

# Use of Mobile Phones to Help Prevent Child Maltreatment

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## INTRODUCTION

Child maltreatment (CM) is defined as acts of omission (neglect) and commission (abuse) related to the physical, psychological, sexual, medical, or emotional needs of a child resulting in the harm, potential for harm, or threat of harm by a parent or other caregiver (Department of Human and Health Services [DHHS], 2013). Technology has been involved in the screening, identification, and prevention of CM. Its usage transcends subfields and is seen in all aspects of a case of CM from the use of x-rays in identifying instances of physical abuse to the use of technologically assisted prevention efforts. The role of technology in prevention is likely to continue to increase as with the rest of public health. There is much potential for technology in prevention efforts. Mobile phone technology is a technological venture prevention researchers are pursuing given the ability to provide the necessary and immediate consultation and corrective feedback. While its use in the field is nascent, preliminary results are promising for prevention and intervention implementation.

The scope of this chapter is threefold: 1) to review recent prevention and implementation research that specifically uses mobile phone technology; 2) to discuss recent successes in the integration of mobile phone technology in interventions preventing CM; and, 3) to consider the limitations of and potential for future research using mobile phone technology in the prevention of CM. In an effort to contextualize the discussion of the potential impact of mobile phone technology in this field, background on CM is first presented. In addition, technologically enhanced intervention strategies will be highlighted and the opportunities for translation of prior research into technological efforts will be discussed.

As this chapter will demonstrate, the integration of mobile phone technology into the field of child maltreatment prevention is still a new research area. Pioneers and leaders in this nascent field include, but are not limited to: Drs. Kathy Bigelow and Judith Carta at the University of Kansas; Dr. Jenn LeFever at the University of Notre Dame; Dr. Julie Gazmararian at Emory University; and Drs. John R. Lutzker, Shannon

Self-Brown, and Dan Whitaker at Georgia State University (see Reference list for relevant citations). This chapter will also serve as a resource for indicating other pioneers in the broader field of public health and its incorporation mobile phone technology.

## OVERVIEW

### Child Maltreatment in the United States

In 2012, child protective services agencies nationwide received 3.4 million referrals alleging maltreatment of which, following CPS investigations, produced 686,000 substantiated cases (DHHS, 2013). Though over the past 20 years, the incidence rate of CM as a whole has declined steadily, with the exception of a small rise documented in 2012 data (Finkelhor & Jones, 2012), the rate of neglect continues to account for over 75 percent of all CM cases (DHHS, 2013). The small rise in 2012 documented by Finkelhor and Jones (2012) was unique to physical and sexual abuse; no increase was found in neglect.

CM trends are different in relation to child ethnicity, child age, and several parental risk factors. In 2012, White children experienced the highest rate of victimization (44 percent), followed by Hispanic children (21.8 percent) and African American children (21 percent) (DHHS, 2013). Children under 1-year-old experienced the highest rate of victimization in 2012: 21.9 per 1,000 children in population of the same age (DHHS, 2013). The percentage of victimization by child age decreases as age increases; stated differently, the younger the child the higher the potential for victimization. Parental factors identified as increasing the risk of CM include: young maternal age at delivery, lower levels of maternal educational attainment, low socioeconomic status or low income, employment status, substance use or abuse, and prior history with domestic violence (Putnam-Hornstein, Needell, & Rhodes, 2013;

Sedlak, Mettenburg, Basena, Petta, McPherson, Greene, & Li, 2010). Perpetrators of CM between the ages of 25-34 account for 39.6 percent of all perpetrators, the largest proportion (DHHS, 2013). Income is a strong indicator of CM across multiple reports: in 2011, families with an annual income under \$15,000 were 23 times more likely to have a report of abuse and 40 times more likely to have a report of neglect compared to families with annual incomes over \$30,000 (DHHS, 2012).

Victims of CM experience its sequelae in many aspects of life: physically and emotionally, as well as socially and economically (Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards, Koss, & Marks, 1998; Min, Minnes, Kim, & Singer, 2013). The impact of CM extends beyond the individual; the direct costs, on average, for a nonfatal case of CM in the US exceed \$32,648 per victim and the current estimate for the lifetime cost of a nonfatal case is \$210,012 per victim (Fang, Brown, Florence, & Mercy, 2012). That being said, the totality of the long-lasting consequences of CM cannot necessarily be reduced to mere dollar amounts.

### CM Intervention Strategies

Of the substantiated cases in 2012, over 80 percent of victims were maltreated by one or both of their parents (DHHS, 2013). Consequently, the majority of intervention and prevention programs are parent-focused. The social service field has long responded to instances of CM, beginning with the publishing of the 1962 seminal article, "Battered Child Syndrome" (Kempe, Silverman, Steele, Droegemueller, & Silver, 1962). It became possible at that time to distinguish between intentional and unintentional injuries, due to the advent of x-ray technology. The field has expanded in the last several decades with a myriad of prevention strategies emerging to aid in the prevention of CM as well as to reduce the risk of recidivism (Chaffin, Hect, Bard, Silovsky, & Beasley, 2012; Gershater-Molko, Lutzker, & Wesch, 2002; 2003; Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009; Zisser & Eyeberg, 2010). An integral component

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