Published in final edited form as:

Violence Vict. 2013 ; 28(3): 381–402.

Prevalence and Overlap of Childhood and Adult Physical, Sexual, and Emotional Abuse: A Descriptive Analysis of Results from the Boston Area Community Health (BACH) Survey

Gretchen R. Chiu, Karen E. Lutfey, Heather J. Litman, Carol L. Link, Susan A. Hall, and John B. McKinlay

New England Research Institutes, 9 Galen Street, Watertown, MA 02472, U.S.A

Abstract

Abuse is associated with a wide variety of health problems, yet comprehensive population-based data are scant. Existing literature focuses on a single type of abuse, population, or lifestyle. Using a racially/ethnically diverse community-based sample, we document the prevalence of physical, emotional, and sexual abuse by lifestyle and gender; assess variation in abuse by socio-demographics; establish overlap of abuses; and examine childhood abuse relationships with abuse in adulthood. Prevalence of abuse ranges from 15% to 27%; women report more adulthood emotional abuse and lifetime sexual abuse than men; reports of abuse can vary by race/ethnicity and poverty status, particularly in women; there is overlap between types of abuse; and a history of childhood abuse is associated with a greater risk of abuse as an adult.

Keywords

violence; diverse; population-based

1. INTRODUCTION

Abuse has been identified as a major public health and medical issue, with national probability and community-based samples estimating that well over one quarter of the U.S. adult population reports either physical or sexual lifetime abuse (Kimerling, Alvarez, Pavao, & Mack, 2008; Scher, Forde, McQuaid, & Stein, 2004; Talley, Fett, Zinsmeister, & Melton, 1994; Tjaden & Thoennes, 2000). Abuse—physical, sexual, and emotional—is a particularly insidious problem because it spans the life course, affects both genders, and occurs across racial/ethnic groups.

Medically, a history of abuse occurring at any age is strongly associated with a wide range of risky behaviors (e.g. heavy alcohol use, HIV-risky behaviors, current smoking, substance abuse, violent criminal behavior, poor prenatal care) (M. C. Black, 2011; Hosser, Raddatz, & Windzio, 2007; Molnar, Buka, & Kessler, 2001; Scher et al., 2004; Seng, Sperlich, & Low, 2008; Smith & Breiding, 2011) as well as health problems including mental health (e.g. PTSD, depression, mania, anxiety, dissociative disorders) (Basile, 2011; M. C. Black,

Corresponding author: Gretchen R. Chiu, New England Research Institutes, 9 Galen Street, Watertown, MA 02472, U.S.A., Tel: (01) 617 972-3312; Fax: (01) 617 926-8246; gchiu@neriscience.com.

Reprint requests:

John B. McKinlay, Senior Vice President, New England Research Institutes, 9 Galen Street, Watertown, MA 02472, Tel: (617) 923-7747 ext 512; Fax: (617) 926-8246; bach@neriscience.com

The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Diabetes and Digestive and Kidney Diseases or the National Institutes of Health.

2011; Leserman, 2005; Molnar et al., 2001; Paolucci, Genuis, & Violato, 2001; Reid et al., 2008; Sar, Akyuz, & Dogan, 2007), physical health (e.g. urologic conditions, sexual dysfunction, abdominal and pelvic pain, gastrointestinal and gynecologic disorders, headache, HIV, hypertension, hyperlipidemia, asthma, obesity, diabetes) (Basile, 2011; M. C. Black, 2011; Cloutier, Martin, & Poole, 2002; Leserman, 2005; Link, Lutfey, Steers, & McKinlay, 2007; Lutfey, Link, Litman, Rosen, & McKinlay, 2008; Rich-Edwards et al., 2010; Smith & Breiding, 2011; Talley et al., 1994; Zierler et al., 1991), and even suicide and premature death (Basile, 2011; M. C. Black, 2011; Brown et al., 2009; Paolucci et al., 2001). If types of abuse overlap, this can result in greater likelihood of deleterious health outcomes (M. C. Black, 2011; Classen, Palesh, & Aggarwal, 2005; Felitti et al., 1998; Kimerling, Alvarez, Pavao, Kaminski, & Baumrind, 2007). These health-related sequelae of abuse are costly and time-consuming to treat (Basile, 2011; Bonomi et al., 2008; Bonomi, Anderson, Rivara, & Thompson, 2009; Chartier, Walker, & Naimark, 2007; Rich-Edwards et al., 2010). Besides medical outcomes, the presence of a single type of abuse has been shown to be indicative of other types of abuse, as well as potentially predictive of revictimization in later lifestages {Basile, 2011 #264; Casey, 2005 #18; Coid, 2001 #3; Kimerling, 2007 #30; Noll, 2005 #15; Chan, 2011 #242; Desai, 2002 #22.

Despite the major medical and public health importance of this problem, comprehensive data addressing the prevalence and overlap of multiple types of abuse in both childhood and adulthood are scant. Existing publications are often based on data from more than ten years ago, utilize samples that are not generalizable to a community or population, or rely on data collected outside of US. Analyses are fractured, often addressing only women, only child abuse, or only sexual assault. We have summarized existing literature in Table 1. While a focused approach is important for understanding specific sub-populations, it precludes a comprehensive understanding of how many people in the general community are affected by abuse, which type(s) of abuse, the life stage at which abuse occurs, and how these types of abuse overlap.

The objectives of this paper are: 1) to establish prevalence of physical, emotional, and sexual abuse by lifestage and gender; 2) to assess variation in abuse by socio-demographic factors; 3) to establish overlap between these three types of abuse within gender; and 4) to examine demographic and childhood abuse relationships with abuse in adulthood. To achieve these objectives we use a racially/ethnically and economically diverse community-based sample of adults, ages 30–79 years.

2. METHODS

2.1 Boston Area Community Health (BACH) Survey

The BACH Survey is supported by the U.S. National Institutes of Health (National Institute of Diabetes and Digestive and Kidney Diseases) and is a population-based, epidemiologic cohort study conducted among 5,502 men and women aged 30 to 79 years at baseline residing in Boston, Massachusetts. A multistage, stratified cluster sampling design was used to recruit approximately equal numbers of persons in pre-specified groups defined according to age (30 to 39, 40 to 49, 50 to 59, 60 to 79), race and ethnic groups (non-Hispanic black, Hispanic, non-Hispanic white), and gender. This analysis used baseline data collected between April 2002 and June 2005 during a two-hour, in-person interview conducted by a trained, bilingual interviewer after acquisition of written informed consent. Interviews for 63.3% of eligible persons were completed, with a resulting study population of 2301 men and 3201 women. The sample is comprised of 1766 black participants, 1877 Hispanic participants, and 1859 white participants. All protocols and procedures were approved by the Institutional Review Board of New England Research Institutes. Further details of the study design and procedures are available {McKinlay, 2007 #96}.

2.2 Measurement of Abuse

We measured abuse with a self-administered questionnaire adapted for BACH from a clinically validated abuse instrument developed by Leserman et al (Leserman, Drossman, & Li, 1995). Sexual abuse was defined as present if respondents answered in the affirmative to any of the following (a–f for childhood <14 years; b–f for adolescence/adulthood [to be called adulthood from this point forward] 14+ years): Has another adult ever (a) Exposed the sex organs of their body to you when you did not want it? (b) Threatened to have sex with you when you did not want this? (c) Touched the sex organs of your body when you did not want this? (d) Made you touch the sex organs of their body when you did not want this? (e) Forced you to have sex when you did not want this? (f) Have you had any other unwanted sexual experiences not mentioned above? Physical abuse (child or adult) was defined as present if a respondent indicated that an adult had “occasionally” or “often” “hit, kick, or beat” them, or had “seldom,” “occasionally,” or “often” “seriously threatened your life.” Emotional abuse was defined as present if a respondent indicated that an adult “emotionally abused, humiliated, or insulted you” “occasionally” or “often.”

2.3 Covariates

Poverty was estimated using self-report of the number of people living in the household and income level (measured in categories of <\$5000, \$5000–\$9999, \$10 000–\$19 000, etc. in increments of \$10 000 until the category of \$120 000 or more). Using the 2003 Census poverty guidelines (U.S. Census Bureau, 2009), we conservatively assigned subjects as living in poverty. Household sizes of 1–2 persons with incomes of <\$10,000 annually, 3–6 with incomes of <\$20,00 annually, 7–8 earning <\$30,000 annually, 9–11 earning <\$40,000 annually were defined as living in poverty (Hall et al., 2010).

2.4 Statistical Analysis

Prevalence rates were calculated and chi-square tests were constructed to assess the statistical significance of differences by each factor. Multivariate logistic regression models were performed to evaluate the association between abuse as an adult with race/ethnicity, poverty status, age, and the number of childhood abuses experienced. Approximately 7% of subjects had missing data for any particular abuse question. Because a complete case analysis could potentially lead to biased or inefficient estimates, a multiple imputation technique was used to impute missing abuse values, taking into account socio-demographic and other variables (SAS Institute., 2003; Schafer, 1997)

In order for analyses to be representative of the city of Boston, observations were weighted inversely proportional to their probability of selection into the study (Cochran, 1977; Kish, 1965). Weights were further post-stratified to the population of Boston according to the 2000 Census. P-values less than 0.05 were deemed statistically significant differences. All statistical analyses were performed in SAS 9.2 and SUDAAN 10.0.1.

3. RESULTS

3.1 BACH Sample

Table 2 describes the weighted BACH Survey sample. Weighted back to the Boston population, our sample was 48% men and 52% women with over half of subjects under the age of 50 years. A majority of people in Boston were white (60%). Overall, 21.5% lived in poverty with higher rates of poverty reported among women than men.

3.2 Prevalence

Prevalence rates by all three types of abuse and gender across both lifestages showed that abuse varies significantly by gender (Table 3). Women reported significantly more sexual abuse than men in childhood (26.7% vs. 16.7%), adulthood (25.8% vs. 13.2%) and lifetime, as well as a higher prevalence of emotional abuse than men after the age of 14 and over the life course. Almost one out of five subjects reported emotional abuse in childhood or physical abuse in adulthood, regardless of gender.

Prevalence rates by socio-demographic variables showed that men reported abuse significantly differently by race/ethnicity for all three types of abuse in both lifestages with the exception of physical abuse in adulthood (Table 4). White men reported the highest prevalence of abuse for sexual and emotional abuse during both lifestages. Hispanic men were consistently the least likely to report any abuse.

Black women were the most likely to report physical abuse. Like Hispanic men, Hispanic women were the least likely to report any abuse with the exception of physical abuse after age 14. In women, reporting varied significantly by age decade for all types of abuse. The trend was similar across all types of abuse: the highest prevalence was reported by subjects aged 40–59 years and the lowest prevalence was reported by subjects aged 70–79 years. There were also significant differences in reporting of physical abuse by poverty status with women living in poverty more likely to report physical abuse.

3.3 Overlap between three types of abuse

Overlap existed between physical, sexual, and emotional abuse within gender and lifestage (Figure 1). In comparisons by gender, the percentage of women that reported all three types of abuse in childhood (8.2%) and adulthood (8.1%) was higher than in men (4.9% and 3.6%, respectively). Regardless of gender or lifestage, if a subject reported having experienced one type of abuse, they were more likely to report that they had experienced at least one additional type of abuse than to report they had no other types of abuse. For example, 10% of men reported only physical abuse a child, while 15% of men reported physical abuse plus at least one other type of abuse as a child.

3.4 Revictimization

The more types of abuse an individual reporting having experienced as a child, the more likely they were to report any type of abuse as an adult (Figure 2). For example, the prevalence of adulthood sexual abuse was 15% among men who reported one type of childhood abuse, 28% among men who reported two types of childhood abuse, and 57% among men who reported all three types of childhood abuse.

Multivariate logistic regressions examining the relationship between socio-demographic variables, number of types of childhood abuse, and the outcome (abuse during adulthood) in men revealed no association in reporting abuse as an adult by age or poverty status (Table 5). Reports of experiencing only one type of childhood abuse resulted in 5.8 times greater likelihood of reporting any abuse as an adult (95% Confidence Interval (CI): 3.91, 8.73). Reports of experiencing all three types of child abuse resulted in even greater odds for any type of abuse (Odds Ratio (OR) = 44.3, 95% CI: 18.59, 105.49). Confidence intervals for the three types of child abuse are often wide due to the small number of subjects that reported three types of child abuse and no abuse in adulthood. Results for the three individual types of abuse were similar to overall results. In addition, black and Hispanic men were approximately only half as likely to report adult sexual or emotional abuse compared to white men after adjustment for other factors.

These models revealed similar associations between childhood abuse and abuse during adulthood in women (Table 6). A single type of abuse in childhood increased odds of reporting any adult abuse about seven times (95% CI: 5.07, 10.15), while three types of childhood abuse increased odds of reporting any adult abuse 36 times (95% CI: 19.65, 67.63). Results for the three individual types of abuse were similar. Of note, race/ethnicity and poverty status were not important for all abuse models with the exception of physical abuse. After adjustment, women who were black or Hispanic were at increased odds for reporting physical abuse as an adult compared to white women and women in poverty were also more likely to report physical abuse compared to women not impoverished.

4. CONCLUSION

We estimated the prevalence and overlap of a variety of abuse measures in a diverse community-dwelling sample. The results show that (1) prevalence of abuse ranges from 15% to 27% dependent on type, gender, and lifestage; (2) women are more likely to report emotional abuse in adulthood and sexual abuse in either lifestage than men, while men report similar prevalences of emotional abuse in childhood and physical abuse to women in either lifestage; (3) there are often differences in reports of abuse by race/ethnicity and poverty status, particularly in women; (4) there is substantial overlap among all types of abuse in both genders and at both lifestages; and (5) a history of childhood abuse is associated with a greater risk of being a victim of all types of abuse as an adult, with revictimization showing a dose response pattern.

We compared abuse prevalence in the BACH study to other population and community based studies from Table 1. Our prevalence of childhood physical abuse matches well with results from several other studies in women (Chartier et al., 2007; Kimerling et al., 2007; Scher et al., 2004) and also in men (Chartier et al., 2007; Scher et al., 2004). Bensley et al. reports significantly lower prevalences of childhood physical abuse in both genders, but this could be due to limiting the definition to abuse by caretakers (Bensley, Van Eenwyk, & Simmons, 2000). Our adulthood physical abuse prevalences among women match well with those found among women from the California Women's Health Survey (Kimerling et al., 2007). Reid et al. reports an intimate partner violence prevalence of 28.8% in men (Reid et al., 2008). This includes sexual, physical, and emotional abuse by an intimate partner. In BACH, 31.4% of men report sexual, physical, or psychological abuse without limitations as to who the abuser is.

A new study, the National Intimate Partner and Sexual Violence Survey (NISVS), recently published a report on sexual victimization data from 2010 (M. C. Black, Basile, K.C., Breiding, M.J., Smith, S.G., Walters, M.L., Merrick, M.T., Chen, J., & Stevens, M.R., 2011). Data on sexual violence were available on a national and state level. Though the prevalence of rape in men from Massachusetts (MA) was not included due to small numbers, the weighted percentage of men experiencing sexual violence other than rape was 23.3%, which is identical to the prevalence of sexual abuse in men we report in BACH. In addition, Black et al. report a lifetime prevalence of rape in women from MA to be 15.1% and sexual violence other than rape to be 41.1%, which is similar to our overall report of 37.7% of women in BACH reporting sexual abuse. Data were also available on a national level by race/ethnicity and similar patterns of lower reporting of sexual violence was observed for both Hispanic men and women as compared to black and white subjects. Finally, data from NISVS also support our findings for revictimization with 35% of women raped before age 18 becoming victims of rape again as an adult.

Compared to other population-based samples from Table 1, prevalence of sexual abuse in NISVS and BACH is high (Bensley et al., 2000; Chartier et al., 2007; Kimerling et al., 2007;

Molnar et al., 2001; Scher et al., 2004). BACH may have been able to collect reports of abuse with greater accuracy than studies with lower prevalence due to (1) how sexual abuse was defined, (2) the number of sexual abuse questions and (3) how our survey was administered. Many of these surveys use a more limited definition of sexual abuse (e.g. unwanted touching only, unwanted sexual activity only, forced sexual activity, rape only, or rape and/or molestation). (Bensley et al., 2000; Chartier et al., 2007; Cloutier et al., 2002; Kimerling et al., 2007; Molnar et al., 2001; Scher et al., 2004; Tjaden & Thoennes, 2000). In limiting the types of activities considered to be sexual abuse, prevalence of sexual abuse could be underestimated in comparison to broader definitions. Since each of the components of sexual abuse have been shown to be related to serious mental and physical health outcomes, it may be important to consider a wider range of types of sexual abuse.

In addition the definition, research has shown that asking multiple questions regarding sexual abuse was significantly more effective in obtaining disclosures (Finkelhor, 1994; Hulme, 2004; Peters, Wyatt, & Finkelhor, 1986; Williams, Siegel, & Pomeroy, 2000). The BACH Survey contains 6 specific childhood sexual abuse questions and 5 specific sexual abuse questions for adulthood while most surveys we are comparing to were limited to 1 or 2 questions (Bensley et al., 2000; Cloutier et al., 2002; Kimerling et al., 2007; Molnar et al., 2001; Tjaden & Thoennes, 2000). Finally, questions regarding sexual abuse are sensitive and these questions were asked by an interviewer in the majority of other studies (Bensley et al., 2000; Cloutier et al., 2002; Kimerling et al., 2007; Molnar et al., 2001; Scher et al., 2004; Tjaden & Thoennes, 2000). Conversely, in the BACH Survey, questions were asked in a self-administered questionnaire where a subject might feel more comfortable reporting sensitive information (Dill, Chu, Grob, & Eisen, 1991).

Revictimization is a key concern in violence literature, and our results support and extend existing knowledge in this area (Kimerling et al., 2007; Widom, Czaja, & Dutton, 2008). Our data demonstrates that any type of childhood abuse can lead to higher rates of revictimization as an adolescent or adult, and that there is a clear dose response from multiple forms of abuse as a child relating to a higher risk of revictimization from all types of abuse as an adult. In fact, our regression estimates for revictimization have very wide confidence intervals for subjects that experienced multiple types of abuse as a child because there were very few subjects experiencing multiple abuses as a child that did not experience abuse later in life.

This study has some important limitations. There are social desirability concerns associated with any study of abuse, and consequently, despite our observed prevalence rates being generally higher than in other studies, it is possible that our estimates are conservative as people may have been hesitant to report their abuse experiences. These differences may occur differentially by gender, age and/or race/ethnicity, such that men, Hispanic, or older participants were more conservative in their reports. Due to the private nature of the self-administered questionnaire, we feel that participants may have been more forthcoming than with interviewer-administered abuse questionnaires which are common in other studies. Recall bias may exist when asking adults to report on events that happened when they were younger than 14 and they may also bias our results in a conservative direction.

In spite of these limitations, our study has many strengths. This is the first analysis using a recent, large community-based survey to measure the prevalence and overlap of childhood and adulthood physical, sexual, and emotional abuse in a racially/ethnically diverse sample of men and women. A review of retrospective childhood sexual abuse measures by Hulme highlights in the literature a lack of a standard operational definition of sexual abuse, as well as the absence of an instrument by which to measure it (Hulme, 2004). However, unlike the majority of sexual abuse measures reviewed by Hulme, the sexual abuse measures used in

the BACH Survey were validated psychometrically. While validation for this measure was performed only in women and has not been validated in men or in a racially/ethnically diverse sample, the BACH Survey is unique in having the same questions asked of a diverse range of participants, which allows for the broad prevalence picture presented in this analysis. The present analyses supply an updated overall picture of abuse that is critical for understanding and improving current abuse prevalence and mitigating its health related consequences.

In light of the fragmented and limited abuse data that has been collected to date, our results underscore the high prevalence rates of abuse across all segments of the population, such that concerns about risk should not be contained only to certain groups such as women or children. These data are unique in both the breadth of the sample and the range of abuse experiences measured, making a critical contribution toward identifying abuse prevalence across the life course. While previous work has identified, for example, the importance of interventions for female youth who have been physically or sexually abused (Kimerling et al., 2007), our work is in line with claims that “sexual revictimization is a cross-gender, cross-cultural phenomenon.” The dose response association observed in our data among both men and women underscores the importance of abuse problems for full population, despite gendered patterns in mediators of childhood and adult abuse (Bender, Cook, & Kaslow, 2003; Fargo, 2009; Filipas & Ullman, 2006; Lutz-Zois, Phelps, & Reichle, 2011) and behavioral and emotional responses (Brousseau, Hebert, & Bergeron, 2011; Messman-Moore, Walsh, & DiLillo, 2010; Van Bruggen, Runtz, & Kadlec, 2006). The high prevalence of different types of abuse across gender, age, race/ethnicity, and poverty status needs to be taken into consideration as a serious risk factor for a wide range of physical and mental health outcomes, as well as behavioral responses. In addition, the results suggest that types of abuse often overlap and should not always be considered independently. Finally, these findings emphasize that victims of any abuse during childhood are at a much greater risk for abuse in adulthood. Therefore, prevention of childhood abuse and appropriately timed interventions may help to lower both the prevalence of all types of abuse in adulthood, as well as numerous negative mental and physical health outcomes.

Acknowledgments

This work was supported by Award Number U01DK056842 from the National Institute of Diabetes and Digestive and Kidney Diseases.

The authors gratefully acknowledge Matthew Grace, Deborah Brander, and Elizabeth Suarez for their research assistance on this paper.

6. REFERENCE LIST

- Basile KC, Smith SG. Sexual violence victimization of women: Prevalence, characteristics, and the role of public health and prevention. *American Journal of Lifestyle Medicine*. 2011; 5:407–417.
- Bender M, Cook S, Kaslow N. Social support as a mediator of revictimization of low-income African American women. *Violence Vict*. 2003; 18(4):419–431. [PubMed: 14582863]
- Bensley LS, Van Eenwyk J, Simmons KW. Self-reported childhood sexual and physical abuse and adult HIV-risk behaviors and heavy drinking. *Am J Prev Med*. 2000; 18(2):151–158. [PubMed: 10698246]
- Black MC. Intimate partner violence and adverse health consequences: Implications for clinicians. *American Journal of Lifestyle Medicine*. 2011; 5:428–439.
- Black, MC.; Basile, KC.; Breiding, MJ.; Smith, SG.; Walters, ML.; Merrick, MT.; Chen, J.; Stevens, MR. The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2011.

- Bonomi AE, Anderson ML, Rivara FP, Cannon EA, Fishman PA, Carrell D, et al. Health care utilization and costs associated with childhood abuse. *J Gen Intern Med*. 2008; 23(3):294–299. [PubMed: 18204885]
- Bonomi AE, Anderson ML, Rivara FP, Thompson RS. Health care utilization and costs associated with physical and nonphysical-only intimate partner violence. *Health Serv Res*. 2009; 44(3):1052–1067. [PubMed: 19674432]
- Brousseau MM, Hebert M, Bergeron S. Sexual Coercion within Mixed-Sex Couples: The Roles of Sexual Motives, Revictimization, and Reperpetration. *J Sex Res*. 2011:1–14.
- Brown DW, Anda RF, Tiemeier H, Felitti VJ, Edwards VJ, Croft JB, et al. Adverse childhood experiences and the risk of premature mortality. *Am J Prev Med*. 2009; 37(5):389–396. [PubMed: 19840693]
- Chartier MJ, Walker JR, Naimark B. Childhood abuse, adult health, and health care utilization: results from a representative community sample. *Am J Epidemiol*. 2007; 165(9):1031–1038. [PubMed: 17309899]
- Classen CC, Palesh OG, Aggarwal R. Sexual revictimization: a review of the empirical literature. *Trauma Violence Abuse*. 2005; 6(2):103–129. [PubMed: 15753196]
- Cloutier S, Martin S, Poole C. Sexual assault among North Carolina women: Prevalence and health risk factors. *Journal of Epidemiology and Community Health*. 2002; 56:265–271. [PubMed: 11896133]
- Cochran, WG. Sampling techniques. 3. New York: Wiley; 1977.
- Dill DL, Chu JA, Grob MC, Eisen SV. The reliability of abuse history reports: a comparison of two inquiry formats. *Compr Psychiatry*. 1991; 32(2):166–169. [PubMed: 2022116]
- Fargo JD. Pathways to adult sexual revictimization: direct and indirect behavioral risk factors across the lifespan. *J Interpers Violence*. 2009; 24(11):1771–1791. [PubMed: 18931368]
- Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *Am J Prev Med*. 1998; 14(4):245–258. [PubMed: 9635069]
- Filipas HH, Ullman SE. Child sexual abuse, coping responses, self-blame, posttraumatic stress disorder, and adult sexual revictimization. *J Interpers Violence*. 2006; 21(5):652–672. [PubMed: 16574638]
- Finkelhor D. Current information on the scope and nature of child sexual abuse. *Future Child*. 1994; 4(2):31–53. [PubMed: 7804768]
- Hall SA, Chiu GR, Kaufman DW, Kelly JP, Link CL, Kupelian V, et al. General exposures to prescription medications by race/ethnicity in a population-based sample: results from the Boston Area Community Health Survey. *Pharmacoepidemiol Drug Saf*. 2010; 19(4):384–392. [PubMed: 20140890]
- Hosser D, Raddatz S, Windzio M. Child maltreatment, revictimization, and violent behavior. *Violence Vict*. 2007; 22(3):318–333. [PubMed: 17619637]
- Hulme PA. Retrospective measurement of childhood sexual abuse: a review of instruments. *Child Maltreat*. 2004; 9(2):201–217. [PubMed: 15104889]
- Kimerling R, Alvarez J, Pavao J, Kaminski A, Baumrind N. Epidemiology and consequences of women's revictimization. *Womens Health Issues*. 2007; 17(2):101–106. [PubMed: 17403467]
- Kimerling R, Alvarez J, Pavao J, Mack K. History of Child Abuse and Adult Victimization Among California Women, 2005 [Electronic Version]. *Data Points*. 2008 Retrieved March 17 2010.
- Kish, L. Survey sampling. New York: J. Wiley; 1965.
- Leserman J. Sexual abuse history: prevalence, health effects, mediators, and psychological treatment. *Psychosom Med*. 2005; 67(6):906–915. [PubMed: 16314595]
- Leserman J, Drossman DA, Li Z. The reliability and validity of a sexual and physical abuse history questionnaire in female patients with gastrointestinal disorders. *Behav Med*. 1995; 21(3):141–150. [PubMed: 8789650]
- Link CL, Lutfey KE, Steers WD, McKinlay JB. Is abuse causally related to urologic symptoms? Results from the Boston Area Community Health (BACH) Survey. *Eur Urol*. 2007; 52(2):397–406. [PubMed: 17383083]

- Lutfey KE, Link CL, Litman HJ, Rosen RC, McKinlay JB. An examination of the association of abuse (physical, sexual, or emotional) and female sexual dysfunction: results from the Boston Area Community Health Survey. *Fertil Steril*. 2008; 90(4):957–964. [PubMed: 18023433]
- Lutz-Zois CJ, Phelps CE, Reichle AC. Affective, behavioral, and social-cognitive dysregulation as mechanisms for sexual abuse revictimization. *Violence Vict*. 2011; 26(2):159–176. [PubMed: 21780532]
- Messman-Moore TL, Walsh KL, DiLillo D. Emotion dysregulation and risky sexual behavior in revictimization. *Child Abuse Negl*. 2010; 34(12):967–976. [PubMed: 21030084]
- Molnar BE, Buka SL, Kessler RC. Child sexual abuse and subsequent psychopathology: results from the National Comorbidity Survey. *Am J Public Health*. 2001; 91(5):753–760. [PubMed: 11344883]
- Paolucci EO, Genuis ML, Violato C. A meta-analysis of the published research on the effects of child sexual abuse. *J Psychol*. 2001; 135(1):17–36. [PubMed: 11235837]
- Peters, SD.; Wyatt, GE.; Finkelhor, D. Prevalence. In: Finkelhor, D., editor. *A sourcebook on child sexual abuse*. Beverly Hills, CA: Sage; 1986. p. 15-59.
- Reid RJ, Bonomi AE, Rivara FP, Anderson ML, Fishman PA, Carrell DS, et al. Intimate partner violence among men prevalence, chronicity, and health effects. *Am J Prev Med*. 2008; 34(6):478–485. [PubMed: 18471583]
- Rich-Edwards JW, Spiegelman D, Lividoti Hibert EN, Jun HJ, Todd TJ, Kawachi I, et al. Abuse in childhood and adolescence as a predictor of type 2 diabetes in adult women. *Am J Prev Med*. 2010; 39(6):529–536. [PubMed: 21084073]
- Sar V, Akyuz G, Dogan O. Prevalence of dissociative disorders among women in the general population. *Psychiatry Res*. 2007; 149(1–3):169–176. [PubMed: 17157389]
- SAS Institute. *SAS/STAT user's guide*. Cary, N.C: SAS Institute; 2003.
- Schafer, J. *Analysis of Incomplete Multivariate Data*. New York: Chapman and Hall; 1997.
- Scher CD, Forde DR, McQuaid JR, Stein MB. Prevalence and demographic correlates of childhood maltreatment in an adult community sample. *Child Abuse Negl*. 2004; 28(2):167–180. [PubMed: 15003400]
- Seng JS, Sperlich M, Low LK. Mental health, demographic, and risk behavior profiles of pregnant survivors of childhood and adult abuse. *J Midwifery Womens Health*. 2008; 53(6):511–521. [PubMed: 18984507]
- Smith SG, Breiding MJ. Chronic disease and health behaviours linked to experiences of non-consensual sex among women and men. *Public Health*. 2011; 125(9):653–659. [PubMed: 21855097]
- Talley NJ, Fett SL, Zinsmeister AR, Melton LJ 3rd. Gastrointestinal tract symptoms and self-reported abuse: a population-based study. *Gastroenterology*. 1994; 107(4):1040–1049. [PubMed: 7926457]
- Tjaden, P.; Thoennes, N. *Full Report of the Prevalence, Incidence, and Consequences of Violence Against Women: Findings from the National Violence Against Women Survey*. Washington, DC: National Institute of Justice and the Center for Disease Control and Prevention; 2000.
- U.S. Census Bureau, H. a. H. E. S. D. *Poverty Thresholds 2003*. 2009 Sep 29. Retrieved March 11, 2010, 2010, from <http://www.census.gov/hhes/www/poverty/threshld/thresh03.html>.
- Van Bruggen LK, Runtz MG, Kadlec H. Sexual revictimization: the role of sexual self-esteem and dysfunctional sexual behaviors. *Child Maltreat*. 2006; 11(2):131–145. [PubMed: 16595847]
- Widom CS, Czaja SJ, Dutton MA. Childhood victimization and lifetime revictimization. *Child Abuse Negl*. 2008; 32(8):785–796. [PubMed: 18760474]
- Williams, LM.; Siegel, JA.; Pomeroy, JL. Validity of women's self-reports of documented child sexual abuse. In: Stone, AA.; Turkkan, JS.; Bachrach, CA.; Jobe, JA.; Kurtzman, HS.; Cain, VS., editors. *The science of self-report: Implications for research and practice*. Hillsdale, NH: Lawrence Erlbaum; 2000. p. 211-226.
- Zierler S, Feingold L, Laufer D, Velentgas P, Kantrowitz-Gordon I, Mayer K. Adult survivors of childhood sexual abuse and subsequent risk of HIV infection. *Am J Public Health*. 1991; 81(5):572–575. [PubMed: 2014856]

CHILDHOOD ABUSE:

ADOLESCENT/ADULTHOOD ABUSE:

Figure 1.
Venn Diagrams of overlap of types of abuse by gender and stage of life (childhood, adolescent/adult).

Figure 2.
Prevalence of adolescent/adult abuse in men and women who experienced 1, 2, or 3 types of abuse as a child.

Table 1

A cross-section of current literature containing abuse prevalence estimates.

Citation	In USA?	Population- or community-based?	Data collected in last 10 years?	Gender	Child			Adult		
					SA	EA	PA	SA	EA	PA
Smith SG & MJ Breiding (Smith & Breiding, 2011) <i>Public Health</i>	Y	Y	Y	M & W	Y [^]	-	-	Y [^]	-	-
Charlier MJ, et al (Chartier et al., 2007) <i>Am J Epi</i>	N	Y	N	M & W	Y	-	Y	-	-	-
Sar V, et al (Sar et al., 2007) <i>Psychiatry Res</i>	N	Y	N	W	Y	Y	Y	-	-	-
Felitti VJ, et al (Felitti et al., 1998) <i>Am J Prev Med</i>	Y	N	N	M & W	Y	Y	Y	-	-	-
Widom CS & MG Maxfield (Widom et al., 2008) <i>NIJ Research in Brief</i>	Y	N	N	M & W	Y	Y	Y	-	-	-
Zierler S, et al (Zierler et al., 1991) <i>Am J Public Health</i>	Y	N	N	M & W	Y	-	-	-	-	-
Leserman J, et al (Leserman et al., 1995) <i>Behav Med</i>	Y	N	N	W	Y	-	Y	Y	-	Y
Bonomi AE, et al (Bonomi et al., 2009) <i>Health Services Research</i>	Y	N	Y	W	-	-	-	Y [*]	Y [*]	Y [*]
Bonomi AE, et al (Bonomi et al., 2008) <i>JGIM</i>	Y	N	Y	W	Y	-	Y	-	-	-
Reid RJ, et al (Reid et al., 2008) <i>Am J Prev Med</i>	Y	N	Y	M	-	-	-	Y [*]	Y [*]	Y [*]
Brown DW, et al (Brown et al., 2009) <i>Am J Prev Med</i>	Y	N	Y	M & W	Y	Y	Y	-	-	-
Kimerling R, et al (Kimerling et al., 2007) <i>Womens Health Issues</i>	Y	Y	Y	W	Y	-	Y	Y	-	Y
Cloutier S, et al (Cloutier et al., 2002) <i>J of Epi & Comm Health</i>	Y	Y	N	W	Y	-	-	Y	-	-
Bensley LS, et al (Bensley et al., 2000) <i>Am J Prev Med</i>	Y	Y	N	M & W	Y	-	Y	-	-	-
Molnar BE, et al (Molnar et al., 2001) <i>Am J Pub Health</i>	Y	Y	N	M & W	Y	-	-	-	-	-
Rich-Edwards Janet et al. (Rich-Edwards et al., 2010) <i>Am J Prev Med</i>	Y	Y	Y	W	Y	-	Y	-	-	-
Scher CD, et al (Scher et al., 2004)	Y	Y	N	M & W	Y	Y	Y	-	-	-

Citation	In USA?	Population- or community-based?	Data collected in last 10 years?	Gender	Child			Adult		
					SA	EA	PA	SA	EA	PA
<i>Child Abuse & Neglect</i>										
Seng, J, et al. <i>J Midwifery Women's Health</i>	Y	N	Y	W	Y	-	Y	Y	-	Y
Swahnberg, K, et al (Swahnberg, Hearn, & Wijma, 2009) <i>Violence and Vict</i>	N	N	Y	M	Y	Y	Y	Y	Y	Y
Talley NJ, et al (Talley et al., 1994) <i>Gastroenterology</i>	Y	Y	N	M & W	Y	Y	Y	Y	Y	Y
Tjaden P & N Thoennes (Tjaden & Thoennes, 2000) <i>NIJ and CDC</i>	Y	Y	N	M & W	Y**	-	Y***	Y**	-	Y
BACH	Y	Y	Y	M & W	Y	Y	Y	Y	Y	Y

SA: Sexual Abuse; EA: Emotional Abuse; PA: Physical Abuse; Y: Yes; N: No; M: Men; W: Women

* limited to intimate partner violence

** limited to rape

*** limited to physical assault by a caretaker

^ asked regarding lifetime and last 12 months

Table 2

Boston Area Community Health (BACH) Survey descriptive statistics.

	Overall (N=5 502)	Men (N=2 301)	Women (N=3 201)
Gender			
Men	47.9%	100.0%	0.0%
Women	52.1%	0.0%	100.0%
Age group			
30–39	35.2%	37.2%	33.3%
40–49	25.1%	25.8%	24.4%
50–59	18.1%	17.8%	18.4%
60–69	13.1%	11.3%	14.7%
70–79	8.5%	7.8%	9.2%
Race/ethnicity			
Black	27.1%	25.1%	28.9%
Hispanic	13.3%	13.0%	13.5%
White	59.7%	61.9%	57.6%
In poverty			
Yes	21.4%	16.6%	25.9%
No	78.6%	83.4%	74.1%

percents are column percents

Table 3

Prevalence of abuse by gender.

	Men (N=2 301)	Women (N=3 201)	p-value*
Physical Abuse			
Child	25.0%	21.1%	0.07
Adult	18.4%	20.9%	0.15
Lifetime	30.6%	29.8%	0.73
Sexual Abuse			
Child	16.7%	26.7%	<0.001
Adult	13.2%	25.8%	<0.001
Lifetime	23.3%	37.7%	<0.001
Emotional Abuse			
Child	18.6%	19.2%	0.71
Adult	15.3%	23.0%	<0.001
Lifetime	22.1%	27.4%	0.007

Table 4
Prevalence of abuse by lifestage, race/ethnicity, age, and poverty status by gender, N=5 502 (p-values* in italics)

Variable	Physical Abuse			Sexual Abuse			Emotional Abuse		
	Child	Adult	Lifetime	Child	Adult	Lifetime	Child	Adult	Lifetime
Men									
Overall	25.0%	18.4%	30.6%	16.7%	13.2%	23.3%	18.6%	15.3%	22.1%
Race/ethnicity	<i><0.001</i>	<i>0.34</i>	<i>0.001</i>	<i>0.005</i>	<i>0.004</i>	<i><0.001</i>	<i><0.001</i>	<i><0.001</i>	<i><0.001</i>
Black	30.3%	19.0%	34.4%	13.8%	10.0%	19.1%	14.7%	11.7%	16.7%
Hispanic	17.4%	14.7%	21.4%	9.9%	7.3%	14.0%	9.8%	6.6%	11.7%
White	24.5%	19.0%	30.9%	19.2%	15.8%	27.0%	22.0%	18.6%	26.5%
Age	<i>0.06</i>	<i>0.26</i>	<i>0.14</i>	<i>0.80</i>	<i>0.29</i>	<i>0.74</i>	<i>0.08</i>	<i>0.04</i>	<i>0.08</i>
30–39	19.4%	14.5%	25.1%	15.1%	12.5%	21.2%	13.6%	10.3%	16.4%
40–49	31.6%	19.1%	36.0%	18.7%	15.9%	27.1%	23.6%	18.1%	25.9%
50–59	27.3%	21.1%	23.9%	15.0%	12.1%	22.5%	20.3%	17.7%	25.0%
60–69	26.1%	25.6%	33.9%	17.7%	15.3%	23.1%	20.9%	21.7%	26.9%
70–79	23.7%	18.5%	28.9%	19.7%	7.5%	23.4%	18.1%	15.0%	23.5%
In poverty	<i>0.51</i>	<i>0.06</i>	<i>0.36</i>	<i>0.09</i>	<i>0.48</i>	<i>0.19</i>	<i>0.80</i>	<i>0.67</i>	<i>0.74</i>
Yes	27.1%	24.6%	33.6%	21.9%	15.0%	27.4%	19.3%	16.4%	23.1%
No	24.6%	17.2%	30.0%	15.6%	12.9%	22.5%	18.4%	15.1%	21.9%
Women									
Overall	21.1%	20.9%	29.8%	26.6%	25.7%	37.7%	19.2%	23.0%	27.4%
Race/ethnicity	<i><0.001</i>	<i>0.003</i>	<i>0.001</i>	<i>0.40</i>	<i>0.56</i>	<i>0.30</i>	<i>0.02</i>	<i>0.65</i>	<i>0.43</i>
Black	27.7%	26.8%	37.3%	27.3%	25.7%	36.8%	17.4%	23.2%	27.0%
Hispanic	14.6%	23.0%	27.8%	22.4%	22.4%	32.6%	13.3%	20.4%	23.6%
White	19.3%	17.5%	26.5%	27.3%	26.5%	39.3%	21.6%	23.5%	28.4%
Age	<i>0.02</i>	<i>0.02</i>	<i>0.01</i>	<i>0.02</i>	<i>0.002</i>	<i>0.006</i>	<i>0.003</i>	<i><0.001</i>	<i>0.001</i>
30–39	18.4%	17.1%	26.3%	26.9%	25.4%	37.9%	17.2%	21.0%	24.9%
40–49	25.7%	26.7%	36.1%	29.7%	28.0%	41.5%	22.8%	28.3%	32.5%
50–59	25.1%	24.0%	33.8%	28.7%	31.8%	40.9%	24.3%	25.4%	31.2%
60–69	18.3%	18.9%	27.2%	24.7%	21.9%	35.8%	15.9%	22.6%	26.5%
70–79	15.0%	16.3%	21.9%	16.4%	14.9%	23.5%	12.2%	11.9%	16.4%

Variable	Physical Abuse			Sexual Abuse			Emotional Abuse		
	Child	Adult	Lifetime	Child	Adult	Lifetime	Child	Adult	Lifetime
In poverty	0.007	<0.001	0.006	0.80	0.72	0.38	0.27	0.28	0.32
Yes	26.7%	28.5%	35.8%	27.2%	25.0%	35.7%	21.5%	25.2%	29.6%
No	19.1%	18.3%	27.7%	26.4%	26.0%	38.4%	18.5%	22.2%	26.6%

percents are row percents
 *
 p-values from chi-square tests

Table 5

Multivariate logistic regressions describing the association between demographic characteristics and childhood abuse with abuse as adult by type of abuse in men.

	Abuse Type							
	Any		Physical		Sexual		Emotional	
	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p
Age		0.72		0.44		0.44		0.44
30–39 y	ref.		ref.		ref.		ref.	
40–49 y	1.11 (0.69, 1.79)		0.96 (0.54, 1.69)	0.94 (0.53, 1.68)			1.30 (0.72, 2.35)	
50–59 y	1.06 (0.64, 1.76)		1.36 (0.79, 2.35)	0.76 (0.40, 1.44)			1.60 (0.86, 2.98)	
60–69 y	1.38 (0.77, 2.47)		1.84 (0.85, 4.01)	0.95 (0.47, 1.92)			2.10 (0.88, 5.03)	
70–79 y	0.82 (0.40, 1.66)		1.09 (0.46, 2.58)	0.42 (0.16, 1.06)			1.22 (0.45, 3.32)	
Race/ethnicity		0.10		0.90		0.02		0.02
Black	0.72 (0.48, 1.07)		1.08 (0.74, 1.59)	0.57 (0.33, 0.97)			0.56 (0.33, 0.94)	
Hispanic	0.62 –(0.39, 1.00)		1.12 (0.65, 1.94)	0.48 (0.26, 0.86)			0.44 (0.23, 0.84)	
White, ref.	ref.		ref.		ref.		ref.	
In poverty (ref: no)	1.46 (0.93, 2.28)	0.096	1.47 (0.89, 2.42)	0.13	1.38 (0.79, 2.40)	0.25	1.12 (0.62, 2.00)	0.71
Number of types of childhood abuse reported		<0.001		<0.001		<0.001		<0.001
0	ref.		ref.		ref.		ref.	
1	5.84 (3.91, 8.73)		5.27 (3.18, 8.73)	2.54 (1.46, 4.42)			5.70 (2.94, 11.04)	
2	17.92 (10.53, 30.52)		14.82 (8.55, 25.68)	5.79 (3.24, 10.35)			27.39 (14.07, 53.33)	
3 [*]	44.28 (18.59, 105.49)		29.03 (12.26, 68.77)	18.79 (9.31, 37.93)			83.79 (36.56, 192.01)	

OR: odds ratio; CI: confidence interval; ref.: referent category

* Some confidence intervals are wide due to small numbers (i.e. there are 14 men who reported all three types of childhood abuse but reported no abuse as an adolescent or adult). Due to the clear trend of the data, we chose to present this category on its own rather than combine them with reporting two types of abuse as a child.

Table 6

Multivariate logistic regressions describing the association between demographic characteristics and childhood abuse with abuse as adult by type of abuse in women.

	Abuse Type							
	Any		Physical		Sexual		Emotional	
	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p
Age		0.04		0.42		0.05		0.10
30–39 y	ref.		ref.		ref.		ref.	
40–49 y	1.28 (0.85, 1.93)		1.64 (0.99, 2.70)		0.99 (0.65, 1.53)		1.32 (0.81, 2.16)	
50–59 y	1.54 (1.04, 2.28)		1.40 (0.92, 2.13)		1.23 (0.83, 1.81)		1.08 (0.69, 1.68)	
60–69 y	0.96 (0.61, 1.51)		1.33 (0.74, 2.40)		0.82 (0.51, 1.30)		1.31 (0.76, 2.24)	
70–79 y	0.77 (0.44, 1.35)		1.40 (0.68, 2.85)		0.56 (0.32, 0.97)		0.63 (0.33, 1.20)	
Race/ethnicity		0.90		0.007		0.83		0.72
Black	0.93 (0.67, 1.30)		1.78 (1.19, 2.67)		0.90 (0.65, 1.26)		0.90 (0.59, 1.36)	
Hispanic	0.93 (0.59, 1.46)		1.90 (1.17, 3.08)		0.94 (0.58, 1.54)		1.11 (0.65, 1.91)	
White, ref.	ref.		ref.		ref.		ref.	
In poverty (ref. no)	0.97 (0.73, 1.29)	0.83	1.49 (1.04, 2.13)	0.03	0.91 (0.68, 1.22)	0.53	1.03 (0.69, 1.54)	0.90
# of types of childhood abuse reported		<0.001		<0.001		<0.001		<0.001
0	ref.		ref.		ref.		ref.	
1	7.17 (5.07, 10.15)		5.08 (3.33, 7.76)		4.95 (3.39, 7.24)		5.53 (3.54, 8.63)	
2	16.57 (9.82, 27.95)		13.70 (8.67, 21.64)		5.22 (3.49, 7.83)		22.95 (13.73, 38.36)	
3	36.45 (19.65, 67.63)		28.32 (16.61, 48.26)		15.76 (9.84, 25.24)		50.28 (28.67, 88.18)	

OR: odds ratio; CI: confidence interval; ref.: referent category

* Some confidence intervals are wide due to small numbers (i.e. there are 28 women who reported all three types of childhood abuse but reported no abuse as an adolescent or adult). Due to the clear trend of the data, we chose to present this category on its own rather than combine them with reporting two types of abuse as a child.