



Original article

Typologies of Joint Family Activities and Associations With Mental Health and Wellbeing Among Adolescents From Four Countries

Kate Parker, Ph.D.^a, Britt Hallingberg, Ph.D.^b, Charli Eriksson, Ph.D.^c, Kwok Ng, Ph.D.^{d,e}, Zdenek Hamrik, Ph.D.^f, Jaroslava Kopcakova, Ph.D.^g, Eva Movsesyan, M.D.^h, Marina Melkumova, M.D.^h, Shynar Abdrakhmanova, M.D.ⁱ, and Petr Badura, Ph.D.^{f,*}

^aInstitute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia

^bCardiff School of Sport and Health Sciences, Cardiff Metropolitan University, Cardiff, UK

^cDepartment of Public Health Sciences, Stockholm University, Stockholm, Sweden

^dSchool of Educational Sciences and Psychology, University of Eastern Finland, Kuopio, Finland

^ePhysical Activity for Health Research Cluster, Department of Physical Education and Sport Sciences, University of Limerick, Limerick, Ireland

^fDepartment of Recreation and Leisure Studies, Faculty of Physical Culture, Palacký University Olomouc, Olomouc, Czech Republic

^gDepartment of Health Psychology and Research Methodology, Faculty of Medicine, P. J. Safarik University, Kosice, Slovakia

^hArabkir Medical Centre, Institute of Child and Adolescent Health, Yerevan, Armenia

ⁱNational Center of Public Health of the Ministry of Health of the Republic of Kazakhstan, Almaty, Kazakhstan

Article history: Received August 25, 2021; Accepted February 22, 2022

Keywords: Youth; Family; Leisure time; Mental health; Global survey; Organized activities



A B S T R A C T

Purpose: This study aims to identify distinct typologies of joint family activities and the associations with mental health and wellbeing among adolescents across four countries from the World Health Organization European region.

Methods: The 2017/2018 data from adolescents from Armenia ($n = 3,977$, $M_{age} = 13.5 \pm 1.6$ years, 53.4% female), Czechia ($n = 10,656$, $M_{age} = 13.4 \pm 1.7$, 50.1% female), Russia ($n = 4,096$, $M_{age} = 13.8 \pm 1.7$, 52.4% female), and Slovakia ($n = 3,282$, $M_{age} = 13.4 \pm 1.5$, 51.0% female) were collected in schools. The respondents self-reported their participation in joint family leisure-time activities, life satisfaction, psychological and somatic complaints, as well as a range of demographic and family situational factors. Stratified by countries, latent class analysis identified typologies of joint family activities, and logistic regression models explored cross-sectional associations with life satisfaction, and psychological and somatic complaints.

Results: Three typologies were identified across each of the four countries, distinguished by low, moderate, and high levels of family engagement. Adolescents with higher family engagement generally reported greater life satisfaction and fewer psychological complaints compared to those with lower family engagement. Russian adolescents in the high family engagement typology reported fewer somatic complaints compared to those with low family engagement. In addition, adolescents from Czechia and Russia showing moderate family engagement also reported fewer psychological complaints compared to those in the low family engagement typology.

IMPLICATIONS AND CONTRIBUTION

Three distinct typologies were identified based on low, moderate, and high engagement in nine joint family leisure-time activities. Adolescents classed as having high family engagement were the most likely to report high life satisfaction and fewer psychological complaints. Results were consistent across four countries, suggesting that cross-national interventions may be warranted.

Conflicts of interest: Britt Hallingberg is a trustee for the Llanharan Community Development Project Ltd which provides play opportunities for a local community in Wales. The remaining authors declare that they have no conflict of interest.

* Address correspondence to: Petr Badura, Ph.D., Department of Recreation and Leisure Studies, Faculty of Physical Culture, Palacký University Olomouc, Olomouc 771 11, Czech Republic.

E-mail address: petr.badura@upol.cz (P. Badura).

Discussion: Our findings from four countries suggest that adolescents with high family engagement have greater life satisfaction and fewer psychological complaints, pointing toward a need for interventions to support family engagement among adolescents. Further research is needed to fully explore underlying mechanisms.

© 2022 Society for Adolescent Health and Medicine. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Adolescence is a crucial period of development during the transition from childhood to adulthood. Extensive psychological and physiological changes occur, adolescents develop independence, and relationships with peers and family dynamics evolve [1]. The global deterioration of adolescent mental health over the last decade [2] is concerning due to the negative impacts on development, and associated health consequences extending into adulthood [1]. Therefore, investment in strategies to enhance adolescents' mental health and wellbeing is crucial.

A significant portion of adolescents' waking hours is spent outside of school, with their choice of leisure time-activities contributing to their development and general wellbeing [3]. For example, organized leisure-time activities are associated with positive psychological benefits [3,4]. Engaging in multiple types of leisure-time activities is also positively associated with mental wellbeing and inversely associated with unhealthy risk-taking behaviors [5]. Although the types of leisure-time activities engaged in during leisure time are important for positive mental wellbeing, so are the people who adolescents spend their time with [1,6].

The desire for greater independence during adolescence can lead to conflicts with, and distancing from, family [7]. Yet, supportive relationships and communication throughout adolescence are protective for mental health and wellbeing [1,6]. Positive parenting practices and parent-child communication are associated with fewer depressive symptoms, and higher emotional wellbeing and life satisfaction among adolescents [8,9]. Levin and Currie [10] also reported that the associations are stronger for parent-child communication than for family structure or affluence. In addition to communication and parenting practices, time spent together as a family in supportive environments is also beneficial for adolescents' emotional wellbeing.

Studies show that a higher level of joint family activities promotes adolescents' mental health, wellbeing, and quality of life, regardless of age, sex, socioeconomic differences, or family status [7,11]. Furthermore, the types of activities that families engage in together are important. For example, Offer [12] demonstrated that productive and maintenance-type family activities (e.g., homework or household chores) were associated with lower wellbeing and higher stress levels among 11–18 year olds. Conversely, joint family recreational, or leisure-time, activities are associated with multiple benefits, including improved adolescents' self-esteem, promotion of empathy, and reduced involvement in risky behaviors in youth from 11 to 23 years of age [11,13,14]. In addition to these direct effects, engagement in joint family activities is potentially also reflected in other positive leisure pursuits the adolescents are involved in, such as organized activities, for 11–15 year olds [15]. Thus, the assumed benefits of joint family leisure-time activities are two-fold such that experiences and values are learnt in joint family leisure, and are indirectly manifested in the remaining portions of leisure time.

To date, studies have looked at unique aspects of joint family activities during leisure time and adolescent mental health and

wellbeing. However, these associations may differ according to participation in combinations of joint family activities. A growing body of research has explored the notion of typologies of leisure-time activities among adolescents aged 12–18 years [16], with consistent findings that mental health outcomes differ according to the combination of activities engaged in [17,18]. Researchers have explored typologies of parenting styles in association with adolescent mental health and wellbeing among 12–18 year olds [9]. However, to the authors' knowledge, no studies have explored typologies of joint family activities and how mental health and wellbeing may differ between typologies. Therefore, this study aims to identify distinct typologies of joint family activities and associations with mental health and wellbeing (reflecting the first domain of the comprehensive framework of adolescent wellbeing) [19] among adolescents from four countries from the World Health Organization (WHO) European region.

Methods

Study sample

The data for this study were drawn from four countries involved in Health Behaviour in School-aged Children (HBSC) study which is a WHO collaborative cross-national study with a standardized methodological approach. The member countries collect data on adolescents aged 11, 13, and 15 years adhering to the HBSC research protocol including sampling procedures, use of standardized questionnaire items, data coding, and processing methods [20]. All participating countries employ stratified cluster sampling strategy, with either schools or classes acting as primary sampling units, and schools were selected with probability proportional to size in the countries involved, except for Russia. Data were collected using questionnaires in the classroom setting. Respondents' participation is anonymous and voluntary, and participants are offered no incentives for taking part in the study. Informed consent is provided by school administrators, parents/guardians and informed assent is provided by adolescents. The study design has been approved by lead institutions or government agencies in each of the participating countries.

In the 2017/2018 data collection, there were 45 participating countries. The set of optional questions regarding the ways in which adolescents spent their leisure time were presented to the participants in Armenia, Czechia, Russia, and Slovakia. Nationally representative samples from these four countries were obtained including 24,542 respondents. The overall response rate was 85.3% (ranged from 53.6% in Russia to 97% in Czechia) and 81.7% (ranged from 70.5% in Slovakia to 88.1% in Armenia) at the school and individual level, respectively. Finally, 22,011 adolescents provided responses to the joint family and organized leisure-time activities and were eligible for the analyses.

Measures

Mental health and wellbeing. Three indicators of mental health and wellbeing were assessed in the study. The Cantril’s ladder indicated the level of adolescents’ *life satisfaction* [10]. This visual analog 11-point scale ranges from 0 = *worst possible life* to 10 = *best possible life*. It is an easily understandable and a reliable instrument for adolescents with good convergent validity [10].

In addition, two subscales of the HBSC Symptoms Checklist [21] were used. Participants reported the frequency (0 = *rarely or never* to 4 = *about every day*) of four *somatic complaints* (e.g., headaches, stomach-aches) and four *psychological complaints* (e.g., feeling low, bad temper/irritability) experienced in the last 6 months. Sum scores (0–16) were computed for each of the subscales separately ($\alpha = 0.65$ and 0.73 in this sample, respectively), with higher scores indicating more frequently experienced complaints. The measure was reported to have good internal and convergent validity [22], and adequate test-retest reliability [23].

Joint family activities. Participants reported their frequency of participation in nine joint family activities by responding to the question “How often do you and your family usually do each of these things all together?” (response options: *everyday, most days, about once a week, less often, never*). The included activities are shown in Figure 1. Responses were dichotomized to indicate joint family activity participation at least once per week (1) or less often or not at all (0). The measure showed acceptable internal consistency and a positive association with parent-reported joint family time [24].

Family support and communication. Participants responded to four family-related items of the Zimet’s Multidimensional Scale

of Perceived Social Support, with Likert response options from 1 (*very strongly disagree*) to 7 (*very strongly agree*) [25]. Responses were summed to create an overall family support score. This scale has moderate construct validity and good internal and test-retest reliability [25].

In addition, adolescents indicated how easy it was for them to talk about things that really bothered them with their father, stepfather (or mother’s partner), mother, and stepmother (father’s partner). Five response options were: I do not have or see this person (0); *very difficult* (1); *difficult* (2); *easy* (3); and *very easy* (4). The highest of the responses for father or stepfather then represented communication with father and the same procedure was used to categorize communication with mother [26]. The two resulting variables were then dichotomized as very easy/easy versus very difficult/difficult and combined into a single variable representing ease of parent-adolescent communication coded as “parents easy to talk to,” “one parent easy to talk to,” and “parents difficult to talk to,” as previously described [27]. The validity (r ’s > 0.5 with the Inventory of Parent and Peer Attachment) and reliability (Cronbach $\alpha = 0.8$) of this measure were assessed internally in the HBSC network and have yet to be published.

Participation in organized leisure-time activities. Participants responded *yes* (1) or *no* (0) to the question “In your leisure time, do you do any of these organized activities?” to indicate whether they participate in the following organized leisure-time activities: team sports, individual sports, art school/club, youth organizations, leisure centers or after-school clubs, and religious activities. This item has previously shown to be reliable among adolescents [28]. The “yes” responses were summed to create an overall indication of breadth of participation in leisure-time organized activities, with possible score ranging from 0 to 6.

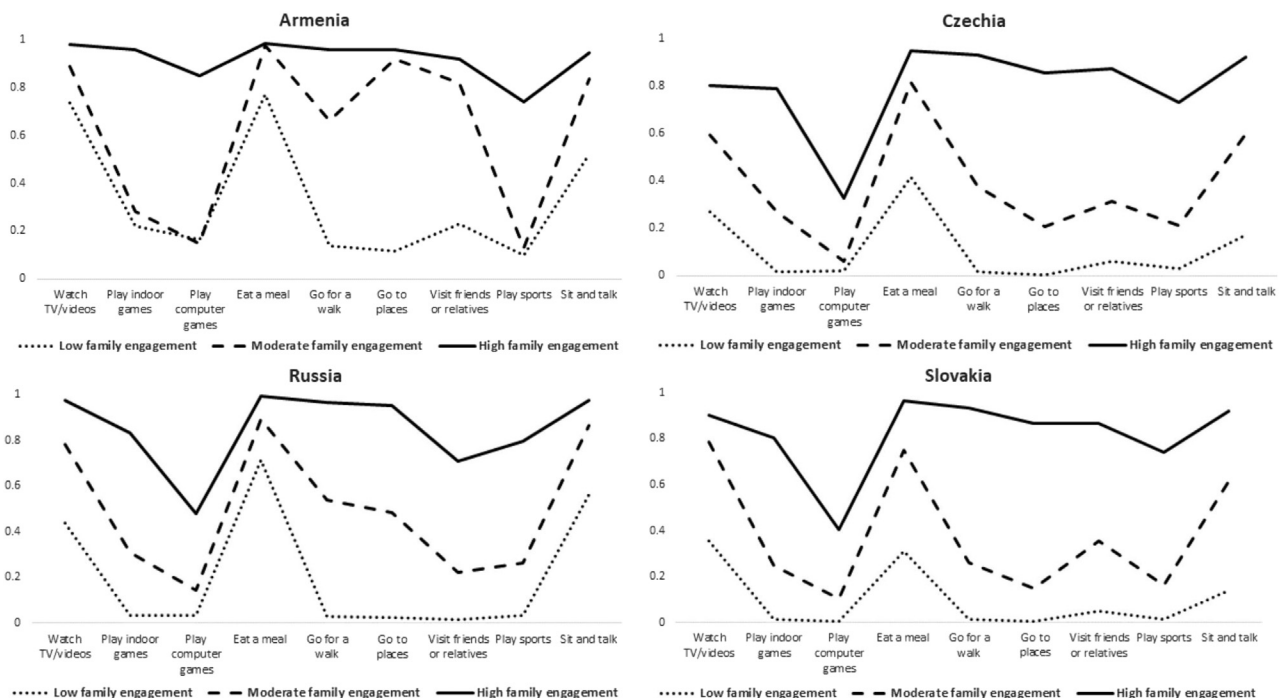


Figure 1. Item response probability plot for typologies of joint family activities.

Demographic variables. In addition to sex (male or female) and age, the respondents were asked to complete the validated Family Affluence Scale (FAS III) [29]. FAS III comprises six items allowing to estimate families' socioeconomic status based on number of cars, bathrooms, computers/laptops, and foreign holidays in the last 12 months, ownership of a dishwasher, and having one's own bedroom. Armenia used the previous version of the scale, i.e., FAS II, which comprises of four items (the dishwasher and bathroom items were not included). To account for this discrepancy, item scores were summed and, after stratification by country, transformed into a ridit score (0–1) [8], which represents adolescents' relative socioeconomic status in their respective country and is considered the gold standard to assess cross-national comparisons in the HBSC study [29].

Moreover, adolescents' family structure was assessed by asking them who they live with at the home where they live most of the time. Response options covered the following: mother, father, stepmother, stepfather, someone else (e.g., siblings, grandparents), and foster or children's home. Four family structure categories were created: both parents, stepfamily, single parent family, and nonparent family as in previous studies [3].

Statistical analysis

All analyses were stratified by country. To identify family activity typologies, Mplus (v.8) was used to conduct Latent Class Analysis (LCA) based on the nine joint family activities. Mplus manages missing data using maximum likelihood estimation and the LCA was conducted using all available data (missingness ranged from 0.4% to 3.4%) for all participants who provided a response to at least one of the joint family activities items. Six LCA models, each specifying a different number of classes (2–7), were analyzed with a range of statistical indicators used to identify the optimal solution for each country. These included Akaike Information Criteria (lower number indicates a better model fit) [30], Bayesian Information Criteria (lower number indicates a better model fit) [31], Entropy (higher number indicates a greater precision of model fit) [32], Lo-Mendel Rubin ($p < .05$ indicates that $n-1$ is a better fit than n class model) [33], and distribution of class sizes.

Once the optimal solution was identified, data were imported into STATA (v.16) for further analyses. Logistic regression models explored differences in demographic characteristics (age, sex, family affluence, and structure), family-related variables, and organized leisure-time activity participation between adolescents in each of the family activity typologies.

Linear regression models then assessed associations between family activity typology membership and adolescent mental health and wellbeing (life satisfaction, somatic complaints, and psychological complaints). First, an unadjusted model (model 1) examined bivariate associations. Demographic characteristics, family support and communication, and breadth of organized leisure-time activity participation were assessed for multicollinearity prior to conducting an adjusted model (model 2) to ensure there was no potential impact on the findings (variance inflation factors ranged from 1.01 to 1.09 indicating minimal or no collinearity). Unstandardized beta coefficients are reported.

Results

The analytical sample included 3,977 adolescents from Armenia (mean age = 13.5 ± 1.6 years, 53.4% female), 10,656 from Czechia (mean age = 13.4 ± 1.7 , 50.1% female), 4,096 from Russia (mean age = 13.8 ± 1.7 , 52.4% female), and 3,282 from Slovakia (mean age = 13.4 ± 1.5 , 51.0% female).

Typologies of joint family activities

Across the countries, the three-class solution was found to be optimal (see [Supplementary Table 1](#)). As can be seen in the item-response probability plots ([Figure 1](#)), typologies were labelled based on clear distinctions between them and characterized by low, moderate, and high family engagement across each of the activities. Armenian adolescents in the “moderate family engagement” typology were somewhat distinct in their joint family activity participation, with a higher likelihood of engaging in social type activities as a family (e.g., going to places, sitting and talking, and visiting friends or relatives) compared to the other countries. Consistently, across all countries and typologies, eating meals, watching TV, and sitting and talking together were the most performed joint family activities. Conversely, playing sports, computer games, and indoor games were among the least performed activities.

Joint family activity typologies and demographic, family-, and leisure-related variables

[Table 1](#) shows that there were significant differences in all demographic characteristics, family support and communication, and participation in organized leisure-time activities between the three typologies across all countries, except for family structure in Russia. Specifically, the level of engagement in family activities was higher in boys, younger adolescents, and those from families of higher socioeconomic position, compared with girls, older adolescents, and families of lower socioeconomic position. Adolescents who were members of the “high family engagement” typology more frequently reported that it was easy to talk to their parents. Moreover, the proportion of adolescents involved in multiple organized leisure-time activities was greater among those in the “high family engagement” typology compared to those in the “low family engagement” typology. These differences were subsequently adjusted for as potential confounders in further analyses.

Mental health and wellbeing associations with joint family activity typologies

[Table 2](#) presents the results of the linear regression models. Model 1 provides the crude regression coefficients of joint family activity typologies with mental health and wellbeing. Results for model 2 (fully adjusted) are reported in the text. Compared with model 1, the size of coefficients has attenuated after adjustment for sociodemographic factors, family environment variables, and participation in organized leisure-time activities. Across all countries, compared to the “low family engagement” typology, adolescents in the “moderate family engagement” and “high family engagement” typologies reported higher life satisfaction (β ranged from 0.23 to 1.12). Adolescents from Russia who were in the “high family engagement” typology reported fewer somatic complaints compared to those in the “low family

Table 1
Adolescent characteristics and leisure time organized activity engagement by country and typology membership

Joint family activity typologies	Age ^a	Sex	Family affluence ^b	Family structure ^c	Family support ^d	Parent-adolescent communication	Organized leisure-time activities
	Mean (SD)	% Female	Mean (SD)	% Both parents	Mean (SD)	% Parents easy to talk to	% More than one activity
Armenia (n = 3,977)	13.53 (1.62)	53.38	0.50 (0.28)	90.14	23.70 (7.15)	76.74	36.33
Low family engagement (n = 1,495)	13.76 (1.60)	52.78	0.45 (0.28)	87.15	23.17 (6.93)	68.02	31.91
Moderate family engagement (n = 1,465)	13.68 (1.58)	50.78	0.52 (0.28)	91.48	24.34 (6.75)	77.28	33.72
High family engagement (n = 1,017)	13.02 (1.59)	46.02	0.53 (0.29)	92.59	23.56 (7.92)	88.32	46.61
Czechia (n = 10,656)	13.43 (1.65)	50.08	0.50 (0.28)	69.94	20.22 (8.91)	63.59	52.88
Low family engagement (n = 5,083)	13.90 (1.49)	49.48	0.48 (0.28)	67.69	19.69 (8.17)	51.94	44.46
Moderate family engagement (n = 4,335)	13.12 (1.64)	52.36	0.51 (0.29)	72.23	21.08 (9.11)	71.05	58.57
High family engagement (n = 1,238)	12.57 (1.49)	46.53	0.54 (0.29)	71.21	19.43 (10.70)	85.30	67.53
Russia (n = 4,096)	13.79 (1.67)	52.42	0.50 (0.29)	68.56	22.20 (7.03)	68.01	45.63
Low family engagement (n = 2,178)	14.17 (1.57)	52.89	0.46 (0.28)	67.17	21.02 (6.94)	57.40	36.96
Moderate family engagement (n = 1,434)	13.49 (1.65)	53.28	0.52 (0.28)	69.71	23.35 (6.68)	77.79	51.26
High family engagement (n = 484)	13.00 (1.69)	47.73	0.60 (0.28)	71.46	24.16 (7.43)	86.71	67.98
Slovakia (n = 3,282)	13.44 (1.51)	51.04	0.50 (0.29)	75.30	23.18 (6.56)	67.26	48.48
Low family engagement (n = 1,054)	13.85 (1.45)	52.75	0.48 (0.28)	72.85	20.77 (7.08)	48.64	38.61
Moderate family engagement (n = 1,526)	13.34 (1.50)	53.54	0.50 (0.29)	77.84	24.27 (5.50)	71.29	47.51
High family engagement (n = 702)	13.01 (1.46)	48.71	0.54 (0.29)	73.43	24.56 (6.86)	86.34	65.38

Statistically significant differences compared to the “low family engagement” typology at $p < .05$ based on regression results are highlighted in bold.

^a Range = 11–16 years.

^b Range = 0–1.

^c Percentage of respondents living with both parents.

^d Range = 7–28.

engagement typology ($\beta = -0.49$). No other statistically significant differences in somatic complaints were observed between typologies. In all countries, adolescents in the “high family engagement” typology reported fewer psychological complaints compared to those in the “low family engagement” typology (β ranging from -0.66 to -1.16). Additionally, adolescents from Czechia and Russia who were in the “moderate family engagement” typology also reported fewer psychological complaints compared to those in the “low family engagement” typology ($\beta = -0.36$ and -0.44 , respectively).

Discussion

This study found descriptively similar typologies of joint family activities across four countries from the WHO European region, distinguished by low, moderate, and high engagement in nine distinct leisure-time activities. Demographic characteristics, family support, parent-child communication, and organized activity participation were also consistent across countries, as were the associations between typologies and life satisfaction, psychological complaints, and null findings for somatic complaints.

Regardless of typology, and consistent with existing literature [34], our findings show that the most common joint family activities are eating a meal together, sitting and talking about things together, and watch TV or videos together. Similar to findings from Badura et al. [15], adolescents who were moderately and highly involved in joint family activities also had greater involvement in organized leisure-time activities compared to those with low involvement in joint family activities. Parental knowledge of children’s leisure preferences, facilitated by communication during joint family activities, may be a mechanism through which parents can support adolescents’ developing interests by directly supporting their organized activity involvement through increasing motivation to engage in specific activities [35].

Our findings also reiterate important considerations regarding adolescents’ family support and structure [13]. Consistently across all four countries, compared with the low family engagement typology, adolescents with moderate and high levels of leisure-time family engagement reported easier parent-child communication and were from higher family affluence. It is possible that broader options of leisure-time pursuits available among mid-to-high socioeconomic classes of

Table 2
Adjusted associations between joint family activity typologies and mental health and wellbeing outcomes

Joint family activity typologies	Model 1: Unadjusted results			Model 2: Adjusted results		
	Life satisfaction β (95% CI)	Somatic complaints β (95% CI)	Psychological complaints β (95% CI)	Life satisfaction β (95% CI)	Somatic complaints β (95% CI)	Psychological complaints β (95% CI)
Armenia^a						
Low family engagement	Reference	Reference	Reference	Reference	Reference	Reference
Moderate family engagement	0.52 (0.40–0.65)	-0.38 (-0.62 to -0.14)	-0.48 (-0.79 to -0.16)	0.42 (0.28–0.57)	-0.16 (-0.35 to 0.02)	-0.25 (-0.59 to 0.08)
High family engagement	0.70 (0.56–0.84)	-0.24 (-0.51 to 0.03)	-1.16 (-1.52 to -0.81)	0.51 (0.34–0.68)	-0.17 (-0.38 to 0.05)	-0.66 (-1.06 to -0.27)
Czechia^a						
Low family engagement	Reference	Reference	Reference	Reference	Reference	Reference
Moderate family engagement	0.62 (0.56–0.69)	-0.33 (-0.44 to -0.22)	-0.89 (-1.05 to -0.73)	0.29 (0.22–0.36)	-0.05 (-0.17 to 0.06)	-0.36 (-0.52 to -0.20)
High family engagement	1.01 (0.91–1.12)	-0.43 (-0.61 to -0.26)	-1.57 (-1.82 to -1.32)	0.54 (0.43–0.65)	-0.04 (-0.23 to 0.14)	-0.74 (-1.00 to -0.48)
Russia^b						
Low family engagement	Reference	Reference	Reference	Reference	Reference	Reference
Moderate family engagement	1.00 (0.87–1.13)	-0.47 (-0.71 to -0.24)	-1.18 (-1.45 to -0.90)	0.55 (0.42–0.68)	-0.13 (-0.38 to 0.12)	-0.44 (-0.72 to -0.16)
High family engagement	1.91 (0.72–2.10)	-0.92 (-1.28 to -0.57)	-2.30 (-2.71 to -1.89)	1.12 (0.93–1.32)	-0.49 (-0.87 to -0.10)	1.16 (-1.58 to -0.74)
Slovakia^a						
Low family engagement	Reference	Reference	Reference	Reference	Reference	Reference
Moderate family engagement	0.64 (0.51–0.78)	-0.50 (-0.76 to -0.25)	-0.87 (-1.17 to -0.57)	0.23 (0.09–0.37)	0.03 (-0.23 to 0.30)	-0.13 (-0.43 to 0.18)
High family engagement	1.08 (0.92–1.25)	-0.76 (-1.07 to -0.45)	-1.66 (-2.03 to -1.30)	0.50 (0.32–0.67)	-0.13 (-0.47 to 0.21)	-0.72 (-1.12 to -0.32)

Statistically significant ($p < .05$) coefficients are highlighted in bold.

CI = confidence interval.

^a Model 2 (Armenia, Czechia, and Slovakia) adjusted for sex, age, family affluence, family structure, family support, ease of parent-adolescent communication, and breadth of organized leisure time activity participation.

^b Model 2 (Russia) adjusted for sex, age, family affluence, family support, ease of parent-adolescent communication, and breadth of organized leisure time activity participation.

population manifest in more time spent together as family. In addition, it seems that a lack of “financial constraints” in a family is positively reflected through the overall family atmosphere, which in turn might result in the willingness to engage in family leisure activities. This complements the results of a Norwegian study reporting that easiness of family communication and level of family support increase with self-reported wealth [36].

With regard to family structure, we found that adolescents reporting moderate and high levels of family engagement were more likely to live with both parents. This held true except for Russian adolescents. This exception might be explained by relatively common culture of living in multigenerational families in Russia that possibly supports participation in joint family activities even in single-parent families [37]. The relationship between joint family activities and family structure and communication is likely bidirectional. Not only are typical or well-functioning families likely to spend more time together [13] but also spending more time together is associated with enhanced family bonding and relationships [38].

Our findings corroborate existing research [11,13,14] and highlight that adolescents who engage in higher levels of joint family activities are less likely to report psychological complaints

and more likely to report greater life satisfaction. The current study results extend those of Bartko and Eccles [17] who reported that adolescents characterized as “high involved” in multiple activities had the highest psychological resilience, and those characterized as being “uninvolved” had the highest depressive symptomatology, along with internalizing and externalizing problems. Our findings also add to those of Moore et al. [6] who found that peer support during adolescence was associated with more positive health and wellbeing outcomes among those with high family support. Combined, these findings emphasize the importance for adolescents to not only engage in leisure-time activities, but to do so with family. Uncertainty and transitioning roles and responsibilities, spending leisure time with family can enhance their life satisfaction, which in turn may minimize negative developmental or future health consequences [1]. Apart from Russian adolescents, no differences in the reporting of somatic complaints were found between typologies. This is unsurprising as engaging in activities together is unlikely to reduce physical pains or aches, but perhaps that meaningful time spent together may help adolescents to manage or react to these symptoms in a more positive manner. An additional explanation may be that aches and pains are less likely to

influence how the more prominent but less physically demanding activities take place (e.g., eating together, sitting and talking together, and watching TV or videos together).

Our study has several implications for practice. Family leisure time is often used as a platform to deliver family-based interventions to improve family relationships and wellbeing due its shared enjoyment, which has been suggested to support adherence to programs [38]. Our findings highlight that interventions delivered through, or framed as, family leisure activities should consider differences between families which may impact engagement. Barriers may be present due to family resources, composition, and communication or due to time demands in the context of pre-existing high levels of engagement. As some of these are differences linked with inequalities, such targeted interventions should be developed in collaboration with families, in order to understand how the programs can best be implemented to support outcomes, otherwise they may potentially adversely impact pre-existing quality leisure time. Finally, learning can take place from families with existing high levels of engagement across cultures, to understand the key components of quality leisure time that are associated with beneficial outcomes such as those identified in our study. Such refinement of theory on family relationships, well-being, and health, and how it ties to leisure time use can help to better design theory-informed, family-, and leisure-based interventions and target public policy and support on the national, and especially local and community levels. This could be especially important in the light of the ongoing COVID-19 pandemics, which has reportedly distorted family routines, including amount of time both adolescents and adults had to spend together [39,40].

Strengths and limitations

The HBSC study utilizes a standard methodology in each participating country including cluster sampling of school classes to select a nationally representative sample of young people to complete the standard international questionnaire. The required sample sizes are large enough for monitoring and analytic purposes, allowing the generalizability of the findings. Although self-report by nature, the survey items have been piloted among young people, undergone rigorous language translation procedures, and their psychometric properties have been tested before inclusion in HBSC surveys, thus enabling cross-country research. However, the leisure-related questions offered a predetermined set of activities, so some other activities undertaken by adolescents themselves or together with their families might have not been captured by our analyses. Another strength of the present study is that it goes beyond looking at each distinct activity and highlighting the importance of combinations of activities for achieving joint family activity typologies. However, it could be of interest to investigate whether specific types of joint family activities are more important for adolescents' wellbeing than others in future research.

The cross-sectional nature of the HBSC study limits the possibility to make inferences about direction of relationships. There is a possibility that the associations we observed are actually reverse, i.e., the adolescents who do not feel well avoid participation in leisure-time activities, both with family and on their own. It would be meaningful to investigate the longitudinal relationships between variables throughout adolescence and into adulthood in order to understand the direction between them, as well as their underlying mechanisms.

All four countries involved in our study are geographically located in the east of the WHO European region, and until 1990, they belonged to the former Eastern Bloc, which may limit the generalizability of the results. On the other hand, there are significant cultural and historical differences between the countries, and socioeconomic transformation in the past 30 years highlighted the socioeconomic differences. Although Czechia and Slovakia are classified as high-income countries, Armenia and Russia are upper-middle-income. Additional countries from different WHO regions should be researched to draw more comprehensive conclusions.

Conclusion

This study identified three distinct typologies of joint family leisure-time activities among adolescents living in Armenia, Czechia, Russia, and Slovakia, each distinguished based on low, moderate, and high levels of engagement. Consistently across countries, the level of family engagement was highest among boys, younger adolescents, adolescents from families of higher socioeconomic position, those who reported that it was easy to talk with both parents, and those participating in multiple organized leisure-time activities. Regardless of country, adolescents with greater engagement in joint family activities were less likely to report psychological complaints and more likely to report greater life satisfaction. The consistency in findings across countries with diverse socioeconomic and cultural backgrounds highlight the need for further research to understand the mechanisms driving these beneficial outcomes. Our findings can also help to better design family- and leisure-based interventions and programs on the national, as well as local and community levels. This could serve as a tool for adolescent wellbeing promotion, provided that such interventions account for distinct characteristics among families.

Acknowledgments

HBSC is an international study carried out in collaboration with WHO/EURO. For the 2017/2018 survey, the International Coordinator was Jo Inchley (University of Glasgow) and the Data Bank Manager was Professor Oddrun Samdal (University of Bergen). The present study used data from four countries involved in the 2017/2018 survey conducted by the following Principal Investigators: Sergey Sargsyan and Marina Melkumova (Armenia), Michal Kalman (Czech Republic), Anna Matochkina (Russia), and Andrea Madarasová Gecková (Slovakia). We would also like to express our gratitude to staff and pupils of the schools that took part in the survey.

Funding Sources

This work was supported by the Czech Science Foundation (reg. no. 20-25019S) and The Ministry of Education, Youth and Sports (Inter-Excellence, LTT18020).

Supplementary Data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jadohealth.2022.02.017>.

References

- [1] Patton GC, Sawyer SM, Santelli JS, et al. Our future: A Lancet commission on adolescent health and wellbeing. *Lancet* 2016;387:2423–78.
- [2] Patalay P, Gage SH. Changes in millennial adolescent mental health and health-related behaviours over 10 years: A population cohort comparison study. *Int J Epidemiol* 2019;48:1650–64.
- [3] Badura P, Hamrik Z, Dierckens M, et al. After the bell: Adolescents' organised leisure-time activities and well-being in the context of social and socioeconomic inequalities. *J Epidemiol Community Health* 2021;75:628–36.
- [4] Zambon A, Morgan A, Vereecken C, et al. The contribution of club participation to adolescent health: Evidence from six countries. *J Epidemiol Community Health* 2010;64:89.
- [5] Santini ZI, Meilstrup C, Hinrichsen C, et al. Associations between multiple leisure activities, mental health and substance use among adolescents in Denmark: A nationwide cross-sectional study. *Front Behav Neurosci* 2020;14:593340.
- [6] Moore GF, Cox R, Evans RE, et al. School, peer and family relationships and adolescent substance use, subjective wellbeing and mental health symptoms in Wales: A cross sectional study. *Child Indic Res* 2018;11:1951–65.
- [7] Larson R, Richards M, Moneta G, et al. Changes in adolescents' daily interactions with their families from ages 10 to 18: Disengagement and transformation. *Dev Psychol* 1996;32:744–54.
- [8] Elgar FJ, Gariépy G, Torsheim T, et al. Early-life income inequality and adolescent health and well-being. *Soc Sci Med* 2017;174:197–208.
- [9] Romm KF, Metzger A. Profiles of parenting behaviors: Associations with adolescents' problematic outcomes. *J Child Fam Stud* 2021;30:941–54.
- [10] Levin KA, Currie C. Reliability and validity of an adapted version of the Cantril Ladder for use with adolescent samples. *Soc Indic Res* 2014;119:1047–63.
- [11] Compañ E, Moreno J, Ruiz MT, et al. Doing things together: Adolescent health and family rituals. *J Epidemiol Community Health* 2002;56:89–94.
- [12] Offer S. Family time activities and adolescents' emotional well-being. *J Marriage Fam* 2013;75:26–41.
- [13] Poff RA, Zabriskie RB, Townsend JA. Modeling family leisure and related family constructs: A national study of U.S. parent and youth perspectives. *J Leis Res* 2010;42:365–91.
- [14] Crouter AC, Head MR, McHale SM, et al. Family time and the psychosocial adjustment of adolescent siblings and their parents. *J Marriage Fam* 2004;66:147–62.
- [15] Badura P, Madarasova Geckova A, Sigmundova D, et al. Do family environment factors play a role in adolescents' involvement in organized activities? *J Adolesc* 2017;59:59–66.
- [16] Parker KE, Salmon J, Costigan SA, et al. Activity-related behavior typologies in youth: A systematic review. *Int J Behav Nutr Phys Act* 2019;16:44.
- [17] Bartko WT, Eccles JS. Adolescent participation in structured and unstructured activities: A person-oriented analysis. *J Youth Adolesc* 2003;32:233–41.
- [18] Brown DMY, Cairney J, Kwan MY. Adolescent movement behaviour profiles are associated with indicators of mental wellbeing. *Ment Health Phys Act* 2021;20:100387.
- [19] Ross DA, Hinton R, Melles-Brewer M, et al. Adolescent well-being: A definition and conceptual framework. *J Adolesc Health* 2020;67:472–6.
- [20] Inchley J, Currie C, Cosma A, et al. Health behaviour in school-aged children (HBSC) study protocol: Background, methodology and mandatory items for the 2017/18 survey. St Andrews: Child and Adolescent Health Research Unit (CAHRU); 2018.
- [21] Haugland S, Wold B, Stevenson J, et al. Subjective health complaints in adolescence. A cross-national comparison of prevalence and dimensionality. *Eur J Public Health* 2001;11:4–10.
- [22] Gariépy G, McKinnon B, Sentenac M, et al. Validity and reliability of a brief symptom checklist to measure psychological health in school-aged children. *Child Indic Res* 2016;9:471–84.
- [23] Haugland S, Wold B. Subjective health complaints in adolescence—reliability and validity of survey methods. *J Adolesc* 2001;24:611–24.
- [24] Sweeting H. Our family, whose perspective? An investigation of children's family life and health. *J Adolesc* 2001;24:229–50.
- [25] Zimet GD, Dahlem NW, Zimet SG, et al. The multidimensional scale of perceived social support. *J Pers Assess* 1988;52:30–41.
- [26] Luk JW, Farhat T, Iannotti RJ, et al. Parent-child communication and substance use among adolescents: Do father and mother communication play a different role for sons and daughters? *Addict Behav* 2010;35:426–31.
- [27] Levin KA, Dallago L, Currie C. The association between adolescent life satisfaction, family structure, family affluence and gender differences in parent-child communication. *Soc Indic Res* 2012;106:287–305.
- [28] Bosakova L, Kolarcik P, Bobakova D, et al. Test-retest reliability of the scale of participation in organized activities among adolescents in the Czech Republic and Slovakia. *Int J Public Health* 2016;61:329–36.
- [29] Inchley J, Currie C, Budisavljevic S, et al. Spotlight on adolescent health and well-being. Findings from the 2017/2018 health behaviour in school-aged children (HBSC) survey in Europe and Canada. International report. Volume 2. Key data. Copenhagen: WHO Regional Office for Europe; 2020.
- [30] Akaike H. Factor analysis and AIC. *Psychometrika* 1987;52:317–32.
- [31] Raftery AE. Bayesian model selection in social research. *Sociol Methodol* 1995;25:111–63.
- [32] Berlin KS, Williams NA, Parra GR. An introduction to latent variable mixture modeling (part 1): Overview and cross-sectional latent class and latent profile analyses. *J Pediatr Psychol* 2014;39:174–87.
- [33] Lo Y, Mendell NR, Rubin DB. Testing the number of components in a normal mixture. *Biometrika* 2001;88:767–78.
- [34] Crosnoe R, Trinitapoli J. Shared family activities and the transition from childhood into adolescence. *J Res Adolesc* 2008;18:23–48.
- [35] Sharp EH, Caldwell LL, Graham JW, et al. Individual motivation and parental influence on adolescents' experiences of interest in free time: A longitudinal examination. *J Youth Adolesc* 2006;35:340.
- [36] Ramdahl ME, Jensen SS, Borgund E, et al. Family wealth and parent-child relationships. *J Child Fam Stud* 2018;27:1534–43.
- [37] Utrata J. Youth privilege: Doing age and gender in Russia's single-mother families. *Genet Soc* 2011;25:616–41.
- [38] Hodge CJ, Duerden MD, Layland EK, et al. The association between family leisure and family quality of life: A meta-analysis of data from parents and adolescents. *J Fam Theory Rev* 2017;9:328–46.
- [39] Cosma A, Pavelka J, Badura P. Leisure time use and adolescent mental well-being: Insights from the COVID-19 Czech spring lockdown. *Int J Environ Res Public Health* 2021;18:12812.
- [40] Evans S, Mikocka-Walus A, Klas A, et al. From "it has stopped our lives" to "spending more time together has strengthened bonds": The varied experiences of Australian families during COVID-19. *Front Psychol* 2020;11:588667.