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ORIGINAL ARTICLE

How Does Individualism-Collectivism Relate to Bullying Victimisation?

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Abstract
Large-scale surveys have pointed to considerable country variations in the prevalence and nature of bullying victimisation. In seeking to explain these, one possible explanatory factor has been the cultural values of a country, such as expounded by (Hofstede 1980; Hofstede et al. 2010). Of his six dimensions of cultural values, the most investigated in relation to aggression and bullying has been that of individualism-collectivism (IDV). The theoretical background and several empirical studies have suggested more aggression in individualist societies, but the evidence has been mixed and often based on small samples. Here, we investigate how the prevalence of victimisation in different countries relates to IDV. We also examine predictions about the proportion of bullying which is relational and the ratio of bullies to victims. We primarily used the Health Behaviour in School-aged Children surveys, available at 3 age groups and over six time points. We also use data from 4 other surveys where appropriate. The overall findings are for less victimisation in individualist societies, but only in more recent years; some support for a greater proportion of relational victimisation in individualist societies and a higher ratio of bullies to victims in collectivist societies. The findings are discussed in relation to other factors, and a hypothesis is advanced that regulatory frameworks and resources have reduced victimisation primarily in more individualist societies in the last two decades.

Keywords Bully · Victim · Individualism · Collectivism · Culture

Introduction

The study of school bullying has become an international endeavour over the last 20 years (Jimerson et al. 2010). As part of the increasing research activity, it has become apparent that there are differences in the prevalence and nature of school bullying, or bullying-like phenomena, in different countries (Migliaccio and Raskauskas 2015; Smith et al. 2016a). This is clear from data available from large-scale surveys of many countries, which use the same methodology in each country. Five such surveys have collected large amounts of data from many countries, on various topics but including self-report data for being a victim of bullying. These are (1) Health Behaviour in School-aged Children (HBSC) survey, (2) EU Kids Online (EUKO), (3) Global School Health Survey (GSHS), (4) Trends in International Mathematics and Science Study (TIMSS), and (5) Programme for International Student Assessment (PISA). All these surveys report substantial country variation in rates of being a victim of bullying and for HBSC, rates of bullying others.

These surveys provide the possibility of making cross-national comparisons and statistically relating these to country-level variables. However, the cross-country agreement between these five surveys is rather limited (Smith et al. 2016; Smith and López-Castro 2017). This suggests that where possible, agreement across several survey sources would be more convincing for correlates of cross-national differences.

Explanations for cross-national differences can be sought in a number of areas (Smith et al. 2018). A model coming from the EU Kids Online project (Livingstone et al. 2011) suggested five country factors of importance: cultural values (e.g. individualism vs. collectivism, power distance), education system (e.g. levels by age, grade retention, class groupings, school and class size, structure of school day, break times, and supervision); technological infrastructure (e.g. penetration of mobile phones, smart phones, and Internet); regulatory framework (e.g. school policies, legal aspects, anti-bullying initiatives); and socioeconomic stratification (e.g., income, inequality, health, crime).

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The first of these, cultural values, has been one area of considerable research, some on bullying and some more generally on aggression. Most of this research has used the framework initially provided by Hofstede (1980). In this article, we examine his individualism-collectivism dimension in relation to aspects of victimisation in school.

Hofstede Dimensions

Hofstede (Hofstede 1980; Hofstede et al. 2010) developed a theory of cultural values as a means of explaining many behavioural differences found between countries. Although originally put forward in 1980 (Hofstede 1980), six subsequent cross-national studies have been carried out between 1990 and 2002. In the latest version, there are six dimensions: power/distance (PDI), individualism/collectivism (IDV), masculinity/femininity (MAS), uncertainty/avoidance (UAI), long-term/short-term orientation (LTO), and indulgence/restraint (IVR). By far, the most research in the area of bullying and victimisation has been on the individualism-collectivism dimension, IDV (sometimes referred to as I/C). Individualism refers to societies with loose ties, where individuals are expected to look after themselves and immediate family, whereas in collectivism, people are integrated from birth onward into strong cohesive in-groups which protect them in exchange for loyalty to the group. Western countries generally score high on IDV, the highest including the USA, Australia, Great Britain, and Canada; many Asian and South American countries score low on IDV (high on collectivism), for example, Guatemala, Ecuador, Pakistan, and Indonesia.

Theoretical Aspects and Prior Research

IDV and the Prevalence of Victimisation

Hofstede et al. (2010) list one characteristic of collectivist societies as being that 'harmony should always be maintained and direct confrontations avoided' (p. 113). Several theorists have therefore suggested that individualism could be expected to relate to higher levels of aggression than collectivism. Bergeron and Schneider (2005) argued that 'Members of individualistic cultures may be more likely to use aggression because this may facilitate the achievement of their individual goals. The use of aggression in cultures in which individuals conceive of themselves as embedded in the group may be less likely, because such behaviour would decrease harmony in the group and would not be of benefit to the collectivity' (op cit., p. 120). Bergeron and Schneider (2005) examined 36 studies that compared countries on prevalence of aggression, and related this to the four Hofstede dimensions available at the time: IDV, PDI, UAI, and MAS. Altogether, 23 countries were entered into comparisons, but most studies just compared two countries. Although UAI and PDI yielded stronger associations, higher IDV was significantly associated with higher rates of aggression.

A similar view concerning IDV was expressed by Ji et al. (2016), who wrote that 'Within a collectivistic culture with tight social norms … maintaining social harmony and positive interpersonal relationships is emphasized. As a result, behaviors that threaten the well-being of others and the group, such as aggression, are strictly forbidden, and during socialization children are taught to control their frustration, anger and impulsive and defiant behaviors from the early years …' (op cit., p. 171). In support of this, they found higher rates of bullying in England (individualist) than in Mainland China (collectivist).

However, a different finding was hinted at by Migliaccio and Raskauskas (2015), who gave a table of international comparisons of 28 countries, based on HBSC survey data from 2002. No formal statistics were calculated, but they commented that 'collectivist countries included were among the highest rates of bullying' (op cit., p. 34).

In fact, HBSC data is available at 4 yearly intervals from 1994, providing six time periods up to 2014, and for 3 age groups (11, 13, and 15 years). Although the predominant hypothesis from theoretical considerations is for higher victimisation in high IDV societies, our first aim was to examine this systematically with HBSC data at different time periods and ages. We did not hypothesise different findings at different time periods; although cultural values do change, this process is thought to be relatively slow—'Value system changes require generations' (Hofstede et al. 2010, p. 456). Also, given very high consistency of country differences in victimisation rates by age, previously found in HBSC surveys (Smith et al. 2016), we did not hypothesise differences in correlations of IDV with victimisation, across countries, by age. Nevertheless, we considered these worth examining. We could also use more limited data from the other four surveys (EUKO, GSHS, TIMSS, PISA) as cross-validation of findings from HSBC.

IDV and the Proportion of Relational Victimisation

Three different predictions have been made about IDV and types of victimisation and in particular for the likelihood of relational victimisation. This term includes both direct social exclusion (not letting someone play with you) and indirect forms (such as spreading lies or nasty rumours or persuading others not to be friends with you).

Smith et al. (2016b) argued that 'collectivism would imply less conflict within the ingroup; however if there is conflict, then shaming and social exclusion would be powerful weapons to hurt someone or make them conform. A more collectivistic culture implies a greater possibility of concerted whole-group (e.g. whole-class) norms emerging, which could at times be aggressive – thus the possibility of severe whole-

class aggression and shunning of a victim. Thus, higher collectivism scores might predict lower bullying scores, but more emphasis on social exclusion when bullying occurs' (op cit., p. 409).

This prediction is for *relatively* less social exclusion types of victimisation in high IDV countries. A similar hypothesis was termed a 'differential reinforcement hypothesis' by Forbes et al. (2009), namely that in collectivist societies, the inhibition of direct aggression would lead to relatively more indirect aggression. They contrasted this with what they called a 'parallel forms hypothesis', namely that both kinds of aggression are treated the same—so there is no relation to IDV. They compared rates of direct (physical and verbal) and indirect (spreading rumours, social exclusion) aggression in the USA (a high IDV society), Poland (moderate IDV society), and China (least IDV society). As predicted for overall prevalence, rates of aggression were highest in the USA, intermediate in Poland, and lowest in China. However, this was true for both direct and indirect aggressions, giving support to the parallel forms hypothesis and not the differential reinforcement hypothesis. Similarly, a study within China by Li et al. (2010), considering endorsement of collectivism by Chinese adolescents, linked this to less use of both overt (direct) and relational (mainly indirect) aggressions.

Lansford et al. (2012) used data from the Parenting Across Cultures project to compared rates of physical and relational aggression in nine countries. Although the IDV dimension was not addressed, a statistical analysis that we carried out on their data for the 7 countries with Hofstede IDV scores available gave a correlation across countries of 0.42 for prevalence of physical aggression and − 0.12 for relational aggression, both non-significant, but lending modest support to the differential reinforcement hypothesis.

A more ambitious cross-national study by Bergmuller (2013) compared 62 countries, using TIMSS 2007 data (grades 4 and 8) for head teacher reports of physical and verbal aggression in schools and student reports of physical and verbal aggression and social exclusion. Bergmuller found that head teacher reports for both physical and verbal aggressions were higher in more IDV societies. However, this did not hold true for student reports of physical, verbal, or relational (social exclusion) aggression; none of these were significantly related to IDV scores, although trends were for slightly higher physical and verbal victimisation in collectivist countries.

A third hypothesis was proposed by Pfundmair et al. (2015), namely that persons in individualistic societies might be *more* affected by social exclusion, precisely because they experience it at an individual level; they argued that in collectivistic societies, 'the individual self, separate from others, is not a core aspect of self-integrity, and is therefore less guarded by highly sensitive reactions to individual social exclusion' (p. 593). In support of their argument, studies that they carried out with undergraduates and young adults showed that those from Turkey, China, and India (more collectivist countries) were less affected by social exclusion than those from Germany (more individualist country). However, we know that social exclusion is particularly salient for adolescents (Sebastian et al. 2010), so an investigation on that age group would be most relevant for considering the evidence regarding school bullying.

In sum, there are three contrasting predictions regarding the relative weighting of relational victimisation (as a fraction of total victimisation) in relation to country IDV scores. The 'differential reinforcement hypothesis' predicts a negative correlation with IDV scores, the 'parallel forms hypothesis' suggests a near-zero correlation, and the hypothesis from Pfundmair et al. (2015) predicts a positive correlation with country IDV. Although HBSC do not provide data by types of victimisation, relevant data is available from GSHS, TIMSS, and PISA, to test these different predictions.

IDV and Ratio of Bullies to Victims

Another prediction discussed by Smith et al. (2016b) was that 'a greater ratio of bullies to victims, found in South Korea and Japan as compared to western countries, could be explained in terms of collectivism' (p. 411). Here bully:victim ratio refers to the prevalence of bullying others divided by the prevalence of being bullied. This prediction emerged from research in South Korea (Koo et al. 2008), where the predominant form of bullying, called *wang-ta*, showed a bully:victim ratio of 1.76. Similarly in Japan (Morita et al. 1999), *ijime* had a bully:victim ratio of 1.33. This compared with ratios of less than one in many western countries. However, contrary to this hypothesis, ratios were also less than one in China and Hong Kong, despite these being more collectivist than in Japan (though less so than in South Korea).

HBSC publish data on rates of bullying others, as well as rates of being bullied. It is therefore possible to test systematically the prediction that bully:victim ratio will correlate negatively with IDV (i.e. the ratio will be higher in collectivist societies).

Aims

More evidence is needed for testing these three sets of hypotheses regarding IDV scores and victimisation, in different countries. Many studies have just compared one or a few countries. The studies by Bergmuller (2013) and Migliaccio and Raskauskas (2015) covered many countries, but only used one survey source (TIMSS and HBSC, respectively) and only at one time point. Given that there are five survey sources available, it is appropriate to use all the available surveys, especially as cross-survey agreement on country differences in bullying is quite modest (Smith et al. 2016). Where possible, consistent findings from different surveys would provide stronger validation of any findings.

Our aims were therefore to test the following:

(1) The prediction that countries high in IDV would have more victimisation, consistent across time periods and ages; here, we used HBSC data. More limited data was available from EUKO, GSHS, TIMSS, and PISA, to check for cross-survey consistency.
(2) Whether countries high in IDV would have relatively less relational victimisation as a proportion of total victimisation, or relatively more, or whether the relationship would be small and non-significant (the three existing hypotheses reviewed above). This could be tested with items from GSHS, TIMSS, and PISA.
(3) Whether countries high in IDV would have a lower ratio of bullies to victims, as suggested by Smith et al. (2016b). Here again, we used HBSC data and calculated the ratio of bully-to-victim prevalence scores by country. These scores were available for six time periods and three ages, but we did not have any prior predictions for any variation by time period or age, for this ratio.

Method

The data on individualism/collectivism (IDV) is taken from Hofstede et al. (2010), checking with the website (www.geerthofstede.nl/). Scores are potentially within the range 1 to 120. We used data from 75 countries, with actual IDV scores ranging from 91 (highest: USA) to 6 (lowest: Guatemala).

The five surveys on victim data, all using pupil self-report on large samples, are:

Health Behaviour in School-aged Children (HBSC) (www.hbsc.org), a World Health Organisation study, gathers data every 4 years in about 42 countries, mainly from Europe and North America. Sample size is a minimum of 1500 per country. Surveys started in 1994 with data currently available up to 2014. Data is provided separately for 11-, 13-, and 15-year-olds. An Olweus-type definition of bullying is given (see Olweus 1996, 2013). In response to 'How often have you been bullied at school in the past couple of months?', we took the proportion of pupils who reported being bullied '2 or 3 times a month' or more (for the earliest, 1994 and 1998, surveys, the figures available are for 'once a month' or more). HBSC also gives similar data for bullying others, and we used the ratio of bullying others to being bullied, to give bully:victim ratio.
EU Kids Online (EUKO) (www.eukidsonline.net) gathered data in 2010 from 25 European countries, from children aged 9 to 16 years who use the Internet. Sample size is 1000 per country. Unlike the other four surveys, data was gathered from face-to-face interviews. The definition of bullying given includes repetition but not imbalance of power. In response to 'Has someone acted in this kind of hurtful or nasty way to you in the past 12 months?, we took the proportion of pupils who reported being bullied overall (online and offline), once or twice a month or more.
Global School Health Survey (GSHS) (www.who.int/chp/gshs/factsheets/en/index.html) is affiliated to WHO and focuses on low- and middle-income countries. Data collection is carried out among approximately 79 participating countries, with the year of data collection varying by country, gathering data from 11- to 18-year-olds. Sample size is around 2000 per country. We used the most recent survey (these were from 2003 to 2015) and national data (where national data was not available, for China, Colombia, Ecuador, and Venezuela, we averaged the available regional scores). An Olweus-type definition of bullying is given (Olweus 1996, 2013). In response to 'During the past 30 days, on how many days were you bullied?', we took the proportion of pupils being bullied '1 or 2 days' or more in the last 30 days.

A second question (missing for Bangladesh and Morocco) asked about experiences of 7 types of victimisation, one of which was relational: 'I was left out of activities on purpose or completely ignored' (the other types being physical and direct verbal). For proportion of relational bullying, we took the ratio of this type of victimisation, to all types, on that question.
Trends in International Mathematics and Science Study (TIMSS) (https://timssandpirls.bc.edu/timss2011/international-database.html; http://timssandpirls.bc.edu/timss2015/international-database/) provides international comparative assessments of student achievement in mathematics and science, also including school safety and bullying, every 4 years in about 63 countries, both developed and developing. Data is gathered from both fourth graders and eighth graders. Sample size is 5000–6000 per country. Although TIMSS reports started in 1995, the 1995 and 1999 reports do not contain items on bullying comparable with later surveys. The 2003 and 2007 surveys report data on 5 items, but do not provide scale scores. We use the 2011 and 2015 data sets, which are comparable with each other (based on 6 items, or 7 items for the 2015 data on eighth graders). No definition of bullying is given. We took the scale scores as reported, based on aggregated frequency of these types of bullying in response to 'During this year, how often have any of the following things happened to you at school?' As a larger scale score implies less victimisation here, we have reversed the correlations so they are comparable with data from the other surveys.

From the 2015 data, we were also able to obtain separate measures of relational victimisation, for both grades 4 and 8, for 3 items: 'left me out of their games or

activities', 'spread lies about me', and 'shared embarrassing information about me' (the other items being verbal and physical). For grade 8 only, there was an additional item 'posted embarrassing things about me online'. We took the proportion of each of these items ever happening ('a few times a year or more') out of those ever experiencing any kind of victimisation.

Program for International Student Assessment (PISA) (https://nces.ed.gov/surveys/pisa/) organised by the OECD measures students' reading, mathematics, and science literacy. We use the most recent PISA results from 2015, covering 52 countries, with an average sample of 7500 pupils per country. This survey includes pupil reports of being a victim of bullying. No definition of bullying is given. In response to 'During the past 12 months, how often did you have the following experiences at school?', we used two measures for prevalence provided. One is the percentage of pupils who have been bullied by any of eight types of victimisation at least a few times a month, over the past 12 months, labelled 'any type of bullying act' in the PISA tables (OECD 2017, p. 17). The second measure is an 'index of exposure' score, based on the 6 types of bullying experience which were found to be most reliable in internal analyses (including confirmatory factor analysis); it excludes 'I got called names by other students' and 'I got picked on by other students', which did not load well onto a unidimensional construct and did not correlate strongly with the other six items.

Two of the types of victimisation are relational: 'other students left me out of things on purpose' and 'other students spread nasty rumours about me' (the other types being physical and direct verbal). For proportion of relational bullying, we took separate measures of the ratio of these two types of bullying, to all 8 types ('any type of bullying act' above).

All the data used is readily available in publications (Livingstone et al. 2011; Currie et al. 2012; GSHS survey results 2018; Inchley et al. 2016; Mullis et al. 2012; OECD 2017) and on the survey websites.

Countries Examined

In some cases, the country data available from Hofstede does not correspond clearly to countries in some of the surveys. There are separate IDV scores available for Belgium (Flemish) and Belgium (French), of 78 and 72, respectively. TIMSS only has Belgium (Flemish) and PISA just has Belgium. Where only Belgium data is available, we took an average IDV value of 75. For Switzerland, there are separate IDV scores available for Switzerland (German) and Switzerland (French), of 69 and 64, respectively. We took an average value of 66.5 to compare with data from HBSC, EUKO, and PISA which only have data for Switzerland. Finally, Hofstede has an IDV score for Great Britain. We compared this with England scores for HBSC (ignoring separate scores for Scotland and Wales, on the basis that England provides 87% of the Great Britain population), England scores for TIMSS (ignoring separate scores for Northern Ireland, which is part of the UK but not part of Great Britain), and with UK scores from EUKO and PISA (England provides 84% of the UK population).

We used correlational and regression analyses with SPSS version 23.

Results

Does IDV Predict Higher Rates of Victimisation?

The correlations of IDV with victimisation scores, from HBSC at six time points and 3 ages, are shown in Table 1(a). It is clear that there is no straightforward answer as to whether the correlations are positive or negative. Instead, there is a distinct temporal shift, demonstrated in Fig. 1. The correlations from the two earliest time periods, 1994 and 1998, are all positive, one being significant at $p < 0.05$. For 2002, the correlations are very small (two positive, one negative). For 2006, the correlations are higher, now two negative (one significant at $p < 0.05$) and one positive. For 2010, all are negative, one significant at $p < 0.01$. Finally, for 2014, all three are substantial and negative, all significant at $p < 0.01$.

Thus, the HBSC data show a change over survey periods, with the correlations changing from positive before 2000 to mixed but near-zero values in 2002 and becoming steadily more negative from 2006 onwards. The linear regressions of the correlation coefficient values against time are highly significant at each age: for 11-year-olds, $\beta = -0.977$, $p < 0.001$; 13-year-olds, $\beta = -0.993$, $p < 0.0001$; 15-year-olds, $\beta = -0.934$, $p < 0.01$.

Age differences are also clear in the data; at each of the six survey periods, the 15-year-olds have the most positive (or least negative) correlations. On sign tests, correlation coefficients at 15 years are consistently higher than at 13 years, $p < 0.05$, and at 11 years, both $z = 2.45$, $p < 0.05$; the difference between 13 and 11 years is not significant, $z = 1.63$, $p = 0.102$.

Table 2 shows the correlations of IDV scores with victim prevalence from EUKO, GSHS, TIMSS (two grades, two survey points), and PISA (two measures). Of the eight correlations, six are negative, one of these being significant at $p < 0.05$, suggesting lower incidence of victimisation in high IDV countries. The two positive correlations are both very small. All these surveys come from the post-2002 period; thus, these negative correlations provide some validation for the negative correlations found from HBSC data in this more recent time period.

Table 1 Correlations of IDV with (a) victim rates and (b) ratio of bullies to victims, from HBSC (1994, 1998, 2002, 2006, 2010, 2014; ages 11, 13, and 15) (*n* number of countries in the correlation)

Correlation with individualism (IDV)	(a) Victim rates	(b) Ratio bullies:victims
HBSC 1994 victim age 11 ($n = 21$)	0.219	− 0.323
HBSC 1994 victim age 13 ($n = 21$)	0.323	− 0.311
HBSC 1994 victim age 15 ($n = 21$)	0.452*	− 0.280
HBSC 1998 victim age 11 ($n = 25$)	0.079	− 0.131
HBSC 1998 victim age 13 ($n = 25$)	0.193	− 0.162
HBSC 1998 victim age 15 ($n = 25$)	0.346	− 0.199
HBSC 2002 victim age 11 ($n = 30$)	− 0.040	− 0.057
HBSC 2002 victim age 13 ($n = 30$)	0.048	− 0.037
HBSC 2002 victim age 15 ($n = 30$)	0.091	0.064
HBSC 2006 victim age 11 ($n = 33$)	− 0.386*	− 0.225
HBSC 2006 victim age 13 ($n = 33$)	− 0.213	− 0.332
HBSC 2006 victim age 15 ($n = 33$)	0.169	− 0.336
HBSC 2010 victim age 11 ($n = 31$)	− 0.563**	0.026
HBSC 2010 victim age 13 ($n = 31$)	− 0.329	− 0.147
HBSC 2010 victim age 15 ($n = 31$)	− 0.058	− 0.139
HBSC 2014 victim age 11 ($n = 33$)	− 0.585**	− 0.020
HBSC 2014 victim age 13 ($n = 33$)	− 0.600**	− 0.080
HBSC 2014 victim age 15 ($n = 33$)	− 0.480**	− 0.050

*$p < 0.05$, **$p < 0.01$

Does IDV Predict Relatively Less (or More) Relational Victimisation

We could test this for data from GSHS (one item), TIMSS (3 items for fourth grade, 4 items for eighth grade), and PISA (2 items). The correlations are shown in Table 3. Negative correlations would support the differential reinforcement hypothesis, and near-zero correlations would support the parallel forms hypothesis, while positive correlations would support the hypothesis of Pfundmair et al. (2015).

Of the nine correlations, eight are positive, this being significant at $p < 0.05$ on a sign test. However, the correlations from GSHS and PISA are all very small. The correlations from TIMSS are consistently positive and reach significance for the item 'left me out of their games or activities', at both grade 4 and grade 8.

Does IDV Predict a Lower Ratio of Bullies to Victims?

This was tested using HBSC data, over six time periods and for three age groups at each survey point (see Table 1(b)). Negative correlations would indicate lower bully:victim ratio in individualist societies. Out of 18 correlations, 16 are negative. Although none are individually statistically significant, the proportion of 16 out of 18 is significant at $p < 0.01$ on a

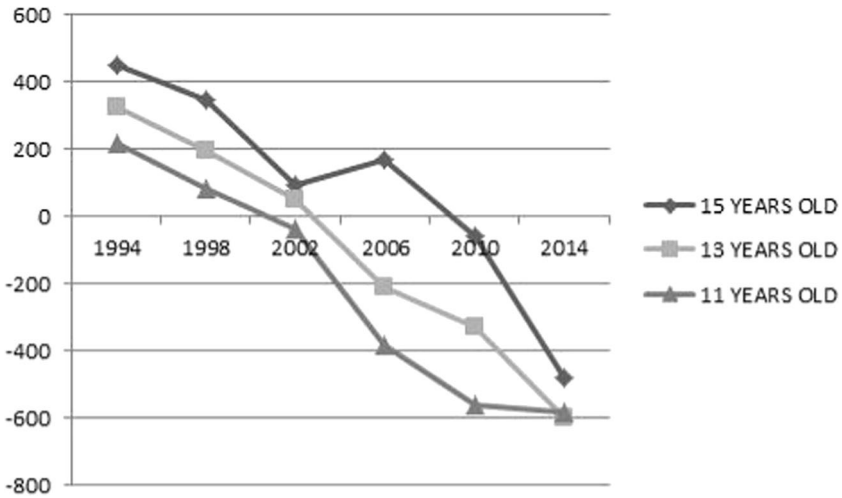

Fig. 1 Correlations of IDV with victim rates from HBSC over six time periods, at ages 11, 13, and 15 years

Table 2 Correlations of IDV with victim rates from EUKO, GSHS, PISA (2 measures), and TIMSS (2011 and 2015; grades 4 and 8) (*n* number of countries in the correlation)

	Correlation with individualism (IDV)
EUKO 2010 (overall victims) ($n = 26$)	− 0.012
GSHS 2003–2015 (percentage bullied on one or more days during the past 30 days) ($n = 23$)	− 0.040
TIMSS 2011 victim mean grade 4 ($n = 36$)	− 0.172
TIMSS 2011 victim mean grade 8 ($n = 25$)	− 0.449*
TIMSS 2015 victim mean grade 4 ($n = 38$)	0.053
TIMSS 2015 victim mean grade 8 ($n = 26$)	− 0.175
PISA 2016 (being bullied at least a few times a month) ($n = 46$)	− 0.193
PISA 2016 (index of exposure to bullying) ($n = 45$)	0.005

*$p < 0.05$

sign test. Thus, the prediction originally proposed by Smith et al. (2016b) has modest support. There are no clear temporal trends; the linear regressions of the correlation coefficient values against time are non-significant at each age: for 11-year-olds, $\beta = -0.734$, $p = 0.097$; 13-year-olds, $\beta = -0.403$, $p = 0.428$; 15-year-olds, $\beta = -0.336$, $p = 0.515$.

Discussion

Our study set out to examine three hypotheses about how the individualism/collectivism (IDV) dimension might be related to country differences in victimisation—first, in terms of prevalence; second, in terms of the proportion of victimisation that is relational; and third, in terms of the ratio of bullies to victims. Previous studies had compared just two or a small number of countries or had used just one of the several cross-national data sources available, at one time point. Here, we used five such large-scale surveys. We looked for consistency across survey findings and time periods, as much as statistical significance of any individual result, in effect taking the different surveys as constructive replications (Lykken 1968).

The Prevalence of Victimisation Here, the dominant hypothesis has been that rates of victimisation would be higher in individualist societies, due to the inhibition of conflict (at least, within-group conflict) in collectivist societies. This hypothesis, at least as simply stated, was not confirmed. The picture from HBSC data is complex and intriguing. Of 18 correlations, nine are positive (one significant) and nine are negative (five significant). However, the trend over time is very clear: all the 1994 and 1998 correlations are positive; all the 2010 and 2014 correlations are negative. Those from 2002 and 2006 suggest a swing from positive to negative correlations. These linear trends are highly significant for each age group. In addition, there are age differences, with 15-year-olds having significantly more positive or less negative correlations than the 11- and 13-year-olds.

The data shown in Table 2 from the other four surveys all come from post-2002 data and give a similar picture of mainly negative correlations, including the only significant

Table 3 Correlations of IDV with social exclusion and relational victim rates as proportion of total victimisation, from GSHS, TIMSS, and PISA (*n* number of countries in the correlation)

	Correlation with individualism (IDV)
GSHS (I was left out of activities on purpose or completely ignored/total victimisation) ($n = 21$)	− 0.026
TIMSS 2015 fourth grade (left me out of their games or activities) ($n = 37$)	0.462**
TIMSS 2015 eighth grade (left me out of their games or activities) ($n = 26$)	0.434*
TIMSS 2015 fourth grade (spread lies about me) ($n = 37$)	0.220
TIMSS 2015 eighth grade (spread lies about me) ($n = 26$)	0.169
TIMSS 2015 fourth grade (shared embarrassing information about me) ($n = 37$)	0.218
TIMSS 2015 eighth grade (shared embarrassing information about me) ($n = 26$)	0.206
TIMSS 2015 eighth grade (posted embarrassing things about me online) ($n = 26$)	0.260
PISA (other students left me out/total victimisation) ($n = 43$)	0.133
PISA (students spread nasty rumours/total victimisation) ($n = 43$)	0.041

*$p < 0.05$, **$p < 0.01$

correlation. Although the individual correlations are often small, those from EUKO, GSHS, and TIMSS (for three out of four correlations, one significant) are negative. PISA has a negative correlation for the overall prevalence measure and a very small positive correlation with the index score. Overall, these findings provide some confirmation of lower victimisation rates in high IDV societies, in this century.

What might explain these findings? A first methodological point is that in the 1994 and 1998 HBSC surveys, victimisation figures included being victimised just once, whereas the later surveys only included being victimised two or three times or more (in the past couple of months). However, there is no obvious reason why this would affect the correlations with IDV across countries. Furthermore, the picture from Fig. 1 is of a continuous gradual transition, rather than an abrupt one at the 1998/2002 transition.

Another consideration is the change in coverage of countries over the different surveys. The earlier surveys had somewhat fewer countries (21, 25) contributing to the analysis, than the later ones (30+). Again however, this would suggest an abrupt change at the 1998/2002 boundary; from 2002 onwards, there is little change in the countries involved.

We hypothesise another explanation for the trend in Fig. 1. Previously, we (Smith et al. 2018) have suggested the use of the EU Kids Online five-factor model as a useful explanatory framework for country differences. The five factors are cultural values, education system, technological infrastructure, regulatory framework, and socioeconomic stratification. Of these, we suggest that regulatory framework is a likely candidate to help explain the trends observed.

Regulatory framework in this context would refer to laws about bullying, requirements or expectations about school policies, resources for teachers, and implementation of anti-bullying programs or interventions. We know that publications on bullying and victimisation have increased enormously over the last decade (Zych et al. 2015; Volk et al. 2017; Smith and Berkkun 2019). Furthermore, the great majority of these articles have come from Europe, North America, and Australasia (Zych et al. 2015; Smith and Berkkun 2019). This research has led to many practical initiatives in these countries—including legal measures, resources for schools, and intervention programs (Smith 2017). These have predominately been in the western, more individualistic, countries where the most research has been carried out. There has been much less research in many more collectivist countries in South America, Africa, and Asia. Although not well-documented, this very probably translates into fewer anti-bullying resources and interventions, in such countries. For example, this was explicitly demonstrated for the South-east Asian (ASEAN) countries in a review by Sittichai and Smith (2015). A review of 79 studies of school bullying prevention programs, by Gaffney et al. (2019a), found only 13 were from low IDV countries (Brazil, China, Cyprus, Hong Kong, Malaysia, Romania, Turkey, Zambia). Similarly, a review of 24 studies on cyberbullying prevention programs by Gaffney et al. (2019b) found only 2 (Cyprus, Greece) came from low IDV countries.

We therefore suggest as a hypothesis that (a) historically, victimisation rates were higher in individualist societies, for the reasons proposed by many theorists, namely that collectivist societies value harmony in the group and strongly discourage within group conflicts; but that (b) over the last two decades, and most especially in the last decade, the more individualistic societies (in Europe, North America, and Australasia) have pursued a human rights agenda (Greene 2006) which, among other aspects, has built on the volume of research on school bullying in ways that have reduced the prevalence of victimisation. These ways have included legal measures against bullying (Butler et al. 2009), schools being required to have anti-bullying policies (Samara and Smith 2008), more resources for teachers, and the implementation of whole-school intervention programs. We know that on average, anti-bullying programs do reduce victimisation levels (Gaffney et al. 2019a, b). There is evidence for a fall in victim rates in many (predominately high IDV) countries (Rigby and Smith 2011) including the USA (Waasdorp et al. 2017).

This hypothesis could be tested further by making more accurate assessments of the extent of regulatory framework activities in different countries, how these have changed over time, and relating these together with IDV scores to victimisation rates. A specific prediction would be that as more resources and interventions are developed in non-western, more collectivist, societies, the correlations of IDV with victimisation rates would become less negative than they are at present.

It is not clear that this hypothesis throws any light on the age differences in Fig. 1. There is evidence that anti-bullying interventions have more success at younger age ranges (Yeager et al. 2015); thus, the impact of regulatory framework activities could be predicted to be greatest at 11 years and least at 15 years. This would predict a difference in slope for the three age groups in Fig. 1. However, this is not what is found; Fig. 1 shows that 15-year-olds have higher correlations of IDV with victimisation rates, than 13- or 11-year-olds. In other words, the theoretical prediction of higher victimisation rates in high IDV societies applies more to 15-year-olds, than to 13- and 11-year-olds. This suggests an age trend common to different countries and historical periods, which may reflect greater adherence to cultural norms (here, of IDV) in the mid-adolescent period (Knoll et al. 2015).

The Proportion of Relational Victimisation Here, the differential reinforcement hypothesis has been that relational forms of victimisation, such as social exclusion and rumour spreading, would relatively (as a proportion of all victimisation) be more frequent in collectivist societies. Social exclusion would seem

to be a very effective way to hurt someone, in a collectivist society. However, Forbes et al. (2009) suggested an alternative parallel forms hypothesis that all forms of victimisation correlate together highly and covary, while Pfundmair et al. (2015) proposed a contrary hypothesis that social exclusion would be less hurtful in collectivist societies, since the individual self was less important.

The evidence we obtained, from GSHS, TIMSS, and PISA data, does vary by survey. The three correlations obtained from GSHS and PISA are small and non-significant and in themselves would give support to the parallel forms hypothesis. However, the findings from TIMSS clearly give most support to the Pfundmair hypothesis. This is especially marked for the direct social exclusion item ('left me out of their games or activities') and less so for the items related to indirect methods—spreading lies, sharing embarrassing information. This could be seen as consistent with the argument of Pfundmair et al. (2015) that in collectivistic societies, the individual self is less sensitive to individual social exclusion.

Nevertheless, the situation regarding social exclusion in different countries appears complex, and more evidence across a range of countries is needed. It also needs to be borne in mind that in some societies, such as Japan, some kinds of social exclusion may be considered normative and therefore not bullying (or *ijime*), so the extent of such kinds of victimisation may be under-represented in self-report data.

The Ratio of Bullies to Victims The hypothesis here is that in collectivist societies, there would be a higher ratio of bullies to victims. This could be expected if social exclusion was a major form of bullying and/or if bullying was mainly an in-class phenomenon. While evidence from Japan and South Korea supports this supposition, evidence from China does not; Ji et al. (2016) found a low bully:victim ratio in China.

Our results here are restricted to data from HBSC, but cover the six survey periods and three age groups. The prediction is supported, albeit rather weakly. Most of the correlations are in the predicted direction, and this is significant on a sign test, even though none is individually significant. In other words, the trend is consistent but small, with many country exceptions. Even if social exclusion is not more proportionately prevalent in many collectivist societies, it appears to be that when bullying does happen (of whatever kind), rather more bullies are likely to be involved in some collectivist societies than would be the case in individualist societies.

Limitations of the Research

Although this research draws on five large-scale survey data sources, a number of limitations must be acknowledged. Firstly, all the surveys depend upon pupil self-report data. This is subject to possible biases such as social desirability in responses and what is considered fitting the definition of bullying (or what is asked about), the extent of which may vary between countries and thus partially confound any findings concerning country differences. A related issue is how the term bullying (if used) is translated into different languages (Smith et al. 2018).

Each survey in itself has its own limitations, including issues such as varying response rates and whether the sample is country representative. These are important limitations for each survey if used on its own, but less so when they are used as constructive replications (as for example in Table 2).

The Hofstede construct of individualism-collectivism (and also the other cultural values) has come in for criticism (Oyserman et al. 2002; Campbell et al. 2018). The original data came from studies of management practices, in the 1980s, and data was relatively sparse from African countries. However, more recent work (Hofstede et al. 2010) has addressed many of these criticisms.

There is also a continuing debate about how useful it is to take such values at the country level, when there are important individual differences in such values within countries (Nesdale and Naito 2005; Strohmeier et al. 2016). For future work, it will certainly be desirable to attempt to go beyond the country level to regional variations within a country (Görzig et al. 2017) and also see how consistent between-country analyses are with within-country analyses.

Our findings regarding IDV and victimisation prevalence data in Table 1(a) and Fig. 1 point strongly to the importance of historical context for understanding research findings. Often, the date of data collection is not mentioned in research articles (Smith and Berkkun 2019). This is unfortunate, as the societal context (such as regulatory framework aspects) can change quite rapidly in ways which may affect victimisation prevalence.

Finally, any single construct such as individualism-collectivism is likely to be only one part of a much more complex picture in explaining cross-national differences in victimisation. In that light, it is surprising how large some of the correlations with IDV are. If we had reported a study just on HBSC rates from 2014, for example, we would have three correlations of victimisation prevalence and IDV scores of 0.585, 0.600, and 0.480, explaining some 34%, 36%, or 23% of the variance. However, we know that other factors also predict country differences, such as socioeconomic inequality (Chaux et al. 2009). Even in our present results, we have invoked an additional factor of regulatory frameworks to suggest a fuller explanation of our findings for prevalence of victimisation. A multi-faceted approach to these issues, perhaps using the EU Kids Online model (Livingstone et al. 2011) as a starting point and examining a much fuller range of explanatory factors, could further advance our knowledge of cross-national differences in victimisation.

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