

ABSTRACT

Title of thesis: PATHWAYS TO ASSISTANCE FOR VICTIMS OF
INTIMATE PARTNER VIOLENCE

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Efforts to understand disclosure of abuse for victims of intimate partner violence have largely focused on characteristics of disclosure rather than the consequences of disclosure. Past research has found that disclosure of abuse to formal and informal sources of support is common among victims of intimate partner violence (Fanslow & Robinson, 2010), however little research exists that attempts to explain the effect that disclosure has on a victim's ability to survive abuse. This thesis draws upon arguments from Edward Gondolf's survivor theory (Edwards & Gondolf, 1988) and contends that the act of disclosing is an important step in seeking help from public services in order to escape or reduce abuse. It posits that the effect of disclosure of abuse varies across a number of characteristics. Using National Intimate Partner and Sexual Violence Survey data, this thesis finds that the effect of disclosure on the likelihood that a victim receives needed services varies across type of support to whom the victim discloses, type of service needed, and seriousness of violence.

PATHWAYS TO ASSISTANCE FOR VICTIMS OF INTIMATE PARTNER
VIOLENCE

by

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Chapter 1. Introduction

Beginning in the 1970's, with the era of women's liberation, intimate partner violence gained increased attention as a serious epidemic in the United States. Violence was no longer hidden behind closed doors, but rather thrust onto the main stage, as evidenced by the numerous lawsuits brought by women's groups that prompted implementation of mandatory arrest policies in cases of domestic violence (National Institute of Justice, 2008). These events reverberated in the scholarly community as researchers attempted to explain various aspects of abuse, from the causes and prevalence of violence, to a victim's decision to report the abuse to both formal sources, such as police, doctors, and counselors, as well as to informal sources of support such as family and friends.

Though the rates of intimate partner violence declined dramatically in the mid-1990s (Rennison & Welchans, 2000), the rate of intimate partner victimization remains alarmingly high, according to current national survey data. Results from the National Intimate Partner and Sexual Violence Survey shows that 25% of men and 33% of women experience some type of intimate partner violence in his or her lifetime (Breiding, Chen & Black, 2014). In an analysis of National Criminal Victimization Survey data collected between 2003 and 2012, intimate partner violence accounted for a fifth of all non-fatal violent victimizations (Morgan & Truman, 2014). This type of victimization occurs across race, gender, social class, and sexual orientation (Bograd, 1999; Rennison, 2001; Rennison & Planty, 2003; Straus, 1977; Tjaden & Thoennes, 2000), and carries severe negative implications for victims' physical and psychological health (Coker, Davis, Arias, Desai, Sanderson, Brandt & Smith, 2002; Coker, Smith, Bethea, King, McKeown, 2000; Plichta, 1996).

While most commonly associated with physical injury, the negative impacts of intimate partner violence are wide-ranging; affecting all aspects of victims' lives. Abuse takes a serious toll on the mental health of victims. Coker et al. (2002) found that for both male and female victims of physical and psychological abuse, intimate partner violence is correlated with depressive symptoms, substance use, and chronic mental illness. Golding, in a meta-analysis of studies of mental health and intimate partner violence, found that the risk for posttraumatic stress disorder and depression was higher among victims of IPV than among victims of childhood sexual assault (Golding, 1999). A study in Canada found abused women have a higher likelihood of anxiety, insomnia, and social dysfunction than women who have not been abused (Ratner, 1993).

Countless resources are available to victims of intimate partner violence to help them escape abuse, including, but not limited to, shelters, medical services, financial support, childcare, legal aid, and counseling (National Coalition Against Domestic Violence, 2014). As of 2013, nearly 2,000 programs aimed at assisting victims of domestic violence were operating in the United States, offering emergency shelter, children's advocacy, legal assistance, transitional housing, and job training (National Network to End Domestic Violence, 2013). However, a population-based study of South Carolina residents found that despite the wide array of services available to victims of intimate partner violence, only about 10% of female victims receive help from shelters (Coker, Derrick, Lumpkin, Aldrich & Oldendick, 2000). In concordance with these findings, the National Intimate Partner and Sexual Violence Survey found that of those who report a need for services, only 49% of female victims and 33% of male victims actually receive services (Breiding, Chen & Black, 2014). Despite their availability and

established importance, these social, medical, and legal services can only assist if victims choose to use them, and existing evidence has repeatedly shown that these services are chronically underused (Henning & Klesges, 2002). Thus, the most essential step in a victim's process to obtain needed services is to seek help from them. Yet, the path to formal help is not necessarily always a direct one. Victims may not turn to formal services such as shelters, police, or doctors for help first, if at all. A 2010 study of women in New Zealand found that of those who experience abuse, only 6% disclose their abuse exclusively to formal supports such as police and health care providers. Yet, 58% of the women in the sample disclosed their abuse exclusively to informal supports such as friends and family (Fanslow & Robinson, 2010). Perhaps disclosure of abuse to informal support is simply a first step in receiving formal help.

Research suggests that victims who get informal support from family and friends are more likely to access services that ultimately help them reduce their exposure to violence. In a study of victim resources in rural communities in Kansas with a sample of 56 female survivors of intimate partner violence, Bosch and Bergen (2006) found that supportive responses from informal supports are associated with better access to resources and ultimately reduced long-term abuse. The simple act of disclosing abuse to another person is only one step in the process of seeking help- the person to whom a victim discloses must also be willing and able to provide help. Fanslow and Robinson (2010) found that of the women who disclosed their abuse to another person, 40% reported that nobody tried to help them. If victims are not guaranteed help when they disclose their situation to another person, do their chances improve if they disclose to a

variety of different people? No empirical research exists that examines the likelihood that a victim receives needed public services after disclosure.

This thesis addresses this gap in the literature, and assesses whether the likelihood of receiving needed services varies as a function of the breadth and diversity of a victim's support network, support type, violence type, and the services needed. The findings from this thesis point to the importance of disclosing to a variety of supports in determining whether a victim receives needed social, medical and legal services, using the National Intimate Partner and Sexual Violence Survey (NISVS) data, collected by the Centers for Disease Control. I use logistic regression to evaluate the impact of the various characteristics of a victim's disclosure on whether victims get the help they need.

Chapter 2. Helpless Victims or Survivors?

Two primary goals of services directed toward victims of intimate partner violence are to aid victims in their recovery and to reduce their exposure to continued violence, largely by providing the opportunities and tools necessary to leave the abusive relationship (The National Center on Domestic and Sexual Violence, 2007; The National Domestic Violence Hotline, 2015). However, services available to victims of intimate partner violence are unable to provide help if the victim fails to make any attempts to use them. This question of why some victims leave and others stay in abusive situations led to two theories that focused on victims' help-seeking behavior. Learned helplessness theory argues that victims stay in abusive relationships because they have been conditioned to feel that they deserve the abuse, and thus experience anxiety and depression. Because of this, victims do not seek help from informal or formal sources (Walker, 1979). Empirical findings, however, show that victims' experiences are inconsistent with the expectations of this theory. Survivor theory is more aligned with victims' experiences, by arguing that victims stay in abusive relationships because their attempts to seek help are unmet by willing support (Gondolf & Fisher, 1988).

2.1 Learned Helplessness Theory

Martin Seligman's psychological theory of learned helplessness (1972) was born out of a series of experiments in which Seligman and his colleagues administered intermittent shocks to dogs that were initially prevented from escaping. They found that after a time, the dogs were unwilling to attempt to escape even when a perfectly safe escape route was made available to them. Seligman later replicated these tests on a number of different species, finding similar reactions each time. He hypothesized that

when a negative stimulus is introduced, and an individual is forced to withstand it without opportunity to escape, the individual fails to learn that escape is possible. Instead, they attribute the negative stimulus to an external cause that is beyond their control (Abramson, Seligman & Teasdale, 1978). Learned helplessness was tested on humans in an experiment using a loud noise as the negative stimulus. It found that subjects who were not given the option to turn off the loud noise when it was first presented were less likely to turn off the noise when that option was finally presented, compared to those who were given the option to turn it off from the start of the experiment (Hiroto, 1974). In an elaboration on Hiroto's initial experiment, Seligman and Hiroto find that when individuals are initially exposed to a loud inescapable noise, their subsequent ability to problem-solve in order to escape this noise diminishes (Hiroto & Seligman, 1975). They argue that this diminished ability is due to a perceptual disconnect between the cause of the noise and the action that stops it. Seligman also points to prisoners of war and political detainees as naturally occurring evidence of learned helplessness among humans, highlighting their failure to make attempts to escape their detainment. Lenore Walker's battered person syndrome (more commonly referred to as learned helplessness), adapts Seligman's theory to explain the mindset of women experiencing intimate partner violence, and identifies battered person syndrome as a form of post-traumatic stress disorder. Learned helplessness, detailed in 'The Battered Woman' (Walker, 1979), posits that women who experience intimate partner violence become submissive and fall into depression. She argues that when this occurs, victims become reclusive and withdrawn from others, and this self-imposed isolation keeps them from reaching out for help. The theory further posits that being trapped in this cycle of intermittent reinforcement of

violence causes some women to tolerate and eventually feel that they deserve the abuse. Because of this, they are less likely to seek help, and even when victims are presented with opportunities to escape their abuser, they are unwilling to leave.

Walker makes bold assumptions about the applicability of Seligman's findings to battered women, as the generalizability is questionable and evidence is inconsistent. Seligman's own empirical studies of learned helplessness in humans primarily examine the effects of noise, rather than the effect of physical harm on attempts to escape or seek help (Hiroto, 1974; Hiroto & Seligman, 1975; Maier & Seligman, 1976). Walker's assertion that these findings can be translated into an explanation of battered women's inability or unwillingness to escape physical violence is tenuous, as it disregards the serious and potentially enduring negative physical and psychological effects of intimate partner violence and equates this trauma with temporary auditory discomfort. It is problematic to accept the human examples that Seligman provides and use them as the foundation for a theory that explains one aspect of personal, isolated violence.

Tests of learned helplessness in battered women have produced little empirical support for the theory's predictions about help-seeking behaviors. Support shows that depression and abuse are comorbid (Campbell, Sullivan, & Davidson, 1995; Cascardi & O'Leary, 1992; Stein & Kennedy, 2001), but assertions beyond this relationship, particularly those that point to victims' acceptance of abuse and unwillingness to seek help, are unfounded. However, when the scope of help-seeking is extended from purely formal help-seeking from public institutions such as shelters, police, or medical professionals to help-seeking from informal sources (including family and friends),

evidence shows that victims of intimate partner violence overwhelmingly choose to seek help from informal sources (Ansara & Hindin, 2010; Fanslow & Robinson, 2010). A qualitative study of shelter residents found that when battered women view themselves as survivors, attempts to escape increase, and identifying as a survivor is the result of a woman's constant reappraisal as her abuse escalates (Mills, 1985). While this study contradicts learned helplessness, the bias of the sample makes it an unfair comparison. In order to be in the sample, the "survivors" needed to successfully seek help from a domestic violence shelter. Those who have learned to be helpless would not have made it into the sample. Another qualitative study of self-identified battered women similarly found that once a victim realizes that her abuser is at fault, she attempts to find safety and escape (Frieze, Knoble, Washburn & Zomnir, 1980). This sample included both men and women living in shelters, though the findings still suffer from sample selection problems as all victims included in the sample successfully sought help. An analysis of Canadian General Social Survey data from a representative community sample found that help seeking behaviors are quite prevalent among those who have experienced intimate partner violence, with 66% of respondents having disclosed to informal supports, and 40% of respondents having disclosed to formal supports (Du Mont, Forte, Cohen, Hyman, & Romans, 2005). These studies consistently refute the claims of learned helplessness theory regarding victim disclosure behaviors, repeatedly finding that victims often make active efforts to escape abuse. It is important to note that there is a possibility that a subset of victims have learned to be helpless, and thus deny ever having been abused. Although this is not supported in the research, it is possible that this group exists and is unobservable.

2.2 Survivor Theory

After noting that empirical studies of disclosure behavior repeatedly found that victims of intimate partner violence do attempt to seek help from outside sources, Edward Gondolf proposed a new theory as a counterargument to Walker's learned helplessness. 'Battered Women as Survivors' (Gondolf & Fisher, 1988) outlines survivor theory, which argues that rather than taking a passive role in their survival as learned helplessness would suggest, women in abusive situations take an active role by disclosing to others in the attempt to obtain services. The theory argues that women who choose to stay with their abusive partners do so because they have tried to leave before and failed, rather than because of submissiveness. It also posits that as violence escalates, help seeking behaviors actually increase. However fear, past failed attempts at leaving, and lack of knowledge of resources can make victims wary of attempting to leave. Additionally, subsequent research shows that when victims are unable to obtain needed resources, the risk of escalated violence increases. Angela Browne (1987) found that when abused women seek help to leave an abusive relationship and this help is ineffective, they sometimes kill their abuser in order to get away.

Specifically, Gondolf argues that the reason victims are unable to escape abuse is that when victims do attempt to seek help by trying to obtain community services, those to whom they turn are often unable to provide help. He explains that this is because the providers of these services tend to suffer from limited funding, insufficient authority, and other administrative obstacles. Gondolf makes the claim that helper's responses to victims may be just as wavering as the victim's requests for help, which makes the

chance that a victim receives needed services, and is therefore aided in escaping abuse, unlikely. Research has further suggested that individuals who are unmarried are less likely to obtain needed services. Explanations for this finding have speculated that service providers may tend to discount the needs of unmarried victims (Dugan, Nagin & Rosenfeld, 2003a; Dugan, Nagin & Rosenfeld, 2003b). However, by the same token, survivor theory asserts that when community services are more readily available, victims are less likely to remain in, or return to, abusive relationships. This reasoning would suggest that the act of telling another person about victimization is insufficient. The person in whom the victim confides must be willing and able to assist the victim in order to increase the likelihood that the victim receives the help he or she needs. If the person from whom the victim initially seeks help is unwilling or unable to assist, the victim must then disclose to another individual—perhaps someone with a different skill set—in order to obtain the needed help.

As survivor theory was developed to explain the empirical findings of tests of learned helplessness, there is great empirical support for the theory's claims (Gondolf & Fisher, 1988; Frieze et al., 1980; Mills, 1985; Okun, 1986). It is important to note that evidence shows that some women use services multiple times, but then return to their abuser. Though much of intimate partner violence research assumes that the preferred outcome is for the victim to leave his or her abuser, this fails to account for victims who leave their partner and later return. A longitudinal study of battered women's wellbeing over the course of a year found that those who leave abusive relationships and do not return and those who stay in abusive relationships for the entirety of the study showed similar outcomes, while women who leave and then return fared worse (Bell, Goodman

& Dutton, 2007). Farmer and Tiefenthaler (1996) argue that this indicates multiple pathways through which receipt of services can operate. The first, in line with survivor theory, posits that when victims receive needed services, they will leave the abusive relationship. The second occurs when a victim receives needed services but returns to the abuser. Farmer and Tiefenthaler claim that this second pathway indicates a different kind of success rather than a failure. The receipt of services represents signals of threat points to their abuser. In other words, the victim uses seeking out and receiving services as a bargaining chip signaling to his or her partner that the abuse has passed the point at which it is still tolerable. In these cases, the conditions to which the victim returns may actually be better, and the victim's life may, in fact, improve.

Given that these two theories are at odds with one another, it is understandable that the solutions they offer also conflict. Learned helplessness theory proposes that, above all, victims of intimate partner violence need psychological treatment to improve their poor self-esteem and depression, and suggests the use of cognitive therapy interventions. Survival theory, instead, argues that victims of domestic violence need access to community resources that will help them escape their abuser. Both theories argue in favor of social services for victims of intimate partner violence; however, the ways in which each theory proposes that victims obtain these services are very different. Learned helplessness suggests that an intervention must be made on behalf of the victim, as they are unlikely to seek help on their own. This is attributed to the depression that characterizes learned helplessness. Conversely, survivor theory argues that victims do act as their own advocates by reaching out to others (whether formal or informal "others") for help in obtaining services.

2.3 Characteristics of Disclosure

Though it is exceedingly common for victims to disclose their abuse to another person, the characteristics of this disclosure can vary from victim to victim. Disclosure is commonly broken down into formal versus informal disclosure, where formal disclosure refers to when victims tell another person about their abuse because of the other person's profession (police, medical professional, etc.). Informal disclosure typically refers to when a victim tells a person with whom they have a personal relationship, such as a friend or family member, about his or her victimization. There is a large disparity between the prevalence of formal disclosure and the prevalence of informal disclosure. Most intimate partner violence incidents are not reported to police (Fanslow & Robinson, 2010; Felson & Paré, 2005; Klein, 2009; Langan & Innes, 1986). Research shows that the majority of victims do, in fact, make active efforts to seek help through disclosure, however they are more likely to turn to informal supports for help rather than formal sources of support (Fanslow & Robinson, 2010; Ansara & Hindin, 2010).

Though formal disclosure is somewhat rare among victims of intimate partner violence, informal disclosure is very common. More than 75% of victims report disclosing their abuse to an informal support (Ansara & Hindin, 2010; Breiding, Chen & Black, 2014; Dunham & Senn, 2000; Edwards, Dardis & Gidycz, 2012). Only 40% of those who disclosed to an informal support also disclosed to a formal support, such as a law enforcement officer or medical professional (Ansara & Hindin, 2010; Barrett & St. Pierre, 2011). Research has also found that among those who disclose their experiences of intimate partner violence, 58% of victims choose to disclose only to informal supports

while 6% choose to disclose only to formal supports (Fanslow & Robinson, 2010). These findings highlight the importance of informal supports. They are frequently the only people to whom the victim discloses the abuse, and as such are often the only ones in the a position to help victims in a direct, meaningful way. Their actions and reactions have the potential to significantly impact a victim's survival.

2.4 Disclosure and Formal Services

The impact that disclosure has on victims' wellbeing varies depending on the person to whom the victim discloses. Research shows that both formal and informal supports can protect victims from future abuse (Bell & Goodman, 2001; Goodman, Dutton, Weinfurt, & Vankos, 2005; Sullivan & Bybee, 1999). However, as discussed earlier, the act of disclosing to a formal or informal support is insufficient in securing resources for a victim—the person to whom the victim discloses must be willing and able to provide help. Victims report that it is most helpful when informal supports provide suggestions or advice when the advice is sought, without pressuring or expressing anger with or disappointment in the victim's choices (Edwards, Dardis & Gidycz, 2012; Lempert, 1997). There is, however, no clear evidence of the specific role that formal or informal supports play in helping victims obtain service, and most research on informal support focuses on the emotional wellbeing of the victim.

Survivor theory argues that the obstacle to escaping abuse is the inability to obtain needed services. Most studies of service obtainment focus on help provided by formal supports. An evaluation of an experimental community-based advocacy program by Sullivan and Bybee (1999) found that when women worked with advocates (individuals

trained to provide both informational help and emotional support) after leaving domestic violence shelters, they experienced a number of positive outcomes, including reduced levels of physical violence and greater ease in obtaining resources.¹ Building on this research, Bosch and Bergen, in a 2006 qualitative study of 56 rural women who had been victims of intimate partner violence, found that when women have access to informational support they are more likely to be able to escape the abuse. These findings confirm that victims are more likely to obtain needed services when they have others helping them by providing clear, guided information.

The likelihood of a victim disclosing to a support who responds in a helpful manner is theoretically increased with each additional support to whom he or she discloses. Given that the likelihood of receiving needed services increases when victims receive a helpful response from their support, the argument can be made that an increase in the number of individuals to whom abuse is disclosed will, in turn, increase the likelihood that victims receive the services they need. Because so many victims choose to disclose their abuse and relatively few are able to obtain needed services, disclosure appears to be the most underutilized yet most potentially meaningful event in victims' attempts to leave abusive relationships. However, the effect of disclosure on receiving needed services is likely to vary between types of support to whom a victim discloses, because different types of individuals are equipped with different skillsets and abilities to help the victim, as well as varying levels of investment in the victim's wellbeing. This thesis tests whether victims with more diverse disclosure practices are more likely to get the services they need.

¹ In this study, the measure of resources incorporated a number of different resources, including goods and services, health care, and legal assistance.

2.5 Hypotheses

Stemming from the above theoretical argument, this thesis aims to test whether victims are equally likely to obtain needed services following disclosure to different types of support, or whether this likelihood varies as a function of support type, services needed, and victimization characteristics. As a guide for the hypotheses I assume that help received follows a binomial process and each type of disclosure is a trial that may or may not result in receiving help. Under this assumption, the probability of help received (π) is equal across disclosure types, which may or may not be reasonable.

H1. A victim's disclosure to a more diverse support network will be related to an increased likelihood of receiving needed services.

This hypothesis represents the naïve model, in which the probability of receiving services is assumed to be constant across disclosure types. Under this assumption, each additional disclosure to a different type of support would increase the probability that a victim receives needed services, regardless of the characteristics of the disclosure, the victimization, or the type of service needed.

H2: Disclosure to formal support will have a larger influence on likelihood of receiving services than disclosure to informal support.

Though victims are more likely to disclose to an informal support than a formal support, an argument can be made that formal supports are in a better position to provide needed services, as they are more likely to be trained in how to aid victims and about the services available to victims. Here, I relax the assumption that π is equal across disclosure types, and test to see if the effect for formal exposure is greater than that for informal.

H3: Disclosure to relevant supports will influence likelihood of receiving services based on type of service needed.

It may be the case that some individuals are better equipped to provide needed services than others. For example, disclosure to a medical professional should have a greater impact on a victim's ability to obtain needed medical services than disclosure to a friend. In testing this hypothesis, I relax the assumption that π is equal across both disclosure types and service types, and test to see if the effect for disclosure to specific support types is greater when the support is able to directly help the victim.

H4: Disclosure to both formal and informal support will have a greater influence on likelihood of receiving services when violence is more severe.

If a victim is experiencing severe physical violence, a support may be more likely to take their request for help more seriously, and make active efforts to aid them. Thus, in this hypothesis, I allow π to vary across victims based on the seriousness of the violence.

Chapter 3. Data

To test the above hypotheses, this thesis uses data from the National Intimate Partner and Sexual Violence Survey (NISVS), a national victimization survey conducted by The Centers for Disease Control from January 2010 through December 2010. These data are unique for including both male and female victims and a comprehensive level of detail describing victims' interactions with all former and current abusive partners, which allows analysis of factors specific to both victims and perpetrators. The following section describes how data were collected and how the final sample was selected for this thesis. It also describes how the variables used in analysis were operationalized.

Respondents were selected using random digit dialing software to implement a dual-frame sampling strategy that includes both landline and cell phone numbers. The NISVS dataset includes data collected from 18,957 respondents,² of which 1,869 were included in the analysis for this thesis. In order to narrow down the sample, I use a two-step selection process in which only respondents who indicated that they had experienced some form of intimate partner violence were included (6,280 respondents). Of those who reported IPV victimization, only respondents who reported needing some type of public service are included (1,869 respondents).

Previous attempts to understand factors that impact whether services are received have either not directly estimated the effect of informal support, or have estimated the effect in a small, non-representative sample (Bosch & Bergen 2006). The strength of this

² The CDC used an almost 1:1 sampling frame, sampling a nearly equal number of respondents from each state rather than a representative sample. Because of this, weighting should be used, however the weighting variables reported by the CDC are inaccurate. Therefore, this thesis does not use weighting. Future analyses of these data will use a corrected weighting scheme created by Dr. Andre Rosay on behalf of the National Institute of Justice.

thesis lies in its use of nationally representative data, and its direct measures of both formal and informal support.

For the purposes of this thesis, only respondents who reported at least one incident of physical violence or threat of physical violence by an intimate partner over the course of their lifetimes were included in the sample. This measure of intimate partner violence is a composite of the items comprising the ‘Physical Violence’ section of the NISVS data, which includes twelve questions about various types of physical violence perpetrated by an intimate partner. Within these data, for respondents to be identified as victims of intimate partner violence, they must have indicated that they had experienced at least one of the twelve physical violence behaviors by at least one intimate partner.³ The behaviors included in the physical violence section can be seen in Table 1.

Table 1. Types of physical violence and corresponding survey questions.

Behavior	Question	Coding
Threatened physical harm	How many of your romantic or sexual partners have ever made threats to physically harm you?	Coded as 0 if respondent said none; Otherwise coded as 1
Slap	How many of your romantic or sexual partners have ever slapped you?	Coded as 0 if respondent said none; Otherwise coded as 1
Push/shove	How many of your romantic or sexual partners have ever pushed or shoved you?	Coded as 0 if respondent said none; Otherwise coded as 1
Hit with a fist/something hard	How many of your romantic or sexual partners have ever hit you with a fist or something hard?	Coded as 0 if respondent said none; Otherwise coded as 1
Kick	How many of your romantic or sexual partners have ever kicked you?	Coded as 0 if respondent said none; Otherwise coded as 1
Pulled hair	How many of your romantic	Coded as 0 if respondent

³ Though past research has identified intimate partner violence as ‘abuse,’ this thesis refers to incidents of IPV as ‘victimization.’ ‘Abuse’ denotes a sustained pattern of violence, and these data do not capture whether the violence is a pattern or if it is limited to one incident. Thus, for the purposes of clarity, all IPV is referred to as ‘victimization.’

	or sexual partners have ever hurt you by pulling your hair?	said none; Otherwise coded as 1
Slammed against something	How many of your romantic or sexual partners have ever slammed you against something?	Coded as 0 if respondent said none; Otherwise coded as 1
Forced sexual contact ⁴	How many of your romantic or sexual partners have ever forced you to engage in sexual activity?	Coded as 0 if respondent said none; Otherwise coded as 1
Choked	How many of your romantic or sexual partners have ever tried to hurt you by choking or suffocating you?	Coded as 0 if respondent said none; Otherwise coded as 1
Beat	How many of your romantic or sexual partners have ever beaten you?	Coded as 0 if respondent said none; Otherwise coded as 1
Burned on Purpose	How many of your romantic or sexual partners have ever burned you on purpose?	Coded as 0 if respondent said none; Otherwise coded as 1
Used knife or gun	How many of your romantic or sexual partners have ever used a knife or gun on you?	Coded as 0 if respondent said none; Otherwise coded as 1

Additionally, only respondents who reported needing some type of service were included in the sample, because within the context of seeking help to obtain services, it logically follows that only those who feel they need services will make an effort to obtain them. These services are outlined in Table 2. For respondents to be identified as having needed services, they must have indicated that they had needed at least one of the five types of services as a direct result of their victimization.

Table 2. Types of service needed

Variable	Question	Coding
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⁴ Based on discussion with Dr. Andre Rosay, a visiting fellow with the National Institute of Justice who currently works with NISVS data, this thesis excludes respondents who reported sexual violence and did not report any other physical violence victimization. This question was used as a tool to get the respondent comfortable with more personal questions, and the results from this particular item are inconsistent with findings from the sexual violence section of the NISVS survey.

<i>Needed Medical Services</i>	Did you ever need medical care because of any of the things that [perpetrators] did?	Coded as 0 if respondent said none; Otherwise coded as 1
<i>Needed Housing Services</i>	Did you ever need housing services because of any of the things that [perpetrators] did?	Coded as 0 if respondent said none; Otherwise coded as 1
<i>Needed Community Services</i>	Did you ever need community services because of any of the things that [perpetrators] did?	Coded as 0 if respondent said none; Otherwise coded as 1
<i>Needed Victim Advocacy Services</i>	Did you ever need victim's advocate services because of any of the things that [perpetrators] did?	Coded as 0 if respondent said none; Otherwise coded as 1
<i>Needed Legal Services</i>	Did you ever need legal services because of any of the things that [perpetrators] did?	Coded as 0 if respondent said none; Otherwise coded as 1

Conditioning on both lifetime incidence of intimate partner violence victimization and ever having received needed services yields a final sample size of 1,869 respondents.⁵

3.1 Dependent Variables

The NISVS study captures respondents' experiences with five different types of public services, as detailed in Table 2. The dependent variables used to test the four hypotheses are constructed from the indicators of whether or not a specific service was received, conditional on having needed that service. Respondents are also asked these questions for each separate reported perpetrator of intimate partner violence. For the purposes of this analysis, these responses are aggregated across perpetrators as a binary measure of 'victim received [legal / medical / housing / community / advocacy] service' for each service type. Thus, if a respondent indicates three separate experiences with

⁵ The analyses presented in this thesis all have a sample size of 1,842 or less due to missingness of the dependent and independent variables. Because less than 2% of the cases were missing data on any of the dependent and independent variables, and imputation of the missing data did not change the substantive findings of the analyses, I chose to omit these cases from analysis.

intimate partner violence, all with different perpetrators, and in two of these incidents he or she received needed legal services, they are recorded in the data as having received legal services. For hypothesis 1, 2 and 4, the dependent variable is an indicator of whether any of these needed services were obtained. For the models in hypothesis 3, the dependent variable is an indicator of whether a specific needed service was obtained.⁶

3.2 Independent Variables

The independent variables used in these analyses are all measures of respondents' disclosure of their victimization to a type of support. As previously discussed measures of disclosure are aggregated across perpetrators. Thus, these measures are lifetime indicators of disclosure, and fail to capture frequency of disclosure to specific types of supports across different perpetrators.

Disclose to Friend: Respondents were asked if they ever talked about their victimization with a friend. A value of 1 indicates that the respondent did talk to a friend, 0 means otherwise. *Disclosure to friend* is expected to increase the likelihood of receiving needed services.

Disclose To Family: Respondents were asked if they ever talked about their victimization with a family member. A value of 1 indicates that the respondent did talk to a family member, 0 means otherwise. *Disclosure to family* is expected to increase the likelihood of receiving needed services.

Disclose to Police: Respondents were asked if they ever talked about their victimization with a police officer. A value of 1 indicates that the respondent did talk to a police

⁶ A limitation of these data is the inability to parse out the event of receiving services from the event of disclosing. For example, it may likely be the case that a victim discloses to medical personnel at the same time he or she is receiving needed medical services. Unfortunately these data do not capture any simultaneity of these events.

officer, 0 means otherwise. *Disclosure to police* is expected to increase the likelihood of receiving needed services.

Disclose to Medical Personnel: Respondents were asked if they ever talked about their victimization with any medical personnel. A value of 1 indicates that the respondent did talk to medical personnel, 0 means otherwise. *Disclosure to medical personnel* is expected to increase the likelihood of receiving needed services.

Disclose to Psychologist: Respondents were asked if they ever talked about their victimization with a psychologist or counselor. A value of 1 indicates that the respondent did talk to a psychologist or counselor, 0 means otherwise. *Disclosure to psychologist* is expected to increase the likelihood of receiving needed services.

Disclose to Hotline Operator: Respondents were asked if they ever talked about their victimization with a hotline operator. A value of 1 indicates that the respondent did talk to a hotline operator, 0 means otherwise. *Disclosure to hotline operator* is expected to increase the likelihood of receiving needed services.

Disclose to Other: Respondents were asked if they ever talked about their victimization with someone they know, other than a friend, family member, police officer, medical personnel, psychologist/counselor, or hotline operator. A value of 1 indicates that the respondent did talk to an 'other,' 0 means otherwise. *Disclosure to other* is expected to increase the likelihood of receiving needed services.

Disclose to None: Respondents were asked if they ever talked about their victimization with someone they know, other than a friend, family member, police officer, medical personnel, psychologist/counselor, or hotline operator. A value of 1 indicates that the respondent did talk did not talk about their victimization with anyone, 0 means otherwise.

Had the other disclosures been mutually exclusive, *disclosure to none* would have been the reference category. However, since people can disclose to more than one type of person, this variable is necessary. *Disclosure to none* is expected to decrease the likelihood of receiving needed services.

Number of Disclosures: In order to test hypothesis one, each indicator was summed to form the total number of different disclosures. This variable represents the breadth of a respondents' support network, with 1 indicating that the respondent disclosed to one of the seven types of support (friend, family, police officer, medical personnel, psychologist/counselor, hotline operator, or other), 2 indicating that the respondent disclosed to two of the seven types of support, and so on.

*Disclose to Informal:*⁷ A value of 1 indicates that the respondent reported having disclosed to either a friend or a family member, 0 means otherwise. *Disclosure to informal* is expected to increase the likelihood of receiving needed services.

Disclose to Formal: A value of 1 indicates that the respondent reported having disclosed to a police officer, medical personnel, psychologist/counselor, or a hotline operator, 0 means otherwise. *Disclosure to formal* is expected to increase the likelihood of receiving needed services.

Because these variables are not mutually exclusive, they should be interpreted as, for example, 'of those who disclosed to a friend compared to those who did not disclose to a friend.'

⁷ *Disclosure to other* is not included in the measures of disclosure to formal and informal support because it is impossible to discern whether the 'other' is formal or informal support.

3.3 Control Variables

Consistent with previous research, a series of demographic variables are included to control for victim characteristics that may impact both an individual's likelihood of disclosing to others and their likelihood of receiving services. Measures of sex, low-SES, race and education level will be included in each model.

Sex: There is a large disparity in the gender of those who seek help for intimate partner violence victimization; women are more likely to seek help (Felson, Messner, Hoskin and Deane, 2002). Additionally more services are available to help female victims of intimate partner violence than to help male victims (Douglas & Hines, 2011), so gender will likely impact the probability of receiving services, and its exclusion might bias the estimate of disclosure. *Female* is a binary measure in which 1 indicates that the respondent is female and 0 means he is male. It is expected that being female will increase the likelihood that a respondent received needed services.

Race: Past research has shown that there are differences in both disclosure habits and likelihood of receiving services between minority and non-minority victims (Ullman & Filipas, 2001). *White* indicates whether the respondent is non-Hispanic white (*white* = 1) or a minority (*white* = 0). It is expected that being white will increase the likelihood that a respondent received needed medical services. Of the 1,869 respondents in the sample, 14 were missing data for this variable. In order to account for this, all missing cases were set to 0, and a *white missing* variable where 1 indicates that the value was missing was included to control for missingness.

Socioeconomic Status: Past research indicates that intimate partner violence is more prevalent among low SES individuals (Rennison & Planty, 2003). Low SES victims are

also less likely to receive assistance in leaving violent relationships (O'Campo, McDonnell, Gielen, Burke & Chen, 2002). Additionally, past research has found that victims who have access to money are more likely to disclose their victimization than those who do not (Leone, Johnson & Cohan, 2007). *Low SES* is a binary measure of SES, where 1 indicates that at the time of data collection, the respondents' household SES is in the bottom quintile of the sample (below \$20,000),⁸ and 0 means otherwise. It is expected that *low SES* will be associated with a decreased likelihood of receiving needed services. Of the 1,869 respondents in the sample, 88 were missing data for this variable. In order to account for this, all missing cases were set to 0, and a *low SES missing* variable where 1 indicates that the value was missing is included to control for missingness.

Education: Past research indicates that higher educational attainment is associated with lower levels of intimate partner violence (World Health Organization, 2012). Existing research has not examined the relationship between educational attainment and disclosure habits. However, it is possible that education impacts the likelihood of receiving services, as higher levels of education are likely associated with access to more opportunity. For this reason, a control variable of *High School or lower* is included in the analyses, in which a 1 indicates that the highest level of education attained is a high school diploma, and 0 indicates that some education beyond high school was attained. It is expected that *High School or lower* will be associated with a decreased likelihood of receiving needed services.

⁸ Because these data are retrospective, this measure is used as a proxy to estimate the relative socioeconomic status of the respondent at the time of his or her victimization. This thesis assumes that individuals who have low earnings at the time of data collection are likely to have had low earnings prior to data collection as well. This assumption is based on research that finds that individual earnings are more likely to increase over the lifetime than decrease (Reeves 2014).

Serious Physical Violence: It is possible that supports will be more willing to provide help to individuals who are experiencing severe physical violence as compared to those who are experiencing less severe violence. Additionally, past research finds that more serious IPV victimization is associated with an increase in the likelihood of disclosure (Ansara & Hindin, 2010; Barrett & St. Pierre, 2011; Fanslow & Robinson, 2010). For the purposes of this thesis, *serious physical violence* is a binary measure of whether or not a respondent has experienced any of the following types of victimization at the hands of an intimate partner (Cook, 1948):⁹ hitting, kicking, hair pulling, slamming into another object, choking, beating, burning, or the use of a knife or gun to threaten. It expected that *serious physical violence* will be associated with an increased probability of receiving needed services.

⁹ This definition of serious physical violence is based on a discussion with Dr. Andre Rosay regarding the Alaska Victimization Survey's operationalization of serious physical violence, and is consistent with Philip Cook's operationalization of serious physical violence.

Chapter 4. Methods

This thesis will first present descriptive statistics of all variables included in the models, followed by models that will test the four hypotheses. As the dependent variable is a binary measure of whether or not the respondent received needed services, in order to test the four hypotheses, each model is estimated using a logistic regression.

Hypothesis 1: Recall that hypothesis 1 represents the naïve model, which assumes that the probability of receiving needed services is the same for all disclosure types. It is expected that disclosure to more types of supports will be associated with a higher likelihood of receiving needed services. To test this hypothesis, a logistic regression is run using the following equation:

$$(1) P(\text{ReceivedNeededService} = 1) = \frac{\exp(\mathbf{XB})}{1 + \exp(\mathbf{XB})}$$

where $\mathbf{XB} = \beta_0 + \beta_1 \text{NumberofDisclosureTypes} + \beta_2 \text{controls}$

Within this model, if hypothesis 1 is supported, the coefficient estimate for β_1 will be both positive and statistically significant.

Hypothesis 2: Recall that hypothesis 2 tests whether the likelihood of receiving needed services after disclosure to a formal support is greater than after disclosure to an informal support. This hypothesis is tested using a model that compares the likelihood of receiving needed services between disclosure to informal versus formal support types.

$$(2) P(\text{ReceivedNeededService} = 1) = \frac{\exp(\mathbf{XB})}{1 + \exp(\mathbf{XB})}$$

where $\mathbf{XB} = \beta_0 + \beta_1 \text{DiscloseInformal} + \beta_2 \text{DiscloseFormal} + \beta_3 \text{DiscloseNone} + \beta_4 \text{controls}$

If hypothesis 2 is supported, the coefficient for the estimate of β_2 will be greater than the coefficient for the estimate of β_1 . A correlation matrix is presented to test for multicollinearity between the independent variables. Wald tests are used to determine if the coefficients for the estimates of these variables are statistically different.

Hypothesis 3: The final hypothesis is concerned with differences in the effect of disclosure across types support for specific types of services. It is expected that π will change depending on whether a support has the ability to directly help the victim obtain services. In order to test this, a series of five models is fitted where in each model the outcome is a different type of service:

$$(3a) P(ReceivedNeededLegal = 1) = \frac{\exp(\mathbf{XB})}{1 + \exp(\mathbf{XB})}$$

$$\text{where } \mathbf{XB} = \beta_0 + \beta_1 \text{DiscloseFriend} + \beta_2 \text{DiscloseFamily} + \beta_3 \text{DiscloseOther} + \beta_4 \text{DisclosePolice} + \beta_5 \text{DiscloseMedicalPersonnel} + \beta_6 \text{DisclosePsychologist} + \beta_7 \text{DiscloseHotlineOperator} + \beta_8 \text{DiscloseNone} + \beta_9 \text{controls}$$

When the outcome of interest is legal services, the relevant disclosure variable is police, as it naturally follows that police are better able to provide direct access to legal services. If hypothesis 3 is supported in model 3a, the coefficient estimate for *disclosure to police* will be positive and significant. A correlation matrix is presented to test for multicollinearity between the independent variables. A Wald test is used to determine if the coefficients for the estimates of the disclosure variables in this model are statistically different.

$$(3b) P(ReceivedNeededHousing = 1) = \frac{\exp(\mathbf{XB})}{1 + \exp(\mathbf{XB})}$$

where $\mathbf{XB} = \beta_0 + \beta_1\text{DiscloseFriend} + \beta_2\text{DiscloseFamily} + \beta_3\text{DiscloseOther} + \beta_4\text{DisclosePolice} + \beta_5\text{DiscloseMedicalPersonnel} + \beta_6\text{DisclosePsychologist} + \beta_7\text{DiscloseHotlineOperator} + \beta_8\text{DiscloseNone} + \beta_9\text{controls}$

When the outcome of interest is housing services, the relevant disclosure variables are *disclosure to friend* and *family*, as it they are more likely to be willing and able to provide a place for the victim to stay, and hotline operators, as they are likely to be able to direct victims to shelters. If hypothesis 3 is supported in model 3b, the coefficient estimates for *disclosure to friend, family, and hotline operator* will be positive and significant. A correlation matrix is presented to test for multicollinearity between the independent variables. A Wald test is used to determine if the coefficients for the estimates of the disclosure variables in this model are statistically different.

$$(3c) P(\text{ReceivedNeededCommunity} = 1) = \frac{\exp(\mathbf{XB})}{1 + \exp(\mathbf{XB})}$$

where $\mathbf{XB} = \beta_0 + \beta_1\text{DiscloseFriend} + \beta_2\text{DiscloseFamily} + \beta_3\text{DiscloseOther} + \beta_4\text{DisclosePolice} + \beta_5\text{DiscloseMedicalPersonnel} + \beta_6\text{DisclosePsychologist} + \beta_7\text{DiscloseHotlineOperator} + \beta_8\text{DiscloseNone} + \beta_9\text{controls}$

When the outcome of interest is community services, the relevant disclosure variable is hotline operators, as it naturally follows that hotline operators are better able to provide direct access to community services. If hypothesis 3 is supported in model 3c, the coefficient estimates for disclosure to hotline operator will be positive and significant. A correlation matrix is presented to test for multicollinearity between the independent variables. A Wald test is used to determine if the coefficients for the estimates of the disclosure variables in this model are statistically different.

$$(3d) P(\text{ReceivedNeededAdvocate} = 1) = \frac{\exp(\mathbf{XB})}{1 + \exp(\mathbf{XB})}$$

where $\mathbf{XB} = \beta_0 + \beta_1\text{DiscloseFriend} + \beta_2\text{DiscloseFamily} + \beta_3\text{DiscloseOther} + \beta_4\text{DisclosePolice} + \beta_5\text{DiscloseMedicalPersonnel} + \beta_6\text{DisclosePsychologist} + \beta_7\text{DiscloseHotlineOperator} + \beta_8\text{DiscloseNone} + \beta_9\text{controls}$

When the outcome of interest is advocacy services, the relevant disclosure variables are police and hotline operators. Given that many victim advocates serve as guides to help victims navigate the criminal justice system, police are likely better able to provide direct access to advocacy services (The National Center for Victims of Crime, 2008).

Additionally, because their primary focus on needs of IPV victims affords them extensive knowledge of relevant services, hotline operators are likely to be able to directly assist victims in obtaining victim advocacy services. If hypothesis 3 is supported in model 3d, the coefficient estimates for *disclosure to police* and hotline operators will be positive and significant. A Wald test is used to determine if the coefficients for the estimates of the disclosure variables in this model are statistically different.

$$(3e) P(\text{ReceivedNeededMedical} = 1) = \frac{\exp(\mathbf{XB})}{1 + \exp(\mathbf{XB})}$$

where $\mathbf{XB} = \beta_0 + \beta_1\text{DiscloseFriend} + \beta_2\text{DiscloseFamily} + \beta_3\text{DiscloseOther} + \beta_4\text{DisclosePolice} + \beta_5\text{DiscloseMedicalPersonnel} + \beta_6\text{DisclosePsychologist} + \beta_7\text{DiscloseHotlineOperator} + \beta_8\text{DiscloseNone} + \beta_9\text{controls}$

When the outcome of interest is medical services, the relevant disclosure variables are medical personnel and psychologists, as these supports are more able to provide direct access to medical services. If hypothesis 3 is supported in model 3e, the coefficient estimates for *disclosure to medical personnel* and *disclosure to psychologist* will be positive and significant. A correlation matrix is presented to test for multicollinearity

between the independent variables. A Wald test is used to determine if the coefficients for the estimates of the disclosure variables in this model are statistically different.

Hypothesis 4: The final hypothesis tests whether disclosure is associated with a higher likelihood of receipt of services in cases where victims experience serious physical violence, compared to when violence is less serious. In order to test this, the model is repeated twice, conditioned upon experiencing serious physical violence:

$$(4a) P(ReceivedNeededService = 1) = \frac{\exp(\mathbf{XB})}{1 + \exp(\mathbf{XB})}$$

where $\mathbf{XB} = \beta_0 + \beta_1 \text{DiscloseFriend} + \beta_2 \text{DiscloseFamily} + \beta_3 \text{DiscloseOther} + \beta_4 \text{DisclosePolice} + \beta_5 \text{DiscloseMedicalPersonnel} + \beta_6 \text{DisclosePsychologist} + \beta_7 \text{DiscloseHotlineOperator} + \beta_8 \text{DiscloseNone} + \beta_9 \text{controls}$, and
 SeriousPhysicalViolence = 1

$$(4b) P(ReceivedNeededService = 1) = \frac{\exp(\mathbf{XB})}{1 + \exp(\mathbf{XB})}$$

where $\mathbf{XB} = \beta_0 + \beta_1 \text{DiscloseFriend} + \beta_2 \text{DiscloseFamily} + \beta_3 \text{DiscloseOther} + \beta_4 \text{DisclosePolice} + \beta_5 \text{DiscloseMedicalPersonnel} + \beta_6 \text{DisclosePsychologist} + \beta_7 \text{DiscloseHotlineOperator} + \beta_8 \text{DiscloseNone} + \beta_9 \text{controls}$, and
 SeriousPhysicalViolence = 0

Hypothesis 4 is supported if the coefficient estimates of the disclosure variables are greater in model 4b than in model 4a. A correlation matrix is presented to test for multicollinearity between the independent variables. An equality of coefficients test (Paternoster, Brame, Mazerolle & Piquero, 1998) is used to determine if the effect of disclosure is greater for those who experience serious physical violence.

Data Limitations

The NISVS survey questions that measure both disclosure and service receipt are administered as follow-up questions to all incidents of violence, and not limited to incidents of only intimate partner violence. I can ensure that the respondent did experience IPV victimization and also whether they disclosed to a support and whether they received the service, however due to inconsistent skip patterns in the data, I am unable to ensure that the disclosure or services received were in response to the IPV victimization. It is possible that the disclosure or services were needed as a direct result of a non-IPV victimization only. This increases the likelihood of false ones in the data if, for example, a respondent indicates that he or she receives a service and it is counted as a result of IPV victimization despite being a result of non-IPV victimization only. If disclosure does indeed lead to services received, this error will bias any results toward 0, suggesting that null findings in these data could be masking a true effect. Future analyses of these data will address this issue using a cleaned dataset that addresses issues in the skip pattern and consistently documents perpetrators throughout the survey. Unfortunately, because these data are not currently available, I am unable to address this issue in these analyses.

Chapter 5. Results

Descriptive Statistics

The two most commonly needed services are legal and medical, with 64.5% (n=1202) of the sample reporting that they needed legal services and 55.3% (n=995) of the sample reporting that they needed medical services. These are also the two most commonly received services, with 91.6% and 92.7% of those who needed legal and medical services, respectfully, reporting that they received them (see table 3). The composite measure of all services received is similarly high, with 88.1% (n=1623) of the sample reporting that they received at least one of the services they reported needing. Respondents reported needing 1.67 services (S.D. = 0.995) and having received 1.50 needed services (S.D. = 0.976), indicating that respondents received, on average, 90.3% of the services that they reported needing.

Table 3. Distribution of Needed and Received Services

	Number respondents (needed)	% Needed (of Sample)	% Received (of needed)
Legal	1202	64.5%	91.6%
Housing	295	15.8%	78.6%
Community	282	15.2%	88.9%
Advocacy	364	19.5%	81.5%
Medical	995	55.3%	92.7%
All Services	1869	100%	88.1%

Descriptive statistics (see Table 4) indicate that the mean number of types of support to whom respondents disclosed is 3.55 (S.D. = 1.486). Approximately 91.6% (n=1712) of respondents indicated that they talked to an informal support and 87.3% (n=1631) report having talked to a formal support about their victimization. The most common type of support to whom respondents disclosed is a friend (84.3%) and the least common is a hotline operator (12.7%). Of 1,869 respondents, 45 (2.1%) indicated that

they did not disclose their victimization to anyone. The sample is primarily female (74.7%) and white (78.2%). Low SES respondents comprise a quarter of the sample (25.7%) and approximately one-third of respondents have a high-school education or less (31.7%).

Table 4. Descriptive statistics for variables used in analysis¹⁰

Variable	Mean	SD	Min	Max
Received All	0.881	0.324	0	1
Received Legal	0.916	0.278	0	1
Received Housing	0.786	0.411	0	1
Received Advocate	0.815	0.388	0	1
Received Medical	0.927	0.260	0	1
Received Community	0.889	0.314	0	1
Number of Disclosures	3.547	1.486	0	7
Disclose - Informal	0.916	0.277	0	1
Disclose - Formal	0.873	0.333	0	1
Disclose - Friend	0.843	0.364	0	1
Disclose - Family	0.725	0.447	0	1
Disclose - Police	0.640	0.480	0	1
Disclose - Medical	0.448	0.497	0	1
Disclose - Psych	0.617	0.486	0	1
Disclose - Hotline	0.127	0.333	0	1
Disclose - Other	0.149	0.356	0	1
Disclose - None	0.024	0.145	0	1
Female	0.747	0.435	0	1
White	0.782	0.413	0	1
Low SES	0.257	0.437	0	1
High School or lower	0.317	0.466	0	1
SPV	0.797	0.402	0	1

Hypothesis 1

The first hypothesis posited in this thesis argues that an increase in the number of types of support to whom a person discloses will be related to an increased likelihood that

¹⁰ A table of descriptive statistics for survey respondents who indicated that they had experienced IPV but did not indicate a need for services compared to those who did indicate a need for services is included in Appendix A.

the victim receives needed services. In order to assess this hypothesis, a logistic regression (Model 1) was conducted. The coefficient estimates and odds ratios estimated from this regression are presented in Table 5. They suggest that *disclosure to more types of supports* is unrelated to the probability that a *victim receives needed services*. Thus, hypothesis 1 is not supported. Low SES respondents are 36.3% less likely to receive needed services ($p < 0.01$). Though *serious physical violence* was hypothesized to increase likelihood of receiving services, respondents who report experiencing serious physical violence are 34.5% less likely to receive needed services ($p < 0.05$). *Serious physical violence* was significant in the opposite tail as was expected, and would be significant in the opposite direction for a two-tailed test.

Table 5. Model 1: Logistic Coefficient Estimates (SE) and Odds Ratios for Receiving Any Needed Services

Model 1 (n=1820) Variable	B (SE)	Odds Ratio
# of Types of Disclosures	0.041 (0.051)	1.041
Female	0.198 (0.171)	1.219
White	0.210 (0.171)	1.233
High School or lower	0.071 (0.162)	1.074
Low SES	-0.451** (0.164)	0.637
Serious Physical Violence	-0.423 ^A (0.208)	0.655
Low SES Missing	-0.081 (0.368)	0.922
White Missing	0.546 (1.058)	1.727

^o $p \leq 0.10$; * $p \leq 0.05$; ** $p \leq 0.01$ (one-tailed tests); ^A $p < 0.05$ in the non-hypothesized direction (two-tailed test).

Hypothesis 2

Seeking to understand whether the *disclosure to a formal support* has a greater impact on likelihood of receiving services than *disclosure to an informal support*, Table 6¹¹ presents the estimates from three iterations of model 2, which tests this relationship across disclosure to formal versus informal supports.

Table 6. Model 2: Logistic Coefficient Estimates (SE) for Receiving Any Needed Services

<i>Model 2</i> <i>n=1842</i>	Fully Specified β (SE)	Formal vs. Informal β (SE)	None Only β (SE)
Variable			
Disclose to Informal Support	0.377° (0.271)	0.680** (0.220)	<i>omitted</i>
Disclose to Formal Support	-0.029 (0.251)	0.214 (0.213)	<i>omitted</i>
Disclosure to None	-1.146* (0.490)	<i>omitted</i>	-1.471** (0.358)
Female	0.146 (0.171)	0.144 (0.170)	0.152 (0.169)
White	0.220° (0.171)	0.225° (0.170)	0.213 (0.170)
High School or lower	0.075 (0.162)	0.057 (0.161)	0.084 (0.161)
Low Income	-0.478** (0.164)	-0.452** (0.164)	-0.476** (0.164)
Serious Physical Violence	-0.454 ^A (0.210)	-0.430 ^A (0.209)	-0.466 ^A (0.210)
Low Income Missing	-0.002 (0.370)	-0.012 (0.368)	0.015 (0.370)
White Missing	0.719 (1.075)	0.652 (1.059)	0.714 (1.076)

°p ≤ 0.10; *p ≤ 0.05; **p ≤ 0.01 (one-tailed tests); ^A p < 0.05 in the non-hypothesized direction (two-tailed test).

¹¹ Odds ratios for model 2 are presented in Appendix B.

Table 7 presents a correlation matrix¹² of the independent variables included in this model.

Table 7. Model 2: Correlation Matrix

	Disclose Informal	Disclose Formal	Disclose None
Disclose Informal	1.0000		
Disclose Formal	0.1454	1.0000	
Disclose None	-0.5187	-0.4122	1.0000

Disclosure to none is highly correlated with both *disclosure to formal* and *disclosure to informal supports*. Systematically omitting variables and conducting likelihood ratio tests reveals that best model is that which only includes *disclosure to none*, which is an inverse representation of whether or not a victim disclosed to anyone. This suggests that the most important factor in receiving needed help is the simple act of disclosing, and that when looking broadly whether victims receive any services, whether the support is formal or informal is less relevant. *Disclosure to informal support* is associated with a 1.458 times increase in the likelihood of receiving needed services, though the estimate is only marginally significant. *Disclosure to formal support* is not significant. This points to evidence that *disclosure to informal support* is more likely to increase the *likelihood of receiving needed services* than *disclosure to formal supports*. Based on these findings, hypothesis 2, which argues that disclosure to formal supports will have a greater impact on *likelihood of receiving services* than disclosure to informal supports, is unsupported.

Consistent with findings from Model 1, in the fully specified model, low SES victims are 38% less likely to have received needed help as victims who are not low SES

¹² While it is traditional to use the Variance Inflation Factor, the comparisons used in this thesis provide more information on whether the correlations lead to type II error.

($p < 0.01$). Additionally, in the fully specified model, white victims are Again, contrary to the hypothesized effect, those who experience serious physical violence are 36.5% less likely to have received needed help than those who experience less serious violence ($p < 0.05$). *Serious physical violence* was significant in the opposite tail as was expected, and would be significant in the opposite direction for a two-tailed test.

Hypothesis 3

The third hypothesis is concerned with the effect of disclosure on *likelihood of receiving specific services*, arguing that disclosure to supports will increase the likelihood of receiving services when the support is able to help the victim directly access the specific needed service. In order to test this hypothesis, a series of five models were fitted, and are presented in Table 8.¹³

Model 3a: Though *disclosure to none* was correlated with *disclosure to friend*, a comparison of how the coefficient estimate and standard error of *disclosure to friend* changes when *disclosure to none* is removed reveals that the insignificance is driven by changes in the coefficient estimate, not the standard error. This suggests that omitting *disclosure to none* would lead to bias in the estimate for *disclosure to friend*. For this reason, *disclosure to none* is kept in the model. Model 3a found no support for the proposed effect of *disclosure to police* on *likelihood that a victim obtains needed legal services*. Further, no effect was found for any of the disclosure variables on *likelihood of receiving needed legal services* in model 3c. Instead, *disclosure to none* has a significant impact on likelihood of receiving needed legal services ($p < 0.05$), with individuals who disclose to no one 0.322 times less likely [$\exp(-1.133)$] to receive needed legal services.

¹³ Odds ratios and correlation matrices for models 3a, 3b, 3c, 3d and 3e are presented in Appendix C.

A Wald test of the equality of coefficients of all eight independent variables in Model 3a found only marginal evidence of an effect of disclosure on likelihood of receiving needed legal services is different across support types (Prob > chi2 = 0.094). Additionally, white victims are 1.57 times more likely [$\exp(0.448)$] to receive needed legal service than their non-white counterparts ($p < 0.05$), and female victims are 1.77 times more likely [$\exp(0.570)$] to receive needed legal services than their male counterparts ($p < 0.01$).

Model 3b: Model 3b found a significant relationship between *disclosure to friend* and likelihood of receiving needed housing services ($p < 0.05$), with those who disclose to friends being 2.12 times more likely to receive needed housing services than those who do not. Additionally, *disclosure to family* increases the likelihood of receiving needed housing services by 2.45 times ($p < 0.01$). Mild support was found for the proposed effect of disclosure to hotline operators on likelihood that a victim obtains needed housing services, with disclosure to hotline operators increasing the likelihood of receiving needed services by 1.83 times ($p < 0.10$). *Disclosure to medical personnel* and *disclosure to psychologist* are correlated in this model; however a comparison of how the coefficient estimate and standard error of *disclosure to medical personnel* changes when *disclosure to psychologist* is removed reveals that the insignificance is driven by a change in the estimate, not the standard error. This suggests that omitting *disclosure to psychologist* would lead to bias in the estimate for *disclosure to medical personnel*. Finally, consistent with the findings from model 3a, white victims are 1.93 times more likely to receive needed housing services than non-white victims ($p < 0.05$). A Wald test of the equality of coefficients of all eight independent variables in Model 3b found that the effect of

disclosure on likelihood of receiving needed housing services is different across support types (Prob > chi2 = 0.024).

Model 3c: Though disclosure to none was correlated with *disclosure to friend*, a comparison of how the coefficient estimate and standard error of *disclosure to friend* changes when disclosure to none is removed reveals that the insignificance is driven by changes in the estimate, not the standard error. This suggests that omitting disclosure to none would lead to bias in the estimate for *disclosure to friend*. For this reason, disclosure to none is kept in the model. Additionally, though a few other disclosure variables are correlated with one another, their inclusion in the model reveals no evidence of multicollinearity, as the standard errors do not change when they are systematically omitted. For theoretical reasons, I have chosen to keep all disclosure variables in the model. *Disclosure to other* increases the likelihood of receiving needed community services by 2.58 times, though this relationship is only marginally significant ($p < 0.10$). No effect was found for any of the other disclosure variables on likelihood of receiving needed community services in model 3c, however individuals who did not disclose to anyone are 0.035 times as likely to receive needed community services ($p < 0.05$). A Wald test of the equality of coefficients of all eight independent variables in Model 3c did not find that the effect of disclosure on likelihood of receiving needed legal services is different across support types (Prob > chi2 = 0.311). Female victims are 2.72 times more likely than male victims to receive needed community services ($p < 0.05$).

Table 8. Models 3a, 3b, 3c, 3d & 3e: Logistic Coefficient Estimates (SE) for Receiving Legal, Housing, Community, Advocacy and Medical Services

Variable	<i>Model 3a</i> <i>Legal</i> <i>n=1185</i> β (SE)	<i>Model 3b</i> <i>Housing</i> <i>n=292</i> β (SE)	<i>Model 3c</i> <i>Community</i> <i>n=274</i> β (SE)	<i>Model 3d</i> <i>Advocacy</i> <i>n=357</i> β (SE)	<i>Model 3e</i> <i>Medical</i> <i>n=977</i> β (SE)
Disclose to Friend	0.314 (0.316)	0.749* (0.403)	-0.596 (0.695)	0.338 (0.460)	-0.205 (0.348)
Disclose to Family	0.312 (0.254)	0.898** (0.337)	0.244 (0.493)	-0.266 (0.401)	0.894** (0.268)
Disclose to Other	-0.194 (0.280)	-0.559 (0.383)	0.946° (0.656)	-0.037 (0.379)	0.034 (0.383)
Disclose to Police	-0.038 (0.150)	-0.268 (0.403)	-0.208 (0.528)	1.380** (0.372)	0.155 (0.280)
Disclose to Medical Personnel	0.008 (0.246)	-0.674 (0.360)	0.450 (0.466)	-0.184 (0.334)	0.705** (0.272)
Disclose to Psychologist	-0.043 (0.245)	0.383 (0.381)	-0.391 (0.557)	-0.188 (0.427)	-0.366 (0.290)
Disclose to Hotline Operator	-0.246 (0.321)	0.606° (0.369)	0.230 (0.520)	0.224 (0.336)	0.328 (0.427)
Disclose to None	-1.133* (0.588)	0.189 (1.344)	-3.349* (1.494)	-2.138* (1.290)	-0.509 (0.689)
Female	0.570** (0.238)	0.376 (0.467)	1.001* (0.531)	1.386** (0.405)	-0.316 (0.354)
White	0.448* (0.251)	0.658* (0.352)	-0.502 (0.548)	-0.016 (0.379)	0.381° (0.280)
High School or lower	-0.036 (0.239)	0.273 (0.351)	-0.562 (0.466)	0.125 (0.360)	-0.095 (0.274)
Low-SES	-0.326° (0.250)	-0.206 (0.342)	-0.253 (0.458)	-0.562* (0.322)	-0.080 (0.282)
Serious physical violence	-0.473 (0.291)	-0.507 (0.571)	0.423 (0.561)	-0.403 (0.505)	0.102 (0.398)
Low Income Missing	-0.043 (0.547)	-0.629 (0.704)	-0.765 (0.898)	0.229 (1.176)	-0.183 (0.573)
White Missing	0.351 (1.147)	<i>omitted</i>	<i>omitted</i>	<i>omitted</i>	<i>omitted</i>

°p ≤ 0.10; *p ≤ 0.05; **p ≤ 0.01 (one-tailed tests); ^A p < 0.05 in the non-hypothesized direction (two-tailed test).

Model 3d: Though disclosure to none was correlated with *disclosure to friend*, as with the earlier models, comparisons of estimates with and without disclosure to none reveal that omitting disclosure to none would lead to bias in the estimate for *disclosure to friend*. For this reason, disclosure to none is kept in the model. Additionally, though there is evidence of correlation among a few disclosure variables, their inclusion in the model reveals no evidence of multicollinearity, as the standard errors hardly change when they are systematically omitted. For theoretical reasons, I have chosen to keep all disclosure variables in the model.

Model 3d found that *disclosure to police* increases the likelihood of receiving needed victim advocacy services by 3.97 times ($p < 0.01$). Additionally, those who disclose to no one are 88.3% less likely to receive needed advocacy services ($p < 0.05$). A Wald test of the equality of coefficients of all eight independent variables in Model 3d found that the effect of disclosure on likelihood of receiving needed victim advocacy services is different across support types (Prob > chi2 = 0.016). Female victims are four times more likely than male victims to receive needed victim advocacy services ($p < 0.01$). Additionally, low SES victims are 0.57 times as likely to receive needed advocacy services as their counterparts ($p < 0.05$).

Model 3e: Although there is evidence of correlation among a few disclosure variables, their inclusion in the model reveals no evidence of multicollinearity, as the standard errors hardly change when they are systematically omitted. For theoretical reasons, I have chosen to keep all disclosure variables in the model. Model 3e found that *disclosure to family* increases the likelihood of receiving needed medical services by 2.45 times ($p < 0.01$), and *disclosure to medical personnel* increases the likelihood of receiving

needed medical services by 2.02 times ($p < 0.01$). However, a Wald test of the equality of coefficients of all eight independent variables in Model 3e failed to reject the null hypothesis that the effect of disclosure on likelihood of receiving needed medical services is different across support types ($\text{Prob} > \chi^2 = 0.056$), though this is only marginally non-significant. White victims are 1.464 times as likely as nonwhite victims to receive needed medical services ($p < 0.10$).

Significant differences were found in the explanatory power of disclosure variables for the likelihood of receiving needed housing and advocacy. Thus, hypothesis 3 is supported for these service types. Hypothesis 3 is not supported for legal, community or medical services, as no significant differences were found in the predictive power of the disclosure variables; however, the differences in predictive power for both legal and medical services were only marginally insignificant.

Hypothesis 4

The final hypothesis in this thesis contends that the effect of disclosure will be greater for victims who experience more serious physical violence. Table 9¹⁴ presents the findings from Models¹⁵ 4a and 4b, which test the same model on victims who experienced serious physical violence and those who did not. Correlation matrices for these models can be found in Appendix C. Although there is evidence of correlation among a few disclosure variables in model 4a, their inclusion in the model reveals no evidence of multicollinearity, as the standard errors hardly change when they are systematically omitted. For theoretical reasons, I have chosen to keep all disclosure

¹⁴ Correlation matrices for models 4a and 4b are presented in Appendix D.

¹⁵ The missing variables in model 4b predict success, and thus drop out of the analysis. In order to accurately assess the equality of coefficients between the two models, the 'missing' variables were omitted from model 4a as well.

variables in the model. In model 4b, disclosure to none was correlated with *disclosure to friend* and *disclosure to family*. However, it was kept because analyses suggested that its omission would lead to bias in the estimate for both variables. For this reason, *disclosure to none* is kept in the model.

Table 9. Models 4a & 4b: Logistic Coefficient Estimates (SE) and Odds Ratios for Receiving Any Needed Services Across Violence Seriousness

	<i>Model 4a –Serious n=1451</i>		<i>Model 4b –Not Serious n=345</i>	
Variable	β (SE)	Odds Ratios	β (SE)	Odds Ratios
Disclose to Friend	0.054 (0.231)	1.056	0.484 (0.561)	1.623
Disclose to Family	0.516** (0.180)	1.675	0.465 (0.467)	1.593
Disclose to Other	-0.134 (0.226)	0.874	-0.975 ^A (0.486)	0.377
Disclose to Police	-0.166 (0.186)	0.847	-0.211 (0.444)	0.809
Disclose to Medical Personnel	-0.103 (0.173)	0.902	0.418 (0.507)	1.518
Disclose to Psychologist	-0.258 (0.186)	0.773	-0.058 (0.446)	0.944
Disclose to Hotline Operator	-0.240 (0.224)	0.789	-0.040 (0.863)	1.040
Disclose to None	-1.032** (0.499)	0.356	-0.991 (0.848)	0.371
Female	0.311 ^o (0.193)	1.365	-0.155 (0.425)	0.856
White	0.109 (0.187)	1.115	1.098** (0.457)	3.000
High School or lower	0.147 (0.177)	1.158	-0.634 (0.463)	0.530
Low SES	-0.544** (0.174)	0.580	0.173 (0.545)	1.188
Low SES Missing	<i>omitted</i>		<i>omitted</i>	
White Missing	<i>omitted</i>		<i>omitted</i>	

^op≤ 0.10; *p ≤ 0.05; **p ≤ 0.01 (one-tailed tests); ^A p<0.05 in the non-hypothesized direction (two-tailed test).

For those who experience serious physical violence (Model 4a), *disclosure to family* increases the odds of receiving needed services by 1.68 (p<0.01), and *disclosure to*

none decreases this likelihood by 0.35 ($p<0.01$). Consistent with previous models, low SES individuals are 0.56 times as likely to receive needed services as those who are not low SES ($p<0.01$). Additionally, among those who experience serious physical violence, females are 1.38 times more likely than males to receive needed services ($p<0.10$). For those who do not experience serious physical violence (Model 3b), *disclosure to other* decreases the likelihood of receiving needed services by 62% ($p<0.05$), counter to the hypothesized relationship. White victims are three times as likely as non-white victims to receive needed help ($p<0.01$).

In order to understand if the effects of disclosure to specific support types are different across seriousness (hypothesis 4), an equality of coefficients test (Paternoster et al. 1998) was run to compare the coefficients for the estimates of the effect of disclosure across the two models. These tests found significant differences across seriousness for disclosure to, family ($p<0.01$), other ($p<0.05$), and none ($p<0.05$). *Disclosure to family* is significant in the hypothesized direction. Interestingly, both *disclosure to other* and *disclosure to none* were significant in the opposite tail as was expected, and would be significant in the opposite direction for a two-tailed test. These findings support the predictions of hypothesis 4 for *disclosure to family*, but not for *disclosure to friend, police, medical personnel, psychologists, hotline operators, other* or *none*.

Chapter 6. Conclusions

Expanding upon previous research on services attained by victims of intimate partner violence, this study provides new insight into the relationship between victims' disclosure and the likelihood that they are able to obtain needed services. The goal of this thesis was to understand whether disclosure has a differential relationship with the likelihood that needy victims receive services across a number of different factors. No support was found for the first hypothesis, which predicted a positive relationship between the variety of supports to whom a victim discloses and the victim's likelihood of receiving needed services. This suggests that "casting a wider net" by disclosing to a wider variety of supports may be ineffective for ensuring that a victim receives help. Instead, strategically disclosing to specific individuals may be more a more efficient and effective method for obtaining needed help.

Positing that there is a differential effect of disclosure across support types, this thesis finds evidence that disclosure to informal supports may have a greater effect on the likelihood of receiving services than disclosure to formal supports. This finding suggests that individuals who are paid to help victims may be less helpful than those who have a vested interest in the health and well being of the victim. Interestingly, the simple act of disclosing to another person has the greatest impact on receiving needed service, implying that when concerned with if a victim receives any services, whether they disclose to a formal or informal support is less relevant than the fact that they disclosed to someone.

Though support type appears to matter less when looking broadly at all services, tests for the benefit of targeted disclosure for specific service types tell a different story.

This thesis found mixed support for the hypothesis that disclosure to relevant support types will be related to an increased likelihood of receiving specific services. *Disclosure to family* was significantly related to both receipt of housing services, as hypothesized, and receipt of medical services. Though this relationship with receipt of medical services was not predicted, it makes logical sense. Victims may be more likely to discuss sensitive health information with family members due to the usually enduring and intimate relationship between family members, and family members are also likely to express more authority over a victim's health than other support types. Interestingly, though *disclosure to friend* was quite common in this sample, it only had a significant relationship with the likelihood of receiving housing services. *Disclosure to police* was not found to have a significant relationship with likelihood of receiving legal services, however it was found to have a significant relationship with the likelihood of receiving victim advocacy services. It is surprising that police do not appear to be a pathway to receiving legal services, as this is arguably the most direct way to obtain legal services. Though only marginally significant, disclosure to hotline operators did increase the likelihood that a victim receives housing services, as hypothesized. *Disclosure to medical personnel* had a significant relationship with the likelihood of receiving medical services, as hypothesized. *Disclosure to psychologist* was not found to have a significant relationship with the likelihood of receiving any of the service types. Not disclosing to anyone significantly decreased the likelihood of receiving legal, community and advocacy services. Only *disclosure to other* was found to have a marginally significant relationship with receiving community services, which may be due to the relatively unclear definition of community services. Whereas legal, housing, advocacy and medical

services have very clear definitions and implications, community services do not, and may seem abstract to a respondent. With the exception of legal services and community services, disclosure to a relevant support had a consistently significant relationship with the likelihood of receiving specific services.

In support of hypothesis 4, these findings show that there is a difference in the effect of *disclosure to family*, *other* and *none* when violence is serious, compared to when violence is less serious. Recall that this relationship is in the hypothesized direction for *disclosure to family* and *disclosure to none*, but in the opposite direction for *disclosure to other*. For *disclosure to family* and *disclosure to none*, this finding suggests that disclosure has a greater impact on the likelihood of receiving services when violence is more serious. However, for *disclosure to other*, this indicates that both variables have a significantly different impact across severity, but that they have a greater impact on the likelihood of receiving services for those who do not experience serious physical violence than on those who do. This thesis provides evidence that the effect of disclosure to a support on the likelihood of receiving services varies across support type, service type, and seriousness of violence. The varied effect of disclosure across seriousness may be due to selection on needing services. As seen in Table 10 (in Appendix A), the incidence of serious physical violence is much lower among those victims who did not identify a need for services. It may be the case that severity of physical violence influences receiving services as a two-step process, with the first step being identifying a need for services and the second being receiving those services. This analysis fails to capture this process, though future analyses will address this issue.

Serious physical violence was found to be a significant predictor of service receipt in some of the analyses, though the direction of the effect was not as predicted. In both the naïve model (model 1) and that which compared informal versus formal support type (model 2), *serious physical violence* was significantly associated with a decreased likelihood of receiving needed services. However, *serious physical violence* is not a significant predictor in any of the models that test receipt of specific service type (hypothesis 3). *Low SES* was a consistent predictor of service receipt across most analyses. As predicted, low SES victims were less likely to have obtained needed services, however when looking at specific service types, this effect only held for legal and advocacy services.

As seen in Table 10 in Appendix A, there are important differences in the prevalence of certain variables when looking a comparison of those who did and did not need services. Notably, those who did not report a need for services disclosed to fewer types of support, were less likely to disclose to any one particular type of support, and were more likely to have disclosed to nobody. This suggests that the act of recognizing a need for services influences the decision to disclose abuse to a support, which in turn influences whether or not they are able to receive services. This makes logical sense, however this process of first recognizing a need for services and then going through the steps to obtain services is relatively understudied. This is a promising avenue for future research.

It is important to note that the sample used in this thesis report an unusually high rate of service receipt. It is possible that the process of obtaining services impact victims' later perceptions of what they did or did not need. By obtaining a service, the need for the

service may be solidified in an individual's memory, whereas if he or she fails to obtain a service, he or she may be more likely to discount the need, and subsequently forget ever needing it. Thus, these data may fail to capture individuals who needed a service at the time of their victimization and were not able to obtain it. Additionally, there are a number of characteristics which are not controlled for in these analyses that may bias the findings. Future analyses will include measures of victim age at the time of victimization and victim location (rural versus urban), however these measures were masked in the current dataset for privacy concerns. It is important to control for these factors, as research has shown that disclosure habits change as individual's age (Barrett & St. Pierre, 2010), and victim location is likely to influence the availability of services. Past research has shown that there are differences in service availability and adequacy in rural communities compared to urban communities (Eastman & Bunch, 2007), and this availability like influences the probability that a victim receives these services. These data do not specify the relationship between the victim and his or her assailant at the time of the victimization. Though it is established that the victim and assailant are intimate partners, it is unclear if, at the time of the victimization, the two are married, dating, cohabiting, etc. The omission of this in the analyses could be leading to omitted variable bias, as past research has argued that unmarried victims may be less likely to receive needed services than married victims (Dugan, Nagin & Rosenfeld, 2003b).

Additionally, some victims who indicated that they had not disclosed their victimization to anyone were coded as having received needed services, including for service types in which providing context for the need is important, such as victim advocacy services and legal services. Though only a very small number of respondents

indicated that they received these services despite never having disclosed their victimization (n=1 for victim advocacy services and n=17 for legal services), this may indicate issues with the wording of the survey.

Because these data consolidate all disclosures to a particular support type for each incident of victimization into one binary indicator, there is necessarily unobserved heterogeneity in this measure. Additional heterogeneity is introduced in these analyses when aggregating the disclosure variable across all incidents of victimization. There is also imposed heterogeneity in service receipt due to aggregation of all incidents into one binary measure of service receipt. Future research should account for this by disaggregating disclosure and utilizing hierarchical linear modeling to more accurately estimate the effects of disclosure.

Drawing upon these findings, it appears that disclosure has a differential effect on the likelihood of receiving services, though additional empirical research that addresses the above concerns is necessary to validate these findings. If validated, these findings argue for the development of policies that inform the general public about how to assist victims of intimate partner violence, and direct them towards public services. In doing so, informal supports could be mobilized to act as advocates for victims, increasing the likelihood that all victims who choose to disclose obtain needed help.

Appendix A. Descriptive Statistics Comparison

Table 10. Descriptive Statistics for IPV victims who did and did not report needing any services

Variable	Needed Services		Did Not Need Services	
	Mean	SD	Mean	SD
Number of Disclosures*	3.547	1.486	1.644	1.295
Disclose – Informal ^o	0.916	0.277	0.721	0.449
Disclose – Formal*	0.873	0.333	0.370	0.483
Disclose – Friend ^o	0.843	0.364	0.641	0.480
Disclose – Family ^o	0.725	0.447	0.452	0.498
Disclose – Police*	0.640	0.480	0.180	0.384
Disclose – Medical ^o	0.448	0.497	0.074	0.261
Disclose – Psych ^o	0.617	0.486	0.249	0.433
Disclose – Hotline ^o	0.127	0.333	0.012	0.110
Disclose – Other ^o	0.149	0.356	0.049	0.216
Disclose – None ^o	0.024	0.145	0.224	0.417
Female ^o	0.747	0.435	0.515	0.500
White ^o	0.782	0.413	0.784	0.411
Low SES	0.257	0.437	0.224	0.417
High School or lower	0.317	0.466	0.382	0.486
SPV ^o	0.797	0.402	0.533	0.499

^op ≤ 0.10; *p ≤ 0.05; **p ≤ 0.01 (one-tailed difference in means tests)

Appendix B. Hypothesis 2 - Odds Ratios

Table 11. Model 2: Odds Ratios for Receiving Any Needed Services

	Fully Specified Odds Ratios	Formal vs. Informal Odds Ratios	None Only Odds Ratios
Disclose to Informal	1.458 [°]	1.973**	<i>omitted</i>
Disclose to Formal	0.971	1.239	<i>omitted</i>
Disclose to None	0.318*	<i>omitted</i>	0.230**
Female	1.157	1.155	1.164
White	1.246 [°]	1.252	1.238
High School or lower	1.078	1.058	1.087
Low Income	0.620**	0.637**	0.621**
Serious Physical Violence	0.635 ^A	0.650 ^A	0.628 ^A
Low Income Missing	0.998	0.988	1.015
White Missing	2.053	1.920	2.042

[°]p ≤ 0.10; *p ≤ 0.05; **p ≤ 0.01 (one-tailed tests); ^A p < 0.05 in the non-hypothesized direction (two-tailed test).

Appendix C. Hypothesis 3 - Odds Ratios and Correlation Matrices

Table 12. Models 3a, 3b, 3c, 3d & 3e: Likelihood of Receiving Legal, Housing, Community, Advocacy and Medical Services – Odds Ratios

	<i>Model 4a</i> <i>Legal</i> <i>n=1185</i>	<i>Model 4b</i> <i>Housing</i> <i>n=292</i>	<i>Model 4c</i> <i>Community</i> <i>n=274</i>	<i>Model 4d</i> <i>Advocacy</i> <i>n=357</i>	<i>Model 4e</i> <i>Medical</i> <i>n=977</i>
Variable	Odds Ratios	Odds Ratios	Odds Ratios	Odds Ratios	Odds Ratios
Disclose to Friend	1.369	2.115*	0.551	1.402	0.815
Disclose to Family	1.367	2.454**	1.276	0.766	2.445**
Disclose to Other	0.823	0.572	2.577°	0.963	1.035
Disclose to Police	0.962	0.765	0.813	3.974**	1.167
Disclose to Medical Personnel	0.992	0.510	1.568	0.832	2.023**
Disclose to Psychologist	0.958	1.467	0.677	0.828	0.693
Disclose to Hotline Operator	0.782	1.834°	1.259	1.251	1.402
Disclose to None	0.322*	1.208	0.035*	0.118*	0.601
Female	1.768**	1.456	2.721*	3.997**	0.729
White	1.566*	1.930*	0.605	1.016	1.464°
High School	0.965	1.314	0.570	1.134	0.909
Low Income	0.722°	0.814	0.776	0.570*	0.923
Serious physical violence	0.623	0.602	1.526	0.669	1.108
Low Income Missing	0.958	0.533	0.465	1.258	0.833
White Missing	1.420	<i>omitted</i>	<i>omitted</i>	<i>omitted</i>	<i>omitted</i>

°p ≤ 0.10; *p ≤ 0.05; **p ≤ 0.01 (one-tailed tests); ^ p < 0.05 in the non-hypothesized direction (two-tailed test).

Table 13. Model 3a: Correlation Matrix

	Disclose Friend	Disclose Family	Disclose Other	Disclose Police	Disclose Medical	Disclose Psych	Disclose Hotline	Disclose None
Disclose Friend	1.0000							
Disclose Family	0.2898	1.0000						
Disclose Other	0.0673	0.0937	1.0000					
Disclose Police	0.1433	0.1077	0.0138	1.0000				
Disclose Medical	0.0483	0.0848	0.0434	0.2517	1.0000			
Disclose Psych	0.1086	0.0831	0.0626	0.1031	0.2818	1.0000		
Disclose Hotline	0.0669	0.0624	0.0424	0.1454	0.1955	0.1586	1.0000	
Disclose None	-0.3777	-0.2616	-0.0659	-0.2049	-0.1162	-0.1930	-0.0543	1.0000

Table 14. Model 3b: Correlation Matrix

	Disclose Friend	Disclose Family	Disclose Other	Disclose Police	Disclose Medical	Disclose Psych	Disclose Hotline	Disclose None
Disclose Friend	1.0000							
Disclose Family	0.2230	1.0000						
Disclose Other	0.1223	0.0896	1.0000					
Disclose Police	0.1919	0.0476	-0.0215	1.0000				
Disclose Medical	-0.0081	0.0763	0.0040	0.2133	1.0000			
Disclose Psych	0.1087	0.1952	0.0736	0.1181	0.3394	1.0000		
Disclose Hotline	0.0549	0.0445	0.0694	0.2225	0.1997	0.1529	1.0000	
Disclose None	-0.2388	-0.1798	-0.0516	-0.1850	-0.1116	-0.1782	-0.0672	1.0000

Table 15. Model 3c: Correlation Matrix

	Disclose Friend	Disclose Family	Disclose Other	Disclose Police	Disclose Medical	Disclose Psych	Disclose Hotline	Disclose None
Disclose Friend	1.0000							
Disclose Family	0.2283	1.0000						
Disclose Other	0.1092	0.0144	1.0000					
Disclose Police	0.1433	0.1285	-0.0306	1.0000				
Disclose Medical	0.0792	0.1480	0.0574	0.2927	1.0000			
Disclose Psych	0.1782	0.1731	0.1132	0.1371	0.3308	1		
Disclose Hotline	0.1286	0.1174	-0.0242	0.2235	0.1411	0.0926	1.0000	
Disclose None	-0.2547	-0.1871	-0.0585	-0.1817	-0.1206	-0.1969	-0.0673	1.0000

Table 16. Model 3d: Correlation Matrix

	Disclose Friend	Disclose Family	Disclose Other	Disclose Police	Disclose Medical	Disclose Psych	Disclose Hotline	Disclose None
Disclose Friend	1.0000							
Disclose Family	0.2910	1.0000						
Disclose Other	0.0204	0.0313	1.0000					
Disclose Police	0.1797	0.0779	0.0372	1.0000				
Disclose Medical	0.0694	0.1309	0.0764	0.2072	1.0000			
Disclose Psych	0.2014	0.1368	0.0733	0.1881	0.2913	1		
Disclose Hotline	0.0710	0.0985	0.0328	0.1351	0.1173	0.0585	1.0000	
Disclose None	-0.3401	-0.2516	-0.0642	-0.3033	-0.1631	-0.2722	-0.0907	1.0000

Table 17. Model 3e: Correlation Matrix

	Disclose Friend	Disclose Family	Disclose Other	Disclose Police	Disclose Medical	Disclose Psych	Disclose Hotline	Disclose None
Disclose Friend	1.0000							
Disclose Family	0.2945	1.0000						
Disclose Other	0.0874	0.0771	1.0000					
Disclose Police	0.0760	0.1600	0.0690	1.0000				
Disclose Medical	0.0977	0.1701	0.0324	0.2187	1.0000			
Disclose Psych	0.1182	0.1089	0.1500	0.1348	0.2611	1		
Disclose Hotline	0.0669	0.0663	0.0599	0.1882	0.1476	0.2065	1.0000	
Disclose None	-0.3039	-0.2130	-0.0551	-0.2060	-0.1911	-0.1881	-0.0589	1.0000

Appendix D. Hypothesis 4 - Odds Ratios and Correlation Matrices

Table 18. Model 4a: Correlation Matrix

	Disclose Friend	Disclose Family	Disclose Other	Disclose Police	Disclose Medical	Disclose Psych	Disclose Hotline	Disclose None
Disclose Friend	1.0000							
Disclose Family	0.2948	1.0000						
Disclose Other	0.0798	0.0787	1.0000					
Disclose Police	0.1028	0.1004	0.0363	1.0000				
Disclose Medical	0.0404	0.0919	0.0136	0.1953	1.0000			
Disclose Psych	0.1072	0.0913	0.1185	0.1253	0.2792	1		
Disclose Hotline	0.0549	0.0472	0.0457	0.1426	0.1601	0.1844	1.0000	
Disclose None	-0.3303	-0.2305	-0.0581	-0.2045	-0.1384	-0.1807	-0.0573	1.0000

Table 19. Model 4a: Correlation Matrix

	Disclose Friend	Disclose Family	Disclose Other	Disclose Police	Disclose Medical	Disclose Psych	Disclose Hotline	Disclose None
Disclose Friend	1.0000							
Disclose Family	0.2781	1.0000						
Disclose Other	0.1189	0.0904	1.0000					
Disclose Police	0.1725	0.2406	0.0381	1.0000				
Disclose Medical	0.1040	0.0603	0.0572	0.1623	1.0000			
Disclose Psych	0.1580	0.1221	0.0526	0.0944	0.2117	1		
Disclose Hotline	0.1195	0.0772	0.1298	0.1486	0.1948	0.1541	1.0000	
Disclose None	-0.4836	-0.3384	-0.0951	-0.2103	-0.1356	-0.2642	-0.0578	1.0000

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