The Economic Burden of Health Consequences of Violence Against Children in Cambodia

Preliminary results

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Note: this analysis presents the preliminary results of the costing analysis of violence against children in Cambodia. The full final report will be published early 2015.

Overview:

- **For males 24.1% of smoking and 13.6% of problem drinking were attributable to physical violence; 37.0% of self-harm, 32.9% of STIs, 11.7% of mental distress, and 10.4% of problem drinking were attributable to physical violence for females.**
- **Emotional violence contributed to 32.6% of self-harm for females and 13.6% for males; to 12.7% of mental distress for females and 26.4% of males; 12.3% of STIs were attributable to emotional violence for females.**
- **Sexual abuse contributed to 5.0% of self-harm, 1.6% of STIs, and 1.5% of mental distress for females. For males, sexual abuse contributed 8.2% to self-harm and 9.5% to STIs.**
- **Overall, the estimated minimum economic loss of health consequences of violence against children in Cambodia totalled US $161 million in 2013, accounting for 1.06% of the country's GDP.**

The economic burden of health consequences of violence against children in Cambodia is substantial, indicating the importance of **investing in prevention.**

Background

Violence against children exists in every country in the world, cutting across culture, class, education, income and ethnic origin[1], and Cambodia is no exception.

The results of the 2013 Cambodia Violence Against Children Survey[2] provide, for the first time, national estimates that describe the magnitude and nature of sexual, physical and emotional violence experienced by girls and young women and boys and young men in Cambodia. As has been shown worldwide, exposure to violence as a child is associated with a range of short-term health consequences, including moderate mental distress, sexually transmitted infections, self-harm and suicidal ideation. The findings highlight the emotional impact of all types of violence experienced by children, which often seems to go unrecognized. They are consistent with decades of research in the neurobiological, behavioural and social sciences that conclusively indicate that childhood exposure to violence can impact the development of the brain and cause subsequent vulnerability to a broad range of mental and

physical health problems, ranging from the short-term consequences identified in the study to long-term health conditions such as cardiovascular disease and diabetes, but also adult aggression, violence and criminality. Reducing the prevalence of violence against children in Cambodia is, therefore, likely to reduce the incidence and costs of future mental and physical health problems in the population. Violence against children in the long run will affect the future family members of the victims, their participation and performance in the labour market, and social development as a whole.

Given the high prevalence and the many negative short- and long-term impacts, violence against children is an economic issue that must be taken seriously. Until now, the costs of violence against children had only been calculated for a handful of countries, but were not yet available for most countries in the world, including for Cambodia. This analysis estimated population attributable fractions (PAFs) for various health consequences of violence against children and developed a costing model to estimate the minimum costs of health consequences of violence against children in Cambodia.

Methods

The analysis included data obtained from the 2013 Cambodia Violence Against Children Survey (CVACS). The 2013 CVACS is a cross-sectional household survey on violence against children that measures the national prevalence of physical, emotional, and sexual abuse against both boys and girls in addition to identifying risk and protective factors and health consequences of violence. A total of 2,560 individuals were invited to participate in the study with 1,121 females and 1,255 males completing the questionnaire (in total 2,376).

With the nationally representative data from CVACS, lifetime prevalence rates by major type of childhood violence were estimated (physical violence, emotional violence, and sexual abuse prior to age 18). Logistic regressions were used to estimate the adjusted odds ratios (ORs) for the associations between the different types of childhood violence and the related health outcomes, controlling for household socio-economic characteristics[3], age cohort, the respondent's marital status, and witnessing violence in the home or the community. The health outcomes examined in this analysis included mental distress, sexually transmitted infections (STIs), self-harm, tobacco use, and alcohol use. The CVACS included too few cases of illicit drug use, attempted suicide and pregnancies resulting from unwanted completed sex to infer reliable estimates. Some other health outcomes (such as suicidal ideation and risk-taking behaviours) were excluded from the analysis because disability-adjusted life years data were not available for these outcomes. A simple formula developed by Zhang and Yu (1998)[4] was used for the approximation of ORs to relative risks (RRs).

To estimate the proportion of health consequences (e.g., self-harm) attributable to a risk factor (e.g., sexual abuse), a standard epidemiologic formula was used to calculate population-attributable fractions (PAF) for males and females, by type of childhood violence (physical violence, emotional violence, and sexual abuse). This PAF formula used two pieces of previously estimated data: the prevalence by major type of violence and the RRs of outcomes given exposure to violence against children. PAFs are scaled from 0.0-1.0, representing an estimated share from 0% to 100% responsible for the outcome. In this example, a PAF of 0.20 would suggest that 20% of self-harm is attributable to exposure to childhood sexual abuse.

After computing the PAFs, one can then translate them into dollar terms in order to assess the economic benefits that are possible in the absence of violence. Two steps were used to estimate the economic costs of violence against children[5]:

- Estimate the disability-adjusted life years (DALYs) lost from deaths, diseases and health risk behaviours attributable to violence against children for each type of violence and for each gender and sub-region groups; and

- Convert the DALY losses into a monetary value for each of the subgroups, assuming one DALY is equal to the country's per-capita Gross Domestic Product (GDP).

The country-level estimates of cause-specific DALY data were obtained from the WHO Global Burden of Disease (GBD) estimates for 2000-2012[6]. The WHO also published DALY estimates of the impact of 24 major risk factors (e.g., tobacco use)[7]. We only used DALY data of those aged 15+ for the estimation of disease-induced DALY losses to avoid the possibility of diseases preceding the occurrence of violence against children. The violence-related deaths among children aged 0-14 in Cambodia were available by gender from the GBD estimates for 2000-2012 (WHO, 2014)[8]. These data were used to approximate fatal cases of violence against children in Cambodia.

The results

More than half of all Cambodian children experienced some form of physical violence prior to age 18 by an intimate partner, parent or adult relative, or community member. Roughly a quarter of Cambodian children are emotionally abused while growing up: 22% of females and 26% of males aged 13-24 experienced emotional violence by a parent, caregiver or other adult relative prior to age 18. About 5% of both females and males aged 13 to 24 experienced some form of sexual abuse prior to age 18.

Gender differences exist in the links between violence against children and health consequences (the PAFs).

Physical violence

- For males 24.1% of smoking and 13.6% of problem drinking were attributable to physical violence. Physical violence was not significantly associated with self-harm, mental distress, and STIs.
- In contrast, 37.0% of self-harm, 32.9% of STIs, 11.7% of mental distress, and 10.4% of problem drinking were attributable to physical violence for females.

Emotional violence

- Emotional violence contributed to 32.6% of self-harm for females and 13.6% for males
- 12.3% of STIs were attributable to emotional violence for females, but this link was not significant for males.
- 12.7% of mental distress was attributable to emotional violence for females; for males this was 26.4%.

Sexual abuse

- Sexual abuse contributed to 5.0% of self-harm, 1.6% of STIs, and 1.5% of mental distress for females.
- For males, sexual abuse contributed 8.2% to self-harm and 9.5% to STIs.

A Minimum Estimate

When converted into monetary value, the estimated minimum economic value of DALYs lost to health consequences of violence against children in Cambodia in 2013 amounted to US$ 74.4 million for females and 87.9 million for males respectively. **Overall, the estimated minimum economic loss of health consequences of violence against children in Cambodia totalled US $161 million in 2013, accounting for 1.06% of the country's GDP.**

The burden estimate of violence against children in Cambodia presents a minimum estimate. Due to the unavailability of data many serious consequences of violence against children, including productivity

losses and higher levels of healthcare utilization, could not be included in the analysis. Other costs that were excluded from this analysis include costs related to the legal and justice system as well as welfare costs. Moreover, some outcomes from the CVACS (such as suicidal ideation and illicit drug use) were excluded from this analysis because no DALY data were available or the CVACS included too few cases to infer reliable estimates. Others (such as moderate injuries caused by interpersonal violence) were excluded because no non-exposed comparison group was available.

Conclusions

The economic burden of violence against children in Cambodia is substantial, indicating the importance of investing in prevention; investments now are very cost-effective when compared with non-investment. The findings following this analysis are key to understanding the consequences of violence against children; the economic costs incurred by individuals, families and society at large; and ultimately, the need for investments to strengthen the national child protection system.

Investment in prevention now is very cost-effective when compared with non-investment

The data generated as part of this analysis is hoped to advance the awareness of policy makers of the lifetime economic impact of violence against children and advice in allocating budgets and making investments in this regard.

Notice: this analysis solely looks at the economic burden of selected health consequences (including mental distress, sexually transmitted infections, self-harm, attempted suicide, pregnancies resulting from unwanted completed sex, tobacco use, illicit drug use and alcohol use) related to physical violence perpetrated by intimate partners, parents or adult relatives or community members, emotional violence perpetrated by parents or caregivers and sexual abuse (encompassing unwanted sexual touching, unwanted attempted sex, pressured sex and physical forced sex). Since the data used for this analysis results from a household survey, the experiences of children living outside of family care (e.g., street children, children living in orphanages) were not included. These children are likely to be at higher risk of victimization, so the results from a household sample are likely conservative estimates of the true prevalence. In addition, some forms of violence such as neglect were excluded. Moreover, prevalence estimates of physical violence, emotional violence and sexual abuse may be underestimated as they are based on self-reported incidents of violence. Thus, the economic burden of violence against children in Cambodia is likely underestimated.

[1] Pinheiro PS. World report on violence against children: United Nations Secretary-General's study on violence against children. Geneva, World Health Organization (WHO) Department of Child and Adolescent Health and Development, 2006. Available at http://www,unicef.org/violencestudy/reports.html (accessed 12 October 2014).

[2] Ministry of Women's Affairs, UNICEF Cambodia, US Centers for Disease Control and Prevention. Findings from Cambodia's Violence Against Children Survey 2013. Cambodia: Ministry of Women's Affairs, 2014.

[3] Age, family wealth, household size, family structure (living with both biological parents or not)

[4] Zhang J, Yu KF. What's the relative risk? A method of correcting the odds ratio in cohort studies of common outcomes. JAMA. 1998;280:1690-1691.

[5] Following the work of: World Health Organzation (WHO) Commission on Macroeconomics and Health (Sachs JD, chair). *Macroeconomics and Health: Investing in Health for Economic Development*. 2001. Available at http://whqlibdoc.who.int/publications/2001/924154550x.pdf (accessed 12 October 2014). And: Brown DW. Economic value of disability-adjusted life years lost to violence: estimates for WHO Member States. *Rev Panam Salud Publica*. 2008;24(3):203–9.

[6] World Health Organization (WHO). *Global burden of disease estimates 2000-2012*. Geneva, World Health Organization (WHO), 2014. Available at http://www.who.int/healthinfo/global_burden_disease/estimates/en/index2.html (accessed 12 October 2014).

[7] World Health Organization (WHO).*Global health risks: mortality and burden of diseases attributable to selected major risks.* Geneva, World Health Organization (WHO), 2009. Available at http://www.who.int/healthinfo/global_burden_disease/global_health_risks/en (accessed 12 October 2014).

[8] World Health Organization (WHO). *Global burden of disease estimates 2000-2012*. Geneva, World Health Organization (WHO), 2014. Available at http://www.who.int/healthinfo/global_burden_disease/estimates/en/index2.html (accessed 12 October 2014).