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REVIEW ARTICLE

High-risk Victims of Intimate Partner Violence: An Examination of Abuse Characteristics, Psychosocial Vulnerabilities and Reported Revictimization

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Abstract

Purpose To support service provision, we sought to advance the existing evidence base about the characteristics of—and potential predictors of reported revictimization for—women identified as being at high risk of experiencing ongoing intimate partner violence (IPV).

Method Our sample included 165 high-risk IPV cases with a female victim and a male aggressor managed by the Integrated Safety Response in New Zealand. Based on police and multi-agency risk assessment information, we (a) described the characteristics of these cases, focusing on victims' abuse experiences and psychosocial vulnerabilities; (b) examined rates of reported recurrence and physical recurrence; and (c) explored which variables predicted these two outcomes across a 12-month follow up, using the Nested Ecological Model as an organizing framework.

Results In addition to experiencing harmful patterns of IPV, victims had relatively high rates of mental health issues, drug use, housing instability and unemployment. Reported revictimization was common: 62.8% of cases involved (at least one) recurrence, and 35.8% of cases involved physical recurrence. Most variables did not predict either outcome; but two variables predicted *decreased* rates of recurrence and physical recurrence: prior strangulation and a victim's initial engagement with IPV interventions.

Conclusions As predicted, reported revictimization rates were high. Victims also experienced other psychosocial vulnerabilities, confirming their need for wide-ranging support. However, this study raises questions about whether these needs are relevant to predicting reported revictimization within high-risk cohorts, and highlights the difficulties of empirically validating treatment targets that could minimize further IPV harm for this group.

Keywords Partner Abuse · Domestic Abuse · Risk Factors · Ecological Model · Coordinated Community Response

Understanding the characteristics of women at high risk of experiencing ongoing intimate partner violence (IPV)—and the potential predictors of reported revictimization among this group—is important for supporting evidence-based service provision that both improves safety and longer-term wellbeing. But there is a relative lack of research that uses the type of information that is typically recorded by frontline practitioners, and specifically focuses on high-risk cases. We therefore seek to contribute to the evidence base about women who are victims in high-risk IPV cases by examining a sample of cases that are reported to New Zealand Police (NZP) and classed as high-risk by the Integrated Safety Response (ISR; a multi-agency crisis response system). In this study, we sought to (a) describe the characteristics of these cases, focusing on victims' abuse experiences and psychosocial vulnerabilities; (b) examine the rates of reported recurrence (i.e., any further calls for police service) and physical recurrence (recurrence involving physical violence); and (c) explore which variables longitudinally predicted reported revictimization across a 12-month follow up.

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Responding to IPV in New Zealand

The legislative framework for IPV in New Zealand means that NZP and the ISR respond to a wide range of abusive behaviors. IPV is situated within a broad definition of family violence that includes any psychological (e.g., verbal abuse, intimidation, harassment, property damage, harm to animals, threats, coercive control, financial abuse), sexual, or physical abuse perpetrated by a current or former intimate partner ([New Zealand] Family Violence Act, 2018). A recent study found that in over one-third of IPV episodes, NZP exclusively detect the occurrence of verbal abuse (Tomkins et al., 2023); and most calls for service do not result in an arrest or charge (Jolliffe Simpson et al., 2021). NZP's current strategic focus prioritizes prevention alongside crime detection and prosecution, meaning that even when an IPV-related offence is detected, charges may not be pursued (New Zealand Police, 2022).

As observed in many other jurisdictions (e.g., Robinson, 2006), collaboration between NZP and other IPV service providers is increasingly common (New Zealand Police, 2022). For example, the ISR is a crisis response system that triages and allocates services to IPV (and non-IPV family violence) cases that come to NZP attention in the Christchurch and Waikato regions. Shortly after each call for service, a multi-agency triage team—comprised of practitioners representing various governmental (e.g., criminal justice, social welfare, education, and health) and non-governmental organizations (e.g., specialist family violence and Indigenous Māori services)—shares information to collaboratively complete risk assessments, manage cases, and allocate agencies to provide interventions (Mossman et al., 2019). Each case is assigned a risk level—low, medium, or high—based on information from NZP's risk assessment instruments and the ISR practitioners' professional judgement (Jolliffe Simpson et al., 2023; Mossman et al., 2017).

High-risk IPV cases represent a particularly important practice and research priority, given the elevated potential for ongoing harm and the intensive resources required to support such cases (Arroyo et al., 2017; Howarth & Robinson, 2016). Regarding the former, the ISR applies a high-risk classification in cases where triage teams judge the prospect of another episode between the aggressor and victim as both imminent and likely to involve serious psychological trauma, physical injury or even death (Mossman et al., 2017). Regarding the latter, each party is typically allocated 40 h of face-to-face support (cf. five hours of face-to-face support for medium-risk cases and one-and-a-half hours of telephone support in low-risk cases; Mossman et al., 2019).

Characteristics of High-Risk IPV Cases and Predictors of Revictimization

Responding to high-risk IPV cases is challenging; in part due to the harmful abuse patterns and the myriad psychosocial vulnerabilities that may be present in those cases. Understanding the characteristics of women at high risk of IPV revictimization is necessary so that organizations can align services with those needs (Howarth & Robinson, 2016). Prior research on high-risk IPV victims has found that, as well as experiencing wide-ranging IPV behavior (e.g., strangulation, sexual violence and physical violence causing injuries), these victims also experienced high rates of unemployment, and, to a lesser extent, substance use and mental health issues (e.g., Howarth & Robinson, 2016; Robinson, 2006). And in terms of revictimizations rates, around one-third of these high-risk victims had an IPV recurrence reported to police over the following six months (Robinson, 2006).

In addition to providing a better understanding of the characteristics of high-risk IPV cases, identifying predictors of revictimization may also support service provision by highlighting promising targets for efforts to improve safety (Dowling & Morgan, 2019; Robinson, 2006). To retain a holistic focus on factors relating to the victim, aggressor, dyad, and wider community, we applied Dutton's (1995, 2006) Nested Ecological Model (NEM). This approach followed the application of the NEM in multiple IPV meta-analyses (e.g., Spencer et al., 2019; Spencer et al., 2022; Stith et al., 2004). The ecological levels of the NEM provide a useful structure for organizing a review of factors potentially relevant to reported revictimization; and, in turn, for guiding service provision (Gulliver & Fanslow, 2016; Spencer et al., 2019, 2022; Stith et al., 2004). Below, we describe the levels of the NEM that we used in this study and briefly review predictors identified in longitudinal revictimization studies.

Individual Level

The 'ontogenetic' or *individual* level comprises the victim's and aggressor's personal characteristics (Dutton, 1995, 2006). Predictors of revictimization at this level include prior mental health issues for the victim (Iverson et al., 2013; Krause et al., 2006; Kuijpers et al., 2012a; Perez & Johnson, 2008; Perez et al., 2012; Sonis & Langer, 2008) and aggressor (Ringland, 2018; Robinson, 2006; Robinson & Howarth, 2012). In addition, research identified prior substance use by victims (Crandall et al., 2004; Testa et al., 2003) and aggressors (Ringland, 2018; Robinson, 2006; Robinson & Howarth, 2012) both predicted revictimization.

Relationship Level

The 'microsystem' or *relationship* level includes the interactions between victims, aggressors, and their immediate families (Dutton, 1995, 2006). Predictors of revictimization at this level include aggressors' use of diverse forms of IPV (Crandall et al., 2004; Ringland, 2018; Robinson, 2006; Robinson & Howarth, 2012), their history of using IPV (Krause et al., 2006; Kuijpers et al., 2012a; Robinson, 2006; Sonis & Langer, 2008; Testa et al., 2003), victims' use of physical IPV (Kuijpers et al., 2012a, b), and victims' appraisals of risk (Heckert & Gondolf, 2004) or fear about their children's safety (Robinson & Howarth, 2012). In addition, *relationship churning*, where a victim and aggressor cycle in and out of the relationship (Halpern-Meekin & Turney, 2021) and separation within the 12 months prior to the index episode (Dowling & Morgan, 2019; Ringland, 2018; Robinson, 2006; Robinson & Howarth, 2012) predicted revictimization, whereas previous separation in any time period predicted a reduced likelihood, but increased severity, of revictimization (Sonis & Langer, 2008).

Furthermore, some studies found that cohabitation between victims and aggressors predicted revictimization (Mele, 2009; Testa et al., 2003) but others did not (Mele, 2006). Similarly, the presence of dependent children in the family unit predicted revictimization in some studies (Mele, 2006; Ringland, 2018; Romans et al., 2007) but not others (Crandall et al., 2004; Mele, 2009; Robinson & Howarth, 2012); whereas a victim's (current or recent) pregnancy consistently predicted revictimization (e.g., Dowling & Morgan, 2019; Robinson, 2006; Ringland, 2018; Sonis & Langer, 2008).

Community Level[1]

The 'exosystem' or *community* level focuses on the victim's and aggressor's lifestyle, support networks, and their interactions with wider social and institutional networks (Dutton, 1995, 2006). Income and employment-related variables predicted revictimization in some studies (Bybee & Sullivan, 2005; Ringland, 2018; Romans et al., 2007) but not others (Sonis & Langer, 2008). Both IPV interventions (Arroyo et al., 2017; Tirado-Muñoz et al., 2014) and informal social support (Bybee & Sullivan, 2005; Perez & Johnson, 2008; Sonis & Langer, 2008) for victims predicted a reduced likelihood of revictimization. Furthermore, aggressor history of general violence perpetration (based on police or court records; Robinson & Howarth, 2012; Ringland, 2018; Sonis & Langer, 2008) and history of breaching court orders (Ringland, 2018) predicted revictimization, whereas the direction of the relationship between a protection order between the victim and aggressor and revictimization varied across studies (Crandall et al., 2004; Dowling et al., 2018; Mele, 2006, 2009).

The Current Study

In this study, we examined 165 high-risk IPV cases managed by the ISR in New Zealand. Based on both NZP and multi-agency risk assessment information, we sought to describe victims' abuse experiences, psychosocial vulnerabilities, and rates of reported recurrence (i.e., any further calls for police service) and physical recurrence (recurrence involving physical violence). We also explored which variables predicted recurrence and physical recurrence across a 12-month follow up, using the NEM as an organizing framework. Rather than building a model for risk assessment purposes or for making causal attributions, in this exploratory analysis we aimed to identify possible warning signs or intervention targets that could guide service provision for this particular group.

Method

This study used a pseudo prospective, longitudinal cohort design with archival data. The research had ethical approval from the University of Waikato and was approved by the ISR national governance board.

Sample

The sample initially included all IPV cases with a female victim and a male aggressor for which there was an index episode reported to police in the ISR areas (Christchurch and Waikato) between 1 November and 31 December 2018 and where the case was categorized as high-risk by the ISR: 171 cases with unique dyads[2] in total. We assigned unique identifiers to ensure participant anonymity and facilitate data matching across time points. We removed a small number of cases due to duplication errors ($n=4$), missing data ($n=1$) and police incorrectly classifying an index episode as IPV ($n=1$), leaving a final sample of 165 dyads.

[1] the NEM also Includes a 'macrosystem' or *socio-cultural* Level, which Focuses on Beliefs and Norms in the Victim's and Aggressor's Culture, Especially Relating to Families, Gender, and Violence. But this Level is outside the Scope of this Study because of our Reliance on Archival data that did not Explicitly Assess or Capture such Information

[2] The sample partially overlapped with a larger sample collated by Jolliffe Simpson et al. (2021) on IPV and non-IPV family violence perpetration; their studies used all IPV and non-IPV family violence cases with an index episode between 1 November and 9 December 2018 from the same archive.

Data Sources

We used two data sources: police reports and ISR case plans. Police reports were completed by attending police officers (and duplicated into the ISR database). ISR case plans encompassed additional, multi-agency information that was recorded in the ISR database in response to processing a police-recorded episode.

Police Reports

Police episode reports included basic demographic data about the victim and aggressor, such as age, ethnicity, and gender, as well as episode characteristics. These include the date the episode was reported to police, who reported the episode, the location type, and the types of harm identified. Each report also contained a 'narrative' section (i.e., the officer's summary of the episode): typically including relationship background; victim, aggressor, and witness perspectives on the episode; any children present; the scene and evidence; and the police actions or recommendations.

ISR Case Plans

In addition to the police reports, multi-agency information relating to risk assessments and case management for each dyad was recorded in ISR case plan notes. ISR practitioners updated case plans after further reported episodes involving the victim and aggressor, and after any case reviews. Case plans also contained a section about interventions. Here, specialist IPV practitioners recorded notes about any interventions allocated to victims and aggressors, including the agency and practitioner involved and intervention type (i.e., Independent Victim Specialist, Perpetrator Outreach Specialist, or Indigenous Māori services), start and completion dates, case notes, and outcome comments.

Procedure and Data Preparation

Raw data were extracted from the ISR database by an NZP employee and made available to the researchers. From these data sources, we collated or manually coded variables (see Table 1). For each case, the index episode was designated as the first police call for service in the two-month window from which we drew the sample. We then created a coding protocol for 54 individual, relationship, and community level variables (Tomkins, 2020), using the two data sources (i.e., police episode report narratives and ISR case plans). We extracted and coded most variables from the six-month baseline period prior to, and including, the index episode (see Tomkins, 2020 for more information). Additionally, we extracted and coded intervention variables from the 12-month follow-up period immediately after the index episode. The first and second authors independently coded these variables for 33 randomly selected dyads (i.e., 20% of the sample). Based on interrater reliability analysis, we retained the 22 variables with an intraclass correlation over 0.70. The first author then administered the coding protocol to the remaining sample.

Overall, intervention data were poorly recorded. As a result, we were only able to create a single dichotomous intervention-related variable: *initial engagement* with IPV interventions. This variable indicated whether victims or aggressors, respectively, who were referred to specialist IPV support services attended at least one face-to-face meeting with the intervention provider during the 12-month follow up period[3].

We created two dichotomous outcome variables measured in the 12 months after the index episode for each dyad. *Recurrence* refers to at least one subsequent IPV episode—irrespective of harm level or type (e.g., verbal abuse, physical abuse, sexual abuse and so on)—reported to NZP during the 12-month follow-up period and involving the index victim and aggressor in the same roles. If reported recurrence was recorded, then we also coded whether *physical recurrence* was recorded. Physical recurrence refers to whether NZP detected any level or type of physical violence in any reported recurrence (i.e., in some cases, the episode meeting criteria for physical recurrence was not the first episode in that dyad's follow-up period and, therefore, not the same event recorded in *recurrence*).

Plan for Analysis

All analyses were conducted in IBM SPSS Statistics Version 26. First, we used descriptive statistics to describe the characteristics of high-risk cases, focusing primarily on victims' abuse experiences and psychosocial vulnerabilities. Next, we examined rates of recurrence and physical recurrence. Then, we used point biserial correlations to explore which variables predicted recurrence and physical recurrence. As a final exploratory step, we conducted a series of binary logistic regressions predicting recurrence and physical recurrence to identify potential predictors of revictimization (i.e., possible interventions targets for this group); although it is critical to note that this analysis cannot identify causal relationships between predictor and outcome variables. Because the ratio of variables to cases exceeded statistical

[3] Other interventions may have been initiated by ISR agencies, such as a non-association order if the victim or aggressor was managed by a Probation Officer, or security upgrades for the victim's home. However, these types of interventions did not inform this initial engagement variable.

Table 1 Summary of Manually Coded Baseline Variables and Police Collated Variables

Variable	Additional Information
Manually coded variables	
Mental health [V]	Current or historic mental health concerns recorded for victim (from presenting with symptoms through to a formal diagnosis, as well as any engagement with mental health services).
Drug use [V]	Current or historic drug use, drug-related intoxication or drug-related issues (such as convictions or accessing treatment) recorded for victim.
Mental health [A]	Current or historic mental health concerns recorded for aggressor (from presenting with symptoms through to a formal diagnosis, as well as any engagement with mental health services).
Relationship status	Current relationship: the index episode is labelled by NZP as 'Violence Between Partners' and there is other evidence confirming a current intimate relationship between the victim and aggressor (or no further information disconfirming it). Separated relationship: the index episode is labelled as 'Violence Between Ex-Partners' by NZP and there is other evidence confirming a separated relationship between the victim and aggressor (or no further information disconfirming it). Churning relationship: irrespective of the relationship status label assigned to the index episode, there is evidence the victim and aggressor have cycled in and out of the relationship at least once during the baseline period.
Cohabitation	Victim and aggressor recorded as residing in the same house. This includes if they claim otherwise but police or ISR suspects they are living together.
Dependent children	Victim or aggressor have children in their full-time care. This variable only includes children aged 16 years and younger and does not include children in third party care (e.g., due to child protective services involvement).
Pregnancy	Victim recorded as pregnant or having recently given birth, including if they miscarried or terminated the pregnancy.
Fear [V]	Victim recorded as being fearful about the aggressor/relationship; includes fear for self and third parties (most typically children or family members). Excludes third-party's fear for victim.
Violence use [V]	Victim recorded as using physical violence (of any kind) towards aggressor.
Physical harm	Record of any physical violence from aggressor towards victim.
Injuries sustained	Record of any victim injuries sustained from aggressor's violence.
Threats to kill	Record of explicit threats from aggressor to kill the victim or someone close to the victim.
Stalking	Recorded pattern of aggressor stalking the victim (i.e., this does not include one instance of turning up uninvited or social media-related 'stalking', without a wider pattern mentioned).
Controlling behavior	Record of aggressor behaving in a controlling or jealous way towards victim, i.e., power and control tactics.
Sexual harm	Aggressor recorded as having raped, sexually assaulted, or sexually coerced victim.
Weapon use/access	Record of aggressor using (any object as) a weapon against the victim or having access to weapons.
Strangulation	Record of aggressor having strangled, choked or applied pressure to victim's neck.
Protection order	Victim recorded as having obtained a temporary or permanent protection order against aggressor.
Unemployment [V]	Victim recorded as being unemployed, usually taken from social welfare information relating to their unemployment benefit type.
Housing instability [V]	Victim recorded as having accommodation-related issues. This includes homelessness, being of 'no fixed abode', transience, staying in emergency accommodation and *housing insecurity* (as defined by Klein et al., 2019]; e.g., overcrowding, possible eviction, waiting on a social housing transfer).
History of violence [A]	Aggressor recorded as having an official criminal history or previous complaints relating to IPV, non-IPV family violence, general violence, or sexual violence.
Noncompliance [A]	Record of aggressor behaving in ways that breach the conditions of a court order (e.g., protection order, parenting order, bail, or non-association order).
Police collated variables	
Age [V]	Age of victim at index episode, entered as date of birth
Ethnicity [V]	Recorded ethnicity of victim
Age [A]	Age of aggressor at index episode, entered as date of birth
Ethnicity [A]	Recorded ethnicity of aggressor
Reported By	Records who contacted police to report the episode; labels according to person type (e.g., victim, family member, member of public).
Location type	Records the physical location type where an episode occurred (i.e., dwelling or public place).
Property damage	Tick box included in the episode report; selection based on an officer's appraisal of whether property damage was evident.
Sexual harm	A tick box selection on the police episode report; based on an officer's appraisal of whether sexual harm was evident.
Threats of harm	A tick box selection on the police episode report; based on an officer's appraisal of whether threats of harm were evident.
Physical harm	A tick box selection on the police episode report; based on an officer's appraisal of the abuse and evidence of physical harm.
Verbal harm	A tick box selection on the police episode report; based on an officer's appraisal of the abuse and evidence of verbal harm.

Notes: All variables dichotomously coded with a score of 1 reflecting the variable of interest was present and 0 reflecting the variable was absent in the data. [V] = victim variable; [A] = aggressor variable

guidelines[4] and we could not examine all variables in one model, we used the NEM to group variables into conceptually meaningful regression models based on their respective ecological levels. We made decisions about how to allocate variables to specific levels of the NEM by drawing on Dutton's (1995, 2006) descriptions for each level and the available consistencies—where possible—across relevant NEM-related research (e.g., Heise, 1998; Refaeli et al., 2019; Slep et al., 2015; Spencer et al., 2019; Spencer et al., 2022; Stith et al., 2004; Weeks & LeBlanc, 2011).

Results

Characteristics of High-Risk Cases

First, we considered the sample's demographic characteristics and features of the index episodes. Cases were drawn from the Christchurch ($n = 108$, 65.5%) and Waikato (n = 57, 34.5%) regions. Index episodes mostly occurred at a private address ($n = 142$, 85.7%; cf. a public place, $n = 23$, 14.3%) and were commonly reported by third parties ($n = 91$, 55.2%; cf. victims, $n = 74$, 44.8%). The types of harm present in index episodes included threats ($n = 37$, 22.4%), property damage ($n = 19$, 11.5%), physical violence ($n = 97$, 58.8%) and sexual violence ($n = 3$, 1.8%)[5]; and 23.6% of index episodes ($n = 39$) involved verbal harm only. Table 2 details the age and ethnicity of victims and aggressors, with many victims and aggressors identified by NZP as Māori (Indigenous New Zealanders).

Table 2 also details the psychosocial vulnerabilities recorded by NZP and the ISR. In the six months preceding the index episode, approximately one-third of victims experienced mental health issues, illicit drug use, and housing instability. Almost half were unemployed. Over four-fifths of aggressors used physical violence against victims; many victims also reported controlling behaviors, fearfulness, and physical injuries. About half experienced strangulation. Most aggressors had a police record for violence perpetration and breaches of court orders, indicating a broader history of antisocial behavior. Following the index episode, victims more frequently demonstrated initial engagement with IPV interventions than aggressors. Initial engagement

Table 2 Overview of Psychosocial Variables Organized by Ecological Level (N = 165)

Variable	*n*	%	Variable	*n*	%
Individual level			*Relationship level*		
Age (years) [V]			Relationship status		
18–24	44	26.7	Together	75	46.1
25–29	41	24.8	Churning	51	30.9
30–39	46	27.9	Separated	38	23.0
40–49	21	12.7	Cohabitation	77	46.7
50–59	10		Dependent children	95	57.6
60 +	3	1.8	Pregnancy [V]	32	19.4
Age (years) [A]			Fear [V]	86	52.1
18–24	24	14.5	Violence use [V]	42	25.5
25–29	37	22.4	Physical violence	136	82.4
30–39	52	31.5	Injuries sustained	86	52.1
40–49	32	19.4	Threats to kill	25	15.2
50–59	16	9.7	Stalking	18	10.9
60 +	4	2.4	Controlling behavior	122	73.9
Ethnicity [V]			Sexual violence	21	12.7
Māori	76	45.2	Weapon use/access	86	52.1
European	78	47.0	Strangulation	91	55.2
Other	11	7.8	*Community level*		
Ethnicity [A]			Protection order	53	32.1
Māori	88	53.0	Unemployment [V]	75	45.5
European	63	38.7	Housing instability [V]	54	32.7
Other	14	8.3	History of violence [A]	153	92.7
Mental health [V]	61	37.0	Non-compliance [A]	119	72.1
Drug use [V]	60	36.4	Initial engagement with interventions [V]	104	63.0
Mental health [A]	75	45.5	Initial engagement with interventions [A]	63	38.2

Notes: [V] = victim variable, [A] = aggressor variable.

[4] Pictuch and Stevens (2016) recommend one independent variable can be added to regression analyses for every 10 participants sampled.

[5] Note these variables were multiply coded and do not sum to 100%.

by both parties was only recorded in 28.5% of cases and these variables were weakly associated ($r = .18$, $p < .05$).

Rates of Reported Revictimization

Next, we examined the overall rates of reported recurrence and physical recurrence. Almost two-thirds of victims had some form of recurrence reported to NZP in the 12-month follow up ($n = 103$, 62.8%, range = 1 to 28 IPV episodes); and typically, at least one recurrence was reported within three months of their index episode ($n = 70$, 76.7% of cases with recurrence). And over one-third of victims had at least one physical recurrence reported to NZP over the same 12 months ($n = 59$, 35.8%).

We then explored which variables predicted recurrence and physical recurrence at the bivariate level. Table 3 displays variables with a statistically significant relationship to at least one type of recurrence. Most variables did not significantly predict either outcome (see Tomkins, 2020 for full correlation matrix); and the magnitude of these relationships were generally small (Cohen, 1998, as cited in Rice & Harris, 2005).

Potential Predictors of Revictimization

Finally, we entered these variables in a series of binary logistic regressions predicting reported recurrence (Table 4) and physical recurrence (Table 5). Table 4 shows three regression models, each using variables from one level of the NEM to predict recurrence reported to NZP during the 12-month follow up. Across all models, the odds ratios for most predictor variables were non-significant, with wide confidence intervals indicating a lack of precision. More specifically, and consistent with the bivariate analyses in Table 3, Model 1 showed that individual-level variables poorly predicted recurrence; the model was not statistically significant, the pseudo R^2 estimates reflected a poor goodness of fit, and none of the variables significantly contributed to the model. At the relationship level, Model 2 was statistically significant and the pseudo R^2 estimates reflected a better fit. Unexpectedly, pregnancy and strangulation both uniquely predicted *reduced* odds of recurrence. Victim fear and recent physical violence against the victim both uniquely predicted increased odds of recurrence. At the community level, Model 3 was statistically significant, but the pseudo R^2 estimates reflected a slightly poorer goodness of fit compared with Model 2. In this model, the victim's initial engagement with IPV interventions uniquely predicted *increased* odds of recurrence.

Table 5 similarly shows three regression models, each using variables from one level of the NEM to predict physical recurrence reported to NZP during the 12-month follow up. Again, the odds ratios for most predictor variables were non-significant, with wide confidence intervals. Here, Model 1 was statistically significant and the pseudo R^2 estimates reflected a better goodness of fit compared with Model 1 in Table 4. Victim age (i.e., being older) uniquely predicted reduced odds of physical recurrence; and, in contrast to the bivariate analyses, victim drug use uniquely predicted increased odds of physical recurrence. At the relationship level, Model 2 was statistically significant and pseudo R^2 estimates reflected a similar goodness of fit to the relationship model for recurrence (i.e., Model 2 in Table 4). Here, relationship status predicted physical recurrence; compared to separated dyads, those who remained in the relationship and those whose relationship status was unstable ("churning") each had an increased likelihood of physical recurrence. As with the recurrence model, strangulation uniquely predicted *reduced* odds of physical recurrence, but in contrast, pregnancy did not. At the community level, Model 3 was statistically significant. The pseudo R^2 estimates reflected a poorer goodness of fit compared with the community-level model for predicting recurrence (i.e., Model 3 in Table 4). As observed for recurrence, the victim's initial engagement with IPV interventions was the only significant variable in the community model and uniquely predicted increased odds of physical recurrence.

Table 3 Bivariate Relationships between Variables and Recurrence Outcomes (n = 164)

	Any recurrence	Physical recurrence
Individual level		
Age [V]	−0.08	−0.22**
Relationship level		
Relationship status		
Together	−0.01	0.08
Churning	0.08	0.10
Separated	−0.09	−0.20**
Strangulation	−0.17*	−0.21**
Community level		
Protection order	0.15*`	0.03
History of violence [A]	0.17*	0.21**
Non-compliance [A]	0.22**	0.19*
Initial engagement with interventions [V]	0.19*	0.18*

Notes: One case removed due to missing outcome data. [V] = victim variable, [A] = aggressor variable

Significance: * = $p < .05$ level (two-tailed); **= $p < .01$ level (two-tailed)

Table 4 Variables Predicting Any Recurrence (n = 164)

	Model 1: Individual-level Variables [a]					Model 2: Relationship-level Variables [b]					Model 3: Community-level Variables [c]				
Variable	*B*	*SE*	Wald χ^2	*p*	*OR [95% CI]*	*B*	*SE*	Wald χ^2	*p*	*OR [95% CI]*	*B*	*SE*	Wald χ^2	*p*	*OR [95% CI]*
Constant	0.91	0.55	2.76	0.097	2.49	-0.90	0.79	1.30	0.255	0.41	-1.77	0.74	5.76	0.016	0.17
Age [V]	-0.01	0.02	0.59	0.443	0.99 [0.96–1.02]										
Mental health [V]	0.53	0.36	2.19	0.139	1.69 [0.84–3.40]										
Mental health [A]	-0.44	0.33	1.71	0.191	0.65 [0.34–1.24]										
Drug use [V]	0.05	0.35	0.02	0.894	1.05 [0.53–2.09]										
Relationship separation [R]								4.45	0.108						
Together						1.07	0.54	4.01	0.045	2.93 [1.02–8.37]					
Churning						1.02	0.56	3.34	0.068	2.78 [0.93–8.31]					
Cohabitation						-0.62	0.41	2.28	0.131	0.54 [0.24–1.20]					
Children						0.58	0.40	2.10	0.147	1.78 [0.82–3.88]					
Pregnancy						**-0.94**	**0.48**	**3.88**	**0.049**	**0.39 [0.15–0.99]**					
Fear [V]						**0.90**	**0.39**	**5.36**	**0.021**	**2.45 [1.15–5.23]**					
Violence use [V]						-0.27	0.42	0.42	0.518	0.76 [0.33–1.75]					
Physical violence						**1.10**	**0.55**	**4.01**	**0.045**	**2.99 [1.02–8.75]**					
Injuries sustained						0.31	0.43	0.51	0.474	1.36 [0.59–3.16]					
Threats to kill						0.56	0.55	1.05	0.306	1.75 [0.60–5.15]					
Stalking						-0.07	0.67	0.01	0.917	0.93 [0.25–3.43]					
Control						-0.06	0.44	0.02	0.890	0.94 [0.40–2.23]					
Sexual violence						1.01	0.64	2.49	0.115	2.76 [0.78–9.71]					
Weapons						-0.48	0.38	1.58	0.209	0.62 [0.30–1.30]					
Strangulation						**-0.94**	**0.40**	**5.63**	**0.018**	**0.39 [0.18–0.85]**					
Protection order [V]											0.46	0.40	1.29	0.256	1.58 [0.72–3.48]
Unemployment [V]											0.36	0.38	0.90	0.342	1.43 [0.68–3.01]
Violence history [A]											0.85	0.72	1.40	0.237	2.34 [0.57–9.53]
Housing [V]											0.28	0.42	0.42	0.516	1.32 [0.58–3.02]
Noncompliance [A]											0.60	0.44	1.85	0.174	1.82 [0.77–4.30]
Intervention [V]											**0.78**	**0.36**	**4.68**	**0.030**	**2.19 [1.08–4.44]**
Intervention [A]											0.64	0.37	2.91	0.088	1.89 [0.91–3.93]

Notes. One case removed due to missing outcome data. OR = Odds Ratio, CI = Confidence Interval. [V] = victim variable, [A] = aggressor variable, [R] = Reference category

[a] *pseudo-R^2* = 0.04 (Nagelkerke), 0.03 (Cox & Snell); Model χ^2 (4) = 4.81, p = .308; -2 Log Likelihood = 211.67

[b] *pseudo-R^2* = 0.23 (Nagelkerke), 0.17 (Cox & Snell); Model χ^2 (15) = 30.08, p = .012; -2 Log Likelihood = 186.39

[c] *pseudo-R^2* = 0.16 (Nagelkerke), 0.12 (Cox & Snell); Model χ^2 (7) = 20.85, p = .004; -2 Log Likelihood = 195.63

Discussion

In this study, our aims were three-fold. First, we used police and multi-agency risk assessment information to describe the characteristics of 165 high-risk IPV cases, and primarily focused on the abuse experiences and psychosocial vulnerabilities of victims. Second, we examined the rates of recurrence and physical recurrence in these cases, reported to NZP across the 12-month follow up. And third, we explored which variables longitudinally predicted these two outcomes, to contribute to the evidence base about possible warning signs or intervention targets for high-risk IPV cases. We consider the key findings, and associated implications, in turn below.

Characteristics of High-Risk Cases

As would be expected in cases classified as high-risk, many victims experienced harmful patterns of IPV. Injuries resulting from physical violence, strangulation and controlling behaviors were very common. With this level of IPV in mind, it is also interesting to note that a large proportion of episodes were reported by third parties rather than the victim themselves. This finding highlights the role of the wider community—in terms of family members, friends, neighbors, members of the public, and practitioners that may already support the victim or aggressor (e.g., social workers, probation officers, healthcare professionals)—in ensuring these high-risk cases receive specialized responses from both police and multi-agency support services.

And over and above IPV victimization, the range and frequency of psychosocial vulnerabilities recorded—such as mental health issues, drug use, pregnancy, caring responsibilities for dependent children, unemployment, and housing instability—also illustrated the pervasiveness of broader stressors that these victims face. These findings are consistent with previous research that demonstrated the types of abuse and other hardships experienced by high-risk IPV victims (e.g., Howarth & Robinson, 2016; Robinson, 2006). Together, this research suggests that high-risk victims of IPV require intensive and broadly focused interventions. Such interventions would ideally reduce the immediate likelihood of being further victimized, help with basic human needs (e.g., housing), and support longer term wellbeing.

However, based on the poor quality of intervention data available in this study, we cannot know the extent to which service provision was well matched to high-risk victims' IPV-related and wider support needs. Practically, then, although these cases presented to NZP (and, in turn, the ISR) due to an acute episode of IPV—meaning that their immediate IPV-related support needs were a top priority—these findings align with previous research indicating that wider service provision over the medium to long term could also usefully focus on issues such as mental health, substance use, unemployment and housing instability (Arroyo et al., 2017; Chetwin, 2013; Herbert & Mackenzie, 2014; Howarth & Robinson, 2016). These findings confirm the relevance of applying a public health lens here, with this kind of holistic emphasis currently underpinning the strategic focus of key criminal justice and social service agencies in New Zealand (e.g., Department of Corrections, 2019; New Zealand Police, 2022; Te Puna Aonui, 2022).

Rates of Reported Revictimization

Overall, reported revictimization was very common in these cases, and often occurred relatively quickly. The rates of reported recurrence and physical recurrence observed in this study were higher than in studies that sampled low-, medium-, and high-risk IPV victims together (e.g., Ringland, 2018) or had shorter follow-up periods (e.g., Robinson, 2006); but were lower than in studies based on victims' self-reported outcome data (e.g., Perez et al., 2012; Sonis & Langer, 2008).

Frontline workers not constrained by structured risk assessment methods often overrate risk, classifying cases as high-risk that may ultimately not appear to justify it (e.g., Robinson & Howath, 2012). But the high rates of recurrence captured here lend support to the ISR's classification of these cases as high-risk prior to the study's follow-up period; during the 12-month follow up, two-thirds of victims had at least one reported recurrence, and one-third had at least one further episode that involved physical violence. Given high-risk cases account for disproportionate levels of harm and consume significant frontline resources, information about the rates at which these victims and aggressors may present back to police is valuable for planning service provision and justifying expenditure in multi-agency response models like the ISR.

Potential Predictors of Revictimization

We found high rates of previous IPV and psychosocial vulnerabilities recorded in these cases, and such variables discriminated very poorly between cases with and without reported revictimization. In fact, only two variables predicted both recurrence outcomes[6]: prior strangulation and a victim's initial engagement with IPV interventions. For each variable, the statistical relationship was in the opposite

[6] Other variables that were significant predictors only attained that status for one or the other outcome variable. Arguably, such variables may be relevant factors to attend to during intervention delivery but did not yield sufficiently consistent findings across our exploratory analyses.

Table 5 Variables Predicting Physical Recurrence (n = 164)

	Model 1: Individual-level Variables [a]					Model 2: Relationship-level Variables [b]					Model 3: Community-level Variables [c]				
Variable	*B*	*SE*	Wald χ^2	*p*	*OR [95% CI]*	*B*	*SE*	Wald χ^2	*p*	*OR [95% CI]*	*B*	*SE*	Wald χ^2	*p*	*OR [95% CI]*
Constant	0.80	0.61	1.69	0.193	2.22	-2.47	0.87	8.01	0.005	0.08	-2.10	0.51	16.83	0.001	0.12
Age [V]	**-0.05**	**0.02**	**7.66**	**0.006**	**0.95 [0.91–0.99]**										
Mental health [V]	-0.08	0.36	0.05	0.823	0.92 [0.46–1.86]										
Mental health [A]	0.09	0.35	0.07	0.796	1.09 [0.56–2.15]										
Drug use [V]	**0.71**	**0.36**	**3.96**	**0.047**	**2.03 [1.01–4.07]**										
Relationship separation [R]								**8.39**	**0.015**						
Together						**1.67**	**0.60**	**7.82**	**0.005**	**5.32 [1.65–17.17]**					
Churning						**1.59**	**0.61**	**6.79**	**0.009**	**4.90 [1.48–16.17]**					
Cohabitation						-0.59	0.41	2.06	0.151	0.56 [0.25–1.24]					
Children						0.66	0.40	2.72	0.099	1.94 [0.88–4.25]					
Pregnancy						-0.29	0.45	0.36	0.551	0.75 [0.29–1.95]					
Fear [V]						0.31	0.39	0.64	0.425	1.36 [0.64–2.90]					
Violence use [V]						-0.49	0.44	1.24	0.265	0.61 [0.26–1.45]					
Physical violence						0.61	0.59	1.07	0.300	1.83 [0.58–5.77]					
Injuries sustained						0.55	0.43	1.67	0.196	1.74 [0.75–4.02]					
Threats to kill						0.89	0.54	2.74	0.098	2.43 [0.85–6.94]					
Stalking						-0.41	0.67	0.39	0.535	0.66 [0.18–2.45]					
Control						0.38	0.45	0.72	0.395	1.46 [0.61–3.51]					
Sexual violence						-0.07	0.57	0.02	0.903	0.93 [0.31–2.84]					
Weapons						-0.22	0.37	0.35	0.552	0.80 [0.38–1.67]					
Strangulation						**-1.11**	**0.39**	**7.89**	**0.005**	**0.33 [0.15–0.72]**					
Protection order [V]											-0.15	0.37	0.15	0.697	0.87 [0.42–1.80]
Unemployment [V]											0.55	0.37	2.23	0.135	1.73 [0.84–3.57]
Housing [V]											0.19	0.39	0.25	0.621	1.21 [0.57–2.58]
Noncompliance [A]											0.83	0.45	3.45	0.063	2.30 [0.95–5.56]
Intervention [V]											**0.92**	**0.38**	**5.90**	**0.015**	**2.50 [1.19–5.23]**
Intervention [A]											0.05	0.36	0.02	0.890	1.05 [0.52–2.13]

Notes. One case removed due to missing outcome data. OR = Odds Ratio, CI = Confidence Interval. History of Violence[A] removed due to statistical instability. [V] = victim variable, [A] = aggressor variable, [R] = Reference category

[a] *pseudo-R^2* = 0.10 (Nagelkerke), 0.08 (Cox & Snell); Model χ^2 (4) = 12.81, p = .012; -2 Log Likelihood = 201.47

[b] *pseudo-R^2* = 0.22 (Nagelkerke), 0.16 (Cox & Snell); Model χ^2 (15) = 28.99, p = .016; -2 Log Likelihood = 185.29

[c] *pseudo-R^2* = 0.12 (Nagelkerke), 0.09 (Cox & Snell); Model χ^2 (6) = 14.78, p = .022; -2 Log Likelihood = 199

direction to what we expected. Inevitably when using administrative data (as in the current study), unexpected associations may be the result of various difficult-to-detect biases resulting from limitations in what is recorded and what is not (e.g., selection biases, confounding by indication, and measurement inaccuracies). While acknowledging these potential issues, we also consider other possibilities in turn below.

First, we found that a documented strangulation history predicted decreased odds of reported recurrence and physical recurrence. This finding clearly diverges from previous research that identified strangulation as a risk factor (e.g., Ringland, 2018; Robinson & Howarth, 2012) and could suggest that a history of strangulation in this sample prompted more intensive risk management responses by police, the courts, and the ISR intervention providers that reduced the likelihood of revictimization, leading to fewer subsequent calls for service. Lending support to this possible explanation, our research coincided with a significant increase in awareness among police and ISR practitioners about international research highlighting the dangers associated with strangulation (e.g., Campbell et al., 2003; Pritchard et al., 2017). Not only were these practitioners trained to recognize strangulation as a 'red flag' behavior and a 'lethality indicator' (Family Violence Death Review Committee, 2014; Ministry of Justice, 2017) but strangulation became a standalone criminal offence in New Zealand around this time too (Family Violence Act, 2018), together leading to a heightened salience for responders.

Alternatively, these findings could reflect that victims 'go underground' after experiencing severe IPV, such as strangulation. In other words, the negative relationship between strangulation and recurrence outcomes could represent victims who are (a) living in fear of the aggressors' response to police involvement or (b) trying to avoid further contact with the police and social services, perhaps due to perceived negative consequences like removal of children by child protection agencies or criminal justice sanctions for aggressors. However, over half of the cases with prior strangulation recorded still had a recurrence reported within the follow-up period, which somewhat dimishes the plausibility of this possible explanation.

That victims' initial engagement with IPV interventions predicted increased odds of both recurrence outcomes also contradicted prior research showing interventions for IPV victims predicted a reduced likelihood of recurrence outcomes (Arroyo et al., 2017; Howarth & Robinson, 2016; Robinson & Howarth, 2012; Tirado-Muñoz et al., 2014). However, these studies typically analyzed the effect of interventions based on participants completing a minimum number of sessions; but due to poor data quality in this study, we could not differentiate superficial, early engagement (e.g., only attending preliminary appointments) from clinically significant interventions or intervention completion. Therefore, the finding that victims' initial engagement with IPV interventions predicted increased odds of recurrence could suggest victims who were open to initially engaging with support agencies were also more likely to report ongoing IPV to police compared with victims who did not engage at all.

An alternative explanation may be that a substantial proportion of victims who engaged initially did not receive a meaningful amount of intervention. High-risk cases are often also viewed as 'hard to reach' with traditional service provision (Coy & Kelly, 2011; Crandall et al., 2004; Howarth & Robinson, 2016), most likely partially because of the very needs that services seek to target. ISR guidelines direct intervention providers to be persistent in attempting to engage reluctant or hard-to-contact cases (Mossman et al., 2017). So it may be that initial engagement represents the cases where practitioners were successful—through persistence—in initially engaging with a significant proportion of women at particularly high risk of experiencing further IPV but were unable to progress intervention support to a point where it meaningfully reduced the risk of recurrence.

Given the high levels of psychosocial vulnerabilities and the seriousness of IPV experienced in this sample, we would expect cases to require intensive intervention, and effective intervention can alter the relationship between predictors and outcomes. But the poor data quality on IPV-related interventions and victims' and aggressors' engagement in this study prevented us from examining whether intervention beyond initial engagement decreased the likelihood of recurrence, or whether interventions moderated the association between any of the other variables and recurrence. Both of the unexpected findings above may have emerged solely as a result of not adequately being able to statistically account for the level or types of intervention provided. As such, if the ISR database were to systematically capture intervention-related information, future research could directly examine questions such as whether the unexpected relationship between strangulation and recurrence was related to effective intervention responses in cases where strangulation was recorded.

Overall, these findings suggest that most variables recorded by NZP and the ISR are not predictors of reported revictimization, at least when focusing exclusively on high-risk cases. On one hand, this pattern of largely non-significant recorded variables raises questions about whether the information police and multi-agency triage teams record is relevant for predicting revictimization in high-risk cases. However, as with the unexpected relationships discussed above, these findings could be attributable to the methodological challenges of using administrative data. And,

inevitably, sampling from the top 3% of cases assessed by the ISR (Mossman et al., 2019) reduced the sample variance, which would have limited our ability to detect significant relationships between possible predictors and recurrence outcomes. Additionally, when considering the relatively small sample size, these null and counterintuitive findings could simply highlight some of the pitfalls of exploratory prediction modeling. However, because building an evidence base that could inform service provision specifically in high-risk cases represents an important endeavor, future research could repeat similar analyses with a much larger sample size (in turn, likely yielding greater variance in the presence of specific variables recorded within the high-risk cases sampled) and better quality intervention data.

Applying the NEM

We turn now to our use of the NEM as an organizing framework in this study. We selected this model because it is well-known, conceptually accessible and helped to impose structure on a relatively unstructured and wide-ranging dataset. However, the original NEM (Dutton, 1995, 2006) did not provide definitive guidelines for allocating variables to specific levels, and several inconsistencies exist in allocation decisions and rationales across both the current and previous IPV research using the NEM (e.g., Brownridge, 2006; Heise, 1998; Refaeli et al., 2019; Slep et al., 2015; Spencer et al., 2019; Spencer et al., 2022; Stith et al., 2004; Weeks & LeBlanc, 2011). Consistent with some previous research (e.g., Ringland, 2018; Robinson & Howarth, 2012; Sonis & Langer, 2008), most of the variables available for analysis were situated at what we determined (based on the overall patterns from this previous research) as the relationship and community levels. This pattern of results arguably provides further empirical support for considering the victim and aggressor's wider ecology in both risk assessments and service provision (Gulliver & Fanslow, 2016). But this finding may also indicate that police do not look for—or have access to—individual-level variables or have no way of measuring them accurately, especially given wider IPV research has clearly demonstrated the importance of factors at this level (e.g., Spencer et al., 2019; Spencer et al., 2022). Second, some variables we allocated to the community level of the NEM were attributed to the individual level in other research (e.g., unemployment, non-compliance history) so an emphasis on particular ecological levels is somewhat subjective.

Future research using the NEM framework would greatly benefit from larger-scale, methods-focused research providing comprehensive definitions for each NEM level and clear guidelines for the *how* and *why* of variable allocation. Such efforts would promote 'best practice' methods in IPV research and, critically, an improved ability for theory testing. Future studies should also ensure that each ecological level in the NEM is well represented, and that analyses include models that combine several ecological levels, to advance more holistic understandings of ongoing abuse, test for shared variance and interactions between variables, and identify possible intervention targets.

Other Limitations and Future Research

More broadly, the dark figure of crime represents a general limitation of all research using police data; and, specifically for the outcomes used in this study. Approximately two thirds of IPV (and non-IPV family violence) remains unreported to NZP, although a common explanation for this finding is that people consider the incident too trivial (New Zealand Crime and Victims Survey, 2022). Additionally, we did not examine any female aggressor-male victim or same-gender dyads, so future research should also examine whether such relationships yield different patterns of variables associated with revictimization outcomes. Another general concern relates to the measurement discrepancies across IPV research, including in the current study. Variables are often labelled similarly but apply divergent inclusion criteria. One example (albeit of several possible) was 'weapons': definitions vary from the aggressor's access to weapons (e.g., Ringland, 2018; Sonis & Langer, 2008) and the use of weapons against the victim (e.g., Howarth & Robinson, 2016; Robinson, 2006; Robinson & Howarth, 2012), to a combined measure of both access and use, as applied here. It remains unclear the extent to which these measurement issues may obfuscate knowledge synthesis around predicting revictimization. To support shared understandings, future research should provide comprehensive details about the variables used.

Conclusion

In this study, we documented the harmful abuse experiences and psychosocial vulnerabilities of women deemed to be at high risk of IPV revictimization, and the relatively high rates of recurrence and physical recurrence reported to NZP across a 12-month follow up. Although this information indicated a need to provide both IPV-specific and wider social support to these victims, these variables mostly did not predict recurrence or physical recurrence. Thus, this study raised questions about what information is relevant for predicting revictimization among high-risk cases and highlighted the difficulties of identifying empirically validated treatment targets to support tailored service provision

and improved safety and longer-term wellbeing for this particular group.

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Declarations

Conflict of Interest The authors declare that they have no conflict of interest.

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