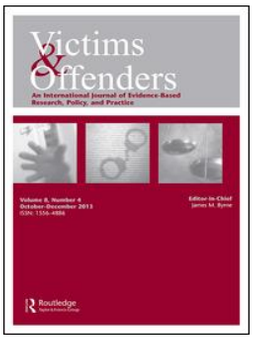

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The Consequences of Identity Theft Victimization: An Examination of Emotional and Physical Health Outcomes

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ABSTRACT

Identity theft—one of the fastest growing crimes—results in considerable financial losses as well as time spent to restore credit and prevent future attacks. While scholars have begun to devote more attention to identifying the factors that increase risk of identity theft, little is known about the aftermath for victims. Using data from the Identity Theft Supplement to the National Crime Victimization Survey, we address this gap in the literature. Results indicate that, in addition to financial losses and loss of time, victims also experience emotional (e.g., depression) and physical (e.g., poor health) symptoms. The implications of these findings for theory, research, and policy are discussed.

KEYWORDS

health consequences; identity theft; victimization

Introduction

Defined as "the unlawful use of another person's identifying information," identity theft has become one of the most feared and fastest-growing crimes (Piquero, Cohen, & Piquero, 2011, p. 438). There have been considerable legislative efforts to respond to and prevent identity theft, but the crime continues to rise (Holtfreter & Holtfreter, 2006). In the United States, more than 34.2 million people over the age of 16 will be victims of identity theft at one point in their lives. The average loss experienced by identity theft victims was approximately $2,183 in 2012 (Harrell & Langton, 2013). Prior research has addressed the monetary consequences of identity theft victimization (e.g., dollar amount lost). However, little is known about the *nonmonetary* losses experienced by victims (e.g., post-traumatic stress disorder). While monetary losses are important, emotional and physical consequences of victimization also warrant empirical attention, as these symptoms may be presented to victim service providers. If left untreated, such negative consequences may result in maladaptive coping (e.g., self-medicating via substance abuse) and a host of further problems for victims, including revictimization (Turanovic & Pratt, 2014).

Anecdotal evidence suggests identity theft victimization also contributes to outcomes such as emotional distress (e.g., depression and anxiety), physical consequences (e.g., headaches and high blood pressure), and life disruption (e.g., missed time from work). Nonetheless, these identity theft victimization consequences have rarely been empirically examined. Guided largely by Agnew's (1992, 2001, 2002, 2006) general strain theory

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(GST), such consequences have been studied in other crime contexts, such as violence. Macmillan (2000) identifies four categories of violent victimization consequences: out-of-pocket expenses; lost wages and productivity; psychological trauma; and pain, suffering, and reduced quality of life. The consequences-of-victimization body of literature shows evidence of negative reactions experienced by victims of "street" crime, but the breadth of the literature is not sufficient and falls short in its examination of identity theft victimization. Greater empirical understanding of the consequences of identity theft will contribute to the literature base, and will also inform victim service providers with evidence-based strategies for developing effective treatments.

Although there is a considerable body of research on the short- and long-term consequences of victimization, the majority of this work focuses on violent crimes. Apart from documented financial losses and time spent restoring one's identity, little is known about the potential emotional and physical consequences experienced by identity theft victims. Falling victim to identity theft, particularly offenses that involve substantial monetary losses and/or criminal charges, has been equated to the distress felt by victims of personal crimes (Dadisho, 2005; Identity Theft Resource Center, 2014). Given the theoretically based, empirical literature documenting shared causal mechanisms across crime types, it stands to reason that the study of identity theft consequences can be informed by research on the consequences of violent victimization. Using data from the 2012 Identity Theft Supplement to the National Crime Victimization Survey (NCVS), the current study examines the emotional and physical consequences that may result from identity theft victimization. Before doing so, we first review the extant research on identity theft and postvictimization experiences in other crime contexts (i.e., violent offenses).

Identity theft research

Defining identity theft

Identity theft has been conceptualized in several different ways, and is often used interchangeably with identity fraud. This mingling of terms confuses the concept, however, which is actually more complicated: *theft* refers to the unlawful taking of information (e.g., personal account numbers or even tangible items such as credit cards or checkbooks) while *fraud* entails actually using the information to the perpetrator's benefit (e.g., to open a new account). While the majority of consumer-based frauds include direct communication between victim and offender as a necessary condition, identity theft is unique in that it typically does not entail any contact or relationship between victim and offender. Along these lines, it is not surprising that a recent panel of fraud victimization experts recommended keeping identity theft outside the realm of consumer fraud to avoid further conceptual confusion (Beals, DiLiema, & Deevy, 2015).

In the United States, knowledge about identity theft has been generated by two entities: government agencies and academic researchers. The former source includes the Bureau of Justice Statistics (BJS) and the Federal Trade Commission (FTC). Both federal agencies rely on similar operational definitions of identity theft. For example, the BJS's definition used in the NCVS defines identity theft as "the unauthorized use or attempted use of an existing account, such as a credit or debit card, checking, savings, telephone, online, or insurance account" (Harrell & Langton, 2013, p. 1). Similarly, the FTC operationalizes an

identity theft victim as "anyone whose existing accounts—either credit card accounts or non-credit card accounts, such as bank accounts, utility accounts, or telephone accounts—have been misused" (Anderson, 2005, p. 2). Crime and justice researchers have used similar definitions in studies of identity theft (Anderson, Durbin, & Salinger, 2008; Copes, Kerley, Huff, & Kane, 2010; Piquero et al., 2011; Reyns, 2013; Sharp, Shreve-Neiger, Fremouw, Kane, & Hutton, 2004). While the definitions articulated above include a wide variety of types of identity theft, 85% of identity theft involves the fraudulent use of an existing account (e.g., credit card and bank account; Harrel & Langton, 2013). In modern society, noncash transactions are becoming more common, further increasing the opportunity for identity theft victimization.

Predictors of identity theft

Much of the research on identity theft has focused on demographic characteristics that are associated with increased risk of victimization. For example, the BJS and FTC report that identity theft is most common among individuals between the ages of 25 and 64. After age 64, victimization decreases with age (Anderson, 2006; Harrell & Langton, 2013). Victimization also varies based on race. Those who do not identify as a single race (e.g., African American, Hispanic, Asian, or white) have slightly higher rates of victimization (Anderson, 2005; Harrell & Langton, 2013). These findings, however, should be interpreted cautiously because it is difficult to attribute the results to a single causal factor. For example, those who identify with more than one race often self-select into the "other" category, inflating the number of participants in the modal category (Anderson, 2005). Victimization risk does not significantly differ for men and women (Harrell & Langton, 2013).

More notable differences emerge when looking at marital status, income, location, and number of children. Family structure is important when assessing identity theft victimization risk due to the amount of time and attention available to catch fraudulent activity. Two-person-headed households and families with fewer than three children experience less victimization than single-parent households and households with three or more children. Additionally, those who live in Pacific states experience more victimization (Allison, Schuck, & Lersch, 2005; Anderson, 2005). Victimization also increases with income level: those who make over $75,000 annually experience higher rates of identity theft (Anderson, 2005; Harrell & Langton, 2013). While data from government agencies provides valuable descriptive information on identity theft, a weakness of this source is its lack of theoretical measures.

While not directly focused on identity theft victimization, there have been notable theoretical developments in the area of fraud victimization that can inform the study of identity theft. For example, consumers' routine activities and low self-control have been linked to increased rates of fraud victimization (Holtfreter, Reisig, & Pratt, 2008; Reisig & Holtfreter, 2013). Along these lines, a number of "risky" behaviors, such as responding to unsolicited e-mails, making purchases from nonreputable vendors, using credit cards on unsecured websites, and the like have been found to increase targeting by fraud perpetrators (Pratt, Holtfreter, & Reisig, 2010; Reisig, Pratt, & Holtfreter, 2009). Similar activities reflecting low levels of guardianship, such as media downloading and visiting unsecured online forums, have also been associated with identity-related crimes and other forms of online victimization (Reyns, 2013; Reyns, Henson, & Fisher, 2011; van Wilsem,

2013). Although these studies are an improvement on prior research given their strong theoretical base, they are somewhat limited in terms of generalizability due to a reliance on selective samples (e.g., college students).

Taking the linked theoretical perspective a step further, a recent study found that low self-control increased the likelihood of making a purchase in response to an unsolicited e-mail, and making such a purchase, in turn, significantly increased the probability of identity theft victimization (Holtfreter, Reisig, Pratt, & Holtfreter, 2015). In sum, while the literature has certainly begun to shed some light on the underlying causal mechanisms of identity theft, there have been few attempts to move beyond the offense itself. Put differently, with a few notable exceptions, little research examining the context of fraud and related crimes has considered the aftermath of the victimization event (Holtfreter, Van Slyke, & Blomberg, 2005; Walsh & Schram, 1980). As articulated in more detail below, the consequences of identity theft—much like violent crime—often linger beyond the event itself.

Strain theory and victimization

Social scientists have increasingly drawn on Agnew's (1992) general strain theory (Agnew, 2001, 2002, 2006) in examining the consequences of victimization. While Agnew's (1992) original theory examined the relationship between stressful life events (or strains) and maladaptive coping in the form of offending, subsequent research (Agnew, 2001, 2006) further clarified the role of negative emotions (e.g., anger and depression) as well as coping resources (e.g., social support and self-esteem) as potential mediators between the strain-offending relationship. In other words, strain may lead *directly* to offending (or analogous forms of negative coping, such as alcohol abuse), or it may occur *through* negative emotions. Within this theoretical framework, victimization—regardless of its specific form—can be conceptualized as a strain (Agnew, 2002). Similar to other negative life events, (e.g., loss of a job or partner), the strain of victimization produces negative emotions (e.g., anger, depression, and the like) and subsequently creates pressures for individuals to engage in coping strategies for "corrective action" (Agnew, 2006, p. 13).

To date, several studies have conceptualized victimization as a strain, applying GST in various national samples of adolescents. Researchers have tested the original strain-offending relationship as well as more elaborate models considering potential mediators (e.g., Hay & Evans, 2006). Agnew's (2002) research revealed that several types of victimization—actual, vicarious (i.e., knowledge of close friends being hurt), and even *anticipated* victimization—had strong effects on delinquency. Using data from the National Survey of Adolescents, Carson, Sullivan, Cochran, and Lersch (2008) also found support for GST in that early victimization predicted both the onset and frequency of drug use; the links between victimization and offending were only partially mediated by social bonds and negative emotions. Hay and Evans (2006) reported similar findings in their secondary analysis of two waves of data from the National Survey of Children. Specifically, their results indicated that strain in the form of early victimization predicted subsequent delinquency, even after controlling for prior delinquency. These relationships were partially mediated by anger, and the effects of victimization on delinquency were conditioned by a child's level of self-control. In a recent analysis of the connections between victimization, negative emotions, and offending, Turanovic and Pratt (2013) argued for the linkage

of GST and self-control theories as a means of understanding the causal pathways between victimization and offending. Consistent with GST as well as a growing body of literature (Carson et al., 2008; Hay & Evans, 2006; Turanovic & Pratt, 2013) the current study conceptualizes victimization as a strain. In fact, we suggest that identity theft victimization exhibits many of the qualities Agnew (2006) links to strains that are particularly *criminogenic*, i.e., most likely to lead to offending: it is often perceived as being *unjust* ("what did I do to deserve getting my personal information stolen and my credit ruined?" wonders the victim) as well as *high in magnitude* (knowing an offender has possession of something so personal as one's social security number invokes intense anxiety and fear).

Consequences of victimization

While little is known empirically about the consequences of identity theft, there is a growing body of research addressing the postvictimization outcomes of other types of crime, such as property and violence. Extending this research to the context of identity theft assumes that different forms of victimization share underlying causal mechanisms —a theoretical assumption that has been supported empirically (Pratt, Turanovic, Fox, & Wright, 2014; Turanovic & Pratt, 2013). Victims of violent offenses experience emotional troubles such as depression, shock, insecurity, anger, and fear (Agnew, 2002; Boney-McCoy & Finkelhor, 1995; Langton & Truman, 2014; Macmillan, 2001; Norris & Kaniasty, 1994; Shapland & Hall, 2007). In addition to emotional distress, victims of property crime not only lose their property, but also experience indirect losses, such as loss of wages due to time off work while recovering (Macmillan, 2000; Miller, Cohen, & Wiersema, 1996). Depression that follows the offense can also manifest itself in other negative emotional outcomes, including helplessness, lack of interest in daily activities, worthlessness, and lack of life satisfaction (Hoyl et al., 1999; Rinaldi et al., 2003; Strawbridge, Deleger, Roberts, & Kaplan, 2002). According to GST, similar postvictimization experiences would also extend to the context of identity theft; this remains an open empirical question.

Documented losses resulting from identity theft include financial and legal troubles that stem from restoring one's credit and protecting personal information. Compared to property offenses, identity theft, on average, tends to be more costly to the victim. The mean dollar amount lost for property offenses is $915 while the mean amount lost from identity theft is $2,183 (Harrell & Langton, 2013). Those who are victims of identity theft experience more than twice the amount of losses compared to those who fall victim to property offenses. In 2012, both direct and indirect losses were estimated at about $24.7 billion (Harrell & Langton, 2013). It is important to note, however, that banks and credit card companies are increasingly covering much of the financial loss associated with identity theft victimization (Synovate, 2007). About 14% of victims reported an out-of-pocket loss associated with their identity theft victimization, with a majority reporting a loss of less than $250 (Harrell & Langton, 2013). In addition to financial losses, identity theft can also be time consuming to resolve. On average, victims spend about 15–30 hours, often spread out over several years, resolving financial problems related to identity theft (Copes et al., 2010; Lynch, 2005; Slosarik, 2002). It is no surprise that the extensive postvictimization efforts to restore financial creditability and protect personal information likely take an emotional and physical toll.

Most available information identifying a broader variety of identity theft consequences is anecdotal in nature (Dashido, 2005). One exception is the work of Sharp and colleagues (2004), who investigated emotional and physical health outcomes in a sample of 37 identity theft victims recruited from police departments and victim service agencies in California, Michigan, Ohio, Pennsylvania, and Florida. The sample had a majority of female respondents (67.6%) ages 20–79. At two weeks after the crime, victims experienced irritation/anger (19%) and anxiety/fear (17%). Physically, victims experienced sleep problems (25%) and anxiety/nervousness (16%). At six months after the crime, victims self-reported irritation/anger (24%), distress (26%), anxiety/nervousness (35%), and gastrointestinal problems (19%). The Identity Theft Resource Center (ITRC) measured similar consequences experienced by identity theft victims (ITRC, 2014). The ITRC surveyed 201 victims of identity theft that sought assistance from the ITRC in 2013. They found that many respondents reported emotional and physical consequences following their victimization: fear for personal safety (69%), rage or anger (65%), feelings of betrayal (50%), sense of powerlessness or helplessness (50%), denial or disbelief (42%), shame or embarrassment (29%), sleep disturbance (40%), inability to concentrate (28%), feeling suicidal (6%), and frustration or annoyance (81%). The work by Sharp et al. (2004) and the ITRC (2014) provide some preliminary evidence to support the hypothesis that victims of identity theft experience emotional and physical problems, a result that is consistent with GST. Nonetheless, these findings are limited in that they are based on small samples and univariate statistics. Accordingly, these observed relationships warrant greater empirical investigation in a multivariate context. It is to that end we now turn.

Current focus

Guided in part by Agnew's (1992, 2001, 2006) theoretical framework, this study addresses a gap in current research related to the consequences of identity theft victimization. Specifically, the link between identity theft victimization and emotional and physical symptomology will be addressed. Past studies of identity theft have focused primarily on the financial and time-consuming consequences victims face; however, this does not tell the whole story. Keeping in mind that a complete test of GST is beyond the scope of the current research, recall that GST conceptualizes victimization—in its myriad forms—as one of many stressful life events that, in turn, produce negative emotional responses (Agnew, 2002). With the rapid growth of identity theft, understanding the consequences of victimization becomes increasingly important. It is expected that, similar to other crimes involving the violation of personal property, information, and trust, victims of identity theft will experience emotional and physical consequences, suggesting a need for professional support. In addressing these issues, this study will help shed light on the aftermath of identity theft victimization, one of the world's fastest-growing crimes.

Data and sample

The NCVS is administered by the BJS to gauge rates of victimization. The NCVS began in 1972 and is considered to be the largest dataset of victimization, impact, and offender characteristics. Historically, the main goal of the NCVS was to gain insight on the prevalence of crime and criminal victimization that might not be reported to police officials. Once selected, households remain in the sample for a span of three years.

Surveys are administered semiannually and reflect victimization that occurred during the previous six months. A total of seven surveys are given throughout a household's participation in the NCVS. The first survey is given in person followed by six telephone interviews every six months. The survey inquires about different types of victimization divided into two categories: personal crimes (e.g., rape, assault, and robbery) and household property crimes (e.g., burglary and motor vehicle theft).

Throughout its history, the NCVS has included several supplemental surveys to expand the scope of the types of victimization covered. Three different supplemental surveys have been administered. The School Crime Supplement (SCS) has been administered at five different stages: 1999, 2001, 2009, 2011, and 2013. In 2006 a Supplemental Victimization Survey (SVS) was administered to measure experiences of stalking and unwanted contact. The Identity Theft Supplement (ITS) is a supplemental component of the NCVS. Since identity theft is considered to be one of the fastest-growing crimes (Piquero et al., 2011), gathering information from victims of identity theft is imperative.

The current study uses the 2012 dataset, which is the second installment of the ITS (the previous installment was administered in 2008). This survey supplement is unique and has yet to be used by crime and justice researchers. The ITS survey is measured individually rather than as a household and had a 91.9% response rate. Put differently, in the greater NCVS study, a single respondent answers the survey on behalf of the household; however, the ITS survey is answered by the single respondent reflecting on their own personal experiences. If the individual respondent representing the household was over the age of 16, they were asked to participate in the ITS. The survey inquires about details from the respondent's experience with identity theft over the past 12 months. Of the respondents surveyed, 3,709 reported experiencing some form of identity theft in the past 12 months.[1] Following reports of identity theft victimization, respondents were asked to acknowledge any emotional and/or physical distress that arose as a consequence of their victimization. For example, respondents were asked if they experienced any emotional distress (e.g., anger, depression, anxiety) or any physical consequences (e.g., headaches, trouble sleeping, changes in eating habits) for a month or more following their identity theft victimization. Over 80% of respondents who experienced identity theft victimization reported experiencing emotional consequences. Additionally, over 21% of respondents experienced physical consequences following their identity theft victimization.

Measures

Dependent variables

Emotional consequences

The *emotional consequences* variable is a count variable constructed by summing the responses to 8 items. Respondents were asked to identify any emotional consequences they experienced for a month or longer following their most recent identity theft victimization. Respondents were asked to identify emotional consequences that were a direct result of their identity theft victimization. Consequences resulting from other forms of victimization were asked separately. Emotional consequences included feelings of "worry/anxiety," "anger," "depression," "vulnerability," "violation," "like you couldn't trust people," "unsafe," and "confused." These emotional consequences represent the emotional consequences

identified by the NCVS and are representative of emotional consequences used in previous studies (Identity Theft Resource Center, 2014; Sharp et al., 2004). The scale ranges from 0 to 8, with higher scores reflecting the experience of more emotional consequences. On average, respondents reported experiencing about 3 of the negative emotions following their victimization (mean = 3.03, SD = 2.13).

Physical consequences

Similarly, the *physical consequences* variable is a count variable of the responses to 7 items reflecting physical consequences following their identity theft victimization. Respondents were asked whether they had experienced any of the following physical consequences for a month or more after their most recent identity theft experience. These responses did not include physical consequences that may have been a result of other forms of victimization such as violent, property, or personal victimization. These physical consequences included headaches, trouble sleeping, changes in eating habits, upset stomach, fatigue, high blood pressure, and muscle tension or back pain. The physical consequences variable includes an extensive list of physical consequences including items used in previous studies (Identity Theft Resource Center, 2014; Sharp et al., 2004). The physical consequences summary measure ranges from 0 to 7, with higher scores representing a greater number of physical consequences experienced by the respondent (mean = 0.59, SD = 1.53).

Independent variables

The *Number of ID theft victimizations* variable is a combined measure taking into account the different types of identity theft that a respondent may have experienced in the past 12 months. This measure is a sum of yes/no responses to the following types of identity theft: "someone trying to use your checking or savings account," "someone using or attempting to use one of your existing credit cards," "someone misusing one of your existing accounts (e.g., telephone, utilities, PayPal, insurance, etc.)," "someone has used your personal information to open a new account," and "someone has used your personal information for fraudulent purposes (e.g., getting medical care, a job, government benefits, etc.)." A majority of respondents reported experiencing a single account of identity theft victimization over the past 12 months (1 = 87.65%, 2 = 10.84%, 3 = 1.27%, 4 = 0.22%, 5 = 0.03%). The scale ranges from 1 to 5 with higher scores representing a greater number of identity theft victimization experiences. Since this study focuses on the consequences of identity theft victimization, the sample includes only those who experienced some form of identity theft victimization in the past 12 months.

Control variables

Several known correlates of the consequences of victimization and demographic variables are included in the multivariate analyses to control for potential spuriousness. *Property victimization* is a 3-item scale that reflects whether individuals experienced property victimization during the past six months. Property victimization includes having something stolen, attempted break-in, and motor vehicle theft. Scores were dichotomously coded 1 (*yes*) and 0 (*no*). Additionally, violent victimization is controlled for. *Violent victimization* is a 3-item scale that measures violent victimization experiences. Variables

included assault by location, assault by type of assault, and being sexually assaulted. Scores are dichotomously coded 1 (*yes*) and 0 (*no*). These variables are included to control for harm that may result from being victimized outside of the scope of identity theft. For example, a respondent may be more likely to experience emotional or physical consequences following their identity theft victimization if they also experienced property or violent victimization. *Prior ID theft victimization* was included to control for the respondent's previous experience with identity theft victimization beyond the 12-month period focused on by the ITS. The variable is a count variable with scores ranging from 0 to 4. Finally, several demographic variables are included: *age* (the respondent's age in years), *male* (1 = male, 0 = female), *racial/ethnic minority* (1 = nonwhite, 0 = white, non-Hispanic), *education* (1 = none/kindergarten, 2 = elementary school, 3 = middle/high school, 4 = college, 5 = Master's degree, 6 = professional degree, 7 = doctoral degree), *married* (1 = married, 0 = single), and *income*[2] (1 = <$5,000, 2 = $5,000–7,499, 3 = $7,500–9,999, 4 = $10,000–12,499, 5 = $12,500–14,999, 6 = $15,000–17,499, 7 = $17,500–19,999, 8 = $20,000–24,999, 9 = $25,000–29,999, 10 = $30,000–34,999, 11 = $35,000–39,999, 12 = $40,000–49,999, 13 = $50,000–74,999, 14 = >$75,000). Descriptive statistics are provided in Table 1.

Analytic strategy

In the data file used for the analyses described below, approximately 39% of cell values were missing. Nonresponse is a common problem in survey research. Participants may choose not to answer several items, may inadvertently skip a question or two, or even refuse to answer a question because they don't like the wording. Regardless of the reasons for nonresponse, the result is the same in that it results in missing data. There are a variety of ways of handling missing data, ranging from the default "listwise deletion" option in most statistical software programs to the application of more sophisticated algorithms that allow the researcher to avoid the main drawback of listwise deletion, i.e., complete loss of a case and reduction of sample size. To address this problem in the current study, similar response pattern imputation (SRPI) in PRELIS version 2.30 was used to impute missing data (Scientific Software International, Chicago, IL). Also known as "hot decking," SRPI computes missing values by searching for other respondents—or donors—with similar response patterns; these similar response patterns are used to predict values for missing respondents. Compared to alternative imputation methods, SRPI has been validated as an appropriate method for handling missing data, and is widely used in social science (Andridge & Little, 2010; Gmel, 2001). Missing values were present in the dependent and control variables, creating sample sizes ranging from n = 740 to n = 1,242.[3]

The multivariate analyses proceed in several steps. First, emotional consequences are regressed onto levels of identity theft victimization and the control variables using negative binomial regression. Negative binomial regression is used due to the dependent variables being constructed as count variables. Second, prior identity theft victimization is incorporated into the model to control for previous victimization experiences. Third, emotional consequences are regressed onto the number of identity theft victimizations, violent victimizations, property victimizations, and control variables. Finally, a full model is evaluated by regressing emotional consequences onto levels of identity theft victimization, prior identity theft victimization, prior violent victimization, prior property

Table 1. Bivariate correlation for study variables.

		Mean	SD	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}
X_1	Emotional consequences	3.03	2.13	–												
X_2	Physical consequences	0.59	1.53	0.48***	–											
X_3	# of ID theft victimizations	1.14	0.40	0.17***	0.12***	–										
X_4	Prior ID theft victimization	1.06	0.49	0.29***	0.12***	0.12***	–									
X_5	Property victimization	0.10	0.33	0.15***	0.29***	0.12***	0.01	–								
X_6	Violent victimization	0.03	0.17	0.08**	0.09***	0.06***	−0.01	0.13***	–							
X_7	Amount lost	0.98	6.84	0.00***	0.04	0.04**	0.11***	−0.00	−0.00	–						
X_8	Age	49.28	15.23	0.86***	−0.02	−0.02	−0.02	−0.04*	−0.02	0.04*	–					
X_9	Male	0.16	–	−0.01	0.03	−0.00	0.01	−0.01	0.02	0.02	−0.16***	–				
X_{10}	Minority	0.13	–	0.10***	0.08**	−0.05**	−0.03	0.04*	0.01	0.00	−0.10***	0.02	–			
X_{11}	Education	3.03	0.81	−0.09***	−0.07**	0.03	−0.03	−0.03	0.00	0.04*	−0.10***	0.00	0.00	–		
X_{12}	Married	0.66	–	−0.09***	−0.11***	−0.03	−0.05	−0.03	−0.05**	−0.00	0.12***	−0.51***	−0.08***	0.01	–	
X_{13}	Income	12.45	2.64	−0.18***	−0.18***	−0.05**	−0.02	−0.10***	−0.05**	0.02	0.02	−0.07***	−0.11***	0.19***	0.33***	–

*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$ (two-tailed test)

victimization, and control variables. Several model diagnostics were run to rule out harmful collinearity and heteroskedasticity. The Breusch-Pagan test found evidence for heteroskedasticity (Breusch & Pagan, 1979). Robust standard errors were estimated to control for any potential biased standard errors. Zero-order correlations do not exceed 0.50, below the standard threshold of 0.70 (Licht, 1995).

Results

Table 1 provides an assessment of the bivariate correlations between study variables. The independent variables of interest are significantly associated with the key dependent variables in the positive direction. While the zero-order correlations do not exceed the standard cutoff of an absolute value of 0.40, additional diagnostics were conducted to further rule out issues of collinearity. The variance inflation factors (VIF) for the variables ranged from 1.02 to 1.47, which fall well below the standard threshold of 4.0 (Fox, 1991).

Negative binomial regressions were run to regress emotional consequences onto identity theft victimization and the control variables. Table 2 provides the analysis for the effects of victimization on emotional consequences. Model 1 demonstrates that identity theft victimizations were significant and positive ($p < 0.001$). The positive coefficient indicates that the more identity theft victimization a respondent experiences, higher levels of emotional consequences are experienced. Several control variables in the model were also significant. Age was significant and positive ($p < 0.001$), the amount lost was significant and positive ($p < 0.01$), and being nonwhite was also significant and positive ($p < 0.001$). Put differently, being of a minority race, experiencing greater losses related to the identity theft victimization, and being older are associated with greater emotional consequences following identity theft victimization. The findings with regard to amount lost are in the hypothesized direction. However, income ($p < 0.001$) and education ($p < 0.01$) were both significant and negative, suggesting that those who are better off in terms of socioeconomic status suffer less than their counterparts with limited resources. Additionally, marriage ($p < 0.01$) is also significant in the negative direction. To be sure, spouses are often vicariously victimized by identity theft given that they share credit history with the victim. In this regard, emotional symptoms might also be shared between spouses, resulting in the negative relationship observed here. Married victims may also simply have greater support than their single counterparts, an interpretation that is consistent with a larger body of stress-process literature suggesting that family members buffer individuals from harmful effects of trauma (Holtfreter, Reisig, & Turanovic, 2016, 2015; Pearlin, 1999).

Given the positive effect of victimization on emotional consequences, hypothetically we may expect to see a similar effect of *prior* identity theft victimization on the emotional consequences experienced by respondents. Put simply, if respondents experience higher levels of emotional consequences following their victimization, we could expect to see prior identity theft victimization exerting a similar effect on the respondent's emotional consequences. Model 2 includes prior victimization into the model predicting emotional consequences. As hypothesized, prior identity theft victimization has a significant positive effect on emotional consequences ($p < 0.001$); however, *recent* identity theft victimization (i.e., in the past 12 months) remains a significant predictor of emotional consequences ($p < 0.001$). Additionally, amount lost ($p < 0.01$), age ($p < 0.001$), and minority status

Table 2. Emotional consequences regression models.

	Emotional consequences[a]											
	Model 1 (n = 1,221)			Model 2 (n = 740)			Model 3 (n = 887)			Model 4 (n = 740)		
	b	SE	*z*-test	*b*	SE	*z*-test	*b*	SE	*z*-test	*b*	SE	*z*-test
# of ID theft victimizations	0.20	0.03	7.04***	0.20	0.03	6.06***	0.20	0.04	5.47***	0.17	0.03	5.12***
Prior ID theft victimization	–	–	–	0.31	0.05	6.45***	–	–	–	0.32	0.05	6.70***
Property victimization	–	–	–	–	–	–	0.17	0.06	3.02**	0.16	0.06	2.73**
Violent victimization	–	–	–	–	–	–	0.20	0.09	2.34*	0.18	0.10	1.87
Amount lost	0.00	0.00	2.90**	0.01	0.00	2.65**	0.01	0.00	2.56**	0.01	0.00	2.85**
Age	0.01	0.00	4.18***	0.01	0.00	3.47***	0.00	0.00	3.18***	0.01	0.00	3.42***
Male	−0.14	0.06	−2.19*	−0.13	0.08	−1.65	−0.12	0.07	−1.76	−0.12	0.08	−1.60
Minority	0.16	0.05	3.22***	0.15	0.06	2.42*	0.12	0.06	2.05*	0.14	0.06	2.26*
Education	−0.06	0.02	−2.52**	−0.03	0.03	−1.04	−0.04	0.03	−1.56	−0.03	0.03	−1.03
Married	−0.12	0.05	−2.57**	−0.09	0.06	−1.57	−0.13	0.05	−2.52**	−0.09	0.06	−1.52
Income	−0.03	0.01	−3.61***	−0.03	0.01	−3.72***	−0.02	0.01	−2.58**	−0.03	0.01	−3.50***
Constant	1.13	0.14	8.33***	0.72	0.18	4.08***	1.04	0.15	6.80***	0.69	0.17	3.99***
	Wald χ^2 = 143.09*** McFadden's R^2 = 0.02			Wald χ^2 = 148.88*** McFadden's R^2 = 0.04			Wald χ^2 = 70.81*** McFadden's R^2 = 0.03			Wald χ^2 = 170.62*** McFadden's R^2 = 0.04		
Likelihood-ratio test of alpha	89.77***			36.26***			99.89***			31.84***		

[a]Negative binomial regression model

*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$ (two-tailed test)

($p < 0.05$) persist as significant and positive predictors of emotional consequences. Income remains a significant negative predictor of emotional consequences ($p < 0.001$), suggesting that victims who are in a better position financially may be able to cope with the emotional burdens of identity theft better than those in lower income brackets. Put differently, being a victim of identity theft may be more devastating to an individual who is less financially stable than someone with a high amount of income.

Model 3 evaluates the effect of recent identity theft victimization while also controlling for recent property and violent victimization. When controlling for property and violent victimization, levels of identity theft victimization remain a significant predictor of emotional consequences ($p < 0.001$). Property victimization ($p < 0.01$) and violent victimization ($p < 0.05$) also reach statistical significance. Consistent with GST, these findings indicate that victimization of *any* kind results in negative emotional consequences. Several control variables remain significant in Model 3. Amount lost ($p < 0.01$), age ($p < 0.001$), and being nonwhite ($p < 0.05$) are also significant predictors of emotional consequences. Additionally, being married ($p < 0.01$) and income ($p < 0.01$) remain significant and negative. These findings are consistent with previous models.

Predictors of emotional consequences are slightly more conservative when the analysis consists of a more comprehensive model. Model 4 regresses emotional consequences onto levels of identity theft victimization, prior identity theft victimization, property victimization, violent victimization, and control variables. Recent identity theft victimization remains significant ($p < 0.001$). This finding indicates that net of control variables and other victimization, identity theft within the past 12 months is a significant predictor of emotional consequences experienced. Consistent with previous models, prior identity theft victimization ($p < 0.001$) and property victimization ($p < 0.01$) also reach statistical significance. Several control variables remain significant. Amount lost ($p < 0.01$), age ($p < 0.001$), and being nonwhite ($p < 0.05$) are all significant predictors of emotional consequences. Income, however, remains a significant negative predictor of emotional consequences ($p < 0.001$). This persistent finding suggests that those who have the financial capability to recover from identity theft experience fewer emotional consequences.

Similar patterns are revealed when looking at the effects of the variables on physical consequences. Model 1 in Table 3 shows that identity theft victimization has a significant positive effect on physical consequences experienced following victimization ($p < 0.001$). Put simply, as the number of identity theft victimizations increases, so too does the level of physical consequences. Several control variables also emerged as significant. Being married ($p < 0.01$) and income ($p < 0.001$) exerted significant *negative* effects on physical consequences of victimization, parallel to the findings observed for emotional consequences.

Model 2 controls for prior identity theft victimization in predicting physical consequences following identity theft victimization. Consistent with what is presented in Table 2, prior victimization is a significant predictor of experiencing physical consequences after identity theft ($p < 0.001$). Recent identity theft victimization remains a significant predictor of physical consequences ($p < 0.001$). Being of a minority race ($p < 0.05$) is also significant and positive. Consistent with Model 1, being married ($p < 0.01$) and income ($p < 0.001$) are significant and negative. As discussed previously, we suspect that the income measure is tapping into resource availability. Along these lines, an identity theft loss of $250 is not likely to put much of a damper on finances for an individual with an above-average income who has money in the bank. Comparatively, a

Table 3. Physical consequences regression models.

	Physical consequences[a]											
	Model 1 (n = 1,242)			Model 2 (n = 747)			Model 3 (n = 906)			Model 4 (n = 747)		
	b	SE	*z*-test	*b*	SE	*z*-test	*b*	SE	*z*-test	*b*	SE	*z*-test
# of ID theft victimizations	0.33	0.10	3.30***	0.46	0.14	3.43***	0.44	0.13	3.43***	0.47	0.15	3.08**
Prior ID theft victimization	–	–	–	0.60	0.17	3.43***	–	–	–	0.55	0.15	3.57***
Property victimization	–	–	–	–	–	–	1.69	0.20	8.35***	1.41	0.26	5.39***
Violent victimization	–	–	–	–	–	–	0.77	0.26	2.95**	0.55	0.37	1.49
Amount lost	0.01	0.01	0.99	0.03	0.02	1.24	0.01	0.01	1.39	0.02	0.01	1.24
Age	0.00	0.01	0.66	0.01	0.01	0.67	0.01	0.01	1.45	0.01	0.01	1.58
Male	−0.01	0.22	0.04	−0.22	0.28	−0.76	−0.00	0.25	−0.01	−0.04	0.29	−0.13
Minority	0.20	0.19	1.05	0.51	0.25	2.04*	0.21	0.22	0.97	0.42	0.25	1.71
Education	−0.20	0.10	−1.91	−0.14	0.13	−1.10	−0.19	0.12	−1.64	−0.18	0.13	−1.38
Married	−0.45	0.17	−2.61**	−0.47	0.23	−2.02*	−0.59	0.20	−2.96**	−0.57	0.23	−2.50**
Income	−0.09	0.02	−4.01***	−0.12	0.03	−3.82***	−0.10	0.03	−3.78***	−0.13	0.03	−4.18***
Constant	0.65	0.52	1.26	−0.24	0.73	−0.33	−0.12	0.57	−0.20	−0.67	0.66	−1.01
	Wald χ^2 = 124.53*** McFadden's R^2 = 0.02			Wald χ^2 = 72.94*** McFadden's R^2 = 0.04			Wald χ^2 = 130.76*** McFadden's R^2 = 0.05			Wald χ^2 = 150.55*** McFadden's R^2 = 0.07		
Likelihood-ratio test of alpha	1047.35***			487.88***			762.93***			439.40***		

[a]Negative binomial regression model

*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$ (two-tailed test)

victim living paycheck to paycheck who experiences the same loss may be hit by added financial burdens (e.g., the inability to pay rent), thus increasing negative consequences. With regard to marriage, a spouse can provide social, emotional, and instrumental support in the aftermath of identity theft, and by doing so, help lessen the impact of victimization on physical symptomology (Arias, Lyons, & Street, 1997; Choenaron, Williams, & Hagerty, 2005; Evans, Steel, Watkins, & DiLillo, 2014; Thoits, 1995).

Model 3 evaluates the influence of property and violent victimization on physical consequences experienced after identity theft victimization. Property victimization ($p < 0.001$) and violent victimization ($p < 0.01$) both serve as significant predictors of physical consequences. Identity theft victimization continues to remain statistically significant ($p < 0.001$). Consistent with the previous two models, being married ($p < 0.01$) and income ($p < 0.001$) remain significant and negative predictors. Similar to what was found for emotional consequences, being married may provide emotional support that reduces physical consequences experienced. Similarly, those who have more capacity to absorb losses may be more financially able to recover from identity theft victimization.

Model 4 provides a comprehensive evaluation of the predictors of physical consequences following identity theft victimization. Consistent with the previous models, recent identity theft victimization ($p < 0.01$) and prior identity theft victimization ($p < 0.001$) are both predictors of physical consequences. Property victimization ($p < 0.001$) is significant, while violent victimization fails to reach statistical significance. Again, consistent with the previous models, being married ($p < 0.01$) and income ($p < 0.001$) remain and negative. The amount lost, however, is not a significant predictor of physical consequences; this may be due to the fact that much of the financial burden of identity theft is placed on banks and credit card companies as opposed to the victim (Synovate, 2007). In other words, prompt handling of identity theft cases, such as crediting the victim's account for fraudulent charges, may help reduce the long-term impacts of victimization.

Discussion

Identity theft researchers have moved beyond demographic predictors by incorporating much-needed theoretical insight into the factors and circumstances that increase risk of victimization. For example, the integrated routine activity/lifestyle theory—a perspective that has received considerable empirical support in other victimization contexts (e.g., violence)—has also been used to explain identity theft and other fraud-based forms of victimization (Holtfreter, Reisig, & Pratt, 2008; Holtfreter, Reisig, Pratt, & Holtfreter, 2015; Reisig et al., 2009; Turanovic, Reisig, & Pratt, 2015; van Wilsem, 2013). Drawing on GST, the purpose of the current study was to move beyond the prediction of identity theft victimization itself to gain understanding of the aftermath of this crime. Toward that end, the results presented here suggest some important considerations for theory, future research, and policy directed toward the growing population of identity theft victims.

Much like what has been reported for other forms of crime, such as bullying and violence, the consequences of identity theft extend beyond financial losses and also include considerable emotional and physical symptoms. The relationships we observed are consistent with anecdotal evidence documenting the distress involved in recovering from identity theft, such as restoring one's credit and protecting personal information from a future attack (Dadisho, 2005). The results also lend some empirical support to GST in that identity theft

victimization can be conceived of as a stressor that results in a host of negative emotions such as depression and anxiety (Agnew, 2006). In doing so, this research adds to the body of evidence demonstrating a link between stressful life events and negative emotionality, and also speaks to the importance of considering negative physical consequences as a component of the GST model. Documenting these relationships is but a first step in understanding the complex chain of events that follows victimization.

Along those lines, is important to acknowledge that our secondary data only permitted us to examine a part of this puzzle: the physical and emotional health symptoms experienced by identity theft victims. Building on the current study, future research might consider the remainder of the equation within the GST model; that is, the victim's *response* to negative emotional and physical consequences. How victims handle these consequences remains an open empirical question. Consistent with GST, the stress created by experiencing identity theft may produce pressure for corrective action. To the extent that access to positive coping is limited, some victims may engage in a variety of maladaptive forms of coping, such as substance abuse, as a means of alleviating a negative emotional state (Agnew, 2006; Turanovic & Pratt, 2014). It is important to note, however, that the same factors that initially increase victimization risk, such as low self-control, may also influence coping behaviors (Pratt et al., 2014; Turanovic & Pratt, 2014). While measures of self-control were not available in the NCVS data, future studies should address the impact of self-control on maladaptive coping in response to identity theft victimization. Indeed, recent work on violent victimization suggests that linking self-control and strain theories will go a long way toward bridging existing gaps in the causal pathways between victimization and offending (Turanovic & Pratt, 2013).

Coping with strain is also largely influenced by the availability of social support from friends, family, and others in one's social network (Thoits, 1995). In that vein, we found that being married was associated with fewer negative consequences. Future work examining the responses to negative emotional and physical symptomology among identity theft victims would thus benefit from attention not just to measures of the presence of friends and family, but also to the quality of those relationships. Toward that end, efforts to further untangle the processes and mechanisms involved in coping with identity theft would be a welcome addition to the literature. Taken with the results of the current study, such efforts would contribute to theory and could also inform treatment strategies (e.g., promoting prosocial ways of coping) for victim service providers. Our findings demonstrate that the outcomes of identity theft are more than just financial, as reflected by both emotional and physical consequences. Accordingly, criminal justice system officials working with identity theft victims should be aware of these consequences so they can direct victims to programs and services designed to address the emotional and physical aftermath. Due to data limitations, the current study was not able to include any measures of victim treatment (e.g., individual counseling, group therapy, or other resources) that may have been accessed by participants. Future work in this area should examine availability and use of mental and physical health services among identity theft victims, and ultimately the effectiveness of these services in reducing emotional and physical symptomology. Such efforts would help providers determine whether existing, "general" treatment modalities (e.g., cognitive behavioral theory) can be applied to identity theft victims, or whether specialized, crime-specific programs and services are warranted.

In the end, this research highlights the importance of moving beyond the prediction of victimization itself to the broader, nonfinancial indicators of victim harm in the form of emotional and physical symptomology. Although such efforts are common in other victimization contexts (e.g., violence), the current study is just one of a handful of studies addressing the repercussions stemming from identity theft victimization. In doing so, this work contributes to the increasing body of literature on the consequences of victimization. While it is often assumed that fraud-related crimes like identity theft are not "as serious" as violent crimes, the level and types of harm experienced by victims certainly do not suggest that to be the case. While this study has identified some previously unexplored consequences of identity theft, there is still much to learn to better serve its victims.

Notes

1. We are aware that the sample used here is whittled down significantly from those originally included in the household-level NCVS. This raises possible concerns about bias in our estimates—namely, that respondents who completed the ITS are unique from those who completed other portions of the interview or who did not complete the study at all. These concerns are lessened by the knowledge that the original researchers found little or no bias stemming from nonresponse in the ITS estimates (Harrell & Langton, 2013).
2. The NCVS measures *income* as a categorical variable rather than a continuous variable.
3. Analyses run prior to imputation produced results identical to the analyses run following imputation; therefore, biased results as a product of imputation are unlikely.

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