Risk & protective factors for domestic abuse perpetration

Establishing the evidence base to support the prevention, management, and risk assessment of domestic abuse perpetrators in the UK

Prepared for the Home Office

by

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The views in this report are those of the authors, not necessarily those of the Home Office.

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Summary of Main Findings

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2. Internal locus of control, relationship, and marital satisfaction, are evidenced-based protective factors for violent partner abuse

3. The 12-month prevalence rate of domestic abuse perpetration in the UK is estimated at 4.9% (partner abuse – 5.2%, family abuse – 1.5%)

4. Risk and protective factors for domestic abuse co-occur in meaningful and predictable ways. These 'profiles' are better at explaining and predicting domestic abuse than single risk factors. Risk assessment and management may benefit from organising around patterns of risk factors rather than discrete factors

5. Five 'routes' to domestic abuse perpetration characterise our sample; the criminal, psychological distress, victimisation, narcissistic, and misogynistic pathways. These pathways highlight the heterogeneity of perpetrators and underpin calls for tailored approaches to perpetrator intervention and prevention programming over a 'one-size fits all' approach

6. Protective factors have different direct and/or buffering effects against different risk factors for domestic abuse perpetration. Understanding how they work can inform the design and delivery of evidence-based perpetrator interventions

7. The science of protective factors in underdeveloped. Further research and investment into understanding protective factors against domestic abuse perpetration is needed

Executive Summary: Second Order Meta-Analysis of Risk & Protective Factors for Domestic Abuse Perpetration

There is a growing body of evidence for risk, and to some extent, protective factors for domestic abuse perpetration. Much of this research has been synthesised by previous systematic reviews and meta-analyses. **Second order meta-analyses review previously published meta-analyses and therefore represent one of the highest levels of evidence synthesis currently available.** Such syntheses provide robust evidence, particularly for policy and practice, who require up-to-date, state of the art science to inform service design and delivery. We found that a second order meta-analysis of risk and protective factors for domestic abuse perpetration did not currently exist. To address this gap in our knowledge, we conducted a review that synthesised the results of **39 meta-analyses** on predictors of domestic abuse perpetration. These 39 evidence syntheses covered over **3,872 studies**, including over **3.5 million participants**, spanning **59 risk and protective factors** for domestic abuse perpetration.

Risk factors

Risk factors are factors which demonstrate a **positive** relationship with domestic abuse perpetration. In other words, in the presence of a risk factor, domestic abuse perpetration is **more** likely. The magnitude of the effect size tells us about the strength of the relationship. Risk factors which exert larger effects have a greater impact on the outcome.

Table 1 summarises the most impactful risk factors, organised by their relative effect on domestic abuse perpetration (effect size).

We found that **the strongest effect sizes related to previous experiences of intimate partner violence (perpetration and victimisation), including stalking, threats and controlling behaviours, diagnosed personality disorder, criminal peers, external locus of control, and demand-withdraw patterns of relationship behaviour.**

External locus of control refers to how much an individual thinks they have control over things that happen to them in their lives, where 'external' means that they think things that happen to them are largely out of their control. An internal locus of control is when a person thinks that they are responsible for and can change the things that happen to them.

Demand-withdraw patterns refer to relationship dynamics when one partner is the demander, seeking change or discussion about a problem, and the other is the withdrawer, looking to avoid discussion or resolution.

Table 1. Risk factors with medium to large effect sizes (> .30)

Factor	Effect size (z)	95% CI
Large effect sizes		
IPV victimization	.51***	.46, .55
Medium effect sizes		
Prior IPV perpetration	.48***	.43, .54
Threatened victim	.47***	.35, .59
Stalking	.42***	.27, .57
Borderline personality disorder	.36***	.32, .40
Criminal peers	.36***	.17, .54

Withdraw and demand	.36***	.28, .45
Anti-social personality disorder	.33***	.28, .37
Controlling behaviours	.32***	.25, .39
Paranoid personality disorder	.31***	.29, .32
External locus of control	.30**	.08, .52

Note: IPV – intimate partner violence, *** p <.001, ** p <.01, * p <.05, CI = 95% confidence intervals

Table 2 summarises risk factors bordering moderate effect sizes. These risk factors demonstrate a weaker, but still impactful relationships with domestic abuse perpetration. Risk factors bordering a moderate effect size include **diagnosed personality disorder, relationship dynamics, attitudes towards violence, trauma, and situational factors such as alcohol abuse and stress.**

Table 2. Risk factors bordering moderate effect sizes (.29 - .20)

Factor	**Effect size (z)**	**95% CI**
Schizotypal personality disorder	.29***	.19, .38
Power in relationship	.27***	.22, .32
Approval of violence	.25***	.20, .31
Psychopathy	.25***	.19, .31
Anger	.25***	.23, .27
Family problems	.25*	.06, .45
Anxious attachment	.24***	.19, .30
Traditional gender roles	.22***	.14, .30
Jealousy	.21***	.14, .27
Peer IPV	.21***	.13, .29
Post-traumatic stress disorder	.21***	.14, .27
Stress	.21***	.14, .27
Alcohol	.20***	.18, .22
Schizoid personality disorder	.20***	.13, .28
Trauma	.20**	.08, .31

Note: IPV – intimate partner violence, *** p <.001, ** p <.01, * p <.05, CI = 95% confidence intervals

Protective factors

Protective factors are factors which demonstrate a **negative** relationship with domestic abuse perpetration. Here, in the presence of a protective factor, domestic abuse perpetration is **less** likely.

In our review, **no protective factor demonstrated strong or moderate effect sizes**. Three factors- **marital satisfaction, relationship satisfaction, and internal locus of control - demonstrated effects bordering moderate effect sizes.** In other words, no single protective factor was found to

directly reduce the likelihood of domestic abuse perpetration greatly or even moderately. Table 3 also highlights a significant gap in the literature – only three protective factors were identified, reiterating the need for research to prioritise understanding **protective factors** for domestic abuse perpetration to support prevention and intervention.

Table 3. Protective factors bordering moderate effect sizes (.29 - .20)

Factor	Effect size (z)	95% CI
Marital satisfaction	-.27***	-.31, -.23
Relationship satisfaction	-.27***	-.29, -.24
Internal locus of control	-.29***	-.43, -.14

Note: *** p <.001, ** p <.01, * p <.05, CI = 95% confidence intervals

Perpetrator gender

To understand gender differences, we examined how risk and protective factor effects differed among male only, female only, and mixed (male and female) samples across the studies identified by our review. We found four significant differences. **For alcohol use, approval of violence, and experiencing childhood violence, we observed a larger risk effect among mixed and male only samples, than the female only samples. For marital satisfaction, the protective effect was larger for female than for male samples.**

Type of abuse

Our review used the Home Office's definition of domestic abuse, and so spanned studies examining different 'types' of abuse perpetration. However, studies mainly reported one of three outcomes: intimate partner violence, adolescent intimate partner violence, or same-sex intimate partner violence. We examined how risk and protective factor effects differed by 'type' of domestic abuse.

Table 4 highlights five significant differences (in bold). **Alcohol use, approval of violence, anxious attachment, depression, and previous intimate partner violence demonstrated stronger risk effects for intimate partner violence, than adolescent intimate partner violence**. **For same sex intimate partner violence, previous intimate partner violence demonstrated a larger risk effect than for intimate partner violence and adolescent intimate partner violence.**

The finding that some risk factors demonstrate weaker effects for adolescent intimate partner violence than for other types of abuse, may be simply because of age. **Younger perpetrators may have had fewer opportunities, or less time, to perpetrate previous intimate partner violence, than older perpetrators.**

Table 4. Moderator analysis for domestic abuse 'type' (significant differences highlighted in bold).

Factor		Number of studies	Effect size (z)	95% CI	$Q_{between}$
Alcohol		**17**	**.20*** **	**.18, .22**	**25.531*** **
	IPV	**12**	**.22*** **	**.20, .23**	
	Teen	**3**	**0.04**	**-.03, .11**	
	Same sex	**2**	**.21*** **	**.14, .28**	
Anger		13	.25***	.24, .27	4.395
	IPV	8	.26***	.23, .29	
	Teen	3	.17***	.08, .25	
	Same sex	2	.25***	.24, .27	

Approval of violence		**9**	**.25*** **	**.20, .30**	**22.257*** **
	IPV	**6**	**.33*** **	**.31, .35**	
	Teen	**3**	**.18*** **	**.12, .23**	
Anxious attachment		**8**	**.24*** **	**.19, .30**	**5.069***
	IPV	**5**	**.27*** **	**.20, .34**	
	Teen	**3**	**.16*** **	**.09, .23**	
Depression		**13**	**.17*** **	**.13, .22**	**26.233*** **
	IPV	**10**	**.21*** **	**.19, .24**	
	Teen	**3**	**.07** **	**.03, .12**	
IPV Victimization		8	.51***	.46, .55	1.419
	IPV	6	.50***	.46, .54	
	Teen	2	.66***	.40, .91	
Parental IPV		14	.19***	.16, .22	1.492
	IPV	7	.21***	.16, .26	
	Teen	7	.17***	.14, .21	
Victim of child abuse		15	.16***	.14, .18	0.613
	IPV	10	.17***	.14, .20	
	Teen	3	.15***	.12, .18	
	Same sex	2	.16***	.08, .24	
Prior IPV		**26**	**.48*** **	**.43, .54**	**21.48*** **
	IPV	**19**	**.51*** **	**.45, .58**	
	Teen	**5**	**.33*** **	**.24, .42**	
	Same sex	**2**	**.64*** **	**.54, .74**	

Note: CI=Lower and upper 95% confidence intervals, $Q_{between}$=Cochran's Q heterogeneity statistic with statistical significance (***<.001, **<.01, *<.05, +<.10)

Limitations

The review highlights the most important risk and protective factors identified by our search strategy. A second order meta-analysis represents the highest level of evidence synthesis and so is a reliable source of evidence for policy and practice. However, **it is important to understand the limitations of the review, and the context within which our findings may be most relevant.**

First, **no systematic review included in our synthesis explicitly focussed on UK offenders.** In fact, **most samples included US perpetrators**. Whilst there are similarities between the UK and US, important socio-cultural differences exist. For instance, the availability of firearms in the US has implications for how domestic abuse may manifest across the different contexts. Further, universal healthcare in the UK may impact upon opportunities to identify domestic abuse, as victims may be more likely to come into contact with healthcare professionals, and therefore have more opportunity to disclose undetected abuse.

Second, **almost all the reviews we identified looked exclusively at intimate partner violence as the outcome.** The Home Office definition of domestic abuse spans far wider than just intimate partner violence, including non-violent partner abuse, family abuse, and coercive control. **Hence these results may be most relevant in the context of violent partner abuse.**

These limitations underscore the importance of investing in research specific to the UK context which builds upon and expands what we know about domestic abuse perpetrators.

Conclusion

There is significant and reliable evidence that previous intimate partner violence, both victimisation and perpetration, making threats toward a victim, controlling behaviours, diagnosed personality disorder (borderline, anti-social paranoid), criminal peers, demand-withdraw patterns of relationship behaviour, and an external locus of control, are evidence-based risk factors for violent partner abuse.

There is reasonable evidence that internal locus of control, relationship, and marital satisfaction, are evidenced-based protective factors for violent partner abuse.

However, there is a growing consensus that, whilst understanding individual risk factors and the magnitude of their effects is essential knowledge, **risk and protective factors co-occur in predictable ways**. These **patterns** are likely to be better at explaining and predicting domestic abuse perpetration than any single factor.

The following sections of our report focuses on establishing a **more nuanced understanding of when and how different risk and protective factors are relevant to domestic abuse perpetration in the UK.**

Executive Summary: Prevalence of Domestic Abuse Perpetration in the UK General Population

The second order meta-analysis synthesised previous research, and in doing so, highlighted the absence of any systematic review which explicitly focusses on domestic abuse perpetration in the UK. It also reiterated that most research in this space focusses on intimate partner violence – one dimension of what the Home Office defines as domestic abuse.

In this section, we aimed to develop a unique dataset in a representative sample of the UK general population, to develop an evidence base **specific to our context**. The sample was representative in terms of age, gender, and ethnicity (*n* = 1,461). Participants were recruited via an online access panel, Prolific, and filled out an anonymous, online survey after agreeing to participate in our research project.

The first aim was to estimate the prevalence of different domestic abuse behaviours in the UK general population.

Domestic abuse perpetration was measured with 43 questions adapted from the Crime Survey for England & Wales (Crime Survey for England and Wales 2018 to 2019: Adult Questionnaire, 2018) and the Domestic Abuse Stalking and Harassment risk assessment tool. Participants were asked to self-report which of the behaviours they had done **in the last 12 months**, and whether the victim was a partner or a family member.

The most frequently self-reported domestic abuse behaviours were non-violent behaviours including keeping track of where a victim went or where they spent their time (9.7%), monitoring their letters, phone calls, emails, texts, or social media (4.7%), and belittling them to make them feel worthless (3.4%).

In terms of so-called high-risk behaviours, 1.3% reported they'd used force against a partner or family member in the last 12 months, 0.1% attempted to choke or drown a partner or family member, 0.1% intentionally caused serious injury to a partner or family member, and 0.1% forced a partner or family member to engage in sex or sexual acts against their will.

Whilst these percentages may seem small, extrapolated to the wider general population, the results suggest that **high-risk domestic abuse behaviours are being perpetrated by a small but significant proportion of the general population.**

Figures 1 - 2 show the prevalence of the individual non-violent, violent, and sexual domestic abuse behaviours we measured in our sample.

Women's Aid defines domestic abuse **"as an incident or pattern of incidents of controlling, coercive, threatening, degrading and violent behaviour, including sexual violence."** Therefore, whilst a single incident or behaviour may be classified as domestic abuse, if we consider domestic abuse to be a **pattern of incidents** of at least **2 - 3 or more** behaviours, the 12-month prevalence of domestic abuse perpetration in our sample is **estimated** as follows:

- **Domestic abuse: 4.9%**
- **Partner abuse: 5.2%**
- **Family abuse: 1.5%**

These trends broadly align with findings from the Crime Survey for England and Wales which estimate self-reported domestic abuse **victimisation** at 5.0% in the UK general population as of March 2022.

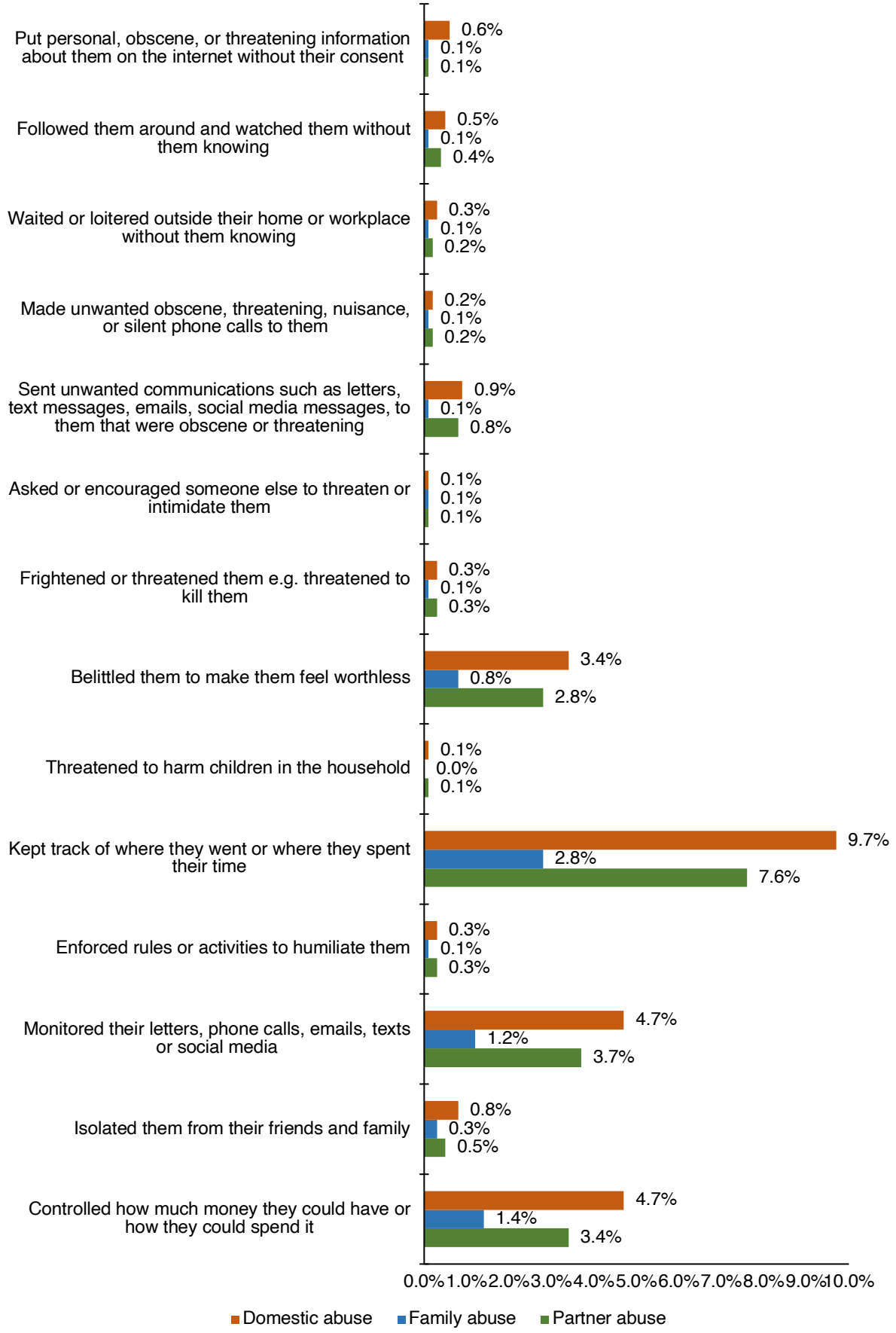


Figure 1. Prevalence of non-violent domestic abuse behaviours in the UK general population (n = 1461).

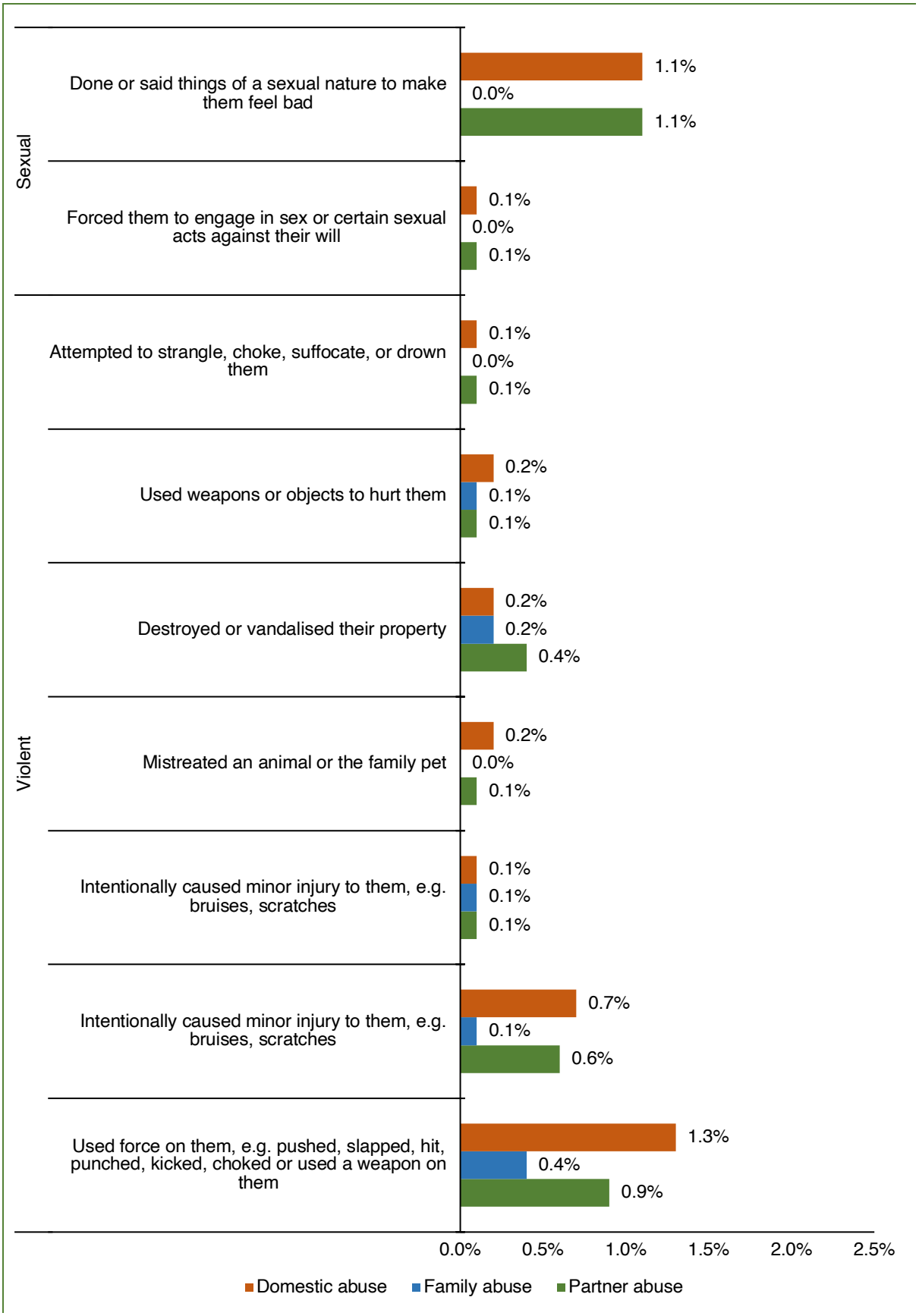


Figure 2. Prevalence of violent & sexual domestic abuse behaviours in the UK general population (n = 1461).

Limitations

It is important to recognise the limitations of our results. First, whilst our sample is (relatively) large, and representative of the UK general population, comparable studies, such as the Crime Survey for England & Wales, sample a far larger proportion of the UK general population to establish prevalence rates of domestic abuse victimisation. This was not feasible here; however, **we encourage future attempts to attempt to replicate our findings in larger samples.**

One implication of this is that we did not uncover large numbers of people self-reporting high-risk or high-harm domestic abuse behaviours. Whilst this is reassuring in one way, it also meant we couldn't analyse differences, such as gender differences for instance, across some of the more concerning behaviours.

Second, it is important to reiterate that this is a general population sample. **We caution against applying these prevalence rates to offender or violent populations.**

Third, this was a first attempt at estimating the 12-month prevalence of domestic abuse perpetration in the UK general population. **The results of any single study should always seek to be replicated to establish reliability and validity.**

Fourth, **asking people to self-report criminal behaviour can be problematic**. It is likely that our results succumbed to a reporting bias. Some participants may not have disclosed perpetration for fear of repercussions. However, research has shown that anonymous, online surveys, may reduce the extent of these biases, by increasing participants' perception of their own anonymity, and thereby facilitating disclosure.

Finally, we advise against interpreting the prevalence of single domestic abuse behaviours. Some of these behaviours, occurring as a single instance, may be within the bounds of what is considered normal relationship behaviour, dependent on the context. This is why **we estimate the prevalence of domestic abuse perpetration from a pattern of domestic abuse behaviours**. This is less likely to include normal relationship behaviour, however we run the risk underestimating domestic abuse perpetration in doing so. **More work on how to measure domestic abuse perpetration which considers frequency, severity, and harm is necessary.**

Conclusion

Amongst the UK general population, we estimate 4.9% of people are perpetrating a pattern of behaviours defined as domestic abuse. Less than 1% self-report perpetrating so-called high-risk domestic abuse behaviours, such as attempting to choke, strangle or drown a partner or family member. However, in real world terms this small percentage translates to a significant number of people who may be at risk of causing serious harm.

Executive Summary: Risk Profiles for Domestic Abuse Perpetration

Risk and protective factors co-occur in predictable ways. These **patterns** are likely to be better at explaining and predicting domestic abuse perpetration than any single factor. Moving on from examining the effects of individual risk factors, in this section we sought to identify **'risk profiles'** for domestic abuse perpetration. First, we looked at how the many different risk and protective factors we measured were associated with domestic abuse perpetration, among men and women (Table 5).

Direct risk factors

The strongest associations for men were typically stable personality traits, such as sadism and psychopathy, and attitudes towards men and women, such as attitudes supportive of violence against women, misogyny, and patriarchal beliefs. Among women, the strongest associations were for more transient or situational risk factors, such as relationship breakdown, psychological distress, and acute stressors such as financial problems. For both men and women, domestic abuse victimisation was associated with domestic abuse perpetration – in line with the results of the second-order meta-analysis.

However, the size of the effects we observed were relatively small. This means that **the risk and protective factors we measured had a relatively weak relationship with domestic abuse perpetration, and so may not be reliable predictors of offending on their own**. This underscores the need to consider how patterns of risk and protective factors relate to domestic abuse perpetration, our assumption being that **combinations of different factors will be better at predicting domestic abuse perpetration.**

Table 5. Significant direct risk factors for domestic abuse perpetration for men and women in the UK general population (n = 1461)

Risk factor (male perpetrators)	Effect size (beta)	Risk factor (female perpetrators)	Effect size (beta)
Attitudes supportive of violence towards women	0.282	Recent stress	0.317
Anger	0.278	Anger	0.288
Sadism	0.231	Conflict engagement	0.282
Victim of domestic abuse	0.223	Victim of domestic abuse	0.269
Conflict engagement	0.215	Psychological distress	0.262
Misogyny	0.186	Temper	0.254
Attitudes supportive of violence	0.178	Attitudes supportive of violence	0.238
Psychological distress	0.178	Financial problems	0.223
Emotionally abusive parents growing up	0.145	Poor mental health	0.201
Psychopathy	0.145	Worsening relationships with partner	0.199
Temper	0.142	Sadism	0.185
Patriarchal beliefs	0.142	Avoidant attachment	0.182
Recent stress	0.135	Substance abuse problems in the home growing up	0.180
Extremism (community)	0.135	Worsening relationships with family	0.180
Anxious attachment	0.132	Threatened to harm self as an adult	0.173
Criminal history	0.129	Psychopathy	0.162
Machiavellianism	0.122	Misogyny	0.161
Threatened to harm self as an adult	0.119	Anti-social personality disorder	0.160
Poor mental health	0.117	Worries about money	0.156

Worsening relationships with family	0.110	Anxious attachment	0.155
Felt unloved as a child	0.104	Lived with someone who went to jail as a child	0.153
Relationship breakdown	0.103	Separated or attempted to separate from partner	0.149
Grew up in poverty	0.097	Emotionally abusive parents growing up	0.144
Worsening relationships with partner	0.094	Mental health problems in the home growing up	0.142
Thrill-seeking	0.089	Criminal history	0.141
Young age	0.086	Impulsivity	0.120
Number of children in household	0.084	Harmed self as an adult	0.119
Vandalism (community)	0.081	Poor physical health	0.117
Religiosity	0.080	Partner infidelity	0.114
Self-protection	0.080	Young age	0.114
Drug issues (community)	0.080	Drug use	0.110
Impulsivity	0.078	Lost a parent (divorce, death, abandonment, etc)	0.109
Avoidant attachment	0.074	Relationship breakdown	0.108
High crime rate (community)	0.074	Thrill-seeking	0.105
		Harmed self as a child	0.104
		High crime rate (community)	0.104
		Gang activity (community)	0.101
		Witnessed parental abuse as a child	0.099
		Committed non-familial violence as an adult	0.098
		Self-protection	0.092
		Drug issues (community)	0.092
		Depression	0.089
		Financial issues (community)	0.089
		Attitudes supportive of violence towards women	0.088
		Narcissism	0.078
		Felt unloved as a child	0.076
		Recent unemployment	0.074
		Machiavellianism	0.073

Note. Magnitude of effect sizes, <.10 negligible, .10 - .29 small, .30 - .49 moderate, > .5 large

Risk profiles

We used a type of clustering algorithm (latent class analysis), to identify subgroups of people who demonstrated different patterns of risk and protective factors from our sample of the UK general population (n = 1,462; Table 6). We identified risk profiles across each of the following domains directly relevant to risk assessment and management: 1) distal factors, 2) proximal factors, 3) attitudinal factors, 4) personality factors, 5) relationship factors, and 6) community level factors. Each of the risk profiles related differently to domestic abuse perpetration.

The **high propensity, high distress, violent misogynist, dark personality, worsening relationships**, and **high community disorganisation** profiles showed a positive relationship with domestic abuse perpetration; therefore, we classified them as **risk profiles**.

The **low propensity, low distress, low misogyny**, and **high-self-control** profiles demonstrated a negative relationship with domestic abuse perpetration; therefore, we classified them as **protective profiles**.

Notably, the highlighted risk and protective profiles demonstrated larger effects on domestic abuse perpetration, in contrast to the relatively small effects of single risk factors we observed.

Considering gender differences, **men** were more likely to demonstrate the **criminal propensity (risk)**, **low distress (protective)**, **violent misogynist (risk)**, and **dark personality (risk)** profiles. **Women** were more likely to demonstrate the **high propensity (risk)**, **high distress (risk)**, **low misogyny (protective)**, and **high self-control (protective)** profiles.

Table 6. Risk (red) and protective (green) profiles for domestic abuse perpetration in the UK general population. Profiles demonstrating negligible (< .10) effect sizes are highlighted in grey, (n = 1,461).

Distal Risk Profiles		**Effect size (Cohen's d)**
1. Low Propensity	Characterised by little to no risk factors for domestic abuse perpetration.	-.366
2. Criminal Propensity	Characterised by substance abuse, previous criminal behaviours, convictions, and violence.	.143
3. Adverse Childhood Experiences (ACEs)	Demonstrates a pattern of childhood abuse, neglect, and early adverse experiences.	.082
4. High Propensity	Pattern of multiple, compounding risk factors including adverse childhood experiences, criminal propensity, and psychological distress.	.801
Proximal Risk Profiles		
1. Low Distress	Relatively low prevalence of proximal or acute stressors, such as job loss and death in the family.	-.577
2. High Distress.	Pattern of acute proximal stressors.	.577
Attitudinal Profiles		
1. Low Misogyny	Lack of attitudes supportive of general violence or violence against women, and absence of patriarchal and misogynistic beliefs.	-.272
2. Misogynist	Demonstrated misogynistic attitudes and patriarchal belief but unsupportive of general violence and violence against women.	.090
3. Violent Misogynist	Demonstrated misogynistic and patriarchal beliefs and supportive of general violence and violence against women.	.192
Personality Profiles		
1. High Self-Control	Characterised by high levels of self-control and low levels of dark personality traits (Machiavellianism, psychopathy, sadism).	-.325
2. Dark Personality	Characterised by low self-control and high levels of dark personality	.325

	traits (Machiavellianism, psychopathy, sadism).	
Relationship Profiles		
1. Positive Relationships	Characterised by good relationships with family and partners.	-.818
2. Worsening Relationships	Demonstrated poor or worsening relationships with family and partners.	.818
Community Profiles		
1. Low	Low community disorganisation	-.268
2. Moderate	Moderate community disorganisation	-.052
3. High	High community disorganisation	.447

Note. Magnitude of effect sizes, <.20 negligible, .20 - .49 small, .50 - .79 medium, > .8 large

The results highlight different distal, proximal, attitudinal, and personality risk profiles for men and women. In terms of more contextual factors, such as relationship and community-level risk profiles, we did not observe any gender differences. This suggests that **the underlying drivers for domestic abuse perpetration differ for men and women. However, situational factors seem to have similar risk effects for both.**

The relationships profiles demonstrate notably large effects on domestic abuse perpetration. Intuitively, **it makes sense that deteriorating relationships with family and partners may be the catalyst which activates or crystalises the interactions of risk factors across the other components.** This is something we explore further in the next section.

Risk profile interactions

Risk emerges from dynamic interactions among risk factors. Taking an interactionist approach, we looked at how the different risk profiles interacted with one another other, across the different components. For instance, we were interested to understand how different distal profiles might interact with proximal or attitudinal profiles to increase or decrease the risk of domestic abuse perpetration. We only looked at interactions among the profiles which demonstrated the largest effect sizes. The following were found to be significant.

Among men, we found that the interaction between **High Propensity** and **Violent misogyny** was significant for domestic abuse perpetration. **This means that when the cluster of risk factors we labelled as Violent misogyny occurs with High propensity, it amplifies the risk effect of the High propensity profile**, where men who demonstrate the Violent misogyny profile **and** the High propensity profile, are at an exponentially greater risk of perpetrating domestic abuse.

The same sort of relationship was observed for the High distress profile, where **men who demonstrated the High distress pattern of risk factors and the Volent misogyny profile, were at a greater risk of perpetrating domestic abuse.**

Finally, **men who demonstrated the Violent misogyny profile who also demonstrated the Worsening relationships profile, were again at greater risk of perpetrating domestic abuse.**

This highlights the relative importance and relevance of the Violent misogyny profile to domestic abuse perpetration risk. Whilst in isolation the profile demonstrates a small effect size, in the presence of other risk profiles, Violent misogyny is highly relevant and actually amplifies the risk of domestic abuse.

This is true also of the Worsening relationships profile. **Although in isolation, it demonstrates a large direct effect on domestic abuse perpetration, in the presence of the Violent misogyny profile, the risk effect is amplified, making domestic abuse perpetration even more likely.**

For women, we found that the interaction between **High propensity** and **Violent misogyny** was significant for domestic abuse perpetration. Among our sample**, when women were characterised by the High Propensity profile, if they also demonstrated violent and misogynistic attitudes, they were more likely to perpetrate domestic abuse than when the Violent misogyny profile was absent.**

The **Dark personality** profile also demonstrated a significant interaction with the **Violent misogyny** profile. Here, **when women demonstrated attitudes supportive of violence and misogynistic beliefs, and they also demonstrated low self-control and higher levels of sadism, psychopathy, and Machiavellianism, the risk of domestic abuse perpetration was amplified.**

A similar relationship was observed between the **Violent misogyny** profile and **High community deprivation** profiles. In this instance, **when women demonstrated attitudes supportive of violence and misogynistic beliefs, and they lived in areas with multiple compounding neighbourhood-level issues (drugs, poverty, housing issues, gang activity, extremism), they were more likely to perpetrate domestic abuse.**

Limitations

The risk profiles we present are not absolutes. A person may demonstrate some degree of one profile and some degree of another. Rather, these are broad categorisations of the sorts of ways that common risk factors might co-occur. Similarly, this is not a typology of types of people. Rather, this is a way of organising co-occurring risk factors to identify the underlying causal mechanisms to which they may speak.

We only considered interactions between profiles which demonstrated the largest effect sizes. Therefore, we highlight what we think may be the most important interactions – not all the interactions. However, our point fundamentally is that risk is dynamic, and that a static approach to risk assessment and management reliant on single risk factors cannot account for the complexity of how offenders come to perpetrate domestic abuse. Whilst not perfect, understanding patterns of observable risk factors, may be a better way to assess risk.

Conclusion

In our sample of the UK general population, single risk factors demonstrate small if not negligible associations with domestic abuse perpetration. In contrast, the patterns of risk and protective factors we identified demonstrated larger effects, suggesting they may be better at explaining and possibly predicting domestic abuse perpetration.

Men and women demonstrate different patterns of risk factors, suggesting the underlying drivers of domestic abuse are different depending on the gender of the perpetrator. Given the gendered nature of domestic abuse in terms of both victimisation and perpetration, these are important distinctions to draw for policy and practice, particularly when thinking about perpetrator interventions.

For risk assessment and management, organising tools or instruments around discrete indicators may be problematic, given their instability. However, whilst not perfect, organising instruments around **patterns of observable indicators**, alongside human professional judgements, such as in a structured professional judgement approach, may be a more reliable way to assess risk.

Executive Summary: Domestic Abuse Perpetrator Pathways

Our risk profiles highlight how discrete factors often considered in risk assessment and management **co-occur in meaningful ways**. We highlight **patterns in how a person thinks or behaves, and how these patterns relate to domestic abuse perpetration**.

I this section we looked at how different individual risk factors relate to one another, inferring **risk pathways**. Risk pathways differ from risk profiles in that they highlight **'routes'** to domestic abuse perpetration. Using a type of statistically modelling (psychometric network analysis), we identified five risk pathways present among our sample of the UK general population:

The criminal pathway

This pathway shows how neighbourhood crime and violence-related issues (high-crime, gang issues, extremism), dark personality traits (psychopathy, sadism), indicators of a criminal propensity (drug use, previous criminality), and attitudes supportive of both general violence and violence against women, lead to domestic abuse perpetration.

The psychological distress pathway

This pathway highlights how neighbourhood deprivation (housing and financial issues), low socioeconomic status, poor mental health, psychological distress, and anger, interact leading to domestic abuse perpetration.

The victimisation pathway

This pathway highlights how poor conflict resolution skills, maladaptive attachment styles, acute stress, and domestic abuse victimisation lead to domestic abuse perpetration.

The narcissistic pathway

The narcissistic pathway demonstrates how narcissism interacts with low self-control, conflict engagement, and anger, leading to domestic abuse perpetration.

The misogynistic pathway

This pathway demonstrates how alcohol use, older age, misogyny, attitudes supportive of violence against women, and patriarchal beliefs leads to domestic abuse perpetration.

The pathways demonstrate that whilst **there is no single 'route' to domestic abuse perpetration**, that **there may by some more commonly observable interactions of risk factors which characterise domestic abuse perpetrators in the UK general population**.

That is not to say that all perpetrators will follow one of these pathways to offending, but rather to highlight that, at least amongst our sample, different 'types' of offender were apparent. This may be relevant when considering designing perpetrator interventions, as **a 'one-size fits all' approach is unlikely to be effective for all**.

Next steps should aim to identify if these pathways relate differentially to the severity of domestic abuse perpetration. **Some pathways may be more typical of prolific or high-harm, high-risk offenders for instance.** Identifying which could feed into the early detection and disruption of serious domestic abuse offenders. Particularly considering that often, a few offenders are found to be responsible for a lot of the offending identified.

Limitations

The risk pathways will not capture every type of domestic abuse perpetrator. Rather our analysis highlights common routes into offending which may be useful to help understand how **some** come to perpetrate domestic abuse.

Also, this is a general population sample. It would not be appropriate at this stage to apply the pathways to other types of populations without further analysis. Some of these pathways may be

more or less prevalent in different types of samples, for instance among offender populations, which remains to be seen in future work.

Equally, we did not identify how the pathways relate to domestic abuse perpetration. It is likely they are differentially associated with perpetration - some may be more predictive of offending than others. Again, this remains to be seen in future work.

Conclusion

The pathways characterise five different routes to domestic abuse perpetration in the UK. Given this is a general population samples, **our findings have most relevance to early prevention and intervention work, such as feeding into a public health approach to mitigating against this type of violence.** Understanding pathways to offending can help design more effective preventative measures, by identifying opportunities for intervention, and tailoring interventions to meet the needs of different groups. **However, this depends upon identifying effective protective factors, and understanding when and for whom they work best – this is the focus of the final section of our report.**

Executive Summary: Protective Factors for Domestic Abuse Perpetration in the UK general population

Understanding protective factors is essential knowledge for policy and practice to successfully prevent and intervene against domestic abuse perpetration. Here we highlight both **direct** and **buffering** protective factors, and try to specify **when** and **how** they work in our sample of 1,461 people across the UK general population. The sample was representative in terms of age, gender, and ethnicity and participants were asked to fill out an online survey to generate our dataset.

Direct protective factors

Direct protective factors reduce the likelihood of domestic abuse perpetration by reducing dysfunction and therefore negating risk. To establish direct protective factors in our sample, we extracted factors which demonstrated a negative association with domestic abuse perpetration. **When a person demonstrated a direct protective factor, they were simply less likely to perpetrate domestic abuse**.

Resilience functions as a protective factor for both men and women. **Women** also benefit from protective factors such as **secure attachment, social support, high self-esteem,** and **relationship satisfaction (family and partner).** Table 7 summarises the direct protective factors for men and women ordered by their effect sizes, with the protective factors at the top of the table having a greater direct protective effect than those at the bottom of the table.

Table 7. Direct protective factors for domestic abuse perpetration in the UK general population (n = 1461).

Protective factor (male perpetrators)	**Effect size (beta)**	**Protective factor (female perpetrators)**	**Effect size (beta)**
Resilience	-0.084	Self-esteem	-0.186
		Relationship satisfaction (partner)	-0.156
		Social support	-0.127
		Resilience	-0.126
		Relationship satisfaction (family)	-0.117
		Secure attachment	-0.108

Note. Magnitude of effect sizes, <.10 negligible, .10 - .29 small, .30 - .49 moderate, > .5 large

Notably, all demonstrate small effect sizes, suggesting that none exert particularly strong protective effects against domestic abuse perpetration on their own.

Buffering protective factors

Given the weak direct protective effects we observed, we also sought to understand **interactive or buffering** protective factors. **Buffering protective factors dampen the impact of a risk factor to reduce the likelihood of domestic abuse offending.**

For men, we found the following significant buffering protective factors:

- When men held **attitudes supportive of general violence**, having either (a) **an internal locus of control**, or (b) **positive social support**, reduced the risk of domestic abuse perpetration
- When men held **misogynistic attitudes**, being **resilient** reduced the risk of domestic abuse perpetration
- When men held **attitudes supportive of violence against women**, being **resilient** reduced the risk of domestic abuse perpetration
- When men held **attitudes supportive of violence against women**, having **positive problem-solving skills** reduced the risk of domestic abuse perpetration

For women, we found the following significant buffering protective factors:

- When women demonstrated **conflict engagement** in their relationships, having either (a) **an internal locus of control**, (b) **high self-esteem**, or (c) **resilience** reduced the risk of domestic abuse perpetration
- When women were **short tempered**, having either (a) **social support** or (b) **resilience**, reduced the risk of domestic abuse perpetration
- When women held **misogynistic attitudes** were present, having either (a) **social support** or (b) **high self-esteem**, reduced the risk of domestic abuse perpetration
- When women held **attitudes supportive of general violence**, **resilience** reduced the risk of domestic abuse perpetration
- When women demonstrated an **anxious attachment** style, **high self-esteem** reduced the risk of domestic abuse perpetration
- When women experienced **acute stress**, **high self-esteem** reduced the risk of domestic abuse perpetration

Whilst no protective factors demonstrated impactful **direct** protective effects, we identified several important **buffering** protective factors. Buffering protective factors might not directly decrease the risk of domestic abuse perpetration, instead they mitigate against, or dampen the effects of pertinent risk factors, therefore indirectly reducing the risk of domestic abuse perpetration.

Protective profiles

As is the case with risk factors, protective factors also co-occur in predictable ways – these are the protective profiles identified in the previous section (see Table 5). We identified five protective profiles: Low propensity, Low distress, Low misogyny, High self-control, and Positive relationships. Here, we sought to identify if any of the protective profiles buffered against the negative risk effects of the risk profiles we also identified.

For men, we found the following significant buffering protective profiles:

- Both the **Low distress** and **Positive relationships** profile buffered against the risk effect of the **Violent misogyny** profile. This means that when a man in our sample demonstrated the Violent misogyny profile, if they were also characterised as experiencing Low distress or Positive relationships, they were less likely to perpetrate domestic abuse
- The **Low misogyny** and **Positive relationships** profile also buffered against the risk effect of the **Dark personality** profile. Here, when a man in our sample was characterised by the Dark personality profile, if they were not misogynistic and did not express attitudes supportive of violence against women (the Low misogyny profile), they were less likely to perpetrate domestic abuse. This was also the case if they had positive relationships with their family and partners (the Positive relationships profile)
- The **High self-control** profile buffered against the **Worsening relationships** profile. In this instance, when a man in our sample demonstrated Worsening relationships, they were less likely to perpetrate domestic abuse if they had high self-control and low levels of dark personality traits (sadism, Machiavellianism, psychoticism)

For women, we found the following significant buffering protective profiles:

- The **Low propensity** and the **High self-control** profiles both buffered against the risk effects of the **Violent misogyny** profile. This means that if a woman in our sample was characterised as Violently misogynistic, she was less likely to perpetrate domestic abuse in the absence of

many compounding distal risk factors (Low propensity), and in the presence of high self-control and low levels of dark personality traits (High self-control)

Taken together, our results suggest **when and for whom** certain individual, and patterns of, protective factors may be most relevant to reduce the risk of domestic abuse perpetration, for men and women. Again, this highlights that a 'one-size fits all' approach to prevention is not supported by the evidence. Tailored approaches to address the needs of different individuals is likely to be far more impactful.

Next, we sought to understand **how** different protective factors work. Understanding how risk or protective factors function is essential knowledge for designing interventions.

Internal locus of control

Internal locus of control is how much a person believes that they, rather than external forces, have control over the outcome of events in their lives. **In both men and women internal locus of control demonstrates a protective effect against low socio-economic status, poor problem-solving skills, anxious and avoidant attachment style, psychological distress, and poor mental health**, suggesting that those with an internal locus of control are less likely to suffer the risk effects of these factors, which are either indirectly or directly associated with a risk of perpetrating domestic abuse.

People with an internal locus of control are also protected to some extent against maladaptive attachment styles, specifically anxious and avoidant attachment styles. In both men and women, maladaptive attachment styles are related to poor conflict resolution skills, psychological distress, and acute stress, which are risk factors for domestic abuse perpetration.

Internal locus of control in both men and women also demonstrates a protective effect against poor mental health and psychological distress. These are risk factors associated with anger, and acute stress, which again predict domestic abuse perpetration.

Statistical tests revealed no significant differences in **how** internal locus of control functions as a protective factor between men and women.

Self-esteem

High self-esteem functions much the same as internal locus of control. **In both men and women, high self-esteem protects against the risk effects of low socio-economic status, poor problem-solving skills, anxious and avoidant attachment, psychological distress, and poor mental health**. It's also protective against **emotional dependency**, which is characterised by an excessive attachment to a significant other, active request for emotional support, and fears of separation, as a facet of maladaptive interpersonal dependency – a risk factor for domestic abuse perpetration. No significant differences in how high self-esteem functions as a protective factor between men and women were found.

Resilience

Resilience also has a protective effect akin to high self-esteem and internal locus of control, where **resilient individuals are protected against negative effects from low socio-economic status, poor problem-solving skills, anxious and avoidant attachment, psychological distress, and poor mental health, thus reducing the risk of domestic abuse perpetration**. Further, resilience demonstrates a protective effect against **functional dependency**, which is characterised by passivity, social anxiety, and a lack of self-confidence, another facet of maladaptive interpersonal dependency. **In women, resilience is also directly protective against emotional dependency, but not in men.**

Social support

Social support demonstrates a protective effect against maladaptive attachment styles, poor mental health, low socioeconomic status, poor conflict resolution skills, and attitudes towards violence. Among men only, social support has a protective effect against misogyny, an attitudinal belief associated with support for violence and violence against women.

Positive problem solving

Positive problem solving has a protective effect against risk factors related to low self-control, such as temper and impulsivity, as well as attitudes towards violence. There were no significant differences between how positive problem solving functioned as a protective factor between men and women.

Limitations

The nature of our data means that whilst we can identify important relationships, to fully understand how protective factors work, longitudinal and experimental designs are necessary. These types of studies require significant time and investment and so were beyond the scope of our report, but are essential in establishing cause and effect, by observing changes over time or in a controlled environment.

Our data is limited by the fact that it is cross-sectional, in that it only presents a single snapshot in time of the UK general population.

Conclusion

Our findings highlight **when** and **how** different protective factors may be most effective at reducing the likelihood of domestic abuse perpetration. Our earlier analyses highlighted **the limited direct protective effects** of many of these factors, hence we went on to examine some of the **buffering** effects of well-known protective factors. With buffering protective factors, introducing certain protective factors dampens the risk effects of important factors related to domestic abuse perpetration, rather than having a direct influence on whether a person offends or not. Mitigating against these risk factors may also have positive outcomes for different types of harmful or undesirable behaviours.

This is another reason why we reiterate moving away from simply analysing the direct effects of single risk factors. Whilst this is essential knowledge to understand, building upon this foundational knowledge to understand the complexity of any phenomenon is essential.

1.0 Introduction

In the year ending March 2022, an estimated 5.0% of all adults in England and Wales aged 16 years and over experienced some form of domestic abuse (ONS, 2020). Given the well-documented harms associated with victimisation, understandably, much of the research translated into practice in the UK centres on domestic abuse victims. For example, the DASH (Domestic Abuse, Stalking, Harassment and Honour Based Violence Assessment) risk assessment tool has operated locally since 2009 and aims to identify domestic abuse victims at high risk of serious harm (CAADA, 2012). By its nature, it does not focus on offenders, their presenting problems, and the predisposing, precipitating, and perpetuating factors contributing toward their risk, or the protective factors which might mitigate future harmful scenarios. Similarly, few services exist for domestic abuse perpetrators, except for the Drive Project (Drive Project, 2023). Understanding **who** perpetrators are, and **how** they come to commit domestic abuse is essential knowledge for policy and practice to prevent this type of violence and the associated harms.

Drawing on international good practice and expertise, this report seeks to develop the science of risk and protective factors for domestic abuse perpetration. It is a **first step** towards establishing the evidence base for risk and protective factors for domestic abuse perpetrators in the UK. We address the following questions:

1) What is currently known about risk and protective factors for domestic abuse perpetration and are there any gaps in our knowledge?
2) What is the prevalence of domestic abuse perpetration, and the associated risk and protective factors in the UK general population?
3) How do risk and protective factors for domestic abuse co-occur in the UK general population?

We do this in two ways. First, we conduct a review of meta-analyses (a second order meta-analysis) of risk and protective factors for domestic abuse perpetration. Second order meta-analyses review previously published meta-analyses and therefore represent one of the highest levels of evidence synthesis currently available. To date, no such review encompassing the full scope of how the Home Office defines domestic abuse exists. We synthesise 39 meta-analyses, including over 3, 872 studies spanning over 3.5 million participants.

Second, we conduct a nationally representative survey of the UK general population to measure risk and protective factors alongside different measures of domestic abuse perpetration. We examine the prevalence of domestic abuse, and the effect of different risk and protective factors associated with offending.

Third, we move beyond considering single risk factors and examine the interactive and cumulative effects of risk and protective factors. This reflects current scientific pursuits that suggest moving away from relying on the presence or absence of single factors and considering how different **combinations** of risk and protective factors may be common to domestic abuse.

2.0 Domestic Abuse Perpetration: A Second Order Meta-Analysis

Like other forms of violent crime, policy makers and practitioners seek to develop evidence-based risk assessment and intervention tools. These tools seek to target risk and protective factors that are found to be associated with domestic abuse perpetration. The most successful tools are those that would target factors with the most salient relationships with the outcomes.

There is a long list of risk and protective factors that have been highlighted throughout the domestic abuse literature. However, determining which factors are more important than others can often be related to specific social and cultural contexts rather than based on evidence. Even when turning to systematic reviews, like in other fields of research, many employ vote-counting procedures, where they simply count the number of studies that have found a particular factor to be statistically significant or not, and then juxtapose these findings with those for other factors. This approach has been referred to as being 'crude' and 'flawed' (see Jewell & McCourt, 2000; Lee & Bryk, 1989; Mann, 1994; Rafaeli-Mor & Steinberg, 2002; Saroglou, 2002; Warner, 2001).

Another issue is that many systematic reviews focus on a specific factor or set of factors. For example, some reviews may examine the relationship between child abuse, or education, and domestic abuse perpetration. There is nothing wrong with this per se. Systematic reviews are meant to answer highly specific questions. However, when developing evidence-based tools, it is necessary to identify a broad range of factors and compare the relative magnitude of their effects with each other. It is here that 'field-wide' systematic reviews are most useful. These reviews seek to assess the entire body of evidence concerning a specified outcome. In the case of risk factor research, field-wide reviews usually make no pre-determinations as to what types of factors they will include. Rather, they allow the literature to dictate this. By including any and all factors, field wide reviews can provide a summary rank-order of estimates according to their size (Wolfowicz et al., 2020).

However, field-wide reviews cannot provide the final say for two main reasons. First, field-wide reviews are very intensive, sometimes gathering thousands of effect sizes pertaining to hundreds of factors. This leaves open the possibility that many eligible studies (and effect sizes) are missed. Second, factor-specific reviews continue to be published after field-wide reviews have been conducted. Indeed, this appears to be the case in the literature on risk factors for domestic abuse. Thirdly, and stemming from the first two issues, field-wide reviews may demonstrate conflicting evidence from earlier, factor-specific reviews which were published first and may already be frequently referred to by both researchers, policy makers, and practitioners.

The issue of competing and sometimes conflicting meta-analyses exists in many fields and with respect to many topics. When information provided by individual reviews is incomplete, and even more so when conflicting conclusions are to be drawn by different reviews, it is difficult to reconcile or synthesize the collective evidence.

To address these issues, an increasingly popular approach has been to conduct a **second-order meta-analysis, or a meta-analysis of meta-analyses** (Schmidt & Oh, 2013). The second-order meta-analysis provides a broad overview of the evidence, robust estimates of the magnitude of the effects of the indicator under examination (whether an intervention or risk factor), and allows for examining how results have changed over time as the evidence-base has. In addition, by synthesizing the findings from multiple reviews, the analysis can assess how heterogeneous (or homogenous) results have been (Polanin et al. 2014)

This approach has been used for investigations into the effectiveness of interventions (Al Attar & Alsheri, 2019), which is the classic application for meta-analysis, as well as for examinations of rates and distributions. Interestingly, even though criminologists were among the pioneers of applying second-order meta-analyses outside of the field of medicine (Lipsey & Wilson, 1993), this approach has only rarely been applied to the analysis of risk factors for criminal outcomes (Kourus et al., 2018). **Here, we conduct a second-order meta-analysis of risk and protective factors for domestic abuse perpetration.**

Method

This section outlines our evidence synthesis of existing meta-analyses of predictors of domestic abuse perpetration which were systematically collected, evaluated, and coded.

We conducted a keyword search of titles and abstracts in Web of Science, Scopus, PsycINFO, and PsychNet for papers published from database inception until 13th January 2022.

We used the same key words for both databases. **Key words searched for issues related to:**

'Type' abuse:
(domestic OR OR "interpersonal" OR "intimate partner*" OR "intimate" OR "relationship*" OR "IPV" OR "spous*" OR "wife" OR "marital" OR "dating" OR "courtship*" OR "premarital" OR "sexual" OR "emotional" OR "psychological" OR "verbal" OR "economic" OR "financial" OR "child*" OR "youth" OR "adolescent" OR "teenage*" OR "famil*" OR "parent*" OR "caregiver*" OR "perinatal" OR "prenatal" OR "pregnanc*" OR "elder*" OR "coercive control" OR "gender-based" OR "technology facilitated" OR "online" OR "digital" OR "cyber"),

Abuse and violence:
(violen*" OR "abus*" OR "domestic violen*" OR "domestic abus*" OR "aggress*" OR "homicid*" OR "femicide*" OR "batter*" OR "neglect*" OR "maltreatment" OR "harass*" OR "stalk*"),

Evidence synthesis:
("meta*" OR "systematic review" OR "rapid evidence assessment" OR "scoping review" OR "evidence map" OR "rapid review" OR "research synthes*" OR "Campbell" OR "umbrella review")

And risk/protective factors:
("risk" OR "protect*" OR "predict*" OR "moderat*" OR "mediat*" OR "need" OR "factor*" OR "cause*" OR "determinant*" OR "indicator*" OR "expla*" OR "predecessor*" OR "associated" OR "preced*" OR "impact*" OR "antecedent*" OR "promot*" OR "epidemiolog*").

We sought evidence syntheses on predictors/inhibitors of domestic abuse perpetration. As such, for the purposes of the sift, the inclusion criteria were as follows:

- we used the **UK Home Office's definition of domestic abuse** outlined by the Domestic Abuse Act 2021 Statutory Guidance, where domestic abuse is defined as - **Abusive behaviour between two people aged 16 or over who are personally connected to each other**, where abusive behaviour includes:

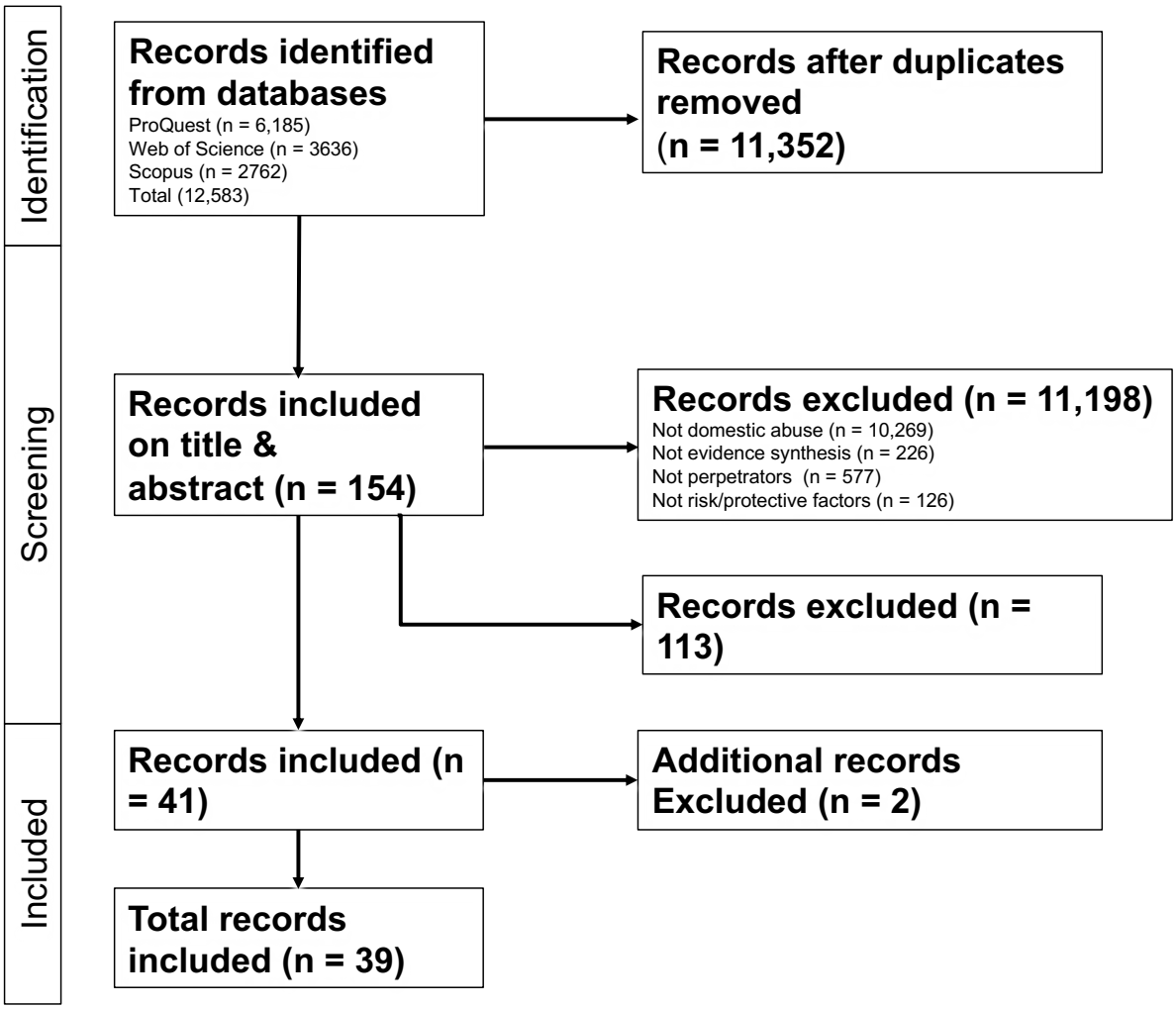
  (a) physical or sexual abuse;
  (b) violent or threatening behaviour;
  (c) controlling or coercive behaviour;
  (d) economic abuse
  (e) psychological, emotional or other abuse;
  and it does not matter whether the behaviour consists of a single incident or a course of conduct.

  and two people are 'personally connected' to each other if any of the following applies:

  (a) they are, or have been, married to each other;
  (b) they are, or have been, civil partners of each other;
  (c) they have agreed to marry one another (whether or not the agreement has been terminated);
  (d) they have entered into a civil partnership agreement (whether or not the agreement has been terminated);
  (e) they are, or have been, in an intimate personal relationship with each other;
  (f) they each have, or there has been a time when they each have had, a parental relationship in relation to the same child;
  (g) they are relatives.

- we focused on **perpetrators** and excluded studies that solely looked at predictors of domestic abuse victimisation
- a **risk factor** was defined as something that is considered to contribute (directly or indirectly) to the perpetration of violence. This can be specific to the individual, their upbringing, their context, their experiences
- we broadly defined a **protective factor** as something that inhibits (directly or by buffering risk factors) the perpetration of violence.
- we focused on **meta-analyses**

The flow chart below depicts the search process. The search string found 12,583 studies. Once duplicates were removed, 11,352 studies remained. Six researchers sifted through these and coded whether the study should be retained for full analyses or rejected based on the contents of the paper's title and abstract. 10,269 were rejected for being unrelated to domestic abuse. 226 were rejected for not being an evidence synthesis. 577 were rejected for not focusing on perpetrators. 126 were rejected for not addressing risk or protective factors. This left 154 search on full texts. 113 were excluded and so 41 records were retained. Two were later excluded because on full inspection one was a meta-analysis of prevalence rates and not risk factors (Farrer et al., 2012), and the other a meta-analysis of risk factors for victimisation and not perpetration (Tenkorang, 2021). This left 39 meta-analyses included.



2.1 Background to the Meta-Analyses on Domestic Abuse Perpetration

The 39 meta-analyses included a total of over 3,800 primary studies for which information was available. For two publications there were a total of n = 367 and n = 508 primary studies for which information on the identity of these studies were not available in publication, supplementary materials, nor were they

forthcoming through attempts to contact the authors. A corrected covered area (CCA) analysis was conducted for the available studies (Johnson & Hennessy, 2019). CCA assesses and documents the degree of overlap in primary studies included in a meta-analysis, where a high CCA suggests there is a high degree of overlap and potentially non-independence. We calculated our CCA = .024, which is low and well within the acceptable range. Whilst acknowledging the potential influence of the missing primary studies from our analysis, their inclusion would be unlikely to lead to a CCA even approaching .25, which is the level at which the degree of overlap would be problematic.

Table 8 outlines the characteristics of the 39 studies included in this review. **None of these meta-analyses explicitly contain UK based studies of domestic abuse perpetrators, and almost all focussed on intimate partner violence, only.**

Table 8: Included Study Characteristics

Study	Studies	Sample Size	Year Range	Country	Specific population
Alebel et al. 2018	8	2691	Up to 2018	Ethiopia	Perpetrators against pregnant women
Baheshmat et al. 2021	22	10,809	2022 - 2018	Iran	Male only
Birkley & Eckhardt, 2015	61	64	1986 - 2012	North American	
Birkley et al. 2016	23	9,935	1987 - 2012	Not reported	Predominately male military
Cafferky et al. 2018	285	627726	1980 - 2000	International & USA	
Collison & Lynam, 2021	163	189	1992 - 2020	17 countries	
Foran & O'Leary, 2008	50	24,158	1980 - 2008	Not reported	
Gil-Gonzalez et al. 2006	11	15416	1996 - 2003	4 countries:	
Godbout et al. 2019	66	70,359	2005 - 2015	Not reported	Male survivors of child maltreatment
Goncy, 2020	70	98	1990 - 2018	7 countries:	Adolescents and young adults
Gracia-Leiva et al. 2019	15	1784018	1997 - 2018	13 countries	
Goncy et al. 2021	66	94	1990 - 2018	7 countries:	Adolescents and young adults
James at al. 2013	92	64994	Not reported	23 countries	Perpetrators against pregnant women
Johnson et al. 2017	13	32795	2003 - 2015	US	Adolescents and young adults
Kane & Bornstein, 2015	17	Not reported	1998 - 2014	Not reported	
Kimmes et al. 2019	24	Not reported	Not reported	Not reported	
Lie et al. 2020	63	32544	1988 - 2017	Not reported	
Love et al. 2020	149	Not reported	1980 - 2000	Not reported	
Mallory et al. 2016	291	225,822	1980 - 2012	US and outside the US	Male only
Matias et al. 2020	28	9721	2000 - 2018	US, Europe, Mexico, South Africa	Homicide offenders
Moore et al. 2007	96	Not reported	1980 - 2005	Not reported	

Norlander & Eckhardt, 2005	28	5085	1988 - 2000	US	Male only
Park & Kim. 2018	27	Not reported	2005 - 2016	4 countries:	
Park & Kim, 2019	25	Not reported	2007 - 2016	Not reported	
Saunders et al. 2021	4	12679	2020 - 2021	Not reported	
Spencer & Smith, 2020	17	10143	1980 - 2017	5 countries:	
Spencer et al. 2016	580	Not reported	1980 - 2012	Not reported	
Spencer et al. 2019a	367	469741	1980 - 2014	34 countries:	
Spencer et al. 2019b	207	Not reported	1980 - 2000	Not reported	
Spencer et al. 2021	37	Not reported	1997 - 2018	Not reported	Adolescents
Spencer et al. 2022	503	Not reported	1980 - 2018	Not reported	
Stith et al. 2000	39	Not reported	1980 - 1997	Not reported	
Stith et al. 2004	207	Not reported	1988 - 2000	Not reported	
Stith et al. 2008	32	12740	1981 - 2005	Not reported	
Sugarman & Frankel. 1996	29	Not reported	up to 1995	Not reported	
Taft et al. 2011	31	14104	1984 - 2009	US, outside US	
Ubillos-Landa et al. 2020	25	31426	2006 - 2015	6 countries	
Velotti et al. 2022	52	13652	up to 2019	Not reported	
Zych et al. 2021	23	66654	2007 - 2017	4 countries	

We used the **AMSTAR II checklist** to assess the methodological quality of the included studies (Shea et al., 2016). AMSTAR II has been found a valid and reliable appraisal tool (Lorenz et al., 2019; Gates et al., 2018; Pieper et al., 2019). AMSTAR II comprises 16 items.[1] The 16 items are broken into two types: critical and non-critical. If a critical item is not present, it is considered a flaw. There are 7 critical items.[2] If a non-critical item is not present, it is considered a weakness. There are 9 non-critical items.[3]

The results provide a rating on the overall confidence in a review's results. Potential outcome ratings range from high to critically low:

- **High** - Zero or one non-critical weakness: The meta-analysis provides an accurate and comprehensive summary of the results of the available studies that address the question of interest

[1] For a full accounting of AMSTAR, see - https://amstar.ca/docs/AMSTAR%202-Guidance-document.pdf

[2] (1) Protocol registered before commencement of the review (2) Adequacy of the literature search (3) Justification for excluding individual studies (4) Risk of bias from individual studies being included in the review (5) Appropriateness of meta-analytical methods (6) Consideration of the risk of bias when interpreting the results of the review (7) Assessment of presence and likely impact of publication bias.

[3] (1) Research questions and inclusion criteria used PICO components (2) Study design selection reported. (3) Study selection performed in duplicate (4) Extraction performed in duplicate (5) Adequate description of included studies (6) Funding sources reviewed (7) Risk of bias considered in results of meta-analysis (8) Sufficient explanation for any heterogeneity observed (9) Conflict of interests reported or not.

- **Moderate** - More than one non-critical weakness: The meta-analysis has more than one weakness, but no critical flaws. It may provide an accurate summary of the results of the available studies that were included in the review.
- **Low** - One critical flaw with or without non-critical weaknesses: The review has a critical flaw and may not provide an accurate and comprehensive summary of the available studies that address the question of interest.
- **Critically low** - More than one critical flaw with or without non-critical weaknesses: The review has more than one critical flaw and should not be relied on to provide an accurate and comprehensive summary of the available studies.

AMSTAR II ratings of the 39 studies were generally low with 3 scoring high, 18 low and 18 critically low (Table 9). The relatively low ratings here were rarely concerned with the execution of the meta-analysis itself but more often to do with features of what the paper reported regarding their search, sift, and coding strategy. For example, all but 3 meta-analyses did not include a list of the excluded studies and 14 meta-analyses did not contain an explicit statement that the review methods were established prior to the conduct of the review.

Table 9: AMSTAR II Rating of Review Methodological Quality

Study	**Critical Weaknesses Identified (out of 7)**	**Non-Critical Weaknesses Identified (out of 9)**	**Confidence Rating**
Alebel et al. 2018	1	0	Low
Baheshmat et al. 2021	0	0	High
Birkley & Eckhardt, 2015	4	1	Critically low
Birkley et al. 2016	5	3	Critically low
Cafferky et al. 2018	1	2	Low
Collison & Lynam, 2021	1	1	Low
Foran & O'Leary, 2008	5	3	Critically low
Gil-Gonzalez et al. 2006	1	1	Low
Godbout et al. 2019	1	0	Low
Goncy, 2020	1	2	Low
Gracia-Leiva et al. 2019	5	5	Critically low
Goncy et al. 2021	1	0	Low
James at al. 2013	3	3	Critically low
Johnson et al. 2017	1	0	Low
Kane & Bornstein, 2015	5	4	Critically low
Kimmes et al. 2019	1	0	Low
Lie et al. 2020	1	0	Low
Love et al. 2020	1	0	Low
Mallory et al. 2016	1	0	Low
Matias et al. 2020.	1	0	Low
Moore et al. 2007	1	1	Low
Norlander & Eckhardt, 2005	4	2	Critically low
Park & Kim. 2018	2	0	Critically low
Park & Kim, 2019	2	0	Critically low
Saunders et al. 2021	0	0	High
Spencer & Stith, 2020	1	1	Low
Spencer et al. 2016	3	3	Critically low
Spencer et al. 2019a	5	3	Critically low
Spencer et al. 2019b	3	2	Critically low
Spencer et al. 2021	2	0	Critically low
Spencer et al. 2022	1	0	Low
Stith et al. 2000	5	4	Critically low
Stith et al. 2004	3	2	Critically low
Stith et al. 2008	5	1	Critically low
Sugarman & Frankel 1996	5	1	Critically low
Taft et al. 2011	1	2	Low

Ubillos-Landa et al. 2020	4	1	Critically low
Velotti et al. 2022	1	0	Low
Zych et al. 2021	0	0	High

Data extraction and analysis

After secondary screening, all data were extracted to Microsoft Excel, which was used for organising data according to the specific risk factors identified. We follow the approach of taking the summary estimates from the first-order meta-analyses together with their standard errors for calculating our second-order meta-analysis (Schmidt & Oh, 2013). We converted everything to *Fisher's z (r),* which is the most common statistic used in risk factor meta-analyses. When standard errors were not reported, we calculated them either from reported confidence intervals, sample sizes, or through re-running the analysis based on the primary studies that were reported to have been included in the analysis.

All analyses were carried out using the Comprehensive Meta-Analysis V3 software, with weight adjustment for the second-order meta-analysis implemented in Microsoft Excel. To maximize the number of effect sizes, where possible, we coded up to three effect sizes per factor from each study, disaggregated by the gender of the samples included. We then examined, where possible, differences by gender using moderator analysis. All data extraction, coding, and analysis was carried out by two of the senior members of the research team.

Moderator analysis

Many of the moderators that are frequently explored in first order meta-analysis are not possible in second-order analyses. We therefore limited our coding of study level characteristics to those relating to the type of sample and the type of outcome. Moderator analysis was carried out whenever there was a minimum of two studies from two categories.

(In)Dependence of effect sizes

Like first-order meta-analyses, the statistical (in)dependence assumption is relevant to second-order meta-analyses. However, assumptions of full statistical independence would preclude the ability to carry out such analysis as this would mean that primary studies cannot overlap among the included first-order meta-analyses. While there is still no consensus on this issue, Tracz, Elmore, and Pohlmann (1992) found that estimates were almost identical irrespective of violations of the independence assumptions. Nevertheless, a general guideline is to err on the side of caution by attempting to minimize (although not completely eliminate, as this is not possible) overlap between studies to ideally less than 25% (Cooper & Koenka, 2012).

Publication bias

Publication bias results from a bias for publishing studies based on the direction of the results. For instance, studies finding a significant effect may be more likely to be published than studies that find a non-significant effect. Publication bias was assessed using two separate but complementary approaches, namely the Trim-and-Fill method and Egger's test. These two tests have been found to be exceptionally useful, and complementary, in meta-analyses focused on risk factors (see Wolfowicz et al., 2020).

2.2. Second Order Meta Analysis Results

In total, we were able to group and meta-analyse **59 risk and protective factors** for which a minimum of two effect sizes were identified. By comparison, the only field-wide review identified, that of Spencer et al (2021), examined 63 factors. While most of the factors identified in this review overlap with the aforementioned review, there are some factors which we identify that were not included. The results are presented below in Table 10 and visualised in Figure 3.

Most of the estimates can only be categorized as **small**, although relatively, many demonstrate salient relationships with domestic abuse. In fact, there are only a small number of protective factors with estimates that can be categorized as exceptionally small (r<.10) and no risk factors that can be

categorized as such. **Those factors with the smallest effects can generally be categorized as socio-demographic factors**, including marital status, age, and religiosity. Education and income level had marginally larger but still small relationships. Relatedly, with respect to risk factors, financial stress had the smallest estimate, aside from OCPD. **The largest estimates among protective factors were for relationship satisfaction locus of control. The largest estimates among risk factors were nearly double the size, with prior stalking and threatening of victims, as well as prior victimization and perpetration commanding the largest estimates.**

In going down the rank-order of factors, there is an apparent clustering of conceptually linked factors by estimate size**. For example, risk factors ranging from *r* .10-.15 relate primarily to 'light', general health related factors**, whereas **factors falling within the range of .16-.20 generally relate to more specific aspects of mental health, combined with different experiences of violence (e.g., experiencing child abuse, violent towards others, criminal history, and parental domestic abuse)**. Continuing down the rank-order, **factors within the range of .20-.29 are more mixed. In addition to specific aspects of mental health** (e.g., PTSD), this cluster includes **psychological factors** (e.g., Anger, stress, psychopathy**), emotional and attitudinal factors** (e.g., jealousy, approval of violence, traditional gender roles), and **situational factors** (e.g., Peer IPV, Family problems, Power in relationship). The second tier also includes **specific types of personality disorder but also factors pertaining to control as well as criminal peers**, with both representing traditional criminogenic factors. As stated above, **the largest effect sizes are associated with specific experiences relating to previous domestic abuse**, both as victim and perpetrator.

Table 10. Rank-ordered effect sizes of risk and protective factors for domestic abuse perpetration (from smallest to largest)

Protective factors	z	95% CI	Q	I^2	τ^2	k
Married	-.06^{+}	-.12, .00	.671	.000	.000	3
Religiosity	-.06**	-.11, -.02	1.34	.000	.000	3
Social support	-.07**	-.11, -.02	.048	.000	.000	3
Employed	-.09***	-.12, -.07	6.87	27.16	.000	6
Age	-.11***	-.13, -.10	3.84	.000	.000	5
Education	-.11**	-.18, -.05	90.10***	91.12	.008	9
Length of relationship	-.11**	-.18, -.05	.455	.000	.000	3
Self-esteem	-.11**	-.19, -.03	1.98	.000	.000	4
Secure attachment	-.12^{+}	-.24, .01	.020	.000	.000	2
Income	-.12***	-.17, -.08	9.38^{+}	46.70	.001	6
Peer support	-.12	-.33, .09	7.04**	85.80	.020	2
Parental bonds	-.16***	-.23, -.09	4.60	56.55	.002	3
Conflict resolution	-.17***	-.21, -.14	6.02	16.89	.000	6
Marital satisfaction	-.27***	-.31, -.23	15.53***	80.68	.001	4
Relationship satisfaction	-.27***	-.29, -.24	1.08	.000	.000	5
Internal locus of control	-.29***	-.43, -.14	.137	.000	.000	2
Risk factors						
Obsessive compulsive PD	.10	-.05, .24	29.08	93.12	.016	3
Financial stress	.11*	.03, .19	.041	.000	.000	4
Attachment disorder	.13***	.05, .22	.168	.000	.000	5
Physical health problems	.14*	.02, .25	.341	.000	.000	2
Avoidant attachment disorder	.14***	.10, .17	28.30**	68.20	.001	10
Mental health issues	.14***	.05, .22	15.89**	74.82	.005	5
Neighbourhood hazards	.15***	.10, .19	.668	.000	.000	2
Dependent PD	.15*	.02, .28	.004	.000	.000	3
Experienced child abuse	.16***	.14, .18	34.04**	58.87	.001	15
Anxiety	.16***	.11, .20	1.99	.000	.000	7
Criminal history	.16^{+}	-.03, .34	2.86^{+}	65.05	.012	2
Internalised negative emotion	.16***	.08, .24	.270	.000	.000	2
Depression	.17***	.13, .22	40.92***	70.67	.004	13
Histrionic PD	.18*	.04, .31	.087	.000	.000	3
Narcissism	.18***	.10, .25	1.20	.000	.000	4
Violence toward others	.18**	.07, .29	4.76^{+}	57.99	.006	3
Parental IPV	.19***	.16, .22	23.71*	45.16	.001	14
Alcohol	.20***	.18, .22	5.72***	70.22	.001	17

Schizoid PD	.20***	.13, .28	.229	.000	.000	3
Trauma	.20**	.08, .31	.578	.000	.000	3
Jealousy	.21***	.14, .27	2.74	27.09	.001	3
Peer IPV	.21***	.13, .29	.047	.000	.000	3
PTSD	.21***	.14, .27	180.56***	92.25	.013	15
Stress	.21***	.14, .27	2.28	.000	.000	4
Anxious attachment	.24***	.19, .30	90.56***	92.27	.005	8
Approval of violence	.25***	.20, .31	26.551***	69.87	.004	9
Family problems	.25*	.06, .45	14.49***	93.10	.018	2
Psychopathy	.25***	.19, .31	.289	.000	.000	3
Anger	.25***	.23, .27	15.69	23.51	.000	13
Power in relationship	.27***	.22, .32	8.65	19.12	.001	8
Traditional gender roles	.22***	.14, .30	26.83***	81.36	.007	6
Schizotypal PD	.29***	.19, .38	.179	.000	.000	3
External locus of control	.30**	.08, .52	.118	.000	.000	3
Controlling behaviours	.32***	.25, .39	37.53***	76.68	.007	9
Paranoid PD	.31***	.29, .32	3.27	38.92	.000	3
Anti-social PD	.33***	.28, .37	4.99	.000	.000	9
Borderline PD	.36***	.32, .40	6.04	.000	.000	9
Deviant peers+	.36***	.17, .54	28.74***	96.52	.017	2
Withdraw and demand patterns	.36***	.28, .45	14.31**	79.03	.006	4
Stalking	.42***	.27, .57	10.33***	80.64	.013	3
Threatened victim	.47***	.35, .59	.733	.000	.000	3
Prior perpetration	.48***	.43, .54	516.62***	95.16	.018	26
Prior victimisation	.51***	.46, .55	15.04*	53.47	.001	8

*Note: ***<.001, **<.01, *<.05, +<.10, L/UCI=95% confidence intervals, Q=Cochran's Q, + we use the term 'deviant' peers as this is what used in the literature, however the term is falling out of use to reduce stigma. Criminal peers is often used instead*

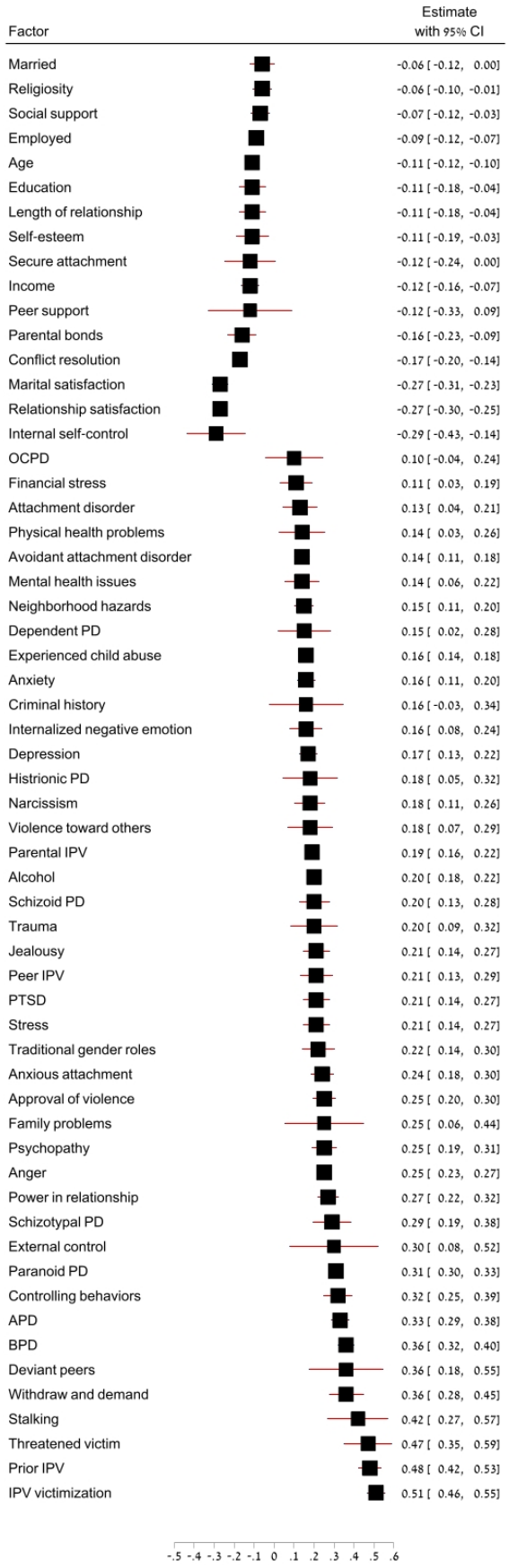


Figure 3: Forest plot of estimates from second-order meta-analysis

Heterogeneity

Heterogeneity on meta-analysis is the difference in study outcomes between studies. High heterogeneity may imply the data is not suitable for meta-analysis, given the variation in study outcomes. Here, heterogeneity was absent (or very low) for a surprisingly large number of the factors (n = 29).

Perpetrator gender

Moderator analysis was carried out for 16 factors for which at least two studies from two categories of perpetrator gender were available (Table 11). For most of these factors, the analysis pertained to three categories of perpetrator gender, namely mixed samples, male samples, and female samples. **Between-group heterogeneity was statistically significant for only four of these factors**. For alcohol use, approval of violence, and experiencing childhood violence, the estimates for mixed and male samples were significantly larger than for female samples, and for marital satisfaction, the negative estimate was larger for male than female samples.

Table 11: Moderator analysis for perpetrator gender

Factor	k	z	95% CI	$Q_{between}$
Alcohol	17	.20***	.18, .22	8.696*
Mixed	3	.21***	FILL	
Males	9	.23***	FILL	
Females	5	.14***	FILL	
Anger	13	.25***	.23, .27	.800^{ns}
Mixed	6	.26***	.24, .28	
Males	4	.25***	.20, .30	
Females	3	.22***	.13, .30	
Anxiety	7	.16***	.11, .20	.845^{ns}
Mixed	3	.15***	.09, .21	
Males	2	.15***	.06, .23	
Females	2	.21***	.08, .35	
Anti-social PD	9	.33***	.28, .37	.324^{ns}
Mixed	5	.33***	.28, .38	
Males	2	.30***	.22, .39	
Females	2	.31***	.14, .49	
Anxious attachment	8	.24***	.19, .30	3.302
Mixed	3	.22***	.14, .30	
Males	3	.21**	.08, .35	
Females	2	.34***	.23, .45	
Borderline PD	9	.36***	.32, .40	.950^{ns}
Mixed	5	.36***	.30, .41	
Males	2	.38***	.25, .52	
Females	2	.36***	.26, .46	
Approval of violence	9	.25***	.20, .30	7.835*
Mixed	3	.21***	.12, .30	
Males	4	.30***	.24, .35	
Females	2	.15***	.05, .25	
Depression	13	.17***	.13, .22	.119^{ns}
Mixed	4	.18***	.10, .25	
Males	5	.16***	.06, .26	
Females	4	.18***	.10, .25	
Exper. child abuse	15	.16***	.14, .18	28.961***
Mixed	5	.16***	.14, .17	
Males	6	.20***	.18, .23	
Females	4	.11***	.09, .13	
Income	6	-.12***	-.17, -.08	.057^{ns}
Mixed	2	-.12***	-.21, -.04	
Males	3	-.14***	-.23, -.05	
Prior victimization	8	.51***	.46, .55	.246 ^{ns}
Mixed	5	.56***	.44, .67	
Females	2	.53***	.50, .55	

Marital satisfaction	4	-.27***	-.31, -.23	11.01***
Males	2	-.30***	-.32, -.28	
Females	2	-.23***	-.26, -.19	
PTSD	15	.21***	.20, .30	1.958^{ns}
Mixed	9	.19***	.13, .24	
Males	3	.29***	.14, .44	
Females	3	.18***	.11, .24	
Parental domestic abuse	14	.19***	.16, .22	.504
Mixed	6	.18***	.15, .22	
Males	5	.21***	.13, .30	
Females	3	.18***	.10, .26	
Education	9	-.11**	-.18, -.05	1.155
Mixed	3	-.05	-.24, .14	
Males	5	-.15***	-.20, -.11	
Employed	6	-.09***	-.12, .07	.249
Mixed	2	-.12**	-.24, -.01	
Males	3	-.09***	-.12, -.07	
Prior perpetration	26	.48***	.43, .54	1.364
Mixed	8	.47***	.38, .57	
Males	11	.46***	.36, .57	
Females	7	.54***	.44, .64	

Note: k=number of studies, z=pooled estimate with statistical significance indicated (***<.001, **<.01, *<.05, +<.10), CI=Lower and upper 95% confidence intervals, $Q_{between}$=Cochran's Q heterogeneity statistic with statistical significance (***<.001, **<.01, *<.05, +<.10)

These findings generally conform with those of prior studies (See Spencer's moderator analyses) that show that gender-based heterogeneity is rare in risk and protective factors for intimate partner violence.

Domestic abuse type

For 9 of the included factors there were at least two studies from two categories of the type of domestic abuse (Table 12). For most of the factors this was relegated to either general domestic abuse or adolescent domestic abuse, although for four of the factors included an additional category of same-sex domestic abuse. For five of the nine factors, between-group heterogeneity was found to be statistically significant. In all such cases, the estimates for general domestic abuse were significantly larger than for adolescent domestic abuse. For the factor measuring prior perpetration, a significantly larger estimate was found for same-sex domestic abuse.

Table 12: Moderator analysis for IPV type

Factor	K	Z	CI	$Q_{between}$
Alcohol	17	.20***	.18, .22	25.531***
General	12	.22***	.20, .23	
Adolescent	3	.04	-.03, .11	
Same sex	2	.21***	.14, .28	
Anger	13	.25***	.24, .27	4.395
General	8	.26***	.23, .29	
Adolescent	3	.17***	.08, .25	
Same sex	2	.25***	.24, .27	
Approval of violence	9	.25***	.20, .30	22.257***
General	6	.33***	.31, .35	
Adolescent	3	.18***	.12, .23	
Anxious attachment	8	.24***	.19, .30	5.069*

General	5	.27***	.20, .34	
Adolescent	3	.16***	.09, .23	
Depression	13	.17***	.13, .22	26.233***
General	10	.21***	.19, .24	
Adolescent	3	.07**	.03, .12	
Previous Victimization	8	.51***	.46, .55	1.419
General	6	.50***	.46, .54	
Adolescent	2	.66***	.40, .91	
Parental domestic abuse	14	.19***	.16, .22	1.492
General	7	.21***	.16, .26	
Adolescent	7	.17***	.14, .21	
Exper. child abuse	15	.16***	.14, .18	.613
General	10	.17***	.14, .20	
Adolescent	3	.15***	.12, .18	
Same sex	2	.16***	.08, .24	
Prior IPV	26	.48***	.43, .54	21.48***
IPV	19	.51***	.45, .58	
Adolescent	5	.33***	.24, .42	
Same sex	2	.64***	.54, .74	

Note: k=number of studies, z=pooled estimate with statistical significance indicated (***<.001, **<.01, *<.05, +<.10), CI=Lower and upper 95% confidence intervals, $Q_{between}$=Cochran's Q heterogeneity statistic with statistical significance (***<.001, **<.01, *<.05, +<.10)

One possible explanation for the finding of consistently lower estimates for adolescents could be related to the frequency of the outcome in samples. That is, in adolescent samples, the frequency of the outcome in the sample is smaller than in adult samples. Another possibility is concerning the frequency of the indicator variable. For example, adolescents may be less likely to have engaged in prior perpetration, perhaps due to having had less opportunities to do so over a shorter lifespan than adults. In the case of alcohol, adolescents may also have fewer opportunities to engage in alcohol consumption, both due to differences in routine activities as well as access and availability.

Publication bias

There was strong evidence of publication bias for only three factors, for which missing studies were identified by the trim-and-fill analysis, alongside a statistically significant Egger's test (Table 13). There were two additional factors for which missing studies were identified alongside a marginally significant test (p<.10). For an additional 20 factors, missing studies were identified but Egger's test was not significant, whereas a significant Egger's test but no missing studies were found for two factors, and four factors in which the test was marginally significant. For studies with missing studies imputed, pooled estimates only shifted by a maximum of (+/-).07, with the average adjustment being only (+/-) .01. **This means that for most factors, there is not substantial evidence of publication bias impacting the estimates.**

Table 13: Publication bias analysis

Factor	Z	T&F (#)	AdjustedZ	CI	Q	Egger's
Age	-.11***	1	-.11***	-.13, -.10	4.31	.097
Alcohol	.20***	3	.21***	.13, .24	79.72	3.26**
Anger	.25***	1	.25***	.23, .27	17.81	.353
Anxiety	.16***	-	-	-	-	1.18

Anxious attachment	.24***	2	.27***	.21, .32	97.62	.254
APD	.33***	-	-	-	-	.160
Approval of violence	.25***	5	.32***	.27, .38	59.11	2.73*
Attachment disorder	.13***	3	.12***	.05, .19	.436	1.65
Avoidant attach. disorder	.14***	5	.11***	.08. .15	49.30	.866
BPD	.36***	4	.33***	.30, .37	14.20	.736
Dependent PD	.15*	-	-	-	-	1.021
Depression	.17***	1	.17***	.12, .21	42.48	.401
Education	-.11**	2	-.08**	-.15, -.02	113.58	.294
Employed	-.09***	1	-.09***	-.12, -.07	7.71	.354
Experienced child abuse	.16***	-	-	-	-	.970
External control	.30**	-	-	-	-	17.20*
Financial stress	.11*	-	-	-	-	1.975+
Impulsivity	.20***	-	-	-	-	.487
Income	-.12***	3	-.09***	-.13, -.04	21.83	2.96*
Jealousy	.21***	2	.17***	.11, .24	7.63	1.38
Length of relationship	-.11**	1	-.12***	-.18, -.06		1.29
Marital satisfaction	-.27***	-	-	-	-	.802
Married	-.06+	-	-	-	-	.584
Narcissism	.18***	1	.19***	.12, .25	1.64	1.61
Peer IPV	.21***	-	-	-	-	.679
IPV victimization	.51***	2	.50***	.45, .54	18.80	.855
Paranoid PD	.31***	1	.30***	.29, .32	4.92	.968
Parental bonds	-.16***	2	-.21***	-.29, -.14	16.39	1.604
Parental IPV	.19***	-	-	-	-	.153
Power in relationship	.27***	-	-	-	-	.308
Prior IPV	.48***	6	.43***	.37, .48	690.09	1.131
Psychopathy	.25***	-	-	-	-	.622
PTSD	.21***	5	.25***	.20, .30	218.77	1.44+
Relationship satisfaction	-.27***	2	-.27***	-.29, -.25	1.76	1.286
Religiosity	-.06**	-	-	-	-	3.20+
Schizotypal PD	.29***	-	-	-	-	.625
Schizoid PD	.20***	-	-	-	-	3.62+
Self-esteem	-.11**	-	-	-	-	1.936+
Social support	-.07**	-	-	-	-	.484
Stalking	.42***	-	-	-	-	1.45
Stress	.21***	2	.25***	.18, .31	7.26	.825
Threatened victim	.47***	2	.42***	.32, .52	2.49	1.291
Traditional gender roles	.27***	2	.27***	.24, .30	6.00	1.929+
Trauma	.20**	-	-	-	-	1.99
Violence toward others	.18**	-	-	-	-	9.478*
Withdraw and demand	.36***	1	.33***	.24, .43	30.31	1.797

Note: Factors are listed in alphabetical order. *Z*=Original pooled estimate, T&F=the number of imputed studies, AdjustedZ=pooled estimate after imputed studies, CI=Confidence intervals for AdjustedZ, Q=Cochran's Q for AdjustedZ, Egger's=Test statistic for Egger's regression test with statistical significance denoted as ***<.001, **<.01, *<.05, +<.10.

Post hoc analyses

For avoidant attachment disorder, there was no statistically significant heterogeneity ($Q_{between}$=.014, p=.905) between studies measuring psychological abuse (*z*=.14) and other, general forms of domestic abuse (*z*=.14). For prior domestic abuse perpetration, there were statistically significant differences between the types of perpetration ($Q_{between}$ =72.08, p=.000). The smallest estimate of *z*=.31 [95% CI=.25, .38] was for studies that examined general perpetration (k=6). Whereas the estimates for physical (k=4) and sexual (k=5) abuse of *z*=.47 [95%CI=.41, .52] and *z*=.48 [95%CI=.44, .51] respectively were much closer to the mean estimate for all forms of domestic abuse combined, the estimates were larger for emotional abuse (k=8) and domestic abuse causing injuries (k=3), with the estimates being *z*=.57 [95%CI=.54, .61] and *z*=.72 [95%CI=.62, .81] respectively.

Limitations

First, we understand that some meta-analyses may include the same primary studies, a phenomenon that causes an overlap issue and could bias the results of a meta-meta-analysis. There appears to be no clear guidance available to handle such an issue (Polanin et al., 2017). Methodological advances are needed regarding this issue. Second, the included meta-analyses in our study were almost entirely based on observational studies, which means we cannot provide a basis for causal inferences.

Few meta-analyses considered mediating or moderating effects across studies, and this demonstrates the major need for the analyses we later conduct. Likewise, **only three protective factors were measured which appears to be a large oversight given these are often the factors that interventions target.**

Finally, most meta-analyses that made our inclusion criteria focussed on **intimate partner violence**. There were several forms of domestic abuse that no meta-analyses exist for (although lower forms of evidence synthesis do exist) including elder abuse (Goldhagen, 2021; Santos et al., 2020; Valimaki et al., 2020), cyberstalking (Marcum, 2021), child to parent violence (Arias-Rivera & Hidalgo Garcia, 2020; Moulds, 2017), and reproductive coercion (Grace & Anderson, 2018). This again points toward the potential for future research to investigate whether certain types of risk factors are more important for certain types of domestic abuse.

Conclusion

The consistently low effect sizes amongst approximately half of the effect sizes may appear underwhelming. **However, the focus should be on cumulative impact**. The experience of multiple risk factors will have a strong cumulative impact upon domestic abuse perpetration likelihood. **The strongest effect sizes consistently refer to aspects of previous perpetration of varying forms of domestic abuse, substance abuse, controlling behaviours, criminal peers, various personality disorders, relationship fractures and previous victimisation**. This matches with risk assessment views that previous behaviours are generally a good indicator of future likely behaviours, the importance of considering personality disorders, the victim-perpetrator overlap, and the impact of dynamic risk factors.

The second order meta-analysis also highlights several areas where evidence is lacking on factors commonly found within domestic abuse relevant risk assessment instruments. For example, we did not find any meta-analyses that examined family criminality, or social ecological factors that consider the impact of community dynamics. Whereas living situation is commonly considered in violent recidivism risk assessment, issues like subjective well-being, living environment, accommodation, residence, and residential stability have not been meta-analysed with regard to domestic abuse. The same is also true for issues related to leisure such as a lack of prosocial leisure/recreation, subjective well-being, and lack of social participation. No meta-analyses considered the impact of previous imprisonment. Few studies examined the differential impact of follow-up periods (e.g., do some risk factors matter more in different follow up periods).

Finally, **no meta-analysis explicitly analysed UK samples**. Cross-country socio-cultural contexts are likely to impact upon domestic abuse perpetration. Therefore, the next section of our report focusses on **generating a rich dataset of risk and protective factors for domestic abuse perpetration, in the UK general population.**

3.0 Domestic abuse perpetration in the UK general population

No single systematic review identified in the previous section exclusively focused on research using UK samples. Hence, in this section we aimed to measure evidenced-based risk and protective factors for domestic abuse perpetration, and understand how these relate to domestic abuse offending, in the UK. To do so, we generated a unique dataset of domestic abuse perpetration and the associated risk and protective factors. The survey examined:

1. Predictors (risk and protective) of domestic abuse perpetration
2. Interactions between risk and protective factors for domestic abuse perpetration
3. Risk profiles for domestic abuse perpetration
4. Risk pathways to domestic abuse perpetration

3.1 Sample

We used Prolific, an online platform, to recruit our sample. Prolific maintains a pool of approved participants (approximately 130,000 persons) who register online to participate in academic studies in exchange for payment. Participants are vetted and quality controlled for participation in academic research.

All participants were required to give informed consent to participate in the study and were able to withdraw their consent at any point. Given the nature of the participant pool and to control for possible inattention, 15 attention checks were included (Oppenheimer et al., 2009). Participants who failed an attention check were escalated to a manual review of their data. In review, we examined the length of time a participant spent completing the questionnaire, the pattern of their responses (i.e., for scale items, was the same answer selected for every question?), and whether they failed any other attention checks. Upon consideration of all these factors, a decision was made about whether to reject or accept a submission. Upon rejection, participants received a message detailing why their response was rejected and were invited to query it should they feel the rejection unfounded. Their place in the study was automatically reassigned to another suitable participant from the pool until the study quota had been met.

1, 500 participants were recruited. Of the 1, 500 participants, **39 reported that they had no intimate partner and no contact with any living family in the last year**, and so their data were removed. The final sample size was 1,461. The age range was 18 to 89 years, where the mean age was 45.56 years old (SD = 15.77). The sample included 755 women (51.7%) and 706 men (48.3%). Table 14 details the sample demographic characteristics.

Table 14. Survey sample descriptive statistics (n = 1,461).

		Mean	**SD**
Age		45.56	15.77
		Frequency	**Percent**
Sex			
	Male	706	48.3
	Female	755	51.7
Ethnicity			
	White	1248	85.4
	Black	51	3.5
	Asian	112	7.7
	Mixed	30	2.1
	Other	20	1.4
Employment			
	Working (paid employee)	812	55.6

Working (self-employed)	125	8.6
Not working (student)	100	6.8
Not working (temporary layoff from a job)	6	0.4
Not working (looking for work)	82	5.6
Not working (retired)	210	14.4
Not working (disabled)	53	3.6
Not working (other - please specify)	73	5
Marital status		
Married	627	42.9
Widowed	33	2.3
Divorced	116	7.9
Separated	39	2.7
Never married	646	44.2
Education		
No secondary school	2	0.1
Some secondary school	24	1.6
Completed secondary school	308	21.1
Completed college	331	22.7
Completed Undergraduate degree	537	36.8
Completed Master's degree	225	15.4
Completed PhD	34	2.3

The survey asked participants to self-report a range of risk and protective for domestic abuse perpetration, alongside domestic abuse behaviours. Findings from the second order meta-analysis informed the survey development to ensure **evidenced-based** risk and protective factors were measured. We further included emerging risk and protective factors to generate a comprehensive dataset of risk and protective factors for domestic abuse perpetration in the UK general population (see Appendix A for a list of all measures).

3.2. Prevalence of Domestic Abuse Perpetration in the UK General Population

In this section, we aimed to estimate the prevalence of domestic abuse perpetration in the UK general population. We estimated rates of partner, family, and domestic abuse. Partner abuse is defined as any form of domestic abuse (as defined by the Home Office) perpetrated against a partner or ex-partner in the last 12 months. Family abuse is defined as any form of domestic abuse perpetrated against a family member (not including a partner) in the last 12 months. Domestic abuse is defined as any domestic abuse behaviour committed against a partner and/or family member in the last 12 months.

The most frequently self-reported domestic abuse behaviours were non-violent behaviours including keeping track of where a victim went or where they spent their time (9.7%), monitoring their letters, phone calls, emails, texts, or social media (4.7%), and belittling them to make them feel worthless (3.4%).

In terms of high-risk behaviours, 1.3% reported they'd used force against a partner or family member in the last 12 months, 0.1% attempted to choke or drown a partner or family member, 0.1% intentionally caused serious injury to a partner or family member, and 0.1% forced a partner or family member to engage in sex or sexual acts against their will. Whilst these percentages may seem small, extrapolated to the wider general population, **the results suggest that high-risk domestic abuse behaviours are being perpetrated by a small but significant proportion of the general population**.

The following figures show the prevalence of non-violent (Figure 4), violent (Figure 5), and sexual (Figure 5). domestic abuse behaviours.

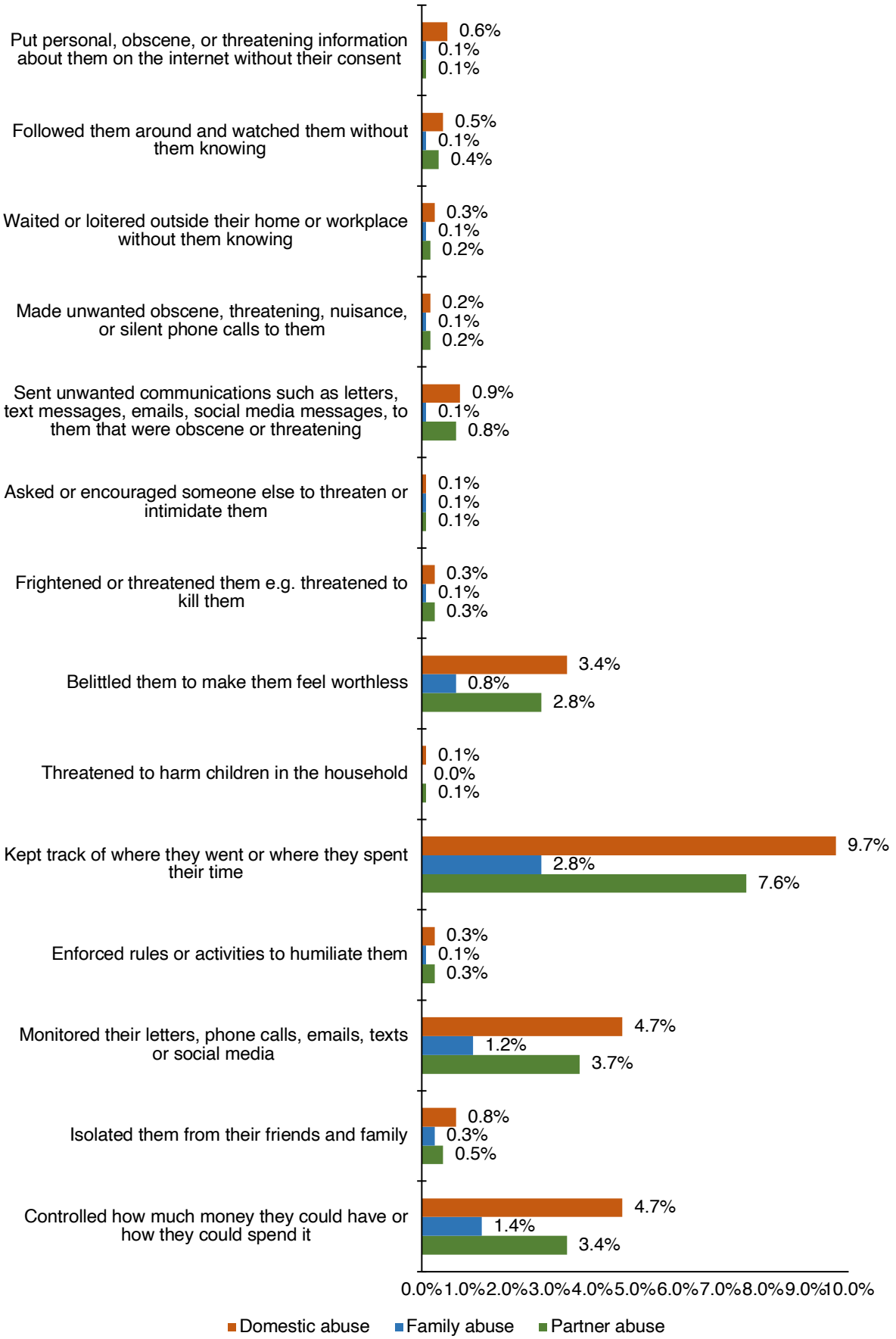

Put personal, obscene, or threatening information about them on the internet without their consent
0.6%
0.1%
0.1%
Followed them around and watched them without them knowing
0.5%
0.1%
0.4%
Waited or loitered outside their home or workplace without them knowing
0.3%
0.1%
0.2%
Made unwanted obscene, threatening, nuisance, or silent phone calls to them
0.2%
0.1%
0.2%
Sent unwanted communications such as letters, text messages, emails, social media messages, to them that were obscene or threatening
0.9%
0.1%
0.8%
Asked or encouraged someone else to threaten or intimidate them
0.1%
0.1%
0.1%
Frightened or threatened them e.g. threatened to kill them
0.3%
0.1%
0.3%
Belittled them to make them feel worthless
3.4%
0.8%
2.8%
Threatened to harm children in the household
0.1%
0.0%
0.1%
Kept track of where they went or where they spent their time
9.7%
2.8%
7.6%
Enforced rules or activities to humiliate them
0.3%
0.1%
0.3%
Monitored their letters, phone calls, emails, texts or social media
4.7%
1.2%
3.7%
Isolated them from their friends and family
0.8%
0.3%
0.5%
Controlled how much money they could have or how they could spend it
4.7%
1.4%
3.4%
0.0%1.0%2.0%3.0%4.0%5.0%6.0%7.0%8.0%9.0%10.0%
Domestic abuse
Family abuse
Partner abuse

Figure 4. Non-violent domestic abuse prevalence in the UK general population (n = 1, 461).

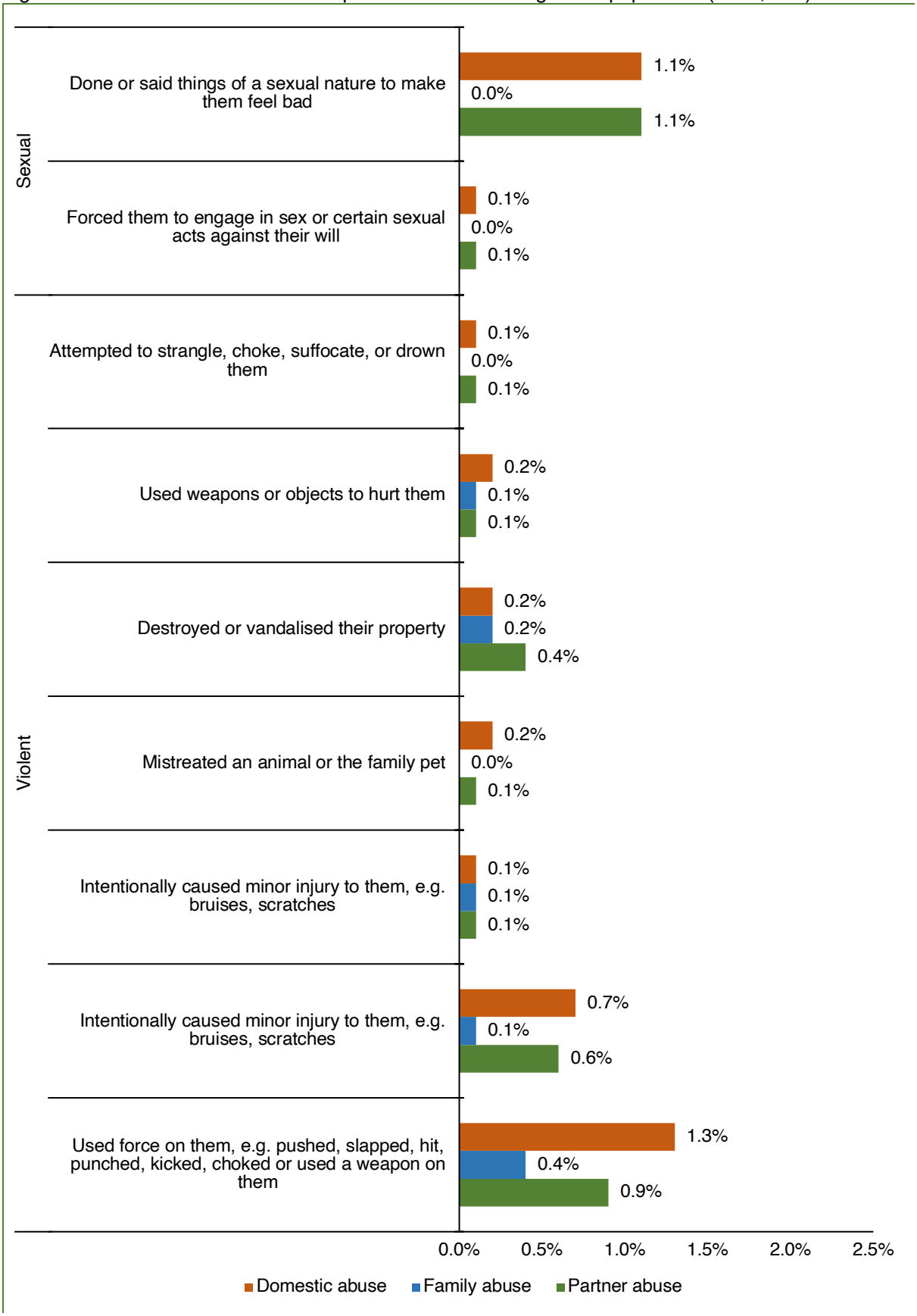


Figure 5. Violent and sexual domestic abuse prevalence in the UK general population (n = 1, 461).

We further analysed any differences between men and women. Table 15 displays the frequencies of self-reported domestic abuse behaviours for men and women disaggregated by partner abuse, family abuse, and domestic abuse.

Comparing the prevalence of individual domestic abuse behaviours between men and women, we found no significant differences between the type or number of behaviours self-reported by men and women. **This is not to suggest that there are not differences in how men and women experience domestic abuse**. Research shows that women are more likely to experience higher rates of repeat victimisation and be seriously hurt (Walby & Allen, 2004). The failure to observe any significant differences here are most likely due to the relatively low frequencies of high-risk behaviours self-reported. In other words, given our sample was a general population sample, we have not captured high enough rates of high-risk domestic behaviours to disaggregate gender differences, where previous research with offender samples suggests they do exist.

Additionally, the scope of the current investigation was to measure **perpetration only**, not victimisation or harm. There may be differences in how victims experience these behaviours, in terms of frequency, intensity, and outcomes. Again, much of the existing literature does focus on victimisation and often finds women at higher risk of serious harm and violence.

Finally, we cannot be certain that we have exclusively measured **domestic abuse behaviours**. Taken in isolation, some self-reported behaviours may fall within the bounds of normal or relationship behaviours, for instance monitoring social media in itself is not necessarily domestic abuse. However, a pattern of monitoring and control may be. Hence, we present these results as evidence of the prevalence of individual behaviours which could constitute domestic abuse in the general population.

To estimate the overall prevalence of domestic abuse in the UK general population, we consider a **pattern** of these behaviours to be indicative of domestic abuse. Women's Aid defines domestic abuse "as an incident or pattern of incidents of controlling, coercive, threatening, degrading and violent behaviour, including sexual violence." A single incident may therefore be classified as domestic abuse. However, if we consider domestic abuse to be a **pattern of incidents** of at least **two to three** behaviours, the prevalence of domestic abuse in our sample is as follows:

- **Domestic abuse: 4.9%**
- **Partner abuse: 5.2%**
- **Family abuse: 1.5%**

These trends broadly align with findings from the Crime Survey for England and Wales that estimated self-reported of domestic abuse victimisation as 5.0% in the UK general population in March 2022.

Limitations & Conclusion

It is important to recognise the limitations of our results. First, whilst our sample is (relatively) large, and representative of the UK general population, comparable studies, such as the Crime Survey for England & Wales, sample a far larger proportion of the UK general population to establish prevalence rates of domestic abuse victimisation. This was not feasible here; however, **we encourage future attempts to replicate our findings in larger samples.**

One implication of this is that we did not uncover large numbers of people self-reporting high-risk or high-harm domestic abuse behaviours. Whilst this is reassuring in one way, it also meant we couldn't analyse differences, such as gender differences for instance, across some of the more concerning behaviours.

Second, it is important to reiterate that this is a general population sample. **We caution against applying these prevalence rates to offender or violent populations.**

Third, this was a first attempt at estimating the 12-month prevalence of domestic abuse perpetration in the UK general population. **The results of any single study should always seek to be replicated to establish reliability and validity.**

Fourth, **asking people to self-report criminal behaviour can be problematic**. It is likely that our results succumbed to a reporting bias. Some participants may not have disclosed perpetration for fear

of perceived repercussions (despite the fact they were entirely anonymous). However, research has shown that online surveys, as we have used here, may reduce the extent of these biases, by increasing participants' perception of their own anonymity, and thereby facilitating disclosure (Clemmow et al. 2020).

Finally, we advise against interpreting the prevalence of single domestic abuse behaviours. Some of these behaviours, occurring as a single instance, may be within the bounds of what is considered normal relationship behaviour, dependent on the context. This is why **we estimate the prevalence of domestic abuse perpetration from a pattern of domestic abuse behaviours**. This is less likely to include normal relationship behaviour, however we run the risk underestimating domestic abuse perpetration in doing so. **More work on how to measure domestic abuse perpetration which considers frequency, severity, and harm is necessary.**

Table 15. Domestic abuse perpetration for males and females in the UK general population (n = 1461).

	Partner abuse			Family abuse			Domestic abuse		
	Overall	Males	Females	Overall	Males	Females	Overall	Males	Females
Perpetrator behaviour	1, 119	527	592	1, 365	657	709	1, 461	706	755
Controlled how much money they could have or how they could spend it	3.4%	3.7%	3.2%	1.4%	1.7%	1.2%	4.7%	5.1%	4.4%
Isolated them from their friends and family	0.5%	0.7%	0.4%	0.3%	0.4%	0.1%	0.8%	1.0%	0.5%
Monitored their letters, phone calls, emails, texts, or social media	3.7%	3.0%	4.4%	1.2%	1.1%	1.3%	4.7%	3.8%	5.4%
Enforced rules or activities to humiliate them	0.3%	0.6%	0.0%	0.1%	0.1%	0.0%	0.3%	60.0%	0.0%
Kept track of where they went or where they spent their time	7.6%	6.2%	8.9%	2.8%	2.7%	2.9%	9.7%	8.4%	10.9%
Threatened to harm children in the household	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
Belittled them to make them feel worthless	2.8%	2.8%	2.8%	0.8%	0.7%	0.8%	3.4%	3.3%	3.4%
Frightened or threatened them e.g., threatened to kill them	0.3%	0.4%	0.1%	0.1%	0.0%	0.1%	0.3%	0.4%	0.3%
Used force on them, e.g., pushed, slapped, hit, punched, kicked, choked, or used a weapon on them	0.9%	0.8%	0.9%	0.4%	0.1%	0.7%	1.3%	1.0%	1.6%
Intentionally caused minor injury to them, e.g., bruises, scratches	0.6%	0.4%	0.8%	0.1%	0.0%	0.1%	0.7%	0.4%	0.9%
Intentionally caused serious injury to them, e.g., broken bones, concussion, injury requiring hospital treatment	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%
Forced them to engage in sex or certain sexual acts against their will	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%	0.0%
Done or said things of a sexual nature to make them feel bad	1.1%	1.4%	0.8%	0.0%	0.0%	0.0%	1.1%	1.4%	0.8%
Mistreated an animal or the family pet	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.2%	0.3%	0.1%
Sent unwanted communications such as letters, text messages, emails, social media messages, to them that were obscene or threatening	0.8%	1.0%	0.5%	0.1%	0.0%	0.3%	0.9%	1.0%	0.8%
Made unwanted obscene, threatening, nuisance, or silent phone calls to them	0.2%	0.3%	0.1%	0.1%	0.0%	0.0%	0.2%	0.3%	0.1%
Waited or loitered outside their home or workplace without them knowing	0.2%	0.1%	0.3%	0.1%	0.0%	0.1%	0.3%	0.1%	0.4%

Followed them around and watched them without them knowing	0.4%	0.6%	0.3%	0.1%	0.0%	0.1%	0.5%	0.6%	0.4%
Put personal, obscene, or threatening information about them on the internet without their consent	0.1%	0.3%	0.0%	0.1%	0.1%	0.0%	0.6%	0.1%	0.0%
Destroyed or vandalised their property	0.4%	0.8%	0.0%	0.2%	0.1%	0.3%	0.2%	1.0%	0.3%
Used weapons or objects to hurt them	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.2%	0.1%	0.3%
Attempted to strangle, choke, suffocate, or drown them	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
Asked or encouraged someone else to threaten or intimidate them	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%

3.3. Risk Factors for Domestic Abuse Perpetration in the UK General Population

Next, we considered which factors direct risk factors for domestic abuse perpetration in the UK general population.

The first step examined the independent discrete effects of each risk factor on domestic abuse perpetration. Understanding how single risk factors relate to an outcome is foundational knowledge for certain types of risk assessment. For instance, risk factors included in actuarial risk assessment tools should be informed by robust empirical evidence.

We consider risk factors for perpetrating domestic abuse for men and women, separately. We ran a series of simple linear regressions. Table 16 quickly summarises the significant risk factors we identified in order of their effect sizes. Standardised beta coefficients are reported and can be understood as follows. If self-control has a standardized beta coefficient with a value of .2, with every increase of one standard deviation in self-control, domestic abuse perpetration increases by .2 standard deviations. Therefore, the risk factors with the largest beta values exert the greatest effect on domestic abuse perpetration.

Table 16. Significant risk factors for domestic abuse perpetration in the UK general population for men and women (n = 1,461). Results are rank ordered by effect size.

Risk factor (male perpetrators)	**Effect size (beta)**	**Risk factor (female perpetrators)**	**Effect size (beta)**
Attitudes supportive of violence towards women	0.282	Recent stress	0.317
Anger	0.278	Anger	0.288
Sadism	0.231	Conflict engagement	0.282
Victim of domestic abuse	0.223	Victim of domestic abuse	0.269
Conflict engagement	0.215	Psychological distress	0.262
Misogyny	0.186	Temper	0.254
General violence attitudes	0.178	General violence attitudes	0.238
Psychological distress	0.178	Financial problems	0.223
Emotionally abusive parents growing up	0.145	Poor mental health	0.201
Psychopathy	0.145	Worsening relationship with partner	0.199
Temper	0.142	Sadism	0.185
Patriarchal beliefs	0.142	Avoidant attachment	0.182
Recent stress	0.135	Substance abuse problems in the home growing up	0.180
Extremism	0.135	Worsening relationships with family	0.180
Anxious attachment	0.132	Threatened to harm self as an adult	0.173
Criminal history	0.129	Psychopathy	0.162
Machiavellianism	0.122	Misogyny	0.161
Threatened to harm self as an adult	0.119	Anti-social PD	0.160
Poor mental health	0.117	Worries about money	0.156
Worsening relationships with family	0.110	Anxious attachment	0.155
Felt unloved as a child	0.104	Lived with someone who went to jail as a child	0.153
Relationship breakdown	0.103	Separated or attempted to separate	0.149
Grew up in poverty	0.097	Emotionally abusive parents growing up	0.144

Worsening relationships with partner	0.094	Mental health problems in the home growing up	0.142
Thrill-seeking	0.089	Criminal history	0.141
Young age	0.086	Impulsivity	0.120
Number of children in household	0.084	Harmed self as an adult	0.119
Vandalism	0.081	Poor physical health	0.117
Religiosity	0.080	Partner infidelity	0.114
Self-protection	0.080	Young age	0.114
Drug issues	0.080	Drug use	0.11
Impulsivity	0.078	Lost a parent (divorce, death, abandonment, etc)	0.109
Avoidant attachment	0.074	Relationship breakdown	0.108
High crime rate	0.074	Thrill-seeking	0.105
		Harmed self as a child	0.104
		High crime rate	0.104
		Gang activity	0.101
		Witnessed parental abuse as a child	0.099
		Committed non-familial violence as an adult	0.098
		Self-protection	0.092
		Drug issues	0.092
		Depression	0.089
		Financial issues	0.089
		Attitudes supportive of violence against women	0.088
		Narcissism	0.078
		Felt unloved as a child	0.076
		Recent unemployment	0.074
		Machiavellianism	0.073

Note. Magnitude of effect sizes, <.10 negligible, .10 - .29 small, .30 - .49 moderate, > .5 large

For men, the most influential risk factors are attitudes supportive of violence against women, anger, sadism, domestic abuse victimisation, conflict engagement, and misogyny. For women, the most influential risk factors are acute stress, anger, conflict engagement, domestic abuse victimisation, psychological distress, and temper (low self-control). In our sample, we can infer that male perpetrators are driven by attitudes towards women and violence, and so called 'dark' personality characteristics, seemingly stable, distal risk factors. Among women, we can infer that domestic abuse perpetration is driven by acute stress, psychological distress, and relationship difficulties – typically more proximal, situational risk factors.

However, the size of the effects we observed were relatively small. This means that **the risk and protective factors we measured had a relatively weak relationship with domestic abuse perpetration, and so may not be reliable predictors of offending on their own**. This underscores the need to consider how patterns of risk and protective factors relate to domestic abuse perpetration, our assumption being that **combinations of different factors will be better at predicting domestic abuse perpetration.**

3.4. How do Risk Factors Co-Occur?

The previous section provided the foundational knowledge essential for understanding which risk factors have a **direct effect** on domestic abuse perpetration. To provide a more nuanced insight into

the drivers of domestic abuse, we consider how these risk factors **co-occur** as risk profiles. The idea being that different patterns of risk factors may be indicative of the underlying causal mechanisms driving domestic abuse offending. Understanding the drivers of a phenomenon is essential to inform prevention and intervention programming, particularly when adopting a public health approach.

This approach reflects current scientific pursuits that suggest moving away from relying on the **presence or absence** of single factors. For instance, Dawson & Piscitelli (2021) examined whether certain risk factor combinations were common among cases of domestic homicide following a call for research on intimate partner violence to better understand the **combined influence** of risk factors. Relatedly, Ward and Beech (2014) argued that to describe causal explanations of offending (in their instance, sexual offending), **sets** of factors need to be identified. Hence, we aimed to disaggregate risk profiles for domestic abuse perpetration.

Risk factors were categorised into different components reflecting common categories of risk factors for domestic abuse perpetration than span the offending trajectory: (1) distal, (2) proximal, (3) attitudinal, (4) personality, (5) relationship, and (6) community-level risk factors. We used cluster analysis to extract different risk profiles within each of the components. Cluster analysis is a data-driven technique which identifies groups from large datasets, where the groups are unknown. **Each cluster reveals a distinct configuration of risk factors for domestic abuse perpetration which impacts upon domestic abuse perpetration differentially.**

Distal Risk Profiles

Cluster analysis identified four profiles which we labelled *low propensity* (*n* = 325), *criminal propensity* (*n* = 379), *adverse childhood experiences* (*ACE)* (*n* = 532), and *high propensity* (*n* = 225). Figure 6 shows the distribution of risk factors across the different profiles.

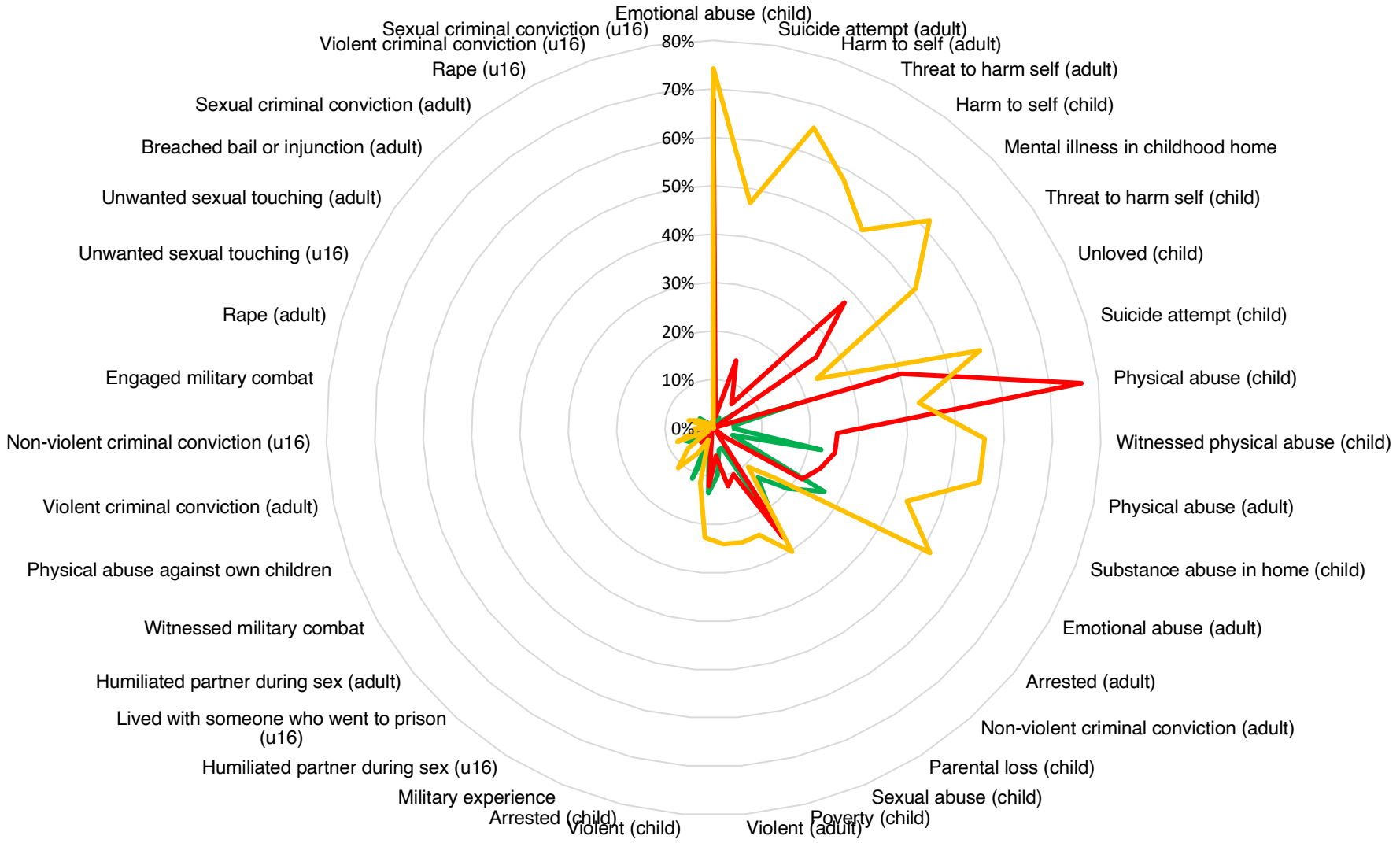


Figure 6. Radar plot of clusters identified within the distal component. High propensity (yellow), adverse childhood experiences (red), low propensity (green).

The Low propensity profile does not demonstrate many distal risk factors for domestic abuse perpetration. This risk profile is intuitively low risk. Second, the Criminal propensity profile demonstrates the highest prevalence of risk factors relating to previous criminal behaviour, including being arrested (19.8%) and previous criminal convictions (13.7%). This profile also demonstrates the highest frequency of previous military involvement (11.3%). This profile could be considered as demonstrating an existing propensity and capacity for violence.

Third, the ACEs profile demonstrated the highest prevalence of adverse childhood experiences, including emotional abuse as a child (67.9%), mental illness in the home (37.4%), and physical abuse as a child (76.5%).

Finally, the High propensity profile demonstrated the highest prevalence of distal risk factors overall, including adverse childhood experiences including physical, emotional, and sexual abuse, domestic abuse, and mental ill-health including self-harm and suicide attempts.

Proximal Risk Profiles

The proximal component includes situational risk factors which survey respondents told us they had experienced in the last 12 months. Hence this category is defined by **acute** stressors, compared to the distal component which is primarily defined by **static** risk factors. Cluster analysis identified two risk profiles: Low distress (n = 810) and High distress (n = 651).

Figure 7 shows how the Low distress cluster present relatively low frequencies of proximal stressors including psychological distress, recent job loss, and financial problems. The High distress profile in contrast demonstrates much higher frequencies of these stressors. For instance, 93.9% reported worries about money, 90.5% reported feeling isolated, and 93.2% reported increasing feelings of stress.

Attitudinal Risk Profiles

The attitudinal component includes attitudes about women and men, general violence, and violence against women (Figure 8). Cluster analysis identified three risk profiles: Low misogyny (n = 677), Misogynist (n = 467), and Violent misogynist (n = 317). The Low misogyny profile does not endorse misogynistic and patriarchal beliefs and is unsupportive of general violence and violence against women. The Misogynistic profile endorses misogynistic and patriarchal beliefs but does not support general violence or violence against women. The Violent misogynist profile endorses misogynistic and patriarchal beliefs and are supportive general violence and violence against women.

Personality Risk Profiles

The personality component includes risk factors relating to self-control, such as thrill-seeking, impulsivity, and temper, alongside measures of psychopathy, sadism, narcissism, and Machiavellianism. Cluster analysis detected two profiles: High self-control (n = 875) and the Dark personality (n = 586) profile. The High self-control profile demonstrates low rates of thrill-seeking, impulsivity, and temper, alongside lower rates of psychopathy, sadism, narcissism, and Machiavellianism. In contrast, the Dark personality profile demonstrates much higher frequencies of all these risk factors (Figure 9).

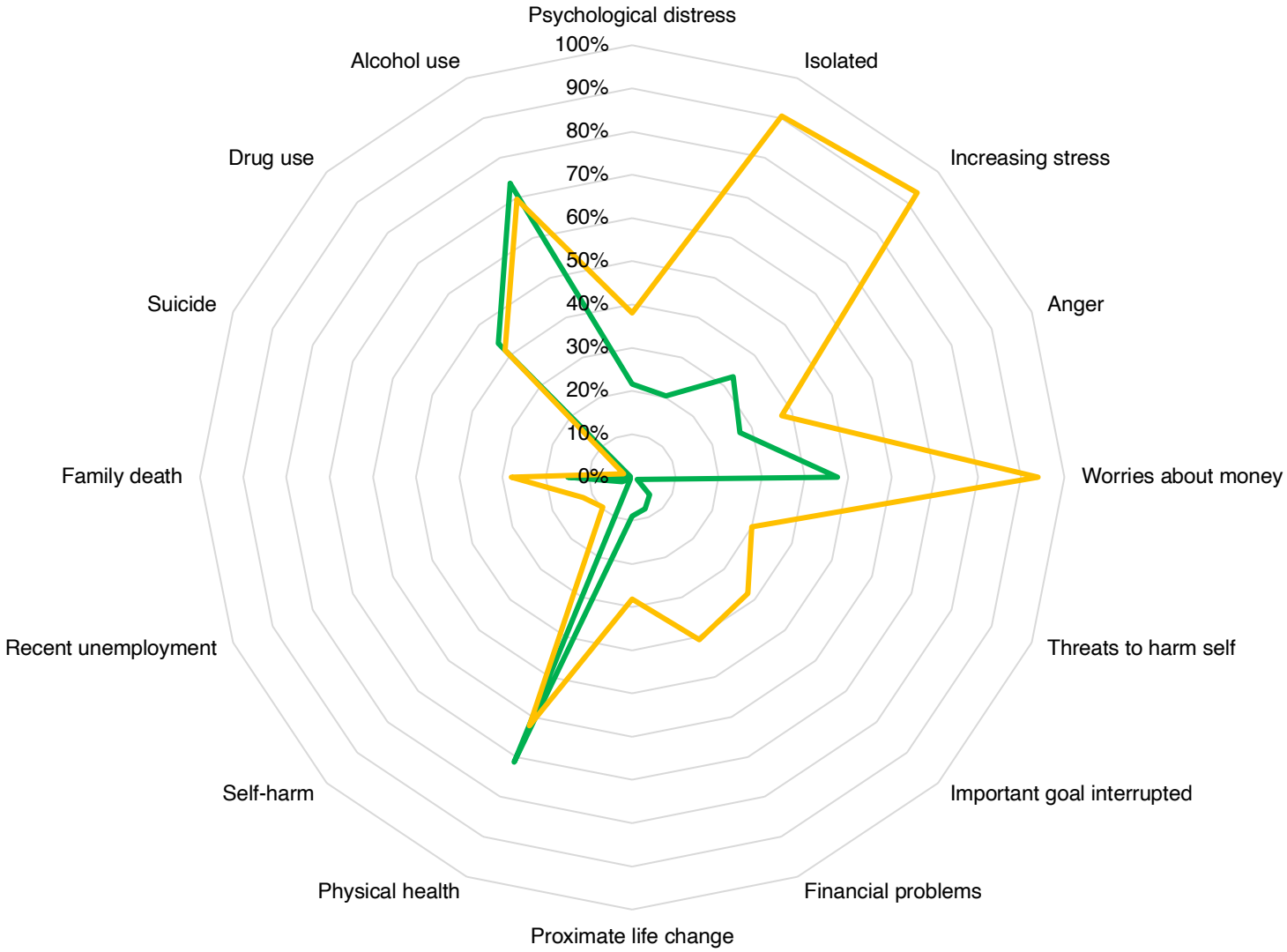


Figure 7. Radar plot of clusters identified within the proximal component. High distress (yellow), Low distress (green)

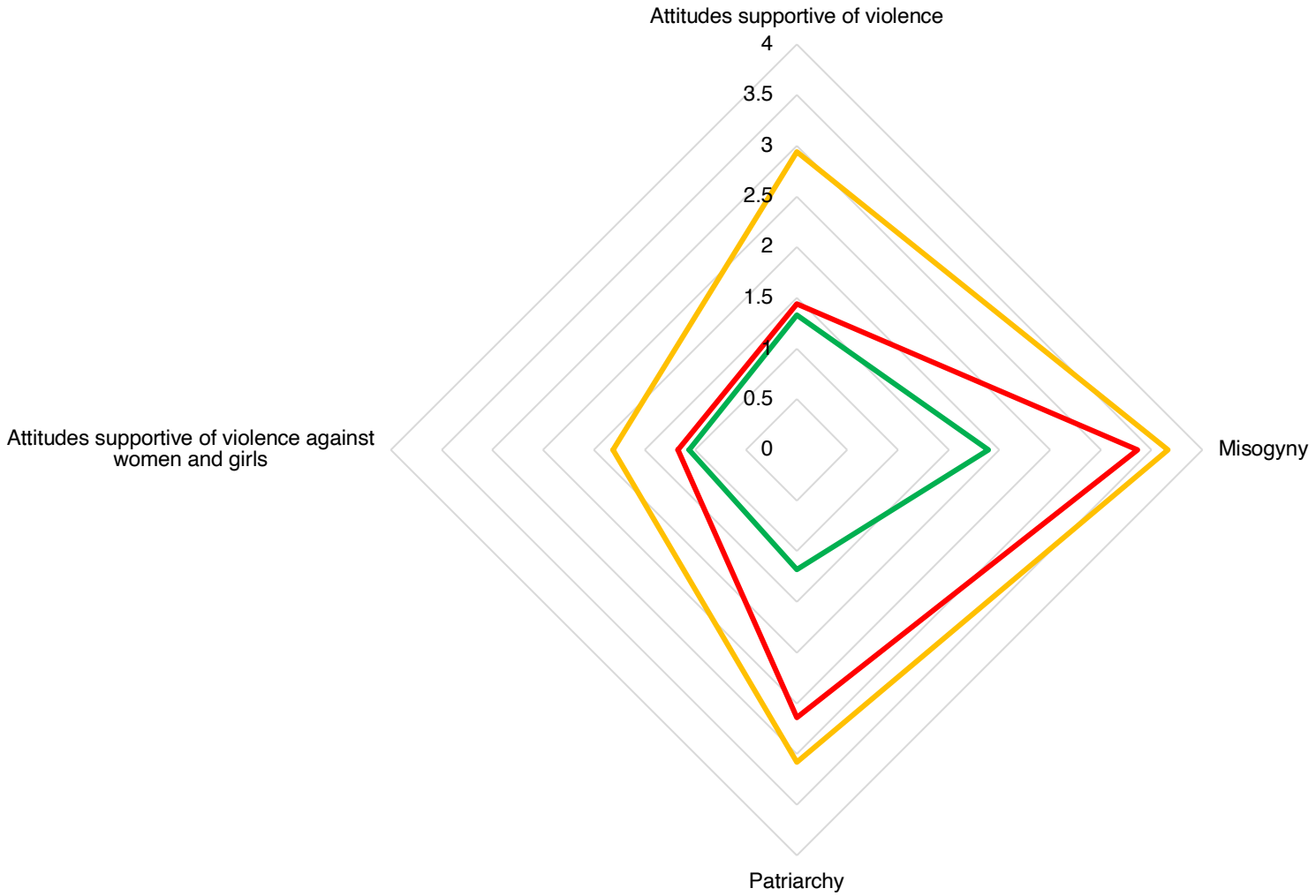


Figure 8. Radar plot of clusters identified within the attitudinal component. Violent misogynist (yellow), misogynist (red), positive attitudes (green)

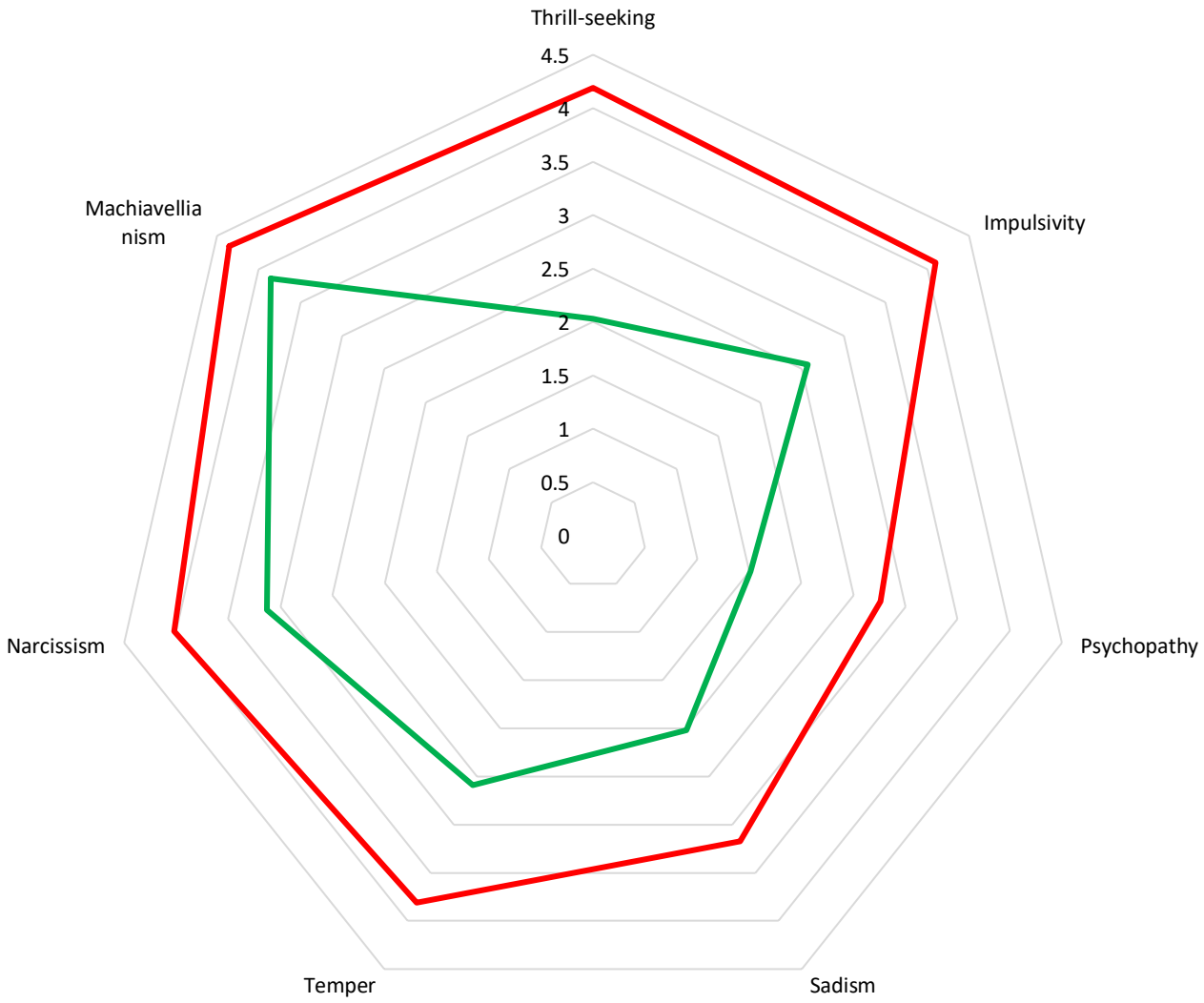


Figure 9. Radar plot of clusters identified within the personality component. Low self-control/high dark triad (red); High self-control/low dark tried (green).

Relationship Risk Profiles

The relationship component includes relationship-level risk factors such as relationship satisfaction, relationship breakdown, attachment style, and interpersonal dependency. Cluster analysis identified two profiles: Positive relationships (n = 727) and Worsening relationships (n = 384; Figure 10). The Positive relationship profile are satisfied with their relationships with their partner and family, do not demonstrate maladaptive attachment styles or poor conflict resolution skills, and tend to have longer relationships. The Worsening relationships cluster demonstrate higher frequencies of relationships breakdown, dissatisfaction with their relationships with their partner or family, worsening relationships with their partners and family, demonstrate poor conflict resolution, maladaptive attachment styles (such as anxious or avoidant attachment), and tend to have shorter relationships.

Community Risk Profiles

The community component considers community-level risk factors including housing, drug, and gang issues, high crime rates, extremism, and vandalism (Figure 11). Cluster analysis identified three profiles: Low disorganisation (n = 557), Moderate disorganisation (n = 560), and High disorganisation (n = 288). The profiles are characterised by low, moderate, and high rates of community disorganisation, respectively. For instance, the High disorganisation profile demonstrates the highest reports of drug, financial, and hosing issues in the community, and the Low disorganisation profiles demonstrates the lowest levels of these risk factors.

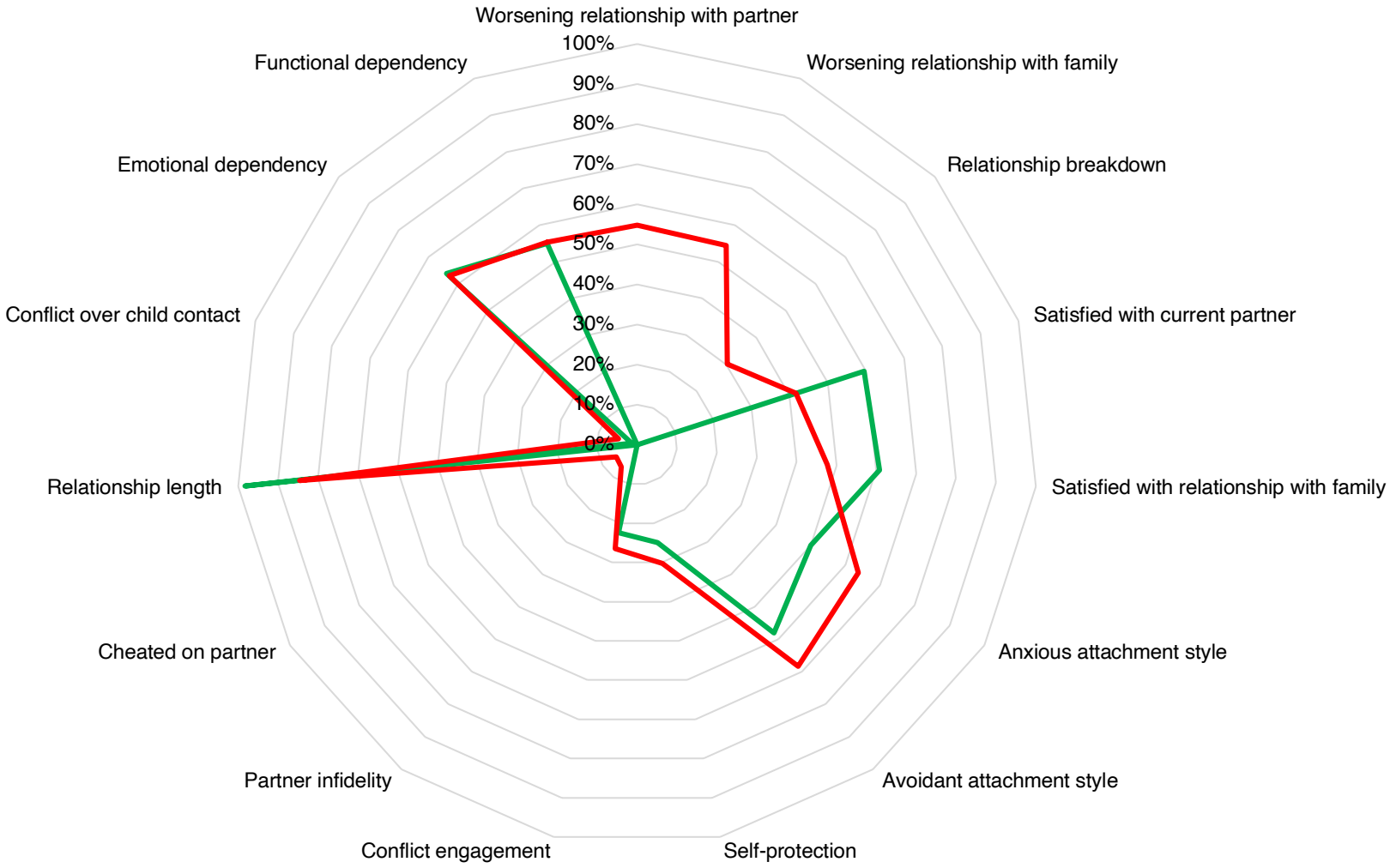


Figure 10. Radar plot of clusters identified within the relationship component. Positive relationships (green); Negative relationship (red).

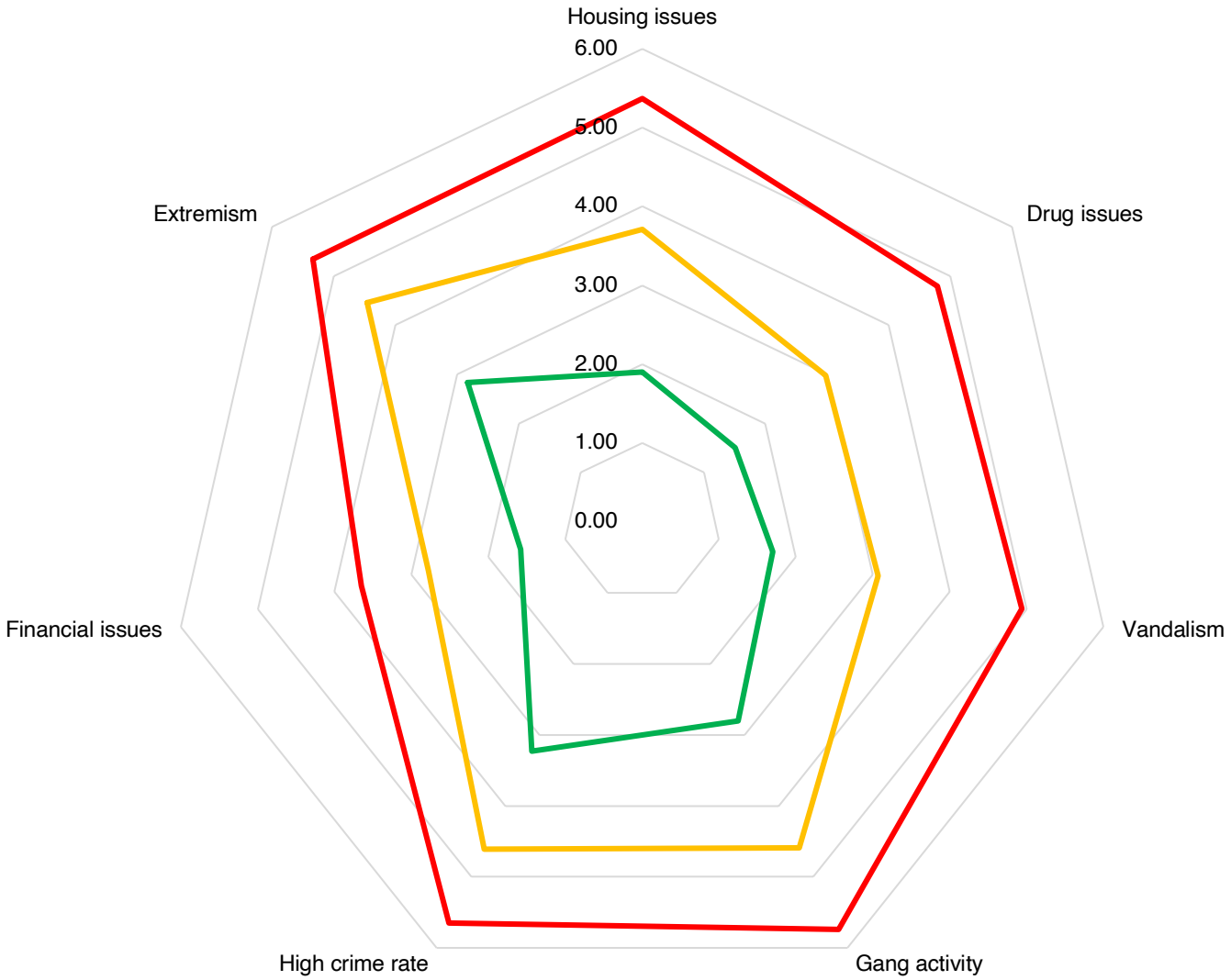


Figure 11. Radar plot of clusters identified within the relationship component. Low community disorder (green), moderate community disorder (yellow); low community disorder (green).

Next, a series of ANOVAs examined how the risk profiles relate to domestic abuse perpetration.

In terms of the distal risk profiles, there was a significant effect on domestic abuse perpetration [F(3, 1457) = 15.483, p <.001]. Post hoc Games-Howell tests revealed that the High propensity profile was significantly more likely to perpetrate domestic abuse than the Low propensity and the Criminal propensity profiles (p <.001). The ACEs profile was significantly more likely to perpetrate domestic abuse than the Low propensity profile. (p <.001) The Criminal propensity profile were more likely to perpetrate domestic abuse than the Low propensity profile (p <.05), but less than the High propensity profile (p <.001). Finally, the Low propensity profile were more likely to perpetrate domestic abuse behaviours than all other risk profiles (p <.001; Figure 12).

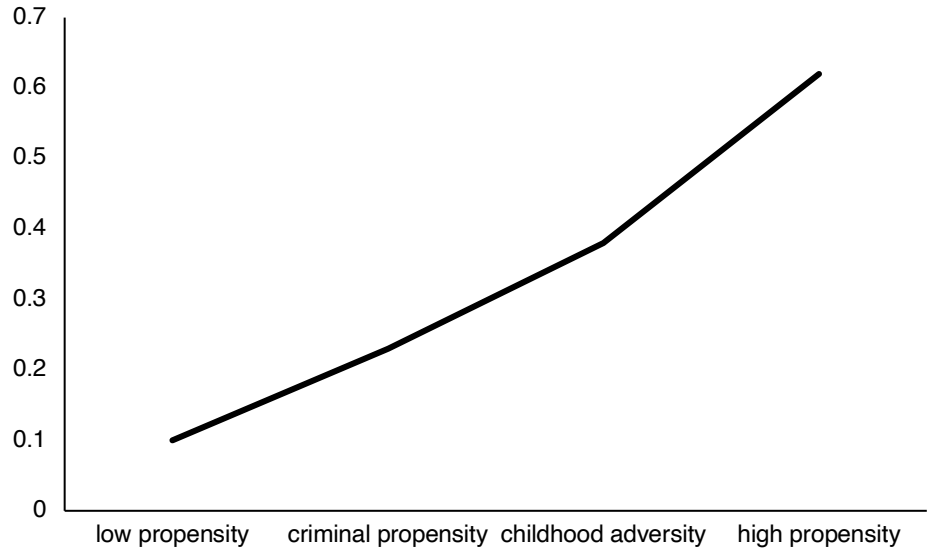


Figure 12. Mean differences in domestic abuse perpetration by distal risk profiles.

For the proximal risk profiles, there was a significant effect on domestic abuse perpetration [F(1, 1459) = 40.573, p <.001]. Post hoc Games-Howell tests revealed the High distress profile were significantly more likely to perpetrate domestic abuse than the Low distress profile (p <.001; Figure 13).

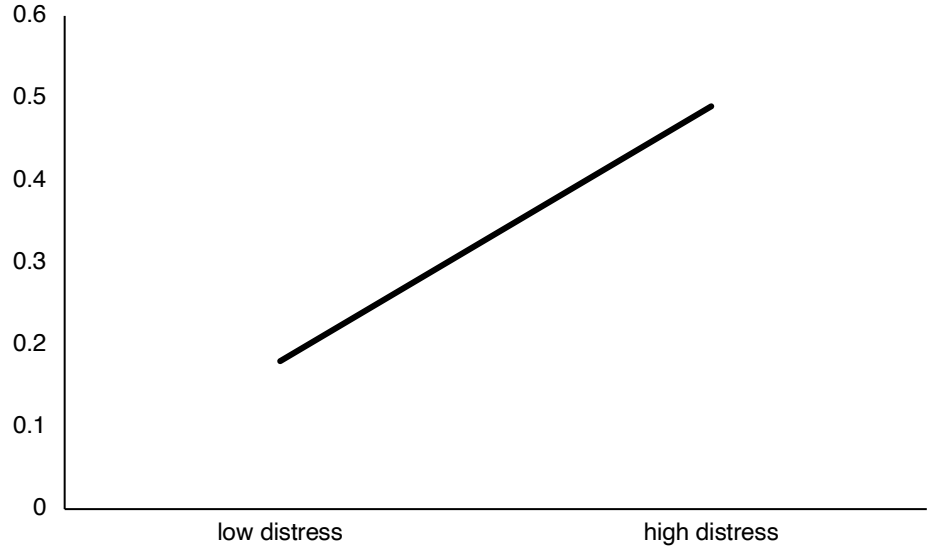


Figure 13. Mean differences in domestic abuse perpetration by proximal risk profiles

Examination of the attitudinal risk profiles revealed a significant effect on domestic abuse perpetration, [F(2, 1458) = 18.361, p <.001]. Post hoc Games-Howell tests revealed the Low misogyny profile were less likely to perpetrate domestic abuse than the Violent misogynist profile (p<.001). The Misogynist profile were less likely to perpetrate domestic abuse than the Violent misogynist profile (p<.001), and

the Violent misogynist profile were more likely to perpetrate domestic abuse than all other profiles (p<.001; Figure 14).

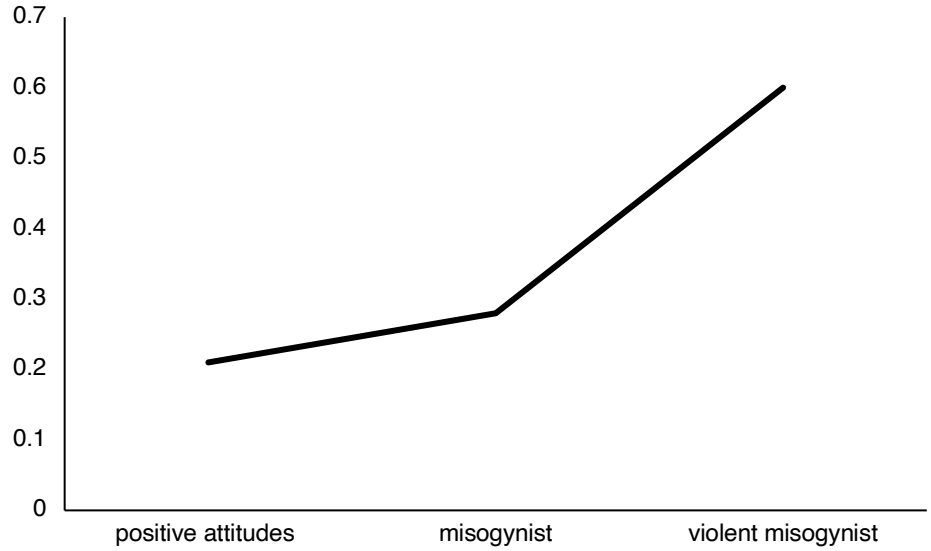


Figure 14. Mean differences in domestic abuse perpetration by attitudinal risk profiles

A significant effect of personality style on domestic abuse perpetration was found F(1, 1459) = 35.729, p <.001]. Post-hoc Games-Howells tests revealed the Dark personality profile were more likely to perpetrate domestic abuse than the High self-control profile (p<.001; Figure 15).

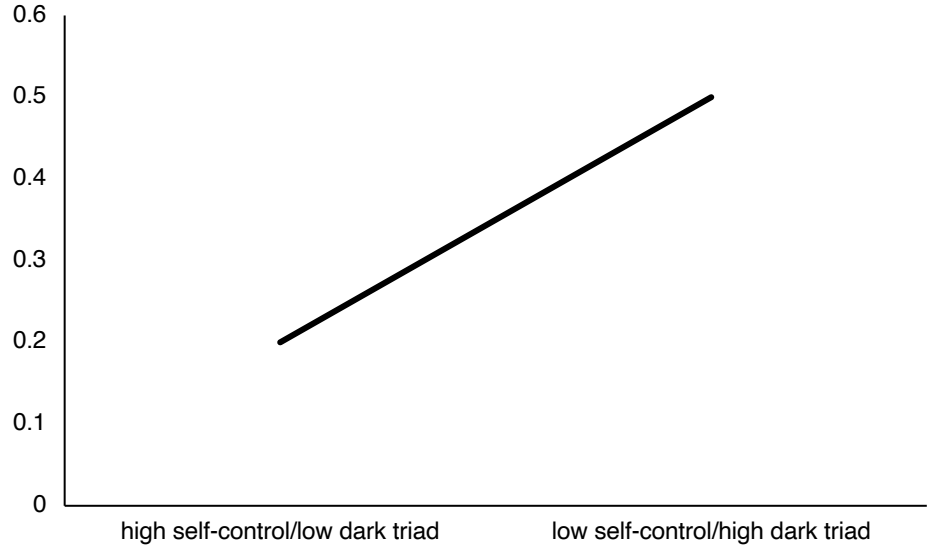


Figure 15. Mean differences in domestic abuse perpetration by personality risk profiles

In terms of relationship styles, a significant effect on domestic abuse perpetration was found F(1, 1079) = 51.217, p <.001]. Games-Howell tests revealed the Worsening relationships profile were more likely to perpetrate domestic abuse than the Positive relationships profile (p<.001; Figure 16).

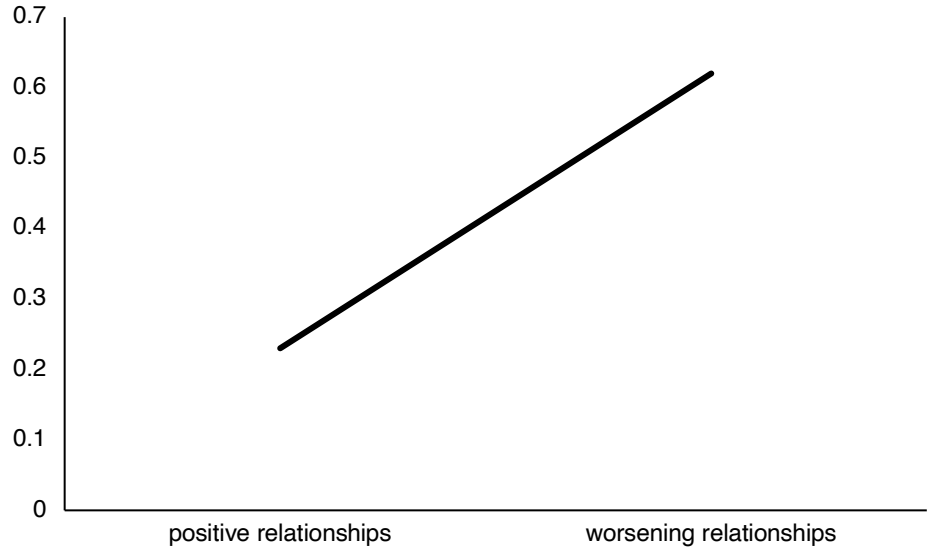


Figure 16. Mean differences in domestic abuse perpetration by relationship risk profiles

Finally, a significant effect of community-level risk profiles on domestic abuse perpetration was found $F(2, 1458) = 7.513$, $p < .001$]. Games-Howell post-hoc comparisons revealed the High disorganisation profile were more likely to perpetrate domestic abuse than the Moderate disorganisation ($p < .05$) and the Low disorganisation profile ($p < .05$; Figure 17).

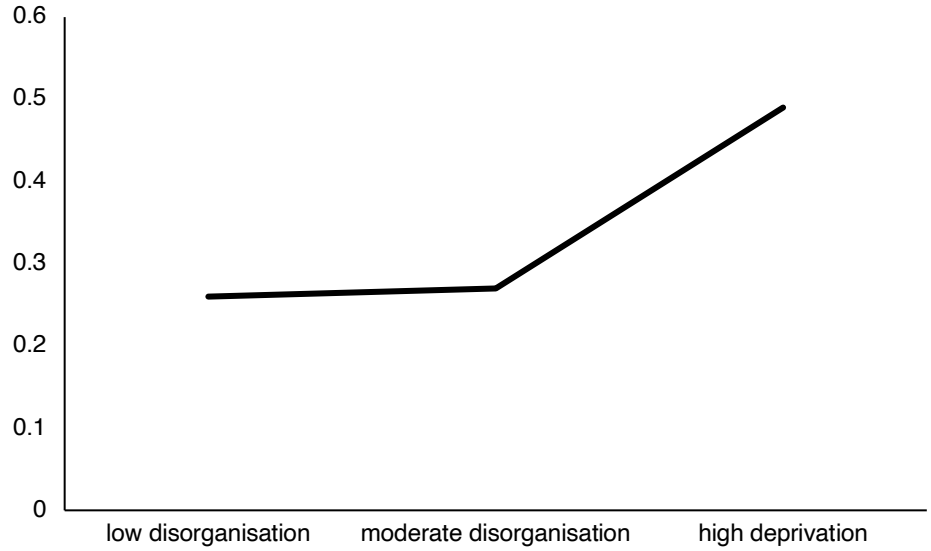


Figure 17. Mean differences in domestic abuse perpetration by community-level risk profiles

Once we established how the risk profiles related to domestic abuse, we investigated the differences between men and women (Table 16).

Within the distal component, men were significantly more likely to demonstrate the Criminal propensity profile. Women were more likely to demonstrate the High propensity profile. Within the proximal component, men were more likely to demonstrate the Low distress profile, and women were more likely to demonstrate the High distress profile. In terms of the attitudinal component, women were more likely to demonstrate the Low misogyny profile and men were more likely to demonstrate the Violent misogynist profile. In terms of personality, men were more likely to demonstrate the Dark personality profile and women were more likely to demonstrate the High self-control profile. **This is in line with inferences drawn from the previous section, that risk factors for male perpetrators tend to be stable attitudinal and personality factors, whereas for women risk factors are more transient, situational stressors.**

As expected, relationship style and community disorganisation did not display any significant differences for men and women, as these are contextual factors where we would not necessarily expect any gender differences.

Table 16. Chi-Square analyses comparing the risk profiles across all components between men and women. Significant predictors highlighted in bold (p <. 001***, p <.01**, p <.05*)

		Males	Females	Chi-Square Statistic	df	p value
Distal				34.442	3	<.001
	Low propensity	52.62%	47.38%			n.s.
	Criminal propensity	**58.05%*** **	41.95%			<.001
	ACEs	43.98%	56.02%			n.s.
	High propensity	36.00%	**64.00%*** **			<.001
Proximal				21.075	1	<.001
	Low distress	**53.70%*** **	46.30%			<.001
	High distress	41.63%	**58.37%*** **			<.001
Attitudinal				111.702	2	<.001
	Low misogyny	36.93%	**63.07%*** **			<.001
	Misogynist	48.18%	51.82%			n.s
	Violent misogynist	**72.87%*** **	27.13%			<.001
Personality				57.239	1	<.001
	High self-control	40.23%	**59.77%*** **			<.001
	Dark personality	**60.41%*** **	39.59%			<.001
Relationship				1.467	1	n.s
	Positive relationships	48.28%	51.72%			n.s
	Worsening relationships	44.35%	55.65%			n.s
Community				3.007	2	n.s
	Low disorganisation	51.17%	48.83%			n.s
	Moderate disorganisation	46.96%	53.04%			n.s
	High disorganisation	48.32%	51.68%			n.s

Finally, we examined the interactions across the different risk domains to understand when different profiles have an interactive effect, increasing or decreasing the risk of domestic abuse perpetration.

We calculated Cohen's *d* effect sizes to establish the magnitude in mean differences between the different profiles across each domain. The results for men and women are reported together as the same patterns emerged across each domain and each profile (Table 16 & Table 17).

In terms of the distal profiles, the strongest risk effect (i.e., largest positive effect size *d*) emerged for the High propensity profile, whereas the strongest protective effect (i.e., largest negative effect size *d*) was found for the Low propensity profile.

For the proximate profiles, the High distress profile was found to be a risk profile and the Low distress profile was found to be a protective profile.

For the attitudinal profiles, the largest positive (risk) effect was found for the Violent Misogynist profile and the largest negative (protective) effect was found for the Low misogyny profile.

In terms of the personality profiles, the Dark personality profile demonstrated a risk effect, and the High self-control profile demonstrated a protective effect.

Similarly, for the relationship profiles, two profiles emerged – Worsening relationships as a risk profile and Positive relationships as a protective profile.

Lastly, for the community domain, the largest positive (risk) effect was found for the High disorganisation profile and the largest negative (protective) effect was found for the Low disorganisation profile.

Table 16. ANOVAs and Cohen's *d* effect sizes for different risk and protective profiles for the male sample

			Domestic Abuse Perpetration			
	F	***p***	**Mean**	***SD***	***n***	**Cohen's *d***
Distal	5.975	< .001			706	
Low propensity			.11	.398	171	-.366
Criminal propensity			.25	.744	220	-.143
ACEs			.38	1.507	234	.082
High propensity			.70	1.418	81	.801
Proximate	11.564	< .001			706	
Low distress			.20	.672	435	-.577
High distress			.49	1.551	271	.577
Attitudes	7.405	< .001			706	
Violent misogynist			.54	1.709	231	.192
Misogynist			.24	.658	225	.090
Low misogyny			.17	.544	250	-.272
Personality	14.418	< .001			706	
Dark personality			.47	1.466	354	.325

High self-control			16	.490	352	-.325
Relationship	23.361	< .001			508	
Positive			.22	.638	351	-.818
Worsening			.62	1.201	157	.818
Community	4.271	< .001			706	
Low disorganisation			.24	.677	285	-.268
Moderate disorganisation			.25	.731	263	-.052
High disorganisation			.54	1.921	158	.447

Note. Magnitude of effect sizes, <.20 negligible, .20 - .49 small, .50 - .79 medium, > .8 large

Table 17. ANOVAs and Cohen's *d* effect sizes for different risk and protective profiles for the female sample.

			Domestic Abuse Perpetration			
	F	***p***	**Mean**	***SD***	***n***	**Cohen's *d***
Distal	11.507	< .001				
Low propensity			.09	3.68	154	-.369
Criminal propensity			.20	.710	159	-.193
ACEs			.38	.813	298	.126
High propensity			.58	1.055	144	.400
Proximate	37.933	< .001				
Low distress			.15	.488	375	-.448
High distress			.49	.981	380	.488
Attitudes	16.014	< .001				
Violent misogynist			.76	1.371	86	.628
Misogynist			.32	.759	242	.001
Low misogyny			.23	.610	427	-.256
Personality	26.814	< .001				
Dark personality			.54	1.060	232	.408

High self-control			.22	.620	523	-.408
Relationship	27.585	< .001				
Positive			.24	.691	376	-.462
Worsening			.62	1.041	197	.462
Community	3.329	< .05				
Low disorganisation			.27	.724	272	-.098
Moderate disorganisation			.29	.689	297	-.074
High disorganisation			.45	1.014	185	.217

Note. Magnitude of effect sizes, <.20 negligible, .20 - .49 small, .50 - .79 medium, > .8 large

We then tested whether the risk profiles would interact with each other to change the effects on domestic abuse perpetration.

For each domain, we identified the risk profiles with the strongest effect size to determine the most relevant profiles. The most relevant risk profiles for domestic abuse perpetration were (1) High propensity (Distal) (2) High distress (Proximate), (3) Violent misogyny (Attitudes), (4) Dark personality (Personality), (5) Worsening relationships (Relationship), and (6) High disorganisation (Community).

All interactions were estimated separately for men and women. First, we ran moderation analyses between the most relevant risk-risk combinations.

Risk-Risk Profile Interactions among Men

The following risk-risk interactions are all based on the male sample.

High propensity (Distal) - High distress (Proximate)

The interaction between High Propensity and High distress proved to be non-significant for domestic abuse perpetration, indicating that the risk effects of High Propensity on domestic abuse perpetration are not dependent on experiencing High distress. The risk effect of these two profiles is likely **cumulative** rather than **interactive**. Cumulative risk factors are risk factors which together exert a joint effect totalling their individual effect sizes. In other words, **more risk factors equal more risk**. Interactive risk factors occur when the presence of two factors **changes** their relationship with the outcome. Here, more risk factors do not simply equal more risk, they equal a **different magnitude of risk**.

High propensity (Distal) – Violent Misogynist (Attitudinal)

Violent misogynist attitudes significantly moderates the effects of High propensity on domestic abuse perpetration (b = .55, 95% CI [.03, 1.07]). To illustrate the significant interaction, we computed simple effects. We plotted values of the predictors as 0 (absent) and 1 (present). The simple effects (Figure 18) show that when Violent misogynist attitudes are present, the risk profile High propensity exerts risk effects on domestic abuse perpetration (b = .76, 95% CI [.35, 1.16]). These effects are attenuated when violent misogynist attitudes are absent (b = .20, 95% CI [-.12, .53]). In other words, when an individual demonstrates the High propensity (distal) risk profile **and** the Violent misogynist (attitudinal) risk profile, the interactive effect of the two risk profiles is greater than the sum of their individual risk effects.

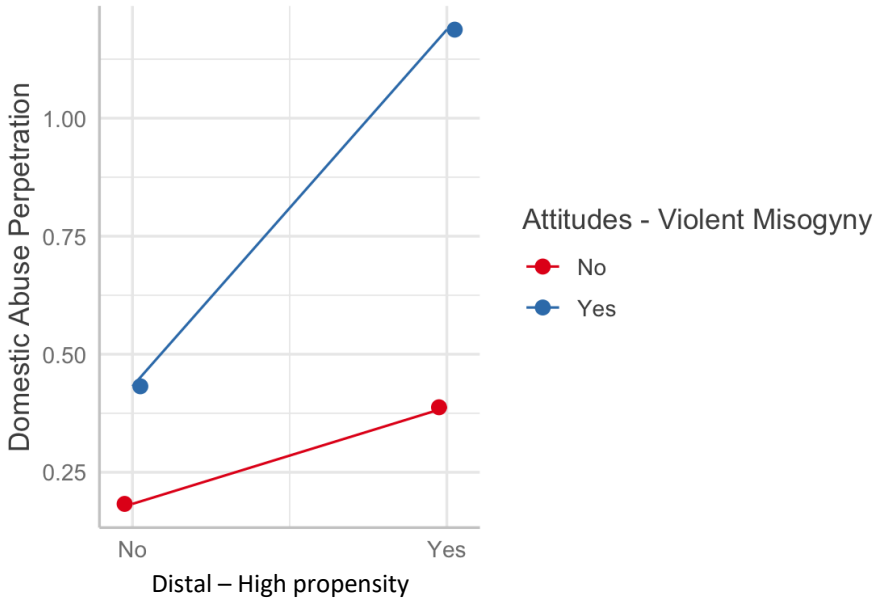


Figure 18. Interaction of High propensity and violent misogyny on domestic abuse perpetration among men

High propensity (Distal) – Dark personality (Personality)

The results show that Dark personality does not moderate the effects of High propensity on domestic abuse perpetration.

High propensity (Distal) - Worsening Relationships (Relationship)

The risk profile Worsening relationships does not moderate the effects of High propensity on domestic abuse perpetration.

High propensity (Distal) - High Disorganisation (Community)

The risk profile High disorganisation does not moderate the effects of High propensity on domestic abuse perpetration.

High distress (Proximate) – Violent misogynist (Attitudes)

Violent misogynistic attitudes significantly moderates the effects of High distress on domestic abuse perpetration (*b* = .37, 95% CI [.02, .72]). The simple effects plot highlights the significant interaction and shows that when Violent misogynistic attitudes are present, the effects of High distress on domestic abuse perpetration are amplified (*b* = .50, 95% CI [.22, .78]) compared to when violent misogyny is absent (*b* = .13, 95% CI [-.07, -.34]) (Figure 19).

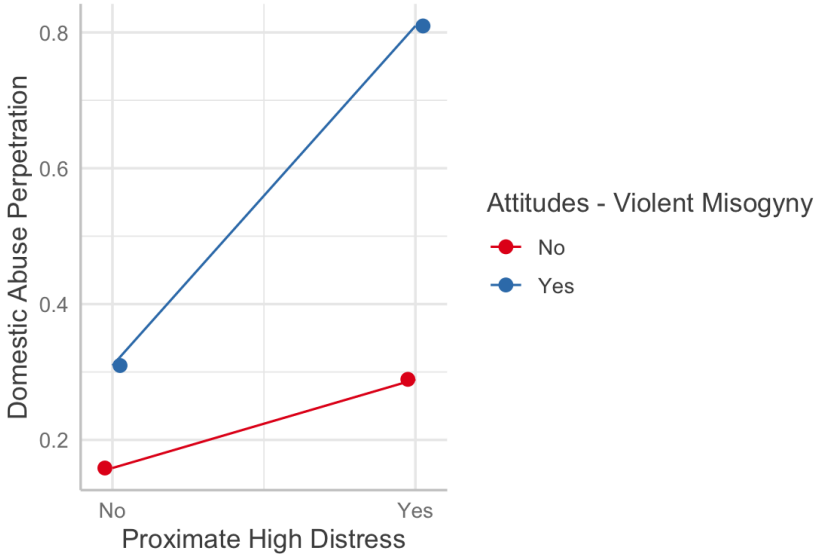


Figure 19. Interaction of High distress and violent misogyny on domestic abuse perpetration among men

High distress (Proximate) – Dark Personality (Personality)

Dark personality does not moderate the effects of High distress on domestic abuse perpetration.

High distress (Proximate) – Worsening Relationships (Relationship)

The results show that risk profile Worsening relationships does not moderate the effects of High distress on domestic abuse perpetration.

High distress (Proximate) - High Disorganisation (Community)

The risk profile High disorganisation does not moderate the effects of High distress on domestic abuse perpetration.

Violent misogyny (attitudinal) – Dark personality (Personality)

The results show that Dark personality does not moderate the effects of Violent misogyny on domestic abuse perpetration.

Violent misogyny (attitudinal) – Worsening relationships (Relationship)

Violent misogynistic attitudes showed a significant positive interaction with the risk profile Worsening relationships (*b* = .48, 95% CI [.15, .82]). The simple effects analysis (Figure 20) shows that the risk effects of Violent misogynistic attitudes increases when Worsening relationships is present (*b* = .70, 95% CI [.42, .97]), compared to when it is absent (*b* = .21, 95% CI [.02, .40]).

Figure 20. Interaction of Violent misogyny and Worsening relationship on domestic abuse perpetration among men

Violent misogyny (Attitudinal) - High disorganisation (Community)

High community deprivation does not moderate the effects of High distress on domestic abuse perpetration.

Dark personality (Personality) – Worsening relationships (Relationship)

The results show that the risk profile Worsening relationship does not moderate the effects of Dark personality on domestic abuse perpetration.

Dark personality (Personality) - High disorganisation (Community)

High disorganisation does not moderate the effects of Dark personality on domestic abuse perpetration.

Worsening relationships (Relationship) - High disorganisation (Community)

High disorganisation does not moderate the effects of Worsening relationship on domestic abuse perpetration.

Our results highlight that among men, the Violent misogyny, and Worsening relationships profiles have interactive risk effects. This means that in the presence of other risk profiles, they amplify their risk effects, increasing the likelihood of domestic abuse perpetration.

Next, we considered how risk profiles interacted among women.

Risk-Risk Profile Interactions among Women

The following risk-risk interactions are all based on the female sample.

High propensity (Distal) - Violent Misogynist (Attitudes)

Among the female sample, Violent misogynistic attitudes is the only risk profile which significantly moderates the effects of High propensity on domestic abuse perpetration (*b* = .47, 95% CI [.06, .88]). The simple effects plot highlights the significant interaction and shows that when Violent misogynistic attitudes are present, the effects of High propensity on domestic abuse perpetration are amplified (*b* = .70, 95% CI [.32, .1.08]) compared to when Violent misogyny is absent (*b* = .23, 95% CI [.08, .38]) (Figure 21).

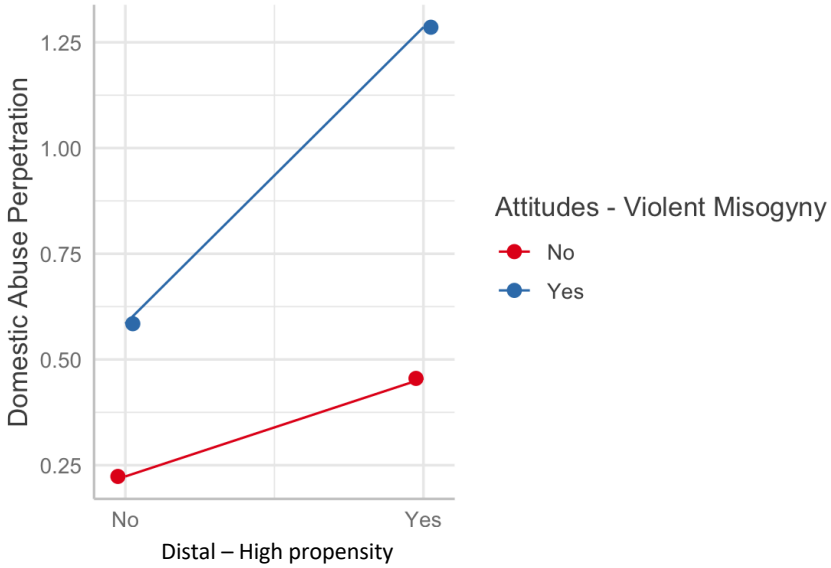


Figure 21. Interaction of High propensity and violent misogyny on domestic abuse perpetration among women

Similarly, to the findings from the male sample, **High distress (Proximate), Dark personality (Personality), Worsening relationships (Relationship),** and **High disorganisation (Community)** do not moderate the effects of High propensity on domestic abuse perpetration among women.

High distress (Proximate) – Risk Profile Interactions

None of the risk profiles significantly interacted with the High distress profile.

Violent misogynist (Attitudes) – Dark personality (Attitudes)

Dark personality shows a significant and positive (risk) interaction with Violent misogynistic attitudes on domestic abuse perpetration (*b* = .46, 95% CI [.10, .83]). The simple effects plot shows that when Dark personality is present, the effects of Violent misogynistic attitudes on domestic abuse perpetration are amplified (*b* = .58, 95% CI [.35, .81]), while they are lessened when Dark personality is not present (*b* = .12, 95% CI [-.17, -.40]) (Figure 22).

Figure 22. Interaction of Violent misogyny and Dark personality on domestic abuse perpetration among women

Violent misogynist (Attitudes) – High disorganisation (Community)

Similar patterns emerged for the Violent misogyny and High disorganisation interaction among women. High community disorganisation moderates the effects of Violent misogynistic attitudes (*b* = .55, 95% CI [.17, .93]), whereby the risk effects significantly increase when High disorganisation is present (*b* = .86, 95% CI [.54, 1.17]), and in turn, the effects are lessened when High community disorganisation is absent (*b* = .31, 95% CI [.10, .52]) (Figure 23).

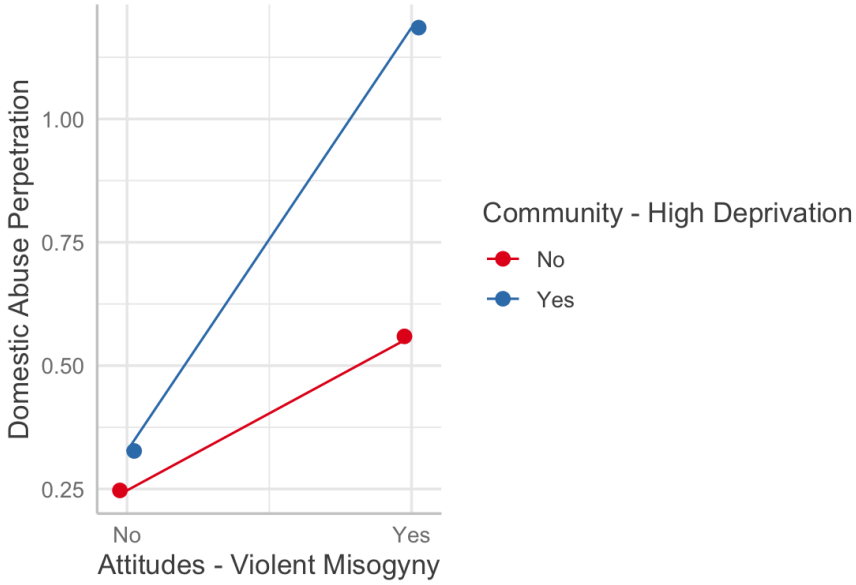


Figure 23. Interaction of Violent misogyny and High community disorganisation on domestic abuse perpetration among women

Dark personality and **Worsening relationships** do not moderate the effects of Violent misogynistic attitudes on domestic abuse perpetration.

Dark personality (Personality) – Risk Profile Interactions

None of the risk profiles moderate the effects of Dark personality on domestic abuse perpetration.

Worsening relationships (Relationship) – Risk Profiles Interactions

Similarly, to the findings above, none of the risk profiles moderate the effects of the Worsening relationship profile on domestic abuse perpetration.

High disorganisation (Community)– Risk Profiles Interactions

None of the risk profiles moderate the effects of High community disorganisation on domestic abuse perpetration.

Our results highlight that among women, the Violent misogyny, Dark personality, and High disorganisation profiles have interactive risk effects. This means that in the presence of other risk profiles, they amplify their risk effects, increasing the likelihood of domestic abuse perpetration.

Limitations

The risk profiles we present are not absolutes. A person may demonstrate some degree of one profile and some degree of another. Rather, these are broad categorisations of the sorts of ways that common risk factors might co-occur. Similarly, this is not a typology of types of people. Rather, this is a way of organising co-occurring risk factors to identify the underlying causal mechanisms to which they may speak.

We only considered interactions between profiles which demonstrated the largest effect sizes. Therefore, we highlight what we think may be the most important interactions – not all the interactions. However, our point fundamentally is that risk is dynamic, and that a static approach to risk assessment and management reliant on single risk factors cannot account for the complexity of how offenders come to perpetrate domestic abuse. Whilst not perfect, understanding patterns of observable risk factors, may be a better, more reliable way to assess risk.

Conclusion

In our sample of the UK general population, single risk factors demonstrate small if not negligible associations with domestic abuse perpetration. In contrast, the patterns of risk and protective factors we identified demonstrated larger effects, suggesting they may be better at explaining and possibly predicting domestic abuse perpetration.

Men and women demonstrate different patterns of risk factors, suggesting the underlying drivers of domestic abuse are different depending on the gender of the perpetrator. Given the gendered nature of domestic abuse in terms of both victimisation and perpetration, these are important distinctions to draw for policy and practice, particularly when thinking about designing perpetrator interventions.

For risk assessment and management, organising tools or instruments around discrete indicators may be problematic, given their instability. However, whilst not perfect, organising instruments around **patterns of observable indicators**, alongside human professional judgements, such as in a structured professional judgement approach, may be a more reliable way to assess risk.

Continuing with an interactive approach, we next adopted a systems approach. A systems approach considers the risk of an outcome, here domestic abuse, as emerging from the many mutually re-enforcing, causal interactions among risk factors. In doing so, we visualise the system of interactions from which domestic abuse perpetration risk emerges, and highlight different ‘routes’ to offending.

3.5. How do risk factors interact?

So far, we have examined the direct effects of risk factors, and how different risk factors co-occur. A systems approach is an alternative to more traditional approaches which considers the multitude of mutually reinforcing, causal interactions among many risk factors – in other words, we consider how risk factors interact as a **system**. This approach aligns with a public health approach to tackling societal issues by looking at how the many risk factors for domestic abuse perpetration interact and impact upon each other. The significance, or not, of single factors is less important, rather a phenomenon is understood as emerging from a dynamic system of interactions.

In the following section we use psychometric network modelling to visualise the interactions between risk factors as a series of network graphs. A key benefit of a network approach is visualising the interactions between many different factors and understanding how they might influence each other, rather than examining the effect of each risk factor one-by-one. This allows us to model risk dynamically as emerging from many cumulative and interactive associations, rather than statically examining the absence or presence of single factors. This is more akin to a structured professional judgement approach to risk assessment and management, where practitioners engage in case formulation to make judgements about risk, rather than an actuarial approach which considers risk based on the absence or presence of single factors.

First, we present the overall risk network to visualise how risk factors for domestic abuse perpetration interact. We identify the 'most important' or 'most influential' risk factors which are often identified as the most effective targets for interventions. Second, we consider different 'risk pathways' – that is, different patterns of risk factors which relate to domestic abuse perpetration.

Overall Risk Network

Figure 18 visualises how different risk factors for domestic abuse perpetration interact. Interpreting network graphs is reasonably intuitive. The labelled circles are called nodes. The nodes are colour-coded depending on the group they belong to. For instance, in Figure 18, blue nodes are community-level risk factors. A line joining two nodes signifies a relationship between the two variables. Adjoining lines are called edges. A blue edge between two nodes signifies a positive relationship, where, as one increases, so does the other. A red edge signifies a negative relationship, where, as one increase, the other decreases. The thickness, or the weight, of the edge depicts the strength of that relationship, where thicker edges denote stronger relationships. The network is plotted so that nodes that are more related to each other appear closer to each other. Therefore, it is possible to (cautiously) interpret the distribution of nodes in physical space. For instance, the blue nodes in Figure 18 are all community-level risk factors. These appear highly related to one another as they cluster together somewhat distinctly from the rest of the network.

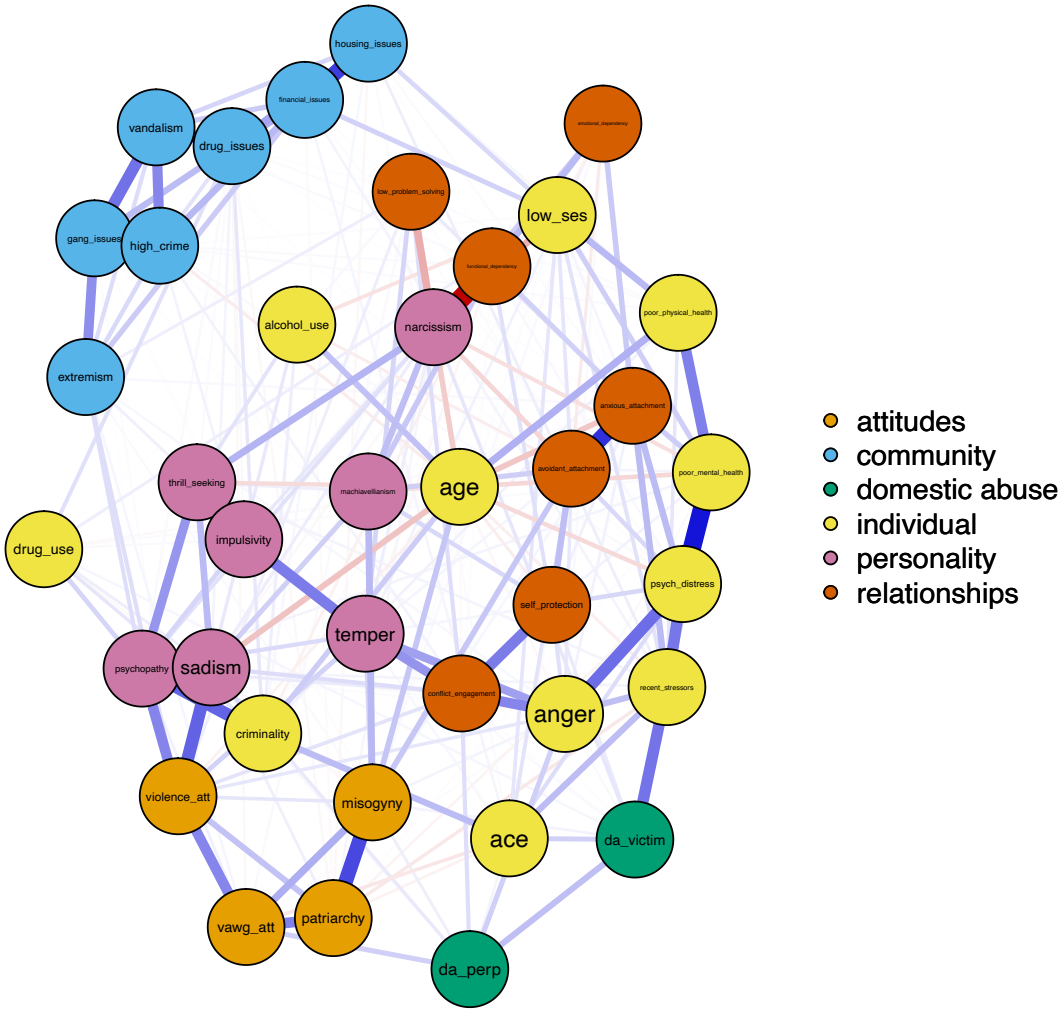


Figure 24. Overall network model of risk factors for domestic abuse perpetration for the full sample (n = 1461).

Examining Figure 24, first we considered the structure of the overall network. All nodes are interconnected – in other words, all the included factors are related to one another in some way. Hence, we can consider this a representation of risk as a system. Focussing on domestic abuse perpetration (da_perp; green), we identify several direct relationships between risk factors and domestic abuse perpetration when controlling for all other factors. The following are directly related to the likelihood of someone perpetrating domestic abuse, taking into consideration the effects of all other factors in the network; **attitudes supportive of violence towards women (vawg_att; orange), previous criminal behaviour (criminality; yellow); misogyny (misogyny; orange), conflict engagement (conflict_engagement; red), adverse childhood experiences (ace; yellow), anger (anger; yellow), and being a victim of domestic abuse (da_victim; green).**

This means that as these risk factors are present, or increase, so does the likelihood of a person engaging in domestic abuse perpetration. However, Figure 18 more notably demonstrates how **all** the many risk factors for domestic abuse perpetration relate to and impact upon each other. For instance, Figure 18 shows how increasing acute stress (recent_stressors; yellow), positively relates to anger (anger; yellow). In turn, anger has a positive relationship with conflict engagement (conflict_engagement; red), which has a positive relationship with domestic abuse perpetration. Here we see an example of a 'risk pathway' where increasing stress, leads to increasing feelings of anger,

leading to increased conflict engagement, leading to domestic abuse perpetration. Next, we formally calculate key risk pathways by applying a shortest path algorithm to identify 'routes' to domestic abuse offending.

Risk Pathways

Next, we calculated different risk pathways to domestic abuse perpetration. These pathways are calculated by using a shortest path algorithm which computes the quickest route from one node to another. Examining shortest paths is useful to provide an insight into how different patterns of risk factors interact cumulatively to lead to an outcome – here, domestic abuse perpetration.

The criminal pathway (red)

Figure 25 depicts the criminal pathway, (highlighted in red). This pathway is characterised by risk factors relating to a crime and violent propensity. Community-level risk factors such as high crime rates, drug and gang issues, vandalism, and extremism, interact with individual-level factors including psychopathy and sadism - facets of personality associated with crime and violence – drug use and previous criminality, attitudes supportive of general violence, and violence towards women and girls, leading to domestic abuse perpetration.

The psychological distress pathway (green)

Highlighted in green is a pathway characterised by poor mental health and psychological distress (Figure 26). Community-level factors relating to deprivation, such as community housing and financial issues, interact with low socio-economic status, poor mental health, psychological distress, and anger, leading to domestic abuse perpetration.

The victimisation pathway (blue)

Highlighted in blue is the victimisation pathway - a shortest path demonstrating how interpersonal dependency and maladaptive attachment styles in relationships, acute stress (recent stressors), adverse childhood experiences, and domestic abuse victimisation lead to domestic abuse perpetration (Figure 27).

The narcissistic pathway (purple)

Highlighted in purple is the narcissistic pathway - a risk pathway characterised by narcissism, which interacts with different facets of low self-control (thrill-seeking, impulsivity, temper), anger, and poor conflict resolution skills, leading to domestic abuse perpetration (Figure 28).

The misogynistic pathway (yellow)

Finally, the misogynistic pathway highlights how alcohol use, increasing age, and misogyny relate to attitudes towards violence against women and girls and patriarchal beliefs, leading to domestic abuse perpetration (Figure 29).

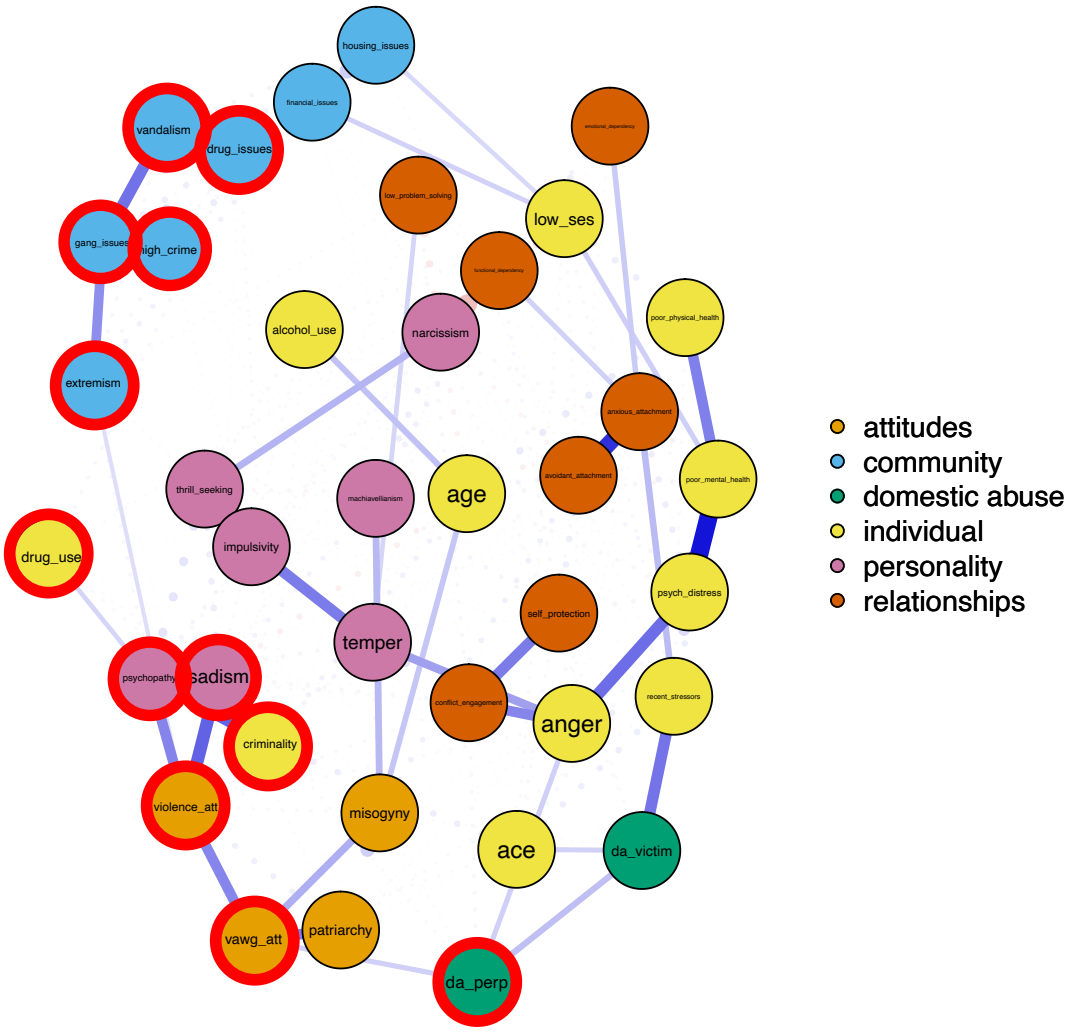


Figure 25. The criminal pathway (red; n = 1461). Community-level risk factors such as high crime rates, drug and gang issues, vandalism, and extremism, interact with individual-level factors including psychopathy and sadism - facets of personality associated with crime and violence – drug use and previous criminality, attitudes supportive of general violence, and violence towards women and girls, leading to domestic abuse perpetration.

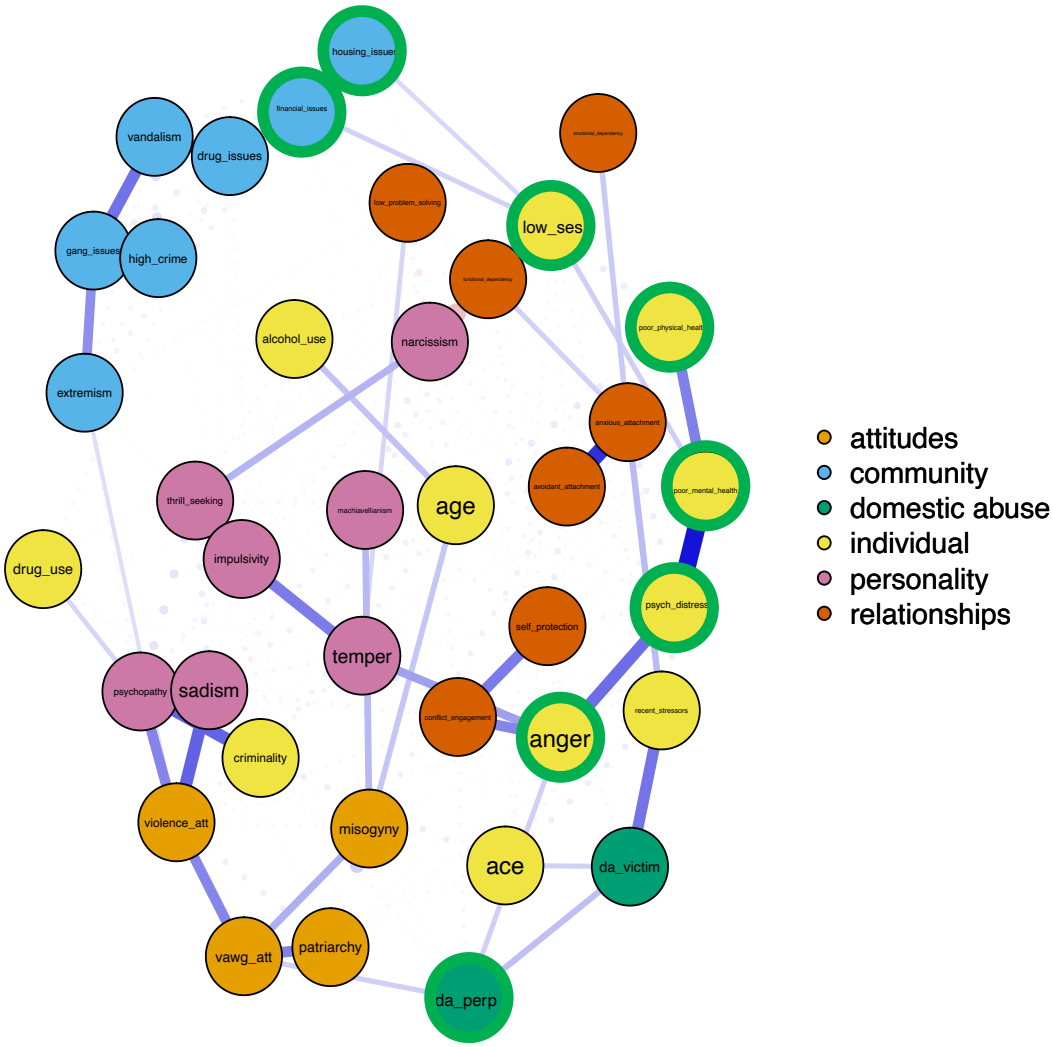


Figure 26. The psychological distress pathway (green; n = 1461). Community-level factors relating to deprivation, such as community housing and financial issues, interact with low socio-economic status, poor mental health, psychological distress, and anger, leading to domestic abuse perpetration.

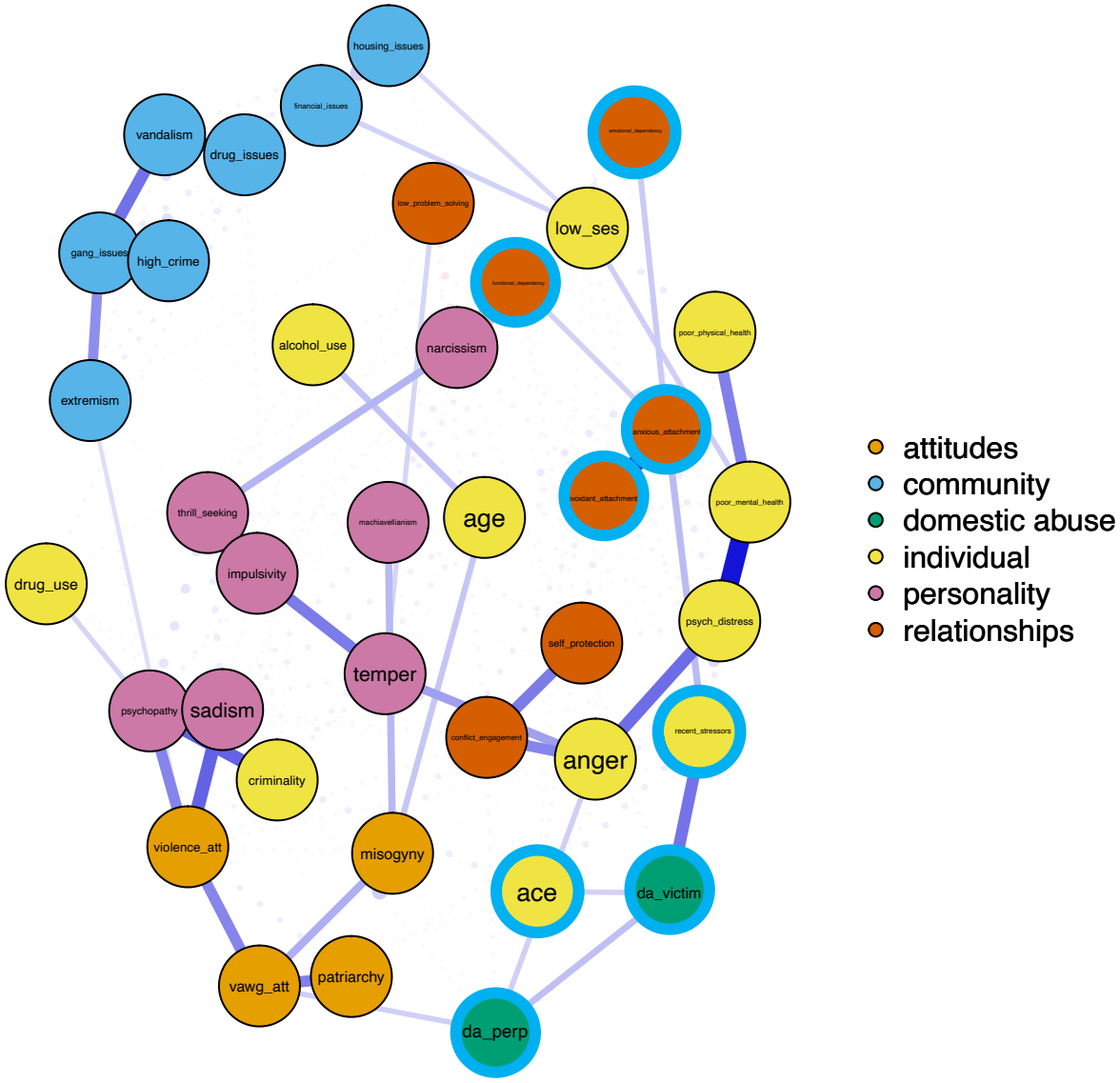


Figure 27. The victimisation pathway (blue; n = 1461). Interpersonal dependency and maladaptive attachment styles in relationships, acute stress (recent stressors), adverse childhood experiences, and domestic abuse victimisation lead to domestic abuse perpetration

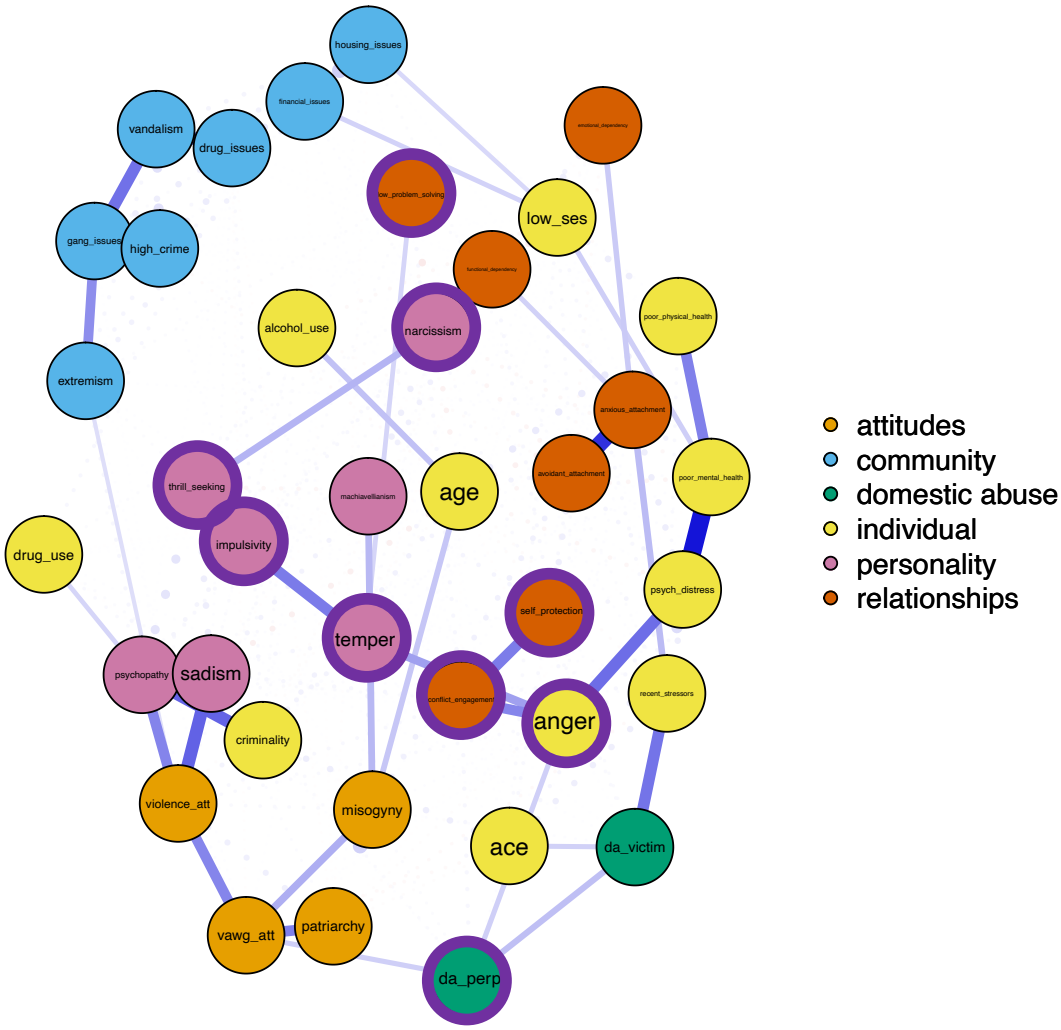


Figure 28. The narcissistic pathway (purple; n = 1461). Narcissism, which interacts with different facets of low self-control (thrill-seeking, impulsivity, temper), anger, and poor conflict resolution skills, leading to domestic abuse perpetration

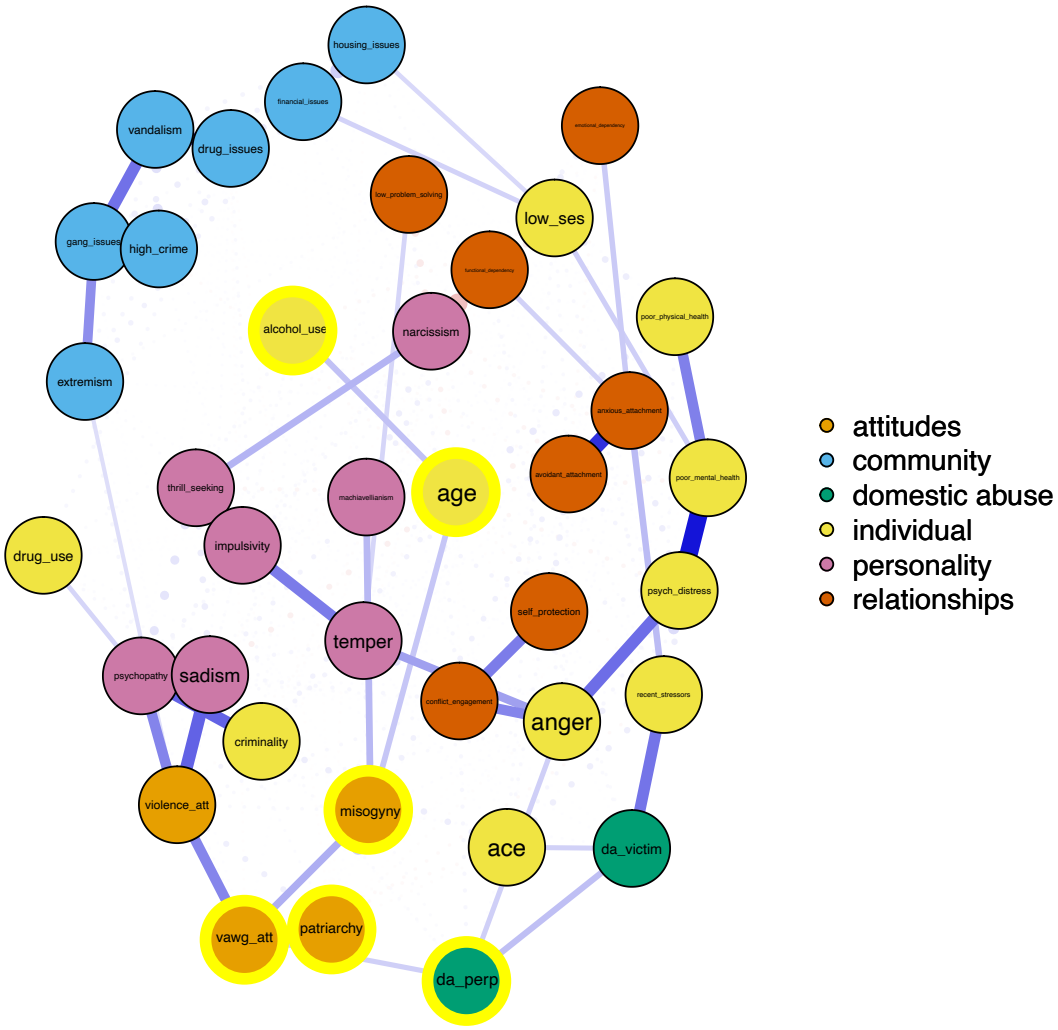


Figure 29. The narcissistic pathway (yellow; n = 1461). The misogynistic pathway highlights how alcohol use, increasing age, and misogyny relate to attitudes towards violence against women and girls and patriarchal beliefs, leading to domestic abuse perpetration..

The risk pathways highlight how different patterns of risk factors relate to domestic abuse perpetration. Not all risk factors are always relevant to every outcome. Different pathways could be indicative of different 'types' of offenders. Understanding this heterogeneity can inform more targeted intervention and prevention strategies, where a 'one-size fits all' approach may be less effective.

Limitations

The risk pathways will not capture every type of domestic abuse perpetrator. Rather our analysis highlights common routes into offending which may be useful to help understand how **some** come to perpetrate domestic abuse.

Also, this is a general population sample. It would not be appropriate at this stage to apply the pathways to other types of populations without further analysis. Some of these pathways may be more or less prevalent in different types of samples, for instance among offender populations, which remains to be seen in future work.

Equally, we did not identify how the pathways relate to domestic abuse perpetration. It is likely they are differentially associated with perpetration - some may be more predictive of offending than others. Again, this remains to be seen in future work.

Conclusion

The pathways characterise five different routes to domestic abuse perpetration in the UK. Given this is a general population samples, **our findings have most relevance to early prevention and intervention work, such as feeding into a public health approach to mitigating against this type of violence.** Understanding pathways to offending can help design more effective preventative measures, by identifying opportunities for intervention, and tailoring interventions to meet the needs of different groups. **However, this depends upon identifying effective protective factors, and understanding when and for whom they work best – this is the focus of the final section of our report.**

4.0. Protective Factors for Domestic Abuse Perpetration in the U.K. General Population

Knowledge about protective factors is key to informing prevention and intervention strategies. To implement a public health approach to address any undesirable outcome, it is necessary to a) understand what the risk and protective factors are, and b) how these can be modified by interventions.

Protective factors can broadly be categorised into two types: direct and buffering protective factors. Direct protective factors work by reducing the likelihood of domestic abuse perpetration. Buffering protective factors have a buffering effect on a risk factor, reducing the risk effect thereby reducing the likelihood of domestic abuse perpetration. In the following section we examine both direct and buffering protective factors.

4.1 Direct protective factors

First, we examined which protective factors showed a significant negative effect on domestic abuse perpetration for men and women. Table 18 summaries the protective factors for men and women in the order of most to least protective.

Table 18. Direct protective factors for domestic abuse perpetration (n = 1,461)

Protective factor (male perpetrators)	**Effect size (beta)**	**Protective factor (female perpetrators)**	**Effect size (beta)**
Resilience	-0.084	Self-esteem	-0.186
		Relationship satisfaction (partner)	-0.156
		Social support	-0.127
		Resilience	-0.126
		Relationship satisfaction (family)	-0.117
		Secure attachment	-0.108
		Relationship length	-0.088
		Socioeconomic status	-0.081

Note. Magnitude of effect sizes, <.10 negligible, .10 - .29 small, .30 - .49 moderate, > .5 large

For men, resilience is the only direct protective factor for domestic abuse perpetration. For women, the most influential protective factors are self-esteem, relationships satisfaction, and social support.

Notably, all demonstrate small effect sizes, suggesting that none exert particularly strong protective effects against domestic abuse perpetration on their own.

As with risk factors, how protective factors **interact** with risk factors is therefore important to understand. For instance, a protective factor may not exert a direct protective effect on domestic abuse perpetration,

however in the presence of a risk factor, it may have a protective effect by buffering against or mitigating the effect of that risk factor.

4.2 Buffering protective factors

We ran risk and protective factor interactions to test the interactive effects of various factors on domestic abuse perpetration. Interactive effects occur where the joint effect of two factors is significantly greater (or significantly less) than their separate effects. For instance, two risk factors may separately exert small effects on an undesirable outcome. However, when the same two risk factors occur simultaneously, their effects are magnified to greater than the total of their independent effects. Some risk and protective factors for domestic abuse may have effects that are conditional on the presence of other factors. In this section we consider risk-protective interactions to understand when protective factors have a buffering effect, i.e., when they dampen the effects of different risk factors.

We chose risk factors which showed a significant positive correlation ($p < .05$) and at least a small effect size ($r \geq .15$) on domestic abuse perpetration. Interaction plots (simple slopes) are provided for significant interactions. We computed simple slopes for the effects of high (-1 SD), medium (mean), and low levels (+1 SD) of each factor.

Table 19 shows that among men, the following risk factors demonstrated at least a small effect size, $r \geq .15$: (1) Domestic abuse victimisation, (2) Psychological distress, (3) Conflict engagement, (4) Misogyny, (5) Sadism, (6) Violent attitudes, (7) Violent attitudes towards women and girls, and (8) Anger.

Among women, the following risk factors exerted at least a small effect size ($r \geq .15$): (1) Domestic abuse victimisation, (2) Avoidant attachment, (3) Anxious attachment, (4) Recent stress (5) Psychological distress, (6) Temper, (7) Conflict engagement, (8) Misogyny, (9) Psychopathy, (10) Sadism, (11) Violent attitudes, (12) Anger, and (13) Adverse childhood experiences.

For both men and women, we tested whether the following protective factors would exert buffering protective effects: (1) Internal locus of control, (2) High self-esteem, (3) Resilience, (4) Social support, and (6) Problem-solving.

Table 19. Correlations of risk and protective factors for domestic abuse perpetration among men and women. Pearson's correlation coefficients are reported. Significant predictors highlighted in bold (p <. 001***, p <.01**, p <.05*).

	Men	Women
1. Domestic abuse perpetration	-	-
2. Avoidant attachment	**.074***	**.182****
3. Anxious attachment	**.132****	**.155****
4. Recent stress	**.135****	**.317****
5. Distress	**.178****	**.262****
6. Thrill-seeking (low self-control)	**.089***	**.105****
7. Impulsivity (low self-control)	**.078***	**.120****
8. Temper (low self-control)	**.142****	**.254****
9. Community disorganisation	**.088***	**.096****
10. Problem-solving	-.031	-.064

11. Conflict engagement	**.215*** **	**.282*** **
12. Emotional dependency	.032	.064
13. Functional dependency	.016	.036
14. Misogyny	**.186*** **	**.161*** **
15. Machiavellianism	**.122*** **	**.073** *
16. Narcissism	.052	**.078** *
17. Psychopathy	**.145*** **	**.165*** **
18. Sadism	**.231*** **	**.185*** **
19. External locus of control	**.076** *	**.121*** **
20. Internal locus of control	-.028	-.041
21. Social support	-.040	**-.127*** **
22. Violent attitudes	**.178*** **	**.238*** **
23. Patriarchal beliefs	**.142*** **	.015
24. High self-esteem	-.053	**-.186*** **
25. Resilience	**-.084** *	**-.126*** **
26. Attitudes supportive of VAW	**.282*** **	**.088** *
27. Anger	**.278*** **	**.288*** **
28. ACE	**.126*** **	**.176*** **
29. Domestic abuse victimisation	**.223*** **	**.269*** **
30. Criminal propensity	**.129*** **	**.141*** **
31. Drug use	-.014	**.110** **
32. Alcohol use	-.018	.021

Note. Magnitude of effect sizes, <.10 negligible, .10 - .29 small, .30 - .49 moderate, > .5 large

Internal Locus of Control

Among men, the effects of violent attitudes on domestic abuse perpetration are conditional on individuals' levels of internal locus of control. The interaction effect is negative and significant (b = -.10, 95% CI [-.19, -.01]), which indicates that internal locus of control acts as a buffering protective factor and thus, higher levels of internal locus of control reduce the risk effects on domestic abuse perpetration.

We further conducted simple slope analysis to explore the significant interaction (Figure 27). We computed the simple slopes for the effects of high (-1 SD), medium (mean) and low (+1 SD) internal locus of control. The plot shows that the effects of violent attitudes on domestic abuse perpetration among those scoring high in internal locus of control are greater than those scoring lower in internal

locus of control. Conversely, the risk effects are stronger for those with medium and particularly for those low in internal locus of control.

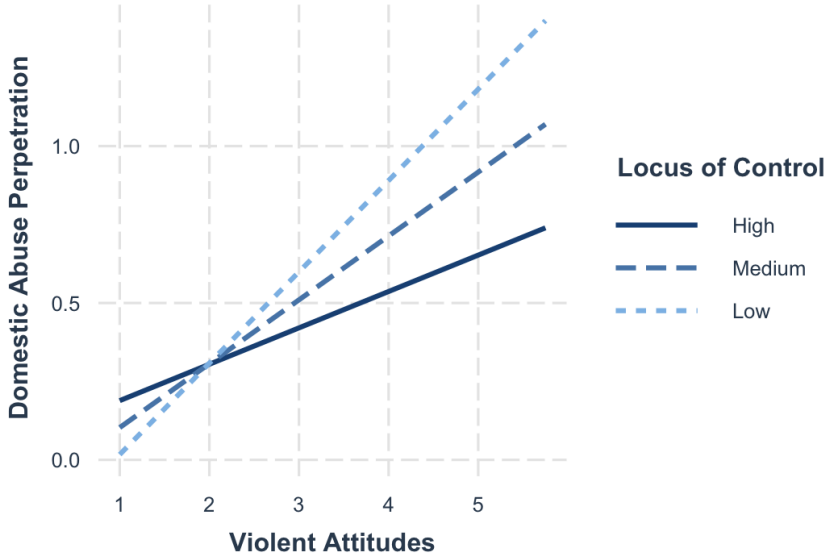


Figure 30. Interaction of violent attitudes and internal locus of control on domestic abuse perpetration among men

Among women, the risk effects of conflict engagement on domestic abuse perpetration are conditional on individuals' levels of internal locus of control (*b* = -.15, 95% CI [-.26, -.03]), rendering it an interactive protective factor. Higher levels of internal locus of control dampen the risk effects on domestic abuse perpetration.

Conversely, for those individuals scoring high on the sadism scale, internal locus of control emerges as a significant **risk** factor (*b* = .08, 95% CI [.01, .15)]. More specifically, higher levels of internal locus of control **increase** the risk effects of sadism on domestic abuse perpetration, whereas lower levels of internal locus of control lessens the risk effects. We also ran simple slope analysis to illustrate the significant protective interaction of conflict engagement and internal locus of control (Figure 30) as well as the significant risk interaction of sadism and internal locus of control (Figure 31).

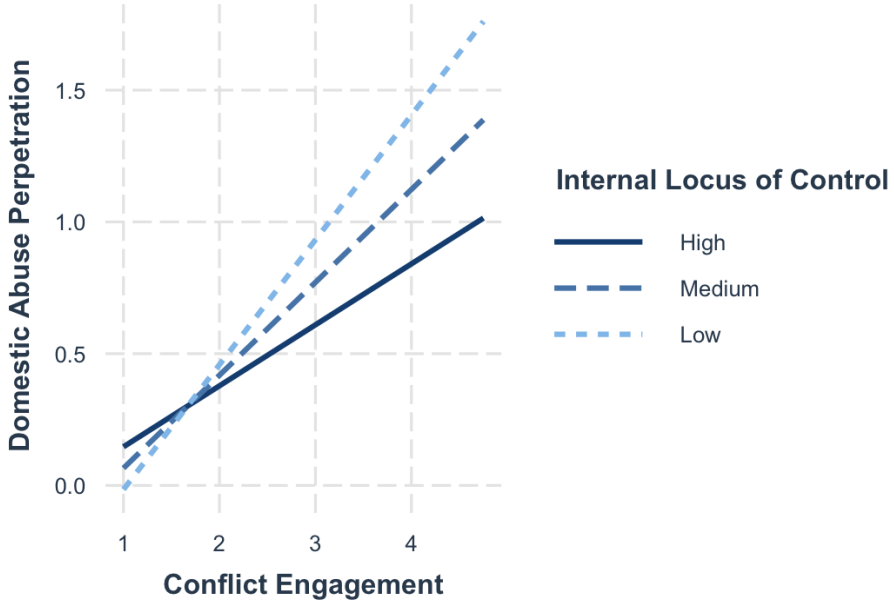


Figure 30. Interaction of conflict engagement and internal locus of control on domestic abuse perpetration among women

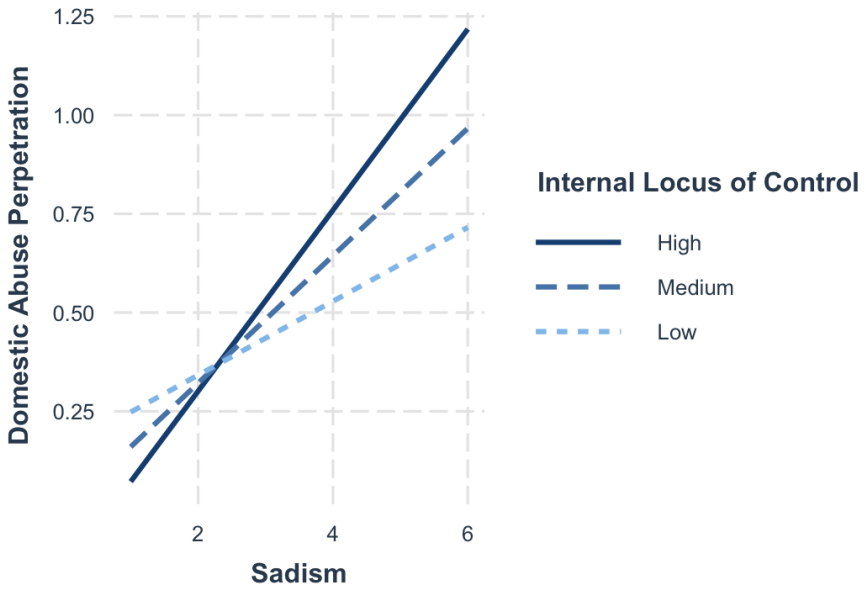


Figure 31. Interaction of sadism and internal locus of control on domestic abuse perpetration among women

The evidence suggests that internal locus of control – a belief that a person has control over the outcomes in their life – has a protective buffering effect against certain risk factors. Among men who hold attitudes supportive of general violence, internal locus of control has a protective effect, decreasing the likelihood of domestic abuse perpetration. For women, the effect of conflict engagement is also buffered by high internal locus of control. Locus of control can be modified and so is a protective factor which may be useful to consider for intervention and prevention programming.

However, among women, those high in internal control who are also sadistic, engage in more domestic abuse behaviours. Sadism is a tendency to derive pleasure from inflicting pain, suffering, and humiliation on others. Among women, when individuals also feel a sense of control over the outcomes in their life, domestic abuse perpetration increases. **This is an instance where a supposed protective factor may in fact have a risk effect.**

Social Support

For the male sample, evidence was found for the moderating effects of social support on the relationship between violent attitudes and domestic abuse perpetration. The interaction effects between violent attitudes and social support (*b* = -.10, 95% CI [-.17, -.02)] are negative and significant. Figure 32 shows that high social support exerts buffering protective effects on the relationship between violent attitudes and domestic abuse perpetration and thus, social support lessens the adverse effects.

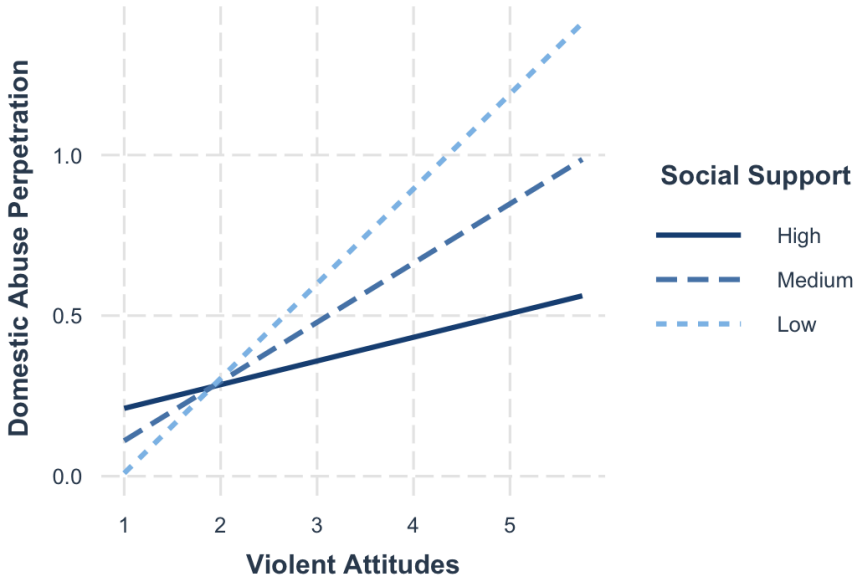


Figure 32. Interaction of violent attitudes and social support on domestic abuse perpetration among men

Among women, social support moderates the risk effects of (1) temper, (2) misogyny, (3) domestic abuse victimisation, and (4) psychopathy. The interaction between temper and social support (*b* = -.04, 95% CI [-.07, -.001]; Figure 33) as well as between misogyny and social support (*b* = -.06, 95% CI [-.10, -.18]; Figure 34) are significant and negative, indicating that higher levels of social support dampen the effects of both risk factors on domestic abuse perpetration.

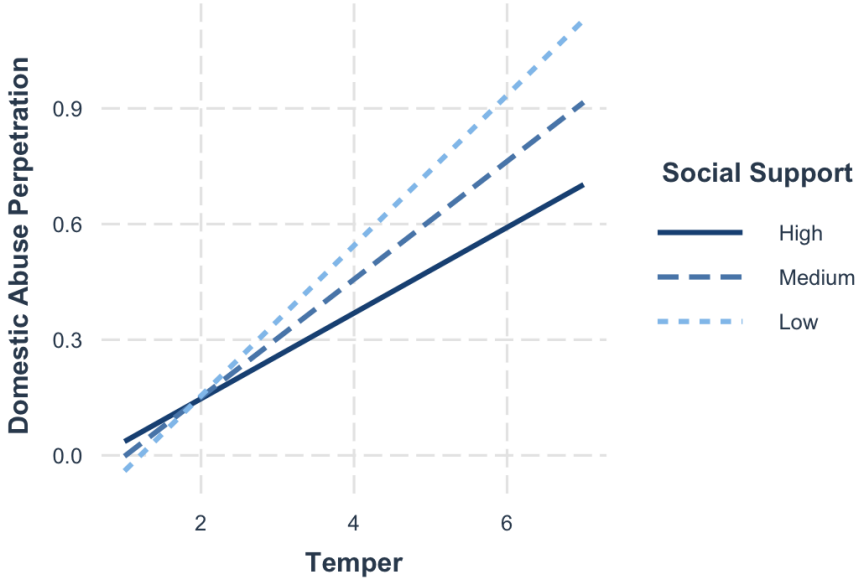


Figure 33. Interaction of temper and social support on domestic abuse perpetration among women

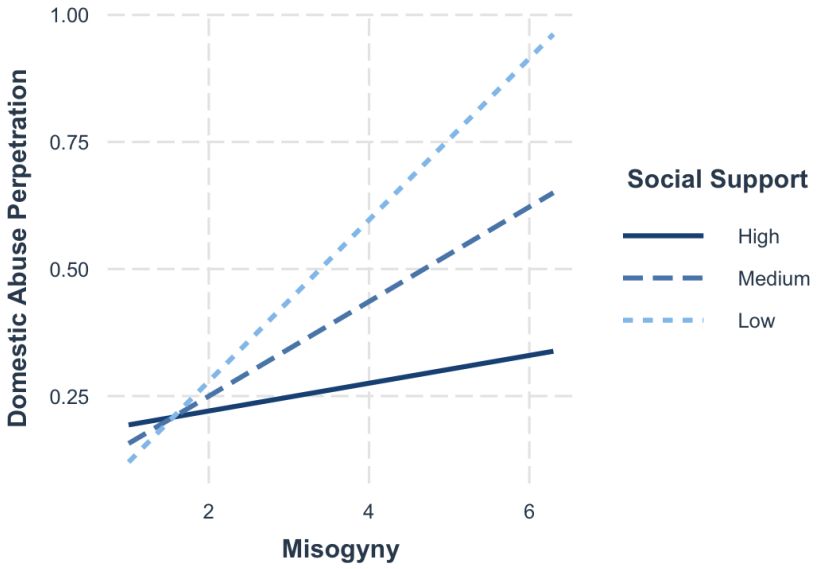


Figure 34. Interaction of misogyny and social support on domestic abuse perpetration among women

Conversely, the interaction between social support and psychopathy (*b* = .07, 95% CI [.02, .12]; Figure 35) is significant and positive. This suggests that higher levels of social support amplify the risk effects of psychopathy on domestic abuse perpetration, whereas lower levels lessen those effects.

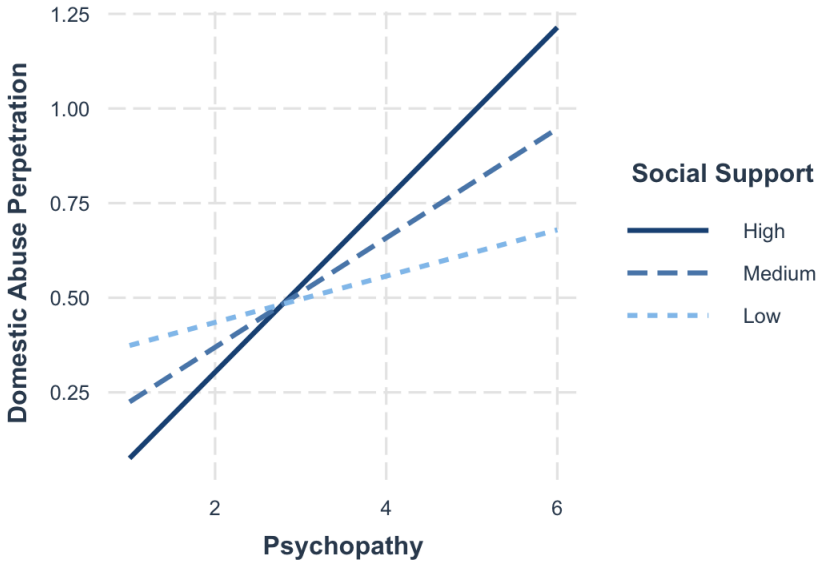


Figure 35. Interaction of psychopathy and social support on domestic abuse perpetration among women

Again, the evidence suggests that social support may be a good protective factor against domestic abuse perpetration. Among men who hold attitudes supportive of general violence, strong, positive relationships with others reduce the likelihood of domestic abuse perpetration. Among women, social support buffers against the risk effects of temper (i.e., short temper) and misogyny. However, when psychopathy is present, women with social support engage in more domestic abuse behaviours. Psychopathy is another maladaptive personality trait (like sadism). In these instances, social support may also have a risk effect. It may be necessary to further consider the nature of the social relationships rather than the perceived quality (i.e., supportive yet criminal peers may increase the risk of domestic abuse perpetration among women with psychopathic traits).

Resilience

Among the male sample, resilience moderates the effects of misogyny (*b* = -.05, 95% CI [-.09, -.001]) and violent attitudes towards women and girls (*b* = -.13, 95% CI [-.26, -.004]) on domestic abuse perpetration. Figure 36 and Figure 37 display the simple slopes analyses. High levels of resilience weaken the effects of both risk factors on domestic abuse perpetration, whereas lower levels of resilience amplify the risk effects.

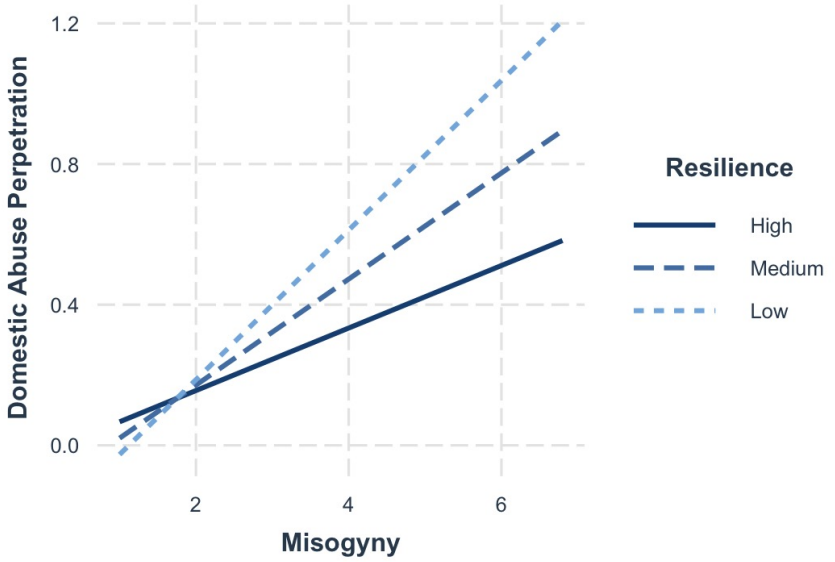


Figure 36. Interaction of misogyny and resilience on domestic abuse perpetration among men

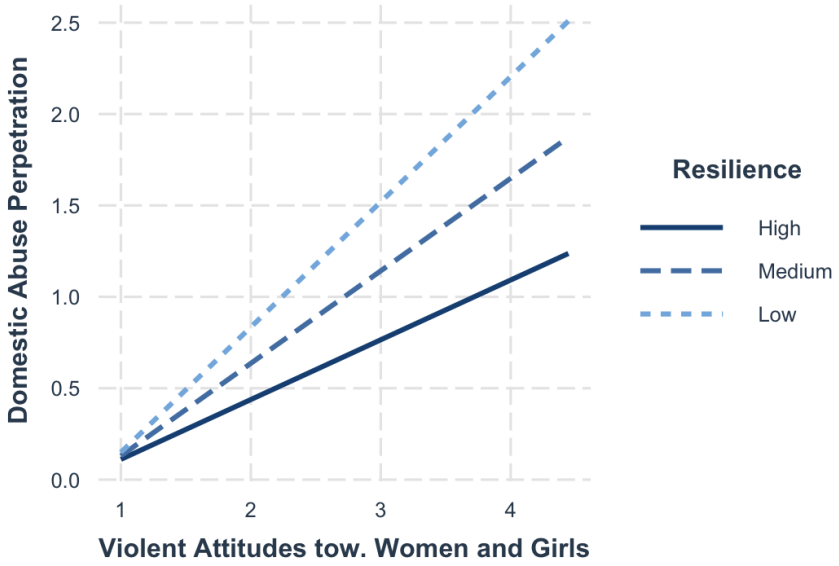


Figure 37. Interaction of violent attitudes towards women and girls and resilience on domestic abuse perpetration among men

Among the female sample, resilience was found to be a significant interactive protective factor for the relationship between (1) temper, (2) conflict engagement, (3) violent attitudes, and domestic abuse perpetration. Thus, higher levels of resilience dampen the risk effects of temper (*b* = -.05, 95% CI [-.08, -.01], Figure 38), conflict engagement (*b* = -.08, 95% CI [-.15, -.01], Figure 39) and violent attitudes (*b* = -.04, 95% CI [-.20, -.06], Figure 38), whereas lower levels of resilience increases the risk effects on domestic abuse perpetration (Figure 40).

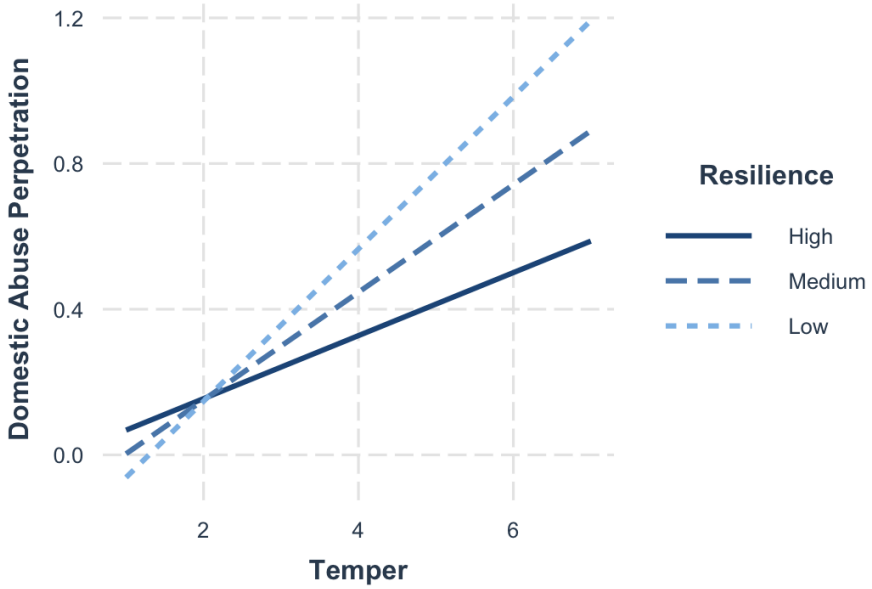


Figure 38. Interaction of temper and resilience on domestic abuse perpetration among women

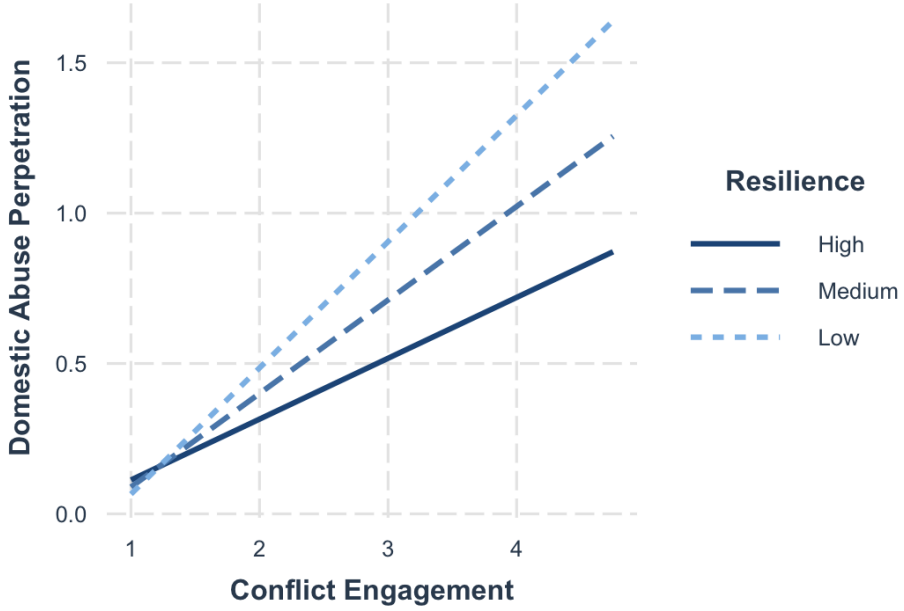


Figure 39. Interaction of conflict engagement and resilience on domestic abuse perpetration among women

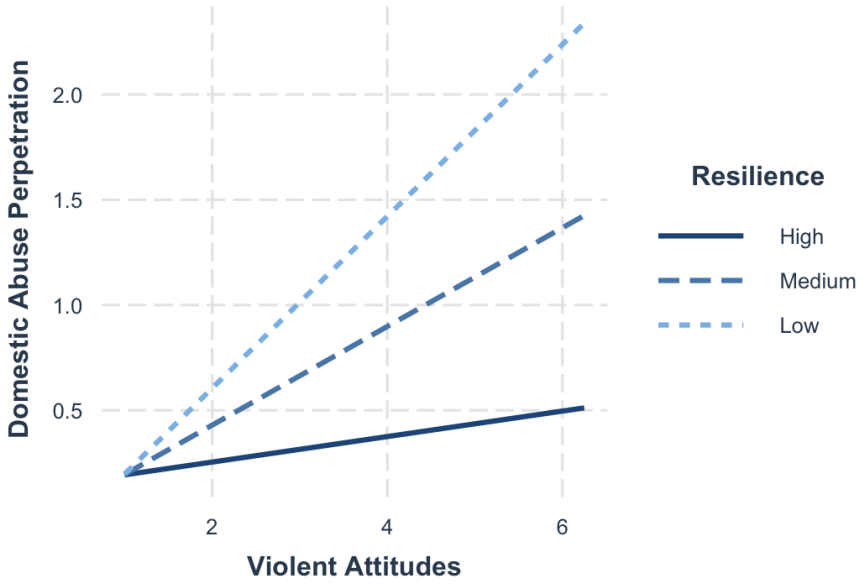


Figure 40. Interaction of violent attitudes and resilience on domestic abuse perpetration among women

Resilience also demonstrates a good buffering protective effect against some key risk factors for domestic abuse perpetration. Resilience is also modifiable via interventions and so may be an appropriate mechanism for reducing domestic abuse perpetration.

Self-esteem

In the male sample, self-esteem moderates the effects of psychological distress on domestic abuse perpetration (*b* = .06, 95% CI [.00, .12]). The simple slopes highlight that when self-esteem is high, the risk effects of psychological distress increase, whereas lower levels of self-esteem attenuate these effects (Figure 41), contrary to what may be expected. Again, in these instances, high self-esteem may have a risk effect under certain circumstances.

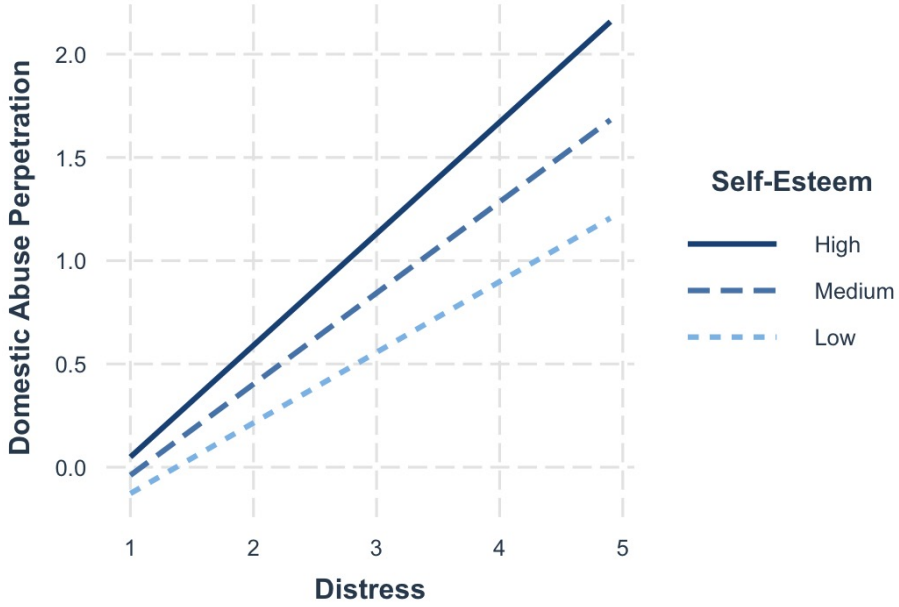


Figure 41. Interaction of distress and self-esteem on domestic abuse perpetration among men

Among females, self-esteem moderates the effects of the following risk factors: (1) anxious attachment (*b* = -.03, 95% CI [-.06, -.002]), (2) recent stress (*b* = -.01, 95% CI [-.02, -.002]), (3) temper (*b* = -.03,

95% CI [-.06, -.003]), (4) conflict engagement (*b* = -.06, 95% CI [-.12, -.004]) and (5) misogyny (*b* = -.03, 95% CI [-.06, -.007]). The interaction plots show that high levels of self-esteem attenuate the risk effects of anxious attachment (Figure 42), recent stress (Figure 43), temper (Figure 44), conflict engagement (Figure 45) and misogyny (Figure 46) on domestic abuse perpetration.

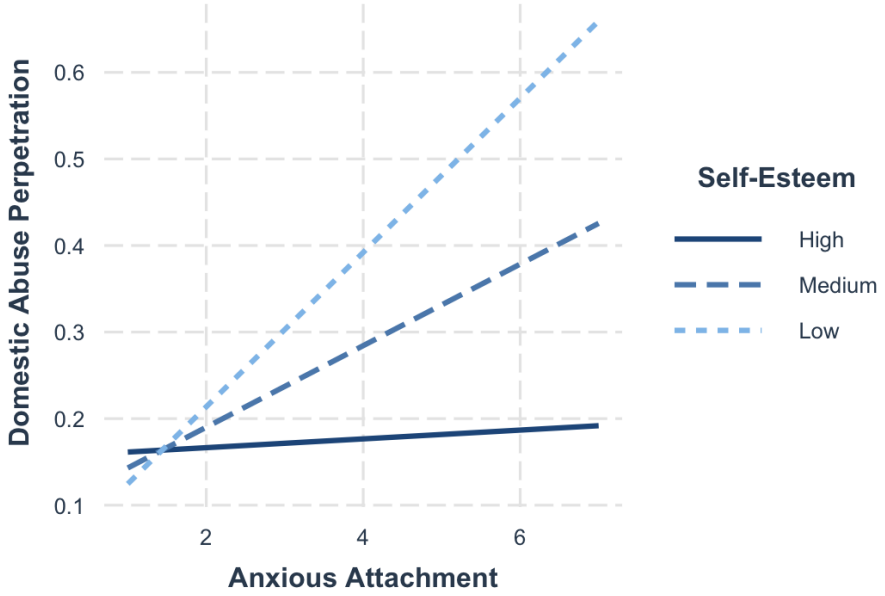


Figure 42. Interaction of anxious attachment and self-esteem on domestic abuse perpetration among women

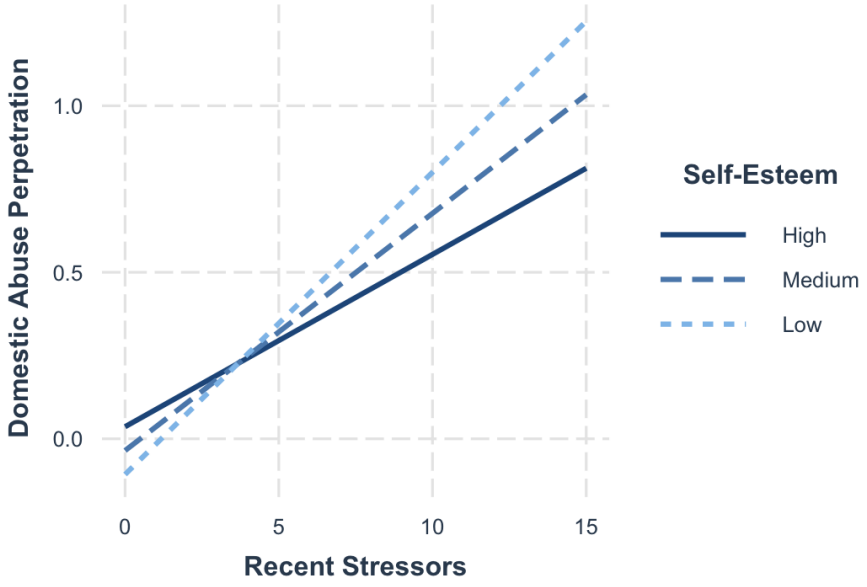


Figure 43. Interaction of recent stress and self-esteem on domestic abuse perpetration among women

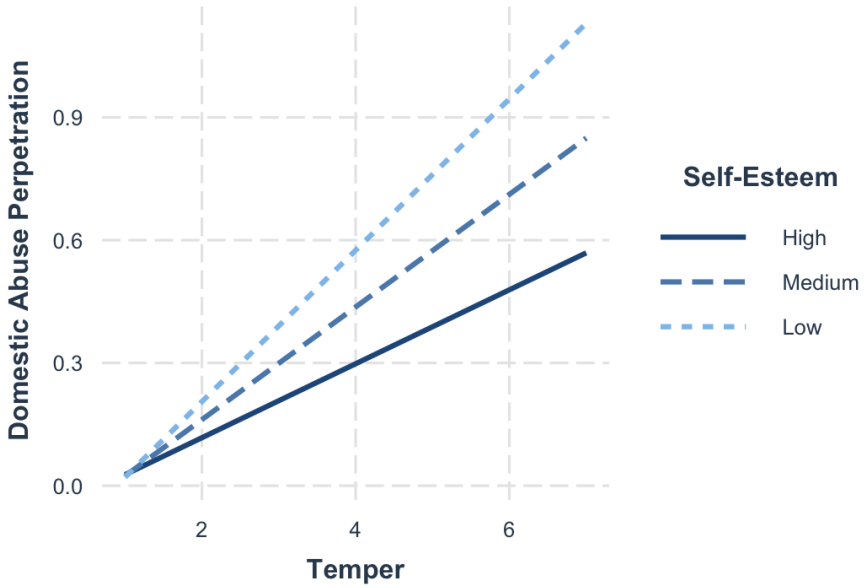


Figure 44. Interaction of temper and self-esteem on domestic abuse perpetration among women

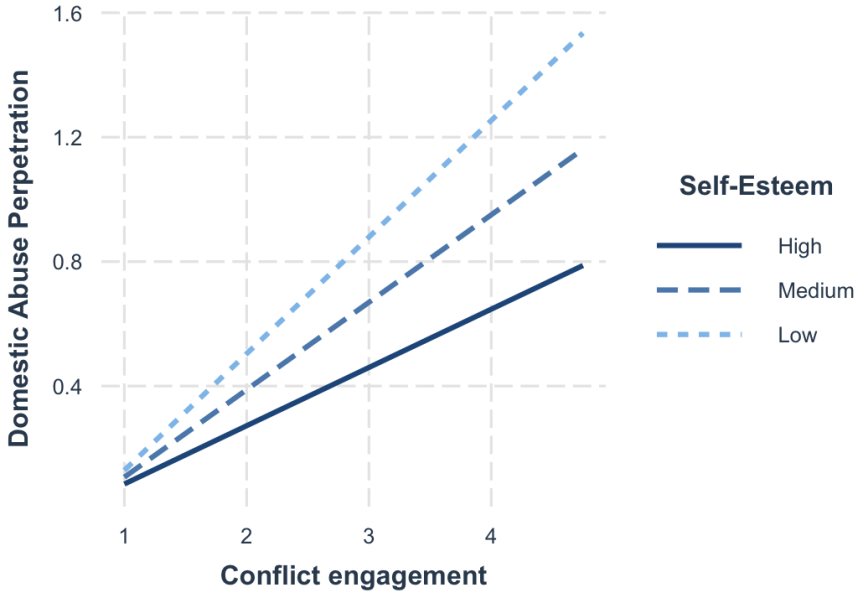


Figure 45. Interaction of conflict engagement and self-esteem on domestic abuse perpetration among women

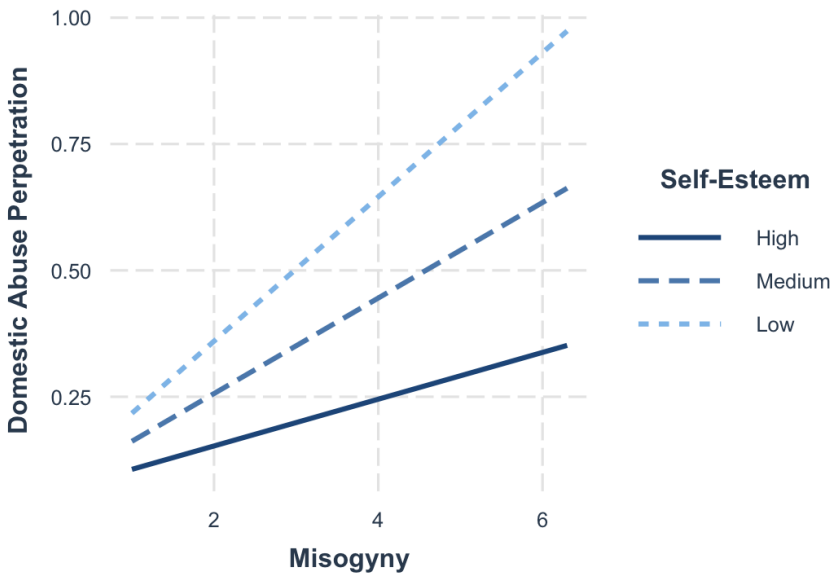


Figure 46. Interaction of misogyny and self-esteem on domestic abuse perpetration among women

High self-esteem therefore demonstrates notable buffering protective effects against risk factors previously demonstrated to have significant risk effects. Again, self-esteem is modifiable and so would be appropriate to apply in preventative and intervention programming to target domestic abuse perpetration.

Problem-solving

Among males, problem-solving moderates the effects of violent attitudes towards women and girls on domestic abuse perpetration (*b* = -.17, 95% CI [-.33, -.02]). The interaction plot shows that the risk effects of violent attitudes towards women and girls are weakened when problem-solving is high (Figure 47). Here, introducing positive problem-solving skills among men may be effective at reducing the likelihood of domestic abuse perpetration, particularly when those men hold attitudes supportive of violence against women and girls.

Among females, problem-solving does not moderate the effects of any of the tested risk factors on domestic abuse perpetration.

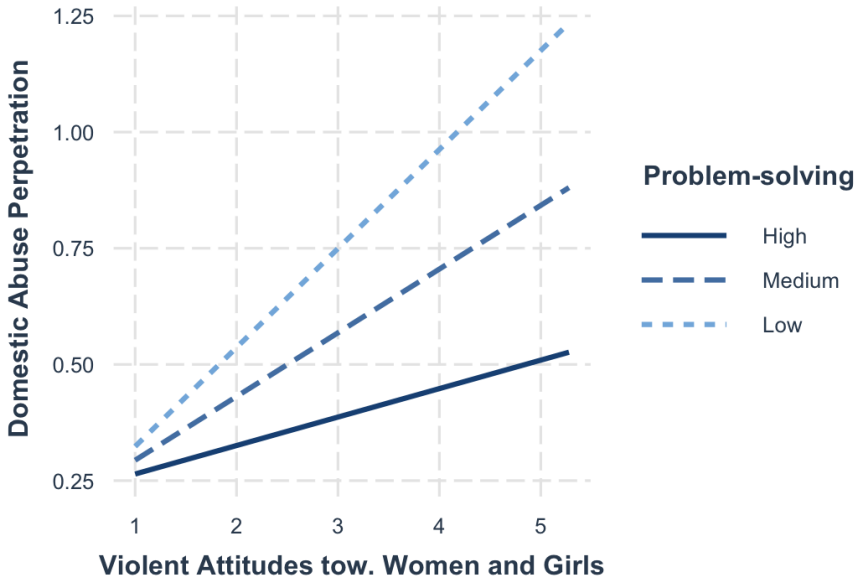


Figure 47. Interaction of violent attitudes towards women and girls and problem-solving on domestic abuse perpetration among men

Moderation and simple slope analyses demonstrate when certain protective factors have an interactive, buffering effect against **single** risk factors. In the next section, we return to the previously deducted risk and protective **profiles** to identify some which may have a buffering effect – in other words, we look to identify potential protective profiles.

4.3 Protective profiles

As is the case with risk factors, protective factors also co-occur in predictable ways – these are the protective profiles identified in the previous section (see Table 5). We identified five protective profiles: Low propensity, Low distress, Low misogyny, High self-control, and Positive relationships. Here, we sought to identify if any of the protective profiles buffered against the negative risk effects of the risk profiles. Again, we ran moderation and simple slope analyses for men and women, separately.

Risk-Protective Profile Interactions among Men

The following risk-protective interactions are all based on the male sample.

High propensity (Distal) – Protective Factor Profiles

We examined whether certain protective profiles reduce the risk effects of High propensity on domestic abuse perpetration. No evidence was found for the moderating effects of any of protective profiles on the relationship between High propensity and domestic abuse perpetration.

High distress (Proximate) – Protective Factor Profiles

None of the protective profiles moderate the risk effects of the High distress profile on domestic abuse perpetration.

Violent Misogyny (Attitudes) – Protective Factor Profiles

The protective profiles of Low distress (Proximal) (b = -.37, 95% CI [-.72, -.02]) and Positive relationship (Relationship) (b = -.49, 95% CI [-.82, -.15]) both showed a significant negative interaction with Violent misogynistic attitudes. The simple effects plots show that the risk effects of Violent misogyny are weakened when Low distress is present (b = .15, 95% CI [-.07, .38), compared to when Low distress is absent (b = .52, 95% CI [.26, .79]) (Figure 47). This indicates that Low distress represents a buffering protective factor for the effects of Violent misogynistic attitudes on domestic abuse perpetration.

Similar patterns emerged when looking at the effects of Positive relationships, rendering it an interactive protective factor. When Positive relationships is present the risk effects are lessened (b = .21, 95% CI [.02, .40), while they are amplified when Positive relationships is absent (b = .70, 95% CI [.42, .97]) (Figure 48). All other protective profiles are found to be non-significant.

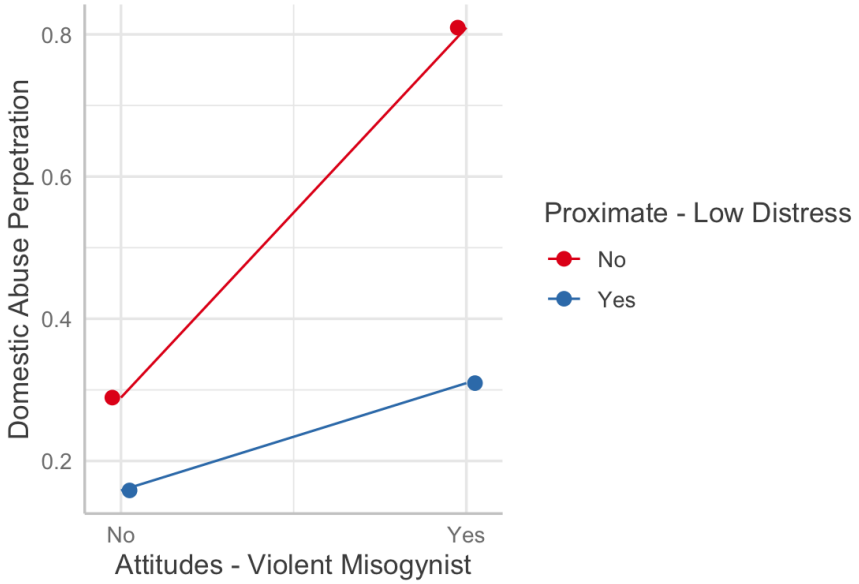


Figure 47. Risk-protective profile interaction - Violent misogyny and Low distress on domestic abuse perpetration among men

Figure 48. Risk-protective profile interaction - Violent misogyny and Positive relationships on domestic abuse perpetration among men

Dark personality (Personality) – Protective Factor Profiles

A significant negative (protective) interaction was found for the protective profiles Low misogyny (Attitudes) (b = -.37, 95% CI [-.71, -.20]) and Positive relationships (Relationship) (b = -.38, 95% CI [-.70, -.06]) with Dark personality. The simple effects plots shows that when Low misogyny is present, the risk effects of Dark personality on domestic abuse perpetration are dampened (b = .05, 95% CI [-

.23, .32]), while strong risk effects emerge when Low misogyny is absent (b = .41, 95% CI [.21, .61]) (Figure 49).

Similarly, the simple effects analysis shows that the risk effects of Dark personality are weakened when Positive relationships are present (*b* = .16, 95% CI [-.01, .34]), compared to when Positive relationships are absent (*b* = .54, 95% CI [.27, .81]) (Figure 50). The findings render the profiles Low misogyny and Positive relationships buffering protective factors for the effects of Dark personality on domestic abuse perpetration.

All other protective profiles were non-significant.

Figure 49. Risk-protective profile interaction – Dark personality and Low misogyny on domestic abuse perpetration among men

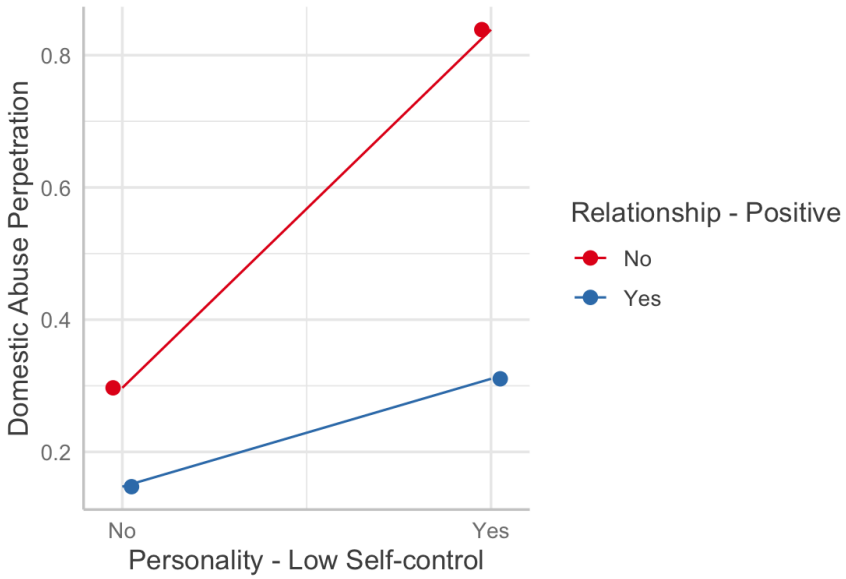


Figure 50. Risk-protective profile interaction – Dark personality and Positive relationships on domestic abuse perpetration among men

Worsening relationships (Relationship) – Protective Factor Profiles

The interaction between Worsening relationships and High self-control was significant (*b* = -.38, 95% CI [-.70, -.06]). The simple effects plot shows that when High self-control is present, the effects of Worsening relationships are dampened (*b* = .15, 95% CI [-.09, .39]), whereas the risk effects significant increase when High self-control is absent (*b* = .53, 95% CI [.31, .74]). This interaction is identical to the Dark personality – Positive relationship interaction as both domains include two profiles each (see Figure 50).

All other protective profiles are found to be non-significant.

High disorganisation (Community) – Protective Factor Profiles

None of the protective profiles moderate the risk effects of the high community disorganisation profile on domestic abuse perpetration.

Our results suggest that among men, High self-control, Positive relationships, Low misogyny, and Low distress, have buffering protective effects against several pertinent risk profiles. Next, we conduct the same analyses among the female sample.

Risk-Protective Profile Interactions among Women

The following risk-protective interactions are all based on the female sample.

High propensity (Distal) – Protective Factor Profiles

None of the protective profiles moderate the risk effects of the High propensity profile on domestic abuse perpetration among women.

High distress (Proximal) – Protective Factor Profiles

None of the protective profiles demonstrate a buffering effect between the High propensity profile on domestic abuse perpetration among women.

Violent Misogyny (Attitudes) – Protective Factor Profiles

The protective profiles Low propensity (b = -.51, 95% CI [-.93, -.09]) and High self-control (b = -.46, 95% CI [-.83, -.10]) both showed a significant negative interaction with Violent misogynistic attitudes. The simple effects plots shows that the risk effects of Violent misogyny are weakened when Low propensity is present (b = .09, 95% CI [-.29, .46), compared to when Low propensity is not present (b = .60, 95% CI [.40, .79]) (Figure 51). This indicates that Low propensity represents a buffering protective factor for the effects of Violent misogynistic attitudes on domestic abuse perpetration.

Similar patterns emerged for the simple plots looking at the effects of High self-control, rendering it an interactive protective factor. When High self-control is present the risk effects are lessened (b = .12, 95% CI [-.17, .40), while they are amplified when High self-control is absent (b = .58, 95% CI [.35, .81]) (Figure 52). All other protective profiles are found to be non-significant.

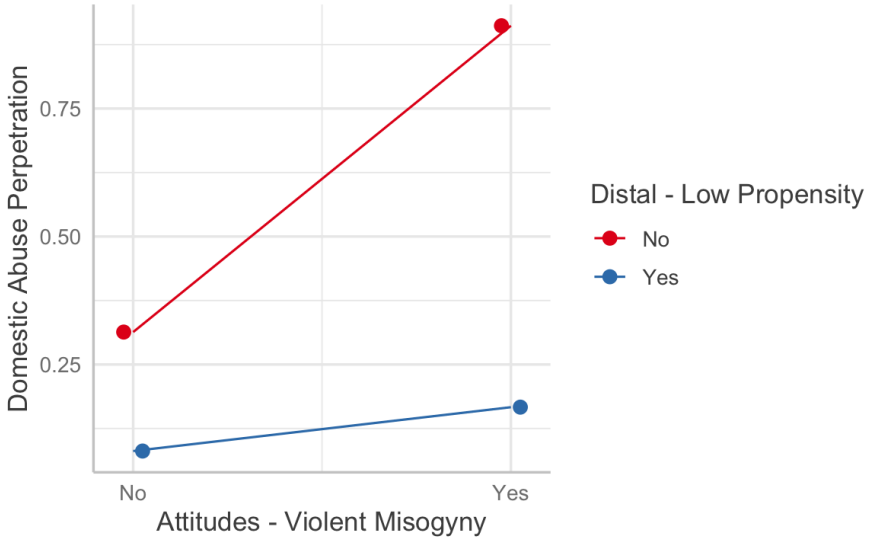


Figure 51. Risk-protective profile interaction – Violent misogynistic attitudes and Low propensity on domestic abuse perpetration among women

Figure 52. Risk-protective profile interaction – Violent misogynistic attitudes and High self-control on domestic abuse perpetration among women

Dark personality – Protective Factor Profiles

We did not find significant interactions between any of the protective profiles and Dark personality. This means that the risk effects of Dark personality on domestic abuse perpetration are not contingent on any protective profiles being present.

Worsening relationships (Relationship)– Protective Factor Profiles

No evidence was found for the interactive effects of the protective profiles and Worsening relationship on domestic abuse perpetration.

High disorganisation (Community) – Protective Factor Profiles

Similarly, to the findings above, the protective profiles do not moderate the risk effects of High community disorganisation on domestic abuse perpetration.

Our results highlight that among women, Low propensity and High self-control have buffering protective effects against patterns of pertinent risk factors.

The interactive effects of different direct protective factors and protective risk profiles helps us understand **when** certain protective factors work. However, alongside this knowledge, it is necessary to understand **how** protective factors work. In the final section we revisit the network models to visualise how different protective factors work.

4.4 Functional roles of protective factors

To understand how different protective factors affect the overall risk system, we introduced protective factors into the previously modelled networks, one by one. We analyse the effects of internal locus of control, self-esteem, resilience, social support, and problem-solving skills. We compare the effects for men and women to understand if any differences exist.

Internal locus of control

Figure 53 introduces the protective factor – internal locus of control – into the network. The novelty of the present approach is that the network diagrams can help elicit understanding about how internal locus of control exerts a protective effect, rather than simply observing that is does.

In both men and women internal locus of control is negatively associated with low socio-economic status, poor problem-solving skills, anxious and avoidant attachment, psychological distress, and poor mental health, suggesting that those with an internal locus of control are protected against the negative effects of these risk factors.

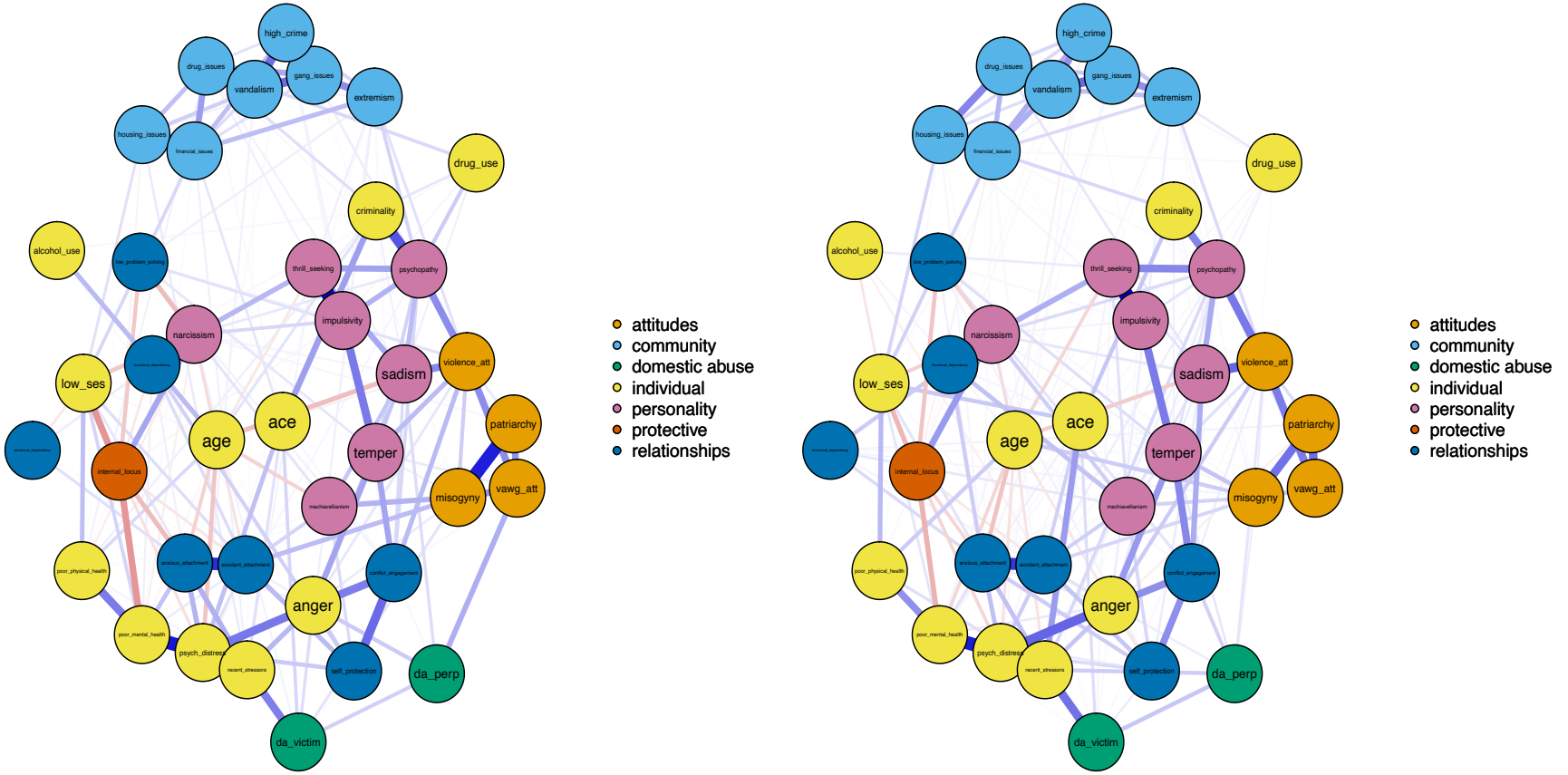
People with an internal locus of control are also ‘protected’ against maladaptive attachment styles, specifically anxious and avoidant attachment styles. In both men and women, maladaptive attachment styles are related to poor conflict resolution skills, psychological distress, and acute stress, which in turn impact upon the likelihood of domestic abuse perpetration.

Internal locus of control in both men and women also protects against poor mental health and psychological distress. These are risk factors associated with anger, and acute stress, which again relate to domestic abuse perpetration.

People with an internal locus of control may be less likely to experience the negative risk effects of low socio-economic status. However, equally, people from low socio-economic backgrounds may be less likely to have an internal locus of control. Risk factors such as socio-economic status are difficult to intervene upon in the short-term, however public health approaches aim to reduce vulnerability by addressing wider societal issues such as poverty, to ultimately minimise a range of adverse outcomes. The network graph visualises the potential ‘knock-on’ effects of investing in long-term vulnerability reduction.

Statistical tests revealed no significant differences in how internal locus of control functions as a protective factor between men and women.

male



female

Figure 52. Overall network model of risk factors for domestic perpetration and protective factor internal locus of control, for men and women (n = 1461).

Self-esteem

Figure 53 introduces the protective factor high self-esteem into the network. High self-esteem functions much the same as internal locus of control. In both men and women, high self-esteem is negatively associated with low socio-economic status, poor problem-solving skills, anxious and avoidant attachment, psychological distress, and poor mental health. Further, high self-esteem is negatively associated with emotional dependency, which is characterised by an excessive attachment to a significant other, active request for emotional support, and fears of separation, as a facet of maladaptive interpersonal dependency – a risk factor for domestic abuse perpetration. No significant differences in how high self-esteem functions as a protective factor between men and women were found.

Resilience

Resilience too has a protective effect akin to high self-esteem and internal locus of control, where resilient individuals are less likely to experience negative effects from low socio-economic status, poor problem-solving skills, anxious and avoidant attachment, psychological distress, and poor mental health, thus reducing the risk of domestic abuse perpetration (Figure 54). Further, resilience is negatively associated with functional dependency, which is characterised by passivity, social anxiety, and a lack of self-confidence, also as a facet of maladaptive interpersonal dependency. In women, resilience is also directly protective against emotional dependency, but not in men ($p < .000$).

male

female

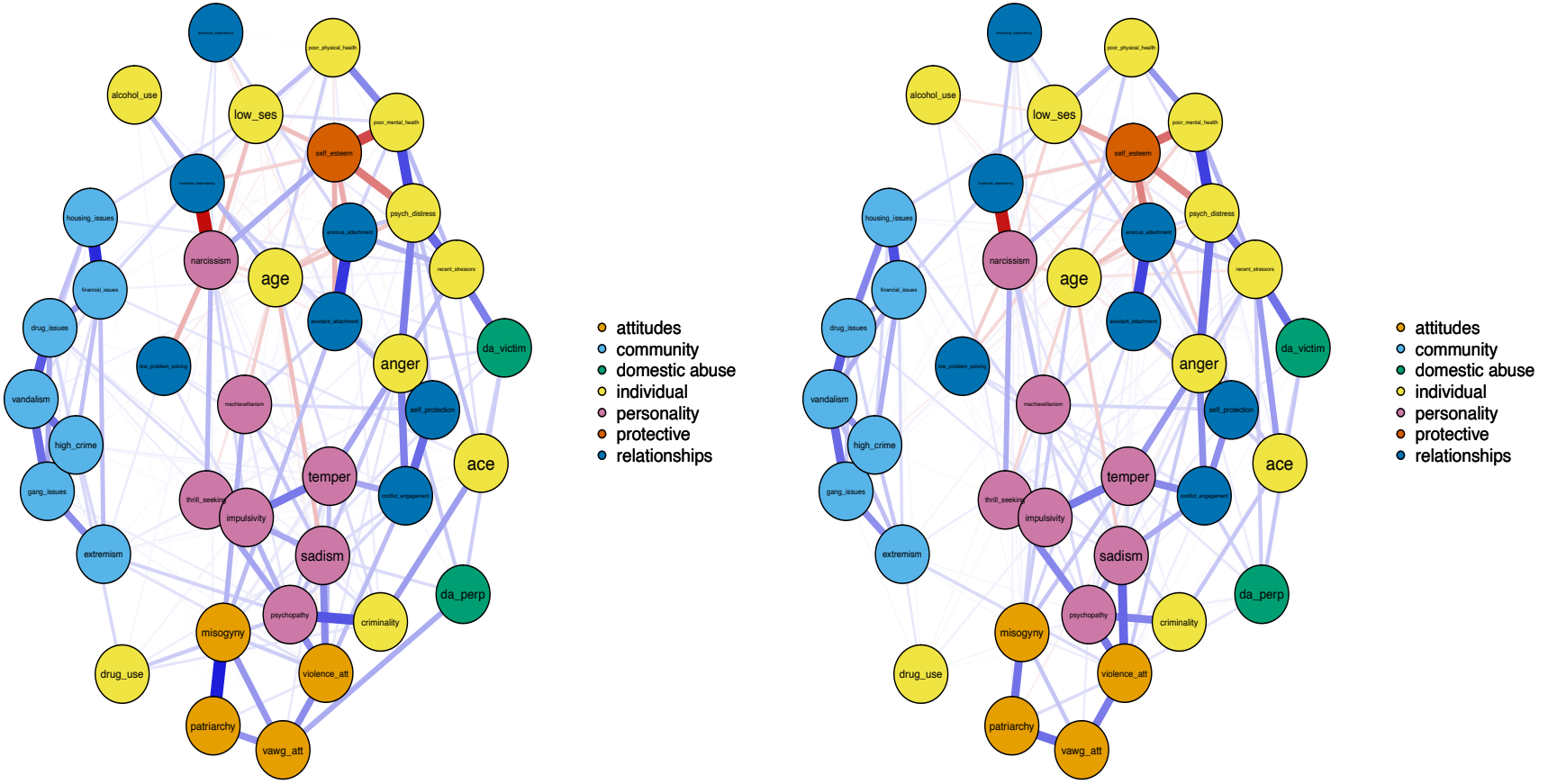


Figure 53. Overall network model of risk factors for domestic abuse perpetration and protective factor self-esteem, for men and women (n = 1, 461).

male

female

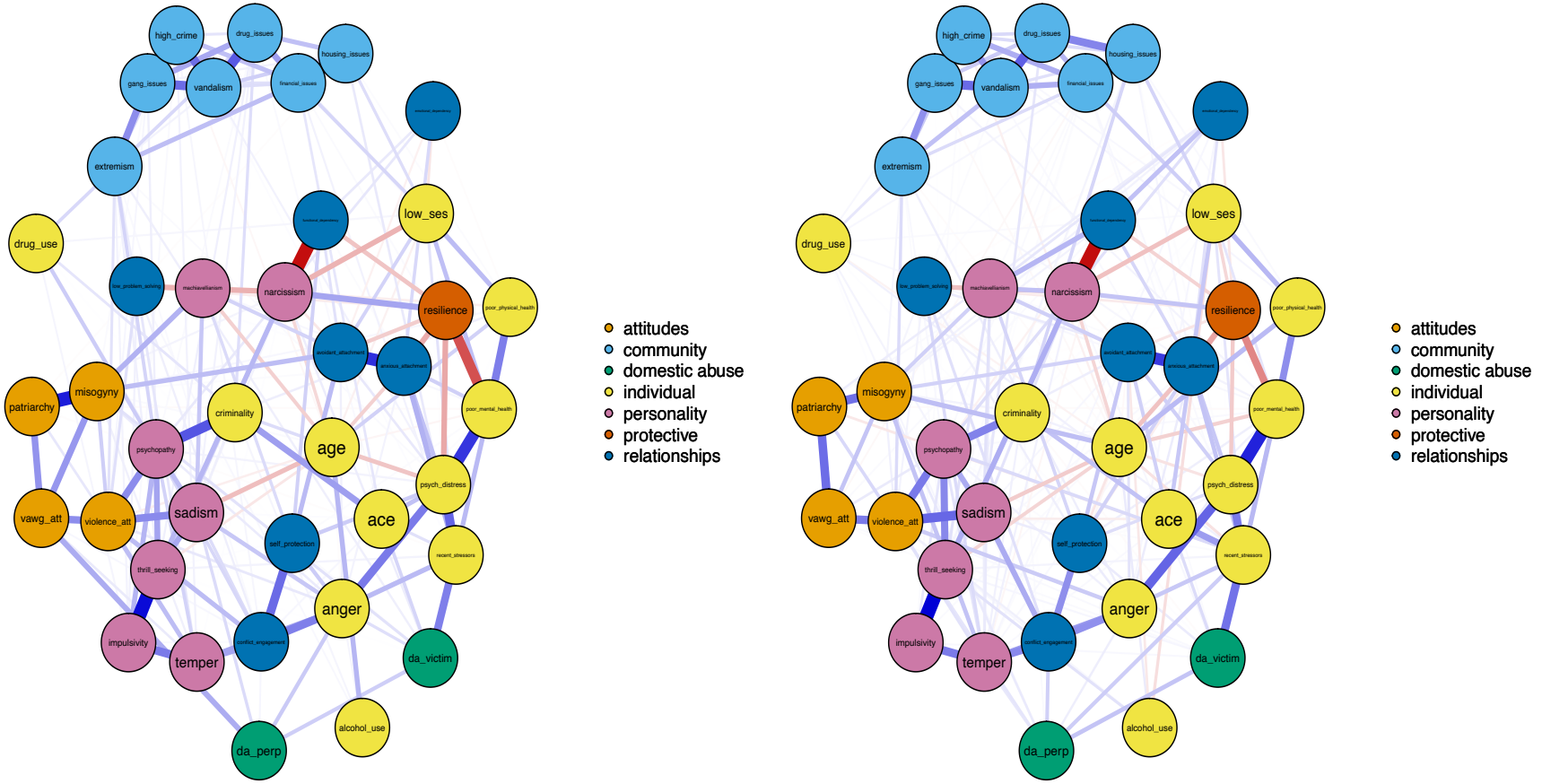


Figure 54. Overall network model of risk factors for domestic abuse perpetration and protective factor resilience, for men and women (n = 1, 461).

Social support

Social support demonstrates a protective effect against maladaptive attachment styles, poor mental health, low socioeconomic status, poor conflict resolution skills, and attitudes about violence (Figure 55). Among men only, social support has a protective effect against misogyny, an attitudinal belief associate with support for violence and violence against women ($p < .05$). Men with positive social support were less likely to endorse misogynistic beliefs.

Positive problem solving

Positive problem solving has a protective effect against risk factors related to low self-control, such as temper and impulsivity, as well as attitudes towards violence (Figure 5 60). There were no significant differences between how positive problem solving functioned as a protective factor between men and women.

male

female

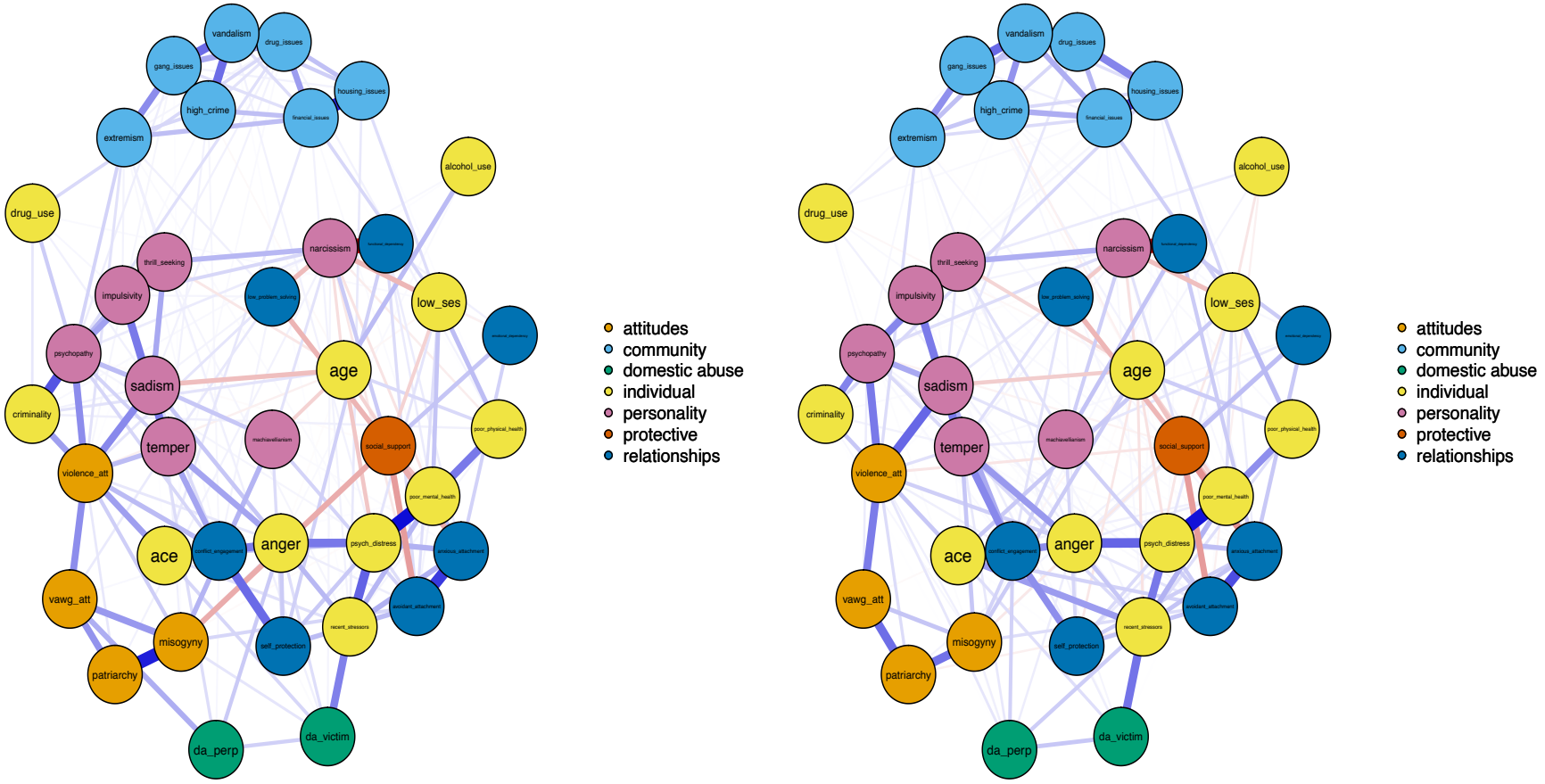


Figure 54. Overall network model of risk factors for domestic abuse perpetration and protective factor social support, for men and women (n = 1, 461).

male

female

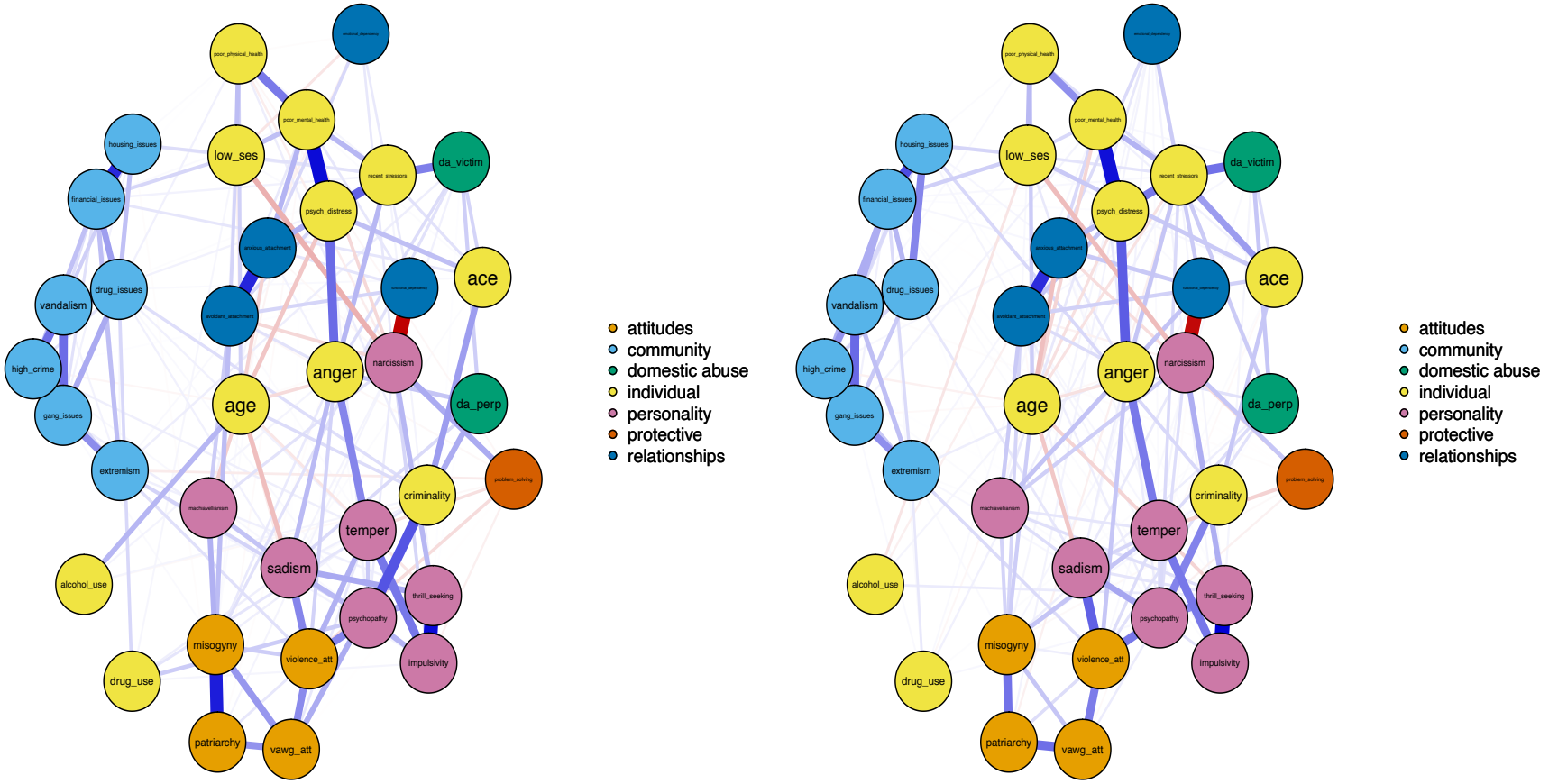


Figure 55. Overall network model of risk factors for domestic abuse perpetration and protective factor positive problem-solving, for men and women (n = 1, 461).

Limitations

The nature of our data means that whilst we can identify important relationships, to fully understand how protective factors work, longitudinal and experimental designs are necessary. These types of studies require significant time and investment and so were beyond the scope of our report, but are essential in establishing cause and effect, by observing changes over time or in a controlled environment.

Our data is limited by the fact that it is cross-sectional, in that it only presents a single snapshot in time across the UK general population.

Conclusion

Our findings highlight **when** and **how** different protective factors may be most effective at reducing the likelihood of domestic abuse perpetration. Our earlier analyses highlighted **the limited direct protective effects** of many of these factors, hence we went on to examine their **buffering** effects. With buffering protective factors, introducing certain factors **dampens** the risk effects of factors related to domestic abuse perpetration, rather than having a direct influence on whether a person offends or not. Mitigating against these risk factors may also have positive outcomes for different types of harmful or undesirable behaviours.

This is another reason why we reiterate moving away from simply analysing the direct effects of single risk factors. Whilst this is essential knowledge to establish, building upon this foundational knowledge to understand the complexity of any phenomenon is also necessary.

5.0 Conclusion

The aim of this research project was to provide a unique data-driven insight into of domestic abuse perpetration in the UK. We used a nationally representative survey to ensure our findings were generalisable and representative of the UK population. 4.9% of the population reported engaging in 2 - 3 or more domestic abuse behaviours against a partner or family member in the last 12 months. 5.1% reported perpetrating 2 - 3 or more partner abuse behaviours, and 1.7% reported perpetrating 2 - 3 family abuse behaviours. Whilst seemingly small percentages, extrapolating these prevalence rates to the general population equates to a significant number of individuals perpetrating domestic abuse behaviours, and equally a significant number of victims experiencing harm.

Our report provides the first baseline assessment of domestic abuse perpetration in the UK. Future work may wish to consider using samples which demonstrate characteristics typically seen across high-harm domestic abuse offenders. For instance, by sampling on age and gender characteristics. Similarly, future work should employ samples of high-harm domestic abuse offenders, such as those seen at MARAC, to understand the characteristics of this specific group of offenders. A comparative look across these different cohorts could provide a more nuanced insight into the differences between different types of offenders to feed directly into risk assessment and management.

A key aim of the project was to provide evidence to inform a preventative, public health approach to tackling domestic abuse. We first identified several significant direct risk and protective factors. Whilst important knowledge to establish and foundational to generating a robust evidence base, the ability of single factors to predict domestic abuse is limited. Hence, we considered how patterns or configurations of different factors present in the general population. Patterns of risk factors are more indicative of the causal mechanisms which underpin domestic abuse offending. Intervening at the root causes of the issue, rather than against any single factor, is a more effective approach to preventing domestic abuse.

For instance, several differences between men and women emerged. Women were more likely to commit domestic abuse after experiencing a pattern of adverse experiences in childhood, as well as multiple acute (recent) stressors. However, men were more likely to commit domestic abuse when having demonstrated a pre-existing criminal propensity, dark personality traits (Machiavellianism, psychopathy, sadism), and violent misogyny. Targeted preventative programming addressing the ‘causes of the causes’ of domestic abuse, would not only reduce domestic abuse offending, but reduce a wide range of societal harms.

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Appendix A; List of Measures Used in Survey

Individual-level markers

All items were measured along a 7-point Likert scale from 'Strongly Disagree' to 'Strongly Agree', unless otherwise specified.

Education
Participants self-reported their highest level of education from 'No secondary school' to 'Completed a PhD'.

Household size
Participants reported how many people lived in their house more than half of the time.

Employment status
Participants were asked to self-report their current employment status.

Household income
Participants reported their income on a scale from less than £20,000 to more than £60,000.

Financial stress
Participants reported yes/no if they had experienced worries about money in the last 12 months.

Substance use
Alcohol use was measured with two items:

1. How often do you drink on weekdays (Monday to Thursday)?
2. How often do you drink on the weekend (Friday to Sunday)?

Drug use was measured with two items:

1. How often do you use drugs (not for medical reasons) on weekdays (Monday to Thursday)?
2. How often do you use drugs (not for medical reasons) on the weekend (Friday to Sunday)?

Mean scores were calculated by totalling the number of days per week a person used alcohol or drugs. Higher scores indicate high frequency of alcohol or drug use.

Criminal propensity
Participants answered a series of yes/no questions about past criminal behaviour, including violence, being arrested, committing non-violent, violent, and sexual offences, etc. Items were added up to give a sum score which was labelled Criminal Propensity. High scores indicate more previous criminal behaviours.

Low self-control
Low self-control was measured with nine items across three subscales in a modified version of Grasmick's self-control scale: thrill-seeking/risk-taking, impulsivity, temper (Grasmick, Tittle, Bursik Jr, & Arneklev, 1993). Mean scores were calculated where high scores indicate higher levels of the traits.

Locus of control
Locus of control is how much people believe that they have control over their own actions (internal locus of control), as opposed to life events determining their actions (external locus of control). Internal and external locus of control were measured with 12-items from Rotter's locus of control scale (Rotter, 1966). Mean scores were calculated for each of the subscales where higher scores indicate higher levels of that trait.

Attitudes towards violence
Attitudes about general violence were measured with four items, i.e. "Sometimes I look for fights". Mean scores were calculated where high scores indicate attitudes which support use of general violence.

Attitudes towards violence against women and girls
Attitudes towards violence against women and girls was measured with 18 items assessing support for sexual, domestic, and intimate partner violence against women and girls. Mean scores were calculated where higher scores indicate attitudes supportive of violence against women and girls.

Abusive towards own children
Previous physical abuse towards own children was recorded as yes/no.

Poor physical health
Physical health was rated on a scale of 1 – 10, with 10 being the highest.

Threats to harm self
Participants reported if they had made threats or committed harm to themselves as a child/adolescent or adult, recorded as yes/no.

Religiosity
Religiosity was rated on a scale of 1 to 10 with 10 being the most religious.

Misogyny
Misogyny is the hatred of, aversion to, or prejudice against women. Misogyny was measured with 10-items (Rottweiler & Gill, 2021). Mean scores were calculated with higher scores meaning more misogynistic attitudes.

Patriarchal beliefs
Patriarchal beliefs are beliefs that men (who are patriarchs) are superior to women and impose stereotypes on society to maintain unequal power relations between men and women. Two items were generated to measure patriarchal beliefs:

1. Men should be making the important decisions within relationships/marriage
2. Important jobs in our society should be undertaken by men rather than women

Mean scores were calculated where higher scores indicate stronger patriarchal beliefs.

Anger
The 12-item Short Anger Measure (SAM, Gerace & Day, 2014) is a self-report measure of angry feelings and aggressive impulses.

Proximal (recent) stress
Several proximal stressors were self-reported, including job loss, money worries, death in the family, etc. Responses were totalled to give a score recorded as Proximal Stress, where high scores relate to more stressors experienced in the last 12 months.

Adverse childhood experiences
The 10-item Adverse Childhood Experiences (ACEs) Questionnaire for Adults (California's Surgeon General's Clinical Advisory Committee) was used to measure adverse experience in childhood. This questionnaire includes the witnessing of domestic abuse and experiencing abuse in childhood. Mean scores were calculated where higher scores indicate a higher frequency of adverse experiences in childhood.

Mental health
Psychological distress. The Kessler Psychological Distress scale (K10) was used to measure psychological distress (Kessler et al., 2002). It is a 10-item measure about emotional state measured along a 5-point Likert scale from 'None of the time' to 'All of the time'. Mean scores were calculated where high scores indicate a person is likely to have a severe mental disorder and low scores indicate a person is likely to be mentally well.

Diagnosed mental disorder. Participants self-reported yes/no if they had a diagnosed mental disorder. If yes, participants reported their diagnoses. Variables were created for depression, anxiety,

post traumatic stress disorder, antisocial personality disorder, and borderline personality disorder. Previous studies suggest these diagnoses may be risk factors for domestic abuse perpetration.

Personality
Machiavellianism is a personality trait which denotes cunningness and manipulativeness, and a drive to use whatever means necessary to achieve power. Narcissism is extreme self-involvement to the degree to which it makes a person ignore the needs around them, characterised by grandiosity, feelings of entitlement, arrogant behaviours and a lack of empathy. Sadism is the tendency to derive pleasure, especially sexual gratification, from inflicting pain, suffering, or humiliation on others, and Psychopathy marked by deficient emotional responses, lack of empathy, and poor behavioural controls, commonly resulting in persistent antisocial deviance and criminal behaviour. Machiavellianism, narcissism, sadism, and psychopathy were measured with 16 items from the Hateful Eight Scale (Webster & Wongsomboon, 2020). Mean scores were calculated for each of the subscales where high scores indicate higher levels of the trait.

Relationship markers

Interpersonal dependency
Interpersonal dependency refers to a complex of thoughts, beliefs, feelings, and behaviours revolving around needs to associate closely with valued other people. The short form (6-item) version of the Interpersonal Dependency Inventory was used to measure interpersonal dependency (McClintock, McCarrick, Anderson, Himawan, & Hirschfeld, 2017). The scale consists of two subscales, functional, and emotional interdependency. Mean scores were calculated, with higher scores indicating higher interpersonal dependency.

Attachment style
Attachment styles are characterized by different ways of interacting and behaving in relationships. The 12-item short form of Attachment Style Questionnaire was used to assess participants' attachment styles (Iwanaga et al., 2018). The scale calculates an average score across three subscales to identify a person's attachment style: secure, avoidant, or anxious.

Conflict resolution skills
An adapted version of the Conflict Resolution Styles Inventory (Kurdek, 1994) was used to measure an individual's conflict resolution skills. The scale has three subscales: conflict engagement (risk factor), self-protection (risk factor), and positive problem-solving (protective factor). Items were measured along a 5-point Likert scale from 'Never' to 'Always'. Mean scores were calculated where high scores indicate higher levels of the conflict resolution style.

Relationship length
Participants were asked to indicate how long they had been with the current partner from 'Less than 1 year' to 'More than 10 years'.

Separation
Participants were asked if their partner had tried to separate from them within the last year and answered yes/no.

Conflict over child custody
Participants were asked if there was conflict with a partner or ex-partner over child contact within the last year and answered yes/no.

Community markers

Community disorganisation
Community disorganisation was measured with seven items asking participants to rate statements about their community including housing, drug, financial, high-crime, vandalism, gang, and extremism issues. Mean scores were calculated. Higher scores indicated more community disorganisation.

Protective markers

Resilience
Resilience is the capacity to recover quickly from difficulties and was measured with the 6-item Brief Resilience Scale (Smith et al., 2008). Mean scores were calculated where high scores indicate higher levels of resilience.

Self-esteem
Five items from Rosenburg et al's., (2015) Self-Esteem Scale were used to measure self-esteem. Mean scores were calculated where high scores indicate high self-esteem.

Social Support
The Berlin Social Support Scale (Schwarzer & Schulz, 2003)was used to measure social support across two subscales (perceived emotional support and perceived instrumental support). An overall mean score was calculated where high scores indicate a person has a higher degree of social support.

Relationship satisfaction
Participants were asked to rate their relationship satisfaction with a) their current intimate partner and b) their family, on a scale of 0 (being the lowest) to 10 (being the highest). Means were calculated where higher scores indicate greater relationship satisfaction.

Dependent variable

Domestic abuse was measured with 46 items, 23 items measuring family abuse and 23 items measuring intimate partner abuse. Items were adapted from the Crime Survey for England & Wales which asks people to self-report domestic abuse *victimisation* (Crime Survey for England and Wales 2018 to 2019: Adult Questionnaire, 2018). We modified the questions to ask participants to self-report domestic abuse *perpetration* and included recently developed questions to measure coercive control behaviours. Participants were asked to self-report which of the behaviours they had done in the last 12 months. Sum scores were calculated for family, partner, and domestic abuse, where higher scores indicated a higher frequency of abusive behaviours perpetrated.