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ORIGINAL ARTICLE

Exploring the Existence of Distinct Subclasses of Intimate Partner Violence Experience and Associations with Mental Health

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Abstract

Intimate Partner Violence (IPV) is a worldwide societal concern. Adversities such as IPV are known to impinge upon mental health and socio-economic development. However, much of the existing literature addresses single or dual constructs of IPV abuse rather than capturing the more common polyvictimisation experience and how they impact on mental health. Using a Northern Irish university student sample ($n = 753$), latent class analysis was employed to examine distinct patterns of IPV experience stratified by gender ($n = 184$ males (24.44%); $n = 569$ females (75.56%)). Regressions were then employed to assess whether there were differential associations between the latent classes of IPV and a range of mental health outcomes. While a greater number of females reported experiencing IPV, patterns of IPV victimisation across gender were found to be similar. Results indicated that three latent classes were optimal across both genders; one characterised by Low or no IPV (males: 48.37%; females: 56.24%), another characterised by predominantly physical and emotional denigration (males: 34.24%; females: 27.42%), and a third characterised by multiple endorsements of different types of IPV (males: 17.39%; females: 16.34%). Differences in mental health outcomes across gender are noted. Classes characterised by multiple forms of abuse report an increased risk of mental health outcomes including posttraumatic stress disorder, anxiety and depression but not alcohol use. The study extends the existing literature which highlights the importance of acknowledging psychological and emotional abuse (PEA) as a significant abuse type in the IPV experience. The study also reaffirms the need for definitional clarity and development of standardised measurement tools of PEA within the research context and beyond.

Keywords Intimate partner violence · Psychological abuse · Emotional abuse · Mental health · Gender · Person-orientated analysis

Introduction

Much of the available evidence demonstrates that intimate partner violence (IPV) victimisation is higher among females compared to males, although emerging work which has focused on IPV victimisation among males has resulted in some debate on this issue (Myhill, 2017; Walby & Towers, 2017), with some offering support for gender symmetry (Straus, 2011). Critique of measurement tools and sampling frames have been cited as some of the potential reasons for such variation (Follingstad & Ryan, 2013; Hamberger et al., 2016; Hamby, 2014). Others have reflected on the conceptual framework underpinning research which include mixed-gender samples, citing that gendered inequality and power imbalance "exists in abusive relationships across sexuality and gender" (Stark & Hester, p.93). This context accounts for the notable rate of violence against women and girls, while still capturing the IPV experience among some males.

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Studies which have explored gender in the IPV victimisation experience have noted that males and females differ in mental health outcomes associated with this experience. Afifi (2007) suggested that these differences in mental health outcomes can be explained by gender related pathology whereby males externalise distress, whilst females internalise distress. Supporting evidence for gender differences in relation to trauma and mental health has been well established within the psychotraumatology literature (Charak et al., 2014; Olff, 2017; Tamres et al., 2002). Additionally, Finkelhor et al. (2007) noted that 'a general problem with victimisation related literature is that most studies on individual types of victimisation have failed to obtain complete victimisation profiles'. In this sense, the focus on single types of victimisation may exaggerate the individual trauma contribution to mental health for both males and females.

Despite being one of the most common forms of IPV reported for males and females [Black et al., 2011; European Union Agency for Fundamental Rights, 2014; Karakurt & Silver, 2013; Smith et al., 2017), psychological and emotional abuse (PEA) has received less attention within the IPV literature compared to other forms of IPV (e.g., physical and/or sexual violence), perhaps because PEA is generally present during the experiences of other types of violence, and is therefore difficult to separate out as a discrete occurrence (Barnish, 2004; Heise et al., 2019; Sabina & Straus, 2008). Studies which have focused on this type of IPV have tended to implement a variety of measures, resulting in differing reports, particularly where mental health it concerned (Dokkedahl et al., 2019). The examination of PEA is further complicated by a lack of agreement about how to conceptualise, and operationalise such behaviour, (Dokkedahl et al., 2019; Goerl, 2005; Heise et al., 2019; Walby & Towers, 2018) with the more extreme cases associated with coercive control being more readily identified (Hamberger et al., 2017). This is perhaps reflecting the 'patterned' nature component of coercive control and the severity of the victim experience.

To date, several conceptual models have been developed in an attempt to operationalise and measure PEA but one in particular offers favourable means in which to do so (O'Leary & Maiuro, 2001). Murphy and Hoover explored the viability and usefulness of assessing PEA as a multi-factorial construct rather than a uni-dimensional one (O'Leary & Maiuro, 2001; Murphy & Hoover, 1999). The researchers proposed a model consisting of four factors: Hostile Withdrawal (*avoidance during conflict and withholding emotional availability*), Domination/Intimidation (*threats, property violence and intense verbal aggression*), Denigration (*degrading attacks on the partner's self-esteem*), and Restrictive Engulfment (*tracking, monitoring, and controlling the partner's activities and social contacts*) (O'Leary & Maiuro, 2001). Murphy and Hoover (1999) found support for these four factors utilising confirmatory factor analysis.

IPV victimisation in and of itself is not uni-dimensional, rather victim experiences are varied and complex, typically underpinned by some form of PEA which perhaps contributes uniquely to mental health outcomes. Using data from the US National Violence Against Women Survey (NVAWS) (Tjaden & Thoennes, 2000), Coker et al. (2002) examined the experience of both males ($n = 1656$) and females ($n = 2014$), aged 18–65, in relation to physical, sexual and psychological violence and abuse within an intimate relationship. They found that although males and females reported experiencing different types of IPV, females were more likely to experience all forms of violence. Furthermore, in both males and females, all forms of IPV (including psychological violence) were significantly associated with current depressive symptoms and physical and psychological violence were associated with heavy alcohol use. In another study which used the same dataset, Coker et al. (2005) examined the relationship between IPV and posttraumatic stress disorder (PTSD) and found that PTSD mean scores were higher for females compared to males.

The work of Coker and colleagues provided a context for further exploration of issues relating to the experience of IPV and its association with psychopathology. However, this body of work did not assess IPV experience using person-orientated (also known as person-centred) methods but rather variable-orientated methods. For example, Coker et al. (2002) report that '28.9% of women and 22.9% of men experienced physical, sexual, or psychological IPV during their lifetime'. As Bogat et al. (2005) explain "These statistics, however true, belie the fact that IPV is heterogeneous as to its type and severity, its directionality, and its continuous or episodic nature" (p.51). Person-orientated methods are testing for interindividual differences among the variables of interest to demonstrate variability among victims' experiences (Nurius et al., 2011).

Up to now a relatively small number of studies have addressed IPV using person-orientated methods such as Latent Class Analysis (LCA). LCA is a statistical method which categorizes participants into latent (unobserved) subgroups based on their responses to multiple observed variables (Hagenaars & McCutcheon, 2002). Ansara and Hindin (2009) used LCA to identify IPV subgroups in a sample of Canadians aged 15 + (7,056 males, 8,360 females) and found meaningful and varied patterns of IPV subtypes among both genders. For example, 'Physical aggression' group was characterised by participants who reported less severe acts of physical aggression, while 'Severe violence, control, verbal abuse' represents those reporting multiple forms of violence and abuse. Research has also shown that certain typologies of IPV are implicated in an increased risk of specific mental health outcomes. For example, using a US community

sample of 412 females, Young-Wolff and colleagues identified three IPV subgroups and found that females in the subgroup characterized by high cumulative IPV victimisation and those in the high prevalence of past but low severity of current IPV subgroup, report more symptoms of depression, posttraumatic stress, and more alcohol and drug problems compared to females in the subgroup characterized by low cumulative IPV victimisation (Young-Wolff et al., 2013).

To date, the majority of the IPV literature which addresses victimisation patterns and associated mental health outcomes has derived from the US as demonstrated by this introductory review. These studies have been instrumental in broadening our knowledge and understanding of the area but have tended to focus on aggregated data and variable-orientated methods rather than person-centred methods (Nurius & Macy, 2010; Nurius et al., 2011). These methods assume that samples are overall homogenous in nature. Furthermore, despite the recent proliferation of research assessing the impact of PEA, much of the literature has only addressed PEA as a single construct rather than considering it in a multi-factorial format as proposed by Murphy and Hoover (1999). However, their initial research did not consider male and female experience of this type of IPV.

Building on previous research, the current study used LCA to ascertain if subgroups of victimisation exist within a sample of university students in Northern Ireland. Victimisation was assessed with variables relating to physical and sexual abuse as well as Murphy and Hoovers' psychological/emotional subtypes of Emotional Denigration, Restrictive Engulfment and Dominance/ Intimidation. Following this, multivariate multiple regression analysis was conducted to assess the associations between IPV typologies and subsequent mental health outcomes, specifically PTSD, depression, anxiety and alcohol use. It was hypothesised that (1) distinct groups reflecting different experiences of IPV will exist across both males and females and (2) participants in groups with greater probability of IPV exposure will be more likely to report negative mental health outcomes.

Methodology

Procedure and Participants

The current study used a cross sectional research design with data collected through an online survey entitled 'The experience of intimate partner violence among university students'. Eligible participants were undergraduate and postgraduate students aged 18 years or over attending one of three universities in Northern Ireland, who received a survey invitation through their university email addresses. Experience of IPV was not an inclusion criterion as comparatives between those with and without IPV experience would be made in future analysis. Potential respondents where made aware of this via study information sheets including additional measures to be included in the survey. As an incentive to complete the survey, potential participants were told that upon the completion of the survey, they would have a chance to be entered into a prize draw for £50 worth of Amazon vouchers as a way thanks for their time to complete the survey.

The initial sample consisted of 1,169 individuals who accessed the survey online and answered at least one question (6% response rate). Of these, 367 were excluded, as they did not complete any of the measures relevant to this study (For example, proceeding sections included questions on childhood maltreatment and perceived social support. See Lagdon, Ross, Robinson, Contractor, Charak & Armour, 2018). Of the remaining 802 participants, 139 were excluded, as they were missing at least 20% of the data on current study measures (i.e. not answering indicative questions such as those relating to IPV or mental health), yielding an effective sample of 753 participants. The large number of missing values was potentially caused by the length of the survey. The effective sample consisted of 184 males (24.44%) and 569 females (75.56%).

Measures

Demographic Information This included 'Age', 'Gender', 'Employment status', 'Nationality', 'Sexual orientation' and 'Relationship status', given these background variables are known to be associated with victimisation experiences (Capaldi et al., 2012).

Intimate Partner Violence Experience We utilized 24 items from the 30-item Composite Abuse Scale (CAS) (Hegarty et al., 1999) which is a commonly used self-report measure of experience of violence within intimate relationships. The item 'put foreign objects in my vagina' was changed to 'put foreign objects in my mouth, vagina or anus' to ensure that males could also answer this question. Six items were not utilised as they did not reflect the abuse domains being addressed in the current study (Ford-Gilboe et al., 2016). The 24 items are presented in Supplementary Table 1. Participants were asked to indicate how often in the past 12 months their partner did to them what was described by the CAS items (e.g., Slapped me; Tried to rape me; Told me I was stupid) using a six-point Likert scale: "never", "only once", "several times", "monthly", "weekly" or "daily". Due to the highly skewed data in the current study, we recoded the values into 0 = *never* and 1 = *at least once*. Cronbach's alpha for the 24 items in this study was 0.96.

Traumatic Exposure Stressful Life Events Screening Questionnaire for DSM-5 (Elhai et al., 2012) was used to assess participants' lifetime traumatic exposure. The measure

consists of 13 items (e.g., Were you ever in a life-threatening accident?) and participants indicate (Yes/No) whether they have ever experienced the event. In the questionnaire, participants who answered 'Yes' to at least one of the 13 questions were subsequently presented with a measure of post-traumatic stress disorder.

Post-Traumatic Stress Disorder The PTSD checklist for DSM-5 (PCL-5: Weathers et al., 2013) is a self-report measure that assesses DSM-5 symptoms of PTSD using 20 items. In the current study, participants were asked how much they have been bothered by the 20 symptoms over a four-week period (e.g., Avoiding memories, thoughts or feelings related to the stressful experience). The 20 items assess re-experiencing, avoidance, negative alterations in cognitions and mood and alterations in arousal and reactivity, which are a part of the PTSD disorder according to DSM-5. The symptoms were keyed to a previously noted 'most' stressful experience as identified by Stressful Life Events Screening Questionnaire for DSM-5 (Elhai et al., 2012). Each item within the PCL-5 comprises five response options: 'Not at all (0), A little bit (1), Moderately (2), Quite a bit (3), Extremely' (4). Responses were summed to give a total score between 0–80, with higher scores indicating greater symptomatology. Participants with no traumatic exposure were assigned a sum score of 0. Cronbach's alpha for the 20 PTSD items was 0.96 in the current study.

Depression Depression was measured using the nine-item Patient Health Questionnaire (PHQ-9: Spitzer et al., 1999). Keeping in line with the PCL-5 time period, participants were asked to report their experience of nine symptoms based on the previous four weeks (e.g., Feeling down, depressed or hopeless). Responses to items were recorded on a four-point Likert scale: 'Not at all (0), Several days (1), More than half the days (2), Nearly every day' (3). Responses were summed with the total score ranging from 0—27. Higher scores indicate more symptomatology. Cronbach's alpha for all nine items in the current study was 0.92.

Anxiety The Generalized Anxiety Disorder-7 screener (GAD-7: Spitzer et al., 2006) is a seven-item self-report measure assessing symptoms of generalized anxiety disorder (e.g., Feeling nervous, anxious, or on edge). Participants rate the responses using a four-point Likert scale: 'Not at all (0), Several days (1), More than half the days (2), Nearly every day' (3). The time period for responses was the previous four weeks. Responses were summed and total scores can range from 0–21. Higher scores mean more symptomatology. Cronbach's alpha for the seven items in the current study was 0.92.

Alcohol Use The Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993) is a brief 10-item self-report measure of a person's drinking behaviour over the past year. Participants are asked to rate the items (e.g., How often do you have a drink containing alcohol) using a Likert scale with the individual items scored from 0–4, and with total scores ranging from 0—40. The current study used the summed scores. Participants, who indicated that they never drink, were assigned a sum score of 0. Cronbach's alpha for the ten items used in the current study was 0.84.

Analytic Plan

All analyses were conducted using IBM SPSS 25 and Mplus 7.3 (Muthén, & Muthén, 2012) in two main steps. In step one, a multiple group LCA was conducted to establish patterns and prevalence of IPV, with 'Gender' as a grouping variable. Twenty-four items from the CAS were recoded into six binary variables representing four types of IPV: physical violence, sexual violence, harassment, and psychological/emotional abuse (emotion denigration, emotion restrictive engulfment, emotional dominance/intimidation). Table 1 shows the overview of variable definitions and coding. Models consisting of between one and six latent classes were estimated and compared using the Akaike Information Criterion (AIC) (Akaike, 1987), the Bayesian Information Criterion (BIC) (Schwarz, 1978), and the sample size adjusted BIC (SSABIC) (Sclove, 1987). Lower relative values on these criteria point to better fitting models. Entropy was used as an indicator of how clearly delineated the classes were, with values closer to one indicating better delineation.

In step two, a multivariate multiple regression was conducted separately for males and females in order to assess the association between latent classes and psychopathology. Participants were assigned to their most likely latent class, which was dummy coded and used as a predictor of the mental health outcomes (PTSD, depression, anxiety, alcohol use), whilst controlling for age, employment and relationship status (nationality and sexual orientation were not included in the models as the majority of the sample was white and heterosexual). There were minimal amounts (1.16%) of missing data on key study variables and these were imputed using the Expected Maximization (EM) algorithm in SPSS. The EM algorithm is a single imputation technique that uses a maximum likelihood approach to substitute all missing values in the dataset with the maximum likelihood values. The imputation process is based on the observed relationships between all the variables in the dataset and considers the uncertainty with imputing the missing values by introducing a degree of random error into the process (Acock, 2005).

Table 1 Descriptive statistics for each latent class

Variable	Males				Females			
	Class 1 ($n=89$)	Class 2 ($n=63$)	Class 3 ($n=32$)	Total ($n=184$)	Class 1 ($n=320$)	Class 2 ($n=156$)	Class 3 ($n=93$)	Total ($n=569$)
Age *M (SD)*	23.62 (7.37)	23.62 (7.14)	26.78 (10.20)	24.17 (7.90)	24.05 (6.64)	24.64 (7.17)	27.98 (10.19)	24.85 (7.59)
Ethnicity								
White *n (%)*	85 (95.51)	63 (100)	30 (93.75)	178 (96.74)	313 (97.81)	152 (97.44)	90 (96.77)	555 (97.54)
Other *n (%)*	4 (4.49)	0 (0)	2 (6.25)	6 (3.26)	7 (2.19)	4 (2.56)	3 (3.23)	14 (2.46)
Sexual orientation								
Heterosexual *n (%)*	76 (85.39)	57 (90.48)	26 (81.25)	159 (86.41)	296 (92.79)	134 (86.45)	81 (87.10)	511 (89.81)
Bisexual *n (%)*	8 (8.99)	3 (4.76)	2 (6.25)	13 (7.07)	21 (6.58)	17 (10.97)	10 (10.75)	48 (8.44)
Towards same sex *n (%)*	5 (5.62)	3 (4.76)	4 (12.5)	12 (6.52)	2 (0.63)	4 (2.58)	2 (2.15)	8 (1.41)
Employment status								
Working part-time *n (%)*	34 (38.20)	27 (42.86)	13 (40.63)	74 (40.22)	134 (41.88)	78 (50.00)	44 (47.31)	256 (44.99)
Working full-time *n (%)*	15 (16.85)	14 (22.22)	4 (12.50	33 (17.93)	71 (22.19)	27 (17.31)	7 (7.53)	105 (18.45)
Unemployed student *n (%)*	35 (39.33)	21 (33.33)	15 (46.88)	71 (38.59)	112 (35.00)	50 (32.05)	41 (44.09)	203 (35.68)
Other *n (%)*	5 (5.62)	1 (1.59)	0 (0)	6 (3.26)	3 (0.94)	1 (0.64)	1 (1.08)	5 (0.88)
Relationship status								
Single *n (%)*	33 (37.08)	27 (42.86)	14 (43.75)	74 (40.22)	61 (19.06)	47 (30.13)	45 (48.39)	153 (26.89)
Dating *n (%)*	40 (44.94)	20 (31.75)	8 (25.00)	68 (36.96)	170 (53.13)	50 (32.05)	30 (32.26)	250 (43.94)
Other *n (%)*	16 (17.98)	16 (25.40)	10 (31.25)	42 (22.83)	89 (27.81)	59 (37.82)	18 (19.35)	166 (29.17)
Mental health								
PTSD *M (SD)*	6.93 (12.79)	10.44 (14.02)	21.44 (18.34)	10.66 (15.14)	8.92 (14.68)	16.75 (20.78)	28.47 (24.15)	14.26 (19.60)
Depression *M (SD)*	5.42 (5.97)	5.56 (4.65)	8.47 (6.92)	5.99 (5.82)	6.23 (5.75)	9.29 (7.47)	11.26 (7.16)	7.89 (6.79)
Anxiety *M (SD)*	3.98 (5.32)	4.87 (4.52)	6.69 (5.57)	4.76 (5.17)	5.21 (4.92)	7.59 (6.01)	9.49 (6.35)	6.56 (5.72)
Alcohol use *M (SD)*	7.00 (6.32)	11.76 (8.01)	9.25 (7.35)	9.02 (7.39)	6.65 (4.89)	8.39 (6.28)	7.47 (6.73)	7.26 (5.67)

Note. % within class. Columns that do not add up to the class count have missing data

Results

Participants

Participants were aged between 18–63 years ($M=24.69$, $SD=7.67$), with almost half of the sample (48.21%) aged between 18–21. The majority were white (97.34%), which based on census data, is representative of the Northern Irish population at this time (Northern Ireland Statistics & Research Agency, 2013). Only a small proportion reported their sexual orientation as bisexual (8.12%) or towards the same sex (2.66%), with the majority being heterosexual (89.21%). Of note, Northern Ireland has held a conservative position on sexuality for many years, only legalising same-sex marriage during January 2020. This may have been a factor in limited participation of same sex or bisexual individuals. Many of the participants were either single (30.15%), dating (42.23%) or living with a significant other

(16.07%). A smaller proportion were married (10.36%) or separated/divorced/widowed (1.20%).

IPV and Mental Health Outcomes

Supplementary Table 2 provides an overview of the prevalence rates of IPV by type and gender. Table 1 provides demographic information and descriptive statistics for each latent class by gender. Overall, based on Mann Whitney U test (the data was not normally distributed) there were no significant differences between males and females in their PTSD scores ($U = 49{,}245.50$, $p = 0.206$), but females had significantly higher depression ($U = 43{,}778.50$, $p = 0.001$) and anxiety ($U = 40{,}994.00$, $p < 0.001$) scores, whereas males had significantly higher alcohol use scores ($U = 46{,}712.50$, $p = 0.028$). A total of 130 (17.26%) participants (26 males (14.13%) and 104 females (18.28%) met criteria for probable PTSD diagnosis, based on a cut-off score of 33 (Weathers et al., 2013). In relation to depression, a total of 118 (15.67%) participants (17 males (9.24%) and 101 females (17.75%) met the criteria for moderately severe to severe depression, based on a cut-off score of 15 (Kroenke et al., 2001). Using the cut-off score of 15 for severe anxiety (Spitzer et al., 2006), 88 (11.69%) participants would qualify for the diagnosis (14 males (7.61%) and 74 females (13.01%). Finally, a total of 327 (43.43%) participants (91 males (49.46%) and 236 females (41.48%)) consumed alcohol at hazardous level, based on a cut-off score of 8 (Saunders et al., 1993). Levels of hazardous drinking among university students has been noted within the wider literature (Davoren et al., 2016).

Table 2 Fit statistics for latent classes models

No. of classes	AIC	BIC	SSABIC	ENTROPY
1	6000.834	6060.947	6019.666	1.000
2	4782.504	4907.353	4821.618	0.941
3	**4690.691**	**4880.277**	**4750.086**	**0.882**
4	4693.965	4948.288	4773.641	0.857
5	4704.498	5023.559	4804.456	0.867
6	4724.234	5108.031	4844.473	0.871

Note. AIC = Akaike information criterion, BIC = Bayesian information criterion, SSABIC = Sample-size-adjusted Bayesian information criterion. Best-fitting model in bold

Latent Class Analysis

Fit statistics for the latent class models are presented in Table 2. As shown, the AIC, BIC and SSABIC were all lowest for the three-class model, which was therefore selected as optimal. The probability plots for the three-class model for males and females can be seen in Figs. 1 and 2 respectively.

Class 1 in both the male and female sub-sample was named the 'Low or No IPV' class and it was the largest class in both genders (males: 48.37% ($n = 89$); females: 56.24% ($n = 320$). It was characterized by very low or no probability of endorsing the IPV indicators. The only exception was the slightly elevated endorsement rate of the emotional denigration variable in the female sub-sample.

Class 2 in the male subsample consisted of 34.24% ($n = 63$) of participants and was named Male Physical abuse/ Emotional denigration victimisation. This class was characterised by an elevated probability of endorsing all the IPV items, except for sexual abuse. Emotional denigration had a particularly high endorsement rate in this class with a

Fig. 1 Profile plot and associated probabilities of endorsing the different IPV domains in the male sub-sample (n = 184, 24.44%). *Note:* Class 1 = Low or No IPV, Class 2 = Male Physical abuse/ Emotional designation victimisation, Class 3 = Male Physical/ Emotional abuse & Harassment victimisation

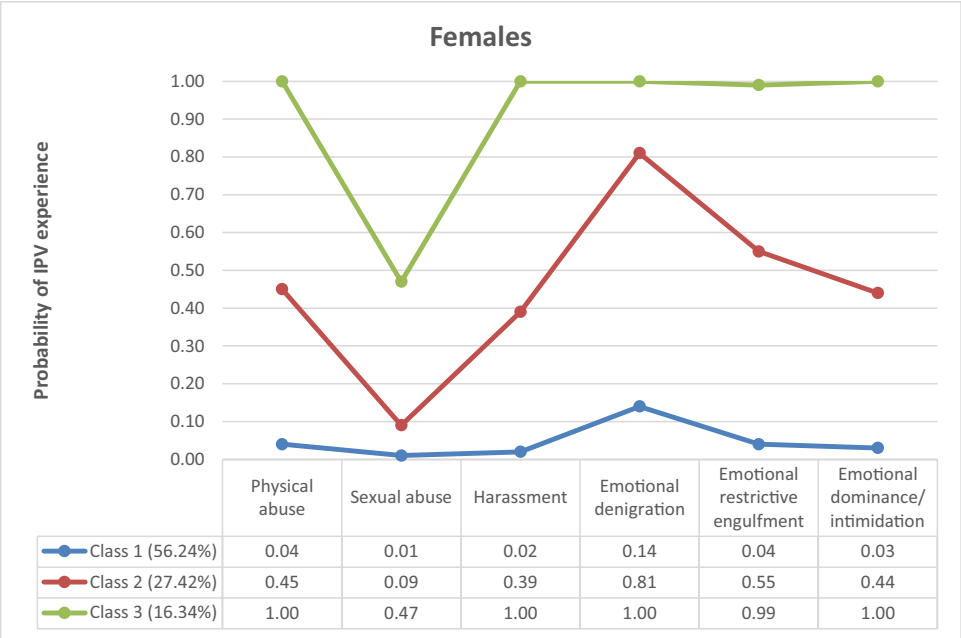

Fig. 2 Profile plot and associated probabilities of endorsing the different IPV domains in the female sub-sample (n = 569, 75.56%). *Note:* Class 1 = Low or No IPV, Class 2 = Female Physical abuse/ emotional denigration victimisation, Class 3 = Female IPV Polyvictimisation

moderate endorsement of harassment. Class 2 in the female subsample consisted of 27.42% ($n = 156$) of participants and was named Female Physical abuse/ Emotional denigration victimisation. The patterns of endorsements of the IPV items were similar to those in the male sub-sample; elevated endorsement rates of all IPV items, except for the low endorsement of sexual abuse, moderate endorsement of harassment and a high endorsement of emotional denigration.

Class 3 in the male subsample was the smallest class, consisting of 17.39% ($n = 32$) of participants. It was named Male Physical/ Emotional abuse & Harassment victimisation. The endorsement of the sexual abuse items in this class was low, but the endorsement of all the other IPV items was relatively high, with particularly high endorsements on the emotional denigration and emotional restrictive engulfment items. In the female subsample, Class 3 was also the smallest class, consisting of 16.34% ($n = 93$) of participants. It was named Female IPV Polyvictimisation. This class was characterised by elevated endorsements on all IPV indicators. With the exception of sexual abuse, the probability of endorsing all the other IPV items in this class was between 0.99 and 1.00. The endorsement of the sexual abuse item was lower, but still higher than in the other classes.

Regression Analyses

The results of the regression analyses for both males and females are presented in Table 3. In the male sub-sample, being in the Male Physical abuse/ Emotional denigration victimisation class (Class 2), compared to the Low or No IPV class was significantly associated with higher scores on alcohol use. There was no association with PTSD, depression and anxiety. However, being in the Male Physical/ Emotional abuse & Harassment victimisation class (Class

Table 3 Regression analysis results

Predictor variable	Outcome variable							
	PTSD		Depression		Anxiety		Alcohol use	
	B (SE)	*Beta (SE)*	*B (SE)*	*Beta (SE)*	*B (SE)*	*Beta (SE)*	*B (SE)*	*Beta (SE)*
Males								
Class 2	3.91 (2.14)	0.26 (0.14)	0.42 (0.86)	0.07 (0.15)	1.26 (0.78)	0.24 (0.15)	4.86 (1.19)***	0.66 (0.16)***
Class 3	13.32 (3.35)	0.88 (0.21)***	2.69 (1.35)	0.46 (0.23)*	2.58 (1.12)	0.50 (0.22)*	2.54 (1.52)	0.35 (0.21)
Females								
Class 2	7.69 (1.81)	0.39 (0.09)***	3.13 (0.67)	0.46 (0.10)***	2.57 (0.56)	0.45 (0.09)***	1.80 (0.57)	0.32 (0.10)**
Class 3	19.25 (2.82)	0.98 (0.13)***	5.37 (0.84)	0.79 (0.12)***	4.85 (0.75)	0.85 (0.13)***	0.85 (0.80)	0.15 (0.14)

Note. Class 1 was the reference group. Analyses controlled for the effects of age, employment (coded as part-time, full-time unemployed student, other) and relationship status (coded as single, dating, other). *** < .001; ** < .01; * < .05

3), compared to the Low or No IPV class, was associated with higher scores on PTSD, depression and anxiety, but not alcohol use. This model (adjusted for demographics) explained 17% of variance in the PTSD scores ($R^2 = 0.17$, $SE = 0.06$, $p = 0.007$), 11% variance in the depression scores ($R^2 = 0.11$, $SE = 0.04$, $p = 0.011$), 9% variance in the anxiety scores ($R^2 = 0.09$, $SE = 0.04$, $p = 0.024$), and 12% variance in the alcohol scores ($R^2 = 0.12$, $SE = 0.04$, $p = 0.003$).

In the female sub-sample, being in the Female Physical abuse/ Emotional denigration victimisation class (Class 2) or in the Female IPV Polyvictimisation class (Class 3), compared to the Low or No IPV class, was significantly associated with higher scores on PTSD, depression, and anxiety. The estimates were higher for the Female IPV Polyvictimisation class (Class 3). Being in the Female Physical abuse/ Emotional denigration victimisation class (Class 2) was also associated with higher scores on alcohol use, compared to the Low or No IPV class, but no such association was found for the Female IPV Polyvictimisation class (Class 3). This model (adjusted for demographics) explained 14% of variance in PTSD scores ($R^2 = 0.14$, $SE = 0.03$, $p < 0.001$), 11% of variance in depression scores ($R^2 = 0.11$, $SE = 0.03$, $p < 0.001$), 10% variance in anxiety scores ($R^2 = 0.10$, $SE = 0.03$, $p < 0.001$), and 4% of variance in alcohol scores ($R^2 = 0.04$, $SE = 0.02$, $p = 0.006$).

Discussion

The current study examined the existence of gender specific IPV typologies and their association with a range of mental health outcomes in a sample of Northern Irish university students. Three classes across both males and females were identified and were named. The finding of two classes across males and females characterized by moderate to high endorsements of different IPV indicators is not surprising given the literature which suggests that where there are reports of relationship violence, experiencing more than one type of violence within the same relationship is common (Armour & Sleath, 2014). Also, both males and females reported a high/ moderate endorsement of emotional abuse, particularly emotional denigration (Class 2 M/F) and restrictive engulfment (Class 3 M/F).

The experience of subtypes of PEA alongside physical and in some cases sexual violence, supports the theory that PEA is present where other types of abuse occur (Dutton et al., 2005; Heise et al., 2019; O'Leary, 2001). Prior research assessing the impacts of verbal emotional abuse such as denigration have found that 'ridiculing traits' associated with denigration have been rated in some cases as the most severe types of PEA (Follingstad et al., 1990; Sackett, & Saunders, 1999). Whilst some may say that findings could be reflecting unintentional verbal aggression during couple's disagreements or perhaps capturing Johnson's 'Common Couple Violence' or 'Situational Couple Violence' (Johnson, 2008) where arguments between partners can escalate into 'minor' physical altercations; the moderate and high endorsement of dominance/ intimidation suggests otherwise. Furthermore, the presence of highly endorsed dominance/ intimidation within Class 3 across both genders have been previously noted as closely related to physical violence among female victims (Murphy & Hoover, 1999; Pico-Alfonso et al., 2006). Although less is known about this construct in relation to male victims, small bodies of work which have addressed the experience of PEA subtypes and male physical violence victimisation, support this association (Randle & Graham, 2011; Walby & Towers, 2018).

In relation to IPV and mental health associations, the current study did find that despite the similarities in the patterns of IPV experiences, the relationship between Class membership and mental health differed slightly by gender. Class 2 males compared to the male Low or No IPV Class was significantly associated with higher scores on alcohol use but no association with PTSD, depression and anxiety. In contrast, Class 2 for females compared to the Low or No IPV Class was significantly associated with higher scores on PTSD, depression, and anxiety and higher scores on alcohol use.

It is pertinent to reflect on such findings whilst acknowledging that females reported higher endorsements of all IPV items which may be linked to 'greater levels of psychiatric symptomatology' (Howard et al., 2013). Indeed, Ehrensaft et al. (2006) completed a longitudinal birth cohort study measuring psychiatric disorders before and after the experience of IPV. The authors found that females who had experienced IPV were more likely than men to experience mental health problems including substance use. That said, it may also be the case that psychological symptom severity is more closely associated with greater IPV exposure regardless of gender. This is perhaps evident when reflecting on Class 3 findings for both males and females whereby participants in these Classes report greater endorsement of all IPV items compared with Class 2 males/ females and higher scores on all mental health outcomes except for alcohol use.

PTSD, depression and anxiety as a result of multiple victimisations has been well documented (Lagdon et al., 2014) supporting this association, but a particular strength of the current study was the inclusion of males and the finding of increased risk for psychopathology. While current study findings relating to males should be interpreted with caution given the small sample size available, previous research has suggested that males who experience multiple IPV types are more likely to perceive this as a traumatic experience than if the violence had been perpetrated by a stranger (Cook, 2009; Dansky et al., 1999; Hines & Douglas, 2012). Indeed, males may underreport IPV because they are embarrassed or

ashamed to admit that they are being abused by a partner, an issue for both heterosexual and same sex relationships (Barnish, 2004). As Walker et al. (2020) noted, a consequence of the continued gender debate regarding IPV victimisation is the continuance of theoretical and ideological discussions, with limited evidence and associated supports available to those with lived experience regardless of gender.

Limitations

The current study had several limitations. Firstly, participants were university students and predominantly reported as white heterosexuals which limit the generalisation of findings. This underrepresentation may have been the result of the low response rate relative to the target population which has had some implications for wider analysis. For example, because of the homogeneity of the sample in terms of ethnic background and sexual orientation, we did not include these variables in the regression analysis, as the estimates would likely be unreliable. Future research could oversample ethnic minority and non-heterosexual individuals to enable the examination of the effects of these on IPV.

Second to this is the limit of a cross sectional design and not measuring IPV or mental health history. These limitations are perhaps reflected in the limited variance explained with regards to some mental health outcomes. As noted by researchers such as Trevillion et al., (2012), mental ill health is both a risk factor and consequence of IPV.

Thirdly, no assessment of chronicity or severity of IPV was attempted in the current study and data was dichotomised in order to accommodate analysis. It is possible that differences in mental health outcomes would have emerged as a function of IPV severity as discussed.

Fourthly, the sample of male respondents in the current study was relatively small, which makes the interpretation of findings relating to males limited. Perhaps an important area for future enquire relates to participation and non-participation in IPV research more broadly, including further inspection of survey 'drop off' points which may also shed light on levels of missing data.

Fifthly, our findings suggest that experiencing IPV polyvictimisation had no association with hazardous drinking. This is contrary to the views of responding professionals who suggest that alcohol abuse is a regularly adopted coping mechanism among victims (Donnelly & Holt, 2020). Given that the study sample consisted of university students who generally are reported as having higher levels of alcohol consumption (Davoren et al., 2016), the association between IPV victimisation and alcohol use (or even alcohol abuse), may be better assessed in clinical samples.

Relatedly and finally, while university samples provided a convenient sample in which to explore complex theoretical assumptions (Hanel & Vione, 2016; Henry, 2008), such samples do differ from other adult populations. It is imperative that future research target a wider general population.

Conclusions & Implications

Our findings verify what in-depth enquiring has already ascertained from survivors (Lagdon et al. 2015), the experience of IPV seldom involves exposure to a single abuse tactic. Stark (2007) coined the term 'coercive control' as a descriptive for a pattern of oppressive behaviour underpinned by PEA. The literature suggests that PEA may precede physical abuse during some relationships (Leonard & Senchak, 1996) further highlighting the importance of understanding and being able to identify discrete and non-physical forms of abuse. Legal frameworks have also been broadened to better capture the victim experience with the development of legislation in some countries (e.g. Norway, England, Northern Ireland), making an offense of coercive and controlling behaviour within intimate and familial relationships (Walby & Towers, Dokkedahl et al., 2019).

It is important as researchers that we continue to capture the multidimensionality of IPV victimisation within research and in doing so, acknowledge PEA as a violent typology. An important endeavour for future research includes focusing on designing and developing clear measures of PEA and validating these across different demographics including gender. Important within such measures is its ability to capture the 'pattern', including some indication of intention and duration so as not to misinterpret 'simple partner assaults occurring outside the context of coercive control' (Stark & Hester, 2019. p.87). The continued use of person-orientated statistical analysis techniques will also support this, particularly with regards to mapping associations with victim mental health. Further, the need for definitional clarity of PEA extends to the general public (Lagdon et al., 2022). If we cannot agree and demonstrate the signs and behaviours associated with PEA independent of other forms of violence, how do we expect victims to acknowledge and report this type of abuse before escalation of further violence.

Additionally, although the association between Class membership and mental health outcomes slightly differed across gender, our findings clearly demonstrate the association between IPV and mental health outcomes further supporting the provision need of mental health support for all victims of IPV. We also suggest that the strategic health, social service and public safety response in any region to IPV victims, both male and female, needs to be methodical and considerate of a victim's pathway to support. Many victims do not officially report their abuse but may seek help via alternative health and social care services as a result of struggling mental health. Questions regarding IPV, including PEA, should form part of routine enquiry. In addition, it is also important to recognise that mental health outcomes

may be experienced by victim's co-morbid. For example, research has queried as to whether the symptom similarities across anxiety and depression may partly account for their co-morbidity (Elklit et al., 2010). The development of comprehensive screening and assessment tools within such services may be helpful towards treatment planning in cases of IPV.

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Declarations

Ethical Approval Research approved by Ulster University Research Ethics Filter Committee, School of Psychology.

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