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ORIGINAL ARTICLE

The Healthy Context Paradox at a National/Country-Level: Is Victimisation associated with Worse Adjustment in Countries where the Average Level of Victimisation is Lower?

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Abstract

Recent research has highlighted the healthy context paradox (HCP), namely that the association between peer victimisation and psychological and social adjustment worsens in social contexts with lower average level of victimisation. Previous research has examined this phenomenon in relation to classroom- or school-level victimisation. We tested whether the HCP is applicable on a much wider scale, at national level. Besides country-level victimisation, we explored whether country-level economic inequality and social welfare protection moderate the victimisation-adjustment link. We used data from the HBSC 2013/2014 survey related to peer victimisation and five measures of health and wellbeing of 11-, 13- and 15-year-old boys and girls from 40 countries ($N = 198{,}646$) in Europe and North America, complemented with information on economic inequality (Gini index, available for 33 countries) and social protection (decommodification index, available for 25 countries). We confirmed an expected within-country correlation between higher levels of victimisation and poorer health and wellbeing for each measure and across countries; however this association had significant between-country variability. For country-level victimisation, there was evidence of a significant HCP effect for the measures of peer support and life satisfaction – but not for feeling low, health, and liking school.

Introduction

It is well recognised that peer victimisation during childhood and adolescence can have a significant and severe negative impact on psychological development of individuals. Nansel et al. (2004) used HBSC survey data from 1997 to 98 to examine the link between victimisation experiences and measures of psychosocial adjustment (such as health problems, emotional adjustment, school adjustment, relationship with classmates) in 25 countries. Across all countries, victimisation was associated with poorer psychosocial adjustment. Although HBSC mainly assesses western countries, such links are found in eastern countries as well. For example in Vietnam, Ngo et al. (2021) found that being bullied was negatively associated with levels of classmate and family support, feelings of school safety, lower health-related quality of life, and greater risk of depression, anxiety, and stress. A meta-analysis of 56 studies by Yuchang et al. (2019) found that victimisation was strongly related to anxiety and depression. Such effects can be substantial and long-term (Arseneault, 2018).

In an attempt to prevent/reduce these adverse effects on victims, anti-bullying interventions have been implemented in schools worldwide to reduce the frequency of bullying among students (Smith, 2019). These interventions have had some, if limited, positive impact on the prevalence of bullies and victims in school classes (Gaffney & Farrington, 2021). It has therefore been assumed that reducing the level of victimisation in schools will result in a general increase in the health, social and psychological well-being of everyone.

Recent research has shown that this is not entirely true. A decrease in the overall level of victimisation does not always lead to an improvement in the health and social well-being of those who remain victims or become victims after the decrease. In fact, remaining or new victims' well-being may worsen as the overall prevalence of victimisation in a

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classroom/school decreases. This phenomenon is referred to as the Healthy Context Paradox (HCP). This concept was introduced by Salmivalli (2018), after a study carried out in Finland as part of the implementation of the KiVa anti-bullying program (Garandeau et al., 2018). From longitudinal data, the authors found that stable victims experienced worse psychological adjustment (they were more socially anxious and depressed) and worse social adjustment (they were less liked) in classrooms where the proportion of victims had reduced over a oneyear period, compared to stable victims in classrooms there the proportion of victims had either increased or stayed the same. This effect was similar in intervention and control schools, in other words, it did not depend on whether the decreases in classroom victimisation were due to the intervention, or other reasons.

These findings highlighted the importance of investigating the effects of seemingly positive contextual changes on victimised students' psychological and social adjustment. The HCP effect has since been confirmed in several studies. Huitsing et al. (2019) used data from the Dutch implementation of the KiVa anti-bullying program, comparing intervention and control schools at baseline and one year follow up. They found that although the anti-bullying intervention was successful in reducing the general level of victimisation, the remaining victimised students in the intervention schools experienced lower self-esteem and more depressive symptoms after the intervention in comparison to the victimised students in control schools.

Using data from middle schools in South Korea, Yun and Juvonen (2020) found that victimised youth experienced a lower level of depressive symptoms in classrooms where victimisation was more common, consistent with HCP. In mainland China, Pan et al. (2021) obtained data from primary school students. Over the course of two years, peer victimisation was more strongly associated with increasing depressive symptoms in classrooms with lower average levels of victimisation. In Italy, Gini and colleagues (2020) found that victimisation was more strongly associated with somatic complaints in classrooms with lower levels of victimisation.

These studies have used self-reported victimisation experiences. In another study from China, Xiong et al. (2022) collected both self-reports and peer-reports to assess peer victimisation. In accordance with previous findings, they found that self-reported victimised adolescents described a higher level of depression and lower levels of self-esteem and well-being in classrooms with low classroom-level victimisation. However, the finding was not replicated using peer-reported victimisation.

These findings have led to attempts to explore possible explanations for the HCP phenomenon. Garandeau and Salmivalli (2019) offered several explanations. Firstly, they suggested that environmental factors such as low classroom-level victimisation may affect victimised students' psychological adjustment because it affects the causal attributions victims make about their situation. For example, in schools that have successfully reduced the average rates of victimisation as a result of implementing anti-bullying interventions, victimised students are more likely to blame themselves for their victimisation instead of external factors, resulting in a decline of their psychological well-being. Another proposed explanation is centred around social comparison theory, which states that people have a natural tendency to compare themselves to their peers (Festinger, 1954). Therefore, in instances when victimised students are in a social context where there are few other victimised students, there is a high likelihood that they will compare themselves to their non-victimised peers, who are often happier and well-liked. This type of 'upward comparison' is likely to intensify feelings such as anxiety and depression in the victimised students. A third explanation is that reduced or decreasing victimisation results in a decline in new or remaining victimised students' mental health due to its influence on their social relationships. It is suggested that victimised students struggle to form friendships particularly in these contexts, as they would typically form friendships with other victims, and non-victims tend to avoid being friends with their victimised peers. The absence of friends and the poor quality of existing friendships may act as contributing factors for internalising problems and self-blaming leading to poorer psychological well-being (Garandeau & Salmivalli, 2019).

Pan et al. (2021) found some support for the second and third of these explanations for the HCP. They found that low classroom-level victimisation affected victimised children's social self-concept. Also, low classroom-level victimisation decreased victimised students' received friendship nominations from peers subsequently. Either of these could explain an increase in depressive symptoms.

So far, the study of HCP, and possible reasons for its occurrence, have been carried out at the classroom and school levels. It is conceivable, although yet untested, that HCP phenomenon also works at a broader, national level. This would mean that victimisation is associated with worse adjustment in countries where the average level of victimisation is lower. In other words, victimisation would lead to more negative consequences in "healthier" countries. This could be due to cognitive processes within individuals. If victimisation is highly prevalent, victimised students might be less likely to attribute their plight to internal reasons e.g., ("There is something wrong with me"). If, on the other hand, they have not seen or heard of others who are also victimised, characterological self-blame (Schacter et al., 2015) might be more likely. Finally, peers may treat victimised class- or schoolmates more negatively in countries where victimisation is rare.

Van Canegem and colleagues recently examined the effects of grade retention on risk of victimisation using the PISA 2018 data set (Van Canegem et al., 2022). It is well established that being held back a grade in school is associated with increased victimisation risk, and this was confirmed; this risk was not related to school level differences in grade retention, but it was significantly related to country level differences in grade retention. As the authors put it, "Peers seem to weigh up the stigma of being retained with the number of other retainees in their country, leading to more victimisation in countries where being retained is a rare experience. In countries where grade retention is a common practice, the high prevalence of retainees softens the negative association between being retained and school victimisation" (p.17) but "It remains unclear, however, why the national level plays a more important role than the school level. This is unexpected, as the country level is a more distant context than the proximal school context" (p.18). The findings are relevant for the present study as they show that the treatment of at-risk youth (in the case of van Canegem's study, grade retainees) by peers can be affected by how many others share the same risk factor.

Some other national or country-level influences on victimisation have been reported. For example, using HBSC data, levels of socioeconomic inequality at the country level have been linked to levels of bullying victimisation (Elgar et al., 2009, 2019); furthermore, this link has been found when looking at early-life (0–5 years) exposure to income inequality as associated to bullying in adolescence, across 40 countries, strongly suggesting influences beyond the school level.

In further analyses using the PISA 2018 cross-national data set, Tuttle et al. (2022) have proposed institutional anomie theory (IAT) as being an explanatory concept for national associations of economic inequality with levels of bullying victimisation. The International Labour Organisation (ILO) database gave a measure of 'decommodification', basically the degree of social welfare protection provided to citizens in a country. Decommodification reduces the emphasis on market competition. This in turn is thought to relate (negatively) to levels of anomie, that is a value system that promotes self-interest over the collective well-being (Konty, 2005). Tuttle et al. reported that countries with a greater degree of decommodification have lower rates of school-based bullying. Although the link with IAT remains speculative, these findings do illustrate how country level factors may influence school victimisation, and potentially its outcomes.

Present Study

We tested whether the HCP phenomenon, which has so far been examined at the classroom and school levels (e.g., Garandeau et al., 2018; Huitsing et al., 2019; Pan et al., 2021) can also be observed at the country level; this would mean that peer victimised youth experienced worse adjustment in countries where the overall level of victimisation was lower. Furthermore, we explored whether the association between victimisation and individual adjustment could be affected by two other country-level factors that have been discussed in the bullying literature: economic inequality and decommodification. We used the HBSC survey data from 2013–2014, this being the most recent with necessary data available at the time of the study. HBSC surveys provide self-report data on bullying victimisation, and on various measures of health and well-being. We selected five of these latter measures: perceived peer support (friends to count on), feeling low, self-rated health, life satisfaction, and liking school. The data set was complemented with information on country economic inequality and decommodification. It was hypothesized, first, that within countries, victimisation is associated with worse adjustment; and second, that this association is especially strong when the prevalence of victimised students at the country level is low. Finally, it was explored whether country economic inequality and decommodification are relevant country-level contextual factors moderating the victimisation-adjustment link in line with the HCP hypothesis (more maladjustment in "healthier" contexts"). If this was the case, one would expect that the negative effect of victimisation on adjustment would be *weaker* in countries with higher economic inequality, but *stronger* in countries with high decommodification.

Method

Study Design and Participants

The HBSC surveys are coordinated by the World Health Organisation; they collect self-report data every four years regarding the health, well-being, social environment, and health behaviour of female and male adolescents aged 11, 13, and 15 years old. Sample size is a minimum of 1,500 per country. The 2013-14 data set was gathered between September 2013 and January 2015, from more than 220,000 adolescents in 44 countries in Europe and North America. The survey employed a cluster probability sampling (random or systematic) of school classes in each country and region. Ethical approval and consent from school administrators, parents, and students was acquired in all countries and regions prior to the completion of the survey. Researchers and teachers administered self-report questionnaires to the students in schools and they were completed by the students anonymously (see Inchley et al., 2016).

After removing four countries where information on our focal variables was missing (see Data Analysis), we ended up with HBSC data from 40 countries, including responses

from 198,646 students. From the HBSC data set we used a measure of victimisation and five health and social well-being outcomes. HBSC assesses 13 Social Context variables, and 11 Health Outcome variables. From these we selected 5 variables: perceived peer support (friends to count on), and liking school (from Social Context), and feeling low, self-rated health, and life satisfaction (from Health Outcomes). These variables were selected based on health and social well-being outcomes that have previously been found to be relevant to victimisation (Del Rey et al., 2022). For country economic inequality and decommodification, we used data provided by Tuttle et al. (2022).

Measures

Victimisation Students were presented with a standard definition of bullying, and then asked, 'How often have you been bullied at school in the past couple of months?'. They answered on a five-point scale (1 = haven't, 2 = once or twice, 3 = 2–3 times/month, 4 = once/week, 5 = several times/week). For country-level victimisation, we aggregated individuals' victimisation scores at the country level. i.e. calculated a mean victimization score for each country.

Peer Support (Friends to Count on) Students were asked a number of questions pertaining to their relationships with their friends; we used responses regarding the statement 'I can count on my friends when things go wrong'. Response options were on a 7-point scale (1 = very strongly disagree to 7 = very strongly agree).

(Not) Feeling Low Students were asked 'How often have you had the following symptoms in the last 6 months?' followed by 8 symptoms, from which we chose 'feeling low' (as being more general than for example 'headache' or 'backache'). They answered on a 5-point scale (1 = about every day, 2 = more than one/week, 3 = about every week, 4 = about every month and 5 = rarely or never). Higher scores thus indicated better adjustment, i.e. not feeling low.

Self-rated Health This was assessed by asking students to describe their general health ('Would you say your health is …?') They answered on a four-point scale (1 = Excellent, 2 = Good, 3 = Fair, 4 = Poor). The responses were recoded so that higher scores indicated better health.

Life Satisfaction This was measured using a visual analogue scale. A Cantril ladder with eleven steps was used: the top of the ladder '10' indicated the best possible life satisfaction and the bottom '0' the worst possible life satisfaction. Respondents were asked to indicate which step on the ladder they would place their lives currently (scored from 0 to 10).

Liking School Students were asked 'How do you feel about school at present?'. Response options ranged from '1' like a lot to '4' not at all. Again, the responses were recoded so that higher scores indicated liking school more.

Country Economic Inequality

Gini index is a measure of the distribution of wealth or income in a country, with higher scores indicating more inequality. Data are available from the World Bank. A Gini coefficient of 0 reflects perfect equality, where all income or wealth values are the same, while a Gini coefficient of 1, or 100%, reflects maximal inequality among values, for example a single individual having all the income while all others have none. Gini coefficients do show some year-to-year fluctuation, and as our HBSC BV data is from 2013 to 2014, we have used Gini coefficients for 2014 (expressed as percentages; from the original World Bank records at https://data.worldbank.org/indicator/SI.POV.GINI).

Country Decommodification We used the decommodification index, taken from the data provided in Tuttle et al. (2022; Table 1). Decommodification index indicates the degree of social welfare (e.g., unemployed receiving unemployment benefits, mothers with newborns receiving maternity benefit; for details, see Tuttle et al., 2022); positive values indicate a higher proportion of population covered by social protection systems. The range reported by Tuttle et al. (2022) is from 1.06 to -2.02; the possible range is somewhat difficult to address directly, as the index is compiled from z-scores, which calculate the relative position within a distribution (Tuttle, pers. comm. 27/08/2023) (Table 2).

Table 1 Mean and standard deviations of the variables in the whole sample

Variable	Scale range	*N*	Mean	SD
Victimisation	1—5	198,646	1.48	0.96
Friends to count on	1—7	173,785	5.37	1.87
(Not) feeling low	1—5	189,281	3.96	1.30
Health	1—4	196,082	3.21	0.71
Life satisfaction	0—10	193,867	7.62	1.95
Like school	1—4	196,515	2.97	0.89
Country Vic	1—5	40	1.48	0.18
Country Ineq	24.00—39.90	33	31.55	4.14
Country Decomm	0.04—1.06	25	0.56	0.30

For each variable, higher score indicates better adjustment

n.b. the mean scores represent recoded scores for two variables ("Health" and "Like school")

Table 2 Correlations among the variables at the student (within-level; above the diagonal) and country (between-level; below the diagonal) levels, along with their intra-class correlations (ICC)

	Country Vic	Friends	(Not) feel low	Health	Life satisfact.	Like school	Country Ineq	Country Decomm	ICC
Victimisation	-	−0.14	−0.22	−0.12	−0.18	−0.12	-	-	0.04
Friends	−.34[c]	-	0.12	0.11	0.17	0.12	-	-	0.03
(Not) feel low	.37[b]	−.05[a]	-	0.28	0.39	0.21	-	-	0.04
Health	−.28[c]	.21[a]	−.02[a]	-	0.36	0.18	-	-	0.04
Life satisfaction	.00[a]	−.06[a]	−.14[a]	.19[a]	-	0.28	-	-	0.02
Like school	−.09[a]	−.24[a]	.13[a]	.03[a]	0.44	-	-	-	0.07
Country Ineq	.24[a]	−.12[a]	−.12[a]	0.46	.15[a]	−.05[a]	-	-	-
Country Decomm	.07[a]	.17[a]	.35[a]	−.19[a]	−.15[a]	.30[a]	−.33[a]	-	-

All correlations significant at $p < .001$, except for those with the superscripts

[a]Non-significant

[b]Significant at 0.01

[c]Significant at 0.05

The Gini index and decommodification index, available for 33 and 25 countries in our data, respectively, were added to the HBSC data set.

Data Analysis

Four countries – Lithuania, Switzerland, Turkey, and the USA - were missing key data entries and were excluded from the analysis, resulting in 40 countries in the data set. Three countries had missing data for 'friends to count on' and one for 'feeling low' (see Table 3) but were included in other analyses. Gini index and Decommodification index were only available for 33 and 25 countries, respectively. For all analyses, we used all available data on each variable.

We started by inspecting the mean levels of the variables and their intercorrelations at the individual and country levels, as well as intra-class correlations indicating the proportion of total variance that was between countries. In all analyses, country-level victimisation was represented by the mean value of individual victimisation scores of the respondents in each country. Next, we examined the five health and well-being outcomes in relation to victimisation experiences, across individuals within each country. Finally, we tested the HCP hypothesis at country level using multilevel models with BAYES estimator in Mplus 8.8. In order to use all available data to estimate the models without imputing it, full information maximum likelihood (FIML) estimation was used to handle the missing data (Muthén & Muthén, 1998–2017). Adding all five victimisation-adjustment slopes simultaneously in the model led to convergence problems due to the large number of parameters in relation to the number of clusters, i.e. countries. We therefore ran five separate multilevel models, one for each adjustment outcome. In the within part of each model, we included the random slope of individual victimisation on adjustment. In the between part, we included the main effects of victimisation, economic inequality, and decommodification on adjustment, along with three cross-level interaction terms where the random slope was predicted by the three country-level indices.

Results

Descriptive Statistics

Mean levels and standard deviations for each variable are shown in Table 1. On average, students reported relatively low levels of victimisation (been bullied) and feeling low, and high levels of perceived peer support (friends to count on), health, life satisfaction, and school liking. Correlations between the variables at the student and country levels are displayed in Table 2, along with intra-class correlations for variables that were assessed at the individual level. The intra-class correlations indicate the proportion of total variance in each variable that lies at the country level, i.e. between-country variation. As shown in the last column of the table, most of the variation (93-98%) was at the individual level. The smallest (2% of total variance) and largest (7% of total variance) between-country variations were found in life satisfaction and school liking, respectively.

All variables correlated significantly ($p < .001$) at the within-level. The between-level correlations (below the diagonal in Table 2) showed that country-level victimization was negatively associated with having friends to count on (r=-.34) and health (r=-.28), and positively associated with not feeling low (r=.37). Moreover, economic inequality correlated with health (r=.46) and school liking correlated with life

Table 3 Correlations of individual victimisation and five health and well-being variables, along with, average country victimisation percentage, for 40 countries; and with Gini index for 33 countries, and Decomm index for 25 countries

Country	Friends count on	(not) Feel low	Health	Life Satisfaction	Like School	Country victimisation	(%)	Decomm Index
Albania	-0.078	-0.094	-0.045	-0.095	-0.046	19.67	34.6	-0.867
Armenia	ND	-0.078	-0.058	-0.075	-0.065	5.33	31.5	-
Austria	-0.237	-0.160	-0.160	-0.203	-0.220	30.0	30.5	0.925
Belgium (Fr)	-0.123	-0.146	-0.124	-0.167	-0.084	41.0	-	-
Belgium (Flem)	-0.177	-0.154	-0.115	-0.138	-0.137	17.33	-	-
Bulgaria	-0.120	-0.219	-0.095	-0.115	-0.119	30.33	37.4	0.045
Canada	ND	-0.333	-0.131	-0.288	-0.155	27.0	33.2	-
Croatia	-0.213	-0.224	-0.145	-0.151	-0.089	15.67	32.1	0.096
Czech Republic	-0.131	-0.195	-0.102	-0.191	-0.155	11.0	25.9	0.295
Germany	-0.154	-0.235	-0.167	-0.215	-0.169	18.67	30.9	1.062
Denmark	ND	-0.244	-0.124	-0.235	-0.177	12.67	28.4	0.807
England	-0.092	-0.286	-0.114	-0.257	-0.153	21.0	-	-
Estonia	-0.162	-0.247	-0.147	-0.184	-0.095	33.0	34.6	0.732
Finland	-0.190	ND	-0.098	-0.196	-0.092	20.67	26.8	0.899
France	-0.161	-0.224	-0.135	-0.222	-0.071	23.33	32.3	0.940
Greenland	-0.022	-0.140	-0.033	-0.143	-0.105	28.0	-	-
Greece	-0.105	-0.160	-0.124	-0.158	-0.060	13.0	35.8	0.039
Hungary	-0.170	-0.193	-0.058	-0.125	-0.077	18.67	30.9	0.435
Ireland	-0.078	-0.234	-0.124	-0.243	-0.154	15.33	31.9	-
Israel	-0.202	-0.196	-0.144	-0.174	-0.173	20.33	39.8	-
Iceland	-0.081	-0.238	-0.107	-0.233	-0.234	9.33	27.8	0.775
Italy	-0.184	-0.143	-0.081	-0.115	-0.023	10.0	34.7	-
Luxembourg	-0.121	-0.283	-0.148	-0.215	-0.023	25.67	31.2	0.683
Latvia	-0.082	-0.197	-0.131	-0.166	-0.140	45.0	35.1	0.597
Moldova	-0.093	-0.097	-0.123	-0.162	-0.138	24.33	26.8	-0.125
Macedonia	-0.148	-0.113	-0.138	-0.077	-0.034	19.33	-	-
Malta	-0.182	-0.162	-0.086	-0.138	-0.069	16.0	29.0	0.348
Netherlands	-0.160	-0.289	-0.152	-0.237	-0.148	17.0	28.6	0.930
Norway	-0.188	-0.315	-0.132	-0.234	-0.317	12.67	26.8	-
Poland	-0.189	-0.246	-0.119	-0.163	-0.124	24.33	32.8	0.467
Portugal	-0.145	-0.237	-0.141	-0.174	-0.083	26.33	35.6	0.453
Romania	-0.121	-0.198	-0.098	-0.121	-0.099	23.0	36.0	0.470
Russian Fed.	-0.059	-0.208	-0.099	-0.109	-0.106	37.67	39.9	0.647
Scotland	-0.121	-0.277	-0.149	-0.237	-0.144	27.0	-	-
Slovenia	-0.112	-0.210	-0.111	-0.18	-0.087	16.67	25.7	0.650
Slovakia	-0.175	-0.198	-0.087	-0.144	-0.057	21.67	26.1	0.405
Spain	-0.176	-0.173	-0.079	-0.149	-0.031	11.33	36.1	0.384
Sweden	-0.131	-0.243	-0.112	-0.208	-0.122	9.0	28.4	-
Ukraine	-0.122	-0.248	-0.141	-0.156	-0.105	28.67	24.0	-
Wales	-0.114	-0.283	-0.178	-0.254	-0.153	27.33	-	-

*ND = No Data Belgium scored separately for Fr = French and Flem = Flemish districts

satisfaction ($r = .44$) at the country level. Neither economic inequality nor decommodification was significantly associated with victimisation at the country level.

Within each country, the frequency of being victimised was then correlated with each of the five health and social wellbeing variables. The direction of correlations was consistent (all negative) across all 5 measures and all countries, although varying in magnitude. These correlations, together with average victimisation as well as Gini index and decommodification index for each country, are shown in Table 3.

Testing the Healthy Context Paradox

We ran five multilevel models, one for each adjustment variable (Table 4). We included the random slope of victimisation predicting adjustment at the individual (within) level of the model and country-level victimisation, economic inequality (Gini index) and decommodification predicting adjustment at the country (between) level of the model. To test the healthy context paradox at the country level, the main focus of the present study, we included the cross-level interaction where the strength of the slope of victimisation on adjustment was predicted by country-level victimisation, economic inequality, and decommodification, in each model. These main findings are shown in the last three rows of Table 4.

Country-level victimisation was positively and significantly associated with the slopes of victimisation on peer support (friends to count on) and life satisfaction. This means that these (negative) slopes were less steep in countries with higher average victimisation. In other words, victimised individuals were less maladjusted in countries where the average level of victimisation was higher. These findings support the healthy context paradox phenomenon at the country level. For (not) feeling low, health, and school liking, such effects were not detected. In case of country economic inequality and decommodification, we did not find any significant cross-level interactions.

It is worth noting that decommodification had no significant country-level main effects on adjustment. Country economic inequality, on the other hand, had a small positive effect on health (so when there was more inequality, adolescents reported feeling healthier).

Sensitivity Analysis

As we had country-level victimisation data for 40 countries, but data on country economic inequality and decommodification only for 33 and 25 countries, it could be that finding more significant cross-level interaction effects for country-level victimisation as compared with the two other indices was due to increased power to detect such effects. We therefore ran the same models including only the 25 countries from where all country-level indices were available. The findings remained similar as they were with previous models, with three exceptions. First, the cross-level interaction between country-level victimisation and individual victimisation predicting peer support (friends to count on) was no longer significant. Second, country decommodification now explained variance in the slope of victimisation on life satisfaction. This effect was negative (suggesting that in countries with better social protection coverage, the negative effect of victimisation on life satisfaction was pronounced) and thus not in line with the HCP hypothesis. Third, the main effect of country decommodification on school liking was now significant.

Discussion

The present study was the first one to test the healthy context paradox (HCP) at the national or country level, in other words, whether victimised youth suffer more in "healthier" countries, where things are better on average. Our main interest was in country-level victimisation as a contextual factor affecting the association between victimisation and adjustment, but we also explored the possibility that other country-level indicators might moderate the effects of victimisation. Therefore, we included country inequality in wealth or income (as indicated by Gini index) and country-level social protection (decommodification index) as contextual predictors in our analyses.

We first confirmed the expected negative association between victimisation and health and well-being variables, both across the whole sample and within each country. As victimisation rates increased, students' health and social well-being outcomes worsened on all five measures that we used. This was as predicted, and replicates the findings reported by Nansel et al. (2004) on an earlier HBSC data set. Nevertheless, the very consistent pattern of findings across all 40 countries (Table 3), with no exceptions to the direction of effect, provides further strong evidence of the deleterious effects that experience of victimisation in school can have. Students victimised more frequently reported not being able to count on their friends, more often feeling low, having worse health, being less satisfied with their lives, and liking school less. Despite the fact that the associations were consistently negative, each one of them varied across countries.

The main focus of this study was to test whether the negative association between victimisation and adjustment is especially strong in lower victimisation countries, in comparison with higher victimisation countries. We found some support for HCP being applicable at the national level: country-level victimisation significantly predicted variation in two out of five victimisation-adjustment slopes: these were the slopes of victimisation on peer support (having friends to count on) and on life satisfaction. That is, victimised youth were especially likely to lack peer support and to report dissatisfaction with their lives in countries where the average victimisation level was low. Many previous studies on HCP at the classroom and school levels (e.g., Pan et al., 2021) have actually reported findings on very similar variables (e.g., friendship opportunities and depression).

Although the findings supporting HCP emerged specifically in the case of country-level victimisation, this was not at least entirely due to the fact that the number of countries with victimisation data ($n = 40$) was higher

Table 4 Standardized associations between victimisation and adjustment at the individual and country levels, followed by cross-level interaction effects indicating how country-level indices of victimisation, inequality, and decommodification affect the association between victimisation and each adjustment variable

	Outcome									
	Model 1: Friends to count on		Model 2: (Not) feeling low		Model 3: Health		Model 4: Life satisfaction		Model 5: Like school	
	Est. (post *SD*)	95% CI	Est. (post *SD*)	95% CI	Est. (post *SD*)	95% CI	Est. (post *SD*)	95% CI	Est. (post *SD*)	95% CI
Individual-level effects										
Victimisation	**−0.14(0.00)**	**−0.15, −0.13**	**−0.22(0.00)**	**−0.22, −0.21**	**−0.12(0.00)**	**−0.13, −0.12**	**−0.18(0.00)**	**−0.19, −0.18**	**−0.12(0.00)**	**−0.12, −0.11**
Country-level effects										
Country Vic	−0.33 (0.19)	−0.67, 0.08	0.06 (0.18)	−0.33, 0.39	**−0.47 (0.14)**	**−0.77, −0.14**	−0.27 (0.17)	−0.60, 0.07	−0.10 (0.18)	−0.51, 0.24
Country Ineq	0.03 (0.19)	−0.34, 0.41	0.08 (0.19)	−0.31, 0.44	**0.49 (0.19)**	**0.03, 0.89**	−0.01 (0.19)	−0.36, 0.36	−0.06 (0.17)	−0.40, 0.30
Country Decomm	0.26 (0.32)	−0.43, 0.77	−0.02 (0.19)	−0.34, 0.37	0.03 (0.20)	−0.60, 0.21	0.11 (0.19)	−0.28, 0.49	0.31 (0.20)	−0.10, 0.70
Cross-level interactions										
Victimisation X Country Vic	**0.59 (0.16)**	0.19, 0.84	0.32 (0.16)	−0.03, 0.62	0.21 (0.18)	−0.21, 0.53	**0.39 (0.14)**	**0.14, 0.62**	0.17 (0.16)	−0.21, 0.44
Victimisation X Country Ineq	−0.08 (0.18)	−0.42, 0.29	0.14 (0.20)	−0.27, 0.47	0.15 (0.18)	−0.23, 0.49	0.26 (0.17)	−0.14, 0.53	0.22 (0.21)	−0.19, 0.58
Victimisation X Country Decomm	−0.07 (0.24)	−0.51, 0.42	−0.21 (0.22)	−0.58, 0.26	−0.18 (0.23)	−0.60, 0.21	−0.42 (0.20)	−0.76, 0.05	−0.08 (0.25)	−0.52, 0.41

The effects were tested separately for each adjustment outcome (five models altogether), including all three country-level indices as independent variables in each model

Significant effects are bolded (95% CI does not include 0)

N = 198646

than those with data on economic inequality ($n = 33$) and decommodification ($n = 25$). When we re-ran our analysis with the 25 countries for which all relevant data was available, one of two significant interaction effects became non-significant. Still, the only evidence for HCP at the national level was obtained for country-level victimisation, and not for country economic inequality or decommodification.

How might country-level victimisation level influence the adjustment of individuals, who experience victimisation themselves? The effects could be mediated by victimised individuals' awareness of how common victimisation is in the larger (national) context. Such an awareness that there are others sharing one's plight as a victim could be a result of discussion of the topic in the media, at school, or in the families. When victimized children realize that they are not the only ones targeted by peers' aggression, they are less likely to make internal attributions (i.e., blame themselves for the situation). Specifically, they may be less likely to engage in characterological self-blame (Morrow et al., 2019; see also Graham & Juvonen, 1998) when trying to make sense of their situation – an attributional style which is associated with internalizing problems and therefore considered especially detrimental.

It is possible that the effects of country-level victimisation are mediated by school- or class-room level victimisation. In countries with a higher prevalence of victimisation, it is more likely that the level of victimisation is also higher in one's own school or class. In the latter case, the more proximal context (school, classroom) would actually be 'the context that matters' for the link between victimisation and adjustment. Whether either, or both of these mechanisms (or some other mediators) explain HCP at the country level need further investigation.

Due to some limitations, the results of the present study need to be interpreted with caution. One limitation to consider is the fact that all the data collected in the HBSC study was via self-report questionnaires. Self-reports are useful at providing a unique subjective perspective of each outcome variable, which it said to be particularly useful when assessing victimisation (Bouman et al., 2012). However, using both self-report and peer-report measures may be beneficial as they are distinct measures which represent two different perspectives and each highlight different child characteristics involved in bullying. Bouman et al. (2012) found peer reports had noticeably stronger associations with social maladjustment than self-reports. Nonetheless, peer nomination data might be unlikely to provide more support for the HCP approach; Xiong et al. (2022) used both peer-reported victimisation and self-reported victimisation to assess whether the HCP was applicable at the classroom-level, and found support using self-reported victimisation, but not for peer-nominated victimisation.

Another limitation may lie in the choice of outcome measures. The present study focused on selected health and social well-being variables as available from the HBSC survey. These were assessed by brief, single-item questions. More thorough and direct measures assessing psychological adjustment such as the Beck Depression Inventory (BDI) and Fear of Negative Evaluation Scale, used by Garandeau et al. (2018) to assess depressive symptoms and social anxiety, or the Children's Depression Inventory (Kovacs, 2015) and the Spence Children's Anxiety Scale (SCAS) (Orgiles et al., 2016), might yield different findings.

Another limitation is that HBSC is only one source of cross-national differences in victimisation rates. By contrast Tuttle et al. (2022) used data from PISA. There are other such data sources including Trends in International Mathematics and Science Study (TIMSS), Global School Health Survey (GSHS), and EU Kids Online. Unfortunately, consistency of country differences in victimisation rates across these different surveys is quite limited (Smith et al., 2016; Smith & López-Castro, 2017). Replication studies using different data sets from HBSC may reveal different results.

Implications for Research and Practice

A possible avenue to investigate further is the HCP at an intermediate level, for example city-level or county-level. For example, Eckenrode et al. (2014) investigated the relationship between county-level income equality and rates of child maltreatment in the USA. Counties with higher income inequality had higher rates of child maltreatment. In the UK, a sophisticated quantitative analysis (Denti, 2021) was reported of data from 110,788 pupils in England aged 15 years, on health and wellbeing, including bullying victimisation. The data could be analysed by the 150 English Upper Tier Local Authorities (UTLAs), to show regional distribution of victimisation rates across England. Victimisation rates generally were higher in areas of more immigration from the 8 enlarged EU countries between 2004 and 2014, but only in those UTLAs where British white students were the majority of the secondary school population. It was also found that local poverty promoted a solidarity effect among deprived pupils, with reduced victimisation, whereas greater spatial income polarization (variation in the distribution of income across neighbourhoods within the same UTLA) increased the odds of school bullying. Such findings suggest that is it possible to observe significant associations at a county or local authority level. It may be of interest for future research to explore whether the healthy context paradox is applicable at these levels between classroom and school on the one hand, and country at the other.

Regarding practical implications, it is important to keep in mind that average levels of victimisation are not all that

matter. Anti-bullying work is needed also in countries that have achieved relatively low prevalence of victimisation, because in such contexts the harmful consequences may be especially severe. Another message is that in addition to preventative work, evidence-based guidelines are needed for intervening in bullying cases that emerged despite prevention efforts. A safe learning environment is every child's right.

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Data Availability Data is available from the third author.

Declarations

Ethical Approval This study uses secondary data analysis of publicly available data. HBSC data gathering followed appropriate ethical guidelines including informed consent.

Conflict of Interest The authors declare that they have no conflicts of interest.

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