

# Policing nonfatal strangulation within the context of intimate partner violence

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## Abstract

**Purpose** – The current study examined police response, specifically identification and arrest decisions, to nonfatal strangulation occurring within the context of intimate partner violence.

**Design/methodology/approach** – Data for the present study were derived from a sample of 117 possible nonfatal strangulation cases reported to a police agency located in one of the fifth largest and most diverse US cities. A series of logistic regression models were employed to examine the role of victim, suspect and case characteristics on officer formal identification of strangulation and officer arrest decisions.

**Findings** – Results revealed that 14% of all intimate partner violence (IPV) cases reported to the police agency involved possible nonfatal strangulation and less than half of all possible nonfatal strangulation cases were formally identified as such by officers. The odds of formal identification of strangulation by police increased when strangulation was manual and when victims reported difficulty breathing. Injury and formal identification increased the odds of arrest.

**Originality/value** – This study is the first to examine predictors of police formal identification and arrest decisions in nonfatal strangulation occurring within intimate partner violence incidents.

**Keywords** Intimate partner violence, Nonfatal strangulation, Police, Decision making, Identification, Case processing

**Paper type** Research paper

## Introduction

Considerable research has focused on the criminal legal system response to intimate partner violence (IPV) to increase victim safety, reporting, reduce re-victimization, arrest suspects, and adjudicate cases (Dichter *et al.*, 2011; Garza *et al.*, 2020; Martin, 1975; Sherman and Berk, 1984; Xie and Lynch, 2017). Despite substantial knowledge on system response to IPV, nonfatal strangulation has received limited attention from the criminal legal system, though advocates and medical professionals have long been aware of the lethality associated with strangulation (Pritchard *et al.*, 2017; Taliaferro *et al.*, 2009; Wilbur *et al.*, 2001). Nonfatal strangulation, frequently misidentified as “choking” by both victims and legal actors (McClane *et al.*, 2001), is an increasingly dangerous component of IPV. Though definitional and methodological shortcomings exist across epidemiological studies, findings have demonstrated that nonfatal

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strangulation perpetrated by an intimate partner is not uncommon (Sorenson *et al.*, 2014). Data from the National Intimate Partner and Sexual Violence Survey (NISVS, Black *et al.*, 2011), for instance, noted that nearly one in 10 women in the United States (US) will experience attempted strangulation by a partner during their lifetime. Clinical and shelter samples have revealed higher prevalence estimates – with upwards of 68% of women reporting strangulation at the hands of an intimate partner (Glass *et al.*, 2008; Messing *et al.*, 2018; Strack *et al.*, 2001; Wilbur *et al.*, 2001).

The increasing attention to nonfatal strangulation within the context of IPV has been intrinsically linked to life-threatening harm for victims. Strangulation has been identified as a coercive control tactic and as a form of attempted homicide (Strack and Gwinn, 2011; Thomas *et al.*, 2014). This serious offense has devastating acute and long-term health consequences for victims (Hawley *et al.*, 2001; Monahan *et al.*, 2019; Plattner *et al.*, 2005). Strangulation is so dangerous that it can lead to unconsciousness in seconds and brain death in less than five minutes (Strack and McClane, 1999). Nonfatal strangulation incidents were also identified as a significant risk factor for intimate partner homicide (Campbell *et al.*, 2007). Glass *et al.*'s (2008) multi-city case control study of intimate partner femicide, for instance, identified that previous nonfatal strangulation increased the risk of attempted homicide by nearly seven times. Additionally, victims of nonfatal strangulation often report being strangled multiple times by a partner during the life course of a relationship (Smith *et al.*, 2001; Thomas *et al.*, 2014; Wilbur *et al.*, 2001). In other words, repeated nonfatal strangulation incidents may directly translate to multiple missed opportunities for criminal legal system intervention.

Only a handful of studies have examined criminal legal system responses to nonfatal strangulation incidents (Pritchard *et al.*, 2018; Reckdenwald *et al.*, 2017, 2019, 2020; Strack *et al.*, 2001). Overwhelmingly, findings have demonstrated inadequacies, such as the misidentification of strangulation by 911 dispatch and officers, definitional inconsistencies, and significant case attrition among prosecutors (Pritchard *et al.*, 2018; Reckdenwald *et al.*, 2017, 2019, 2020). This is to say that much remains in terms of improving system intervention for nonfatal strangulation incidents. The present study extends knowledge on nonfatal strangulation within the context of IPV by (1) assessing the extent of possible nonfatal strangulation cases reported to a police agency in one of the fifth largest and most diverse US cities; (2) examining the congruency of identification between possible nonfatal strangulation cases and those formally identified by police; (3) identifying victim, suspect, and case characteristics that influence officer formal identification of nonfatal strangulation; and (4) identifying victim, suspect, and case characteristics that influence an officer's decision to arrest in nonfatal strangulation incidents.

### **Strangulation as part of intimate partner violence**

Presently, strangulation within the context of IPV is understood as a serious offense, though this was not always the case. In 1995, the two preventable deaths of Casondra Stewart and Tamara Smith resulted in transformative change across the San Diego Police Department and San Diego City Attorney's Office (Strack and Gwinn, 2011). These cases shared important commonalities – a history of IPV and strangulation (Strack and McClane, 1999). Subsequently, Strack *et al.* (2001) conducted the first comprehensive evaluation of nonfatal strangulation incidents using 300 attempted strangulation cases from the San Diego City Attorney's Office. Findings from Strack *et al.* (2001) demonstrated the highly-gendered nature of strangulation incidents, such that 99% of victims were females and 89% of offenders had a history of prior violence. Of note, officers documented no visible injuries in half of cases – this lack of demonstrable physical evidence translated to significant underestimation of nonfatal strangulation by both police and prosecutors. Indeed, Strack *et al.* (2001) highlighted the necessity for specialized training on the dynamics, symptomology, and best practices for investigating nonfatal strangulation incidents.

Since then, nonfatal strangulation within the context of IPV has gained increased attention in the form of advocacy, legislation, and research. Beginning in 2000, for instance, states created or amended existing legislation to recognize and prosecute strangulation (Pritchard *et al.*, 2017). Currently, 47 states address strangulation in some capacity across statutes (The Institute, 2020a). In 2011, the Training Institute on Strangulation Prevention (The Institute, 2020c) was founded to provide nationwide, multidisciplinary training to a range of professionals emphasizing the importance of identifying and prosecuting strangulation cases. Further, existing studies have since amassed and highlighted several key points regarding the dynamics of nonfatal strangulation.

First, victims have tended to be overwhelmingly female, while strangulation perpetrators have largely been male intimate partners (Glass *et al.*, 2008; Plattner *et al.*, 2005; Sorenson *et al.*, 2014; Strack *et al.*, 2001; Wilbur *et al.*, 2001). It has also been increasingly common for victims to experience more than one strangulation incident (Smith *et al.*, 2001). Wilbur *et al.* (2001), for example, found that victims reported being strangled an average of five times. The most frequently reported form of strangulation has been manual (e.g. hands around neck) compared to ligature strangulation (Plattner *et al.*, 2005; Strack and McClane, 1999). Additionally, strangulation as a coercive control tactic has sadistically displayed a perpetrator's power over the victim's life (Joshi *et al.*, 2012; Thomas *et al.*, 2014), such that victims have reported feeling "so close to death" (Vella *et al.*, 2017, p. 180). Finally, while strangulation victims may present with a range of symptoms, including voice/swallowing changes, airway compression or obstruction, internal bleeding, trouble breathing, difficulty speaking, behavioral changes, memory loss, headaches, neurapraxia, and involuntary urination/defecation (Smith *et al.*, 2001; Strack and McClane, 1999), almost little or no demonstrable evidence of visible external injuries has been common when police arrive on scene (Hawley *et al.*, 2001; McClane *et al.*, 2001; Strack and McClane, 1999; Strack *et al.*, 2001). In other words, nonfatal strangulation can result in painful and serious internal injuries with limited or delayed external marks (De Boos, 2019). This may present barriers in terms of identifying and corroborating evidence for police who may not be proficient in identifying and investigating nonfatal strangulation.

### **Police response to nonfatal strangulation**

Significant advancements to understanding nonfatal strangulation as a part of IPV have been made with regard to advocacy, legislation, and research—yet legal system progress has been slow to improve. Historically, the criminal legal system response to nonfatal strangulation was characterized by limitations impeding the protection of victims and successful case processing. For instance, police and prosecutors have traditionally underidentified nonfatal strangulation or treated these incidents as misdemeanor IPV assaults (Strack *et al.*, 2001; Turkel, 2007). Police response was also plagued by the poor documentation of evidence due to limited visible symptomology and a lack of specialized training on the complexities of strangulation injuries (Strack *et al.*, 2001). In turn, this created complications for prosecuting strangulation incidents (Reckdenwald *et al.*, 2020). This is particularly problematic given the recidivist nature of strangulation perpetrators (Wilbur *et al.*, 2001) and the dangerousness they also pose for police officer safety in terms of risk of injury to officers (Gwinn, 2019; Johnson, 2011).

Police officers, as the first point of contact for a victim, have the ability to intervene in nonfatal strangulation incidents. This can include identifying strangulation, allotting investigative efforts, arresting suspects, and referring victims to appropriate medical and social services. That said, few studies have considered police response to nonfatal strangulation (but see Pritchard *et al.*, 2018; Reckdenwald *et al.*, 2017, 2019). Reckdenwald *et al.* (2017), for example, used 356 police reports and 911 records from Brevard County,

Florida to examine the identification of nonfatal strangulation by 911 dispatchers and response times among patrol officers. Among 356 cases, 911 dispatchers identified explicit strangulation in 22 cases, while explicit strangulation was identified in 33 police reports (Reckdenwald *et al.*, 2017) [1]. Further analyses revealed no significant differences in priority level assigned by 911 dispatchers between explicit strangulation cases and cases without identified strangulation. Similarly, results demonstrated no significant differences in police response time between explicit strangulation cases and cases without identified strangulation. These findings are particularly interesting given the urgency with which response time may have on the survival of a victim (Strack and McClane, 1999).

Related, Pritchard *et al.* (2018) assessed 591 domestic violence case files representing three years of data from Brevard County, Florida to estimate police-identified explicit strangulation cases and those possible strangulation cases that may have been missed. Findings demonstrated that, among 591 cases, police explicitly identified 68 cases (11.5%) as strangulation and 101 cases (17.1%) that were deemed as possible strangulation by the research team [2]. Subsequent analyses revealed that cases coded as possible strangulation very closely resembled explicit strangulation cases with regard to the types of injuries, as compared to cases with no strangulation indicators (Pritchard *et al.*, 2018). Finally, in a subsequent study using data from Brevard County, Florida, Reckdenwald *et al.* (2019) used a pretest-posttest design to evaluate the effect of a strangulation-specific training on police officer identification and documentation of strangulation cases. Results indicated that while the proportion of explicitly-identified strangulation cases was similar across the pre/post samples, the proportion of cases deemed as possible strangulation were significantly less among the post-training sample, suggesting officers improved in their identification of strangulation. Reckdenwald *et al.* (2019) found that, following training, officers were less likely to use synonyms of strangulation (e.g. choking) in case file narratives, demonstrating efficacy in appropriate strangulation documentation.

Indeed, findings from these studies have provided a few key takeaways in terms of police response to nonfatal strangulation. Police officers have had difficulties identifying strangulation and often treat these cases as misdemeanor IPV calls, despite their documented morbidity (Reckdenwald *et al.*, 2017). Moreover, scholars have recommended that strangulation cases likely have been undercounted by responding officers (Pritchard *et al.*, 2018)—though specialized training seems promising in enhancing response (Reckdenwald *et al.*, 2019). These studies have provided an instructive point for additional research given their calls for the continued examination of police response to nonfatal strangulation. It also worth noting that these studies used data from the same police agency located in Brevard County, Florida, suggesting much remains unknown in terms of understanding police response across other jurisdictions. Further, existing work has not considered other police officer decisions in nonfatal strangulation incidents, such as the factors related to arrest decision-making.

### **Purpose of the present study**

The present study used data from a large, metropolitan police department located in one of the fifth largest and most diverse US cities to address the following research questions:

- RQ1. What is the extent of possible nonfatal strangulation cases among heterosexual male-to-female IPV cases?
- RQ2. What is the congruency between possible nonfatal strangulation cases and cases formally identified as strangulation by police?
- RQ3. What victim, suspect and case factors influence police officer's decision to formally identify nonfatal strangulation cases?

RQ4. What victim, suspect and case factors influence police officer's decision to arrest in nonfatal strangulation cases?

## Method

### *Sample*

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Data for the present study were part of a larger federally-funded grant awarded by the Office on Violence Against Women (OVW) that involved the collection of a stratified-random sample of family violence incidents reported to a municipal police agency located in one of the five most populous and diverse US cities. At the time of data collection, the police agency employed 5,300 commissioned police personnel and approximately 1,200 civilian employees, operating one central station and 14 substations. Further, at the time of data collection, the police agency was not using a strangulation supplement or lethality assessment when responding to IPV calls for service.

The sample in this study was derived from a larger, multi-stage process of gathering redacted family violence case files. First, the population of 98,041 reported family violence case files were generated from January 1, 2014 through February 28, 2018 by the police agency and given to the Principal Investigator (PI) who created a stratified random sample based on case disposition with equal numbers to represent each of five case dispositions. These were selected so that case dispositions would be represented proportionately in the final sample. The number of cases per disposition were selected by the PI based on resource allocation constraints for time, money, and personnel. The stratified random sample included 250 cases for each of the following four dispositions: (1) cleared – arrest, (2) cleared – other, (3) active, (4) inactive, and the population of unfounded cases ( $n = 240$ ) for a total of 1,240 incident numbers. These were collected, printed, and redacted by the agency so that information was de-identified. Files were then coded and quantifiable data was extracted from each case.

Data were entered directly into an SPSS 25.0 data spreadsheet. Coding involved extensive training with five graduate research assistants, a detailed codebook, and regular contact with Special Victims' Division personnel to navigate the case file format and discuss issues that arose. The PI supervised and checked coding to ensure inter-coder reliability. Case files were coded in an iterative process; individuals first coded together for 80 h and then met routinely to discuss discrepancies and reach consensus throughout the process. Each case file allowed for the extraction of detailed, quantifiable information that included the responding officer's initial incident report, victim, suspect, and witness information, accounts of the incident, whether or not the case was assigned to an investigator and subsequent reports, description of evidence, injury, victim cooperation, criminal history, and case disposition. Coding of each case file took 35–60 min, depending on the complexity of each incident and length of each case. Once data were entered and cleaned, 811 cases involved a reported incident between a single male suspect and a single female victim that were current or former intimate partners [3].

In this jurisdiction, incidents of nonfatal strangulation occurring within the context of IPV are to be formally identified in the offense title as "Family violence aggravated assault impeding breath." These offenses are considered a form of aggravated assault and a felony offense that, in theory, *should* result in arrest if the officers decide that the offense meets the criteria of the statute. While officer discretion may influence decision-making, research has also noted that police may often lack the training and knowledge to identify all possible strangulation incidents as such – this means that due to underidentification, cases may not necessarily result in arrest or arrest for the appropriate strangulation offense.

For the purpose of the current study, the research team coded all incidents of *possible strangulation* (0 = no, 1 = yes) among the IPV cases, if the case file included any mention of suspect actions that could be related to strangulation as the means of attack without

necessarily explicitly having been termed “strangulation” by the responding police officer or specialized investigator. For example, this included cases where officers noted the complainant was grabbed by the neck and could not breathe, was grabbed by the throat and pinned to the wall, or where complainants were placed in chokeholds. These broad criteria allowed the research team to identify strangulation incidents that may not have been counted as such by police (see Pritchard *et al.*, 2018). Overall, 119 (14.6%) cases were identified as possible strangulation incidents within the context of IPV. Among these 119 cases, two case files had missing data on suspect race and suspect age and were not retained for analyses. The final sample of possible nonfatal strangulation included 117 cases (14.4%).

*Dependent variables*

Formal identification of nonfatal strangulation among IPV incidents by police officers was captured through the officer’s titling of each offense report. Table 1 presents all offense titles for the entire sample of possible strangulation cases. *Formal identification* was a binary measure that captured whether a case was formally identified as strangulation (No = 0, Yes = 1). *Arrest* was captured from information contained in the case file as a binary variable (No = 0, Yes = 1).

*Independent variables*

*Victim characteristics.* Three variables were included as victim characteristics. *Victim age* was captured as a continuous variable. *Victim race* was a binary variable (White = 0, Person of Color = 1) [4]. *Relationship type* was a binary variable that captured whether the victim and suspect were former or current intimate partners (Former = 0, Current = 1). Former intimate partners included those who were legally separated, divorced, formerly dating, or formerly cohabitating. Current intimate partners included those who were married, common law married, currently dating or currently cohabitating.

*Suspect characteristics.* Four variables were included as suspect characteristics. *Suspect age* was a continuous variable. *Suspect race* was a binary variable (White = 0, Person of Color = 1). *History of IPV* was a binary variable that captured explicit mention of whether the suspect had a history of (1) exhibiting any relationship violence, (2) had prior IPV arrests or (3) had prior IPV convictions. *Threats to kill* was a binary measure that captured explicit mention in the case file of whether the suspect threatened to kill the victim and/or children (No = 0, Yes = 1).

*Case characteristics.* Four variables were included as case characteristics. *Strangulation modality* was originally captured as a categorical variable that included manual, pinning, chokehold, and ligature. Due to cell size and for analytic purposes, strangulation modality was

Offense report title	<i>n</i>
Family violence aggravated assault impeding breath	49
Family violence assault bodily force	50
Aggravated assault deadly weapon	5
Investigation family violence	4
Family violence serious bodily injury aggravated assault	3
Investigation assault	2
Family violence assault by other weapon	1
Aggravated assault injury to elderly/disabled (family)	1
Criminal trespassing all other locations	1
Family violence burglary of a residence to commit assault	1

**Table 1.**  
Offense report titles of possible nonfatal strangulation IPV cases (*N* = 117)



recoded as a binary measure to capture manual strangulation (No = 0, Yes = 1). *Lost consciousness* was a binary variable that captured explicit mention in the case file if the victim lost consciousness (e.g. "passed out") during the incident (No = 0, Yes = 1). *Difficulty breathing* was a binary variable (No = 0, Yes = 1) that captured explicit mention of breathing difficulty during the incident (e.g. "could not breathe," "lost ability to breathe for 10 seconds"). *Visible injury* was a binary variable (No = 0, Yes = 1) that captured any explicit mention of visible, external injuries on the victim by the officer (e.g. "bruising," "red marks," "petechiae") [5].

### Analytic strategy

The analysis proceeded in two steps. First, descriptive statistics were calculated addressing research questions one and two. Second, given the binary nature of the dependent variables, multivariate binary logistic regression models were estimated (Long, 1997) to assess predictors of formal identification and arrest addressing research questions three and four. SPSS, version 25.0 was used to analyze the data. Prior to estimating the multivariate binary logistic regression models, the data were screened for skewness and kurtosis. Estimates fell between the accepted values of 3.0 and 8.0, respectively (Kline, 2005). Multicollinearity diagnostics were also evaluated; tolerances ranged from 0.289 to 0.904 and variance inflation factors (VIF) ranged from 1.12 to 3.5 indicating that multicollinearity was not an issue (Belsley *et al.*, 1980; Fox, 1991).

## Results

### *Descriptive statistics*

Table 2 presents the descriptive statistics for the variables. Out of 811 IPV incidents, 117 cases involved possible nonfatal strangulation (14.4%). Among the possible nonfatal strangulation incidents, just under half ( $n = 49$ , 41.9%) were formally identified by police officers. As displayed in Table 2, female victims averaged 29.94 (SD = 9.01) years of age while male suspects averaged 32.92 (SD = 10.40) years of age. Approximately two-thirds of the victims and suspects were Persons of Color (65.8%), and the majority of victims reported a current intimate relationship with the suspect (76.9%). Just over half of suspects did not have a history of IPV (54.7%) and most suspects did not engage in threats to kill the victim and/or children based on the information collected by the police during the investigation (76.1%). Approximately a quarter of the nonfatal strangulation incidents involved manual strangulation (25.6%). While just over half of victims experienced difficulty breathing during the incident (55.6%), the majority of victims did not report a loss of consciousness (82.1%). Finally, there was evidence of visible injury in over half of the reported nonfatal strangulation cases (56.4%).

### *Multivariate binary logistics regression predicting identification*

Table 3 presents the results from the multivariate binary logistic regression equation predicting formal identification of nonfatal strangulation in IPV cases. The regression equation, which estimated the effect of victim, suspect, and case characteristics on formal identification, was statistically significant,  $\chi^2(11) = 40.41$ ,  $p = 0.000$ . Victim age was a statistically significant, negative predictor ( $B = -0.09$ , OR = 0.92,  $p = 0.03$ ), where a one-unit increase in victim age decreased the odds of formal identification of nonfatal strangulation. Suspect age was a statistically significant, positive predictor, ( $B = 0.08$ , OR = 1.08,  $p = 0.02$ ) where a one-unit increase in suspect age increased the odds of formal identification of nonfatal strangulation. The modality of strangulation was a statistically significant, positive predictor ( $B = 1.44$ , OR = 4.23,  $p = 0.01$ ); police officers were 4.23 times more likely to formally identify nonfatal strangulation in cases that involved manual strangulation,

Variables	<i>n</i>	%	<i>M</i> ( <i>SD</i> )	Range
<i>Formally identified</i>				
No	68	58.1%	–	–
Yes	49	41.9%	–	–
<i>Arrested</i>				
No	56	47.9%	–	–
Yes	61	52.1%	–	–
Victim age	–	–	29.94 (9.01)	17–64
<i>Victim race</i>				
White	40	34.2%	–	–
Person of color	77	65.8%	–	–
<i>Relationship type</i>				
Former	27	23.1%	–	–
Current	90	76.9%	–	–
Suspect age	–	–	32.92 (10.40)	18–65
<i>Suspect race</i>				
White	40	34.2%	–	–
Person of color	77	65.8%	–	–
<i>History of IPV</i>				
No	64	54.7%	–	–
Yes	53	45.3%	–	–
<i>Threats to kill</i>				
No	89	76.1%	–	–
Yes	28	23.9%	–	–
<i>Strangulation modality</i>				
All others	87	74.4%	–	–
Manual	30	25.6%	–	–
<i>Lost consciousness</i>				
No	96	82.1%	–	–
Yes	21	17.9%	–	–
<i>Difficulty breathing</i>				
No	52	44.4%	–	–
Yes	65	55.6%	–	–
<i>Visible injury</i>				
No	51	43.6%	–	–
Yes	66	56.4%	–	–

**Table 2.**  
Descriptive statistics of  
possible nonfatal  
strangulation IPV  
cases (*N* = 117)

compared to cases involving other strangulation modalities. Difficulty breathing was a statistically significant, positive predictor ( $B = 2.11$ ,  $OR = 8.24$ ,  $p = 0.00$ ) such that police officers were 8.24 times more likely to formally identify nonfatal strangulation when victims reported experiencing difficulty breathing during the incident, compared to when victims reported no difficulty breathing. The remaining variables were not statistically significant.

*Multivariate binary logistic regression predicting arrest*

Table 4 presents the results from the multivariate binary logistic regression equation estimating the effect of victim, suspect, and case characteristics on arrest decisions in cases of



**Table 3.**  
Multivariate binary  
logistic regression  
predicting formal  
identification ( $N = 117$ )

Variables	<i>B</i>	S.E.	Exp( <i>B</i> )
Victim age	-0.09	0.04	0.92*
Victim person of color	1.61	0.90	5.03
Current intimate partners	-0.47	0.57	0.63
Suspect age	0.08	0.03	1.08*
suspect person of color	-1.03	0.84	0.36
History of IPV	0.25	0.49	1.28
Threats to kill	-0.15	0.57	0.86
Manual strangulation	1.44	0.58	4.23*
Lost consciousness	0.67	0.57	1.95
Difficulty breathing	2.11	0.53	8.24**
Visible injury	1.06	0.53	2.89
Constant	-3.45	1.29	0.32
Nagelkerke $R^2$		0.39	

**Note(s):** \* $p < 0.05$ , \*\* $p < 0.01$

**Table 4.**  
Multivariate binary  
logistic regression  
predicting arrest  
decisions ( $N = 117$ )

Variables	<i>B</i>	S.E.	Exp( <i>B</i> )
Victim age	-0.07	0.04	0.94
Victim person of color	0.19	0.81	1.21
Current intimate partners	0.83	0.53	2.30
Suspect age	0.02	0.03	1.01
Suspect person of color	-0.04	0.77	0.96
History of IPV	-0.10	0.45	0.91
Threats to kill	0.62	0.55	1.86
Manual strangulation	-0.71	0.52	0.49
Lost consciousness	-0.32	0.57	0.73
Difficulty breathing	-0.51	0.52	0.60
Visible injury	1.48	0.49	4.37**
Formally identified	1.16	0.51	3.20*
Constant	0.33	1.02	1.39
Nagelkerke $R^2$		0.27	

**Note(s):** \* $p < 0.05$ , \*\* $p < 0.01$

nonfatal strangulation. The regression equation was statistically significant,  $\chi^2(12) = 26.52$ ,  $p = 0.009$ . Visible injury was a statistically significant, positive predictor of arrest ( $B = 1.48$ ,  $OR = 4.37$ ,  $p = 0.00$ ), where police officers were 4.37 times more likely to arrest the suspect in cases of nonfatal strangulation when victims presented with visible injuries, compared to no visible injuries. Formal identification was also a statistically significant, positive predictor of arrest ( $B = 1.16$ ,  $OR = 3.20$ ,  $p = 0.02$ ), where police officers were 3.20 times more likely to arrest suspects in formally identified nonfatal strangulation incidents, compared to cases where strangulation was not formally identified.

### Discussion

A dearth of literature has examined police response and case processing of nonfatal strangulation within the context of IPV and all of the existing research has relied on a single data set drawn from one county in the state of Florida. The current study contributed to the existing program of research by: (1) assessing the extent of possible nonfatal strangulation among IPV cases reported to a large, urban police department in one of the fifth largest and

most diverse US cities; (2) examining the congruency between possible nonfatal strangulation cases relative to cases formally identified by police; (3) identifying victim, suspect, and case characteristics that influenced an officer's decision to formally identify nonfatal strangulation; and (4) identifying victim, suspect, and case characteristics that influenced an officer's decision to arrest in nonfatal strangulation incidents. Several findings are worthy of additional discussion.

First, research question one addressed the extent to which possible nonfatal strangulation incidents were reported to the police agency. Indeed, results indicated that among the sample of 811 reported IPV incidents involving a single male suspect and a single female victim that were current or former intimate partners, approximately 14.4% involved *possible* strangulation. This estimate is in line with existing research on possible nonfatal strangulation within IPV reported to police agencies in other jurisdictions (Pritchard *et al.*, 2018). Broadly, this finding reiterates the need to continue to identify those incidents involving nonfatal strangulation that have been "missed" because it is likely that these incidents are similarly being overlooked and undercounted. Future research should continue to identify possible nonfatal strangulation incidents among smaller and medium size police agencies to build a body of knowledge on prevalence rates across a range of municipalities.

Second, research question two considered the congruency between the sample of 117 possible nonfatal strangulation cases identified by researchers and nonfatal strangulation cases formally identified by police officers. Findings presented in Table 1 demonstrated just under half of all possible nonfatal strangulation cases were formally identified by officers as "Family violence aggravated assault impeding breath," which is the appropriate offense title for a strangulation incident within this agency. These results reiterate extant scholarship that has suggested nonfatal strangulation incidents have been underidentified by police (Pritchard *et al.*, 2018). In other words, those nonfatal strangulation cases that have been identified and investigated are likely a conservative estimate of the complete population of strangulation incidents. Due to the pervasive problem surrounding underidentification, relatively little information is known about police response to nonfatal strangulation. It is important, however, to reiterate that, during the time in which data were collected, the police agency was not using a strangulation supplement or lethality assessment, nor had they participated in specialized strangulation training.

Furthermore, this study was concerned with identifying predictors of formal identification of strangulation in IPV incidents reported to police. Difficulty breathing was the strongest predictor of formal identification. Specifically, when victims reported trouble breathing, the odds of police formally identifying the incident as nonfatal strangulation increased by more than eight times. In a similar vein, loss of consciousness also increased officers' formal identification of nonfatal strangulation. It could be that police have relied on common behaviors reported by victims that have been associated with strangulation when formally identifying this type of abuse. Prior research has noted that difficulty breathing and loss of consciousness were documented symptoms of strangulation (Smith *et al.*, 2001; Strack and McClane, 1999); therefore, these findings are somewhat promising in terms of officer formal identification.

Results also demonstrated that suspect and victim age were significant predictors of formal identification of nonfatal strangulation. Specifically, police were more likely to formally identify nonfatal strangulation in incidents involving older suspects. While not ideal, these findings could reflect police perceptions of dangerousness as it relates to IPV and strangulation. For example, suspect age may be affiliated with notions of physical strength, stamina, and the ability to engage in behaviors such as strangulation where an individual is applying pressure on a victim's neck or throat to stop the flow of oxygen or blood to the brain, despite desperate attempts by the victim to survive at all costs. Alternatively, an increase in

victim age was associated with a decrease in the odds of formal identification. These findings were relatively unexpected and should be further explored in future research endeavors.

Finally, research question four investigated significant predictors of arrest in cases of nonfatal strangulation. Results demonstrated that victim injury had the strongest effect on arrest. Indeed, when victims presented with visible physical injuries, odds of arrest increased by over four times. Prior research has suggested victims of nonfatal strangulation may not present with demonstrable evidence of visible external injuries when officers arrive on scene (Hawley *et al.*, 2001; McClane *et al.*, 2001; Strack and McClane, 1999; Strack *et al.*, 2001), or external injuries are often delayed to appear given the type of abuse inflicted (De Boos, 2019). Furthermore, victim injury was significant for police officer arrest decisions but not in the context of formal identification of nonfatal strangulation. It could be that police officers were unfamiliar with specific strangulation injuries, such as petechiae, which may have hindered their ability to formally identify nonfatal strangulation. Furthermore, this finding suggests that despite the nature or context, victim injury continues to play a substantial role in police decision-making, reiterating prior research on IPV case processing (Dichter *et al.*, 2011; Durfee and Fetzer, 2016; Franklin *et al.*, 2019; Garza *et al.*, 2020; Tatum and Pence, 2015). To be sure, demonstrable injury often reflects the severity of violence and provides physical evidence of abuse, both of which can reduce police officers' discretion in decision-making (Dichter *et al.*, 2011; Hirschel and Hutchison, 2001). Formal identification of nonfatal strangulation also increased the odds of arrest. While intuitive, this result suggests police officers who identify nonfatal strangulation in IPV incidents may understand of the seriousness of this type of violence, particularly as it relates to lethality risk (Campbell *et al.*, 2007; Glass *et al.*, 2008). As a result, police officers may be more inclined to formally intervene. Future research should continue to explore arrest decisions in nonfatal strangulation incidents, particularly as it relates to the role of victim cooperation.

In terms of policy implications, specialized systematized training has the potential to increase identification of strangulation and improve police response. Specific training topics should include training officers to ask questions that focus on gaps in memory to gather information to more suitably identify strangulation from a victim's responses (The Institute, 2020b). Oftentimes, victims may not realize they have suffered loss of consciousness and when they are questioned about their experiences, they may not accurately recall the timely sequence of events that transpired. Training content should also focus on specific physical and psychological signs of nonfatal strangulation. This may include mandating particular lines of questioning that highlight behavioral descriptions of perpetrator behavior to facilitate identification. Educating officers on ways to gather information, including medical assessment and documentation of injury, can aid in the formal identification of strangulation and later, the prosecution of perpetrators (The Institute, 2020b).

Finally, training should highlight trauma-informed and victim-centered approaches that encourage empathy, respect and compassion from police when interviewing victims. This approach can facilitate feelings of safety for victims, thus increasing the likelihood that a victim will be willing to discuss sensitive information, provide details following the incident, and cooperate with later investigative efforts (The Institute, 2020b). This type of specialized strangulation training is provided to a range of practitioners through the Alliance for Hope International and the Training Institute on Strangulation Prevention (The Institute, 2020b). We recommend that professional police associations, such as the Major Cities Chiefs Association (MCCA) and the International Association of Chiefs of Police (IACP), promote the need for systematized nonfatal strangulation training in police academies and as continuing education.

Although the findings presented here are instructive, they are not without limitations. First, at the time of data collection, the police agency did not use a strangulation supplement or lethality assessment, therefore, identification of possible strangulation cases were created

by the researchers through careful evaluation of the entire case file in line with existing research precedence and this should be interpreted accordingly. Moreover, the researchers used the case file offense title as a proxy for the formal identification of nonfatal strangulation – findings should be interpreted with caution. It may be that some officers did identify the case as nonfatal strangulation, but failed to title the offense appropriately or perhaps chose a different offense title. Additionally, the current study used a relatively small sample size, which limited the number of variables included in the multivariate regression models and this could lead to omitted variable bias. The current study, for instance, did not include a measure for a history of prior strangulation due to limitations in cell size. Future research should examine how this and other variables omitted, such as victim cooperation, victim affect, and the presence of children, may influence police decision-making in nonfatal strangulation incidents. Further, the nature of using case file data for this study also precluded the inclusion of individual officer characteristics that may influence response to strangulation, such as years of experience, exposure to IPV calls, and officer sex, among others. Subsequently, the results may not be reflective of all variables that can influence police officers' formal identification and arrest decisions in nonfatal strangulation. Finally, data used in the present study come from a single, large urban police department located in one of the fifth largest and most diverse US cities and findings may not be generalizable to other police agencies across the US. It would be important to replicate this study among other departments located in smaller or medium sized agencies, situated in more rural or suburban jurisdictions. It would also be important to replicate this study among police departments who receive fewer IPV calls for service involving nonfatal strangulation.

Despite the limitations outlined above, findings presented here have important implications. Police officers have the opportunity to respond to, identify, and investigate nonfatal strangulation occurring within the context of IPV. The aforementioned results, however, affirm that nonfatal strangulation incidents do exist among IPV cases, often go unidentified, and this has significant repercussions for officer decision-making. From a policy implication standpoint, these findings speak to offering systematized strangulation training for this police agency and the implementation of a strangulation supplement (Reckdenwald *et al.*, 2019). Educational programming should highlight the dynamics, symptomology, and best practices for investigating nonfatal strangulation incidents (The Institute, 2020b). In turn, augmenting police response to nonfatal strangulation within the context of IPV has the potential to ensure victim safety from the standpoint of police whose interest is in preserving victim wellbeing and public safety.

## Notes

1. In this study, explicit strangulation was conceptualized as “using words such as strangulation, choking, throttling, or other synonyms or derivatives” (Reckdenwald *et al.*, 2017, p. 512).
2. This study used the above definition for explicit strangulation and relied upon any mention of any actions or symptoms related to strangulation as “possible strangulation” cases (Pritchard *et al.*, 2018, p. 168).
3. This excluded incidents involving parents, relatives, guardians, and other non-intimate relationships. Incidents involving same-sex IPV were also excluded due to small cell size.
4. Unfortunately, this police agency does not systematically capture ethnicity in case files. People of Color, then, included the following races: Black, Asian, and Pacific Islander.
5. The medical term, “petechiae” refers to pinpoint spots or hemorrhaging that appears on the skin, eyes, and internal organs as a result of strangulation (Hawley *et al.*, 2001).

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