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Author: Tran, Kieu N.
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CHILD MALTREATMENT IN VIETNAM

Prevalence, Risk Factors, and Consequences

Nhu Kieu Tran

CHILD MALTREATMENT IN VIETNAM

Prevalence, Risk Factors, and Consequences

PROEFSCHRIFT

ter verkrijging van de graad van Doctor aan de Universiteit Leiden
op gezag van Rector Magnificus prof. mr. C.J.J.M. Stolker
volgens besluit van het College voor Promoties
te verdedigen op dinsdag 12 december 2017
klokke 10.00 uur door

Tran Kieu Nhu

geboren te Hanoi, Vietnam
in 1979

Humankind has not woven the web of life.
We are but one thread within it.
Whatever we do to this web, we do to ourselves.
All things are bound together. All things connect.
- Chief Seattle

CONTENTS

Chapter 1

GENERAL INTRODUCTION

Child maltreatment can affect individuals across their life span and in many aspects of their life (Majer, Nater, Lin, Capuron, & Reeves, 2010; Norman et al., 2012; Wegman & Stetler, 2009). The cycle of maltreatment shows reoccurrence across multiple generations (Thornberry et al., 2013). Child maltreatment has been observed without exception in every culture and society where it has been studied (Who & Ipscan, 2006). This also applies to Vietnam, where research showed that child maltreatment is highly prevalent (Nguyen, 2006; Nguyen, Dunne, & Anh, 2009). The economic loss due to child maltreatment consequences in low- and middle-income countries in East Asia and the Pacific region have been estimated to account for 3.30% of the gross domestic product (GDP) (Fang et al., 2015). Because of the burden of child maltreatment for individuals, families, and the country, it is important to gain solid scientific evidence on child maltreatment to improve the awareness of stakeholders and increase the effectiveness of child maltreatment prevention and treatment. The current thesis addresses the prevalence, both current and over time, risk factors, and consequences of child maltreatment in Vietnam.

Vietnam is an East Asian country on the Indochina peninsula with a surface area of 331,051 square kilometers. Its borders are shared with China, Laos, and Cambodia. It has a relatively low degree of urbanization with 33.5% of the population living in urban areas. The population was estimated to be around 90,493,000 in 2014 (Gso, 2015) of which the majority, 84%, has the Kinh ethnicity (Baulch, Chuyen, Haughton, & Haughton, 2007). Vietnamese culture is affected deeply by Confucianism which originated in China. Some characteristics of the Vietnamese culture are collectivism and power disparities between men and women and between children and adults. Harsh discipline is a common parenting practice to shape children's behaviors as in the traditional belief "Spare the rod, spoil the child" (Beazley, Bessell, Ennew, & Waterson, 2006). Since the economy changed from a command mechanism to a market mechanism in 1986, Vietnam has achieved impressive economic growth (Wb, 2016). Nevertheless, the high speed of development has brought challenges to the country, such as an increase in migration, family breakdowns, erosion of traditional values, and widening inequality between rich versus poor, urban versus rural, and Kinh (the ethnic majority) versus ethnic minorities (Mocst, Gso, Unicef, & Ifgs, 2006).

Throughout four thousand years of history, Vietnam experienced many wars at various scales. The prolonged and most devastating war with the United States ceased 40 years ago, but its trace is still apparent in the Vietnamese people of today: in the arts, in the memories and lives of veterans, and possibly in an attitude towards the acceptance of violence. From 1954 to 1975 during the Vietnam war, the country was divided into the North and the South ruled by two different governments. Since 1975, the North and the South have been reunited, but there are still some differences in culture and dialects. However, there are no clear indications that the North and South differ greatly in family life, childrearing practices, or population size, as about half of the Vietnamese population lives in each region (GSO, 2013). Despite recent efforts , the child protection system in Vietnam is still rudimentary, which can be seen in the limited coverage of and underqualified social work force, a lack of a comprehensive data monitoring system for child protection, a shortage of clear guidance on child protection legislation, and limited availability of support services for child maltreatment victims (Molisa & Unicef, 2009; Unicef, 2017). The characteristics described above suggest that Vietnamese children might be vulnerable to child maltreatment.

Empirical research on child maltreatment in Vietnam is scarce. The very low number of studies on child maltreatment in limited resource contexts compared with that in *Western,* educated, *industrialized,* rich, and democratic *(WEIRD)* countries (Henrich, Heine, & Norenzayan, 2010) is also evident in the literature (Mikton & Butchart, 2009; Stoltenborgh, Bakermans-Kranenburg, Alink, & Van Ijzendoorn, 2014). Scientific knowledge about various aspects of child maltreatment in Vietnam including its prevalence, prevalence changes over time, its consequences specifically for Vietnamese children, and child and family characteristics associated with child maltreatment would shed more light on child maltreatment in limited resource contexts and inform policy makers and child protection program developers to tackle this issue in Vietnam.

This dissertation is based on data from the Vietnam prevalence study on child maltreatment (VPM-2014), a cross-sectional study with a representative sample of secondary and high school students in Northern Vietnam. The VPM-2014 study aims to explore (1) the child maltreatment prevalence in Vietnam and compare it with the prevalence in the Netherlands; (2) the changes in child maltreatment prevalence in Vietnam over the period of 10 years; (3) the association of child maltreatment with emotional, cognitive and physical health functioning of children; and (4) the association of child maltreatment with child and family risk factors.

METHODOLOGY

DEFINING CHILD MALTREATMENT

To conform with the international norms in child maltreatment research, the child maltreatment definition the WHO issued in 1999, WHO Consultation on Child Abuse Prevention (WHO,1999), is used in this dissertation:

Physical abuse: Physical abuse of a child is that which results in actual or potential physical harm from an interaction or lack of an interaction, which is reasonably within the control of a parent or person in a position of responsibility, power or trust. There may be single or repeated incidents.

Sexual abuse: The involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violate the laws or social taboos of society. Child sexual abuse is evidenced by this activity between a child and an adult or another child who by age or development is in a relationship of responsibility, trust or power, the activity being intended to gratify or satisfy the needs of the other person. This may include but is not limited to:

➢ *The inducement or coercion of a child to engage in any unlawful sexual activity;*

➢ *The exploitative use of a child in prostitution or other unlawful sexual practices;*

➢ *The exploitative use of children in pornographic performance and materials.*

Emotional abuse: Emotional abuse includes the failure to provide a developmentally appropriate, supportive environment, including the availability of a primary attachment figure, so that the child can develop a stable and full range of emotional and social competencies commensurate with her or his personal potentials and in the context of the society in which the a child dwells. There may also be acts towards the child that cause or have a high probability of causing harm to the child's health or physical, mental, spiritual, moral or social development. These acts must be reasonably within the control of the parent or person in a relationship of responsibility, trust or power. Acts include restriction of a movement, patterns of belittling, denigrating, scapegoating, threatening, scaring, discriminating, ridiculing or other non-physical forms of hostile or rejecting treatment.

Neglect: Neglect is the failure to provide for the development of the child in all spheres: health, education, emotional development, nutrition, shelter, and safe living

conditions, in the context of resources reasonably available to the family or caretakers and causes or has a high probability of causing harm to the child's health or physical, mental, spiritual, moral or social development. This includes the failure to properly supervise and protect children from harm as much as is feasible.

SAMPLING

The VPM-2014 study was conducted in Northern Vietnam only because of time and funding constraints. Northern Vietnam is divided into three geographical areas including the Northern midland and mountains, the Red River Delta, and the North Central Coast. The Northern midland and mountain area is the least developed area; it has more remote areas where many ethnic minorities are living. With favorable geographical characteristics, the Red River delta is highly inhabited and has the highest economic development. The North Central Coast is at the mid-level of development compared with the Northern midland and mountain area and the Red River Delta. In each of the three geographic areas, one province was randomly selected from the list of provinces. In addition, four additional provinces per area were randomly selected in case a province did not participate. Hanoi is the capital of Vietnam. It is located in the Red River Delta. Its metropolitan level is much higher than the metropolitan level of any other province in (the northern) Vietnam so Hanoi was selected in addition to the three provinces mentioned above.

In each of the four provinces, two secondary schools were randomly selected first. Because the sample of Hanoi represents the highest metropolitan population, only schools in urban areas were selected. In each of the other three provinces one school was selected from a list of all schools in the urban areas and one from a list of all schools in rural areas. In addition, for each province we selected two high schools that were close to the secondary schools. Within the schools we randomly selected one class per grade.

The final sample consisted of 1,851 students (47.3% boys, 57.6% secondary school students). The students were equally distributed among the four provinces. Most of the students were Kinh (81.7%), and 17.8% belonged to one of the ethnic minority groups (the other 0.5% had missing values for ethnicity). The mean age of the students was 14.2 years (SD = 1.4) and 89% of the students lived in two-parent families.

MEASUREMENT

The VPM-2014 study administered two different child maltreatment measures with the same population of school children in order to be able to compare child maltreatment prevalence cross-culturally and chronologically. One measure was based on the measure of the Netherlands' prevalence study on maltreatment of children and youth (NPM-2010) (Euser et al., 2013) (NPM measure). The other (Vietnam measure) was constructed by Nguyen (Nguyen, 2006) and was used in an earlier child maltreatment study in Vietnam (Nguyen, 2006; Nguyen et al., 2009). Students also reported child and family demographics. For child well-being, we measured emotional function and perceived physical health with standard questionnaires. In addition, we also administered a working memory test and collected information from students on weight, height, school performance to attain some objective indicators about children physical health, academic performance, and cognitive function.

FOCUS AND OUTLINE OF THE DISSERTATION

This dissertation presents the findings of the VMP-2014 study to provide empirical evidence on child maltreatment prevalence, risk factors and consequences in Vietnam. Chapter 2 and Chapter 3 focus on child maltreatment prevalence but in different perspectives. In Chapter 2, child maltreatment prevalence are estimated and compared with those in the Netherlands. Chapter 3 also explores the prevalence of child maltreatment but in a chronological comparison with the child maltreatment prevalence in Vietnam 10 years ago. In Chapter 4, the association between child and family risk factors and child maltreatment is investigated. The fifth chapter examines the association of child maltreatment with emotional, cognitive and physical health functioning of children. The last chapter addresses measurement issues, integrates the findings from the previous chapters using an etiological perspective and discusses implications for interventions and future research.

REFERENCE

Baulch, B., Chuyen, T. T. K., Haughton, D., & Haughton, J. (2007). Ethnic minority development in Vietnam. *The journal of development studies, 43,* 1151-1176.

Beazley, H., Bessell, L., Ennew, J., & Waterson, R. (2006). What children say: Results of comparative research on physical and emotional Punishment of children in Southeast Asia, East Asia and the Pacific.

Euser, S., Alink, L. R., Pannebakker, F., Vogels, T., Bakermans-Kranenburg, M. J., & Van, I. M. H. (2013). The prevalence of child maltreatment in the Netherlands across a 5-year period. *Child Abuse & Neglect, 37,* 841-851. doi: 10.1016/j.chiabu.2013.07.004

Fang, X., Fry, D. A., Brown, D. S., Mercy, J. A., Dunne, M. P., Butchart, A. R., ... Swales, D. M. (2015). The burden of child maltreatment in the East Asia and Pacific region. *Child Abuse & Neglect, 42,* 146-162. doi: 10.1016/j.chiabu.2015.02.012

Gso. (2015). Vietnam Population and Housing Census 2014 (pp. 36). Hanoi: GSO.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Science,* 33, 61-83; discussion 83-135. doi: 10.1017/s0140525x0999152x

Majer, M., Nater, U. M., Lin, J. M., Capuron, L., & Reeves, W. C. (2010). Association of childhood trauma with cognitive function in healthy adults: a pilot study. *BMC Neurology, 10,* 61. doi: 10.1186/1471-2377-10-61

Mikton, C., & Butchart, A. (2009). Child maltreatment prevention: a systematic review of reviews. *Bulletin of the World Health Organization, 87,* 353-361. doi: 10.2471/BLT.08.057075

Mocst, Gso, Unicef, & Ifgs. (2006). Result of nation-wide survey on the family in Vietnam 2006. Hanoi.

Molisa, & Unicef. (2009). Creating a protective environment for children in Vietnam: an assessment of child protection laws and policies, especially children in special circumstances in Vietnam. Hanoi.

Nguyen, H. T. (2006). *Child maltreatment in Vietnam: prevalence and associated mental and physical health problems.* Queensland: Queensland University of Technology.

Nguyen, H. T., Dunne, M. P., & Anh, L. V. (2009). Multiple types of child maltreatment and adolescent mental health in Viet Nam. *Bulletin of the World Health Organization, 88,* 22-30. doi: 10.2471/BLT.08.060061

Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. *PLoS Medicine, 9,* e1001349. doi: 10.1371/journal.pmed.1001349

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R., & Van Ijzendoorn, M. H. (2014). The prevalence of child maltreatment across the globe: review of a series of meta-analyses. *Child Abuse Review, 24.* doi: 10.1002/car.2353

Thornberry, T. P., Henry, K. L., Smith, C., Ireland, T. O., Greenman, S. J., & Lee, R. D. (2013). Breaking the Cycle of Maltreatment: The Role of Safe, Stable, and Nurturing Relationships. *Journal of Adolescent Health, 53,* S25-S31. doi: 10.1016/j.jadohealth.2013.04.019

Unicef. (2017). Child protection overview.   Retrieved 28 June 2017, from https://www.unicef.org/vietnam/protection.html

Wb. (2016). Taking Stock: An Update on Vietnam's Recent Economic Developments.

Wegman, H. L., & Stetler, C. (2009). A meta-analytic review of the effects of childhood abuse on medical outcomes in adulthood. *Psychosomatic Medicine, 71,* 805-812. doi: 10.1097/PSY.0b013e3181bb2b46

Who. (1999). Report of the Consultation on Child Abuse Prevention. Geneva.

Who, & Ipscan. (2006). Preventing child maltreatment: a guide to taking action and generating evidence. *Geneva: World Health Organization.*

Chapter 2

CHILD MALTREATMENT IN VIETNAM:

PREVALENCE AND CROSS-CULTURAL COMPARISON

Nhu K. Tran, Lenneke R.A. Alink, Sheila R. Van Berkel,
and Marinus H. van Ijzendoorn

ABSTRACT

This Vietnam Prevalence study on child maltreatment (VPM-2014), was designed to examine the prevalence of child maltreatment in Vietnam and to compare it with the child maltreatment prevalence in the Netherlands using the same measures and procedure. Questionnaires were filled out by 1,851 students aged 12 to 17 years (47.3% were boys). Results indicated that half of the students (49.9%) reported at least one event of child maltreatment in the past year. Emotional abuse was most frequently reported (31.8%), followed by physical abuse, neglect, and witnessing parental conflict. Sexual abuse was the least prevalent (2.6%). Compared with the Netherlands, the prevalence rates of most types of child maltreatment were higher in Vietnam: the largest difference was with emotional abuse, followed by neglect, physical abuse, and witnessing parental conflict. Only the past year sexual abuse prevalence in Vietnam was lower. These findings highlight the alarming problem of child maltreatment in Vietnam.

Keywords: child maltreatment, child abuse and neglect, prevalence, cross-cultural comparison, Vietnam

INTRODUCTION

Child maltreatment is a worrisome burden. It has short-term and long-term consequences for the well-being of the victims such as more depression, anxiety, and risky behaviors both during childhood and adulthood (Huong, Dunne, & Anh, 2009; Spinhoven et al., 2010), and poorer economic well-being during adulthood (Currie & Widom, 2010). These consequences are not limited to personal effects; the victims also have a higher risk of developing delinquency and maltreating their own children (Berlin, Appleyard, & Dodge, 2011; Mersky & Reynolds, 2007; Thompson, 2006). This vicious cycle is detrimental to the society at large. As an illustration, it was estimated that the costs converted from Disability-Adjusted Life Years (DALYs) losses related to child maltreatment accounted for 1.36%-2.52% of GDP (Gross Domestic Product) of countries in East Asia and Pacific regions (Fang et al., 2015).

Meta-analyses on the global prevalence of child maltreatment show that 18% of children experienced physical abuse, 36% experienced emotional abuse, and about 18% of girls and 8% of boys were sexually abused during their childhood (Stoltenborgh, Bakermans-Kranenburg, Alink, & Van IJzendoorn, 2012; Stoltenborgh, Bakermans-Kranenburg, Van IJzendoorn, & Alink, 2013; Stoltenborgh, Van IJzendoorn, Euser, & Bakermans-Kranenburg, 2011). Moreover, global prevalence estimates of neglect show that 16% of children have experienced physical neglect and 18% have experienced emotional neglect during their lives (Stoltenborgh, Bakermans-Kranenburg, & Van IJzendoorn, 2013). Meta-analyses based on available studies in Asia suggest that child maltreatment is also a considerable problem in these regions (4%-42%) (Stoltenborgh, Bakermans-Kranenburg, Alink, & Van IJzendoorn, 2014). Similar prevalence rates were found for East Asia and Pacific regions (2%-53%) (Fang et al., 2015). In addition, meta-analyses on child maltreatment in China show that the prevalence rates for physical and sexual abuse range from 10%-43% (Ji & Finkelhor, 2015; Ji, Finkelhor, & Dunne, 2013) and that the prevalence rates of sexual abuse among boys (14%) and physical abuse (37%) are even higher than the world prevalence estimates at 8% for sexual abuse and at 23% for physical abuse (Ji & Finkelhor, 2015). Even though prevalence estimates are available for a number of different Asian countries, these are still a small *minority* of child maltreatment studies worldwide (Stoltenborgh et al., 2014), so more efforts should be undertaken to get a reliable view on the prevalence of child maltreatment in Asia.

The current study specifically focuses on the prevalence of maltreatment in Vietnam. Culturally, similar to other East Asian countries, the strong family and community cohesion, the power disparity between males and females, and adults and

children embedded in Confucianism affects the behavior of adults including parents towards children (Park & Chesla, 2007) and may also be risk or protective factors for child maltreatment. In addition, Vietnam has been severely affected by the long and devastating war between North and South Vietnam which ended only 40 years ago. Violence induced by the war may still leave its trace in the current lives of Vietnamese people and lead to a higher tolerance of violence in the society, which in turn could affect the behavior of parents towards their children.

In Vietnam, to date four studies on the prevalence of child maltreatment have been conducted (Emery, Nguyen, & Kim, 2014; Emery, Trung, & Wu, 2015; Huong, 2006; Loan, 2010; Tran, Dunne, Vo, & Luu, 2015). These studies have strengths as well as limitations. For example, provinces were not randomly selected (Huong, 2006) or only one province was included (Emery et al., 2014a; Emery et al., 2015; Loan, 2010), which limits the generalizability of the findings. In addition, two of the previous studies investigated only one or two forms of child maltreatment (Emery et al., 2014b; Emery et al., 2015) and one other study focused on physical discipline and verbal aggression and not on child maltreatment as such (Cappa & Dam, 2014). Finally, a more recent study examined all types of child maltreatment, but used a sample of medical university students (Tran et al., 2015) which limits the generalizability of the findings to other members of society. The current study addresses these limitations by including a representative, randomly selected sample and assessing all types of maltreatment.

The comparison of child maltreatment prevalence rates across continents and cultures can provide interesting insights into the nature of child maltreatment. However, there are very few studies that directly compared prevalence rates between countries. Indirect comparisons via meta-analyses indicate that the prevalence of physical and emotional abuse for Asia are not different from the global estimates but the prevalence of emotional abuse for Asian-American samples seems much higher than for Asian samples (Stoltenborgh et al., 2012; Stoltenborgh, Bakermans-Kranenburg, Van IJzendoorn, et al., 2013). This difference may suggest an underestimation of the emotional abuse prevalence in Asia (Stoltenborgh et al., 2012). In addition, the global sexual abuse prevalence rate in Asia appeared to be consistently lower than that in other geographical areas (Back et al., 2003; Stoltenborgh et al., 2011). However, the validity of these comparisons is limited by methodological issues. Most studies used different methodologies such as different measurements, study procedures, or different child maltreatment definitions. Specifically, for emotional abuse, some studies used a narrow definition by including only verbal abuse, while others used a broader definition by including also inadequate nurturance and affection (Stoltenborgh et al., 2012). Regarding child sexual abuse and emotional neglect, some

studies used vague or subjective terms, while others used more behaviorally specific questions (Stoltenborgh, Bakermans-Kranenburg, & Van IJzendoorn, 2013; Stoltenborgh et al., 2011). Fortunately, some progress has been made to improve the quality of cross-cultural studies by using the same measures and procedures in different countries (Back et al., 2003; Mbagaya, Oburu, & Bakermans-Kranenburg, 2013). Yet, there still is a crucial need to conduct more cross-cultural studies with optimal designs for valid comparisons (Stoltenborgh et al., 2012; Stoltenborgh, Bakermans-Kranenburg, Van IJzendoorn, et al., 2013).

To address these issues, the aims of the current study were to examine (a) the prevalence of child maltreatment in Vietnam, and (b) differences between the prevalence of the different types of child maltreatment in Vietnam and the Netherlands. We conducted a cross-sectional study with secondary and high school students (aged 12-17 years) in Vietnam using the same measures as the Netherlands' Prevalence Study on Maltreatment of children and youth of 2010 (NPM-2010; Euser et al., 2013). In the NPM-2010, a representative group of randomly selected high school students (aged 12-17 years) from all parts of the country reported on their maltreatment experiences. The current study, the Vietnam Prevalence study on child maltreatment (VPM-2014), addresses the limitations of current child maltreatment studies in Asia and is among the first to examine the prevalence of child maltreatment in Vietnam in a more representative sample. In addition, it is a unique cross-cultural study comparing an Asian country and a European country with a similar study design.

METHOD

SAMPLE

The study was conducted in four provinces of Northern Vietnam, namely Hanoi, Nam Dinh, Ha Tinh, and Tuyen Quang. Hanoi, the capital of Vietnam, was selected because of its unique metropolitan characteristics. Regarding the other three provinces, one province was randomly selected from each of the three geographic areas of Northern Vietnam. In each province, two secondary schools and two high schools were randomly selected. Because the sample of Hanoi represents the largest metropolitan population, only schools in urban areas were selected in this province. In each of the other three provinces, one secondary school (for children aged 12-14) was selected from a list of schools in urban areas and the other secondary school in rural areas. In addition, for logistical reasons, for each province the two high schools (for children aged 15-17) that were nearest to the secondary schools were selected. We excluded schools for blind

students, schools with fewer than 40 students per grade, and boarding schools where children live full time. We randomly selected one or two classes per grade of each participating school, depending on the number of students in a class.

Our sample thus consisted of a total of eight secondary schools and eight high schools. In total, 2,360 students of 71 classes participated in the study. Students were excluded when unreliable answers were suspected based on outlying scores (more than 3.29 SD above the mean (Tabachnick & Fidell, 2012) on the Wildman Symptom Checklist, a scale consisting of bogus symptoms, such as "The buzzing in my ears keeps switching from the left to the right" (Merckelbach, Smeets, & Jelicic, 2009; Wildman & Wildman, 1999), or based on a specific pattern in their answers on the maltreatment questionnaire (e.g., all questions answered with the highest possible score; $n = 53$). In addition, students who were 18 years or older were excluded ($n = 2$). Finally, 11-year-old students were excluded ($n = 331$) to make our sample comparable in age distribution with the sample of the Dutch child maltreatment study (NPM-2010; Euser et al., 2013). The final sample consisted of 1,851 students (47.3% boys, 57.6% secondary school students). The students were equally distributed among the four provinces. Most of the students were Kinh (81.7%), which is the majority ethnic group of Vietnam and 17.8% belonged to one of the ethnic minority groups (the other 0.5% had missing values for ethnicity). The mean age of the students was 14.2 years ($SD = 1.4$). The Dutch comparison sample comprised of 1,920 students, with 52% boys, the mean age was 13.8 ($SD = 1.3$) (Euser et al., 2013).

PROCEDURE

After the Provincial Department of Education and the school boards approved the implementation of the study in the schools, informed consent was obtained from both the students and their parents. The students filled out a questionnaire during class hours. Students who refused or students whose parents refused participation in the study filled out dummy questionnaires which were not used in our data-analyses, to avoid making these students a special group in the classroom. The original questionnaire was in English and translated forward to English and backward to Vietnamese by two bilingual social science professionals. The Vietnamese questionnaire was piloted with 5 school-aged children and well understood by these children. The research proposal was approved by the Ethics Committee of the Institute of Education and Child Studies, Leiden University and the Ethics Committee of Institute of Population, Health and Development of Vietnam.

MEASURES

Child maltreatment.

The child maltreatment questionnaire was based on the measure of the Netherlands' NPM-2010 (Euser et al., 2013). The 32-item NPM measure was developed for the NPM-2010 study and was based on the Dating Violence Questionnaire (Douglas & Straus, 2006) and the Parent-Child Conflict Tactics Scales (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). The physical abuse scale consists of 8 items reflecting serious physical violence by (one of) the parents. The emotional abuse scale consists of a single item ("threatening to spank or hit") because during scale development (Lamers-Winkelman, Slot, Bijl, & Vijlbrief, 2007) only this item was considered serious enough to be regarded as maltreatment. The sexual abuse scale includes 8 items, and distinguishes between abuse within and outside of the family and uses both behaviorally specific and subjective questions. The witnessed parental conflict scale consists of 7 items covering physical violence between parents. The neglect scale includes 8 items and uses behaviorally specific questions to measure both emotional and physical neglect. The items are listed in Table 2.1. The maltreatment items were embedded in a questionnaire with filler items, which concerned unpleasant and nasty incidents, nonviolent parental discipline (CTSPC; Straus et al., 1998), and the social desirability items of the Dating Violence Questionnaire (Douglas & Straus, 2006). In the current study, 28 filler items about violence in the school were left out (while keeping enough filler items to not change the content of the questionnaire), because of time constraints (additional questionnaires were added, which will be presented elsewhere). The Cronbach's alphas of the whole maltreatment scale was.75. In addition, the Cronbach's alphas of the child maltreatment subscales were also adequate (≥ .69) and comparable with those of the NPM-2010 study, except the Cronbach's alphas of the sexual abuse subscale in the VPM-2014 (Cronbach's alpha = .69), which was adequate, but somewhat lower than that of the sexual abuse subscale in the NPM-2010 (Cronbach's alpha = .88).

Table 2.1 | Child Maltreatment Items

Type of CM	Items	Past-year CM	Life-time CM	NIS definition
Sexual abuse				
Within family	(1) An adult member of my family has had sex with me	x	x	x
	(2) An adult member of my family has forced me to look at his/her genitals or to touch them, or he/ she has done this to me	x	x	x
	(3) A child/young person from my family has forced me to look at his/her genitals or to touch them, or he/she has done this to me	x	x	
	(4) A child/young person from my family has done things to me that you could call sexual abuse	x	x	
Outside family	(5) An adult who does not belong to my family, has had sex with me	x	x	
	(6) An adult who does not belong to my family has forced me to look at his/her genitals or to touch them, or he / she has done this to me	x	x	
	(7) A child/young person who does not belong to my family, has forced me to look at his/her genitals or to touch them, or he/she has done this to me	x	x	
	(8) A child/young person who does not belong to my family, has done things to me that you could call sexual abuse	x	x	
Physical abuse	(1) My mother/ father hit me on my bottom with something	x	x	x
	(2) My mother/ father beat me with a fist or kicked me hard	x	x	x
	(3) My mother/ father grabbed me around my neck and choked me	x	x	x
	(4) My mother/ father beat me up, that is he/she hit me over and over	x	x	x
	(5) My mother/ father burned or scalded me on purpose	x	x	x
	(6) My mother/ father hit me on some other part of my body besides my bottom	x	x	x
	(7) My mother/ father threatened me with a knife or a gun	x	x	x
	(8) My mother/ father threw me or knocked me down	x	x	x

Emotional abuse	(1) My mother/ father threatened to spank or hit me but did not actually do it	x	x	
Witnessed parental conflict	(1) My mother/ father pushed, grabbed, or shoved the other	x	x	
	(2) My mother/ father slapped the other	x	x	
	(3) My mother/ father kicked, bit or hit the other with a fist	x	x	x
	(4) My mother/ father hit the other or tried to hit the other with something	x	x	
	(5) My mother/ father beat the other up	x	x	x
	(6) My mother/ father threatened the other with a knife or gun	x	x	x
	(7) My mother/ father used a knife or fired a gun against the other	x	x	x
Neglect	(1) When I was younger, my parents made sure I went to school	x		
	(2) When I was younger, my parent made sure I was clean	x		
	(3) When I was a child, my parents would comfort me when I was upset	x		
	(4) My parents did not help me to do my best	x		
	(5) My parents did not care if I got into trouble in school	x		
	(6) My parents gave me enough clothes to keep me warm	x		
	(7) My parents helped me with my homework	x		
	(8) My parents helped me when I had problems	x		

Note. CM refers to child maltreatment. Items are derived from the Dating Violence Questionnaire (Douglas & Straus, 2006) and the CTSPC (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998).

The NPM-2010 consisted of a sentinel component and a self-report component. The self-report component used the questionnaire with 32 child maltreatment items mentioned above (see Table 2.1). To be able to directly compare sentinel and self-report results in that study, the coders of the sentinel component coded these items according to the definitions they used to code sentinel reports (NIS [National Incidence Study] definitions; Sedlak et al., 2010). All coders agreed on 13 items out of the 32 items to be the most valid indicators of maltreatment as defined by the NIS (these items were used for comparison with the sentinel data). We refer to these 13 items as child maltreatment according to the NIS definition (Euser et al., 2013). The Cronbach's alpha of the child maltreatment scale using the NIS definition was .77. The physical abuse scale using the NIS definition was the same as the physical abuse scale of the original questionnaire (Cronbach's alpha = .78). The sexual abuse scale included two items of the eight sexual abuse items of the original questionnaire (Cronbach's alpha = .35) and three items of the witnessed parental conflict scale were selected as indicators of child maltreatment according to the NIS definition (Cronbach's alpha = .72).

STATISTICAL PROCEDURES

Prevalence estimates were computed as the proportion maltreated students of the total number of participants. Parallel to the Dutch prevalence study, participants were considered to have experienced child maltreatment if they reported any experience of maltreatment, regardless of the frequency of this experience. For the neglect scale, severe neglect was measured and only participants who had experienced at least three events of neglect were considered as being neglected (Lamers-Winkelman et al., 2007). To compare the prevalence estimates of the different samples, 84% confidence intervals were computed. Non-overlapping 84% CIs are considered to be adequate for the comparison of rates at a 5% significance level (Julious, 2004). Prevalence estimates were considered not significantly different if their 84% confidence intervals overlapped. This method has been shown to be statistically adequate (Goldstein & Healy, 1995; Julious, 2004; Payton, Greenstone, & Schenker, 2003) and has been used in previous research (Euser, Van IJzendoorn, Prinzie, & Bakermans-Kranenburg, 2009; Euser et al., 2013). The neglect prevalence was only available for lifetime experience. For the other forms of maltreatment both past year and lifetime prevalence rates were computed.

RESULTS

PREVALENCE ESTIMATES OF CHILD MALTREATMENT IN VIETNAM

Maltreatment prevalence rates are presented in Table 2.2. About half of the Vietnamese participants reported having experienced any type of child maltreatment during the past year and a vast majority of the children (83%) had experienced any type of maltreatment during their lifetime. Emotional abuse was the most frequently reported type of maltreatment both for the occurrence within the past year and for life-time occurrence. The past year and lifetime prevalence rates of emotional abuse were followed by physical abuse, neglect (only life-time) and witnessing parental conflict. Sexual abuse was reported least frequently both for the occurrence within the past year and for lifetime occurrence.

Table 2.2 | *Maltreatment prevalence estimates in Vietnam*

Type of maltreatment	Past year prevalence			Lifetime prevalence		
	N	%	84% CI	*N*	%	84% CI
Sexual abuse	1,685	2.6	[2.2,3.3]	1,701	7.1	[6.3,8.1]
Within family	1,708	1.3	[1.0,1.8]	1,714	3.2	[2.7,3.9]
Outside family	1,780	2.0	[1.6,2.5]	1,783	5.7	[5.0,6.6]
Physical abuse	1,782	19.1	[17.9,20.5]	1,795	38.5	[36.9,40.1]
Emotional abuse	1,823	31.8	[30.3,33.3]	1,823	59.9	[58.3,61.5]
Witnessed parental conflict	1,851	15.3	[14.2,16.6]	1,851	23.7	[22.3,25.1]
Neglect[a]	-	-	-	1,846	25.0	[23.6,26.4]
Total	1,759	49.9	[48.2,51.6]	1,816	83.4	[82.1,84.5]

[a] The questions about neglect only covered lifetime experiences

Next, prevalence rates were compared between boys and girls. There was no difference between boys and girls in the experience of maltreatment in general (Table 2.3). However, boys reported significantly more physical and sexual abuse than girls both during the past year and their lifetime. There were no differences in the past year and lifetime experience of witnessed parent conflict and past year experience of emotional abuse between boys and girls. In addition, boys reported significantly less neglect and emotional abuse during their lifetime than girls.

Table 2.3 | Child Maltreatment Prevalence by Gender

Type of maltreatment		Boys			Girls		Boys (M) versus Girls (F)
Past year prevalence	*N*	%	84% CI	*N*	%	84% CI	
Sexual abuse	773	3.5	[2.8,4.7]	899	1.7	[1.2,2.5]	M > F
Physical abuse	834	22.2	[20.3,24.3]	933	16.4	[14.8,18.2]	M > F
Emotional abuse	858	33.1	[30.9,35.4]	950	30.7	[28.7,32.9]	M = F
Witnessed parental conflict	875	15.2	[13.6,17.1]	961	15.6	[14.1,17.4]	M = F
Total	825	51.9	[49.4,54.3]	920	48.2	[45.8,50.5]	M = F
Lifetime prevalence							
Sexual abuse	784	8.9	[7.7,10.6]	904	5.3	[4.4,6.6]	M > F
Physical abuse	843	42.8	[40.5,45.3]	937	34.6	[32.5,36.8]	M > F
Emotional abuse	858	57.5	[55.1,59.8]	950	62.6	[60.4,64.8]	M < F
Witnessed parental conflict	875	23.2	[21.3,25.3]	961	24.3	[22.5,26.4]	M = F
Neglect	871	22.6	[20.7,24.7]	960	27.2	[25.3,29.3]	M < F
Total	854	84.3	[82.4,85.9]	948	82.5	[80.6,84.1]	M = F

Note. The numbers for boys and girls do not add up to the total numbers mentioned in Table 2.1 because of missing information on gender.

COMPARISON OF CHILD MALTEATMENT PREVALENCE IN VIETNAM AND THE NETHERLANDS

The past year child maltreatment prevalence estimates in Vietnam with those in the Netherlands (NPM-2010; Euser et al., 2013) were also compared. Of the Vietnamese children 49.9% (84% CI [48.2,51.6]) had experienced any event of emotional abuse, physical abuse, sexual abuse, or witnessed parental conflicts in the past year, while 18.7% (84% CI [17.5,20.0]) of the Dutch children did (Figure 2.1). When comparing the subtypes of child maltreatment, similar differences were found between the prevalence estimates of Vietnam and the Netherlands for most types of maltreatment. Compared to the prevalence estimates in the Netherlands, the prevalence estimates in Vietnam were significantly higher for emotional abuse (VN: 31.8%, 84% CI [30.3,33.3]; NL: 8.5%, 84% CI [7.7,9.5]), physical abuse (VN: 19.1%, 84% CI [17.9,20.5]; NL: 7.2%, 84% CI [6.4,8.1]), neglect (VN: 25.0%, 84% CI [23.6,26.4]; NL: 4.3%, 84% CI [3.5,5.3]), and witnessing parental conflicts (VN: 15.3%, 84% CI [14.2,16.6]; NL: 4.9%, 84% CI [4.3,5.7]). Only the past year prevalence of sexual abuse in Vietnam was lower than in the Netherlands (VN: 2.6%, 84% CI [2.2,3.3]; NL: 5.8%, 84% CI [5.1,6.6]). A similar pattern was observed for sexual abuse outside the family (VN: 2.1%, 84% CI [1.7,2.7]; NL: 5.1%, 84% CI [4.5,5.9]). However, prevalence of sexual abuse within the family was similar between the two countries (VN: 1.3%, 84% CI [1.0,1.8]; NL: 2.2%, 84% CI [1.8,2.8]).
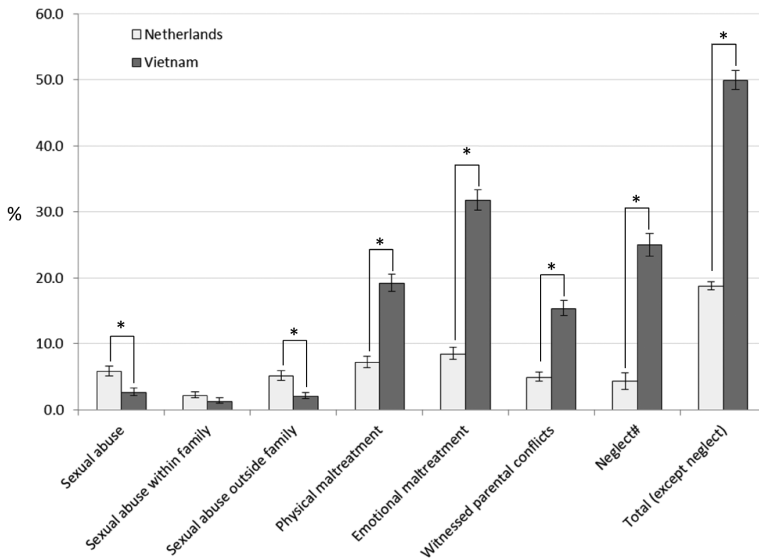

Figure 2.1 | *Comparison of past year maltreatment prevalence in Vietnam and the Netherlands*

*p < .05;   #: Lifetime neglect prevalence estimate

In the NPM-2010 study, 13 maltreatment items were selected based on the NIS-definitions of maltreatment (Euser et al., 2013). For this measure, similar differences were found between Vietnam and the Netherlands (Table 2.4). Maltreatment prevalence estimates were higher in Vietnam for total maltreatment, physical abuse, and witnessing parental conflicts than in the Netherlands. In contrast, using the two selected sexual abuse items, the sexual abuse prevalence in Vietnam was significantly lower than in the Netherlands (0.5% versus 1.8%).

Table 2.4 | Past Year Child Maltreatment Prevalence Estimates Using NIS-Definitions in Vietnam and in the Netherlands

Type of maltreatment	Vietnam			Netherlands			Vietnam (V) versus Netherlands (N)
	N	%	84% CI	*N*	%	84% CI	
Sexual abuse	1719	0.5	[0.4,0.9]	1195	1.8	[1.4,3.3]	V<N
Physical abuse	1782	19.1	[17.9,20.5]	1229	7.2	[6.5,8.2]	V>N
Witnessed parental conflicts	1851	12.3	[11.3,13.5]	1285	2.3	[1.9,2.9]	V>N
Total	1753	29.3	[27.8,30.8]	1218	9.9	[9.0,11.0]	V>N

DISCUSSION

Child maltreatment, especially emotional abuse, physical abuse, and neglect, is highly prevalent in Vietnam. In addition, children's exposure to violence in the form of witnessing parental conflict is very common. Compared to the Netherlands prevalence estimates of all forms of child maltreatment except child sexual abuse are much higher in Vietnam.

Majority of 12-17-year-old Vietnamese children had experienced at least one type of child maltreatment during their lives. Emotional abuse was reported most frequently, with more than half of the children reporting that they had experienced emotional abuse. This result was like the findings of a previous Vietnamese study indicating that the most common adversity reported by medical university students was emotional abuse at 42.3% (Tran et al., 2015) and the Vietnamese national household survey on violent discipline in 2010-2011 that found that 55.4% of the caregivers reported to use verbal aggression towards their children (Cappa & Dam, 2014). This finding is also in line with the results of the meta-analyses on child maltreatment in lower and middle income East Asian and Pacific countries (Fang et al., 2015).

In addition, the comparison of past year child maltreatment prevalence rates between Vietnam and the Netherlands showed the largest difference between the two countries in emotional abuse. In Vietnam, the emotional abuse prevalence estimate was 23.3% higher than in the Netherlands. This result is in line with previous studies that found that emotional punishment is used widely as a child-rearing practice in Vietnam (Beazley, Bessell, Ennew, & Waterson, 2006; Cappa & Dam, 2014). Other cross-cultural studies that directly compare the prevalence of child emotional abuse in Asian and Western countries are lacking. The recent global meta-analysis estimated the emotional abuse prevalence for each available geographic region and did not find a difference between the prevalence in Asia and global prevalence estimates (Stoltenborgh et al., 2012). This could be due to the broad range of measures used in the different studies included in the meta-analysis, which complicates direct comparison between regions. A higher prevalence of emotional abuse was found for ethnic Asian Americans compared to other ethnic groups within the US (Meston, Heiman, Trapnell, & Carlin, 1999; Stoltenborgh et al., 2012). The current study is the first to show a similar difference between countries.

Physical abuse was the second most frequently reported type of maltreatment and prevalent at a similar level as the meta-analytic estimate in China (Ji & Finkelhor, 2015), as well as the prevalence reported by medical university students in Vietnam (Tran et al., 2015). This was in line with our expectation based on the knowledge that physical violence is widely used by parents for the purpose of discipline and punishment in Southeast Asia and the Pacific (Beazley et al., 2006). Comparing with the Netherlands, there was also a large difference in prevalence rates, with prevalence estimates in Vietnam being 11.9% higher. Other cross-cultural studies also showed that the physical abuse prevalence was higher in a context where physical discipline is commonly accepted as a parenting practice such as in Asia and Africa as compared to contexts where physical discipline is less accepted such as in Europe or the United States (Back et al., 2003; Mbagaya et al., 2013). This finding is in line with the meta-analysis showing that the physical abuse prevalence was higher in China than worldwide (Ji & Finkelhor, 2015). In contrast, the global meta-analysis did not find a difference between the physical abuse prevalence in Asia and other geographic areas (Stoltenborgh, Bakermans-Kranenburg, Van IJzendoorn, et al., 2013). The lack of studies in developing Asian countries, rather than developed Asian regions such as Hong Kong or Taiwan, could be a reason for the under-estimation of physical abuse prevalence in Asia (Ji & Finkelhor, 2015; Stoltenborgh, Bakermans-Kranenburg, Van IJzendoorn, et al., 2013). We added to this literature by showing that the prevalence of physical abuse in a developing Asian country was high.

With one in four students reporting having experienced neglect, this was the next most frequently reported type of maltreatment This parallels the findings that 19.8% of middle and high school students in Ho Chi Minh city reported to have experienced neglect (Loan, 2010). In addition, the neglect prevalence in Vietnam in the current study seems similar to the global neglect prevalence estimates (16.3% for physical neglect and 18.4% for emotional neglect) (Stoltenborgh, Bakermans-Kranenburg, & Van IJzendoorn, 2013). We also found that the life-time neglect prevalence rate in Vietnam was much higher than in the Netherlands (by 21%) (Euser et al., 2013). To our knowledge, no previous cross-cultural studies have been conducted that directly compare the prevalence of neglect between Asian countries and other countries. However, our results are in line with a cross-cultural study comparing parenting in Vietnam and in Germany, which found a higher level of neglectful parenting in Vietnam compared to Germany (Rindermann, Hoang, & Baumeister, 2013). The difference in neglect rates that we found could be related to the lower developmental level of Vietnam compared to the Netherlands. Families, especially poor families, in Vietnam may have fewer resources to meet the physical needs of their children. In two African countries with similar economic circumstances as Vietnam, the neglect prevalence was indeed also higher than in the Netherlands (Mbagaya et al., 2013). In addition, the power disparity between children and adults, originating from Confucianism in the Vietnamese culture, (MOCST, GSO, UNICEF, & IFGS, 2006; Rindermann et al., 2013), may lead to more neglect. Compared to Dutch parents, Vietnamese parents may have more financial stress because of the large difference in social economic status between the two countries. For example, in Vietnam, 68% of the population live in rural areas, with much lower living standards than urban counterparts (GSO, 2013; Thu Le & Booth, 2014). This, in combination with limited parenting skills, may result in parents neglecting their children more in Vietnam than in the Netherlands.

Witnessing parental conflict was almost as commonly reported as neglect. There were no previous studies examining witnessed parental conflict in Vietnam. However, some evidence concerning the high frequency of parental conflict can be derived from a study on family violence, in which 36.8% of the married women in the Nghe An province in Vietnam reported being hit by their husbands (Luke, Schuler, Mai, Vu Thien, & Minh, 2007). Compared to the Netherlands, Vietnamese children witnessed parental conflict in the past year more often than Dutch children both when analyzing the full subscale (by 10.4%) and the selected items according to the NIS-definitions (by 10.0%). Although there were no previous cross-cultural studies on witnessing parental conflict, the discrepancy in the prevalence estimates between Vietnam and the Netherlands - two countries with largely different developmental and income levels - is consistent

with the finding of the meta-analysis in East Asian and Pacific regions indicating that the prevalence of witnessing parental conflict was higher in the lower middle income countries than in the upper middle and high income countries in this region (Fang et al., 2015). Another explanation for the higher prevalence in Vietnam can be found in Vietnam's cultural background. Historically, the Vietnamese culture is largely influenced by Confucianism, which considers females inferior to males; hence it may facilitate husbands to treat their wives violently (Hong, Duong, & Huong, 2009; MOCST et al., 2006; Weil & Lee, 2004). Other studies indeed found that domestic violence is common in Vietnam (Luke et al., 2007; Weil & Lee, 2004).

We found that among the five types of maltreatment, child sexual abuse was the least prevalent, which is consistent with the findings of two studies on four types of child maltreatment in Vietnam (Huong, 2006; Loan, 2010) and the findings of the meta-analyses of child maltreatment in the East Asian and Pacific countries with lower or middle income (Fang et al., 2015). Regarding the comparison with the Netherlands, among the different types of child maltreatment, only the past year prevalence of sexual abuse in Vietnam was lower than the prevalence in the Netherlands. Similarly, in the global meta-analysis on sexual abuse, the prevalence in Asia was the lowest compared to the other continents (Stoltenborgh et al., 2011). The lower prevalence of sexual abuse in Asian samples was also found in a cross-cultural study with Singapore and the United States and in a cross-ethnic study in Canada, comparing East and Southeast Asian Canadians with European Canadians (Back et al., 2003; Meston et al., 1999). This finding is also in line with the finding on sexual abuse among females in China (Ji et al., 2013). Moreover, the higher sexual abuse prevalence among boys than girls in this study is consistent with the meta-analytic findings on child sexual abuse in China (Ji et al., 2013). Some cultural factors may affect the reported prevalence in Vietnam. First, the taboo for girls on losing virginity before marriage may inhibit the report of assaults. Second, the collectivist culture in Asia, which emphasizes family interests and honor above individual interests or needs, may lead to reluctance to report abusive events, especially when they occur within the family (Back et al., 2003; Huong, 2006; Ji et al., 2013; Meston et al., 1999; Stoltenborgh et al., 2011). These cultural characteristics can lead to under-report of sexual abuse in Asia.

In addition to the Confucianistic ideology, the long and devastating war in Vietnam could play a role in the higher prevalence of child maltreatment other than sexual abuse in Vietnam compared to the Netherlands. A study in post-conflict settings in Uganda found that the exposure to traumatic war events increased the risk of domestic violence victimization and child maltreatment perpetration of women 20 years after the war (Saile, Ertl, Neuner, & Catani, 2014; Saile, Neuner, Ertl, & Catani, 2013).

Although the relation between war exposure of men and their child maltreatment perpetration or the violence against their partners was not found in the study of Saile et al. (2013, 2014), a higher severity level of PTSD among men was related to higher reported maltreatment of their children (Saile et al., 2014). In a meta-analysis, PTSD, a common disorder among veterans (Kulka et al., 1990; Sagi, Van IJzendoorn, Joels, & Scharf, 2002; Van der Hal-Van Raalte, Van Ijzendoorn, & Bakermans-Kranenburg, 2007), was also found to be associated with domestic violence perpetration of male veterans (Taft, Watkins, Stafford, Street, & Monson, 2011). Although the Vietnam war ceased 40 years ago, the effect of the war may still transmitted inter-generationally through the cycle of violence mechanism (Widom, 1989) and contribute to the higher prevalence of child maltreatment in Vietnam.

LIMITATIONS

Some limitations of this study must be mentioned. First, this study was conducted only in Northern Vietnam, so the representativeness of the study for the country is not guaranteed. It should be noted however that about half of the Vietnamese population lives in Northern Vietnam (GSO, 2013) and there are no clear indications that the north and south differ greatly in family life and child rearing. A second limitation is that the emotional abuse subscale consisted of only one item. From a psychometric perspective, this certainly is a weakness. Perhaps the influence on our results is not fatal as we previously showed in a meta-analysis that the number of items used to measure emotional abuse (ranging from 1-20) was not significantly related to the estimated prevalence of emotional abuse (Stoltenborgh et al.,2012). Future research should use a broader emotional abuse scale to test whether results converge. Furthermore, the internal consistency of the sexual abuse subscale based on the NIS-definition was low. However, results were consistent with the full sexual abuse scale. Third, this study used only self-report data and no sentinel reports. Recent meta-analyses on child maltreatment indicated that the prevalence estimates of self-report studies are often much higher than sentinel-based prevalence, so this could have influenced our results (Stoltenborgh et al., 2012; Stoltenborgh, Bakermans-Kranenburg, Van IJzendoorn, et al., 2013; Stoltenborgh et al., 2011). However, in developing countries such as Vietnam, the knowledge and skills of professionals working with children regarding child maltreatment are limited and there is no legal mechanism mandating the report of suspicions of child maltreatment for these professionals. Therefore, in Vietnam, child maltreatment research with sentinel reports might still be rather unreliable. We recommend training professionals and improving the infrastructure for reporting child maltreatment in Vietnam. By doing this, children and their families can be supported more

adequately in an earlier stage and it would be possible to get a better view on the prevalence of child maltreatment. Fourth, the comparison between Vietnamese and Dutch prevalence rates was done with data from different years (2014 for Vietnam and 2010 for the Netherlands). This might have influenced the validity of the comparison of child maltreatment prevalence estimates between the two countries, although between 2010 and 2014 no major policy changes or social issues emerged in one of the countries that would affect maltreatment prevalence substantively.

PRACTICAL IMPLICATIONS

Despite these limitations, this study addresses some important lacunas in the literature on child maltreatment in Asia in general and Vietnam in particular and has clear practical implications. We recommend that more studies on child maltreatment should be conducted with representative samples and using data collection strategies that maximize the confidentiality of the respondents, as some cultural issues may discourage the report of the participants. Moreover, cross-cultural studies on child maltreatment should use the same methodology in both cultures. The striking difference between Vietnam and the Netherlands in physical and emotional abuse and neglect suggests that there is a need to provide interventions focusing on positive parenting skills for parents in a setting of common harsh discipline practices such as in Vietnam (Ji & Finkelhor, 2015). For example, the home-visit intervention Video-feedback Intervention to Promote Positive parenting and Sensitive Discipline (VIPP-SD) or telephone-based parenting education like the Strongest Families program which seem promising in limited resource contexts (McGrath et al., 2011). Furthermore, prevention of domestic violence and sexual abuse need more attention. For example, school-based child sexual abuse education programs were found to be effective in reducing the risks and the consequences of child sexual abuse (Butchart, Phinney Harvey, Mian, Fürniss, & Kahane, 2006; Finkelhor, 2007; Mikton & Butchart, 2009). In addition to the interventions mentioned above, economic development can also improve the living standards of households, which may reduce physical neglect, in particular. Finally, the child protection system needs to be improved because the fight against child maltreatment cannot be won without an effective child protection system (Butchart et al., 2006). In conclusion, the findings of this study underscore the problem of child maltreatment in Vietnam, with most of the maltreatment types being much more prevalent in Vietnam than in the Netherlands. It is urgent that parenting education aimed at improving positive parenting skills and preventing maltreatment is provided in parallel with strengthening and improving the child protection system.

REFERENCES

Back, S. E., Jackson, J. L., Fitzgerald, M., Shaffer, A., Salstrom, S., & Osman, M. M. (2003). Child sexual and physical abuse among college students in Singapore and the United States. *Child Abuse Neglect,* 27, 1259-1275. doi: 10.1016/j.chiabu.2003.06.001

Beazley, H., Bessell, L., Ennew, J., & Waterson, R. (2006). What children say: Results of comparative research on physical and emotional Punishment of children in Southeast Asia, East Asia and the Pacific.

Berlin, L. J., Appleyard, K., & Dodge, K. A. (2011). Intergenerational continuity in child maltreatment: mediating mechanisms and implications for prevention. *Child Devevelopment,* 82, 162-176. doi: 10.1111/j.1467-8624.2010.01547.x

Euser, E. M., Van IJzendoorn, M., Prinzie, P., & Bakermans-Kranenburg, M. J. (2009). The prevalence of child maltreatment in the Netherlands. *Child Maltreatment, 15,* 5-17. doi: 10.1177/1077559509345904

Butchart, A., Phinney Harvey, A., Mian, M., Fürniss, T., & Kahane, T. (2006). Preventing child maltreatment: a guide to taking action and generating evidence. *Geneva: World Health Organization*13-16.

Cappa, C., & Dam, H. (2014). Prevalence of and risk factors for violent disciplinary practices at home in Viet Nam. *Journal of Interpersonal Violence,* 29, 497-516. doi: 10.1177/0886260513505215

Currie, J., & Widom, C. S. (2010). Long-term consequences of child abuse and neglect on adult economic well-being. *Child Maltreatment,* 15, 111-120. doi: 10.1177/1077559509355316

Douglas, E. M., & Straus, M. A. (2006). Assault and injury of dating partners by university students in 19 countries and its relation to corporal punishment experienced as a child. *European Journal of Criminology,* 3, 293-318. doi: 10.1177/1477370806065584

Emery, C. R., Nguyen, H. T., & Kim, J. (2014). Understanding child maltreatment in Hanoi: intimate partner violence, low self-control, and social and child care support. *Journal of Interpersonal Violence,* 29, 1228-1257. doi: 10.1177/0886260513506276

Emery, C. R., Trung, H. N., & Wu, S. (2015). Neighborhood informal social control and child maltreatment: A comparison of protective and punitive approaches. *Child Abuse Neglect*, 41, 158-169. doi: 10.1016/j.chiabu.2013.05.002

Euser, S., Alink, L. R., Pannebakker, F., Vogels, T., Bakermans-Kranenburg, M. J., & Van, I. M. H. (2013). The prevalence of child maltreatment in the Netherlands across a 5-year period. *Child Abuse Neglect,* 37, 841-851. doi: 10.1016/j.chiabu.2013.07.004

Fang, X., Fry, D. A., Brown, D. S., Mercy, J. A., Dunne, M. P., Butchart, A. R.,... Swales, D. M. (2015). The burden of child maltreatment in the East Asia and Pacific region. *Child Abuse Neglect,* 42, 146-162. doi: 10.1016/j.chiabu.2015.02.012

Finkelhor, D. (2007). Prevention of sexual abuse through educational programs directed toward children. *Pediatrics,* 120, 640-645. doi: 120/3/640 [pii] 10.1542/peds.2007-0754

Goldstein, H., & Healy, M. J. (1995). The graphical presentation of a collection of means. *Journal of the Royal Statistical Society. Series A (Statistics in Society),* 158, 175-177. doi: 10.2307/2983411

GSO. (2013). *The 2013 population change and family planning survey.* Hanoi: GSO.

Hong, K. T., Duong, L. B., & Huong, N. N. (2009). *Sexuality in Vietnamese modern society: easy to joke, difficult to talk* (1st ed.). Hanoi: Institute for Social Development Studies.

Huong, N. T. (2006). *Child maltreatment in Vietnam: prevalence and associated mental and physical health problems.* Queensland: Queensland University of Technology.

Huong, N. T., Dunne, M. P., & Anh, L. V. (2009). Multiple types of child maltreatment and adolescent mental health in Viet Nam. *Bulletin of the World Health Organization,* 88, 22-30. doi: 10.2471/BLT.08.060061

Ji, K., & Finkelhor, D. (2015). A meta-analysis of child physical abuse prevalence in China. *Child Abuse Neglect,* 43, 61-72. doi: 10.1016/j.chiabu.2014.11.011

Ji, K., Finkelhor, D., & Dunne, M. (2013). Child sexual abuse in China: a meta-analysis of 27 studies. *Child Abuse Neglect,* 37, 613-622. doi: 10.1016/j.chiabu.2013.03.008

Julious, S. A. (2004). Using confidence intervals around individual means to assess statistical significance between two means. *Pharmaceutical Statistics,* 3, 217-222. doi: 10.1002/pst.126

Kulka, R. A., Schlenger, W. E., Fairbank, J. A., Hough, R. L., Jordan, B. K., Marmar, C. R., & Weiss, D. S. (1990). *Trauma and the Vietnam war generation: Report of findings from the National Vietnam Veterans Readjustment Study:* Brunner/Mazel.

Lamers-Winkelman, F., Slot, N. W., Bijl, B., & Vijlbrief, A. (2007). Scholieren over mishandeling: Resultaten van een landelijk onderzoek naar de omvang van kindermishandeling onder leerlingen van het voortgezet onderwijs.

Loan, K. X. (2010). *Adverse childhood experiences: prevalence and affects on mental health and risk behaviours of adolescents in Ho Chi Minh city, Vietnam.* Queensland: Queensland University of Technology.

Luke, N., Schuler, S. R., Mai, B. T., Vu Thien, P., & Minh, T. H. (2007). Exploring couple attributes and attitudes and marital violence in Vietnam. *Violence Against Women,* 13, 5-27. doi: 10.1177/1077801206295112

Mbagaya, C., Oburu, P., & Bakermans-Kranenburg, M. J. (2013). Child physical abuse and neglect in Kenya, Zambia and the Netherlands: a cross-cultural comparison of prevalence, psychopathological sequelae and mediation by PTSS. *International Journal of Psychology,* 48, 95-107. doi: 10.1080/00207594.2012.691975

McGrath, P. J., Lingley-Pottie, P., Thurston, C., MacLean, C., Cunningham, C., Waschbusch, D. A.,... Chaplin, W. (2011). Telephone-based mental health interventions for child disruptive behavior or anxiety disorders: randomized trials and overall analysis. *Journal of American Academy of Child and Adolescent Psychiatry,* 50, 1162-1172. doi: 10.1016/j.jaac.2011.07.013

Merckelbach, H., Smeets, T., & Jelicic, M. (2009). Experimental simulation: Type of malingering scenario makes a difference. *The Journal of Forensic Psychiatry & Psychology, 20,* 378-386. doi: 10.1080/14789940802456686

Mersky, J. P., & Reynolds, A. J. (2007). Child maltreatment and violent delinquency: disentangling main effects and subgroup effects. *Child Maltreatment, 12,* 246-258. doi: 12/3/246 [pii] 10.1177/1077559507301842

Meston, C. M., Heiman, J. R., Trapnell, P. D., & Carlin, A. S. (1999). Ethnicity, desirable responding, and self-reports of abuse: a comparison of European- and Asian-ancestry undergraduates. *Journal of Consulting and Clinical Psychology, 67,* 139-144. doi: 10.1037/0022-006X.67.1.139

Mikton, C., & Butchart, A. (2009). Child maltreatment prevention: a systematic review of reviews. *Bulletin of the World Health Organization, 87,* 353-361. doi: 10.2471/BLT.08.057075

MOCST, GSO, UNICEF, & IFGS. (2006). Result of nation-wide survey on the family in Vietnam 2006. Hanoi.

Park, M., & Chesla, C. (2007). Revisiting Confucianism as a Conceptual Framework for Asian Family Study. *Journal of Family Nursing, 13,* 293-311. doi: 10.1177/1074840707304400

Payton, M. E., Greenstone, M. H., & Schenker, N. (2003). Overlapping confidence intervals or standard error intervals: what do they mean in terms of statistical significance? *Journal of Insect Science, 3,* 34. doi: http://dx.doi.org/10.1093/jis/3.1.34

Rindermann, H., Hoang, Q. S. N., & Baumeister, A. E. (2013). Cognitive ability, parenting and instruction in Vietnam and Germany. *Intelligence, 41,* 366-377. doi: 10.1016/j.intell.2013.05.011

Sagi, A., Van IJzendoorn, M. H., Joels, T., & Scharf, M. (2002). Disorganized reasoning in Holocaust survivors. *American Journal of Orthopsychiatry, 72,* 194-203. doi: 10.1037/0002-9432.72.2.194

Saile, R., Ertl, V., Neuner, F., & Catani, C. (2014). Does war contribute to family violence against children? Findings from a two-generational multi-informant study in Northern Uganda. *Child Abuse Neglect, 38,* 135-146. doi: 10.1016/j.chiabu.2013.10.007

Saile, R., Neuner, F., Ertl, V., & Catani, C. (2013). Prevalence and predictors of partner violence against women in the aftermath of war: A survey among couples in Northern Uganda. *Social Science & Medicine, 86,* 17-25. doi: http://dx.doi.org/10.1016/j.socscimed.2013.02.046

Spinhoven, P., Elzinga, B. M., Hovens, J. G., Roelofs, K., Zitman, F. G., van Oppen, P., & Penninx, B. W. (2010). The specificity of childhood adversities and negative life events across the life span to anxiety and depressive disorders. *Journal of Affective Disorders, 126,* 103-112. doi: 10.1016/j.jad.2010.02.132

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R., & Van IJzendoorn, M. H. (2012). The universality of childhood emotional abuse: a meta-analysis of worldwide prevalence. *Journal of Aggression, Maltreatment & Trauma, 21,* 870-890. doi: 10.1080/10926771.2012.708014

Stoltenborgh, M., Bakermans-Kranenburg, M. J., & Van IJzendoorn, M. H. (2013). The neglect of child neglect: a meta-analytic review of the prevalence of neglect. *Social Psychiatry Psychiatric Epidemiology, 48,* 345-355. doi: 10.1007/s00127-012-0549-y

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & Alink, L. R. (2013). Cultural-geographical differences in the occurrence of child physical abuse? A meta-analysis of global prevalence. *International Journal of Psychology, 48,* 81-94. doi: 10.1080/00207594.2012.697165

Stoltenborgh, M., Bakermanas-Kranenburg, M. J., Alink, L. R., & Van IJzendoorn, M. H. (2014). The Prevalence of Child Maltreatment across the Globe: Review of a Series of Meta-Analyses. *Child Abuse Review, 24,* 37-50. doi: 10.1002/car.2353

Stoltenborgh, M., Van IJzendoorn, M. H., Euser, E. M., & Bakermans-Kranenburg, M. J. (2011). A global perspective on child sexual abuse: meta-analysis of prevalence around the world. *Child Maltreatment,* 16, 79-101. doi: 10.1177/1077559511403920

Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the Parent-Child Conflict Tactics Scales: Development and psychometric data for a national sample of American parents. *Child Abuse Neglect, 22,* 249-270. doi: 10.1016/S0145-2134(97)00174-9

Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.): Pearson.

Taft, C. T., Watkins, L. E., Stafford, J., Street, A. E., & Monson, C. M. (2011). Posttraumatic stress disorder and intimate relationship problems: a meta-analysis. *Journal of Consulting and Clinical Psychology, 79,* 22-33. doi: 10.1037/a0022196

Thompson, R. (2006). Exploring the link between maternal history of childhood victimization and child risk of maltreatment. *Journal of Trauma Practice, 5,* 57-72. doi: 10.1300/J189v05n02_04

Thu Le, H., & Booth, A. L. (2014). Inequality in Vietnamese urban–rural living standards, 1993–2006. *Review of Income and Wealth, 60,* 862-886.

Tran, Q. A., Dunne, M. P., Vo, T. V., & Luu, N. H. (2015). Adverse Childhood Experiences and the Health of University Students in Eight Provinces of Vietnam. *Asia-Pacific Journal of Public Health, 27,* 26s-32s. doi: 10.1177/1010539515589812

Van der Hal-Van Raalte, E., Van Ijzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2007). Quality of care after early childhood trauma and well-being in later life: child Holocaust survivors reaching old age. *American Journal of Orthopsychiatry, 77,* 514-522. doi: 10.1037/0002-9432.77.4.514

Weil, J. M., & Lee, H. H. (2004). Cultural considerations in understanding family violence among Asian American Pacific Islander families. *Journal of Community Health Nursing, 21,* 217-227. doi: 10.1207/s15327655jchn2104_2

Widom, C. S. (1989). Does violence beget violence? A critical examination of the literature. *Psychological Bulletin, 106,* 3-28.

Wildman, R. W., & Wildman, R. W. (1999). The detection of malingering. *Psychological reports, 84,* 386-388. doi: 10.2466/pr0.1999.84.2.386

Chapter 3

CHANGES IN THE PREVALENCE OF CHILD MALTREATMENT IN VIETNAM OVER 10 YEARS

Nhu K. Tran, Sheila R. Van Berkel, Huong T. Nguyen,
Marinus H. Van Ijzendoorn, and Lenneke R. A. Alink

ABSTRACT

In the context of the shortage of studies on child maltreatment changes over time in limited resource settings, this paper explores the changes in the prevalence of multiple types of child maltreatment over a period of 10 years in Vietnam and tests the moderating role of some demographic characteristics in these changes. We used data from two prevalence studies conducted in 2004 and in 2014 using similar methodologies. Both studies used self-report questionnaires which were completed by randomly selected students aged 12-17 years from different provinces in Vietnam. We also compared Hanoi subgroups to examine the trend using the most equivalent samples. While the prevalence estimates of sexual abuse and neglect were unchanged over 10 years, the prevalence of physical abuse and emotional abuse declined. The decrease in the prevalence of physical abuse was larger for younger adolescents and boys than for their counterparts. For sexual abuse, older adolescents reported an increase in the prevalence of sexual abuse. In the Hanoi sample comparison, only the prevalence of emotional abuse declined, and this reduction was smaller for younger adolescents than for the older group. Despite the reduction of emotional and physical abuse in the whole sample and emotional abuse in the Hanoi sample, all types of child maltreatment were still highly prevalent in Vietnam. We argue that interventions on all types of child maltreatment should be further implemented. Additional similar studies could be conducted to evaluate the effect of child protection policies on the prevalence of child maltreatment.

Keywords: child maltreatment prevalence; child abuse and neglect prevalence; trends; changes; Vietnam;

INTRODUCTION

Child maltreatment is highly prevalent in Asian countries and has negative consequences for child development (Fang et al., 2015; Tran, Alink, Van Berkel, & Van Ijzendoorn, 2016; Tran, Van Berkel, Van Ijzendoorn, & Alink, 2017). However, there is a gap in our knowledge about whether and how the prevalence of maltreatment in Asian countries changes over time. Research on prevalence changes over time may provide important knowledge that can be used to inform policy makers to help them improve national child protection programs. In this study we investigated the changes in the prevalence of child maltreatment in Vietnam over a period of 10 years.

The possible consequences of child maltreatment on development across the life-span have been well studied. Meta-analytic evidence shows that different types of child maltreatment are associated with a variety of mental and physical health problems such as depression, anxiety, overweight, and extensive hospital visits (Hemmingsson, Johansson, & Reynisdottir, 2014; Hillberg, Hamilton-Giachritsis, & Dixon, 2011; Norman et al., 2012; Wegman & Stetler, 2009). Adults who experienced childhood maltreatment have been found to be more likely involved in delinquency and to maltreat their own children (Berlin, Appleyard, & Dodge, 2011; Mersky & Reynolds, 2007; Thompson, 2006). In addition, adults with a history of child maltreatment have, on average, lower educational levels, lower employment rates, and lower income (Currie & Widom, 2010; De Jong, Alink, Bijleveld, Finkenauer, & Hendriks, 2015). Consistent with studies in both Western and Asian countries, child maltreatment studies in Vietnam showed that child maltreatment is associated with poorer emotional, cognitive, and physical health functioning during childhood and in adolescence (Loan, 2010; Nguyen, 2006; Nguyen, Dunne, & Anh, 2009; Tran et al., 2017).

Because of the negative consequences of child maltreatment for the victims, their families and societies, it is necessary to conduct studies on the prevalence of child maltreatment to estimate the magnitude of the problem. Moreover, conducting prevalence studies periodically to estimate the changes of the different types of maltreatment over time is valuable in evaluating the impact of policy and other changes in the country on the occurrence of child maltreatment. In order to compare estimates at different time points, these periodically conducted studies should use the same methodology. The National Incidence Studies (NIS) (Sedlak et al., 2010) in the United States and the Netherlands Prevalence study of Maltreatment of children and youth (NPM) (Euser et al., 2013) are examples of periodically conducted national prevalence studies. Both the NIS and NPM studies were conducted with Child Protection Services (CPS) agencies and sentinels who are professionals who have frequent contact

with children and are able to provide information on the occurrence of child maltreatment. In addition, there are a number of studies on child maltreatment trends using prevalence data reported by children (Finkelhor, Turner, Ormrod, & Hamby, 2010; Knutson & Selner, 1994). Research also showed that some demographic characteristics are related to the occurrence of child maltreatment. For example, girls are at higher risk of sexual abuse than boys (Black, Heyman, & Smith Slep, 2001; Stoltenborgh, Van Ijzendoorn, Euser, & Bakermans-Kranenburg, 2011), but studies in some countries in Asia such as China and Vietnam have found that the child sexual abuse prevalence among boys were at higher than among girls (Ji, Finkelhor, & Dunne, 2013; Tran et al., 2016). Reviews showed that the risk of emotional abuse increases with age (Black, Smith Slep, & Heyman, 2001). Further, lower socio-economic status appears to be associated with sexual abuse, physical abuse, emotional abuse and neglect (Black, Heyman, et al., 2001; Black, Smith Slep, et al., 2001; Stith et al., 2009). However, to our knowledge, the role of these demographic characteristics in changes in child maltreatment prevalence over time has never been examined.

In Asia, especially in Asian countries with limited resources, there is a paucity of child maltreatment studies. No published studies on the temporal changes of child maltreatment prevalence in Asian countries have been found. Vietnam is no exception to this. Based on a number of studies, child maltreatment seems highly prevalent in Vietnam (Emery, Nguyen, & Kim, 2014; Emery, Trung, & Wu, 2015; Loan, 2010; Nguyen, 2006; Tran et al., 2016; Tran, Dunne, Vo, & Luu, 2015). We recently showed that in Vietnam, the prevalence estimates of most types of child maltreatment including emotional abuse, neglect, physical abuse, and witnessing parental conflict were much higher compared to the Netherlands (Tran et al., 2016). To obtain a more dynamic view on child maltreatment prevalence in Vietnam, we address the temporal changes of child maltreatment prevalence across a 10-year period in this paper. Here, we aim (1) to examine the changes in the prevalence of different types of child maltreatment in Vietnam over 10 years and (2) to explore the moderating roles of gender, age, parental education, and metropolitan level (urban vs rural areas) in the temporal changes in the prevalence of child maltreatment.

We used data from two prevalence studies with similar methodologies: one performed in 2004 (Nguyen, 2006; Nguyen et al., 2009) and one in 2014, the Vietnam Prevalence study on child Maltreatment (VPM-2014) (see also Tran et al., 2016). Both studies used a partly overlapping self-report questionnaire completed by secondary and high school students (aged 12-17 years). Besides comparing the two samples, we compared subgroups of the samples that consist of participants living in Hanoi to gain insight on the child maltreatment trend using the most equivalent samples.

METHOD

PARTICIPANTS

The 2004 study.

The 2004 study (see Nguyen, 2006; Nguyen et al., 2009) was conducted in a purposely-selected urban district and rural district in two province/city of Northern Vietnam, namely Hanoi city and Hai Duong province. In each district, two secondary schools (for children aged 12 to 14 years) and two high schools (for children aged 15 to 17 years) were randomly selected. In these schools, 6 classes per grade were randomly selected. The sample thus consisted of a total of four secondary schools and four high schools. Questionnaires that had more than 10% of questions missing or questionnaires that had all items in any of the scales missing were excluded. The final sample consisted of 2,591 students from 61 classes (Nguyen, 2006; Nguyen et al., 2009). In order for the VPM-2014 sample and 2004 sample to be comparable, students who were 18 years or older were excluded ($n = 12$) in the 2004 study. Therefore, the sample of the 2004 study comprised of 2,579 students, with 47.9% boys, 99.2% Kinh, which is the majority ethnic group of Vietnam, 51.6% from urban areas, and a mean age of 15.0 years ($SD = 1.5$, range 12-17). The sample in the 2004 study was equally distributed among the two provinces.

The 2014 study.

The Vietnam Prevalence study on child maltreatment (VPM-2014; see also Tran et al., 2016; Tran et al., 2017) was conducted in four provinces/city of Northern Vietnam, namely Hanoi city, Nam Dinh, Ha Tinh, and Tuyen Quang. Hanoi, the capital of Vietnam, was selected because of its unique metropolitan characteristics. Regarding the other three provinces, one province was randomly selected from each of the three geographic areas of Northern Vietnam. In each province, two secondary schools and two high schools were randomly selected. Because the sample of Hanoi represents the largest metropolitan population, only schools in urban areas were selected in this province. In each of the other three provinces, one secondary school was selected from a list of schools in urban areas and the other secondary school in rural areas. In addition, for logistical reasons, the two high schools that were nearest to the secondary schools were selected for each province. We excluded schools for blind students, schools with fewer than 40 students per grade, and boarding schools where children live full time. We randomly selected one or two classes per grade from each participating school, depending on the number of students in a class.

The 2014 sample thus consisted of a total of eight secondary schools and eight high schools. In total, 2,360 students of 71 classes participated in the study. Students were excluded when unreliable answers were suspected based on outlying scores (more than 3.29 *SD* above the mean (Tabachnick & Fidell, 2012)) on the Wildman Symptom Checklist, a scale consisting of bogus symptoms, such as "The buzzing in my ears keeps switching from the left to the right" (Merckelbach, Smeets, & Jelicic, 2009; Wildman & Wildman, 1999), or based on a specific pattern in their answers on the maltreatment questionnaire (e.g., all questions answered with the highest possible score; *n* = 53). In addition, students who were 18 years or older were excluded (*n* = 2). Finally, 11-year-old students were excluded (*n* = 331) to make our sample comparable in age distribution with the 2004 sample (Nguyen, 2006; Nguyen et al., 2009). The final sample consisted of 1,851 students (47.3% boys, 57.6% secondary school students). The majority of students were Kinh (81.7%), 17.8% belonged to one of the ethnic minority groups (the other 0.5% had missing values for ethnicity), and 55.4% were from urban areas. The mean age of the students was 14.2 years (*SD* = 1.4, range 12-17).

PROCEDURE

The 2004 study.
After the Provincial Department of Education (DOE) and the school boards approved the implementation of the study in the schools, passive informed consent was obtained from the parents in advance. During a class hour, the students were informed about the study, given a questionnaire, and were told that they could fill in the questionnaire if they wished to do so. The research proposal was approved by the Ethics Committee of Queensland University of Technology and the Ethics Committee of Hanoi School of Public Health, Vietnam.

The 2014 study.
After the Provincial DOE and the school boards approved the implementation of the study in the schools, informed consent was obtained from both the students and their parents. In Nam Dinh, Ha Tinh, and Tuyen Quang, passive informed consent was used. In Hanoi, active consent was obtained which was a requirement of the local DOE. The students filled out a questionnaire during class hours. Students who refused or students whose parents refused participation in the study filled out dummy questionnaires which were not used in our data-analyses, as to avoid making these students a special group in the classroom. Participants filled out questionnaires about child maltreatment, background characteristics, and aspects of their wellbeing. The research proposal was

approved by the Ethics Committee of Institute of Education and Child Studies of Leiden University and the Ethics Committee of Institute of Population, Health and Development of Vietnam.

In this paper, we focus on the child maltreatment questions that were overlapping in both studies.

MEASURE

The 27-item child maltreatment measure was constructed by Nguyen (see Nguyen, 2006) and was based on the Revised Conflict Tactics Scales (Straus, Hamby, Boney-Mccoy, & Sugarman, 1996), the Juvenile Victimization Questionnaire (Hamby, Finkelhor, Ormrod, & Turner, 2001), the Childhood Trauma Questionnaire (Bernstein et al., 2003), and other scales used in Australia (Higgins & Mccabe, 2001), South Africa (Madu & Peltzer, 1999), and China (Chen, Dunne, & Han, 2004). The questionnaire avoided subjective terms, and favored behaviorally specific terms.

The questionnaire consisted of the following scales (see Appendix 3.1): physical abuse (6 items), emotional abuse (7 items), sexual abuse (8 items), physical neglect (3 items), and emotional neglect (4 items). All scales assessed lifetime experiences of maltreatment. The physical and sexual abuse scales asked about abuse by any adult. The emotional abuse scale consisted of questions about the actions induced by parents, caregivers or any other adults in the family. Finally, neglect reflected the behaviors of parents or caregivers only. The Cronbach's alphas of the child maltreatment subscales were adequate in both samples (.63-.85), except for physical neglect in 2014 ($\alpha = .51$). We nevertheless decided to present comparisons for this latter scale as well which should be interpreted with caution.

Comparisons between 2004 and 2014.

There were some differences between the characteristics of the sample of 2004 and the VPM-2014. In the VPM-2014, there were significantly more Kinh participants (the majority ethnic group in Vietnam; $\chi^2 = 431.50$, $p < .01$) and participants with highly educated parents ($\chi^2 = 244.08$, $p < .01$), and participants in 2014 were somewhat younger compared to the 2004 sample (Cohen's $d = .56$, $p < .01$). These differences do not seem to reflect the changes in the population of Vietnam over this decade since the percentage of ethnic minorities has not changed considerably and the educational level seems to have increased (Gso, 2006; Gso, 2015). However, the percentage of urban areas did increase during these 10 years, but this level of increase was not as large as in our samples (Gso, 2006; Gso, 2015). Therefore, we controlled for the sample characteristics

in the analyses comparing prevalence estimates between the two years. In addition, to compare samples that were more similar in characteristics we also directly compared the Hanoi samples (both urban) of the 2004 study and the VPM-2014. The gender, ethnicity, and parental education distributions of both Hanoi samples in the 2004 study and the VPM-2014 were equivalent. Participants in the Hanoi sample were somewhat younger in 2014 than in 2004 (Cohen's $d = .46$, $p < .01$). We also controlled for the sample characteristics in the comparisons of the prevalence estimates in the Hanoi samples.

STATISTICAL PROCEDURES

Prevalence estimates were computed as the proportion maltreated students of the total number of participants. Participants were considered to have experienced child maltreatment if they reported any experience of maltreatment, regardless of the frequency of this experience. The child maltreatment prevalence estimates in the 2004 study were not derived from the 2004 published paper (Nguyen et al., 2009), but were calculated from the original data set because the VPM-2014 sample did not include students older than 17 years. The two datasets were merged and logistic regression analyses were conducted with child maltreatment as the outcome variable, study year and control variables as the predictors in Model 1 and with the interactions between study year and sample characteristics as additional predictors to test for possible moderation effects in Model 2. We controlled for age, gender, ethnicity, parental education, and rurality (only in the total sample). A conservative significance level of p < .01 was used because of the number of tests (Bland & Altman, 1995).

RESULTS

CORRELATIONS BETWEEN TYPES OF CHILD MALTREATMENT

In both 2004 and 2014, all types of child maltreatment were inter-correlated except emotional abuse and sexual abuse in 2014 (Table 3.1).

Table 3.1 | Correlations between child maltreatment variables

		Sexual abuse	Physical abuse	Emotional abuse	Emotional neglect	Physical neglect
				2014		
Sexual abuse			.22*	.06	.24*	.20*
Physical abuse		.17*		.31*	.27*	.13*
Emotional abuse	**2004**	.06*	.19*		.20*	.03
Emotional neglect		.15*	.21*	.16*		.30*
Physical neglect		.19*	.14*	.06*	.26*	

* *p* < .01

Note. Correlations below the diagonal refer to associations between types of child maltreatment in 2004. Correlations above the diagonal refer to associations between types of child maltreatment in 2014.

CHANGES IN CHILD MALTREATMENT PREVALENCE IN VIETNAM OVER 10 YEARS

Table 3.2 and Figure 3.1 present the changes in child maltreatment prevalence estimates in Vietnam over 10 years using the whole samples. Controlling for sample characteristics, the prevalence of sexual abuse, emotional neglect, and physical neglect in 2014 were not significantly different from those in 2004. The prevalence estimates of physical abuse and emotional abuse in 2014 were significantly lower than in 2004; they changed from 74.2% to 62.2% (physical abuse) and from 94.4% to 81.7% (emotional abuse).

Table 3.2 | *Logistic regression results predicting child maltreatment in the total sample*

Variable	Sexual abuse				Physical abuse				Emotional abuse				Emotional neglect				Physical neglect			
	B	SE	p	Odds ratio	B	SE	p	Odds ratio	B	SE	p	Odds ratio	B	SE	p	Odds ratio	B	SE	p	Odds ratio
Model 1	*Nagelkerke R² = 0.02*				*Nagelkerke R² = 0.03*				*Nagelkerke R² = 0.15*				*Nagelkerke R² = 0.03*				*Nagelkerke R² = 0.02*			
Study year	0.03	0.09	.77	1.03	-0.42	0.08	.00	0.65*	-1.02	0.12	.00	0.36*	-0.11	0.07	.14	0.90	-0.20	0.11	.08	0.82
Age	0.09	0.03	.00	1.09*	.011	0.02	.00	1.11*	0.37	0.04	.00	1.45*	0.18	0.02	.00	1.20*	0.00	0.03	.89	1.00
Gender[a]	0.29	0.08	.00	1.33*	0.26	0.07	.00	1.30*	-0.63	0.11	.00	0.53*	-0.23	0.06	.00	0.80*	0.14	0.09	.12	1.15
Major ethnicity[b]	-0.35	0.15	.02	0.71	0.18	0.14	.19	1.19	0.61	0.16	.00	1.84*	0.23	0.13	.09	1.25	-0.44	0.17	.01	0.64
Parental education	-0.05	0.02	.02	0.95	0.01	0.02	.61	1.01	-0.01	0.03	.67	0.99	-0.03	0.02	.08	0.97	-0.09	0.03	.00	0.91*
Rurality[c]	0.18	0.08	.03	1.20	-0.08	0.07	.28	0.92	-0.46	0.12	.00	0.63*	-0.10	0.07	.13	0.90	0.28	0.10	.01	1.32
Model 2[d]	*Nagelkerke R² = 0.02*				*Nagelkerke R² = 0.04*				*Nagelkerke R² = 0.16*				*Nagelkerke R² = 0.03*				*Nagelkerke R² = 0.02*			
Age x Study year	0.18	0.06	.00	1.20*	0.19	0.05	.00	1.21*	0.03	0.08	.68	1.03	-0.04	0.05	.37	0.96	0.00	0.07	.95	1.00
Gender x Study year	0.26	0.16	.11	1.29	-0.46	0.14	.00	0.63*	0.37	0.23	.11	1.44	0.17	0.13	.20	1.18	0.20	0.19	.31	1.22
Major ethnicity x Study year[e]	-0.01	0.55	.99	0.99	0.58	0.58	.32	1.78	-	-	-	-		0.48	.29	1.66	-0.19	0.66	.77	0.83
Parental education x Study year	-0.06	0.05	.23	0.95	0.01	0.04	.81	1.01	0.04	0.07	.55	1.04	-0.01	0.04	.81	0.99	-0.02	0.05	.76	0.98
Rurality x Study year	-0.28	0.18	.11	0.76	0.08	0.15	.60	1.08	0.28	0.24	.25	1.32	0.25	0.14	.07	1.29	-0.11	0.21	.58	0.89

* p < .01

[a] 0 = girls, 1 = boys

[b] 0 = Minority, 1 = Kinh

[c] 0 = living in urban area, 1 = living in rural area

[d] All variables in Model 1 were also included in Model 2; statistics for these variables in Model 2 did not differ from those reported in Model 1

[e] The interaction of ethnicity was not included in the logistic regression of emotional abuse because the cell containing students from an ethnic minority who experienced no emotional abuse of the 2004 sample was empty.
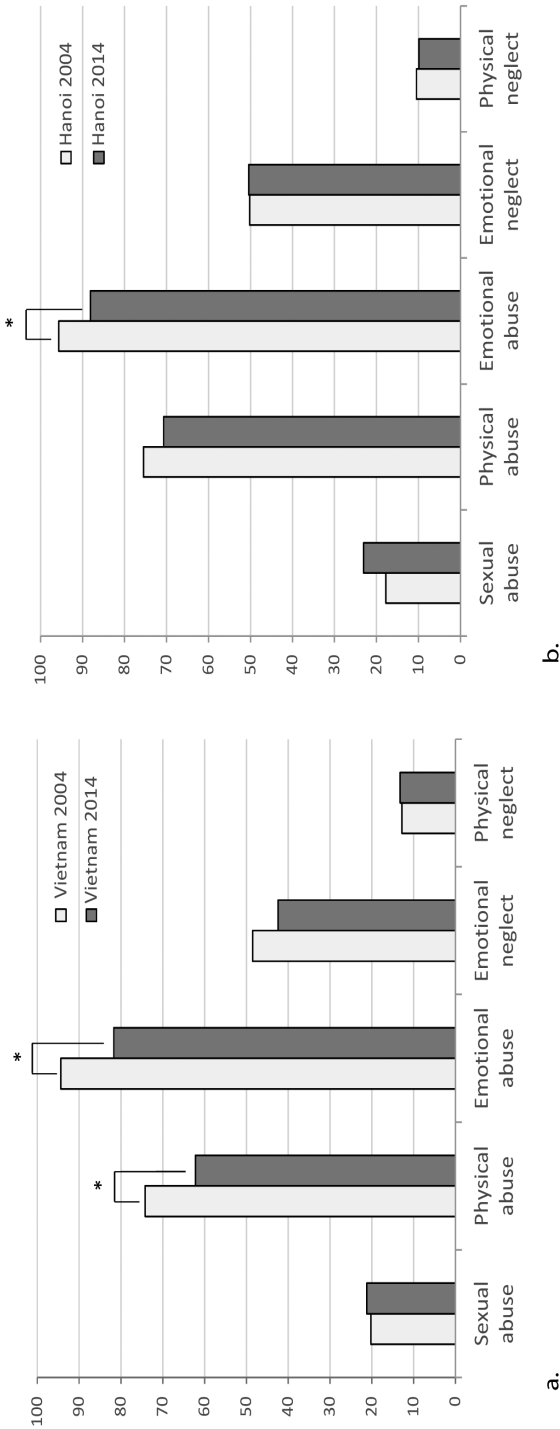
Figure 3.1 | Comparison of the prevalence of child maltreatment between 2004 and 2014

Note.   a Total sample comparison: 2004 (N=2579) and 2014 (N = 1831). Physical abuse: reduced by 12.0%. Emotional abuse: reduced by 12.7%.

b. Hanoi sample comparison: 2004 (n=1331) and 2014 (n=397). Emotional abuse: reduced by 7.6%

* $p < .01$

The results of the comparison using the Hanoi samples were largely convergent with the results of the whole sample comparison. The emotional abuse prevalence in Hanoi in 2014 (95.7%) was lower than in 2004 (88.1%); the prevalence of physical abuse, emotional neglect, and physical neglect were similar over 10 years (Table 3.3 and Figure 3.2). The increasing trend of sexual abuse (from 17.8% to 23.1%) was marginally significant (p = .014). Although for physical abuse no significant difference was found between 2004 and 2014 in the Hanoi sample, the decreasing trend was convergent with the result in the total sample.

MODERATION EFFECTS OF GENDER, AGE, PARENTAL EDUCATION, AND RURALITY ON CHILD MALTREATMENT TRENDS

In the total sample, the examination of the moderation effects revealed a significant interaction between age and study year on sexual abuse (Table 3.2). To interpret the moderation of age, we used a median split for child age (Figure 3.3). The prevalence of sexual abuse reported by older children increased from 20.2% to 25.9%, while the prevalence of sexual abuse reported by younger children decreased from 20.1% to 17.5%. For physical abuse, both age and gender significantly moderated trends over time. The decrease in the prevalence of physical abuse over time was smaller for older children (from 74.5% to 69.5%) than for younger children (from 73.8% to 56.4%) (Figure 3.3). The interaction by gender indicated that the decrease in physical abuse was smaller for girls (from 70.2% to 62.9%) than for boys (from 78.6% to 61.6%; Figure 3.3).

In the Hanoi sample, a significant interaction between age and study year was found for emotional abuse (Table 3.3). The decrease in the prevalence of emotional abuse was smaller for younger children (from 93.8% to 89.5%) than for older children (from 97.2% to 86.6%; Figure 3.3d).

Table 3.3 | Logistic regression results predicting child maltreatment in the Hanoi sample

Variable	Sexual abuse				Physical abuse				Emotional abuse				Emotional neglect				Physical neglect			
	B	SE	p	Odds ratio	B	SE	p	Odds ratio	B	SE	p	Odds ratio	B	SE	p	Odds ratio	B	SE	p	Odds ratio
Model 1	*Nagelkerke R² = 0.02*				*Nagelkerke R² = 0.01*				*Nagelkerke R² = 0.09*				*Nagelkerke R² = 0.04*				*Nagelkerke R² = 0.01*			
Study year	0.38	0.15	.01	1.46	-0.27	0.14	.05	0.76	-1.14	0.22	.00	0.32*	0.08	0.13	.54	1.08	0.04	0.20	.85	1.04
Age	0.08	0.04	.06	1.08	0.02	0.04	.67	1.02	0.09	0.07	.21	1.10	0.18	0.03	.00	1.20*	0.05	0.05	.38	1.05
Gender[a]	-0.03	0.13	.84	0.97	0.28	0.11	.02	1.32	-0.79	0.22	.00	0.45*	-0.37	0.10	.00	0.69*	-0.01	0.16	.94	0.99
Parental education	-0.10	0.04	.01	0.91	-0.04	0.04	.26	0.96	-0.18	0.07	.01	0.83	-0.05	0.03	.14	0.95	0.01	0.05	.91	1.01
Model 2[b]	*Nagelkerke R² = 0.02*				*Nagelkerke R² = 0.02*				*Nagelkerke R² = 0.10*				*Nagelkerke R² = 0.04*				*Nagelkerke R² = 0.003*			
Age x Study year	0.10	0.12	.41	1.10	0.23	0.10	.03	1.25	-0.51	.16	.00	0.60*	-0.13	0.10	.16	0.87	0.13	0.15	.40	1.14
Gender x Study year	0.38	0.31	.22	1.46	-0.46	0.28	.10	0.63	0.11	.46	.81	1.12	-0.30	0.25	.23	0.74	0.12	0.40	.77	1.13
Parental education x Study year	-0.14	0.09	.10	0.87	0.01	0.08	.88	1.01	-0.19	.16	.25	0.83	-0.12	0.07	.12	0.89	-0.06	0.12	.63	0.95

* $p < .01$

[a] 0 = girls, 1 = boys

[b] All variables in Model 1 were also included in Model 2; statistics for these variables in Model 2 did not differ from those reported in Model 1
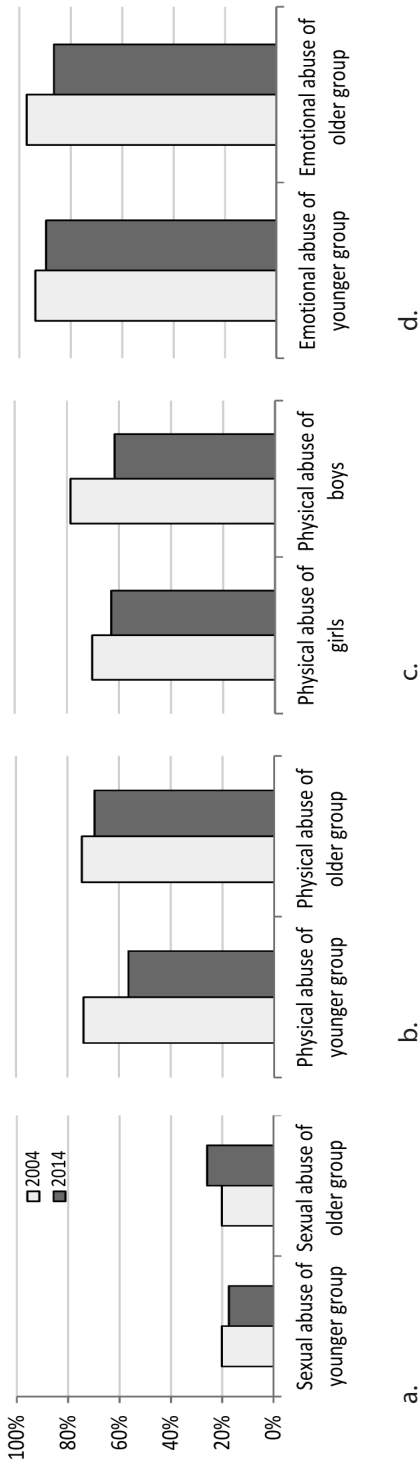
Figure 3.2 | *Moderation of age and gender in child maltreatment changes*

Note. a, b, c: Moderation of age and gender in the total sample comparison

d: Moderation of age in the Hanoi sample comparison

DISCUSSION

In general, although prevalence estimates are still considerably high, the prevalence of child maltreatment in Vietnam declined from 2004 to 2014. Specifically, we found evidence for lower prevalence estimates of physical abuse and emotional abuse in 2014 than in 2004. When we narrowed in on the urban area of Hanoi, we found a similar downward trend of physical abuse and emotional abuse, although this trend was only significant for emotional abuse.

Most periodically conducted studies on the prevalence of child maltreatment have been conducted in the USA. Statistics from Child Protective Services and victim self-reports show a downward trend of physical and sexual abuse from 1990 to 2014 (Finkelhor, Saito, & Jones, 2016). Some of the hypothetical explanations that were generated for the decline in the US may also be helpful in understanding the declines in Vietnam (Finkelhor, 2008). For example the increase in economic prosperity, cultural changes, and changing norms and practice concerning parenting (Finkelhor, 2008) may also have played a role in Vietnam, although there is a lack of empirical evidence on the causal link between these factors and the decreasing trends in child maltreatment. First, Vietnam has gone through an impressive increase in economic prosperity. Since the *Doi Moi* policy in 1986, the Vietnamese economy shifted from a centrally-planned to a market-oriented economy and has made impressive achievements (Molisa & Unicef, 2013; Wb, 2016). Vietnam changed from one of the poorest countries in the world in the 1990s into a lower-middle-income country since 2010, and the gross domestic product per capital has grown among the world fastest since 2000 (Wb, 2016). The overall economic prosperity can promote a positive living attitude and lower social-economic stress which in turn may affect parenting positively. Indeed, there is a wide range of scientific evidence about the negative association between poverty and child maltreatment (Cancian, Slack, & Yang, 2010; Sedlak & Broadhurst, 1996; Sedlak et al., 2010).

Second, the open economy in combination with the exponential growth of information technology in Vietnam (Wb, 2016) increased the accessibility of information for the public and intensified the cultural exchange with Western culture. In turn, these processes may have challenged traditional norms concerning, for example, the necessity of using harsh discipline when raising children. Moreover, the efforts of the Vietnamese government and NGOs, such as UNICEF, in improving the child protection system, child protection legislation and policies, and their funding of public campaigns to increase awareness of child protection and children's rights may also have resulted in changing norms and practices (Molisa & Unicef, 2010; Unicef, 2010; Vng, 2008).

Overall, the declining trend of emotional abuse and physical abuse in the whole sample and emotional abuse in the Hanoi sample was consistent across different age groups, genders, social status groups. Only a few differences in the size of the changes over time between subgroups were found. The reduction of physical abuse was larger for younger adolescents and boys than for older adolescents and girls, respectively. In contrast, the reduction of emotional abuse was larger for older adolescents than for younger adolescents. At this point, it would be too speculative to try to find explanations for these differences in the size of the decline. However, it is clear that extra steps should be taken to reduce these types of maltreatment in specific groups by increasing efforts to reach families with older adolescents and girls in preventing physical abuse and families with younger adolescents in the prevention of emotional abuse.

In the whole sample comparison, the only type of maltreatment for which we found an *increase* over time was sexual abuse, but only in the group of older adolescents. A possible explanation for this increasing trend could be a change in reporter bias over time. Because of the economic, social, and information technology development, the taboo on reporting sexual abuse may have reduced over time. As a result, older adolescents who have more access to information and have probably had at least some sex education may be less hesitant to report their sexual abuse experiences than before. In addition, the development of information technology allows individuals easy access to information on sex, including pornography. The current high levels of sexual abuse can also be explained by the culture of sexual conservatism, which has existed in Vietnam for thousands of years and has resulted in limited education about sex at school and hesitation of parents and teachers to talk about sex with children. Sex education at schools currently focuses on physiological differences between genders and prevention of negative consequences of unprotected sex. Although this information is useful, it may not help children to develop a healthy attitude towards sex. An unhealthy attitude towards sex, together with the availability of pornography, can put people at risk of child sexual abuse perpetration. Perhaps older adolescents are more likely to be victims of this, but the exact mechanisms still have to be investigated.

The unchanged prevalence of physical and emotional neglect over 10 years could indicate that these types of child maltreatment were not affected by the described changes in the Vietnamese society. However, results on physical neglect in the current study have to be interpreted with caution because of the low reliability of this subscale. Interestingly, the studies on child maltreatment trends in the United States also found that while other types of child victimization had reduced from 1990 to 2005, neglect

did not change (Finkelhor, 2008). The mechanisms to intervene in child neglect may be different from those for other types of child maltreatment. More studies on neglect may clarify this concern (see also Stoltenborgh, Bakermans-Kranenburg, & Van Ijzendoorn, 2013).

This study is among the first to make an effort to explore the temporal changes in the prevalence of child maltreatment in a limited resource country. However, some limitations should be mentioned. First, the 2004 study purposely selected one province and one city, while the VPM-2014 study purposely selected one province and randomly selected three other provinces in Northern Vietnam. These different sampling strategies may limit the generalization of the findings. Relatedly, some characteristics of the two samples were somewhat different and were not related to changes in the general population over time. We did control for these differences in the analyses, but this also meant that we were unable to identify whether general population changes in educational levels, ethnicity, and rurality were related to changes in maltreatment prevalence estimates. Finally, the finding on the changes of physical neglect should be interpreted with caution given the low reliability of this scale.

In conclusion, there seems to be a decreasing trend of physical abuse and emotional abuse and a stable prevalence of emotional and physical neglect in Vietnam over 10 years. These trends are confirmed by the compatible changes in most groups based on age, gender, ethnicity ,and parent education. The prevalence estimates of all types of child maltreatment in 2014 including the ones that decreased over a decade were still very high. This indicates that further interventions on child maltreatment are indeed necessary in Vietnam. Extra attention should be paid to physical abuse among girls, physical abuse and sexual abuse among older adolescents and emotional abuse among younger adolescents. Further improvement in policy, economy, and health care services could create positive effects on child maltreatment. More direct interventions on child maltreatment should be conducted. In the context of common harsh discipline and power disparity between children and adults in Vietnam, positive parenting programs could be beneficial in reducing physical and emotional abuse, and emotional neglect. Programs teaching parents positive parenting skills at a distance via telephone such as *Strongest Families* might be promising in limited-resource contexts such as Vietnam (Mcgrath et al., 2011). Considering the possible increasing trend of child sexual abuse, the Ministry of Education should accelerate the initiated revision of school sex education programs to include sexual abuse prevention as well. Although evidence concerning the effectiveness of these programs on reducing child sexual abuse is still rare and inconclusive (Finkelhor, Asdigian, & Dziuba-Leatherman, 1995; Gibson & Leitenberg, 2000), school based child sexual abuse programs were proven to increase

knowledge about prevention concepts (Berrick & Barth, 1992), proper reactions in simulated scenarios (Fergusson & Mullen, 1999), and the likelihood to report real-life sexual abuse situations (Finkelhor et al., 1995). Focusing on possible perpetrators in addition to possible victims may increase the effectiveness of efforts to prevent sexual abuse. By including child sexual abuse programs in a comprehensive and positive sexual education program that also focuses on friendships and romantic relationships (Schutte et al., 2014; Weaver, Smith, & Kippax, 2005), victimization as well as future perpetration may be prevented. In addition, activities to improve child protection and children's rights should be maintained and strengthened, and the child protection system, which is still rudimental in Vietnam (Molisa & Unicef, 2010), should be improved. Last but not least, this study showed that in countries with limited resources, studies on temporal changes in child maltreatment are possible and informative. It would be valuable if more similar studies could be conducted in the larger Asian region to inform policy makers, and evaluate the effect of similar or different national child protection policies on changes in the prevalence of child maltreatment.

REFERENCES

Berlin, L. J., Appleyard, K., & Dodge, K. A. (2011). Intergenerational continuity in child maltreatment: mediating mechanisms and implications for prevention. *Child Devevelopment, 82,* 162-176. doi: 10.1111/j.1467-8624.2010.01547.x

Bernstein, D., Stein, J., Newcomb, M., Walker, E., Pogge, D., Ahluvalia, T., ... Desmond, D. (2003). Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Abuse & Neglect, 27,* 169 - 190. doi: 10.1016/S0145-2134(02)00541-0

Berrick, J. D., & Barth, R. P. (1992). *Child sexual abuse prevention: Research review and recommendations.* Paper presented at the Social Work Research and Abstracts.

Black, D. A., Heyman, R. E., & Smith Slep, A. M. (2001). Risk factors for child sexual abuse. *Aggression and Violent Behavior, 6,* 203-229. doi: http://doi.org/10.1016/S1359-1789(00)00023-9

Black, D. A., Smith Slep, A. M., & Heyman, R. E. (2001). Risk factors for child psychological abuse. *Aggression and Violent Behavior, 6,* 189-201.
doi: http://doi.org/10.1016/S1359-1789(00)00022-7

Bland, J. M., & Altman, D. G. (1995). Multiple significance tests: the Bonferroni method. *BMJ, 310,* 170.

Cancian, M., Slack, K. S., & Yang, M. Y. (2010). *The effect of family income on risk of child maltreatment:* Institute for Research on Poverty, University of Wisconsin-Madison Madison, WI.

Chen, J., Dunne, M. P., & Han, P. (2004). Child sexual abuse in China: a study of adolescents in four provinces. *Child Abuse & Neglect,* 28, 1171-1186. doi: 10.1016/j.chiabu.2004.07.003

Currie, J., & Widom, C. S. (2010). Long-term consequences of child abuse and neglect on adult economic well-being. *Child Maltreatment, 15,* 111-120.
doi: 10.1177/1077559509355316

De Jong, R., Alink, L., Bijleveld, C., Finkenauer, C., & Hendriks, J. (2015). Transition to adulthood of child sexual abuse victims. *Aggression and Violent Behavior, 24,* 175-187.
doi: http://dx.doi.org/10.1016/j.avb.2015.04.012

Emery, C. R., Nguyen, H. T., & Kim, J. (2014). Understanding child maltreatment in Hanoi: intimate partner violence, low self-control, and social and child care support. *Journal of Interpersonal Violence, 29,* 1228-1257. doi: 10.1177/0886260513506276

Emery, C. R., Trung, H. N., & Wu, S. (2015). Neighborhood informal social control and child maltreatment: A comparison of protective and punitive approaches. *Child Abuse & Neglect, 41,* 158-169. doi: 10.1016/j.chiabu.2013.05.002

Euser, S., Alink, L. R., Pannebakker, F., Vogels, T., Bakermans-Kranenburg, M. J., & Van, I. M. H. (2013). The prevalence of child maltreatment in the Netherlands across a 5-year period. *Child Abuse & Neglect, 37,* 841-851. doi: 10.1016/j.chiabu.2013.07.004

Fang, X., Fry, D. A., Brown, D. S., Mercy, J. A., Dunne, M. P., Butchart, A. R., ... Swales, D. M. (2015). The burden of child maltreatment in the East Asia and Pacific region. *Child Abuse & Neglect, 42,* 146-162. doi: 10.1016/j.chiabu.2015.02.012

Fergusson, D. M., & Mullen, P. E. (1999). *Childhood sexual abuse: An evidence based perspective* (Vol. 40): Sage Publications Thousand Oaks, CA:.

Finkelhor, D. (2008). *Childhood victimization: Violence, crime, and abuse in the lives of young people:* Oxford University Press.

Finkelhor, D., Asdigian, N., & Dziuba-Leatherman, J. (1995). The effectiveness of victimization prevention instruction: an evaluation of children's responses to actual threats and assaults. *Child Abuse & Neglect, 19,* 141-153. doi: unavailable

Finkelhor, D., Asdigian, N., & Dziuba-Leatherman, J. (1995). Victimization prevention programs for children: a follow-up. *American Journal of Public Health, 85,* 1684-1689. doi: 10.2105/AJPH.85.12.1684

Finkelhor, D., Saito, K., & Jones, L. (2016). Updated trends in child maltreatment, 2014 (pp. 1-4): Crimes Against Children Research Center.

Finkelhor, D., Turner, H., Ormrod, R., & Hamby, S. L. (2010). Trends in childhood violence and abuse exposure: evidence from 2 national surveys. *Archives of Pediatrics and Adolescent Medicine 164,* 238-242. doi: 10.1001/archpediatrics.2009.283

Gibson, L. E., & Leitenberg, H. (2000). Child sexual abuse prevention programs: do they decrease the occurrence of child sexual abuse? *Child Abuse & Neglect, 24,* 1115-1125. doi: http://doi.org/10.1016/S0145-2134(00)00179-4

Gso. (2006). Vietnam Population and Housing Census 2006 (pp. 36). Hanoi: GSO.

Gso. (2015). Vietnam Population and Housing Census 2014 (pp. 36). Hanoi: GSO.

Hamby, S. L., Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2001). The juvenile victimization questionnaire (JVQ): Administration and scoring manual. *Durham, NH: Crimes Against Children Research Center.*

Hemmingsson, E., Johansson, K., & Reynisdottir, S. (2014). Effects of childhood abuse on adult obesity: a systematic review and meta-analysis. *Obesity Reviews, 15,* 882-893. doi: 10.1111/obr.12216

Higgins, D. J., & Mccabe, M. P. (2001). The development of the comprehensive child maltreatment scale. *Journal of Family Studies, 7,* 7-28. doi: http://dx.doi.org/10.5172/jfs.7.1.7

Hillberg, T., Hamilton-Giachritsis, C., & Dixon, L. (2011). Review of meta-analyses on the association between child sexual abuse and adult mental health difficulties: a systematic approach. *Trauma Violence Abuse, 12,* 38-49. doi: 10.1177/1524838010386812

Ji, K., Finkelhor, D., & Dunne, M. (2013). Child sexual abuse in China: a meta-analysis of 27 studies. *Child Abuse & Neglect, 37,* 613-622. doi: 10.1016/j.chiabu.2013.03.008

Knutson, J. F., & Selner, M. B. (1994). Punitive childhood experiences reported by young adults over a 10-year period. *Child Abuse & Neglect, 18,* 155-166. doi: 10.1016/0145-2134(94)90117-1

Loan, K. X. (2010). *Adverse childhood experiences: prevalence and affects on mental health and risk behaviours of adolescents in Ho Chi Minh city, Vietnam.* Queensland: Queensland University of Technology.

Madu, S. N., & Peltzer, K. (1999). Child Abuse among High School Students in the Northern Province of South Africa 1998. *South African Data Archive, Pretoria.*

Mcgrath, P. J., Lingley-Pottie, P., Thurston, C., Maclean, C., Cunningham, C., Waschbusch, D. A., ... Chaplin, W. (2011). Telephone-based mental health interventions for child disruptive behavior or anxiety disorders: randomized trials and overall analysis. *Journal of American Academy of Child and Adolescent Psychiatry, 50,* 1162-1172. doi: 10.1016/j.jaac.2011.07.013

Merckelbach, H., Smeets, T., & Jelicic, M. (2009). Experimental simulation: Type of malingering scenario makes a difference. *Journal of Forensic Psychiatry & Psychology, 20,* 378-386. doi: 10.1080/14789940802456686

Mersky, J. P., & Reynolds, A. J. (2007). Child maltreatment and violent delinquency: disentangling main effects and subgroup effects. *Child Maltreatment, 12,* 246-258. doi: 12/3/246 [pii]10.1177/1077559507301842

Molisa, & Unicef. (2010). Analysis of the Child and Family Welfare and Protection Services System in Vietnam.

Molisa, & Unicef. (2013). Manual on Local Annual and Five Year Development Planning with New Approach.

Nguyen, H. T. (2006). *Child maltreatment in Vietnam: prevalence and associated mental and physical health problems.* Queensland: Queensland University of Technology.

Nguyen, H. T., Dunne, M. P., & Anh, L. V. (2009). Multiple types of child maltreatment and adolescent mental health in Viet Nam. *Bulletin of the World Health Organization, 88,* 22-30. doi: 10.2471/BLT.08.060061

Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. *PLoS Medicine, 9,* e1001349. doi: 10.1371/journal.pmed.1001349

Schutte, L., Meertens, R. M., Mevissen, F. E., Schaalma, H., Meijer, S., & Kok, G. (2014). Long Live Love. The implementation of a school-based sex-education program in The Netherlands. *Health education research, 29,* 583-597. doi: 10.1093/her/cyu021

Sedlak, A. J., & Broadhurst, D. D. (1996). The national incidence study of child abuse and neglect. *Washington, DC:* US Department of Health and Human Services, 8730763.

Sedlak, A. J., Mettenburg, J., Basena, M., Peta, I., Mcpherson, K., & Greene, A. (2010). Fourth national incidence study of child abuse and neglect (NIS-4). *Washington, DC:* US Department of Health and Human Services. Retrieved on July, 9, 2010.

Stith, S. M., Liu, T., Davies, L. C., Boykin, E. L., Alder, M. C., Harris, J. M., ... Dees, J. E. M. E. G. (2009). Risk factors in child maltreatment: A meta-analytic review of the literature. *Aggression and Violent Behavior, 14,* 13-29. doi: http://dx.doi.org/10.1016/j.avb.2006.03.006

Stoltenborgh, M., Bakermans-Kranenburg, M. J., & Van Ijzendoorn, M. H. (2013). The neglect of child neglect: a meta-analytic review of the prevalence of neglect. *Social Psychiatry & Psychiatric Epidemiology, 48,* 345-355. doi: 10.1007/s00127-012-0549-y

Stoltenborgh, M., Van Ijzendoorn, M. H., Euser, E. M., & Bakermans-Kranenburg, M. J. (2011). A global perspective on child sexual abuse: meta-analysis of prevalence around the world. *Child Maltreatment, 16,* 79-101. doi: 10.1177/1077559511403920

Straus, M. A., Hamby, S. L., Boney-Mccoy, S., & Sugarman, D. B. (1996). The revised conflict tactics scales (CTS2) development and preliminary psychometric data. *Journal of family issues, 17,* 283-316. doi: 10.1177/019251396017003001

Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.): Pearson.

Thompson, R. (2006). Exploring the link between maternal history of childhood victimization and child risk of maltreatment. *Journal of Trauma Practice, 5,* 57-72. doi: 10.1300/J189v05n02_04

Tran, N. K., Alink, L. R., Van Berkel, S. R., & Van Ijzendoorn, M. H. (2016). Child Maltreatment in Vietnam: Prevalence and Cross-Cultural Comparison. *Journal of Aggression, Maltreatment & Trauma, 26,* 1-20. doi: http://dx.doi.org/10.1080/10926771.2016.1250851

Tran, N. K., Van Berkel, S. R., Van Ijzendoorn, M. H., & Alink, L. R. A. (2017). The association between child maltreatment and emotional, cognitive, and physical health functioning in Vietnam. *BMC Public Health, 17,* 332. doi: 10.1186/s12889-017-4258-z

Tran, Q. A., Dunne, M. P., Vo, T. V., & Luu, N. H. (2015). Adverse Childhood Experiences and the Health of University Students in Eight Provinces of Vietnam. *Asia-Pacific Journal of Public Health, 27,* 26s-32s. doi: 10.1177/1010539515589812

Unicef. (2010). Report of Children Situation in Vietnam 2010. Hanoi.

Vng. (2008). The third and fourth country report on Viet Nam's implementation of the United Nations convention of the rights of the child in the 2002-2007 period. Hanoi.

Wb. (2016). Vietnam 2035: toward prosperity, creativity, equity, and democracy - overview

Weaver, H., Smith, G., & Kippax, S. (2005). School-based sex education policies and indicators of sexual health among young people: a comparison of the Netherlands, France, Australia and the United States. *Sex Education, 5,* 171-188. doi: 10.1080/14681810500038889

Wegman, H. L., & Stetler, C. (2009). A meta-analytic review of the effects of childhood abuse on medical outcomes in adulthood. *Psychosomatics Medicine, 71,* 805-812. doi: 10.1097/PSY.0b013e3181bb2b46

Wildman, R. W., & Wildman, R. W. (1999). The detection of malingering. *Psychological reports, 84,* 386-388. doi: 10.2466/pr0.1999.84.2.386

APPENDIX 3.1. CHILD MALTREATMENT ITEMS (NGUYEN, 2006)

Type of CM	Items
Sexual abuse	When you were growing up, did any adult ever do any of the following acts to you, while you didn't want it? (1) Spoke to you in an obscene way or talk to you in sexual way (2) Exposed their private parts to you (3) Made you see sexual scenes on video, or porn magazines/ photos (4) Touched or fondled your private parts (5) Made you touch or fondle their private parts (6) Tried to have sexual intercourse with you but was unsuccessful (7) Did someone have sexual intercourse with you? (8) Did someone do other things to you in a sexual way?
Physical abuse	When you grew up, did any adult ever do something like (1) pushing, grabbing, or shoving you, throwing something at you? (2) locking you up in a small place? (3) tying you up or chaining you with something? (4) spanking you with something? (5) kicking or hitting you with a fist or other objects, or beating you up? (6) choking you, or burning or scalding you?
Emotional abuse	When children grow up, their parents/ guardians or adults in their family may have treated them in some ways as in the incidents below. Did any of these incidents happen to you? (1) Yell at you (2) Insult you (3) Try to make you feel guilty (4) Embarrass you in front of others (5) Make you feel like you were a bad person (6) Wish you were never born (7) When you grew up, did any adult in your family threaten to hurt or kill you?
Emotional neglect	When you were growing up, did your parents/ guardians do the following things to you? (1) Didn't make you feel important (2) Didn't care about you (3) Were not close to you (4) Were not sources of strength to you
Physical neglect	Sometimes, parents or caretakers do not take care of children properly. Please answer the following questions about your life. When you grew up, have any of the following things happened to you? (1) You did not get enough food to eat (2) You had to wear dirty or torn clothes, or clothes that were not warm enough (3) You were not taken care of when you were sick

Chapter 4

CHILD AND FAMILY FACTORS ASSOCIATED WITH CHILD MALTREATMENT IN VIETNAM

Nhu K. Tran, Sheila R. Van Berkel, Marinus H. van IJzendoorn, and Lenneke R.A. Alink

ABSTRACT

This study aims to explore possible risk factors for child maltreatment in Vietnam by investigating the association of child and family factors with different types of child maltreatment (i.e., sexual abuse, physical abuse, emotional abuse, witnessing parental conflict, and neglect) and the occurrence of multiple types of child maltreatment. Cross-sectional data of 1,851 secondary and high school students aged 12-17 years (47.3% boys) in four provinces of Northern Vietnam was obtained using self-report questionnaires. Results indicated that the likelihood of emotional abuse, witnessing parental conflict, and experiencing multiple types of child maltreatment during lifetime increased with age. Boys had a higher risk than girls on lifetime sexual abuse, and past year and lifetime physical abuse. Living in a single parent family was the risk factor related to most types of child maltreatment including lifetime sexual abuse, neglect, and multiple types of child maltreatment, and both past year and lifetime witnessing parental conflict. Interestingly, low socioeconomic status (SES) and parental unemployment were associated with a decreased risk on experiencing emotional abuse in the past year and during lifetime, respectively. "Tiger parenting", a parenting style observed frequently in East-Asian parents, may be more common in families with high SES and might explain this finding. This study highlights the importance of prioritizing single parent families in parenting programs and implementing child maltreatment interventions early because of the risk on child maltreatment increased with age. More research on emotional abuse and "Tiger parenting" in Vietnam could clarify the association of emotional abuse with high SES and parental employment. Finally, the underlying mechanisms of the risk factors in Vietnam should be studied more in order to inform interventions.

Keywords: child maltreatment; child abuse and neglect; risk factors; Vietnam

INTRODUCTION

Child maltreatment has negative consequences for individuals and societies at large (Fang et al., 2015; Tran, Van Berkel, Van Ijzendoorn, & Alink, 2017). Child maltreatment was found to be highly prevalent in Vietnam, with prevalence estimates for the different types ranging from 7.7% to 59.9% (Tran, Alink, Van Berkel, & Van Ijzendoorn, 2016). Empirical inquiry on the risk factors for child maltreatment could provide scientific evidence for developing prevention and early intervention programs. However, most of the research on risk factors for child maltreatment was conducted in high income countries. Vietnam is a middle income country with some specific characteristics such as high tolerance of harsh discipline and a long war history. Research on the risk factors for child maltreatment considering this specific context is very much needed. In this paper, we explore risk factors for several types of child maltreatment separately as well as risk factors for having experienced multiple types of child maltreatment in Vietnam.

The etiological framework of child maltreatment by Belsky (Belsky, 1980; Belsky, 1993) which was based on Bronfenbrenner's social ecological model (Bronfenbrenner, 1979) proposes that the occurrence of child maltreatment depends on factors at multiple subsystems in an interactive way. The model includes proximal factors including child and family factors and distal factors including social and cultural structures in which individuals and families are embedded. Proximal factors may affect child maltreatment more directly than distal factors. Therefore, the current study focuses on a number of proximal risk factors for child maltreatment in Vietnam: child age (within adolescence), gender, ethnic minority status, number of children in the family, single parenthood, parental unemployment, and socioeconomic status (SES). In addition, we will explore a risk factor related to the Vietnamese history: war veteran status of the father.

There is evidence that child age and gender are significantly related to the occurrence of one or more different types of child maltreatment. When zooming in on the period of adolescence, there is evidence for an increased risk of child maltreatment in general for older adolescents (Euser et al., 2013). Less is known about the association with age in adolescence for the specific types of maltreatment. Using data for a broader age range, meta-analytic results show that the risk for neglect and physical abuse appears to be unrelated to age (Stith et al., 2009). The risk for sexual abuse and emotional abuse seems to increase with age in samples ranging from 0 to 17 years of age (Black, Heyman, et al, 2001b; Black, Smith Slep, et al., 2001). A systematic review of risk factors for intimate partner violence, which – in case this is witnessed by children – is considered a form of emotional abuse, showed that intimate partner violence

occurs more often within younger couples, so younger children may be at increased risk for this type of emotional neglect (Capaldi, Knoble, Shortt, & Kim, 2012). However, it is unknown whether this association also exists within adolescence.

Meta-analytic evidence shows that worldwide, the only gender difference is related to sexual abuse, with girls being more at risk than boys (Stoltenborgh, Bakermans-Kranenburg, Alink, & Van IJzendoorn, 2014). However, a meta-analysis on sexual abuse in China showed a higher risk among boys (Ji, Finkelhor, & Dunne, 2013). The absence of gender differences for the other types of maltreatment is confirmed by several studies (Black, Heyman, et al, 2001a; Black, Heyman, et al, 2001b; Stith et al., 2009). In addition, ethnic minority status seems to be related to a number of maltreatment types. There is evidence that maltreatment occurs more often in families with a minority background as compared to other families (Alink, Euser, Van Ijzendoorn, & Bakermans-Kranenburg, 2013; Black, Smith Slep, & Heyman, 2001). However, these studies mostly report about minorities with a (recent) immigrant status. It is not known whether the same risk applies to minorities in Vietnam, whose immigrant status were not explored in this study.

Regarding family factors, several large prevalence studies have shown an increased risk of child maltreatment in families with low SES, unemployment, single parents, and large family size (Euser et al., 2013; Sedlak et al., 2010). More specifically, low SES was shown to increase the risk of physical abuse, emotional abuse, neglect, and of intimate partner violence as a proxy for witnessing parental conflict (Black, Smith Slep, et al., 2001; Capaldi et al., 2012; Stith et al., 2009). Single parenthood and parental unemployment were found to be associated with higher risk of sexual abuse, physical abuse, and neglect (Black, Heyman, & Smith Slep, 2001; Stith et al., 2009). Parental unemployment also increased the risk of intimate partner violence (Capaldi et al., 2012). Large family size is another family risk factor related to physical abuse and neglect (Stith et al., 2009).

A specific characteristic of Vietnam is its long war history. War experiences of veterans may increase the likelihood of perpetrating child maltreatment, as research has found that the severity of a post-traumatic disorder (PTSD), a common disorder among veterans, was associated with more child maltreatment reported by the veterans' children (Saile, Ertl, Neuner, & Catani, 2014). However, the effect of parental war experience on child maltreatment in Vietnam has not been examined in previous research.

In her dissertation research, Nguyen (2006) found an increased risk for maltreatment based on several risk factors, such as SES, gender, rurality, family composition, and employment. Unfortunately, these results have not been published, and they reflect the situation in Vietnam more than 10 years ago. In addition, a Vietnamese study on risk factors for intimate partner violence specifically, found that

lower education, a history of sexual violence, and experiences with child physical abuse were risk factors for women to be victims, and young age, alcohol use, extramarital relationships, and child abuse experience were risk factors for men to be perpetrators. Moreover, low SES was related to more intimate partner violence. Child gender, number of children in the family, ethnicity, and employment status were not related to intimate partner violence (Jansen, Nguyen, & Hoang, 2016).

Clearly, most research on child maltreatment has been conducted in Western settings, in particular in North American and European societies (Stoltenborgh, Bakermans-Kranenburg, Alink, & Van Ijzendoorn, 2014). Research on risk factors in limited resource settings is lacking. In addition, worldwide there is a wide range of literature exploring risk factors for sexual abuse and physical abuse, but fewer studies focus on risk factors for emotional abuse, witnessing parental conflict, and neglect. A large number of studies did not examine all types of child maltreatment, and were thus unable to explore the risk factors for experiencing multiple types of child maltreatment. In addition, absence of multivariable analysis limits the possibility to control for the role of other risk factors when exploring a specific factor (Nguyen, 2006; Stith et al., 2009).

To address the limitations of the current studies on risk factors for child maltreatment, we conducted the cross-sectional 'Vietnam Prevalence Study on Child maltreatment '(VPM-2014) with a representative student sample in Northern Vietnam (see also Tran et al., 2016; Tran et al., 2017). We used multivariable analyses to investigate the association between proximal factors on the level of the child (age, gender, ethnic minority) and the family (number of children in the family, single parenthood, parental unemployment, low SES, war veteran experience of father), and the various types of child maltreatment including sexual abuse, physical abuse, emotional abuse, witnessing parental conflict, neglect, and the occurrence of multiple types of child maltreatment to explore possible risk factors for child maltreatment in Vietnam.

METHOD

SAMPLE

The study was conducted in four provinces of Northern Vietnam, namely Hanoi, Nam Dinh, Ha Tinh, and Tuyen Quang. Hanoi, the capital of Vietnam, was selected because of its unique metropolitan characteristics. Regarding the other three provinces, one province was randomly selected from each of the three geographic areas of Northern Vietnam. In each province, we randomly selected two secondary schools and two high

schools. Because the sample of Hanoi represents the largest metropolitan population, only schools in urban areas were selected in this province. In each of the other three provinces, one secondary school (for children aged 12 to 14 years) was selected from a list of schools in urban areas and the other secondary school from a list of schools in rural areas. In addition, for logistical reasons, we selected two high schools (for children aged 15 to 17 years) in each province that were nearest to the secondary schools. We excluded schools for blind students, schools with fewer than 40 students per grade, and boarding schools where children live full time. We randomly selected one or two classes per grade of each participating school, depending on the number of students in a class (Tran et al., 2016; Tran et al., 2017).

Our sample thus consisted of eight secondary schools and eight high schools. In total, 2,360 students from 71 classes participated in the study. Students were excluded when unreliable answers were suspected based on outlying scores (more than 3.29 SD above the mean (Tabachnick & Fidell, 2012) on the Wildman Symptom Checklist, a scale consisting of bogus symptoms, such as "The buzzing in my ears keeps switching from the left to the right" (Merckelbach, Smeets, & Jelicic, 2009; Wildman & Wildman, 1999), (n = 31), or based on a specific pattern in their answers on the maltreatment questionnaire (e.g., all questions answered with the highest possible score; n = 23). In addition, students who were older than 17 (n = 331) or younger than 12 years (n = 2) or with missing data concerning age (n = 123) were excluded. The final sample consisted of 1,851 students (47.3% boys, 57.6% secondary school students). The students were equally distributed among the four provinces. Most of the students were Kinh (81.7%), which is the majority ethnic group of Vietnam and 17.8% belonged to one of the ethnic minority groups (the other 0.5% had missing values for ethnicity). The mean age of the students was 14.2 years (SD = 1.4).

PROCEDURE

After the Provincial Department of Education and the school boards approved the implementation of the study in the schools, passive informed consent was obtained from both the students and their parents. The students filled out the questionnaire during class hours. Students who refused or students whose parents refused participation in the study filled out dummy questionnaires to avoid making these students a special group in the classroom. These questionnaires were destroyed after the study and thus were not used in our analyses. The research proposal was approved by the Ethics Committee of the Institute of Education and Child Studies of Leiden University and the Ethics Committee of the Institute of Population, Health and Development of Vietnam.

MEASURES

Child maltreatment.

The child maltreatment questionnaire was based on the measure of the Prevalence Study on Maltreatment of children and youth in the Netherlands 2010 (NPM 2010; Euser et al., 2013). The 32-item NPM maltreatment measure was based on the Dating Violence Questionnaire (Douglas & Straus, 2006) and the Parent-Child Conflict Tactics Scales (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). The scale consists of the following subscales: emotional abuse (1 item), physical abuse (8 items), witnessed parental conflict (7 items), sexual abuse (8 items), and neglect (8 items). The maltreatment items were embedded in a questionnaire with filler items, which concerned unpleasant and nasty incidents, nonviolent parental discipline (CTSPC; Straus et al., 1998), and the social desirability items of the Dating Violence Questionnaire (Douglas & Straus, 2006). The Cronbach's alpha of the whole maltreatment scale was .75. In addition, the Cronbach's alphas of the child maltreatment subscales were also adequate (αs $\geq$ .69). We also computed the sum of all types of child maltreatment during the past year and lifetime respectively, so a higher score indicates that the participant had experienced more types of child maltreatment.

Child and family risk factors.

Students were asked to report their age, gender, ethnicity, and the number of children living with them in the family. In addition, they were asked about the type of family they were living with (e.g., two parents, single parent, with relatives, in a boarding school), the unemployment status of each parent, the educational level of their parents (never went to school, primary school, secondary school, high school, college/university or higher), items their family owned (such as a color television, fridge, mobile phone, etc.), and whether or not their father had served in the army during the war. Regarding living situation, 89.8% of the students lived with two parents, 6.7% lived in single parent families, and 3.5% had other living situations. We first focused on single parent families versus two-parent families, and repeated all analyses with the variable representing single parent families versus all other families. Concerning unemployment status, parents without an income from a job were considered unemployed. Parental unemployment was computed as the sum of the unemployment status of father and mother (0 = neither of the parents unemployed, 1 = one parent unemployed, 2 = both parents unemployed). For single parent families, parental unemployment was defined using only the unemployment status of the parent that the child lived with. Finally, SES was computed as the standardized sum of the metropolitan level of the living area

(urban vs rural), the parents' level of education and the number of items in the household. The combination of these three variables was based on the results of a principal component analysis, indicating that a one-factor solution explained 65% of the variance and factor loadings were high (metropolitan level of the living area: 0.71; parental education: 0.80, number of items in household: 0.87). Lower SES was indicated by a rural living area, low parental education, and fewer items in the household.

STATISTICAL PROCEDURES

As missing values were not missing completely at random (MCAR) and the percentage of missing values ranged from 0.3% (neglect) to 19.8% (having a war veteran father), we imputed the missing values using all study variables. Multiple imputation was performed in SPSS 23 using all background, predictor, and outcome variables (Van Buuren, 2012). To deal with non-normal distribution and outliers, the variable "number of children in the family" was transformed using a log10 transformation and winsorized before imputing missing data. One hundred data sets were imputed to allow for detection of small effect sizes even with variables with a rather high percentage of missing values, as in the case of having a war veteran father (Graham, Olchowski, & Gilreath, 2007).

To explore the relation between risk factors and child maltreatment, logistic regression analyses with each type of child maltreatment as the outcome variable and child and family factors as the predictors. Separate models were tested for past year and lifetime maltreatment. Results are based on the pooled standardized regression coefficients of the 100 imputed data sets and the pooled explained variance that was computed by calculating the mean (pseudo) R^2 of the 100 imputed data sets. Because of the number of tests, we used a conservative significance level of alpha < .01.

RESULTS

BIVARIATE ASSOCIATIONS BETWEEN VARIABLES

The positive correlations between most types of maltreatment, both past year and lifetime indicate modest comorbidity among types of child maltreatment (Table 4.1). All maltreatment variables were significantly intercorrelated for past year and lifetime experiences with a few exceptions. Lifetime emotional abuse was negatively associated with neglect and was not associated with both past year and lifetime sexual abuse and witnessing parental conflict. Past year emotional abuse was not related to lifetime experience of sexual abuse and neglect.

Child age was positively related to lifetime emotional abuse, witnessing parental conflict, the number of child maltreatment types a child experienced. In addition, boys were more likely to have experienced lifetime sexual abuse and physical abuse and to have experienced more types of child maltreatment during the past year than girls. Belonging to an ethnic minority was positively associated with lifetime sexual abuse and negatively with lifetime physical abuse. Living in a single parent family was positively related to lifetime sexual abuse, neglect, witnessing parental conflict, and the number of experienced child maltreatment types both past year and lifetime. Parental unemployment was negatively associated with emotional abuse during lifetime. Lower SES was associated with more past year witnessing parental conflicts and more lifetime sexual abuse, and with less emotional abuse both past year and lifetime.

Table 4.1 | *Correlations between predictors and outcome variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Age																		
2 Gender	-.02																	
3 Minor ethnicity	.01	.04																
4 Number of children in family	.02	-.14*	-.10*															
5 Single parent	.05	.00	-.01	-.03														
6 Unemployment	-.03	.02	.16*	.06	.01													
7 Low family SES	.09*	-.09*	.43*	.20*	.06	.16*												
8 Father war veteran	-.07*	-.01	.16*	-.09*	-.01	.01	.09*											
9 Sexual abuse, P	-.05	.09*	.10*	.01	.06	.05	.07	-.00										
10 Physical abuse, P	-.05	.08*	-.05	-.02	.00	-.01	-.06	.00	.21*									
11 Emotional abuse, P	.05	.03	-.02	-.03	-.02	-.05	-.09*	-.03	.06	.26*								
12 Witness parental conflicts, P	.04	-.01	.02	-.02	.17*	-.02	.07*	.01	.18*	.17*	.11*							
13 Number of CM types, P	.01	.07*	.00	-.03	.07*	-.02	-.03	-.01	.46*	.69*	.68*	.57*						
14 Sexual abuse, L	-.02	.09*	.10*	.05	.08*	.06	.09*	-.02	.74*	.20*	.04	.15*	.37*					
15 Physical abuse, L	.04	.08*	-.09*	-.03	.02	-.02	-.06	-.03	.14*	.60*	.16*	.14*	.44*	.16*				
16 Emotional abuse, L	.09*	-.05	-.06	-.02	-.02	-.08*	-.08*	-.03	.00	.11*	.55*	.05	.34*	-.01	.17*			
17 Witness parental conflicts, L	.09*	-.01	-.01	.02	.14*	-.02	.06	-.03	.15*	.16*	.07*	.77*	.45*	.17*	.21*	.07		
18 Neglect, L	-.01	-.05	.00	.02	.10*	.03	.05	-.01	.09*	.13*	-.03	.08*	.10*	.11*	.12*	-.06*	.09*	
19 Number of CM types, L	.08*	.01	-.04	.01	.10*	-.02	.00	-.04	.35*	.46*	.33*	.44*	.64*	.44*	.66*	.50*	.56*	.46*

* $p < .01$ Note: Gender (0= girls, 1 = boys); Minor ethnicity (0= major ethnicity, 1= minor ethnicity); Single parent (0= two parent families, 1=single parent families); War experience of father (0= not served in military during a war, 1= served in military during a war); Unemployment (0 = neither of the parents unemployed, 1 = one parent unemployed, 2 = both parents unemployed); WPC: witnessed parental conflict; P: past year; L: lifetime

MULTIVARIABLE ASSOCIATIONS BETWEEN CHILD AND FAMILY FACTORS AND MALTREATMENT

The results of the logistic regression models predicting sexual abuse are described in detail in Table 4.2. Boys were about 2 times more likely to have experienced sexual abuse during lifetime compared to girls. Similarly, living in a single parent family was associated with a 2 times higher risk of experiencing lifetime sexual abuse.

Table 4.2 | Results of the logistic regression models predicting sexual abuse

| | Sexual abuse past year | | | | Sexual abuse lifetime | | | |
| | *Nagelkerke R^2 = 0.05* | | | | *Nagelkerke R^2 = 0.05* | | | |
	B	*SE*	*p*	Odds ratio	B	*SE*	*p*	Odds ratio
Age	-.12	.09	.168	0.89	-.02	.06	.786	0.98
Gender	.68	.27	.011	1.98	.65	.19	.001	1.92*
Ethnic minority	.53	.37	.151	1.69	.55	.27	.046	1.73
Number of children in family	.48	.56	.392	1.62	.93	.42	.026	2.55
Single parent[1]	.59	.41	.146	1.81	.75	.29	.009	2.12*
Parental unemployment	.20	.23	.383	1.22	.24	.17	.153	1.27
Low social economic status	.02	.03	.459	1.02	.01	.02	.551	1.01
Father war veteran	-.10	.30	.727	0.90	-.17	.21	.406	0.84

* p < .01

Gender (0 = girls, 1 = boys)

[1] single parent families vs. two-parent families; we also conducted the logistic regression with single parent families versus all other families and the results are similar (Sexual abuse past year: Odds ratio = 2.06, *p* = .072; Sexual abuse lifetime: Odds ratio = 2.32, *p* = .003).

The odds of being physically abused, both in the past year and during lifetime, were about 1.5 times higher for boys than for girls (Table 4.3). Furthermore, both past year and lifetime physical abuse were not associated with child age or any of the family factors.

Table 4.3 | *Results of the logistic regression models predicting physical abuse*

	Physical abuse past year				Physical abuse lifetime			
	Nagelkerke R² = 0.02				*Nagelkerke R² = 0.02*			
	B	*SE*	*p*	Odds ratio	B	*SE*	*p*	Odds ratio
Age	-.07	.05	.122	0.93	.07	.04	.070	1.07
Gender	.38	.13	.003	1.46*	.38	.10	.000	1.46*
Ethnic minority	-.27	.22	.216	0.77	-.38	.17	.021	0.68
Number of children in family	.03	.31	.931	1.03	-.03	.25	.914	0.97
Single parent[1]	-.06	.24	.816	0.94	.03	.20	.875	1.03
Parental unemployment	.01	.15	.969	1.01	-.02	.12	.862	0.98
Low social economic status	-.01	.01	.398	0.99	.00	.01	.840	1.00
Father war veteran	.01	.15	.944	1.01	-.02	.12	.861	0.98

* $p < .01$

Gender (0 = girls, 1 = boys)

[1] single parent families vs. two-parent families; we also conducted the logistic regression with single parent versus all other families and the results are similar (Physical abuse past year: Odds ratio = 1.04, p = .872; Physical abuse lifetime: Odds ratio = 1.14, p = .528).

Regarding emotional abuse, child age was the only child characteristic that was significantly related to emotional abuse (Table 4.4). The odds of emotional abuse during lifetime increased with age. With respect to family factors, lower SES was significantly associated with less emotional abuse in the past year and parental unemployment was related with less emotional abuse during lifetime.

Table 4.4 | *Results of the logistic regression models predicting emotional abuse*

	Emotional abuse past year				Emotional abuse lifetime			
	Nagelkerke R² = 0.02				*Nagelkerke R² = 0.02*			
	B	*SE*	*p*	Odds ratio	B	*SE*	*p*	Odds ratio
Age	.08	.04	.037	1.09	.12	.04	.002	1.12*
Gender	.07	.11	.520	1.07	-.24	.10	.019	0.78
Ethnic minority	.24	.17	.143	1.28	.01	.16	.938	1.01
Number of children in family	-.05	.27	.861	0.95	-.12	.25	.632	0.89
Single parent[1]	-.18	.21	.399	0.83	-.16	.20	.424	0.85
Parental unemployment	-.19	.13	.147	0.82	-.33	.12	.004	0.72*
Low social economic status	-.04	.01	.004	0.96*	-.02	.01	.074	0.98
Father war veteran	-.12	.13	.328	0.88	-.03	.12	.807	0.97

* $p < .01$

Gender (0 = girls, 1 = boys)

[1] single parent families vs. two-parent families; we also conducted the logistic regression with single parent versus all other families and the results are similar (Emotional abuse past year: Odds ratio = 0.85, $p = .444$; Emotional abuse lifetime: Odds ratio = 0.83, $p = .363$).

The logistic regression analysis predicting witnessing parental conflicts showed that child age was the only child factor that was positively associated with lifetime experience of witnessing parental conflicts (Table 4.5). Among the family factors, the odds of witnessing parental conflicts were about 3.5 times higher for past year experiences and about 2.5 times for lifetime experiences among children living in single parent families.

Table 4.5 | Results of the logistic regression models predicting witnessing parental conflict

	Witnessed parental conflicts past year				Witnessed parental conflicts lifetime			
	Nagelkerke R² = 0.05				*Nagelkerke R² = 0.04*			
	B	SE	p	Odds ratio	B	SE	p	Odds ratio
Age	.06	.05	.282	1.06	.13	.04	.003	1.14*
Gender	-.11	.14	.450	0.90	-.10	.12	.403	0.91
Ethnic minority	-.09	.21	.679	0.92	-.21	.18	.262	0.81
Number of children in family	-.37	.36	.313	0.69	.02	.30	.951	1.02
Single parent[1]	1.24	.21	.000	3.45*	.92	.20	.000	2.51*
Parental unemployment	-.14	.17	.428	0.87	-.11	.14	.427	0.89
Low social economic status	.03	.02	.119	1.03	.02	.01	.075	1.02
Father war veteran	.15	.17	.395	1.16	-.09	.14	.539	0.92

* p < .01

Gender (0 = girls, 1 = boys)

[1] single parent families vs. two-parent families; we also conducted the logistic regression with single parent families versus all other families and the results are similar (Witnessed parental conflicts past year: Odds ratio = 3.87, *p* = .00; Witnessed parental conflicts lifetime: Odds ratio = 2.78, *p* = .00).

For lifetime experience of neglect, the regression analysis only showed an effect of living situation (Table 4.6). Children living in single parent families were twice as likely to experience neglect. None of the child factors and other family factors were associated with neglect.

Table 4.6 | *Results of the logistic regression models predicting neglect*

	Neglect lifetime			
	Nagelkerke R^2 = 0.02			
	B	SE	*p*	Odds ratio
Age	-.02	.04	.637	0.98
Gender	-.23	.12	.050	0.80
Ethnic minority	-.18	.18	.319	0.83
Number of children in family	.22	.29	.431	1.25
Single parent[1]	.74	.20	.000	2.09*
Parental unemployment	.17	.13	.190	1.18
Low social economic status	.01	.01	.270	1.01
Father war veteran	-.08	.14	.591	0.93

*$p < .01$

Gender (0 = girls, 1 = boys)

[1] single parent families vs. two-parent families; we also conducted the logistic regression with single parent families versus all other families and the results are similar (Odds ratio = 2.21 and $p =.000$).

Finally, the number of child maltreatment types that children experienced during lifetime increased with age. In addition, controlling for other family and child factors, living in a single parent family was associated with experiencing more types of child maltreatment during lifetime and the past year (but only when comparing to living in any other type of family). Figure 4.1 summarizes the results of all child and family risk factors associated with the different types of child maltreatment.

Table 4.7 | Results of the regression models predicting number of maltreatment types

	Number of types of child maltreatment past year $R^2 = .01$		Number of types of child maltreatment lifetime $R^2 = .02$	
	Beta	*p*	*Beta*	*p*
Age	.01	.719	.06	.003*
Gender	.10	.028	.03	.582
Ethnic minority	.04	.581	-.10	.275
Number of children in family	-.02	.881	.10	.473
Single parent[1]	.21	.017	.40	.000*
Parental unemployment	-.04	.473	-.04	.509
Low social economic status	-.01	.315	.00	.713
Father war veteran	-.02	.777	-.06	.412

*$p < .01$

Gender (0 = girls, 1 = boys)

[1] single parent families vs. two-parent families; we also conducted the logistic regression with single parent families versus all other families. And the results are similar for number of types of child maltreatment lifetime: Unstandardized Beta = .47, p = .000. For number of types of child maltreatment past year, single parents became significant: Unstandardized Beta = .27, p =.004.
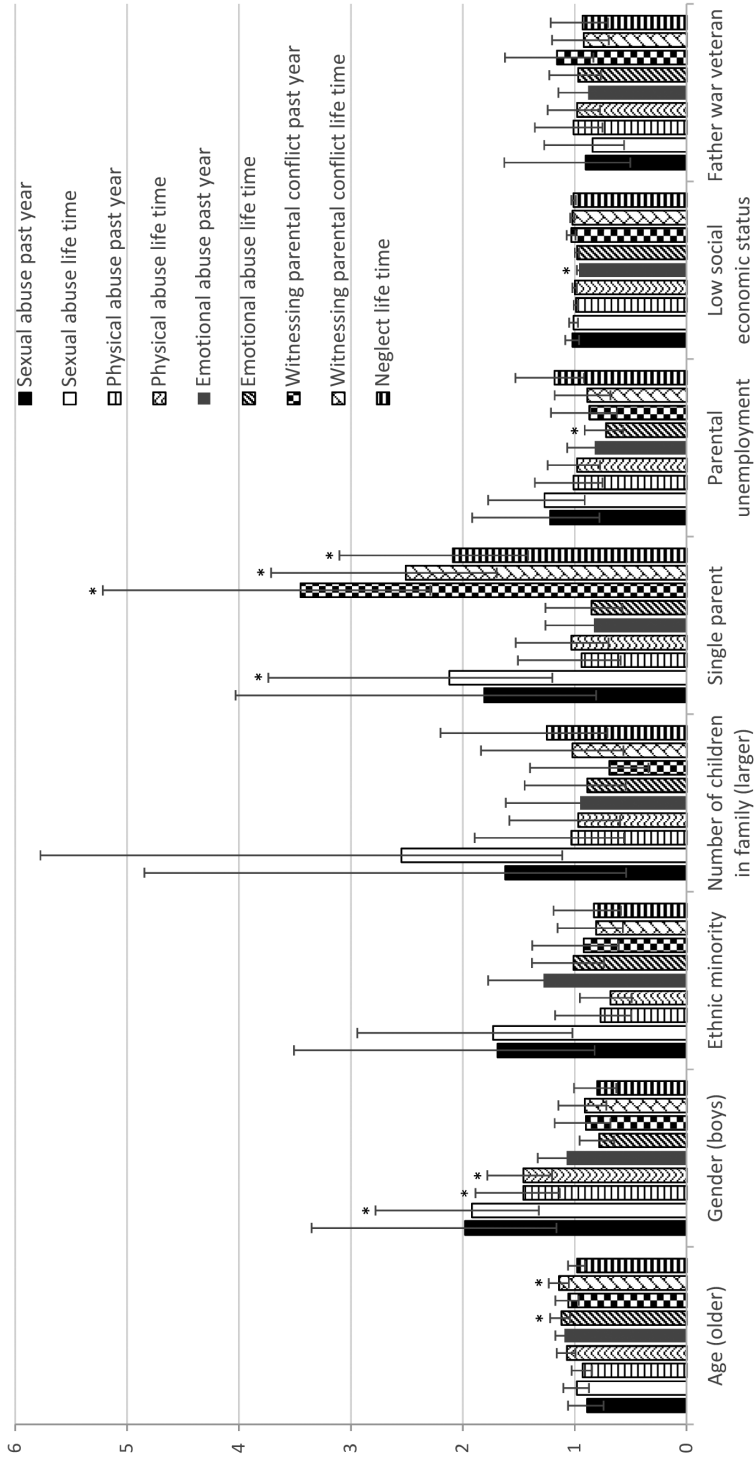
Figure 4.1 | Odds ratios of child and family factors predicting types of child maltreatment

* *p* < .01

DISCUSSION

Child gender and age were child factors related to several types of child maltreatment. In addition, living in a single parent family was the most frequent family factor associated with child maltreatment, followed by low SES and parental unemployment. In contrast, child ethnicity, the number of children in the family, and war veteran status of the father were not associated with any type of child maltreatment when potential confounders were controlled for.

Specifically, controlling for the other factors, age (12-17 years) was the child factor that was most frequently associated with child maltreatment. The likelihood of emotional abuse, witnessing parental conflict, and multiple types of child maltreatment experience during lifetime increased with age, but we did not find significant associations between age and past year experience of any type of child maltreatment. A possible explanation for this is that as children grow older, they have had more experiences in general and possibly also more experiences of child maltreatment.

In our study child gender was also frequently related to child maltreatment. Boys were at higher risk than girls for sexual abuse during lifetime and physical abuse during past year and lifetime, similar to the finding in a meta-analysis on child sexual abuse in China (Ji et al., 2013). It could be that sexual abuse among boys in the East Asian culture is indeed higher than that among girls. However, the taboo for girls to lose virginity before marriage in the East Asia culture, to some extent, may induce reluctance to report sexual abuse among girls. More studies on child sexual abuse in East Asia could clarify this concern. That boys were at higher risk of physical abuse than girls was inconsistent with the meta-analysis of Stith et al. (2009), which showed child gender was not related to physical abuse. In Vietnam and other similar East Asian cultures, there is a saying "Spare the rod, spoil the child". In addition, boys are generally preferred to girls (Guilmoto, 2012), so the harsher behaviors of parents with boys might express their greater focus on boys.

Among family factors, living in a single parent family was related to more sexual abuse, neglect, the number of types of child maltreatment experience during lifetime, and witnessing parental conflict during both past year and lifetime. The finding that living in a single parent family increased the risk of sexual abuse during lifetime was in line with the findings of the Black et al. review (Black, Smith Slep, et al., 2001). There might be a lack of adequate supervision of children in single parent families, which may provide more opportunities for perpetrators to sexually abuse children. The result that living in single parent families was a significant risk factor of witnessing parental conflict was in line with the finding of a study about intimate partner violence in Vietnam

indicating that conflicts still occurred after a separation or divorce (Jansen et al., 2016). Perhaps a considerable part of single parenthood in our sample concerned separated or divorced parents, or parents in the process of a separation, which would increase the risk of witnessing parental conflicts. Regarding neglect, it is interesting that neither socioeconomic nor employment status predicted neglect experiences, but living situation played an important role. With the burden of taking care of the household, providing family income, and being responsible for their child's physical and emotional needs, it may be more difficult for single parents to provide sufficient care which could explain the elevated risk of child neglect in these families. This finding is partly consistent with a meta-analysis that found that single parenthood was related to neglect in addition to unemployment, large family size, and low SES (Stith et al., 2009). However, only univariate associations were addressed in this meta-analysis.

SES and parental employment status were only associated with emotional abuse experience. In contrast with previous literature that low SES is a risk factor for emotional abuse (Black, Smith Slep, et al., 2001), we found that low SES and parental unemployment *lowered* the likelihood of experiencing emotional abuse in the past year and during lifetime, respectively, although the effect for SES in particular was very small. In our previous paper on the consequences of child maltreatment, we also found that emotional abuse was associated with better academic performance (Tran et al., 2017). The practice of "tiger parenting" may play a role in this discrepancy (Chua, 2011). This parenting style, which favors harsh discipline and puts pressure on children to achieve high academic results and gain honor for the family, has been found to be common in Asian families (Kim, Wang, Orozco-Lapray, Shen, & Murtuza, 2013; Nguyen, Chang, & Loh, 2014) and may be reflected in experiences of emotional abuse. Parents with low SES or unemployment may put lower expectations of academic performance on their children than parents with higher SES or better employment status, so their children may report fewer emotional abuse experiences. This phenomenon, its risk factors and consequences need more exploration in future research.

Some of the discrepancies between our findings and those from previous meta-analyses and reviews could be explained by the difference in societies and cultures. Most of the previous studies were conducted in Western high-income countries, where there may be better social programs, a larger and more skilled social service workforce, and less harsh discipline acceptance than in a limited resource country such as Vietnam. Another explanation could be that in many previous studies, risk factors were examined independently from other factors, so it was impossible to control for the effects of other factors. In the current study, we tested the multivariable effects of risk factors, thus controlling for the other risk factors.

Some limitations should be mentioned. First, this is a cross-sectional study, so the chronological order between child and family factors and child maltreatment could not be specified. Nevertheless, knowledge on associations between the risk factors and child maltreatment is still valuable for designing targeted intervention programs. Second, the emotional abuse scale and the measure for war veteran status of fathers are based on only one single item which limits the validity of these measures. However, a meta-analysis about emotional abuse by Stoltenborgh et al. did not find an association between the number of items (from 1-20 items) for the emotional abuse scale and the prevalence of emotional abuse (Stoltenborgh, Bakermans-Kranenburg, Alink, & Van Ijzendoorn, 2012). A more extensive and detailed measure on traumatic war experiences administered directly to fathers could make it possible to examine the association between war experience and child maltreatment better.

In sum, among all explored factors, single parenthood was associated with most types of child maltreatment including sexual abuse, witnessing parental conflict, neglect, and multiple types of child maltreatment. Therefore, single parent families should be a prioritized target population in prevention/early intervention programs. The next factor most frequently associated with child maltreatment was child age. Lifetime maltreatment experiences increased with age. This confirms the advantage of early intervention on child maltreatment so that additional maltreatment experiences can be prevented. Our findings also show that boys were at higher risk of experiencing sexual abuse and physical abuse than girls. More studies on these differences and on whether they are specific to East Asian cultures could clarify the underlying mechanisms so that intervention programs for these types of child maltreatment could become gender specific, and therefore better adjusted to the specific problems for boys and girls. Last but not least, more studies on emotional abuse and "Tiger parenting" in Vietnam could clarify the association of emotional abuse with high SES and parental employment.

REFERENCES

Alink, L. R., Euser, S., Van Ijzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2013). Is elevated risk of child maltreatment in immigrant families associated with socioeconomic status? Evidence from three sources. *International Journal of Psychology, 48,* 117-127.
doi: 10.1080/00207594.2012.734622

Belsky, J. (1980). Child maltreatment: an ecological integration. *American psychologist, 35,* 320-335. doi: 10.1037/0003-066X.35.4.320

Belsky, J. (1993). Etiology of child maltreatment: A developmental ecological analysis. *Psychological bulletin, 114,* 413. doi: 10.1037/0033-2909.114.3.413

Black, D. A., Heyman, R. E., & Smith Slep, A. M. (2001). Risk factors for child sexual abuse. *Aggression and Violent Behavior, 6,* 203-229. doi: http://doi.org/10.1016/S1359-1789(00)00023-9

Black, D. A., Smith Slep, A. M., & Heyman, R. E. (2001). Risk factors for child psychological abuse. *Aggression and Violent Behavior, 6,* 189-201.
doi: http://doi.org/10.1016/S1359-1789(00)00022-7

Bronfenbrenner, U. (1979). *The ecology of human development.* Cambridge: Harvard university press.

Capaldi, D. M., Knoble, N. B., Shortt, J. W., & Kim, H. K. (2012). A Systematic Review of Risk Factors for Intimate Partner Violence. *Partner abuse, 3,* 231-280. doi: 10.1891/1946-6560.3.2.231

Chua, A. (2011). *Battle hymn of the tiger mother:* Bloomsbury Publishing.

Douglas, E. M., & Straus, M. A. (2006). Assault and injury of dating partners by university students in 19 countries and its relation to corporal punishment experienced as a child. *European Journal of Criminology, 3,* 293-318. doi: 10.1177/1477370806065584

Euser, S., Alink, L. R., Pannebakker, F., Vogels, T., Bakermans-Kranenburg, M. J., & Van, I. M. H. (2013). The prevalence of child maltreatment in the Netherlands across a 5-year period. *Child Abuse & Neglect, 37.* doi: 10.1016/j.chiabu.2013.07.004

Fang, X., Fry, D. A., Brown, D. S., Mercy, J. A., Dunne, M. P., Butchart, A. R., ... Swales, D. M. (2015). The burden of child maltreatment in the East Asia and Pacific region. *Child Abuse & Neglect, 42,* 146-162. doi: 10.1016/j.chiabu.2015.02.012

Graham, J. W., Olchowski, A. E., & Gilreath, T. D. (2007). How many imputations are really needed? Some practical clarifications of multiple imputation theory. *Prevention Science, 8,* 206-213. doi: 10.1007/s11121-007-0070-9

Guilmoto, C. Z. (2012). Son preference, sex selection, and kinship in Vietnam. *Population and Development Review, 38,* 31-54. doi: 10.1111/j.1728-4457.2012.00471.x

Jansen, H. A., Nguyen, T. V., & Hoang, T. A. (2016). Exploring risk factors associated with intimate partner violence in Vietnam: results from a cross-sectional national survey. *International Journal of Public Health, 61,* 923-934. doi: 10.1007/s00038-016-0879-8

Ji, K., Finkelhor, D., & Dunne, M. (2013). Child sexual abuse in China: a meta-analysis of 27 studies. *Child Abuse & Neglect, 37,* 613-622. doi: 10.1016/j.chiabu.2013.03.008

Kim, S. Y., Wang, Y., Orozco-Lapray, D., Shen, Y., & Murtuza, M. (2013). Does "Tiger Parenting" Exist? Parenting Profiles of Chinese Americans and Adolescent Developmental Outcomes. *Asian

American Journal of Psychology, 4, 7-18. doi: 10.1037/a0030612

Merckelbach, H., Smeets, T., & Jelicic, M. (2009). Experimental simulation: Type of malingering scenario makes a difference. *Journal of Forensic Psychiatry & Psychology, 20,* 378-386. doi: 10.1080/14789940802456686

Nguyen, H. T. (2006). *Child maltreatment in Vietnam: prevalence and associated mental and physical health problems.* Queensland: Queensland University of Technology.

Nguyen, T., Chang, P. P., & Loh, J. M. (2014). The psychology of Vietnamese tiger mothers: Qualitative insights into the parenting beliefs and practices of Vietnamese-Australian mothers. *Journal of Family Studies, 20,* 48-65. doi: http://dx.doi.org/10.5172/jfs.2014.20.1.48

Saile, R., Ertl, V., Neuner, F., & Catani, C. (2014). Does war contribute to family violence against children? Findings from a two-generational multi-informant study in Northern Uganda. *Child Abuse & Neglect, 38,* 135-146. doi: 10.1016/j.chiabu.2013.10.007

Sedlak, A. J., Mettenburg, J., Basena, M., Peta, I., Mcpherson, K., & Greene, A. (2010). Fourth national incidence study of child abuse and neglect (NIS-4). *Washington, DC: US Department of Health and Human Services. Retrieved on July, 9,* 2010.

Stith, S. M., Liu, T., Davies, L. C., Boykin, E. L., Alder, M. C., Harris, J. M., … Dees, J. E. M. E. G. (2009). Risk factors in child maltreatment: A meta-analytic review of the literature. *Aggression and Violent Behavior, 14,* 13-29. doi: http://dx.doi.org/10.1016/j.avb.2006.03.006

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R., & Van Ijzendoorn, M. H. (2012). The universality of childhood emotional abuse: a meta-analysis of worldwide prevalence. *Journal of Aggression, Maltreatment & Trauma, 21,* 870-890. doi: 10.1080/10926771.2012.708014

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R., & Van Ijzendoorn, M. H. (2014). The prevalence of child maltreatment across the globe: review of a series of meta-analyses. *Child Abuse Review, 24.* doi: 10.1002/car.2353

Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the Parent-Child Conflict Tactics Scales: Development and psychometric data for a national sample of American parents. *Child Abuse & Neglect, 22,* 249-270. doi: 10.1016/S0145-2134(97)00174-9

Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.): Pearson.

Tran, N. K., Alink, L. R., Van Berkel, S. R., & Van Ijzendoorn, M. H. (2016). Child Maltreatment in Vietnam: Prevalence and Cross-Cultural Comparison. *Journal of Aggression, Maltreatment & Trauma, 26,* 1-20. doi: http://dx.doi.org/10.1080/10926771.2016.1250851

Tran, N. K., Van Berkel, S. R., Van Ijzendoorn, M. H., & Alink, L. R. A. (2017). The association between child maltreatment and emotional, cognitive, and physical health functioning in Vietnam. *BMC Public Health, 17,* 332. doi: 10.1186/s12889-017-4258-z

Van Buuren, S. (2012). *Flexible imputation of missing data:* CRC press.

Wildman, R. W., & Wildman, R. W. (1999). The detection of malingering. *Psychological reports, 84,* 386-388. doi: 10.2466/pr0.1999.84.2.386

Chapter 5

THE ASSOCIATION BETWEEN CHILD MALTREATMENT
AND EMOTIONAL, COGNITIVE, AND PHYSICAL
HEALTH FUNCTIONING IN VIETNAM

Nhu K. Tran, Sheila R. Van Berkel, Marinus H. van IJzendoorn, Lenneke R.A. Alink

ABSTRACT

Background.
There is a paucity of research on correlates of child maltreatment in limited-resource countries with a relatively high tolerance of harsh discipline. This Vietnamese study aimed to investigate associations between different types of child maltreatment and child emotional, cognitive, and physical health functioning as well as moderation effects of gender and ethnicity.

Methods.
This cross-sectional study was conducted with 1,851 randomly selected students aged 12 to 17 years. Both self-report and more objective measures (weight, height, study ranking, and a memory test) were used.

Results.
All types of child maltreatment were associated with emotional dysfunctioning. Lifetime and past year experiences of physical abuse and lifetime experiences of sexual abuse and neglect were related to poorer perceived physical health. The study did not find associations between any type of child maltreatment and overweight or underweight status. Regarding cognitive functioning, lifetime experience of sexual abuse and neglect were related to poorer working memory performance. Noticeably, emotional abuse was related to better academic performance, which might be an indication of "tiger parenting" practice in Vietnam, implying academic performance stimulation at the expense of emotional security. No significant moderation effects by gender and ethnicity were found.

Conclusion.
Even in a culture in which harsh discipline is normative, child maltreatment was related to negative aspects of child wellbeing including emotional, cognitive, and physical health functioning. Efficient and low-cost interventions on child maltreatment should be developed and conducted in Vietnam as well as other countries with similar contexts.

Keywords: child maltreatment; child abuse and neglect; emotional problems; physical health; cognitive functioning; Vietnam

INTRODUCTION

Child maltreatment has been associated with poor emotional, cognitive, and physical health functioning both during childhood and later in life (Majer, Nater, Lin, Capuron, & Reeves, 2010; Norman et al., 2012; Wegman & Stetler, 2009). Although child maltreatment exists in every culture and every society, research on child maltreatment focuses primarily on North American and European societies, and much less on Asian societies, especially those societies with limited resources (Stoltenborgh, Bakermans-Kranenburg, Alink, & Van Ijzendoorn, 2014). In addition, most studies are unable to control for comorbidity of different types of child maltreatment, because they did not investigate all types of maltreatment (Norman et al., 2012; Wegman & Stetler, 2009). In the current study, we investigated the relation between five types of child maltreatment (sexual abuse, physical abuse, emotional abuse, witnessing parental conflict, and neglect) and child emotional, cognitive, and physical functioning while controlling for comorbidity among different types of child maltreatment in a representative sample in Vietnam.

The effects of different types of child maltreatment on emotional functioning have been studied frequently, mostly in Western high resource countries (Norman et al., 2012; Wolfe, Crooks, Lee, Mcintyre-Smith, & Jaffe, 2003). A review of seven meta-analyses on the association between child sexual abuse and mental health showed that child sexual abuse increases the risk of depression, anxiety, post-traumatic stress disorder (PTSD), and impaired self-esteem in adulthood (Hillberg, Hamilton-Giachritsis, & Dixon, 2011). In addition, there is meta-analytic evidence for the association between physical abuse, emotional abuse, and neglect and a higher risk on depression and anxiety, and between physical abuse and PTSD and panic disorder (Norman et al., 2012). In a meta-analysis on exposure to domestic violence, a relation was found between experiencing domestic violence, and emotional problems including depression, anxiety, PTSD, and internalizing disorders in general (Wolfe et al., 2003). Moreover, there is empirical evidence that child maltreatment is linked to poorer interactions with peers (Alink, Cicchetti, Kim, & Rogosch, 2012).

In addition, there is some, although limited, evidence for the association between child maltreatment and cognitive development. Small-sized studies, mostly with clinical samples or samples referred by Child Protection Services found that emotional abuse (Majer et al., 2010), physical abuse, neglect, and witnessing domestic violence (Augusti & Melinder, 2013) were related to poorer spatial working memory. Furthermore, physical neglect was related to poorer recognition memory (Majer et al., 2010). Physical abuse and sexual abuse were associated with impairments in verbal short-term

memory (Bremner et al., 1995) and working memory for positive emotions (Cromheeke, Herpoel, & Mueller, 2014). Controlling for comorbidity of other types of child maltreatment, sexual abuse was uniquely related to deficits in language and memory functioning (De Bellis, Woolley, & Hooper, 2013). However, a study conducted with a nationally representative sample from the United States found no effect of physical abuse or sexual abuse on memory performance, although the timing of the first experience of sexual abuse did account for differences in memory performance (Dunn et al., 2015). Compared with adults without sexual abuse experiences, adults with such an experience during early childhood performed better on a working memory test, while those who experienced sexual abuse only during adolescence performed worse (Dunn et al., 2015). Finally, child maltreatment was associated with lower academic performance as a proxy of cognitive functioning (Maguire et al., 2015; Romano, Babchishin, Marquis, & Frechette, 2015).

Furthermore, child maltreatment seems to be related to physical health problems, although again, results are not always pointing in the same direction. A meta-analysis found that child maltreatment was associated with poorer adult health including neurological, musculoskeletal, respiratory, cardiovascular, gastrointestinal, and metabolic problems, more hospital visits, and more general health issues (Wegman & Stetler, 2009). However, most of the participants of the studies in this meta-analysis were females, restricting generalizability of the findings to this gender. Another meta-analysis exploring the long term health consequences of child physical abuse, emotional abuse, and neglect showed that the associations with some health problems were weak and inconsistent and the number of studies on some of the other health outcomes was insufficient to be meta-analyzed (Norman et al., 2012). In addition, there is meta-analytic evidence that physical, emotional, and sexual abuse are related to being overweight in adulthood (Hemmingsson, Johansson, & Reynisdottir, 2014), and studies have shown that neglect and emotional abuse are related to underweight status (Bennett, Wolan Sullivan, Thompson, & Lewis, 2010; Olivan, 2003) although this association is not always confirmed (Duncan et al., 2015). Most studies on the physical consequences of child maltreatment assess physical problems in adulthood. It is unclear whether physical health problems as a result of child maltreatment are already visible in childhood. Finally, similar to research on the emotional and cognitive consequences of maltreatment, most studies did not examine the effects of all types of child maltreatment (Hemmingsson et al., 2014; Norman et al., 2012; Wegman & Stetler, 2009). Since about half of the maltreated children experience more than one type of child maltreatment (Euser et al., 2013; Tran, Dunne, Vo, & Luu, 2015), it is essential to control for the other types of maltreatment in order to know how specific types of maltreatment relate to outcomes.

There is little research on the consequences of child maltreatment in Asian societies, especially those societies with limited resources. Vietnam is a middle-income country with a culture highly influenced by Confucianism. In Vietnam, the saying "Spare the rod, spoil the child" describes the spirit of parenting practices. Physical and emotional punishment are considered necessary to raise well-behaved children in Vietnam as well as many other countries in Asia (Beazley, Bessell, Ennew, & Waterson, 2006). Indeed, the prevalence of child maltreatment in Vietnam was found to be high, emotional abuse was highest at 31.8%, followed by neglect (25.0%), physical abuse (19.1%), witnessing parental conflicts (15.3%) and sexual abuse (2.6%) (Tran, Alink, Van Berkel, & Van Ijzendoorn, 2016). These prevalence are consistent with similar countries in Asia and Pacific regions (Fang et al., 2015; Stoltenborgh, Bakermans-Kranenburg, Alink, & Ijzendoorn, 2014) , but compared directly to Western countries such as the Netherlands, most types of child maltreatment were much more common in Vietnam (Tran et al., 2016). The question is whether different types of child maltreatment have similar effects in Vietnam compared to Western cultures. In a study with an international sample, perceived normativeness of harsh discipline lowered the negative effects of harsh discipline (Gershoff et al., 2010). The differential effects of *maltreatment* based on perceived normativeness have not been investigated yet. It may be that maltreatment has less severe effects as well in cultures where physical and emotional punishment are more normative.

In Vietnam, three studies on the association of child maltreatment with emotional and physical health functioning have been conducted (Kim, 2010; Nguyen, 2006; Tran et al., 2015). The results of these studies on emotional functioning were partially similar to those in Western cultures. When controlling for the other types of child maltreatment, emotional abuse was associated with depression, anxiety, and impaired self-esteem and neglect was related to depression (Nguyen, 2006) and anxiety (Kim, 2010). Furthermore, sexual abuse was related to more depression, anxiety, and psychological distress while controlling for co-morbidity of physical abuse, emotional abuse, and neglect (Kim, 2010). However, no significant associations were found for physical abuse and emotional abuse with emotional problems, when controlling for neglect and sexual abuse (Kim, 2010). Regarding physical health outcomes of child maltreatment, a study in Vietnam showed that poorer perceived physical health was associated with emotional abuse for both boys and girls, and with physical abuse for girls only (Nguyen, 2006). However, these studies only used self-reported outcomes and were conducted with non-random samples or samples only representative of a small area in Vietnam.

The effects of child maltreatment may not be the same for boys and girls. A meta-analysis found larger effect sizes for the association between child maltreatment and

health issues in samples with only females compared to samples including both males and females (Wegman & Stetler, 2009). However, meta-analyses on the association between child sexual abuse and adult mental health did not confirm significant moderation effects of gender (Fossati, Madeddu, & Maffei, 1999; Rind & Tromovitch, 1997).

In addition to gender, ethnicity may play a role in the effects of child maltreatment on the wellbeing of victims. The findings of studies with American samples showed that the effects of child maltreatment were more severe in African-American children than in children from other racial groups on the likelihood of being arrested for violence in young adulthood (Widom & Maxfield, 1995), suffering from PTSD in adulthood (Roberts, Gilman, Breslau, Breslau, & Koenen, 2011), and developing internalizing and externalizing behavior in both adolescence and adulthood (Hatcher, Maschi, Morgen, & Toldson, 2009). However, other studies found that the associations between child maltreatment and depression, heavy drinking, and violence were equivalent between Black and White adolescent and young adult men (Lee et al., 2012). Differences in the effects of child maltreatment based on ethnicity have not yet been examined in Vietnam. The Kinh is the ethnic majority accounting for 84% of the population. We will test whether the association of maltreatment with different outcomes is different for Kinh versus non-Kinh populations.

In sum, the current study aims to (1) examine the association between sexual abuse, physical abuse, emotional abuse, witnessing parental conflict, and neglect and child emotional, cognitive, and physical health functioning in a representative sample in Vietnam using both self-report and more objective measures (weight, height, study ranking, digit span test); (2) test the moderation effects of gender and ethnicity in these associations.

METHODS

SAMPLE

The study was conducted in four provinces of Northern Vietnam, namely Hanoi, Nam Dinh, Ha Tinh, and Tuyen Quang (see also Tran et al., 2016). Hanoi, the capital of Vietnam, was selected because of its unique metropolitan characteristics. Regarding the other three provinces, one province was randomly selected from each of the three geographic areas of Northern Vietnam. In each province, we randomly selected two secondary schools and two high schools. Because the sample of Hanoi represents the largest metropolitan population, only schools in urban areas were selected in this province. In each of the other three provinces, one secondary school (for children aged 12 to 14

years) was selected from a list of schools in urban areas and the other secondary school from a list of schools in rural areas. In addition, for logistical reasons, we selected for each province the two high schools (for children aged 15 to 17 years) that were nearest to the secondary schools. We excluded schools for blind students, schools with fewer than 40 students per grade, and boarding schools where children live full time. We randomly selected one or two classes per grade of each participating school, depending on the number of students in a class.

Our sample thus consisted of a total of eight secondary schools and eight high schools. In total, 2,360 students from 71 classes participated in the study. Students were excluded when unreliable answers were suspected based on outlying scores (z-scores greater than 3.29 (Tabachnick & Fidell, 2012) on the Wildman Symptom Checklist, a scale consisting of bogus symptoms, such as "The buzzing in my ears keeps switching from the left to the right" (Merckelbach, Smeets, & Jelicic, 2009; Wildman & Wildman, 1999), ($n = 31$) or based on a specific pattern in their answers on the maltreatment questionnaire (e.g., all questions answered with the highest possible score; $n = 23$). In addition, students who were older than 17 ($n = 331$) or younger than 12 years ($n = 2$) or with missing data concerning age ($n = 123$) were excluded. The final sample consisted of 1,851 students (47.3% boys, 57.6% secondary school students). The students were equally distributed among the four provinces. Most of the students were Kinh (81.7%), and 17.8% belonged to one of the ethnic minority groups (the other 0.5% had missing values for ethnicity). The mean age of the students was 14.2 years ($SD = 1.4$) and 89% of the students lived in two-parent families.

PROCEDURE

After the Provincial Department of Education (DOE) and the school boards approved the implementation of the study in the schools, informed consent was obtained from both the students and their parents. In Nam Dinh, Ha Tinh, and Tuyen Quang, passive informed consent was used. In Hanoi, active consent was obtained which was a requirement of the DOE. One week prior to the study, students were provided an envelope for themselves and one for their parents. Each envelop had a letter with information about the study anda participation refusal form. In active consent, a letter of information with participation form was provided. Students were asked to give the envelop for parents to them. Only students who turned in both the participation refusal forms unsigned in the passive consent and both participation forms signed in the active consent could participate. Only 4.4% of the students and/or parents refused to participate through passive consent, while in the active consent procedure the refusal proportion was 18.1%.

The students filled out the questionnaire during class hours. Students who refused or students whose parents refused participation in the study filled out dummy questionnaires to avoid making these students a special group in the classroom. These questionnaires were not used in our analyses and destroyed after the study. The research proposal was approved by the Ethics Committee of the Institute of Education and Child Studies of Leiden University and the Ethics Committee of the Institute of Population, Health and Development of Vietnam.

MEASURES

Child maltreatment.

The child maltreatment questionnaire was based on the measure of the Prevalence Study on Maltreatment of children and youth in the Netherlands 2010 (NPM 2010; Euser et al., 2013). The 32-item NPM maltreatment measure was based on the Dating Violence Questionnaire (Douglas & Straus, 2006) and the Parent-Child Conflict Tactics Scales (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). The scale consists of the following subscales: emotional abuse (1 item), physical abuse (8 items), witnessed parental conflict (7 items), sexual abuse (8 items), and neglect (8 items). The maltreatment items were embedded in a questionnaire with filler items, which concerned unpleasant and nasty incidents, nonviolent parental discipline (CTSPC; Straus et al., 1998), and the social desirability items of the Dating Violence Questionnaire (Douglas & Straus, 2006). The Cronbach's alpha of the whole maltreatment scale was .75. In addition, the Cronbach's alphas of the child maltreatment subscales were also adequate (≥ .69).

Emotional dysfunctioning.

Emotional dysfunctioning was computed as the mean of standardized scores of five (sub)scales measuring the following constructs (1) depression, (2) anxiety, (3) post-traumatic stress symptoms, (4) self-esteem, and (5) social and emotional functioning at school. The scale had a high internal consistency with a Cronbach's alpha of .81. Depression and anxiety were measured with the 7-item depression subscale (Cronbach's alpha = .82) and the 6-item anxiety subscale (Cronbach's alpha = .81) of the Brief Symptom Inventory (BSI; Derogatis, 1993). The BSI assesses whether specific psychological symptoms occurred in the past week using a five-point Likert scale ranging from 1 ("Not at all") to 5 ("Extremely"). Post-traumatic stress symptoms were measured with the 17- item Child PTSD Symptom Scale (CPSS) (Cronbach's alpha = .85) (Foa, Riggs, Dancu, & Rothbaum, 1993).

Participants indicated how often several PTSD symptoms occurred in the last two weeks such as *"Having upsetting thoughts or images about the event that came into your head when you didn't want them to"* on a four-point Likert scale ranging from 0 *("Not at all or only at one time")* to 3 *("5 or more times a week/ almost always")*. Self-esteem was assessed with the 10-item Rosenberg Self-Esteem Scale (RSES) consisting of items such as *"On the whole, I am satisfied with myself"* answered on a four-point Likert scale ranging from 1 (*"Strongly agree"*) to 4 (*"Strongly disagree"*) (Cronbach's alpha = .73) (Rosenberg, 1965). Finally, social and emotional functioning at school was measured with the 6-item subscale of the Pediatric Quality of Life Inventory (PedsQL) measuring social interactions with peers (*"I have trouble getting along with other teens"*) and the ability to concentrate on tasks at school (*"It is hard for me to pay attention in class"*) in the past month on a four-point Likert scale ranging from 1 (*"Never"*) to 5 (*"Almost always"*) (Cronbach's alpha = .71) (Varni, Seid, & Kurtin, 2001).

Working memory.
Working memory was measured with the verbal digit span task, which was administered in the classrooms (Cowan et al., 2005). The verbal digit span task includes a forward test and a backward test. In each test, an audiotape was played in which seven random number sequences were read aloud at the speed of one sequence per second. The first sequence had three digits and every subsequent sequence had one additional digit compared to the previous sequence, up to the length of nine digits. In the forward test, students were asked to write down each sequence in the exact order as broadcasted. In the backward test, participants had to write down each sequence in reversed order. In both tests, students could start writing after the sequence was finished. During the test, the researchers monitored students closely to identify students who did not follow the instructions (e.g., who wrote down the numbers during listening instead of after the whole sequence was presented, or who were observed to copy answers from fellow students). These students were excluded from analyses, resulting in 26.5% (*n* = 491) missing values on working memory.

Academic performance.
Academic performance was measured using students' study ranking of their previous school year, which they filled out on the questionnaire. In Vietnam, students get a study ranking at the end of every school year, which is a rating of their average scores of courses with grades on a scale from 1 to 10 and their qualification of courses without grades including music, art and gymnastics. The classification ranges from 1 (*"Excellent"*) to 4 (*"Poor"*). Academic performance is considered excellent if (1) the average grade

on all courses is higher than 8.0 (on a scale from 1-10), (2) either the average grade on literature or mathematics is higher than 8.0, (3) there are no courses with grades below 6.5, and (4) courses that do not assess performance with grades are completed successfully. The academic performance is good if (1) the average grade is between 6.5 and 8.0 (2) either the average grade on literature or mathematics is between than 6.5 and 8.0 (3) there are no courses with grades below 5.0, and (4) courses that do not assess performance with grades are completed successfully. The academic performance is average if (1) the average grade is between 5.0 and 6.5 (2) either the average grade on literature or mathematics is between 5.0 and 6.5, (3) there are no courses with grades below 3.5, and (4) courses that do not assess performance with grades are completed successfully. The academic performance is poor if (1) the average grade is between 3.5 and 5, and (2) there are no courses graded below the 2.0. (Moet, 2011). There were no students with an academic performance lower than "poor" in this study. To facilitate interpretation, classifications were recoded, which resulted in higher scores indicating better academic performance, before statistical analyses.

Underweight and overweight status.
Participants were asked to fill out their current weight and height. Body mass index (BMI) was calculated as weight in kilograms divided by height in meters squared (Cole, 1979). This crude measure of BMI has been used as a standardized indicator for weight problems. The international cut-off points for underweight (thinness grade 1) and overweight by sex and age were used (Cole, Bellizzi, Flegal, & Dietz, 2000; Cole, Flegal, Nicholls, & Jackson, 2007). There were 84 children with underweight and 181 children with overweight status in this sample.

Physical health.
Physical health was measured with 25 items selected from the Child Health Questionnaire (CHQ-CF87; Landgraf, Abetz, & Ware, 1996). The items covered perceptions concerning the participants' current general health condition (e.g., "In general, would you say your health is…") and limitations in the participants' performance of specific physical activities (e.g., walking for 15 minutes). The response options vary between items, therefore combined standardized mean scores were computed. The Cronbach's alpha of the total scale was good, $\alpha = .78$.

STATISTICAL PROCEDURES

As missing values were not missing completely at random (MCAR) and the percentage of missing values ranged from 0.3% (neglect) to 26.5% (working memory), we imputed the missing values using demographic variables (i.e. number of children in the family, living with both biological parents, war experiences father, and parental education and unemployment) in addition to all study variables. Multiple imputation was performed in SPSS 23 using all background, predictor, and outcome variables (Van Buuren, 2012). To deal with outliers, body mass index, physical health, and emotional wellbeing were winsorized before imputing missing data. One hundred data sets were imputed to allow for detection of small effect sizes even with a rather high percentage of missing values, as in case of working memory (Graham, Olchowski, & Gilreath, 2007).

To explore the relation between child maltreatment and emotional, cognitive and physical health functioning of the children, hierarchical linear regression analyses with emotional dysfunction, working memory, academic performance, and physical health as outcome variables and logistic regression analyses were conducted with underweight and overweight status as outcome variables. To control for the effect of several background variables (age, gender, ethnicity, metropolitan level, and total items in the household, such as color television, motor bike as a measure for social economic status), these variables were added in the first step of the model. In the second step, child maltreatment variables were added. To test interaction effects between maltreatment and gender and ethnicity, similar regression analyses were run with the interaction variables of gender or ethnicity and child maltreatment in the third step (in separate models for gender and ethnicity). Separate models were tested for past year and lifetime maltreatment. Results are based on the pooled standardized regression coefficients of the 100 imputed data sets and the pooled explained variance that was computed by calculating the mean (pseudo) R^2 of the 100 imputed data sets. Because of the number of tests, we used a conservative significance level of alpha < .01.

RESULTS

ASSOCIATIONS BETWEEN VARIABLES: CORRELATIONS

The correlations between background variables, child maltreatment variables, and outcome measures are presented in Table 5.1. Most types of maltreatment, both past year and lifetime experiences, were positively related to each other indicating that there was comorbidity among types of child maltreatment (Table 5.1). Only emotional abuse was not related to sexual abuse (both past year and lifetime), past year experience of emotional abuse was not associated with neglect, and lifetime experience of emotional abuse was not related to lifetime and past year experience of witnessing parental conflict. The lifetime experience of emotional abuse was negatively correlated with neglect.

Except for the relation between emotional dysfunction and working memory, better working memory, better physical health, higher academic performance and lower emotional dysfunction were related to each other. For underweight status, negative correlations with working memory, and academic performance were found.

More emotional dysfunction and poorer physical health were associated with most types of child maltreatment both past year and lifetime (Table 5.1), except emotional dysfunction, which was not related to past year sexual abuse, and physical health was not related to past year emotional abuse. Working memory was positively related to past year and lifetime emotional abuse, and negatively related to past year and lifetime sexual abuse and neglect. Academic performance was positively associated with lifetime emotional abuse. Overweight was positively related to lifetime physical abuse.

Table 5.1 | Correlations between predictors and outcome variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Age																			
2. Gender	-.02																		
3. Ethnic majority	-.01	-.04																	
4. Items household	-.07*	.09*	.43*																
5. Rurality	.07*	-.04	-.30*	-.44*															
6. Sexual abuse, P	-.05	.09*	-.10*	-.09*	.06														
7. Physical abuse, P	-.05	.08*	.05	.07	-.05	.21*													
8. Emotional abuse, P	.05	.03	.02	.08*	-.01	.07	.26*												
9. WPC, P	.04	-.01	-.02	-.05	.02	.19*	.17*	.11*											
10. Sexual abuse, L	-.02	.09*	-.10*	-.08	.06	.78*	.20*	.04	.15*										
11. Physical abuse, L	.04	.08*	.08*	.07	-.03	.14*	.60*	.16*	.14*	.16*									
12. Emotional abuse, L	.09*	-.05	.06	.06	-.00	-.00	.11*	.55*	.05	-.01	.17*								
13. WPC, L	.09*	-.01	.01	-.03	.04	.16*	.16*	.07*	.77*	.17*	.21*	.07							
14. Neglect, L	-.01	-.05	-.00	-.03	-.00	.10*	.13*	-.03	.08*	.12*	.12*	-.06*	.09*						
15. Emotional dysfunction	.17*	-.15*	.01	.01	.02	.07	.25*	.18*	.09*	.13*	.26*	.14*	.16*	.26*					
16. Working memory	.06	.00	.23*	.32*	-.18*	-.11*	.01	.08*	.03	-.12*	.04	.10*	.04	-.11*	-.04				
17. Academic performance	-.18*	-.12*	.27*	.36*	-.15*	-.06	.02	.04	-.02	-.06	.00	.09*	-.04	-.06	-.09*	.28*			
18. Underweight	-.02	.01	-.04	-.13*	.08*	.03	.02	-.02	.05	.02	.02	-.01	.05	.02	-.03	-.07*	-.08*		
19. Overweight	-.12*	.09*	.02	.10*	-.10*	.05	.05	-.02	.03	.03	.07*	-.02	.01	.02	.00	.02	.03	-.06	
20. Physical health	-.08*	.19*	.13*	.17*	-.14*	-.08*	-.10*	-.06	-.06*	-.12*	-.12*	-.06*	-.11*	-.15*	-.51*	.14*	.14*	-.04	.03

Note. Gender (0= girls, 1 = boys)

* p < .01

WPC witnessing parental conflict

P past year

L lifetime

ASSOCIATIONS BETWEEN MALTREATMENT AND EMOTIONAL, COGNITIVE, AND PHYSICAL FUNCTIONING

The findings of the regression analysis predicting emotional dysfunctioning showed that all types of child maltreatment during lifetime were associated with more emotional dysfunctioning (Table 5.2). With respect to past year child maltreatment experience, only physical abuse and emotional abuse were positively associated with emotional dysfunctioning.

Table 5.2 | *Results of the regression models predicting emotional dysfunction*

		Past year maltreatment $R^2 =.13$		Lifetime maltreatment $R^2 =.19$	
Model		Beta	*p*	Beta	*p*
1	Age	.17*	.00	.15*	.00
	Gender	-.17*	.00	-.16*	.00
	Ethnic majority	-.01	.60	-.03	.30
	Total items in the household	.02	.38	.04	.12
	Rurality	.02	.51	.01	.66
2	Physical abuse	.24*	.00	.19*	.00
	Sexual abuse	.04	.19	.09*	.00
	Emotional abuse	.11*	.00	.10*	.00
	Witnessing parental conflict	.02	.28	.07*	.00
	Neglect [a]			.22*	.00

Note. Betas and R^2 in model 1 and model 2 are derived from model 2, R^2 is the mean of the R^2 for the imputed data sets

Gender (0 = girls, 1 = boys)

p < .01

[a] Neglect only covered lifetime experiences

For cognitive functioning, the regression analysis predicting working memory showed negative main effects of lifetime experience of sexual abuse and neglect (Table 5.3). The experience of sexual abuse and neglect were associated with poorer working memory. Furthermore, the regression analyses predicting academic performance showed that lifetime emotional abuse was associated with better academic performance of the participants (Table 5.4).

Table 5.3 | *Results of the regression models predicting working memory*

Model		Past year maltreatment $R^2 =.10$		Lifetime maltreatment $R^2 =.12$	
		Beta	p	Beta	p
1	Age	.07*	.005	.07*	.007
	Gender	-.01	.63	-.01	.56
	Ethnic majority	.10*	.00	.09*	.00
	Total items in the household	.25*	.00	.25*	.00
	Rurality	-.04	.13	-.05	.09
2	Physical abuse	-.01	.66	.02	.60
	Sexual abuse	-.08	.02	-.08*	.005
	Emotional abuse	.06	.04	.06	.03
	Witnessed parental conflict	.05	.06	.05	.04
	Neglect [a]			-.10*	.00

Note. Betas and R^2 in model 1 and model 2 are derived from model 2, R^2 is the mean of the R^2 for the imputed data sets

Gender (0 = girls, 1 = boys)

* $p < .01$

[a] Neglect only covered lifetime experiences

Table 5.4 | Results of the regression models predicting academic performance

		Past year maltreatment		Lifetime maltreatment	
		$R^2 = .18$		$R^2 = .19$	
Model		Beta	p	Beta	p
1	Age	-.16*	.00	-.16*	.00
	Gender	-.14*	.00	-.14*	.00
	Ethnic majority	.13*	.00	.14*	.00
	Total items in the household	.31*	.00	.31*	.00
	Rurality	.03	.23	.03	.26
2	Physical abuse	-.01	.72	-.01	.61
	Sexual abuse	-.02	.40	-.00	.95
	Emotional abuse	.03	.21	.07*	.00
	Witnessed parental conflict	-.01	.78	-.02	.45
	Neglect [a]			-.05	.02

Note. Betas and R^2 in model 1 and model 2 are derived from model 2, R^2 is the mean of the R^2 for the imputed data sets

Gender (0 = girls, 1 = boys)

* $p < .01$

[a] Neglect only covered lifetime experiences

The two logistic regression analyses predicting weight problems found no significant associations between any type of child maltreatment and weight problems (Tables 5.5). Finally, past year and lifetime physical abuse experience and lifetime sexual abuse and neglect were associated with lower quality of physical health (Table 5.6).

Table 5.5 | Results of the logistic regression predicting underweight and overweight status

		Past year maltreatment				Lifetime maltreatment			
		Nagelkerke R² = .10				*Nagelkerke R² = .10*			
		B	*SE*	*p*	Odds ratio	B	*SE*	*p*	Odds ratio
Underweight status									
1	Age	-.13	.13	.31	0.88	-.15	.13	.25	0.86
	Gender	.34	.13	.01	1.40	.34	.13	.01	1.41
	Ethnic majority	.20	.13	.11	1.22	.19	.13	.13	1.21
	Total items in the household	-.84*	.19	.00	0.43	-.85*	.19	.00	0.43
	Rurality	.14	.13	.30	1.15	.13	.13	.34	1.14
2	Physical abuse	.09	.14	.49	1.10	.06	.13	.64	1.06
	Sexual abuse	-.05	.17	.75	0.95	-.07	.15	.63	0.93
	Emotional abuse	-.12	.14	.41	0.89	-.01	.14	.95	0.99
	Witnessed parental conflict	.15	.12	.20	1.16	.19	.12	.12	1.21
	Neglect[a]					.07	.12	.57	1.07
Overweight status									
1	Age	-.47*	.11	.00	0.62	-.50*	.11	.00	0.61
	Gender	.33*	.11	.00	1.39	.32*	.11	.00	1.38
	Ethnic majority	-.13	.13	.33	0.88	-.14	.13	.26	0.87
	Total items in the household	.24	.12	.04	1.27	.22	.12	.06	1.25
	Rurality	-.41*	.14	.00	0.66	-.41*	.14	.00	0.66
2	Physical abuse	.10	.10	.34	1.10	.22	.11	.04	1.25
	Sexual abuse	.11	.11	.33	1.11	.05	.11	.65	1.05
	Emotional abuse	-.16	.11	.16	0.85	-.08	.10	.46	0.93
	Witnessed parental conflict	.11	.10	.28	1.12	.07	.11	.52	1.07
	Neglect[a]					.05	.10	.60	1.05

Note. Statistics in model 1 and model 2 are derived from model 2, *Nagelkerke R²* is the mean of the *Nagelkerke R²* for the imputed data sets

B is comparable with Beta as all the variables were standardized

Gender (0 = girls, 1 = boys)

* *p* < .01

[a] Neglect only covered lifetime experiences

Table 5.6 | Results of the regression models predicting physical health

Model		Past year maltreatment $R^2 =.09$		Lifetime maltreatment $R^2 =.12$	
		Beta	p	Beta	p
1	Age	-.07*	.00	-.06	.01
	Gender	.19*	.00	.19*	.00
	Ethnic majority	.07*	.005	.08*	.00
	Total items in the household	.10*	.00	.09*	.00
	Rurality	-.07*	.009	-.06	.01
2	Physical abuse	-.11*	.00	-.11*	.00
	Sexual abuse	-.05	.09	-.08*	.00
	Emotional abuse	-.03	.14	-.04	.08
	Witnessed parental conflict	-.02	.33	-.05	.04
	Neglect [a]			-.11*	.00

Note. Betas and R^2 in model 1 and model 2 are derived from model 2, R^2 is the mean of the R^2 for the imputed data sets

Gender (0 = girls, 1 = boys)

* $p < .01$

[a] Neglect only covered lifetime experiences

MODERATING EFFECTS OF GENDER AND ETHNICITY

The examination of the moderations by gender and ethnicity showed that there were no significant moderation effects on the association between child maltreatment experiences and emotional, cognitive, and physical health functioning.

DISCUSSION

We showed that child maltreatment was related to different aspects of child wellbeing including emotional, cognitive, and physical health functioning. More specifically, controlling for all other types of maltreatment, we found that lifetime sexual abuse and neglect were related to emotional dysfunctioning, poorer working memory, and physical health problems. Past year and lifetime physical abuse was related to emotional dysfunctioning and physical health problems. Past year and lifetime emotional abuse was associated with emotional dysfunctioning. Lifetime prevalence of witnessing parental conflict was linked to emotional dysfunctioning. Contrary to our hypotheses, we found that lifetime emotional abuse was positively associated with academic performance and no associations were found for weight status.

All types of child maltreatment were associated with emotional dysfunctioning. This finding is consistent with previous research in mostly Western countries (Hillberg et al., 2011; Norman et al., 2012; Varese et al., 2012; Wolfe et al., 2003). Regarding cognitive functioning, sexual abuse and neglect were associated with poorer working memory performance. This is in line with several other studies on memory functioning (Augusti & Melinder, 2013; De Bellis et al., 2013; Majer et al., 2010). Physical health was related to physical abuse, sexual abuse, and neglect. This finding extends previous findings on the effects of child maltreatment on physical health in adulthood (Norman et al., 2012; Wegman & Stetler, 2009) by showing that also during childhood, physical abuse, sexual abuse, and neglect were associated with poorer perceived physical health while controlling for the effects of other types of child maltreatment.

Comparing our results with previous studies on the effects of child maltreatment in Vietnam reveals both similarities and differences. Earlier research in Vietnam found negative associations of some specific psychological conditions, for example depression and anxiety, with emotional abuse (Nguyen, 2006), sexual abuse (Kim, 2010), and neglect (Kim, 2010; Nguyen, 2006). The current study shows that - in addition to emotional abuse, sexual abuse, and neglect - physical abuse and witnessing parental conflict were also related to emotional dysfunctioning while controlling for the co-morbidity of other types of child maltreatment. In addition, previous research with Vietnamese students of similar age as our sample found that physical health problems were linked to physical abuse (for girls) and emotional abuse (Nguyen, 2006). Our results extend these findings in that we also found associations with sexual abuse and neglect. Our measure of physical health was a general one whereas Nguyen (2006) measured specific physical health problems, which may explain differences in effects (Nguyen, 2006). Contrary to this earlier study however, we did not find an association with

emotional abuse which could possibly be explained by the fact that in the current study, emotional abuse was measured with a single item, which may not be representative of the full range of emotionally abusive behaviors. In addition, our study is the first to investigate and find associations between child maltreatment and cognition in Vietnam. Taking these and our other findings together, we showed that the consequences of child maltreatment in Vietnam seem to be more extensive than was thought based on previous research. Considering the high prevalence of all types of child maltreatment in Vietnam, with prevalence rates up to 39.0% for physical abuse and 59.6% for emotional abuse (Tran et al., 2016), child maltreatment is a very serious threat to the general health of the Vietnamese population.

One of the central mechanisms of the association between child maltreatment and emotional, cognitive, and physical health outcomes may be alterations in the stress system and brain areas regulating the stress system. There is a wide range of evidence that the chronic stress of child maltreatment can induce long term impairments of the hypothalamic-pituitary-adrenal axis (HPA axis), a core part of the human stress system (Alink et al., 2012; Carpenter, Shattuck, Tyrka, Geracioti, & Price, 2011). In turn, changes in the functioning of the HPA-axis are related to mental health problems such as anxiety and depression (Heim, Newport, Mletzko, Miller, & Nemeroff, 2008). Moreover, abnormal cortisol levels as a result of an impaired stress response system were also associated with lower cognitive functioning (Suor, Sturge-Apple, Davies, Cicchetti, & Manning, 2015). More specifically, meta-analytic results showed that child maltreatment was associated with reduced hippocampal volume, a brain area that plays an important role in cognition, primarily memory, and controls the regulation of the HPA axis (Riem, Alink, Out, Van Ijzendoorn, & Bakermans-Kranenburg, 2015). In addition, impaired functioning of the HPA axis was found to alter metabolic processes, enhance the susceptibility to inflammation, and impair counter-regulatory control of immune responses (Silverman & Sternberg, 2012), all putting individuals at risk for health problems. Another possible mechanism through which child maltreatment could influence emotional, cognitive, and physical health functioning is through an increase in exhibiting risky behaviors. Child maltreatment experiences were found to increase the practice of risky behaviors, such as substance abuse, smoking, physical inactivity, multiple sex partners, which in turn can impair emotional, cognitive, and physical health functioning (Felitti et al., 1998).

Regarding physical and emotional abuse, not only lifetime experience, but also past year experience was related to emotional dysfunction, whereas for the other types of maltreatment only lifetime experiences were related to the outcomes. This finding suggests that past as well as recent experiences of physical and emotional abuse in adolescence can have devastating effects, whereas for the other types of maltreatment,

the occurrence earlier in development may be more relevant. A reason that we did not find an association between past year sexual abuse and emotional dysfunction could be the low prevalence of sexual abuse in the past year which may not have allowed to detect significant association.

Among all types of child maltreatment, lifetime physical abuse and neglect were related to the largest number of dysfunctional child outcomes. While physical abuse has been studied frequently, research on neglect is often "neglected" (Stoltenborgh, Bakermans-Kranenburg, & Van Ijzendoorn, 2013). Our finding on the effects of neglect is consistent with the results of Spinhoven et al. (2010) (Spinhoven et al., 2010) that neglect has as much or even more detrimental effects than other types of child maltreatment, even after controlling for co-morbidity. Noticeably, total items in the household as a proxy for poverty was also related to four out of six outcome measures: physical health, underweight status, working memory performance, and academic performance. This finding may add to the findings on neglect and provides empirical evidence for the negative effect of poverty on cognitive functioning and physical health during childhood.

In contrast to our hypotheses, emotional abuse was related to better academic performance. Samples of previous studies reporting worse academic performance as a result of emotional abuse, all originated from Western and Middle Eastern countries and none originated from an East Asian country (Maguire et al., 2015; Romano et al., 2015). In East Asian countries, such as Vietnam, the so called "tiger parenting" practice is more common than in countries in other regions (Choi, Kim, Kim, & Park, 2013; Kim, Wang, Orozco-Lapray, Shen, & Murtuza, 2013). "Tiger parenting" was first introduced by Chua (2011) who described it as a harsh parenting style that focuses on making children reach high academic achievements and compliance with family obligations (Chua, 2011). This parenting style is in line with the "achievement/adjustment paradox" observed in Asian American children, who both reach higher academic achievement and have more psychological problems (Qin, 2008), something that was also confirmed by the positive association between emotional abuse and emotional dysfunctioning found in this study. "Tiger parenting" has rarely been studied with Vietnamese parents; a qualitative study with a few Vietnamese-Australian mothers did find that Vietnamese parents had an authoritarian parenting style and expected high education achievements of their children (Nguyen, Chang, & Loh, 2014). Although there are no studies on "tiger parenting" conducted in Vietnam and our study did not measure parenting style, the association between emotional abuse and better academic performance on the one hand and worse emotional functioning on the other hand might be an indication of "tiger parenting" practice. As mentioned before, only one item

was used to assess emotional abuse and therefore this association needs to be further investigated in future research.

Regarding overweight and underweight status, the current study did not find associations with any type of child maltreatment. Although previous findings on the effects of child maltreatment on underweight status are inconsistent, there is evidence that child maltreatment is related to more overweight in children referred to Child Protective Services (Helton & Liechty, 2014) and there is meta-analytic evidence concerning this relation in adult samples (Hemmingsson et al., 2014). The current study was conducted with a general population sample of school-aged children, and the effects of child maltreatment on overweight could be less explicit in population-based samples compared to children referred by Child Protective Services.

No significant results were found for the moderation effects of gender and ethnicity. A reason that we did not find moderation by ethnicity could be the differences between minor and major ethnicities in Vietnam mainly reflect differences in economic status, so after controlling for the effects of economic status and other background information differences, the effects of child maltreatment across ethnicities were similar. These findings imply that the effects of child maltreatment during childhood were equivalent across different genders and ethnicities after controlling for socioeconomic inequalities.

Some limitations of this study should be mentioned. First, the cross-sectional design of this study does not allow the examination of causality of child maltreatment on emotional functioning, cognitive functioning and physical health status. However, research with animal models and a longitudinal twin-study on child development provide strong evidence of causal effects of child maltreatment on different outcomes (Jaffee, Caspi, Moffitt, & Taylor, 2004; Koch, Mccormack, Sanchez, & Maestripieri, 2014). Second, the different informed consent procedure in Hanoi compared with other provinces resulted in a lower participation rate for this region. The use of different consent procedures in one sample could affect the validity of the results of the study. Third, in terms of measurement, the emotional abuse scale only consisted of one item which limits the reliability and validity of this scale. Moreover, overweight and underweight status were identified through height and weight reported by the participants. It might be difficult for children to remember their precise height and weight, thus recall bias may affect the accuracy of weight problems in this study. Another limitation is the fact that a large percentage of working memory test results were invalid or missing (26.5%). Although we used a reliable multiple imputation process, the large number of missing values may still have introduced bias in the data analysis relating to working memory.

CONCLUSION

This study contributes to the scarce empirical research on the effects of child maltreatment in limited resource contexts such as Vietnam. We showed that the consequences of maltreatment may be more widespread than previously thought. There were several associations of child maltreatment with different domains of child wellbeing including emotional, cognitive, and physical health functioning, even when controlling for co-morbidity. Among various types of child maltreatment, lifetime experience of sexual abuse, and neglect were related to the largest number of problems in functioning. Given these results and the shortage of studies specifically on neglect, more research on the effects of neglect, controlling for other types of child maltreatment, should be conducted. In addition, the positive association between emotional abuse and academic performance should be explored further.

In conclusion, considering the widespread consequences and the high prevalence rates of child maltreatment in Vietnam , we recommend that effective and low-cost interventions are designed and implemented to prevent or relieve the short- and long-term consequences of maltreatment.

ABBREVIATIONS

BMI: Body mass index; BSI: Brief Symptom Inventory; CHQ-CF87: Child Health Questionnaire; CPSS: Child PTSD Symptom Scale; CTSPC: Parent-Child Conflict Tactics Scales; HPA: Axis hypothalamic-pituitary-adrenal axis; MCAR: Missing completely at random; NPM: Netherlands' Prevalence Study on Maltreatment of children and youth; PedsQL: Pediatric Quality of Life Inventory; PTSD: Post Traumatic Stress Disorder; RSES: Rosenberg Self-Esteem Scale; SD: Standard Deviation; WPC: Witnessing parental conflict.

REFERENCES

Alink, L. R. A., Cicchetti, D., Kim, J., & Rogosch, F. A. (2012). Longitudinal associations among child maltreatment, social functioning, and cortisol regulation. *Developmental Psychology,* 48, 224-236. doi: 10.1037/a0024892

Augusti, E. M., & Melinder, A. (2013). Maltreatment is associated with specific impairments in executive functions: a pilot study. *Journal of Trauma Stress,* 26, 780-783. doi: 10.1002/jts.21860

Beazley, H., Bessell, L., Ennew, J., & Waterson, R. (2006). What children say: Results of comparative research on physical and emotional Punishment of children in Southeast Asia, East Asia and the Pacific.

Bennett, D. S., Wolan Sullivan, M., Thompson, S. M., & Lewis, M. (2010). Early child neglect: does it predict obesity or underweight in later childhood? *Child Maltreatment,* 15, 250-254. doi: 10.1177/1077559510363730

Bremner, J. D., Randall, P., Scott, T. M., Capelli, S., Delaney, R., Mccarthy, G., & Charney, D. S. (1995). Deficits in short-term memory in adult survivors of childhood abuse. *Psychiatry Research,* 59, 97-107.

Carpenter, L. L., Shattuck, T. T., Tyrka, A. R., Geracioti, T. D., & Price, L. H. (2011). Effect of childhood physical abuse on cortisol stress response. *Psychopharmacology (Berl),* 214, 367-375. doi: 10.1007/s00213-010-2007-4

Choi, Y., Kim, Y. S., Kim, S. Y., & Park, I. K. (2013). Is Asian American Parenting Controlling and Harsh? Empirical Testing of Relationships between Korean American and Western Parenting Measures. *Asian American Journal of Psychology,* 4, 19-29. doi: 10.1037/a0031220

Chua, A. (2011). *Battle hymn of the tiger mother:* Bloomsbury Publishing.

Cole, T. J. (1979). A method for assessing age-standardized weight-for-height in children seen cross-sectionally. *Annals of Human Biology,* 6, 249-268.

Cole, T. J., Bellizzi, M. C., Flegal, K. M., & Dietz, W. H. (2000). Establishing a standard definition for child overweight and obesity worldwide: international survey. *BMJ, 320,* 1240-1243.

Cole, T. J., Flegal, K. M., Nicholls, D., & Jackson, A. A. (2007). Body mass index cut offs to define thinness in children and adolescents: international survey. *BMJ, 335,* 194. doi: 10.1136/bmj.39238.399444.55

Cowan, N., Elliott, E. M., Scott Saults, J., Morey, C. C., Mattox, S., Hismjatullina, A., & Conway, A. R. (2005). On the capacity of attention: its estimation and its role in working memory and cognitive aptitudes. *Cognitive Psychology,* 51, 42-100. doi: 10.1016/j.cogpsych.2004.12.001

Cromheeke, S., Herpoel, L. A., & Mueller, S. C. (2014). Childhood abuse is related to working memory impairment for positive emotion in female university students. *Child Maltreament,* 19, 38-48. doi: 10.1177/1077559513511522

De Bellis, M. D., Woolley, D. P., & Hooper, S. R. (2013). Neuropsychological findings in pediatric maltreatment: relationship of PTSD, dissociative symptoms, and abuse/neglect indices to neurocognitive outcomes. *Child Maltreatment, 18,* 171-183.
doi: 10.1177/1077559513497420

Derogatis, L. R. (1993). BSI: Brief Symptom Inventory: Administration, Scoring, and Procedure Manual. Minneapolis: National Computer Systems Inc.

Douglas, E. M., & Straus, M. A. (2006). Assault and injury of dating partners by university students in 19 countries and its relation to corporal punishment experienced as a child. *European Journal of Criminology, 3,* 293-318. doi: 10.1177/1477370806065584

Duncan, A. E., Sartor, C. E., Jonson-Reid, M., Munn-Chernoff, M. A., Eschenbacher, M. A., Diemer, E. W., . . . Heath, A. C. (2015). Associations between body mass index, post-traumatic stress disorder, and child maltreatment in young women. *Child Abuse & Neglect, 45,* 154-162. doi: 10.1016/j.chiabu.2015.02.007

Dunn, E. C., Busso, D. S., Raffeld, M. R., Smoller, J. W., Nelson, C. A., Doyle, A. E., & Luk, G. (2015). Does developmental timing of exposure to child maltreatment predict memory performance in adulthood? Results from a large, population-based sample. *Child Abuse & Neglect.* doi: 10.1016/j.chiabu.2015.10.014

Euser, S., Alink, L. R., Pannebakker, F., Vogels, T., Bakermans-Kranenburg, M. J., & Van, I. M. H. (2013). The prevalence of child maltreatment in the Netherlands across a 5-year period. *Child Abuse & Neglect, 37,* 841-851. doi: 10.1016/j.chiabu.2013.07.004

Fang, X., Fry, D. A., Brown, D. S., Mercy, J. A., Dunne, M. P., Butchart, A. R., ... Swales, D. M. (2015). The burden of child maltreatment in the East Asia and Pacific region. *Child Abuse & Neglect, 42,* 146-162. doi: 10.1016/j.chiabu.2015.02.012

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine, 14,* 245-258.

Foa, E. B., Riggs, D. S., Dancu, C. V., & Rothbaum, B. O. (1993). Reliability and validity of a brief instrument for assessing post-traumatic stress disorder. *Journal of Traumatic Stress, 6,* 459-473.

Fossati, A., Madeddu, F., & Maffei, C. (1999). Borderline Personality Disorder and childhood sexual abuse: a meta-analytic study. *Journal of Personality Disorders, 13,* 268-280.

Gershoff, E. T., Grogan-Kaylor, A., Lansford, J. E., Chang, L., Zelli, A., Deater-Deckard, K., & Dodge, K. A. (2010). Parent discipline practices in an international sample: associations with child behaviors and moderation by perceived normativeness. *Child Development, 81,* 487-502. doi: 10.1111/j.1467-8624.2009.01409.x

Graham, J. W., Olchowski, A. E., & Gilreath, T. D. (2007). How many imputations are really needed? Some practical clarifications of multiple imputation theory. *Prevention Science, 8,* 206-213. doi: 10.1007/s11121-007-0070-9

Hatcher, S. S., Maschi, T., Morgen, K., & Toldson, I. A. (2009). Exploring the impact of racial and ethnic differences in the emotional and behavioral responses of maltreated youth: Implications for culturally competent services. *Children and Youth Services Review, 31,* 1042-1048. doi: 10.1016/j.childyouth.2009.05.005

Heim, C., Newport, D., Mletzko, T., Miller, A., & Nemeroff, C. (2008). The link between childhood trauma and depression: insights from HPA axis studies in humans. *Psychoneuroendocrinology, 33,* 693 - 710.

Helton, J. J., & Liechty, J. M. (2014). Obesity prevalence among youth investigated for maltreatment in the United States. *Child Abuse & Neglect, 38,* 768-775. doi: 10.1016/j.chiabu.2013.08.011

Hemmingsson, E., Johansson, K., & Reynisdottir, S. (2014). Effects of childhood abuse on adult obesity: a systematic review and meta-analysis. *Obesity Reviews, 15,* 882-893. doi: 10.1111/obr.12216

Hillberg, T., Hamilton-Giachritsis, C., & Dixon, L. (2011). Review of meta-analyses on the association between child sexual abuse and adult mental health difficulties: a systematic approach. *Trauma Violence Abuse, 12,* 38-49. doi: 10.1177/1524838010386812

Jaffee, S. R., Caspi, A., Moffitt, T. E., & Taylor, A. (2004). Physical maltreatment victim to antisocial child: evidence of an environmentally mediated process. *Journal of Abnormal Psychology, 113,* 44-55. doi: 10.1037/0021-843x.113.1.44

Kim, S. Y., Wang, Y., Orozco-Lapray, D., Shen, Y., & Murtuza, M. (2013). Does "Tiger Parenting" Exist? Parenting Profiles of Chinese Americans and Adolescent Developmental Outcomes. Asian American Journal of Psychology, 4, 7-18. doi: 10.1037/a0030612

Kim, X. L. (2010). *Adverse childhood experiences: prevalence and affects on mental health and risk behaviours of adolescents in Ho Chi Minh city, Vietnam.* Queensland: Queensland University of Technology.

Koch, H., Mccormack, K., Sanchez, M. M., & Maestripieri, D. (2014). The development of the hypothalamic-pituitary-adrenal axis in rhesus monkeys: effects of age, sex, and early experience. *Developmental Psychobiology, 56,* 86-95. doi: 10.1002/dev.21093

Landgraf, J. M., Abetz, L., & Ware, J. (1996). The CHQ User's Manual. Boston: The Health Institute, New England Medical Center.

Lee, C., Cronley, C., White, H. R., Mun, E. Y., Stouthamer-Loeber, M., & Loeber, R. (2012). Racial differences in the consequences of childhood maltreatment for adolescent and young adult depression, heavy drinking, and violence. *Journal of Adolescent Health, 50,* 443-449. doi: 10.1016/j.jadohealth.2011.09.014

Maguire, S. A., Williams, B., Naughton, A. M., Cowley, L. E., Tempest, V., Mann, M. K., ... Kemp, A. M. (2015). A systematic review of the emotional, behavioural and cognitive features exhibited by school-aged children experiencing neglect or emotional abuse. *Child: Care, Health and Development, 41,* 641-653. doi: 10.1111/cch.12227

Majer, M., Nater, U. M., Lin, J. M., Capuron, L., & Reeves, W. C. (2010). Association of childhood trauma with cognitive function in healthy adults: a pilot study. *BMC Neurology, 10,* 61. doi: 10.1186/1471-2377-10-61

Merckelbach, H., Smeets, T., & Jelicic, M. (2009). Experimental simulation: Type of malingering scenario makes a difference. *Journal of Forensic Psychiatry & Psychology, 20,* 378-386. doi: 10.1080/14789940802456686

Moet. (2011). Circular 58/2011/TT-BGDDT on Regulation *on evaluation, ranking for secondary and high school students.*

Nguyen, H. T. (2006). Child maltreatment in Vietnam: prevalence and associated mental and physical health problems. Queensland: Queensland University of Technology.

Nguyen, T., Chang, P. P., & Loh, J. M. (2014). The psychology of Vietnamese tiger mothers: Qualitative insights into the parenting beliefs and practices of Vietnamese-Australian mothers. *Journal of Family Studies, 20,* 48-65. doi: http://dx.doi.org/10.5172/jfs.2014.20.1.48

Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. *PLoS Medicine, 9,* e1001349. doi: 10.1371/journal.pmed.1001349

Olivan, G. (2003). Catch-up growth assessment in long-term physically neglected and emotionally abused preschool age male children. *Child Abuse & Neglect, 27,* 103-108.

Qin, D. B. (2008). Doing well vs. feeling well: Understanding family dynamics and the psychological adjustment of Chinese immigrant adolescents. *Journal of Youth and Adolescence, 37,* 22-35.

Riem, M. M., Alink, L. R., Out, D., Van Ijzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2015). Beating the brain about abuse: Empirical and meta-analytic studies of the association between maltreatment and hippocampal volume across childhood and adolescence. *Development and Psychopathology, 27,* 507-520. doi: 10.1017/s0954579415000127

Rind, B., & Tromovitch, P. (1997). A meta-analytic review of findings from national samples on psychological correlates of child sexual abuse. *Journal of Sex Research, 34,* 237-255.

Roberts, A. L., Gilman, S. E., Breslau, J., Breslau, N., & Koenen, K. C. (2011). Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. *Psychological Medicine, 41,* 71-83. doi: 10.1017/s0033291710000401

Romano, E., Babchishin, L., Marquis, R., & Frechette, S. (2015). Childhood Maltreatment and Educational Outcomes. *Trauma Violence Abuse, 16,* 418-437. doi: 10.1177/1524838014537908

Rosenberg, M. (1965). *Society and the adolescent self-image:* Princeton University Press.

Silverman, M. N., & Sternberg, E. M. (2012). Glucocorticoid regulation of inflammation and its functional correlates: from HPA axis to glucocorticoid receptor dysfunction. *Annals of the New York Academy of Sciences, 1261*, 55-63. doi: 10.1111/j.1749-6632.2012.06633.x

Spinhoven, P., Elzinga, B. M., Hovens, J. G., Roelofs, K., Zitman, F. G., Van Oppen, P., & Penninx, B. W. (2010). The specificity of childhood adversities and negative life events across the life span to anxiety and depressive disorders. *Journal of Affective Disorders, 126,* 103-112. doi: 10.1016/j.jad.2010.02.132

Stoltenborgh, M., Bakermans-Kranenburg, M. J., & Van Ijzendoorn, M. H. (2013). The neglect of child neglect: a meta-analytic review of the prevalence of neglect. *Social Psychiatry & Psychiatric Epidemiology, 48,* 345-355. doi: 10.1007/s00127-012-0549-y

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R., & Ijzendoorn, M. H. (2014). The Prevalence of Child Maltreatment across the Globe: Review of a Series of Meta-Analyses. *Child Abuse Review.*

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R., & Van Ijzendoorn, M. H. (2014). The Prevalence of Child Maltreatment across the Globe: Review of a Series of Meta-Analyses. *Child Abuse Review, 24,* 37-50. doi: 10.1002/car.2353

Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the Parent-Child Conflict Tactics Scales: Development and psychometric data for a national sample of American parents. *Child Abuse & Neglect, 22,* 249-270. doi: 10.1016/S0145-2134(97)00174-9

Suor, J. H., Sturge-Apple, M. L., Davies, P. T., Cicchetti, D., & Manning, L. G. (2015). Tracing Differential Pathways of Risk: Associations Among Family Adversity, Cortisol, and Cognitive Functioning in Childhood. *Child Development.* doi: 10.1111/cdev.12376

Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.): Pearson.

Tran, N. K., Alink, L. R., Van Berkel, S. R., & Van Ijzendoorn, M. H. (2016). Child Maltreatment in Vietnam: Prevalence and Cross-Cultural Comparison. *Journal of Aggression, Maltreatment & Trauma, 26,* 1-20. doi: http://dx.doi.org/10.1080/10926771.2016.1250851

Tran, Q. A., Dunne, M. P., Vo, T. V., & Luu, N. H. (2015). Adverse Childhood Experiences and the Health of University Students in Eight Provinces of Vietnam. *Asia-Pacific Journal of Public Health, 27,* 26s-32s. doi: 10.1177/1010539515589812

Van Buuren, S. (2012). *Flexible imputation of missing data:* CRC press.

Varese, F., Smeets, F., Drukker, M., Lieverse, R., Lataster, T., Viechtbauer, W., . . . Bentall, R. P. (2012). Childhood adversities increase the risk of psychosis: a meta-analysis of patient-control, prospective- and cross-sectional cohort studies. *Schizophrenia Bulletin, 38,* 661-671. doi: 10.1093/schbul/sbs050

Varni, J. W., Seid, M., & Kurtin, P. S. (2001). PedsQL 4.0: reliability and validity of the Pediatric Quality of Life Inventory version 4.0 generic core scales in healthy and patient populations. *Medical Care, 39,* 800-812.

Wegman, H. L., & Stetler, C. (2009). A meta-analytic review of the effects of childhood abuse on medical outcomes in adulthood. *Psychosomatic Medicine, 71,* 805-812. doi: 10.1097/PSY.0b013e3181bb2b46

Widom, C. S., & Maxfield, M. G. (1995). *The cycle of violence revisited six years later:* National Institute of Justice.

Wildman, R. W., & Wildman, R. W. (1999). The detection of malingering. *Psychological reports, 84,* 386-388. doi: 10.2466/pr0.1999.84.2.386

Wolfe, D. A., Crooks, C. V., Lee, V., Mcintyre-Smith, A., & Jaffe, P. G. (2003). The effects of children's exposure to domestic violence: a meta-analysis and critique. *Clinical Child and Family Psychology Review, 6,* 171-187.

Chapter 6

GENERAL DISCUSSION

This dissertation provides insight into various aspects of child maltreatment in Vietnam, from the prevalence in chronological and cross-cultural perspectives to its association with several risk factors and outcomes. Child maltreatment appears to be highly prevalent in Vietnam and most types of child maltreatment, except sexual abuse, are more prevalent in Vietnam than in the Netherlands (Chapter 2). The chronological comparison in Chapter 3 showed unchanged prevalence of sexual abuse and neglect and reduced prevalence of emotional abuse and physical abuse (whole sample only; not in the Hanoi sample) over a decade in Vietnam. Regarding the association of child maltreatment with child and family risk factors, single parenthood, child age, and being a boy were associated with more child maltreatment experiences, and higher socioeconomic status and parental employment were related to more emotional abuse (Chapter 4). The examination of the association of child maltreatment with child wellbeing in Chapter 5 showed that all types of child maltreatment were related to emotional dysfunctioning and that physical abuse, sexual abuse, and neglect were associated with poorer perceived physical health. Besides, sexual abuse and neglect were associated with poorer working memory performance and emotional abuse was related to better academic performance. In this final chapter, these results will be put in a broader perspective, followed by a discussion of issues regarding the measurement of maltreatment in this study.

RISK FACTORS FOR CHILD MALTREATMENT IN VIETNAM: AN ECOLOGICAL PERSPECTIVE

We found several risk factors to be associated with child maltreatment. To have a better view on the scale of the effects of each of the significant risk factors in our study, we converted odds ratios from logistic regression analyses into effect sizes (Cohen's d) based on Borenstein et al. (Borenstein, Hedges, Higgins, & Rothstein, 2009) and Chen et.al (Chen, Cohen, & Chen, 2010). Cohen's d values of 0.2, 0.5, and 0.8 are considered as corresponding to a small, medium, and large effect size, respectively (Cohen, 1988). Figures 6.1 and 6.2 provide a summary of the risk factors and their effect sizes (for past year and lifetime maltreatment). We found that being a boy was a risk factor for lifetime experience of sexual abuse, and both past year and lifetime physical abuse. Effect sizes were, however, small. In addition, the risks of lifetime emotional abuse and witnessing parental conflict increased with age, but these associations showed very small effect sizes. In addition, living in a single parent family was associated with higher lifetime experience of sexual abuse and neglect with a small to medium effect size, and higher past year and

lifetime experience of witnessing parental conflict with a medium effect size. Unexpectedly, low socio-economic status and parental unemployment were related to *lower* past year and lifetime emotional abuse, respectively. Both effects had a small effect size. It could be seen that the magnitude of the effect of single parenthood was largest compared with other factors. And although the associations of other factors with child maltreatment were present, the magnitude of the effects was quite small.
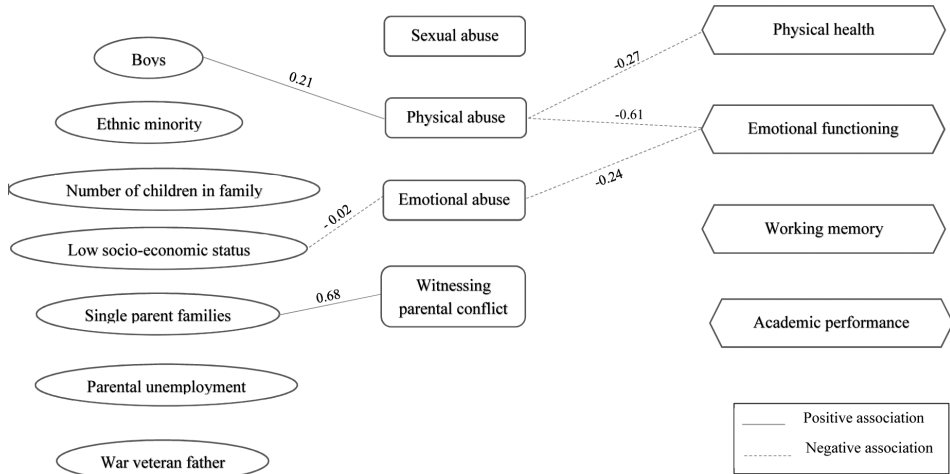

Figure 6.1 | Associations of past year child maltreatment with risk factors and child wellbeing aspects (Cohen's d)
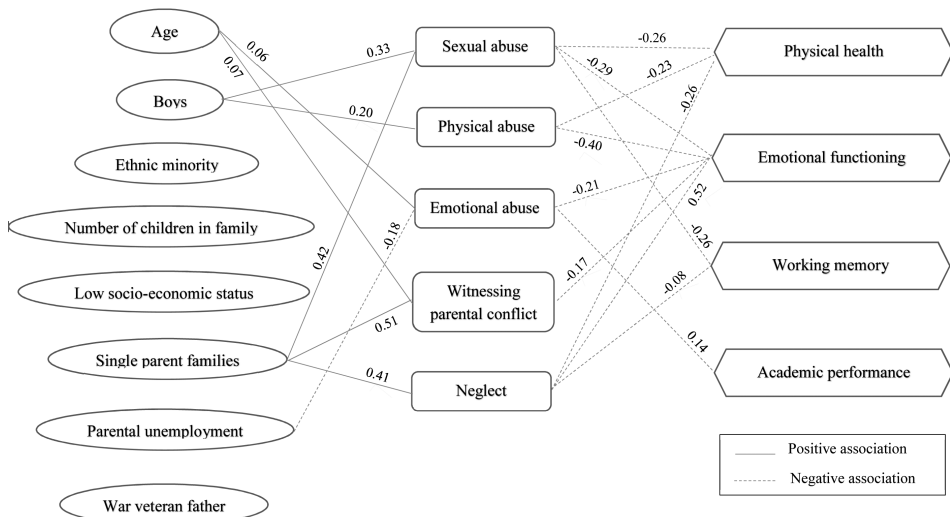
Figure 6.2 | Association of lifetime child maltreatment with risk factors and child wellbeing aspects (Cohen's d)

Our results regarding risk factors for child maltreatment in Vietnam can be viewed from an ecological perspective, which may shed more light on directions for interventions and policy. From an ecological perspective, the occurrence of a phenomenon is determined by interrelated factors at multiple levels. Considering Bronfenbrenner's model (Bronfenbrenner, 1979; Bronfenbrenner, 2009) and the risk factors in the ecological framework in the guide by the WHO and IPSCAN to prevent child maltreatment (Who & Ipscan, 2006), risk factors related to child maltreatment could be categorized in three levels namely the microsystem, the exosystem and the macrosystem. The *microsystem* level includes the immediate context in which child maltreatment takes place. The *exosystem* covers larger social structures such as the context of work and neighborhoods. Factors at the *macrosystem* relate to characteristics of the overarching setting contributing to child maltreatment such as culture, social norms, and national policies. Figure 6.3 shows the ecological framework with examples of relevant factors for Vietnam at the different levels, in which our results are integrated at the *microsystem* and *exosystem* (factors in bold in Figure 6.3). The other examples are derived from literature outside of Vietnam because other reliable studies on risk factors of child maltreatment in Vietnam are virtually absent. The different levels are interrelated; the larger levels cover the smaller levels as individuals and their families are embedded in communities and then communities are placed within the larger society.
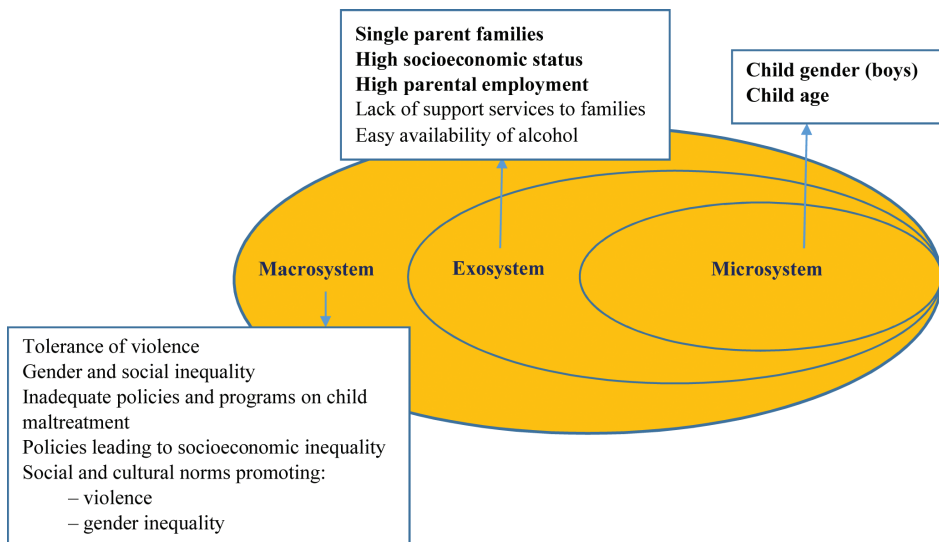

Figure 6.3 | Ecological framework model of risk factors for child maltreatment in Vietnam

Note.   **Factors in bold:** are the results of this study

Factors in regular: are based on the review of other literature

On the *microsystem level* we found that boys and older adolescents were at higher risk of maltreatment, although effect sizes were small. Our study also showed that significant risk factors on the *exosystem level* were living in a single parent family, high socioeconomic status, and high parental employment status. Single parenthood affected child maltreatment the most, both in terms of the number of types of child maltreatment and the magnitude of the effects. In addition, although we did not study "Tiger parenting" directly, the association of emotional abuse with high academic performance as well as the association of high socioeconomic and employment status with emotional abuse suggests that "Tiger parenting" practice might be an underlying risk factor at the *microsystem* level which would need further investigation. In contrast with previous literature on the association of low SES with child maltreatment (Black, Smith Slep, & Heyman, 2001; Capaldi, Knoble, Shortt, & Kim, 2012; Stith et al., 2009), we did not find an increased risk of child maltreatment experience among children in families with low SES. More studies on child maltreatment could confirm this discrepancy.

In addition, literature concerning risk factors for child abuse and violent crimes in general suggests several risk factors at the *exosystem* and *macrosystem* level in Vietnam. Inequality may be one of the most important risk factors for child maltreatment in Vietnam, given its association with violence (Fajnzylber, Lederman, & Loayza, 2002). The rapid economic growth has enlarged the gaps between the poor and the rich and between urban and rural areas in Vietnam (Mocst, Gso, Unicef, & Ifgs, 2006), and although the government and public organizations have made great efforts in improving gender equity and promoting children's rights, the gender inequality and power disparity between adults and children still exist. In addition, "primordial violence" is nurtured in the traditional belief that harsh discipline is the best way to educate children (Beazley, Bessell, Ennew, & Waterson, 2006), and the extensive war history of Vietnam may further stimulate the tolerant attitude towards violence. Alcohol use is found to be associated with violence perpetration, and the alcohol consumption in Vietnam is among the highest in the world. Despite the recent achievements in economic development, the social and political infrastructure have still lagged behind compared to the economic development, and there is a shortage of support services and legislation for child maltreatment (Molisa & Unicef, 2009; Unicef, 2017).

The factors summarized in the ecological framework in Figure 6.3 are not exhaustive. However, based on our current knowledge, this framework could contribute to explain the occurrence of child maltreatment as the interaction of multiple factors at various levels. Because this model depicts possible factors that may be relevant in Vietnam, it gives a basis for future research in which risk factors should be investigated

more broadly, and it may guide the process of developing a comprehensive child protection plan. The ecological framework also points out the importance of policies or interventions at the community and societal level, such as gender inequity, violence, and poverty because changes in community and societal levels may impact a large number of individuals and their social relationships. This framework is also useful in formulating strategies for child maltreatment interventions to determine their prioritized target ecological levels. It would be preferable if policy changes and research go hand in hand so the effectiveness of data and theory based policy can be tested.

THE ASSOCIATION OF CHILD MALTREATMENT WITH CHILD WELLBEING

The ecological framework presented risk factors for child maltreatment in Vietnam. In turn, child maltreatment increases the chance of a disadvantageous development on several child wellbeing aspects as shown in Figure 6.1 and Figure 6.2. Similar to the risk factors, we converted the betas from the linear regression analyses on consequences into effect sizes (Cohen's d) to be able to estimate the sizes of the effects (Borenstein et al., 2009). Most types of child maltreatment were associated with emotional dysfunctioning (Figure 6.1 and Figure 6.2). Past year physical abuse and lifetime neglect predicted emotional dysfunctioning with a medium effect size, and effect sizes for lifetime physical abuse, lifetime sexual abuse, lifetime witnessing parental conflict, and both past year and lifetime emotional abuse were small. Similarly, all the effect sizes of the associations of past year and lifetime physical abuse, lifetime sexual abuse and neglect with physical health, the association between lifetime sexual abuse and poorer working memory performance, and between lifetime emotional abuse and higher academic performance were small. The magnitude of the effect of child maltreatment on emotional functioning was largest compared to the effects on other child wellbeing aspects, which were only small.

Several mechanisms may explain the consequences of maltreatment on wellbeing. As discussed in Chapter 5, there is a wide range of evidence on the association of child maltreatment with the impairment of the stress response system (i.e. reduced hippocampal volume, a brain area regulating the stress system, impaired function of the hypothalamic-pituitary-adrenal axis) (Alink, Cicchetti, Kim, & Rogosch, 2012; Carpenter, Shattuck, Tyrka, Geracioti, & Price, 2011; Riem, Alink, Out, Van Ijzendoorn, & Bakermans-Kranenburg, 2015). These impairments of the stress response system were found to alter metabolism, immune response, memory, and mental health status (Heim, Newport, Mletzko, Miller, & Nemeroff, 2008; Silverman & Sternberg, 2012).

Risky behavior practices among child maltreatment victims, which may also be related to an altered stress response system (Platje et al., 2013), could also worsen emotional, cognitive, and physical health functioning (Silverman & Sternberg, 2012).

The consequences on emotional, cognitive, and physical health dysfunctioning during childhood could be one of the pathways leading to the long term consequences of child maltreatment on various aspects in adulthood. Poorer physical health and mental health difficulties in adults with a history of child maltreatment victimization were observed in meta-analyses (Hemmingsson, Johansson, & Reynisdottir, 2014; Hillberg, Hamilton-Giachritsis, & Dixon, 2011; Wegman & Stetler, 2009). Besides, child maltreatment was associated with lower education, unemployment, and a lower income in adulthood in a longitudinal study (Currie & Widom, 2010) and a systematic review (De Jong, Alink, Bijleveld, Finkenauer, & Hendriks, 2015). Other functioning as adult roles were also altered such as parenting, quality of relationship and risky behavior involvement (De Jong et al., 2015; Norman et al., 2012). Economic loss of societies due to child maltreatment was proven to be significant (from 1.24% to 3.46% of the gross domestic products) in the systematic reviews and meta-analyses of Fang et al. (Fang et al., 2015). Because of the consequences on many life domains both in childhood and adulthood, child maltreatment should be intervened early to prevent the accumulation of consequences.

Although causality of child maltreatment on wellbeing at early life is supported by research with animal models (Koch, Mccormack, Sanchez, & Maestripieri, 2014) and a longitudinal twin study (Jaffee, Caspi, Moffitt, & Taylor, 2004), our VPM-2014 study is a cross-sectional study, and causality of the effects could thus not be investigated. Furthermore, child emotional and behavioral problems can also increase the risk for child maltreatment. In a meta-analysis, child internalizing behavior was found to be a risk factor for neglect and physical abuse (Stith et al., 2009), and child interpersonal problems could be a risk factor for emotional abuse (Black, Smith Slep, et al., 2001). Our results concerning mental health could thus also suggest vulnerability of these children to experience maltreatment. Moreover, the association of lower working memory capacity with sexual abuse during lifetime may support the finding that low intelligence could be a risk factor for child sexual abuse victimization (Black, Heyman, & Smith Slep, 2001). Therefore, the association between child maltreatment and child wellbeing aspects may be reciprocal and effects could be bidirectional and worsen the situation of both child maltreatment and wellbeing.

EFFECTS OF MEASUREMENT ON CHILD MALTREATMENT PREVALENCE ESTIMATES

Chapter 2 and Chapter 3 used two different child maltreatment measures to make a cross-cultural comparison with the prevalence of child maltreatment in the Netherlands and a chronological comparison with the prevalence of 2004 in Vietnam. Since previous studies indicate that differences between questionnaires can result in different prevalence estimates (Stoltenborgh, Bakermans-Kranenburg, Alink, & Van Ijzendoorn, 2012; Stoltenborgh, Bakermans-Kranenburg, & Van Ijzendoorn, 2013; Stoltenborgh, Bakermans-Kranenburg, Van Ijzendoorn, & Alink, 2013; Stoltenborgh, Van Ijzendoorn, Euser, & Bakermans-Kranenburg, 2011), it may be worthwhile to explore differences in both of our measures and discuss possible effects on the prevalence estimates. Importantly, both measures were used in the same population of school children. One measure was based on the measure of the NPM-2010 (Euser et al., 2013) (NPM measure). The other (Vietnam measure) was constructed by Nguyen (Nguyen, 2006) and used in a child maltreatment study in 2004 in Vietnam (Nguyen, 2006; Nguyen, Dunne, & Anh, 2009).

To explore why the prevalence estimates differ, while having been assessed within the same sample, we made a detailed overview of the items of the two child maltreatment measures (Table 6.1). The colored rows in the table indicate comparable items measuring similar constructs or similar actions. For sexual abuse, the prevalence estimates based on the NPM measure were significantly lower than these based on the Vietnam measure. The main reason for this may be that the Vietnam measure included questions about non-contact sexual abuse, with a prevalence of 17.2%, while there are no items specifically measuring non-contact sexual abuse in the NPM measure. In addition, although sexual abuse with physical contact in the Vietnam measure contains fewer items, it covers more different acts of sexual abuse compared to the NPM measure, which may be an additional explanation for the higher prevalence. Furthermore, because the item "tried to have sexual intercourse," which is only included in the Vietnam measure, might be sensitive to subjective interpretation, this item could explain the higher prevalence of sexual abuse with physical contact in the Vietnam measure compared to the NPM measure.

Table 6.1 | *Child maltreatment items and prevalence rates based in the NPM measure (Chapter 2) and the Vietnam measure (Chapter 3)*

Type of CM	NPM measure (Chapter 2)	Prevalence % (84%CI)	Vietnam measure (Chapter 3)	Prevalence % (84%CI)
Sexual abuse		7.1 (6.3-8.1)		21.2 (19.9-22.6)
Contact sexual abuse		5.6 (4.9-6.5)	When you were growing up, did any adult ever do any of the following acts to you, while you didn't want it?	8.6 (7.7-9.6)
	• An adult member of my family has forced me to look at his/her genitals or to touch them, or he/she has done this to me • A child/young person from my family has forced me to look at his/her genitals or to touch them, or he/she has done this to me • An adult who does not belong to my family has forced me to look at his/her genitals or to touch them, or he / she has done this to me • A child/young person who does not belong to my family, has forced me to look at his/her genitals or to touch them, or he/she has done this to me		• Touched or fondled your private parts • Made you touch or fondle their private parts	
	• An adult member of my family has had sex with me • An adult who does not belong to my family, has had sex with me		• Tried to have sexual intercourse with you but was unsuccessful • Did someone have sexual intercourse with you?	
Non-contact sexual abuse		-	When you were growing up, did any adult ever do any of the following acts to you, while you didn't want it? • Spoke to you in an obscene way or talk to you in sexual way • Exposed their private parts to you • Made you see sexual scenes on video, or porn magazines/ photos	17.2 (16.0-18.5)

Category	Statement items	%	Question items	%
General	• A child/young person from my family has done things to me that you could call sexual abuse • A child/young person who does not belong to my family, has done things to me that you could call sexual abuse	3.2 (2.7-3.9)	• Did someone do other things to you in a sexual way?	1.4 (1.1-1.9)
Physical abuse	• My **mother/father** grabbed me around my neck and choked me • My **mother/father** burned or scalded me on purpose • My **mother/father** beat me with a fist or kicked me hard • My **mother/father** threw me or knocked me down • My **mother/father** beat me up, that is he/she hit me over and over • My **mother/father** hit me on my bottom with something • My **mother/father** hit me on some other part of my body besides my bottom • My **mother/father** threatened me with a knife or a gun	38.5 (36.9-40.1)	When you grew up, did **any adult** ever do something like • pushing, grabbing, or shoving you, throwing something at you? • choking you, or burning or scalding you? • kicking or hitting you with a fist or other objects, or beating you up? • spanking you with something? • locking you up in a small place? • tying you up or chaining you with something?	62.2 (60.5-63.8)
Emotional abuse	• My **mother/father** threatened to spank or hit me but did not actually do it	59.9 (58.3-61.5)	When children grow up, **their parents/ guardians or adults in their family** may have treated them in some ways as in the incidents below. Did any of these incidents happen to you? • Yell at you • Insult you • Try to make you feel guilty • Embarrass you in front of others • Make you feel like you were a bad person • Wish you were never born When you grew up, **did any adult in your family** threaten to hurt or kill you?	81.7 (80.4-82.9)

Witnessed parental conflict	• My mother/ father pushed, grabbed, or shoved the other • My mother/ father slapped the other • My mother/ father kicked, bit or hit the other with a fist • My mother/ father hit the other or tried to hit the other with something • My mother/ father beat the other up • My mother/ father threatened the other with a knife or gun • My mother/ father used a knife or fired a gun against the other	23.7 (22.3-25.1)	-
Neglect		83.5 (82.2-84.7)	45.2 (43.5-46.8)
Educational neglect	• When I was younger, my parents made sure I went to school • My parents did not care if I got into trouble in school • My parents helped me with my homework	76.9 (75.5-78.2)	-
Physical neglect	• When I was younger, my parents made sure I was clean • My parents gave me enough clothes to keep me warm	14.0 (13.0-15.3)	Sometimes, parents or caretakers do not take care of children properly. Please answer the following questions about your life. When you grew up, have any of the following things happened to you? • You did not get enough food to eat • You had to wear dirty or torn clothes, or clothes that were not warm enough • You were not taken care of when you were sick 13.2 (12.1-14.4)
Emotional neglect	• When I was a child, my parents would comfort me when I was upset • My parents did not help me to do my best • My parents helped me when I had problems	43.5 (41.9-45.2)	When you were growing up, did your parents/ guardians do the following things to you? • Didn't make you feel important • Didn't care about you • Were not close to you • Were not sources of strength to you 42.4 (40.8-44.1)

Note. Colored rows are comparable groups of items.

The prevalence of physical abuse based on the NPM measure was significantly lower than that based on the Vietnam measure. The number of physical abuse acts addressed in the questions was comparable between the two scales, although the scale of the NPM measure had two more items than the one of the Vietnam measure (Table 6.1). The most striking difference between the two scales was the definition of the perpetrator: for the NPM measure, only abuse by a parent, while in the Vietnam measure, abuse by any adult was considered physical abuse. The broader definition of possible perpetrators could explain the higher prevalence of physical abuse in Vietnam measure than in NPM measure.

Similar to sexual and physical abuse, the emotional abuse prevalence based on the NPM measure was lower than that based on the Vietnam measure. Again the definition of the perpetrator differed between the scales, with the NPM measure limiting this to mother or father, while the Vietnam measure took into account emotional abuse by parents/guardians or other adults in the family. In Vietnam, family size is generally large with many generations living in the same household. This could be an explanation for the higher prevalence of emotional abuse based on the Vietnam measure. In addition, the emotional abuse scale in the NPM measure covered only verbal abuse while the scale in the Vietnam measure did not restrict its definition to only verbal abuse (Table 6.1).

In the NPM measure, neglect was defined as the experience of at least 3 items of the 8-item scale (Lamers-Winkelman, Slot, Bijl, & Vijlbrief, 2007). However, to be able to compare it with the 7-item neglect scale of the Vietnam measure, the neglect prevalence estimate in this section was defined as the experience of at least 1 item. The neglect prevalence based on the NPM measure was higher than the prevalence based on the Vietnam measure. Since the prevalence of physical neglect and emotional neglect of the two measures were similar, the reason for the higher neglect prevalence in the NPM measure was likely to be the presence of items considering educational neglect which were not included in the Vietnam measure.

In summary, the operationalization of sexual abuse, and neglect seemed to have played an important role in the prevalence estimates. The definition covering more subtypes of sexual abuse (contact and non-contact sexual abuse) and neglect (educational, physical, emotional neglect) seemed to have led to higher prevalence estimates. For physical abuse and emotional abuse, the operationalization of possible perpetrators seems to have influenced the prevalence estimates. Although meta-analyses pointed out the role of the number of items in prevalence estimates (Stoltenborgh, Bakermans-Kranenburg, Van Ijzendoorn, et al., 2013; Stoltenborgh et al., 2011)). Our comparison suggests that it may be the number of specific acts described

in the questionnaire which influences the prevalence estimates. Overall, the extensiveness of the child maltreatment definition considering the number of subtypes, of possible perpetrators and the number of acts included are likely to affect prevalence estimates. Based on these findings, it is recommended that published papers on child maltreatment provide detailed information about the items used to measure child maltreatment to enable the examination of the comparability of different studies using different measures and to facilitate combining study results in meta-analyses.

LIMITATIONS

Some limitations of this study should be mentioned. First, the VPM-2014 study made use of data from previous studies, which led to some unavoidable restrictions. The cross-cultural comparison in Chapter 2 used the available data of the NPM-2010 study, comparing prevalence estimates in the Netherlands and Vietnam. The difference in time points (2010 vs 2014) may affect the validity of the comparison between the two countries. However, there were no major political or societal changes from 2010 to 2014 in the two countries affecting the maltreatment situation significantly.

In addition, the administration of two child maltreatment questionnaires may have made the students resistant to answer overlapping questions which could have affected the validity of their responses. However, we excluded unreliable questionnaires which had a specific answering pattern (e.g., all questions answered with the highest possible score) or which had outlying scores on the Wildman Symptom Checklist, a bogus symptom scale. This data cleaning procedure has reduced response bias. Furthermore, the VPM-2014 is a cross-sectional study, so the direction of effects between risk factors, child maltreatment, and child wellbeing could not be confirmed. However, irrespective of the direction of the effect, the knowledge about the association with demographic factors and child wellbeing aspects is still valuable to identify children and families at risk and develop care plans for child maltreatment victims. Lastly, as most of the measures were retrospective, recall bias may have affected the validity of the findings.

FUTURE RESEARCH

This study contributes to relieve the scarcity of research on child maltreatment in limited resource contexts. More studies on various aspects of child maltreatment in these contexts should be conducted to shed more light on this problem. Specifically, there is a need for high quality cross-cultural studies that use the same methodology to get a valid international comparison. Published papers should therefore provide detailed information on the instruments used to measure child maltreatment to facilitate comparing results in meta-analyses or across studies. In addition it is important to study temporal changes in child maltreatment in limited resource countries periodically to evaluate the effect of child protection policies.

This dissertation also highlights the importance of conducting more research on neglect, an understudied type of child maltreatment. Even controlling for the effects of other types of child maltreatment, neglect was one of the two types of child maltreatment associated with poorer performance on the highest number of child wellbeing aspects. We also showed that the temporal changes of neglect seem different from other types of child maltreatment: neglect was unchanged over the recent decade despite the economic and societal growth in Vietnam whereas other types decreased. It is necessary to explore possible ways to stop and prevent neglect in future research. Besides, the association of emotional abuse with higher academic performance, emotional dysfunction, and high socioeconomic and parental employment status suggests a "Tiger parenting" practice in Vietnam. Future research could explore the prevalence of this phenomenon as well as its consequences both at the individual and societal level as "Tiger parenting" seems common in communities either living in or originated from East Asia. Other studies could also further verify and explore the mechanism underlying the higher reported prevalence of sexual abuse and physical abuse among boys in East Asian populations.

IMPLICATIONS FOR PRACTICE

Although there were some positive signs in the changes of emotional and physical abuse in Vietnam, all types of child maltreatment were still highly common in Vietnam and most were more prevalent than in the Netherlands, a *WEIRD* (Western Educated Industrialized Rich Democratic) country. Each type of child maltreatment was associated with poorer performance on at least one child wellbeing aspect. This dissertation highlights the importance of prompt responses to child maltreatment in

Vietnam. Child maltreatment interventions should prioritize single parent families as a high risk group (with a medium effect size) and be conducted as early as possible to prevent for multiple experiences of child maltreatment. A care plan for child maltreatment victims should be developed based on scientific evidence with more attention on emotional functioning, as its association with a large number of child maltreatment types had a medium effect size. The different reductions or increases of specific types of child maltreatment in specific groups over 10 years in Vietnam suggested that child maltreatment interventions should pay extra attention to physical abuse among girls, physical abuse and sexual abuse among older adolescents, and emotional abuse among younger adolescents. The common harsh discipline practice and limited knowledge about sex including sexual abuse in Vietnam might be underlying causes for some types of child maltreatment that need to be addressed. Low-cost and effective programs on positive parenting and comprehensive school-based sex education should be implemented. Further improvement of child protection services is also very important in the struggle against child maltreatment. Focus on child protection should be prioritized including but not limited to strengthening the social work force, child protection legislation, and a data monitoring system.

CONCLUDING REMARK

This dissertation sheds more light on child maltreatment in Vietnam specifically and in limited resource settings in general. Our study may promote a new routine of periodically assessing the prevalence of child maltreatment. All in all, it may contribute to the improvement of the child protection system in Vietnam.

REFERENCES

Alink, L. R. A., Cicchetti, D., Kim, J., & Rogosch, F. A. (2012). Longitudinal associations among child maltreatment, social functioning, and cortisol regulation. *Developmental Psychology, 48,* 224-236. doi: 10.1037/a0024892

Beazley, H., Bessell, L., Ennew, J., & Waterson, R. (2006). What children say: Results of comparative research on physical and emotional Punishment of children in Southeast Asia, East Asia and the Pacific.

Black, D. A., Heyman, R. E., & Smith Slep, A. M. (2001). Risk factors for child sexual abuse. *Aggression and Violent Behavior, 6,* 203-229. doi: http://doi.org/10.1016/S1359-1789(00)00023-9

Black, D. A., Smith Slep, A. M., & Heyman, R. E. (2001). Risk factors for child psychological abuse. *Aggression and Violent Behavior, 6,* 189-201. doi: http://doi.org/10.1016/S1359-1789(00)00022-7

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). Introduction to Meta-Analysis (pp. 409-414). West Sussex: John Wiley & Sons, Ltd.

Bronfenbrenner, U. (1979). The ecology of human development. Cambridge: Harvard university press.

Bronfenbrenner, U. (2009). *The ecology of human development:* Harvard university press.

Capaldi, D. M., Knoble, N. B., Shortt, J. W., & Kim, H. K. (2012). A Systematic Review of Risk Factors for Intimate Partner Violence. *Partner abuse, 3,* 231-280. doi: 10.1891/1946-6560.3.2.231

Carpenter, L. L., Shattuck, T. T., Tyrka, A. R., Geracioti, T. D., & Price, L. H. (2011). Effect of childhood physical abuse on cortisol stress response. *Psychopharmacology (Berl), 214,* 367-375. doi: 10.1007/s00213-010-2007-4

Chen, H., Cohen, P., & Chen, S. (2010). How big is a big odds ratio? Interpreting the magnitudes of odds ratios in epidemiological studies. *Communications in Statistics-Simulation and Computation, 39,* 860-864. doi: http://dx.doi.org/10.1080/03610911003650383

Cohen, J. (1988). Statistical power analysis for the behavioral sciences. *Lawrence Erlbaum Associates, 2.*

Currie, J., & Widom, C. S. (2010). Long-term consequences of child abuse and neglect on adult economic well-being. *Child Maltreatment, 15,* 111-120. doi: 10.1177/1077559509355316

De Jong, R., Alink, L., Bijleveld, C., Finkenauer, C., & Hendriks, J. (2015). Transition to adulthood of child sexual abuse victims. *Aggression and Violent Behavior, 24,* 175-187.

Euser, S., Alink, L. R., Pannebakker, F., Vogels, T., Bakermans-Kranenburg, M. J., & Van, I. M. H. (2013). The prevalence of child maltreatment in the Netherlands across a 5-year period. *Child Abuse & Neglect, 37*, 841-851. doi: 10.1016/j.chiabu.2013.07.004

Fajnzylber, P., Lederman, D., & Loayza, N. (2002). Inequality and violent crime. *The journal of Law and Economics, 45,* 1-39.

Fang, X., Fry, D. A., Brown, D. S., Mercy, J. A., Dunne, M. P., Butchart, A. R., ... Swales, D. M. (2015). The burden of child maltreatment in the East Asia and Pacific region. *Child Abuse & Neglect, 42,* 146-162. doi: 10.1016/j.chiabu.2015.02.012

Heim, C., Newport, D., Mletzko, T., Miller, A., & Nemeroff, C. (2008). The link between childhood trauma and depression: insights from HPA axis studies in humans. *Psychoneuroendocrinology, 33.* doi: 10.1016/j.psyneuen.2008.03.008

Hemmingsson, E., Johansson, K., & Reynisdottir, S. (2014). Effects of childhood abuse on adult obesity: a systematic review and meta-analysis. *Obesity Reviews, 15.* doi: 10.1111/obr.12216

Hillberg, T., Hamilton-Giachritsis, C., & Dixon, L. (2011). Review of meta-analyses on the association between child sexual abuse and adult mental health difficulties: a systematic approach. *Trauma Violence Abuse, 12,* 38-49. doi: 10.1177/1524838010386812

Jaffee, S. R., Caspi, A., Moffitt, T. E., & Taylor, A. (2004). Physical maltreatment victim to antisocial child: evidence of an environmentally mediated process. *Journal of Abnormal Psychology, 113,* 44-55. doi: 10.1037/0021-843x.113.1.44

Koch, H., Mccormack, K., Sanchez, M. M., & Maestripieri, D. (2014). The development of the hypothalamic-pituitary-adrenal axis in rhesus monkeys: effects of age, sex, and early experience. *Developmental Psychobiology, 56.* doi: 10.1002/dev.21093

Lamers-Winkelman, F., Slot, N. W., Bijl, B., & Vijlbrief, A. (2007). Scholieren over mishandeling: Resultaten van een landelijk onderzoek naar de omvang van kindermishandeling onder leerlingen van het voortgezet onderwijs.

Mocst, Gso, Unicef, & Ifgs. (2006). Result of nation-wide survey on the family in Vietnam 2006. Hanoi.

Molisa, & Unicef. (2009). Creating a protective environment for children in Vietnam: an assessment of child protection laws and policies, especially children in special circumstances in Vietnam. Hanoi.

Nguyen, H. T. (2006). *Child maltreatment in Vietnam: prevalence and associated mental and physical health problems.* Queensland: Queensland University of Technology.

Nguyen, H. T., Dunne, M. P., & Anh, L. V. (2009). Multiple types of child maltreatment and adolescent mental health in Viet Nam. *Bulletin of the World Health Organization, 88,* 22-30. doi: 10.2471/BLT.08.060061

Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. *PLoS Medicine, 9,* e1001349. doi: 10.1371/journal.pmed.1001349

Platje, E., Jansen, L. M. C., Raine, A., Branje, S. J. T., Doreleijers, T. a. H., De Vries-Bouw, M., ... Vermeiren, R. R. J. M. (2013). Longitudinal associations in adolescence between cortisol and persistent aggressive or rule-breaking behavior. *Biological Psychology, 93,* 132-137. doi: http://dx.doi.org/10.1016/j.biopsycho.2013.01.002

Riem, M. M., Alink, L. R., Out, D., Van Ijzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2015). Beating the brain about abuse: Empirical and meta-analytic studies of the association between maltreatment and hippocampal volume across childhood and adolescence. *Developmental Psychopathology, 27,* 507-520. doi: 10.1017/s0954579415000127

Silverman, M. N., & Sternberg, E. M. (2012). Glucocorticoid regulation of inflammation and its functional correlates: from HPA axis to glucocorticoid receptor dysfunction. *Annals of the New York Academy of Sciences, 1261,* 55-63. doi: 10.1111/j.1749-6632.2012.06633.x

Stith, S. M., Liu, T., Davies, L. C., Boykin, E. L., Alder, M. C., Harris, J. M., … Dees, J. E. M. E. G. (2009). Risk factors in child maltreatment: A meta-analytic review of the literature. *Aggression and Violent Behavior, 14,* 13-29. doi: http://dx.doi.org/10.1016/j.avb.2006.03.006

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R., & Van Ijzendoorn, M. H. (2012). The universality of childhood emotional abuse: a meta-analysis of worldwide prevalence. *Journal of Aggression, Maltreatment & Trauma, 21,* 870-890. doi: 10.1080/10926771.2012.708014

Stoltenborgh, M., Bakermans-Kranenburg, M. J., & Van Ijzendoorn, M. H. (2013). The neglect of child neglect: a meta-analytic review of the prevalence of neglect. *Social Psychiatry & Psychiatric Epidemiology, 48,* 345-355. doi: 10.1007/s00127-012-0549-y

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Van Ijzendoorn, M. H., & Alink, L. R. (2013). Cultural-geographical differences in the occurrence of child physical abuse? A meta-analysis of global prevalence. *International Journal of Psychology, 48,* 81-94. doi: 10.1080/00207594.2012.697165

Stoltenborgh, M., Van Ijzendoorn, M. H., Euser, E. M., & Bakermans-Kranenburg, M. J. (2011). A global perspective on child sexual abuse: meta-analysis of prevalence around the world. *Child Maltreatment, 16,* 79-101. doi: 10.1177/1077559511403920

Unicef. (2017). Child protection overview. Retrieved 28 June 2017, from https://www.unicef.org/vietnam/protection.html

Wegman, H. L., & Stetler, C. (2009). A meta-analytic review of the effects of childhood abuse on medical outcomes in adulthood. *Psychosomatic Medicine, 71,* 805-812. doi: 10.1097/PSY.0b013e3181bb2b46

Who, & Ipscan. (2006). Preventing child maltreatment: a guide to taking action and generating evidence. *Geneva: World Health Organization.*

APPENDICES

SUMMARY IN ENGLISH

Child maltreatment affects many life aspects of victims from childhood to adulthood, as well as their families and society. Although it is prevalent in many cultures and societies, scientific evidence about child maltreatment in resource-poor contexts like Vietnam is scarce compared to the number of studies on child maltreatment in developed countries. Therefore, we conducted a prevalence study on child maltreatment in Vietnam (Vietnam Prevalence study on maltreatment of children and youth; VPM-2014) to shed more light on the magnitude of this burden in Vietnam. We investigated the prevalence of child maltreatment in a cross-cultural perspective, the changes in prevalence estimates in Vietnam over time, child and family characteristics related to child maltreatment, and possible consequences of child maltreatment for Vietnamese children.

To gain this knowledge, we administered several questionnaires and a working memory test during class hours to secondary and high school students in four Northern provinces of Vietnam. The final sample consisted of 1,851 students who were 12-17 years old. Hanoi, the capital city, was purposely selected and the other three provinces were randomly selected. In each province, two secondary schools were randomly selected, and the two high schools nearby the secondary schools were also selected. We compared the data from this study with the data from the prevalence study on child maltreatment in the Netherlands (NPM-2010) to achieve a cross-cultural comparison and we compared it with the data from the prevalence study in Vietnam 10 years ago to estimate the changes in prevalence over time.

Regarding the prevalence of child maltreatment in Vietnam, half of the students reported at least one event of child maltreatment in the past year and the majority had experienced at least one type of child maltreatment during their lives. Emotional abuse was most frequently reported (31.8%), followed by physical abuse (19.1%), neglect (25.0%), and witnessing parental conflict (15.3%). Sexual abuse was the least prevalent type (2.6%). Compared with the Netherlands, the prevalence estimates of most types of child maltreatment were higher in Vietnam. The largest difference was with emotional abuse, followed by neglect, physical abuse, and witnessing parental conflict. Only the past year sexual abuse prevalence in Vietnam was lower.

The exploration of child maltreatment trends over 10 years showed that the prevalence estimates of sexual abuse and neglect were unchanged, while the prevalence of physical abuse and emotional abuse declined over time. The prevalence of physical abuse of younger adolescents and boys decreased more than that of older

adolescents and girls, respectively. For sexual abuse, older adolescents reported an increase in the prevalence of sexual abuse.

The investigation of risk factors for child maltreatment indicated that several child and family characteristics are related to child maltreatment. The likelihood of emotional abuse, witnessing parental conflict, and experiencing multiple types of child maltreatment during lifetime increased with child age. Boys had a higher risk than girls on lifetime sexual abuse, and past year and lifetime physical abuse. Living in a single parent family was linked to most types of child maltreatment including lifetime sexual abuse, neglect, and multiple types of child maltreatment, and both past year and lifetime witnessing parental conflict. Noticeably, we found an association between high socioeconomic status (SES) and past year emotional abuse, and between parental employment and lifetime emotional abuse. "Tiger parenting" might explain these associations. Tiger parenting is a parenting style consisting of harsh emotional discipline to force children's academic achievement. It may be more common in families with a high SES and with high employment status who value educational achievement of their children.

Regarding the consequences of child maltreatment in Vietnamese children, all types of child maltreatment were linked to emotional dysfunctioning. Lifetime and past year experiences of physical abuse and lifetime experiences of sexual abuse and neglect were related to poorer perceived physical health. None of the maltreatment types were related to overweight or underweight status. Regarding cognitive functioning, lifetime experience of sexual abuse and neglect were related to poorer working memory. Unexpectedly, emotional abuse was linked to better academic performance, which once again suggests the existence of the "tiger parenting" practice in Vietnam. Lifetime experience of sexual abuse and neglect were related to the largest number of poor functioning in child wellbeing aspects. The relations described above were similar for boys and girls, and ethnic minority and majority groups.

In sum, although there were positive signals on the changes of emotional and physical abuse, all types of child maltreatment were still highly prevalent and most were more common in Vietnam than in the Netherlands. Even in a culture where harsh discipline is accepted and normative like Vietnam, child maltreatment was related to negative child well-being aspects with the largest effect on emotional functioning. Single parenthood was a prominent characteristic related to child maltreatment besides child gender and age. Our study draws a clearer picture on child maltreatment in Vietnam. It highlights the importance of prompt responses to child maltreatment based on scientific evidence in the country and illuminates some topics for further research such as Tiger parenting and neglect, an understudied type of child maltreatment with a large range of consequences.

NEDERLANDSE SAMENVATTING (SUMMARY IN DUTCH)

Kindermishandeling heeft naast de ingrijpende gevolgen voor de slachtoffers gedurende de verschillende fases in hun leven, ook gevolgen voor de familieleden van de slachtoffers en voor de maatschappij. Dit maakt het meer dan een individuele traumatische gebeurtenis en geeft aan dat het een kwestie is van maatschappelijk belang die nationale aandacht verdient. Hoewel kindermishandeling in verschillende culturen en landen voorkomt, is dit fenomeen in niet-Westerse landen nog weinig onderzocht. Deze studie is één van de eerste studies naar de prevalentie van kindermishandeling in Vietnam (Vietnam Prevalence study on maltreatment of children and youth; VPM-2014) waarmee zij een indicatie geeft voor de omvang van dit probleem in een Oost-Aziatische context met beperkte middelen voor de bescherming van kinderen en de ondersteuning van ouders.

De prevalentiecijfers uit deze studie zijn vergeleken met een eerdere prevalentieschatting in Vietnam uit 2004 en met de Nederlandse prevalentieschatting uit 2010 (de tweede Nationale Prevalentiestudie Mishandeling van kinderen en jeugdigen; NPM-2010) om zo naast een vergelijking over tijd een cross-culturele vergelijking te kunnen maken. Daarnaast is de samenhang tussen kenmerken van de slachtoffers en hun gezinnen en kindermishandeling onderzocht, om zo mogelijke risicofactoren en gevolgen van kindermishandeling in Vietnam in beeld te brengen.

Om deze kennis te verwerven hebben we vragenlijsten en een werkgeheugentaak afgenomen bij middelbare scholieren uit vier regio's in Noord-Vietnam. De regio waarin de hoofdstad Hanoi is gelegen, is wegens haar unieke demografische eigenschappen geselecteerd. De overige drie regio's zijn willekeurig geselecteerd. Binnen de vier regio's zijn steeds vier middelbare scholen geselecteerd (twee met onderbouw klassen en twee met bovenbouw klassen). De uiteindelijke steekproef bestond uit 1.851 scholieren met een leeftijd van 12-17 jaar.

De prevalentiecijfers met betrekking tot kindermishandeling in Vietnam lieten zien dat de meerderheid van de scholieren op enig moment in hun leven ten minste één keer mishandeling had meegemaakt en dat de helft van de scholieren dit in het afgelopen jaar had meegemaakt. Kijkend naar de verschillende subtypes werd emotionele mishandeling het meest gerapporteerd (31,8%), gevolgd door fysieke mishandeling (19,1%), verwaarlozing (25,0%), en het getuige zijn van geweld tussen ouders (15,3%). Seksueel misbruik werd het minst gerapporteerd (2,6%). In vergelijking met Nederland waren de prevalentiecijfers van de meeste vormen van kindermishandeling in Vietnam beduidend hoger. Het grootste cross-culturele verschil werd gevonden voor emotionele mishandeling, gevolgd door verwaarlozing, fysieke mishandeling en het getuige zijn van geweld tussen ouders. Alleen de prevalentieschatting voor seksueel misbruik in het afgelopen jaar lag in Vietnam lager dan in Nederland.

Uit de verkenning van de verandering in kindermishandeling in Vietnam over een periode van 10 jaar bleek dat de prevalentie van seksueel misbruik en verwaarlozing onveranderd was, terwijl de prevalentie van fysieke mishandeling en emotioneel misbruik in de loop van de tijd was afgenomen. De prevalentie van fysieke mishandeling daalde bij jongens en jongere scholieren meer dan bij meisjes en oudere scholieren respectievelijk. Voor de prevalentie van seksueel misbruik werd een toename gevonden voor oudere scholieren terwijl de prevalentie voor jongere scholieren gelijk bleef over de periode van 10 jaar.

Het onderzoek naar risicofactoren voor kindermishandeling toonde aan dat meerdere kind- en gezinskenmerken verband houden met kindermishandeling. De kans op emotionele mishandeling, het ervaren van huiselijk geweld en het ervaren van meerdere vormen van kindermishandeling nam toe naar mate de scholier ouder was. Jongens hadden een hoger risico dan meisjes op het meemaken van zowel fysieke mishandeling als seksueel misbruik gedurende hun jeugd, en op fysieke mishandeling in het afgelopen jaar. Opgroeien in een ééénouder-gezin was gerelateerd aan de meeste vormen van kindermishandeling, waaronder seksueel misbruik, verwaarlozing, het getuige zijn van huiselijk geweld en het meemaken van meerdere vormen kindermishandeling gedurende de jeugd. Daarnaast was het gerelateerd aan het getuige zijn van huiselijk geweld in het afgelopen jaar. Opvallend was dat er een verband was tussen een hogere sociaaleconomische status (SES) en emotioneel misbruik in het afgelopen jaar, en tussen het hebben van twee ouders met een betaalde baan en emotioneel misbruik gedurende de jeugd. *"Tiger parenting"*, een Oost-Aziatische opvoedstijl die gekenmerkt wordt door harde psychologische controle om hoge (school)prestaties af te dwingen, zou deze verbanden kunnen verklaren. Deze opvoedstijl zou vooral bij gezinnen met een hoge SES en hoogopgeleide ouders voor kunnen komen, omdat zij vergelijkbare onderwijsprestaties van hun kinderen verwachten.

Wat betreft de gevolgen van kindermishandeling bij Vietnamese kinderen, waren alle soorten kindermishandeling gerelateerd aan emotionele problemen. Scholieren die fysiek mishandeld waren (zowel gedurende hun gehele jeugd als in het afgelopen jaar) of seksueel misbruikt of verwaarloosd waren (gedurende de gehele jeugd) rapporteerden een slechtere fysieke gezondheid dan scholieren die niet mishandeld waren. Geen van de vormen van kindermishandeling was gerelateerd aan gewichtsproblemen (overgewicht noch ondergewicht). Daarnaast waren seksueel misbruik en verwaarlozing op enig moment gedurende de jeugd gerelateerd aan verminderd presteren van het werkgeheugen. Deze twee vormen van kindermishandeling bleken op het grootste aantal domeinen het welbevinden aan te tasten. Emotionele mishandeling was tegen de verwachting in gerelateerd aan betere schoolprestaties, ook dit verband zou kunnen wijzen op het bestaan van de *"tiger parenting"* opvoedstijl in Vietnam. De hierboven

beschreven relaties waren vergelijkbaar voor jongens en meisjes, en voor etnische minderheden en de etnische meerderheid.

Samenvattend laten de resultaten van dit onderzoek zien dat, hoewel er positieve signalen waren over de veranderingen in emotionele en fysieke mishandeling, alle vormen van kindermishandeling veel voorkomen in Vietnam en dat de meeste vormen een hogere prevalentie hebben in vergelijking met Nederland. Alleenstaand ouderschap bleek een risicofactor voor de meeste vormen van kindermishandeling, naast het geslacht en de leeftijd van het kind. Daarnaast bleek dat ook in Vietnam, waar een hardhandige opvoedstijl cultureel gezien geaccepteerd en genormaliseerd wordt, kindermishandeling gerelateerd is aan verschillende negatieve gevolgen voor het welzijn van kinderen. Hierbij was de relatie met emotionele problemen bij scholieren het sterkst. Deze studie geeft een duidelijker beeld van de huidige situatie rondom kindermishandeling in Vietnam en benadrukt het belang van het implementeren van *evidence-based* interventies voor de preventie van kindermishandeling op nationaal niveau.

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CURRICULUM VITAE

Nhu Kieu Tran was born on May 19th 1979 in Hanoi, Vietnam. She graduated from Hanoi University and received her Bachelor's degree in Pharmacy in 2002. From 2002 to 2009, she practiced as a pharmacist and research assistant in Hanoi, Vietnam. In 2009 and 2010, she acquired her Master's degree in International Course in Health Development at the VU University in Amsterdam, the Netherlands, and graduated "with merit". After graduation, she has been working as a senior researcher at the Institute of Population, Health, and Development in Hanoi, Vietnam. In 2013, she was granted a scholarship from the Netherlands Fellowship Programmes to perform her PhD study on child maltreatment at the Centre of Child and Family Studies at Leiden University, the Netherlands. During her PhD trajectory, she was trained as an intervener of the Strongest Families intervention, a Canadian parenting program on distance for parents of children with mental health problems. This dissertation presents the results of her PhD study in the Netherlands.

LIST OF PUBLICATIONS

Tran, N. K., Alink, L. R. A, Van Berkel, S. R., & Van IJzendoorn, M. H. (2016). Child Maltreatment in Vietnam: Prevalence and Cross-Cultural Comparison. *Journal of Aggression, Maltreatment & Trauma, 26,* 1-20.
doi: http://dx.doi.org/10.1080/10926771.2016.1250851.

Tran, N. K., Van Berkel, S. R., Van IJzendoorn, M. H., & Alink, L. R. A. (2017). The association between child maltreatment and emotional, cognitive, and physical health functioning in Vietnam. *BMC Public Health, 17,* 332. doi: 10.1186/s12889-017-4258-z

Tran, N. K., Van Berkel, S. R., Nguyen, H. T., Van IJzendoorn, M. H., & Alink, L. R. A. (2017). Changes in the Prevalence of Child Maltreatment in Vietnam over 10 Years. *Manuscript submitted for publication.*

Tran, N. K., Van Berkel, S. R., Van IJzendoorn, M. H., & Alink, L. R. A. (2017). The Association between Child and Family Factors and Child Maltreatment in Vietnam. *Manuscript submitted for publication.*