Child Mortality and Child-Abuse-Related Deaths in Albania, Bulgaria, Croatia, Cuba, Czech Republic, Estonia, FRY Macedonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Serbia, Slovakia and Slovenia Compared to Western Comparators the USA and the UK (1988–90 to 2012–14)

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Abstract

Child-abuse-related deaths (CARD) and child mortality rates (CMR) are important issues in every culture. This paper examines both CARD and CMR in seventeen former communist countries (FCCs) since the end of the Russian hegemony, with two Western comparator countries: the USA and the UK. World Health Organisation CARD and CMR data (birth to four years) between 1988–90 and 2012–14 have been extrapolated. Chi-square tests compare each FCC mortality outcome with the Western comparators over the period. To avoid under-reporting of CARD, undetermined deaths are also analysed and combined with confirmed CARD to provide a maximum estimate of abuse-related deaths. Combined CARD fell substantially in all FCCs, on average by 66 per cent. Russia had the least successful reduction (–25 per cent). Combined CARD fell significantly more in sixteen FCCs than in the USA. CMR in FCCs fell on average by 66 per cent over the period. Moldova, Russia and FRY Macedonia have the highest current CMR. Thirteen FCCs had significantly greater CMR reductions than the Western comparators. All but one FCCs met the UN millennium 2 per cent per annum reduction target for CMR but not the USA and Bulgaria. Most FCCs have made substantial improvements in reducing CARD and CMR. Country-specific research is

required to investigate the major differences between FCCs and Western comparator outcomes.

Keywords: Child abuse deaths, child mortality, former communist countries, USA, UK

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Introduction

A central concern of social work is the care, development and protection of children, reflecting UNICEF's long-standing position that 'in the last analysis child mortality rates (CMR) are an indication of how well a nation meets the needs of its children' (UNICEF, 2001, p. 3). This focus is further strengthened by the UN millennium goal that aimed to reduce CMR for the under-fives by 2 per cent per annum in every country, not just developing nations (UN, 2000; UNMDG Task Force, 2009). If parents fail to meet the needs of their children, for whatever reason, they are designated as 'neglecting'; this logic can also be applied to nations when, relatively and comparatively speaking, they have failed to meet the needs of their children, namely by not achieving the UN millennium target.

A major social work responsibility in every country is to improve child protection and therefore, at the extreme, to reduce child-abuse-related deaths (CARD). Comparative studies on how effective countries are meeting the needs of their children provide the social work discipline and individual countries with broad indicators of relative success or failure. Although major reductions in CARD have been shown in general over the past two decades (see e.g. Pritchard and Sharples, 2008; Pritchard et al., 2013), perhaps against expectations, in regards to reducing CMR, the six English-speaking countries of the Western world have been less successful, suggesting cultural factors amongst others may be operating (Pritchard et al., 2011, 2015).

This comparative approach had been used to explore how well the ten former USSR countries had dealt with CARD and CMR since the end of the Soviet Union (Pritchard and Mirza, 2016). The results are mixed for, although nine met the millennium goal target for CMR, CARD rose over the period in Russia, Ukraine and Belarus, appearing to match increases in reported violence against adults following the USSR break-up, which were found to be related to severe socio-economic disruption accompanied by substantial rises in crime and possibly making vulnerable families more unstable (Maksimova et al., 2006; Varnik et al., 2010; Stametal, 2012).

It has to be recognised that, compared with the West, researching sensitive topics such as CARD or other violent deaths in the Soviet world has been difficult and indeed actively discouraged (Wasserman and Varnik, 1998). Initially, Kempe et al.'s (1962) seminal US study on CARD had a limited response in the UK; the first major British study, published in the British Medical Journal (Smith and Hanson, 1974), was triggered by the public response to the death of Maria Colwell the year before. From this period, child protection has taken on a more political dimension (Parton, 1994; Pritchard, 2004). In the Durkheim tradition, some deaths such as suicides, CARD, CMR and child poverty reflect badly on societies; Western politicians are eager to avert any suggestion of blame (Parton, 1994; Pritchard and Wallace, 2015). How much more so in authoritarian regimes, for example, in Romania?

During the rule of President Ceausescu who liked to stress his Western links, unlike a number of the former communist countries (FCCs), mortality statistics were routinely produced for the World Health Organisation (WHO). However, any that might be considered as socially embarrassing were omitted, so all forms of violent deaths, suicides, homicides and CARD were not reported (WHO, 2016) until after the end of his regime in 1989.

After considering CARD in the former USSR (Pritchard and Mirza, 2016), this has led to questioning how FCCs and members of the Warsaw Pact have fared in reducing their CMR and CARD since the end of the Soviet hegemony, as all are signatories to the UN goal of reducing CMR by 2 per cent per annum. In one sense, therefore, all FCCs, as all Western countries, have made a policy declaration to improve the lot of children but the priority given to such policies is likely to vary between countries.

Compared to Western countries, the only studies we could find from the FCCs concerned with children's deaths fell into two broad categories. First, in relation to child health outcomes, studies from Hungary (Nagy et al., 2012), Poland (Lipowicz et al., 2007), Estonia (Lang et al., 2010) and Romania (Golli et al., 2011) all demonstrated a strong statistical association between CMR and poverty. Second, in regard to CARD-type mortalities, the main theme was described as 'shaken baby syndrome' as reported by Peychi (2005) from the Czech Republic and Talvik et al. (2008) from Estonia. Reports on children's homicide and CARD came from Serbia (Baralic et al., 2010), Poland (Ptaszynska-Sarosiek et al., 2011) and Hungary (Toro et al., 2010). In brief, they were acknowledging that they had cases similar to cases reported in Western literature, often raising the issue for their country for the first time and recognising that there was a problem but wondering what should be done about it.

Bearing in mind the relative lack of inquiry into these politically sensitive social matters, this paucity of research may not be surprising,

especially considering that, from the whole of the former USSR, only five papers could be found directly relating to child abuse and the major study was from a British and Russian team and published in the West (Kerfoot et al., 2007).

Together, these studies recognise and highlight the issue of child abuse and neglect, yet we could find no study that explored what happened to CMR and CARD in these FCCs since the end of the Russian hegemony. Consequently, this study is probably the first comparative analysis of what happened to children deaths at the end of the Soviet period (1988–90) compared to the current post-Soviet era (2012–14).

There are, of course, major differences in the socio-economic and historical backgrounds of the various FCCs, between central European countries such as the Czech Republic, Hungary, Poland and the Balkan countries such as Albania, Bulgaria and Serbia, for example. For instance, the Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Slovenia and Slovakia have been part of middle Europe since the late nineteenth century and are more socio-economically developed than the other six former communist Balkan countries (Brown, 2010).

Cuba has also been included in the review, which was a member of the Warsaw Pact and for which there is longitudinal WHO (2016) data available. However, the previous strict Marxist regime appears to have undergone major revision, reflected in the restored diplomatic relations between Cuba and the USA. Moreover, Cuba's inclusion provides a wider comparison. However, other 'Marxist' countries such as Cambodia, Manchuria, North Korea, the People's Republic of China and Viet Nam could not be included because there are no WHO longitudinal data.

To place the study in a wider context and make the FCCs' results more meaningful, it was decided that Western comparators were required to provide the reader with a comparative and relative context. Bearing in mind the markedly different historic-socio-economic backgrounds of FCCs compared with the twenty-one Western nations, there would be little value in using average Western countries (CMR and CARD) (Pritchard et al., 2013; Pritchard and Wallace, 2015). So, to allow for the relative socio-economic situations of FCCs, the logical comparator would be the Western nation with the highest current CMR and CARD, currently the USA. For balance, the European comparator will be the UK, who had the highest European CMR, and is fifth highest of the twenty-one Western nations (Pritchard and Williams, 2011; Pritchard et al., 2013; Pritchard and Wallace, 2015).

The analysis is a total population-based study of children (birth to four years), using comparative tests of significance. This is to statistically confirm findings that might be unexpected, namely that some FCCs had better child mortality outcomes than the Western comparators. This approach has been used in total population-based studies that

demonstrated that the UK had significantly greater reductions in adult (fifty-five to seventy-four) deaths (Pritchard and Hickish, 2011; Pritchard et al., 2016) and that Britain had significantly bigger reductions in CARD than the other developed nations (Pritchard et al., 2013). One null hypothesis is postulated—that, between 1988–90 and 2012–14, the latest period for which we have international data (WHO, 2016), there will be no statistically significant difference between CMR and CARD of FCCs and the two Western comparator countries.

Methodology

Child mortality rates (CMR)

This is a population-based study and mortality rates are calculated from the numbers of deaths per million (pm) of population. This allows comparisons to be made between countries of differing population sizes; for example, comparing mortality rates between Croatia and the USA enables any significant differences to be analysed. In each of Tables 2–4, the combined boy and girl under-five CMR pm have been extrapolated from WHO (2016) data for each country. Age-bands of Infant (under one year old) and Young Child (one to four) have been combined to calculate a birth-to-four rate pm of population to assess the extent to which FCCs and Western comparators have achieved the UN target of reducing CMR by 2 per cent per annum and measure any changes between 1988 and 2014.

Estimating maximum child abuse-related deaths (CARD)

Classic confirmed CARD are categorised as homicides in which an assault led to a fatality, coded X85 to Y09 and Y871 in WHO mortality data (WHO, 2016). However, some authors have argued that there is an under-reporting or 'hidden' CARD contained in the category 'undetermined deaths' (UnD), as the method of lethality in UnD contains a degree of violence and, of course, any assailants will seek to hide their crime (Creighton, 1993; Emery, 1993; Newton and Vandeven, 2006; Matturi et al., 2008). Furthermore, the key to the UnD category is that the authorities are unable to determine whether the death was accidental or self-inflicted, or if there was an assailant; this also includes 'unexpected' and 'unexplained' deaths, mainly of under-one-year-olds (WHO, 2016). Self-inflicted birth-to-four-year deaths are unlikely to be a credible factor. However, to avoid the possible criticism that we have under-reported CARD, confirmed CARD is combined with UnD rates to produce an estimated maximum CARD rate. Although this is probably now an over-estimate of CARD, it is better than being criticised for

under-reporting abuse-related deaths (Creighton, 1993). Although we present the confirmed CARD and UnD figures separately, it is not possible to determine the exact extent of 'hidden' under-reported CARD amongst UnD rates.

Baseline and index years (1988–90 versus 2012–14)

From the latest WHO (2016) data, an average of three baseline years (1988–90) to cover before the break-up of the Soviet bloc is compared with an average of three index years (2012–14), well after FCCs established their independence and to match other studies of CMR in Western comparator countries (e.g. Pritchard and Wallace, 2015). It should be noted that Slovakia (1992–94) and Serbia (1998–2000) had later baseline years than 1988–90 and Albania earlier index years (2008–10), all indicated in the tables. This means there cannot be an exact comparison between them and the Western comparators. Yugoslavia was a former communist country but now consists of the independent countries of Croatia, FYR Macedonia, Serbia and Slovenia. Bosnia Herzegovina and Montenegro were also part of Yugoslavia but cannot be included as there are no available WHO data.

Statistics of change

CMR for the average baseline and index years of the seventeen FCCs (including Russia), the USA and the UK have been extrapolated and a percentage of change calculated. A series of chi-square tests compares each FCC outcome with those from the USA and the UK over the same period. A simple example best explains this. At the end of the Soviet era, Croatia's CMR of 2,532 pm was similar to that of the USA's at 2,460 pm. In the post-Soviet era, by 2012–14, Croatian rates fell to 965 pm—a reduction of 76 per cent. The US rates fell to 1,291 pm—a fall of 48 per cent. Table 1 shows the breakdown from which a chi-square test is calculated. Tables 2–4 show CMR, CARD and UnD as rates per million of population (0–4 years). They are presented in rank order of the highest current death rates.

Results

Child mortality rates

The three highest current CMR among FCCs are in the Republic of Moldova (2,366 pm) Russia (2,114 pm) and FYR Macedonia (2,071 pm).

Table 1. Child Mortality Former Community Countries & Western Comparators 1989–90 to 2012–14.

Country	Soviet era	Post-Soviet
Croatia	2,532	965
USA	2,460	1,291

Table 2. Child mortality rates (CMR) per million from FCCs, the USA and the UK: 1988–90 versus 2012–14, ranked by highest current CMR

Country—baseline 1988–90 versus current 2012–14 rank	CMR 0–4 per million	Percentage change
1–4: Republic of Moldova	4,818	
2012–14	2,366	–51%
2–5: USSR	4,220	
Russian Federation 2009–11	2,114	–50%
3–3: FRY Macedonia	6,494	
2012–14	2,071	–68%
4–2: Romania	6,846	
2012–14	1,904	–72%
5–7: Bulgaria	3,479	
2011–13	1,888	–46%
6–1: Albania	9,239	
2008–10	1,474	–84%
7–14: Serbia 1998–2000	2,467	
2012–14	1,386	–44%
8–15: USA	2,466	
2012–14	1,328	–46%[a]
9–17: Slovakia 1992–94	2,508	
2012–14	1,296	–48%
10–11: Latvia	3,058	
2012–14	1,206	–61%
11–10: Cuba	2,982	
2012–14	1,106	–63%
12–7: Hungary	3,512	
2012–14	1,105	–69%
13–9: Poland	2,944	
2012–14	993	–66%
14–19: UK	1,925	
2011–13	967	–50%
15–13: Croatia	2,537	
2012–14	965	–62%
16–12: Lithuania	2,666	
2012–14	952	–64%
17–6: Estonia	3,842	
2012–14	706	–82%
18–18: Slovenia	2,041	
2011–13	626	–69%
19–16: Czech Republic	2,445	
2012–14	588	–76%
FCC average	3,888	
2012–14	1,338	–66%

[a]Failed to meet UN millennium goal of reducing 0–4 CMR by 2% per annum.

Yet, these CMR represent large reductions over the period, equivalent to falls of 51 per cent, 50 per cent and 68 per cent, respectively (see Table 2). Countries with the lowest CMR include the Czech Republic (588 pm), Slovenia (626 pm) and Estonia (706 pm); each of these countries had impressive reductions of 76 per cent, 69 per cent and 82 per cent, respectively. The baseline years for FCCs averaged 3,888 pm but, by 2012–14, this had reduced to an average of 1,338 pm—an average fall of 66 per cent.

Fourteen FCCs reduced their CMR by more than an equivalent of 50 per cent and sixteen FCCs achieved the UN millennium goal of reducing CMR by 2 per cent per annum.

At the baseline years, the USA's CMR was 2,466 pm and ranked fifteenth out of these nineteen countries under review. By 2012–14, the USA was eighth highest CMR at 1,328 pm—a reduction of 46 per cent, failing to meet the millennium target. Nine FCCs have lower CMR than the USA: Slovakia, Latvia, Cuba, Hungary, Poland, Croatia, Lithuania, Estonia, Slovenia and the Czech Republic. The UK, whose index years were 2011–13, met the UN target with a reduction of 50 per cent but it is worth noting that Croatia, Lithuania, Estonia, Slovenia and the Czech Republic have lower CMR than the UK.

Child-abuse-related deaths and undetermined deaths (birth to four years)

Confirmed CARD

In Table 3, it can be seen that the USA has the highest current confirmed CARD rate of all the reviewed countries at 31 pm, followed by Hungary at 22 pm. Although Albania and Latvia slightly increased their numbers of confirmed CARD over the period, ten FCCs have current confirmed CARD rates under 10 pm. The UK holds the lowest current confirmed CARD rate at 1 pm.

Undetermined deaths

In the baseline years, FCCs averaged a 131 pm UnD rate, with nine countries having rates of over 100 pm; the average fell to 46 pm by 2012–14 and equates to a reduction of 66 per cent since independence, suggesting that, under previous regimes, there may have been a degree of hidden CARD in the UnD category. The UK also witnessed reductions in UnD equivalent to falls of 44 per cent but the USA UnD rose by 39 per cent over the period. Whilst there may still be hidden CARD in UnD, the reductions in UnD in most FCCs are remarkable.

Table 3. Child-abuse-related deaths (CARD) and undetermined deaths (UnD) from FCCs, the USA and the UK—1988–90 versus 2012–14 rates per million, ranked by highest current combined CARD

Country—baseline 1988–90 versus 2008–10 rank	CARD 0–4 per million	UnD 0–4 per million	Combined CARD 0–4 per million	Combined CARD % of change
1–1: Republic of Moldova	28	422	450	
2012–14	13	143	156	–63%
2–5: USSR	15	178	193	
Russian Federation 2009–11	13	131	144	–25%
3–15: USA	40	54	94	
2012–14	31	75	101	þ7%
4–2: Romania	14	326	340	
2012–14	14	66	80	–76%
5–3: Estonia	24	215	239	
2012–14	13	66	79	–67%
6–4: Bulgaria	34	178	212	
2011–13	8	60	68	–68%
7–7: Latvia	12	122	134	
2012–14	13	53	66	–51%
8–13: Cuba	17	82	99	
2012–14	11	52	63	–36%
9–11: Hungary	25	80	105	
2012–14	22	25	47	–56%
10–12: Lithuania	9	91	100	
2012–14	9	38	47	–53%
11–9: Albania	3	112	115	
2008–10	5	38	43	–63%
12–17: Slovakia 1992–94	8	61	69	
2012–14	3	25	28	–59%
13–19: Serbia 1998–2000	5	16	21	
2012–14	4	23	27	þ29%
14–6: Czech Republic	14	127	141	
2012–14	6	19	25	–82%
15–18: UK	10	38	48	
2011–13	1	22	23	–52%
16–8: Poland	10	108	118	
2012–14	3	18	21	–82%
17–10: Croatia	14	81	95	
2012–14	5	9	14	–85%
18–14: FRY Macedonia	7	88	95	
2012–14	0	12	12	–87%
19–16: Slovenia	26	53	79	
2011–13	3	6	9	–89%
FCC average	16	131	147	
2012–14	9	46	64	–56%

Combined CARD/UnD

The Republic of Moldova (156 pm), Russia (144 pm) and the USA (101 pm) have the highest current combined CARD/UnD followed by Romania (80 pm) and Estonia (79 pm). Ten FCCs have combined rates lower than 50 pm, from a baseline average rate of 154 pm down to 46 pm, which is an impressive fall of 70 per cent.

Initially, the USA were fifteenth out of the nineteen countries reviewed but, by 2012–14, they had risen to the third highest, at 101 pm—a slight

Table 4. Comparing child mortality rates (CMR) and child-abuse-related deaths (CARD) of each former communist country with Western comparators: the USA and the UK—Soviet (1988–90) and post-Soviet era (2012–14), chi-square results and p-values

Each country versus Western comparators	USA CMR	USA CARD	UK CMR	UK CARD
Albania versus 2008–10	764.0, p <0.0001	23.1, p <0.0001	599.0, p <0.0001	0.641, n.sig.
Bulgaria versus 2011–13	0.347, n.sig	25.2, p <0.0001	2.52, p <0.1 trend[a]	1.94, n.sig.
Czech Republic versus 2012–14	204.4, p <0.0001	55.0, p <0.0001	151.0, p <0.0001	9.25, p <0.002
Croatia versus 2012–14	46.9, p <0.0001	45.1, p <0.0001	26.0, p <0.0001	10.1, p <0.002
Cuba versus 2012–14	58.2, p <0.0001	6.65, p <0.02	33.0, p <0.0001	0.894, n.sig.
Estonia versus 2012–14	426.0, p <0.0001	40.4, p <0.0001	325.0, p <0.0001	1.710, n.sig.
FRY Macedonia versus 2012–14	154.7, p <0.0001	50.1, p <0.0001	95.1, p <0.0001	12.10, p <0.001
Hungary versus 2012–14	124.2, p <0.0001	16.3, p <0.001	84.0, p <0.0001	0.488, n.sig.
Latvia versus 2012–14	42.4, p <0.0001	15.4, p <0.001	21.6, p <0.0001	0.871, n.sig.
Lithuania versus 2012–14	65.7, p <0.0001	14.4, p <0.001	39.2, p <0.0001	0.390, n.sig.
Republic of Moldova versus 2012–14	4.76, p <0.05	48.2, p <0.0001	0.275, n.sig.	1.45, n.sig.
Poland versus 2012–14	88.3, p <0.0001	48.7, p <0.0001	55.0, p <0.0001	8.400, p <0.004
Romania versus 2012–14	243.4, p <0.000	71.2, p <0.0001	160.0, p <0.0001	6.830, p <0.02
Russian Fed. versus 2009–11	2.80, p <0.1 trend	4.80, p <0.05	0.238, n.sig.	2.59, p <0.1 trend
Serbia 1998–2000 versus 2012–14	0.785, n.sig.	0.307, n.sig.	4.67, p < 0.05[a]	6.69, p <0.02[a]
Slovakia 1992–94 versus 2008–10	0.732, n.sig.	14.7, p <0.001	0.310, n.sig.	0.241, n.sig.
Slovenia versus 2011–13	98.7, p <0.0001	45.4, p <0.0001	67.4, p <0.0001	12.0, p <0.001

n.sig. ¼ not significant. [a] indicates UK had better outcome than the specified FCC.

rise of 7 per cent. The UK were fifth lowest at 23 pm, representing a fall of 52 per cent over the period.

Statistical comparison of FCCs with the USA and the UK

Table 4 displays the chi-square test results that compare the rates of CMR and combined CARD of each FCC from the end of the Soviet era with the current post-Soviet period with the USA and the UK. Chi-square results show any statistical significant difference between each FCC and the Western comparators the USA and the UK, respectively, over the period.

Fifteen FCCs reduced their CMR over the period significantly better than the USA and thirteen better than the UK.

In terms of reducing combined CARD, eleven FCCs had significantly larger reductions than the USA—Croatia, Cuba, Czech Republic, Estonia, Latvia, FRY Macedonia, Moldova, Poland, Romania, Slovenia and Slovakia, with only Serbia being the exception.

In regard to reducing combined CARD, the Czech Republic, Croatia, FRY Macedonia, Poland, Romania, Russia (trend) and Slovenia had significantly bigger reduction than the UK. However, no FCC did substantially better in reducing confirmed CARD than the UK.

Discussion

Limitations

The major limitation to this study is that, as with all international mortality studies, we have to accept the reliability and validity of the data, which, in relation to CARD, will always have a degree of ambiguity. However, WHO mortality statistics appear to be the best available and have been collated in a uniform manner since 1968. The data submitted by member states to WHO (2016) are based on confirmed mortality, whereas UN data for the millennium challenge were based upon estimates from expert panels (UN, 2000; UNMDG Task Force, 2009).

It might be speculated that there could be an under-reporting of baby (under one year old) mortality, as reporting of such deaths can be thought to have a 'political dimension' especially in respect to CARD in FCCs (UNICEF, 2001; Maksimova et al., 2006; Varnik et al., 2010; Lysova et al., 2012; Stametal, 2012). Moreover, earlier work has found that adult violent deaths in some FCCs have been under-reported because they embarrassed the former communist regimes, as seen in the disproportionately high levels of UnD in most FCCs during the period of Soviet hegemony (Maksimova et al., 2006; Wasserman and Varnik, 1998; Lysova et al., 2012; Pritchard and Mirza, 2016). This old problem reinforced our decision to include under-five UnD as a possible source of under-reporting of CARD and is exemplified in the cases of Moldova and Romania (see Table 2), whose UnD rates fell over the period from 422 pm and 326 pm to 143 pm and 66 pm, respectively. This strongly suggests that the mortality statistics under the old regimes were either unreliable or there was a greater degree of CARD than there is today.

Another limitation in this hypothesis-stimulating study is that we cannot explain why some of the big changes have occurred in the various countries, especially those who have overtaken the Western comparators, such as the Czech Republic, who had previously been united with Slovakia—both countries had similar baseline CMR at the end of the

post-Soviet period but, by 2012–14, the Czech Republic was almost twice as successful as Slovakia in reducing CMR, although both met the millennium goal of reducing CMR by 2 per cent per annum. To explain this marked difference, only country-specific research could possibly explain this apparent anomaly. Whilst the data cover most of the former Yugoslavian countries, there were no WHO data available for Bosnia Herzegovina and Montenegro.

A further methodological issue relates to interpreting the meaning of the chi-square results that highlight major differential reductions in both mortalities, which probably centres upon the issue of diminishing returns (Hux and Naylor, 1996; Murphy and Topel, 2003). Put another way, countries starting with relatively lower baseline CMR, such as Slovakia, the Czech Republic and Slovenia—all lower than the USA in 1988–90—can find it increasingly difficult to achieve further comparable improvements with new investment (Hux and Naylor, 1996; Murphy and Topel, 2003).

The final limitation is that this study can give no explanation for the marked differentials between the various FCCs, which again requires country-specific research, as studies based upon aggregated data can only produce broad indicative patterns of change, not specific reasons. However, they can serve as a future baseline against which to map a country's future progress and provide social workers and their organisations with valuable comparative evidence from which to present the case for the continuing need to enhance child development and protection.

Main findings

Overall, it is argued that FCCs can be commended for reducing their levels of CMR and, except for Albania, Bulgaria and Russia's confirmed/combined CARD and UnD. Moreover, in view of Russia's recent history of an apparent over-use of the UnD category in politically sensitive adult mortalities, such as adult homicide and suicide (Wasserman and Varnik, 1998; Maksimova et al., 2006; Lysova et al., 2012; Stametal, 2012), it would seem that Russia really does have a serious problem related to child abuse and this is not just a statistical artefact (Pritchard and Mirza, 2016).

Russia had the second highest CARD of all FCCs. This may reflect something of the socio-economic turbulence following the Soviet break-up and cultural factors related to a more traditional, harsher, parenting style compared with more modern child-centred rearing practices (Shors, 1999; Vafors et al., 2008; MacKinnon, 2013). However, the English-speaking countries cannot be overly critical, as the highest rates of child mortality in the twenty-one Western countries are in the six English-speaking countries, which, apart from their higher relative poverty

ratings (Pritchard et al., 2015; Pritchard and Wallace, 2015) also suggests cultural links to CMR, as, in the last analysis, it is said that CMR reflect how a country meets the needs of its children (UNICEF, 2001).

The fact that Russia and before it the USSR had CMR above the average of the other FCCs merits further speculative comment. Earlier Russian data incorporated all the ten other notionally independent republics, including those from Central Asia, which would have been considerably less affluent than Russia (Brown, 2010). However, a brief perusal of Gross National Income figures from the World Bank (2015) shows that, whilst Russia has the tenth largest economy in the world, their per capita income, equivalent to only $13,220—comparatively, the UK is $43,800—Russia is lower than most Western FCCs but higher than Albania, Cuba, FYR Macedonia, Republic of Moldova and Romania. This may be a factor in their poorer CMR result compared to the other FCCs, as Russia was the second highest of all countries reviewed.

However, the achievements of the majority of FCCs in regard to reducing CMR are remarkable, even though Bulgaria and Moldova, along with the USA, failed to meet the UN millennium goal of a 2 per cent per annum reduction (UN, 2000; UNMDG Task Force, 2009). Fifteen of the seventeen FCCs have current lower CMR than the USA and five lower than the UK.

Given the politico-socio-economic history of FCCs involved, these can be seen as major accomplishments. Therefore, the null hypothesis that there will be no statistically significant differences in CMR and CARD between FCCs and the Western comparators can be broadly rejected, especially in relation to the USA. The UK's current CARD figures are among the best in the world. But how can the USA's outcomes and to a lesser extent the UK's poor CMR be explained?

The USA exhibits the highest CMR in the West and the smallest reductions from nineteen of the other twenty Western nations (Pritchard and Wallace, 2015). This is a possible indication of the structural inequalities linked to relative poverty and ethnic discrimination in the USA (McLeod et al., 2004; Brandon et al., 2008; House et al., 2009; Wang et al., 2009; Wilkinson and Pickett, 2009; Pritchard and Wallace, 2015). The USA has the highest, and the UK the third highest, income inequality in the Western world; relative poverty is a factor frequently associated with poorer outcomes for children in the West (Wilkinson and Pickett, 2009; Pritchard and Williams, 2011; Pritchard et al., 2013; Stiglitz, 2013; Pritchard and Wallace, 2015). Unfortunately, income inequality is only available for two FCCs, so this poverty dimension could not be adequately extended to this study. However, clinical studies from Hungary (Nagy et al., 2012), Poland (Lipowicz et al., 2007) and Romania (Golli et al., 2011) have also found what many Western clinical studies have shown—that is, a strong statistical association between CMR and

poverty (Wang et al, 2009; Freemantle et al., 2009; Conroy et al., 2010; Pritchard and Wallace, 2015); this may also be a factor in those FCCs with higher CMR. A number of other studies have also demonstrated the complexity of the poverty–child mortality dimension; factors such as education, health care systems, ethnicity and social policies all influence CMR (Feinstein et al., 2007; House et al., 2009; Conroy et al., 2010); again, country-specific research is needed to explain these differences and the possible interactions of the various factors. Whilst inevitably comparative international studies paint with a broad brush, what could account for the major improvements in the FCCs?

Was it simply throwing off the economic and political shackles of the former Soviet system?

We can only speculate with the type of evidence we have available and country-specific research would be necessary to explore within-country service configurations and policies. One clue, however, might be in the fact that the highest CMR of the twenty-one Western nations are all English-speaking countries (Pritchard et al., 2014), suggesting there may be cultural factors operating, which are reflected in changes in mortality rates. For example, the UK had a significantly bigger reduction in adult (fifty-five to seventy-four) deaths than seventeen other countries (Pritchard et al., 2016), whilst Britain's reduction of child (birth to four) deaths of was significantly worse than nine of these same countries (Pritchard and Wallace, 2015), indicating their apparently giving greater priority to adults rather than children? Thus, perhaps the most successful FCCs gave greater priority with their new freedoms to improving their children's situation? Moreover, with the exception of Serbia, FCCs with lower CMR than the USA (Croatia, Cuba, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia) are, apart from Cuba, in the EU. This may be an indication of the value benefits of having common standards, aspirations and mutual co-operation across international boundaries, as these countries had to make certain commitments to become members, which may have especially benefitted their child mortality results.

Conclusions

The progress of most of FCCs is considerable, though, in regard to child abuse and neglect, no country can be complacent. However, mention must be made of the current position of the USA, who arguably first alerted the world to child abuse (Kempe et al., 1962). It is beyond the scope of this study to explain the US results, other than to note that they have the highest relative poverty in the West (Wilkinson and Pickett, 2009; Pritchard and Wallace, 2015). Despite spending the highest level of Gross Domestic Product on health (World Bank, 2016), the

USA has the highest rate of adult mortality (fifty-five to seventy-four) and is the least cost-effective nation in reducing adult mortality (Pritchard and Hickish, 2011; Pritchard and Wallace, 2011; Pritchard et al., 2016). All this suggests that the US health care, along with its child protection, system appears less effective and efficient in reducing child mortality than the FCCs of Croatia, Cuba, Czech Republic, Estonia, Hungary, Lithuania, Poland, Serbia, Slovakia and Slovenia, as well as other Western nations.

Hopefully, these results have stimulated a number of other possible hypotheses, not least to provide a baseline for further comparative research for the countries under review, who are all signatories to the UN millennium target of reducing child mortality and poverty. The substantial CMR and CARD reductions for FCCs since the end of Russian hegemony should be a boost and encouragement not only for child protection services, but for all their children's services.

It is recognised that these results might cause a degree of embarrassment to certain countries but, if social work cannot speak up for children, who can? We recall the words of the great founding American William Penn (1693, no. 52) that 'it is a reproach to government and religion to suffer such poverty and excess'. Notwithstanding, we should end by commending the majority of FCCs who have achieved so much in a relatively short space of time. We might speculate this is because they have joined the democratic nations and, reflecting the UNICEF (2001) statement, have shown that, in reducing child mortality, they have given considerable priority to 'meeting the needs of their children'.

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