental health and preventing mental health problems.

4. **Alexandrova-Karamanova, A.** (2021). Motivation for appearance-related health behaviour in female emerging adults. *Personality, Motivation, Sport, 25,* 95-112.

Modern society places excessive emphasis on body weight and shape. Excessive preoccupation with weight and body shape is in the context of increasing levels of overweight/obesity and unhealthy eating, the sociocultural norm of a thin body/stigmatization of overweight and the

desire for a tight, well-shaped, muscular body, and the growing industry of weight loss and fitness products and services. Particularly vulnerable age periods are adolescence and emerging adulthood (18–29 years), in which the ongoing intensive processes of physical, mental and social development pose particularly great challenges for the individual to integrate in an adaptive manner their internal needs and external demands on their body and appearance. The study examined the motivation of appearance-related health behaviour in female emerging adults (18-29 years). Fifteen semistructured interviews with women and 15 interviews with men (who share their opinions and experiences of women they know) were conducted and were analyzed through thematic analysis and interpretative phenomenological analysis. Eight main motives for appearance-related health behaviour (weight control through dieting, healthy eating and a healthy lifestyle, and sports and physical activity) have been identified: to be thinner (but not too thin); to have a tight (but not too muscular) body; to be healthy; to feel good; for good self-esteem and self-acceptance; to be liked by others (to attract attention); to be liked by boys/by your partner; for (professional) development in sports. The association of certain motives to a greater extent with healthy or risky behavior requires increased attention to young women for whom these motives are leading. The presence of a wide variety of motives indicates the need for an individual approach when counseling young women with potentially risky behavior, as well as the need to include the leading motives when formulating messages in programs and interventions for the promotion of a positive body image and the prevention of eating disorders.

5. **Alexandrova-Karamanova, A.** (2021). Sports and physical activity in young women in the context of body change behaviours. *Personality, Motivation, Sport, 25,* 113-131.

Body and appearance modification behaviors are widespread among young people, and among women they are most often aimed at achieving the ideal of a thin body. Women are increasingly interested in achieving a tight, well-shaped, athletic female body, which has been linked to engaging in behaviors such as physical activity, sports, and fitness. Sports and physical activity in young women (18–29 years) have been analyzed in the context of body change behaviours, which also included weight control through dieting, healthy eating, and a healthy lifestyle. Fifteen interviews with women and 15 interviews with men (who share their opinions and experiences of women they know) were conducted and were analyzed through thematic analysis and interpretative phenomenological analysis. Young women had a positive attitude towards sports and physical activity as methods of keeping the body in good shape (weight loss, tightening). A small part of the participants reported they played sports regularly but actually there was high involvement in typical "female" activities such as dancing, exercise/gymnastics, modern sports based on aerobics, yoga. The perception of sport as identity and profession, identified as a predominantly "male" model, was found in some of the female participants. Playing classic sports and going to the gym are relatively rare among women outside of the "male" model. The diversity and complexity of attitudes and behaviors related to body change indicate the need for a specific approach in the development of interventions for the promotion of a positive body image and a healthy lifestyle and for the prevention of risky behaviors, as well as in individual counseling of young people.

5. Articles and reports published in non-referenced peer-reviewed journals or published in edited collective volumes

1. **Alexandrova-Karamanova, A.** (2023). Trust, empathy, and life satisfaction in adolescents with romantic and sexual experience. *Bulgarian Journal of Psychology, 1-4,* 89-102.

Romantic relationships in adolescence are key to identity development, development of sexuality and building close relationships in adulthood and can be an important source of subjective well-being. Early sexual contacts can be seen as part of a cluster of risk behaviours. Personal strengths and resources (such as love, trust, empathy) are associated with better well-being and a lower likelihood of risk behaviour. The aim of the study is to examine romantic and sexual experience in adolescence and their relationships with generalized trust, empathy, and life satisfaction. The sample of 1517 adolescents aged 15 is part of the international study „Health Behaviour in School-Aged Children - HBSC“, wave 2017/2018. Romantic and sexual experience were assessed as the previously experienced falling in love, romantic attraction and sexual contacts. Methods included: Generalized trust questions about the tendency of people to try to help and to be honest, used in international studies, Empathy scale (The Social Emotional Health Survey-Secondary - 2015), and Life satisfaction - Cantril's ladder (Cantril, 1965). Results showed that 79,5% of adolescents had been in love (more often boys), 89,4% had experienced romantic attraction, and 30,3% had had sexual experience (more often boys). Adolescents who had experienced falling in love reported higher levels of trust and life satisfaction, those who had experienced attraction - higher levels of empathy, and those who had had sexual experience - lower levels of trust and empathy. Significant predictors of life satisfaction were falling in love and generalized trust. Love, trust, and empathy are individual resources, important to adolescent well-being, that should be developed through appropriate programs and initiatives aimed at young people.

2. **Alexandrova-Karamanova, A.** (2021). Positive Youth Development: effects on adolescent health behaviour. *Bulgarian Journal of Psychology. Proceedings of the 9th International Congress of Psychology 2020.* Issue 3(4), p. 35-43.

The Positive Youth Development (PYD) theory defines positive development in five aspects: competence, confidence, connection, character and caring. The characteristics of positive youth development are related to young people's mental health and well-being, risk and healthy behaviour, academic achievement, and civic engagement. The aim of the study is to examine the relationships between positive youth development and adolescents' health behaviours, including healthy behaviours such as physical activity and healthy eating and risk health behaviours such as alcohol abuse, cannabis use and early sexual initiation. 1517 fifteen-year-old adolescents, participants in the international comparative study "Health behaviour in school-aged children – HBSC" 2017/2018 were studied. The characteristics of positive youth development were found to be significant predictors of adolescent health behaviour. Healthy

levels of physical activity were associated with high competence, and daily consumption of fruits and vegetables – with high values of character; the consumption of vegetables was also associated with high caring. All three risk behaviours were associated with low confidence, and drunkenness and early sexual activity were associated with high competence. Specific for drunkenness was its relationship with low values of character, for cannabis use – the relationship with low caring, and for the early start of sexual life – low connection with others. The impact of positive development characteristics on the health and risk behaviors of Bulgarian adolescents shows that developing competence, confidence, connectedness, character, and caring for others within various positive development programs for young people can contribute significantly to their good health and well-being.