Journal of Psychiatric Research 47 (2013) 1134–1142

Contents lists available at SciVerse ScienceDirect

Journal of Psychiatric Research

journal homepage: www.elsevier.com/locate/psychires

Review

Prevalence and risk of experiences of intimate partner violence among people with eating disorders: A systematic review

Louise Bundock [a], Louise M. Howard [a], Kylee Trevillion [a], Estelle Malcolm [a], Gene Feder [b], Siân Oram [a,*]

[a] King's College London, Institute of Psychiatry, De Crespigny Park, Denmark Hill, London SE5 8AF, United Kingdom
[b] Centre for Academic Primary Care, School of Social and Community Medicine, University of Bristol, 39 Whatley Road, Clifton, Bristol BS8 2PS, United Kingdom

ARTICLE INFO

Article history:
Received 4 December 2012
Received in revised form
20 March 2013
Accepted 29 April 2013

Keywords:
Eating disorder
Anorexia nervosa
Bulimia nervosa
Intimate partner violence
Domestic violence

ABSTRACT

Objectives: To estimate the prevalence and risk of lifetime and past year intimate partner violence (IPV) among males and females with eating disorders.
Methods: Systematic review. We searched 15 electronic databases, supplemented by hand searching, citation tracking, updating a review on victimisation and mental disorder and expert recommendations.
Results: Eight papers were included, involving 6775 females and 4857 males. Individual studies reported that eating disorders are associated with a high prevalence and increased odds of lifetime IPV among both males and females. Evidence is lacking on eating disorder and past year IPV, on whether associations between eating disorder and IPV vary by type of IPV, and temporality.
Discussion: More research is needed to investigate the strength and nature of the association between eating disorders and IPV, including with regards to the direction of causality between eating disorders and IPV, and whether associations are mediated by childhood abuse.

1. Introduction

Intimate partner violence (IPV) refers to acts of physical, sexual, or emotional abuse, and coercive or controlling behaviours, perpetrated by a current or former partner. IPV is a public health problem associated with substantial physical and psychological morbidity (Campbell, 2002; Golding, 1999; Howard et al., 2010b) and, as a consequence of victims' increased use of health services compared to those not abused, (MacMillan et al., 2006; Rivara et al., 2007) significant healthcare costs. The direct medical and mental healthcare costs associated with domestic violence are estimated to exceed $4 billion each year in the USA alone (Centers for Disease Control and Prevention & National Center for Injury Prevention and Control, 2003). Little is known about the relationship between IPV and eating disorders, despite evidence that psychiatric patients experience a high prevalence of IPV (Oram et al., 2013) and substantial literature on the association between eating disorder and childhood abuse (Rayworth et al., 2004; Wonderlich et al., 1997).

IPV affects the lives of hundreds of thousands of people around the world each year. The WHO multi-country study on women's health and violence, conducted in ten countries, reported that the prevalence of lifetime physical or sexual IPV ranged from 15% to 71% and that the prevalence of past year physical or sexual IPV ranged from 4% to 54% (Garcia-Moreno et al., 2006). In all but one site, women were at higher risk of violence perpetrated by a partner than by other people. No similar global estimates exist for the prevalence of being a victim of IPV among men. Studies conducted in the USA and UK suggest the prevalence of isolated incidents of violence reported by men and women is comparable (Howard et al., 2010a). However, women are more likely to sustain physical and psychological injuries as a result of violence from an intimate partner, and to report multiple incidents of violence (Black et al., 2011; Walby and Allen, 2004).

Despite the growing literature on the association between IPV and mental ill-health, (Golding, 1999; Howard et al., 2010b; Trevillion et al., 2012) reviews of risk factors for eating disorders have not examined the role of IPV (Kallivayalil, 2010; Polivy and Herman, 2002; Stice, 2002). A recent review, restricted to primary studies which reported on formally diagnosed mental disorders, identified only one study that assessed eating disorder and

* Corresponding author. Section for Women's Mental Health, Institute of Psychiatry, Box PO31, David Goldberg Centre, De Crespigny Park, Denmark Hill, London SE5 8AF, United Kingdom. Tel.: +44 (0) 20 7848 5129; fax: +44 (0) 20 7277 1462.
E-mail address: sian.oram@kcl.ac.uk (S. Oram).

0022-3956
http://dx.doi.org/10.1016/j.jpsychires.2013.04.014

IPV (Trevillion et al., 2012). We therefore aimed to systematically review the literature to estimate the prevalence and odds of IPV (lifetime and past year) among males and females with eating disorders identified using diagnostic or screening instruments.

2. Methods

2.1. Search strategy

The review followed MOOSE and PRISMA guidelines and the protocol is registered with the PROSPERO database of systematic reviews (http://www.crd.york.ac.uk/prospero); registration number CRD42011001281 (Moher et al., 2009; Stroup et al., 2000). A completed PRISMA checklist is provided as Supplementary Information. In the first stage, we conducted an electronic search of 15 bibliographic databases (see Supplementary Information for a list of databases used), updated a systematic review on the victimisation of people with severe mental illness, (Maniglio, 2009) hand searched three key journals (Trauma Violence and Abuse, Journal of Traumatic Stress, and Violence Against Women), conducted backwards and forwards citation tracking, and sought expert recommendations. Electronic databases were searched, using Medical Subject Headings (MeSH) and text words, from their dates of inception up to 31st March 2011. Terms for IPV were adapted from Cochrane protocols and peer-reviewed literature reviews and terms for mental disorders were adapted from NICE guidelines (Friedman and Loue, 2007; NICE, 2008; Ramsay et al., 2009). The search strategy for Medline, EMBASE and PsycINFO is provided as Supplementary Information. In the second stage, we hand searched three eating disorder journals (International Journal of Eating Disorders, European Review of Eating Disorders, and Eating Disorders) and conducted additional backwards and forwards citation tracking.

2.2. Selection criteria

Studies were eligible for inclusion in this review if they: (a) included people who were 13 years or older and were assessed as having an eating disorder using a validated diagnostic instrument or screening instrument; (b) presented the results of peer-reviewed research based on experimental studies (e.g. randomised controlled trials, non-randomised controlled trials, parallel group studies), before-and-after studies, interrupted time series studies, cohort studies, case-control studies, or cross-sectional studies; and (c) measured the prevalence or risk of IPV. We defined IPV as acts of physical, sexual or emotional abuse, alone or in combination, and a range of controlling or coercive behaviours, perpetrated by current or former partners. When we identified multiple eligible papers from the same study only the paper reporting the largest sample size of relevance to the review was included.

2.3. Data extraction and quality appraisal

Two reviewers (SO and KT) screened the downloaded titles and abstracts against the inclusion criteria. If it was unclear whether a reference met the inclusion criteria, it was taken forward to the next stage of screening. Two reviewers (SO and KT) assessed the full texts of potentially eligible studies. If studies collected data on the prevalence and/or risk of IPV but did not report it, authors were contacted for further information. Data from included papers were extracted by two reviewers (LB and EM). Extracted data included details of the study design, sample characteristics, measures of mental disorder and IPV and the prevalence and risk of experiencing IPV. The quality of included studies was independently appraised by two reviewers (LB and EM) using criteria adapted from validated tools (Public Health Resource Unit, 2006). Reviewers compared scores and resolved disagreements before allocating a final appraisal score. The quality appraisal checklist includes items assessing study selection and measurement biases and is provided as Supplementary Information. Table 1 presents quality appraisal scores for each study.

2.4. Data analysis

Prevalence, odds ratios and 95% confidence intervals were calculated for IPV among men and women by type of eating disorder. When calculating odds ratios, the control group was people with no mental disorder. Prevalence and unadjusted odds ratios were also calculated separately by period (lifetime and past year). Adjusted odds ratios were extracted from primary studies if reported.

3. Results

3.1. Key features

Eight studies were included in the review, reporting on a combined sample of 6775 women and 4857 men. The study selection process is presented in Fig. 1. As shown in Table 1, all eight studies were conducted in high income settings. Five studies were conducted in a clinical setting (i.e. clinics or mental health services) and three used data from large scale epidemiological surveys: the third UK Adult Psychiatric Morbidity Survey (APMS), the US National Co-morbidity Survey-Replication (NCS-R), and the Dunedin Multidisciplinary Health and Development Study. Four studies included both men and women in their samples and four included only women. The mean age of participants across the eight studies

Table 1
Summary of key features of included studies ($n = 8$).

	Total ($n = 8$)
Gender	
Female only	4
Male only	0
Female or male	4
Setting	
Clinical only	5
Non-clinical	3
Region	
North America	3
Europe	3
Australasia	2
Eating disorder*	
Anorexia nervosa	2
Bulimia nervosa	4
Binge eating disorder	1
Any eating disorder	4
Assessment of eating disorder:	
Diagnostic interview schedule	2
Structured clinical interview for DSM-IV	2
Composite international diagnostic interview	1
SCOFF	1
Clinical interviews using DSM criteria	2
Recency of intimate partner violence*	
Lifetime	6
Past year	3
Type of intimate partner violence*	
Physical	6
Sexual	2
Psychological	1
Physical or psychological (combined)	1
Assessment of intimate partner violence	
Validated instrument	1
Modified instrument	3
Single item measure	2
Not stated	2

*As categories are not mutually exclusive, totals may exceed eight.

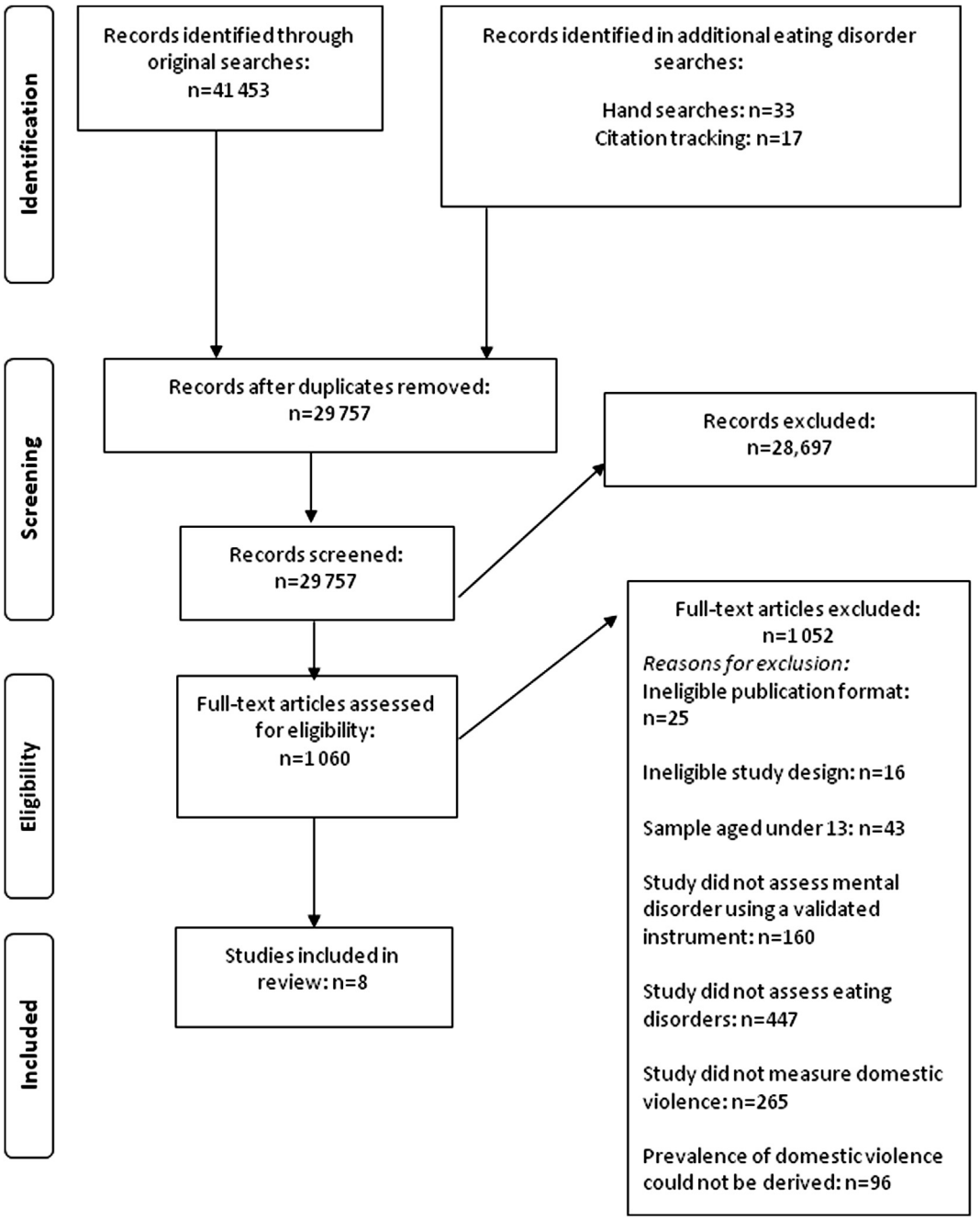

Fig. 1. Flow chart showing study selection process.

ranged from 17.7 to 44 years. Full details of study design, sample size and outcomes are provided in Table 2.

3.2. Prevalence and odds of intimate partner violence among people with an eating disorder

Results are reported by type of eating disorder (bulimia nervosa, anorexia nervosa, binge eating disorder, and eating disorder unspecified).

3.3. Bulimia nervosa

Lifetime: Four studies reported on lifetime IPV among people with bulimia nervosa. Among women, a large nationally-representative household survey and a small community-based survey reported the prevalence of lifetime physical IPV to be 34.6% and 40.0%, respectively, (Kaner et al., 1993; Mitchell et al., 2012) and a third, a small clinic-based survey, reported a prevalence of 22.7% (Root, 1988). Lifetime experiences of sexual IPV were measured by one study, also conducted in a clinical setting, which reported a prevalence of 15.4% (Waller, 1991). Only one study measured IPV among men with bulimia nervosa, and reported a prevalence of lifetime physical IPV of 66.7% (Mitchell et al., 2012).

Past year: No studies reported on past year IPV among men or women with bulimia nervosa.

3.4. Anorexia nervosa

Lifetime: Two studies measured IPV among people with anorexia nervosa. The first, a large nationally representative

Table 2
Characteristics and outcomes of included studies ($n = 8$).

Author and year	Country	Sample	Method	Prevalence of eating disorder	Prevalence of intimate partner violence (IPV)	Prevalence & odds ratio (OR) of IPV	Quality appraisal score
(Brown et al., 2009)	Australia	$N = 45$ males $N = 53$ females	Cross sectional survey of a consecutive sample of outpatients at a public youth mental health service in Melbourne, Australia for people aged 15 and 25 years. Past year physical dating violence was assessed by a single item from the Youth Risk Behaviour Survey. Psychiatric disorder assessed during clinical interview using the Structured Clinical Interview for DSM-IV (SCID-IV).	Eating disorder: 8/98 (8.2%) Other disorder: 90/98 (91.9%) No disorder: 0/98 (0.0%)	Past year physical dating violence: 26/98 (26.9%)	*Males and females:* With eating disorder: 0/26 (0%) No disorder: n/a OR: n/a	Total score: 27/40 Selection quality score: 8/14 Measurement quality score: 10/14
(Danielson et al., 1998)	New Zealand	$N = 461$ women	Single wave of cohort study (Dunedin birth cohort) using data collected during interview at age 21 years. Past year physical partner violence assessed using Conflict Tactics Scale (CTS). DSM-III psychiatric disorder assessed using DIS.	Eating disorder: 11/461 (2.3%) Other disorders: 186/461 (40.3%) No disorder: 264/461 (57.3%)	Past year physical partner violence: 115/461 (24.9%)	*Women:* With eating disorder: 7/11 (63.6%) No disorder: 51/264 (19.3%) OR: 7.31 (1.76–35.10) $P = 0.0004$	Total score: 31/40 Selection quality score: 11/14 Measurement quality score: 12/14
(Jonas et al.)-unpub'd*	UK	$N = 3592$ men $N = 3801$ women	Nationally representative cross sectional of household residents in England. Sampling used a two-stage random probability design. Weighted prevalence and odds ratios are presented. Lifetime and past year physical and emotional partner violence assessed using questions adapted from the British Crime Survey. Psychiatric disorder assessed using the Clinical Interview Schedule (Revised), possible eating disorder using the SCOFF questionnaire, possible PTSD using the Trauma Screening Questionnaire, and possible psychosis using the Psychosis Screening Questionnaire.	*Men:* Eating disorder: 0.6% Other disorder: 12.7% No disorder: 86.7% *Women:* Eating disorder: 2.5% Other disorder: 18.4% No disorder: 79.1%	*Men:* Lifetime partner violence: 18.7% Past year partner violence: 5.0% *Women:* Lifetime partner violence: 27.8% Past year partner violence: 6.1%	*Men:* Lifetime partner violence With eating disorder: 34.3% No disorder: 15.9% OR: 2.77 (0.95–8.0) $P = 0.062$ Past year partner violence: With eating disorder: 16.4% No disorder: 3.9% OR: 4.79 (1.27–18.0) $P = 0.021$ *Women:* Lifetime partner violence With eating disorder: 60.4% No disorder: 22.1% OR: 5.38 (3.27–8.0) $P = 0.000$ Past year partner violence: With eating disorder: 25.1% No disorder: 3.5%	Total score: 34/40 Selection bias: 10/14 Measurement bias: 13/14

(*continued on next page*)

Table 2 (*continued*)

Author and year	Country	Sample	Method	Prevalence of eating disorder	Prevalence of intimate partner violence (IPV)	Prevalence & odds ratio (OR) of IPV	Quality appraisal score
						OR: 9.16 (5.16–16.0) $P = 0.000$	
(Kaner et al., 1993)	USA	$N = 37$ women	Cohort study of community sample of women. 35 bulimic and 35 control women assessed at baseline. 20 bulimic women and 17 control women assessed at 1 year follow up. DSM-III bulimia nervosa assessed at baseline using the Diagnostic Interview Schedule. Control women were screened for eating disorders, major psychoses, alcoholism, major depression requiring hospitalisation, and medical disorders that could affect eating behaviour or body weight. Physical partner violence assessed by self-administered questionnaire using the Physical Abuse Questionnaire.	Bulimia nervosa: 20/37 (54.1%) No major disorder: 17/37 (45.9%)	Lifetime partner violence: 9/37 (24.3%)	*Women:* With eating disorder: 8/20 (40.0%) No major disorder: 1/17 (5.9%) OR: 10.7 (1.1–502.1) $P = 0.0159$	Total score: 18/40 Selection quality score: 4/14 Measurement quality score: 7/14
(Leithner et al., 2009)	Austria	$N = 424$ women	Survey of women attending the Women's Psychosomatic Outpatient Clinic run by the Department of Obstetrics and Gynaecology at Vienna General Hospital. DSM-IV psychiatric diagnoses assessed during clinical interviews. Domestic violence assessed during interviews; no instrument specified	Eating disorder: 5/424 (1.2%) Other disorder: 419/424 (98.8%) No disorder: 0/424 (0.0%)	Any lifetime partner violence: 62/424 (14.6%) Lifetime physical partner violence: 38/424 (7.9%) Lifetime sexual partner violence: 11/424 (2.6%) Lifetime psychological partner violence: 44/424 (10.4%)	*Women:* Any lifetime partner violence With eating disorder: 0/5 (0.0%) No disorder: n/a OR: n/a Lifetime physical partner violence With eating disorder: 0/5 (0.0%) No disorder: n/a OR: n/a Lifetime sexual partner violence With eating disorder: 0/5 (0.0%) No disorder: n/a OR: n/a *Lifetime psychological partner violence* With eating disorder: 0/5 (0.0%) No disorder: n/a OR: n/a	Total score: 23/40 Selection quality score: 8/14 Measurement quality score: 8/14
(Mitchell et al., 2012)	USA	$N = 1220$ men $N = 1760$ women	Nationally representative cross sectional survey (National Co-morbidity Survey-Replication). Eating disorder assessed among a probability sub-sample. Weighted prevalence and odds ratios are presented.	*Men:* With anorexia nervosa: 0.3% With bulimia nervosa: 0.5% With binge eating disorder: 2.0% No disorder: data not available *Women:* With anorexia nervosa: 0.9% With bulimia nervosa: 1.5%	*Men:* Lifetime physical partner violence: 18/1220 (1.5%) *Women:* Lifetime physical partner violence: 234/1760 (13.3%)	*Men:* With anorexia: 25.0% No disorder: data not available OR: n/a With bulimia: 66.7% No disorder: data not available	Total score: 33/40 Selection quality score: 11/14 Measurement quality score: 11/14

			Lifetime physical partner violence assessed using items derived from the Conflict Tactics Scale (CTS). DSM-IV psychiatric disorder assessed using the CIDI.	With binge eating disorder: 3.5% No disorder: data not available		OR: n/a With binge eating disorder: 12.5% No disorder: data not available OR: n/a *Women:* With anorexia: 18.8% No disorder: data not available OR: n/a With bulimia: 34.6% No disorder: data not available OR: n/a With binge eating disorder: 24.2% No disorder: data not available OR: n/a	
(Root, 1988)	USA	$N = 172$ women	Clinical sample of consecutive female applicants to the Bulimia Treatment Program in Seattle, Washington USA. Lifetime physical partner abuse assessed by self-administered questionnaire. Women met DSM criteria for bulimia and study criteria of a history of concurrent binge-eating and purging behaviour.	With bulimia nervosa: 172/172 (100.0%) No disorder: 0/172 (0.0%)	Lifetime physical partner violence: 39/172 (10.5%)	*Women:* With bulimia nervosa: 39/172 (22.67%) No disorder: n/a OR: n/a	Total quality score: 20/40 Selection quality score: 8/14 Measurement quality score: 4/14
(Waller, 1991)	UK	$N = 67$ women	Consecutive sample of 67 consecutive women receiving psychological therapy for eating disorders. Sexual violence assessed for 1/3 sample by self-administered Sexual Events Questionnaire, for remaining 2/3 assessed during treatment interviews – domestic violence derived from information on age at abuse and perpetrator of violence Patients met DSM-III-R criteria for anorexia nervosa or bulimia nervosa.	With anorexia nervosa: 28/67 (41.8%) With bulimia nervosa: 39/67 (58.2%) No disorder: 0/67 (0.0%)	Lifetime sexual partner violence: 6/67 (9.0%)	*Women:* With anorexia nervosa: 0/28 (0.0%) No disorder: n/a OR: n/a With bulimia nervosa: 6/39 (15.4%) No disorder: n/a OR: n/a	Total quality score: 18/42 Selection quality score: 5/14 Measurement quality score: 7/14

* Data analysed by the research team.

household survey of 7393 men and women reported that 25.0% of men and 18.8% of women with anorexia nervosa had experienced lifetime physical IPV (Mitchell et al., 2012). The second, a study of women receiving psychological therapy for an eating disorder found that none of the 28 women with anorexia nervosa had experienced lifetime sexual IPV (Waller, 1991).

Past year: No studies measured past year IPV among men or women with anorexia nervosa.

3.5. Binge eating disorder

Lifetime: One study, a nationally representative household survey, reported the prevalence of lifetime physical IPV among women with binge eating disorder to be 18.8%.and among men to be 12.5% (Mitchell et al., 2012).

Past year: No studies measured past year IPV among men or women with binge eating disorder.

3.6. Eating disorders unspecified (i.e. studies in which participants with any eating disorders were grouped)

Lifetime: Two studies did not report findings separately by type of eating disorder. One study, a nationally representative household survey of 7393 men and women, measured the prevalence and risk of lifetime IPV among men and women with any eating disorder. The study found that 60.4% of women with probable eating disorder reported lifetime physical or emotional IPV and that women with probable eating disorder had an increased risk of lifetime IPV (OR 5.4, 95% CI 3.3–8) compared to women with no disorder (Jonas et al.). A high prevalence of lifetime physical or emotional IPV was also identified among men with a probable eating disorder (34.3%), although the increase in risk was not statistically significant (OR 2.8, 95% CI 0.9–8) (Jonas et al.). A second study, conducted with women attending a psychosomatic gynaecology clinic, reported that none of the five women diagnosed with eating disorder had ever experienced IPV (Leithner et al., 2009).

Past year: Three studies measured past year physical IPV among men and women with any eating disorder. One study, a nationally representative psychiatric morbidity survey, reported a high prevalence and increased risk of IPV among both men (16.4%, OR: 4.8, 95% CI 1.3–18) and women (25.1%, OR: 9.2, 95% CI 5.2–16) with eating disorder (Jonas et al.). A second study reported a high prevalence and increased risk of past year physical IPV among women with eating disorder (63.6%, OR: 7.3, 95% CI 1.8–35.1) but did not measure IPV among men (Danielson et al., 1998). The final study, conducted among young people accessing a psychiatric outpatient service, reported that none of the eight men and women with diagnosed eating disorder reported past year physical violence within a dating relationship (Brown et al., 2009).

4. Discussion

4.1. Key findings

This systematic review found that, although evidence is extremely limited, eating disorders may be associated with a high prevalence and increased lifetime risk of IPV. The review findings also suggest that differences may exist between eating disorder subtypes with regards to the prevalence and odds of IPV. However, the limited number of studies identified means that these findings should be interpreted with caution. More research is needed to investigate the strength and nature of the association between eating disorders and IPV.

4.2. Strengths and limitations

One of the key strengths of this review is the inclusion of only studies that assessed eating disorder using either diagnostic or validated screening instruments with their recommended cut-off scores. The search strategy was comprehensive, encompassing searches of multiple electronic databases, hand searches, backwards and forwards citation tracking, and expert recommendations.

Data on eating disorder and IPV were extremely limited and the review thus highlights several important evidence gaps. It is likely that an association between eating disorder and IPV would vary with type of IPV, as eating disorders have different aetiologies (Collier and Treasure, 2004), but because most studies measured only physical IPV we were unable to assess this. We were also unable to assess either the temporality of the relationship between eating disorder and IPV or whether recovery from eating disorder is associated with a reduction in risk of IPV (or vice versa). Although two longitudinal studies were included in the review, (Danielson et al., 1998; Kaner et al., 1993) one presented data from a single time point in the study and the second assessed lifetime rather than past year IPV. Additionally, there were insufficient data to analyze the strength of association between eating disorders and recency of IPV (i.e. past year vs. lifetime). Opportunities to synthesize findings were limited by heterogeneity among the primary studies. Studies varied, for example, according to setting (e.g. clinic samples versus nationally-representative household surveys), the instruments used to assess IPV, and the reference period for which violence was measured (e.g. lifetime versus past year).

The conclusions that can be drawn from the review are limited by methodological weaknesses in the primary studies. In particular, the measurement of IPV is likely to have reduced not only the comparability but also the reliability of study findings. Only one study used a validated instrument, the Conflict Tactics Scale (CTS), to assess IPV. However, the CTS has itself been criticised for measuring acts out of context (i.e. not reporting whether acts of violence were in attack or defence), focussing on physical violence, and not eliciting information about the frequency or severity of violence (Loseke and Kurz, 2005). Three further studies adapted previously developed instruments, which may have adversely impacted validity. The remaining four studies provided no detail about how IPV was assessed or developed their own questions or single-item measures to assess IPV.

Studies also inadequately controlled for factors that may influence the relationship between eating disorder and IPV. Risk estimates reported in primary studies were not adjusted for childhood abuse, which is highly associated with both eating disorder and IPV (Desai et al., 2002; Gladstone et al., 2004; Rayworth et al., 2004; Wonderlich et al., 1997). Thus, the association between eating disorder and IPV identified by the studies included in this review may be confounded by childhood abuse. Similarly, primary studies did not adjust for co-morbid psychiatric conditions, which may also confound the association between eating disorder and IPV. There is, for example, an established association between depression and anxiety disorders and both IPV and eating disorder (Bulik, 2005; Golding, 1999; Swinbourne and Touyz, 2007).

4.3. Implications

Although limited, current evidence suggests that professionals working with people with eating disorders should be competent at addressing their patients' experiences of IPV, including safe identification and responses. The review particularly highlights, however, the need for further research to assess the prevalence and risk of IPV among women, men, and adolescents with eating disorders.

Research should be conducted using standardized and validated measures of IPV – such as the Composite Abuse Scale – which ask behaviourally-specific questions (i.e. "has a partner ever slapped or thrown something at you that could hurt you?" rather than "has a partner ever been violent towards you?") and enable analysis of the type, frequency and severity of violence (Hegarty et al., 2005). The use of single-item questions to measure IPV should be avoided, as such questions are unable to differentiate between physical, sexual, and psychological violence; between minor, moderate, and severe violence; and between frequent violence and violence that occurred on a single occasion. Future studies should be designed to allow consideration of key questions such as whether the suggested association between eating disorder and IPV differs by eating disorder subtype; whether the relationship is mediated by factors should as childhood abuse; and the direction of causality. Research should also investigate which interventions are effective in reducing IPV among men and women with eating disorders and how to improve mental health once abuse has stopped (Howard et al., 2010b). Such evidence would provide insight into the aetiology of eating disorders and help health professionals to sensitively manage risk and respond to the needs of men and women with eating disorders.

Role of funding source

LMH, SO, KT, and GF are supported by the National Institute for Health Research (NIHR) Programme Grants for Applied Research scheme (RP-PG-0108-10084). LMH is also supported by the NIHR Mental Health Biomedical Research Centre at South London and Maudsley NHS Foundation Trust and King's College London. This paper presents independent research funded by the NIHR under its Programme Grants for Applied Research scheme (RP-PG-0108-10084). The views expressed in this publication are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health. The sponsor of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Contributors

LMH and GF conceptualised and designed the review and interpreted findings. KT and SO assisted with the design of the review. KT and SO conducted the first stage literature searches and assessed the eligibility of studies. LB and EM conducted the second stage searches, assessed the eligibility and quality of studies, and analysed and interpreted data. LB and SO wrote the first draft of the manuscript. LMH, KT, EM and GF critically revised the manuscript. All authors have approved the final version of the manuscript.

Conflict of interest

LMH and GF are members of the WHO Guideline Development Group on Policy and Practice Guidelines for responding to Violence Against Women and the NICE/SCIE Guideline Development Group on Preventing and Reducing Domestic Violence. LB, KT, EM and SO declare no conflicts of interest.

Acknowledgements

We gratefully acknowledge the authors of the included primary studies for providing additional data and information required for the review.

Appendix A. Supplementary material

Supplementary data related to this article can be found online at http://dx.doi.org/10.1016/j.jpsychires.2013.04.014.

References

Black MC, Basile KC, Breiding MJ, Smith SG, Walters ML, Merrick MT, et al. The National Institute partner and sexual violence survey (NISVS): 2010 summary report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2011.
Brown A, Cosgrave E, Killackey E, Purcell R, Buckby J, Yung AR. The longitudinal association of adolescent dating violence with psychiatric disorders and functioning. Journal of Interpersonal Violence 2009;24:1964–79.
Bulik CM. Anxiety, depression and eating disorders. In: Fairburn CG, Brownell KD, editors. Eating disorders and obesity, second edition: A comprehensive handbook. New York: The Guildford Press; 2005.
Campbell JC. Health consequences of intimate partner violence. The Lancet 2002;359:1331–6.
Centers for Disease Control and Prevention, & National Center for Injury Prevention and Control. Costs of intimate partner violence against women in the United States. Atlanta: GA: Centers for Disease Control and Prevention; 2003.
Collier DA, Treasure JL. The aetiology of eating disorders. British Journal of Psychiatry 2004;185:363–5.
Danielson KK, Moffitt TE, Caspi A, Silva PA. Comorbidity between abuse of an adult and DSM-III-R mental disorders: evidence from an epidemiological study. American Journal of Psychiatry 1998;155:131–3.
Desai S, Arias I, Thompson MP, Basile KC. Childhood victimization and subsequent adult revictimization assessed in a nationally representative sample of women and men. Violence and Victims 2002;17:639–53.
Friedman SH, Loue S. Incidence and prevalence of intimate partner violence by and against women with severe mental illness. Journal of Women's Health 2007;16:471–80.
Garcia-Moreno C, Jansen H,AFM, Ellsberg M, Heise L, Watts CH. Prevalence of intimate partner violence: findings from the WHO multi-country study on women's health and domestic violence. The Lancet 2006;368:1260–9.
Gladstone GL, Parker GB, Mitchell PB, Malhi GS, Wilhelm K, Austin MP. Implications for childhood trauma for depressed women: an analysis of pathways from childhood sexual abuse to deliberate self-harm and revictimization. The American Journal of Psychiatry 2004;161:1417–25.
Golding MJ. Intimate partner violence as a risk factor for mental disorders: a meta-analysis. Journal of Family Violence 1999;14:99–132.
Hegarty K, Bush R, Sheehan M. The composite abuse scale: further development and assessment of reliability and validity of a multidimensional partner abuse measure in clinical settings. Violence and Victims 2005:529–47.
Howard LM, Trevillion K, Agnew-Davies R. Domestic violence and mental health. International Review of Psychiatry 2010a;22:525–34.
Howard LM, Trevillion K, Khalifeh H, Woodall A, Agnew-Davies R, Feder G. Domestic violence and severe psychiatric disorders: prevalence and interventions. Nov 6. Psychological Medicine 2010:1–13.
Jonas, S., Khalifeh, H., Bebbington, P., McManus, S., Brugha, T., Meltzer, H., et al. Intimate partner violence and psychiatric disorder in England: Results from the 2007 adult psychiatric morbidity survey (Unpublished).
Kallivayalil D. Narratives of suffering of South Asian immigrant survivors of domestic violence. Violence Against Women 2010;16:789–811.
Kaner A, Bulik CM, Sullivan PF. Abuse in adult relationships of bulimic women. Journal of Interpersonal Violence 1993;8:52–63.
Leithner K, Assem-Hilger E, Naderer A, Umek W, Springer-Kremser M. Physical, sexual, and psychological violence in a gynaecological-psychosomatic outpatient sample: prevalence and implications for mental health. European Journal of Obstetrics & Gynecology and Reproductive Biology 2009;144:168–72.
Loseke DR, Kurz D. Men's violence toward women is the serious social problem. In: Loseke DR, Gelles RJ, Cavanaugh MM, editors. Current controversies on family violence. 2nd ed. Newbury Park: Sage; 2005. p. 79–96.
MacMillan LH, Wathen CN, Jamieson E, Boyle M, McNutt AL, Worster A, et al. Approaches to screening for intimate partner violence in health care settings: a randomized trial. Journal of the American Medical Association 2006;296:530–6.
Maniglio R. Severe mental illness and criminal victimization: a systematic review. Acta Psychiatrica Scandinavica 2009;119:180–91.
Mitchell KS, Mazzeo SE, Schlesinger MR, Brewerton TD, Smith BN. Comorbidity of partial and subthreshold PTSD among men and women with eating disorders in the national comorbidity survey-replication study. International Journal of Eating Disorders 2012;45:307–15.
Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. PLoS Medicine 2009. 6.
NICE. The guidelines manual. London: National Institute for Health and Clinical Excellence; 2008.
Oram S, Trevillion K, Feder G, Howard LM. Prevalence of experiences of domestic violence among psychiatric patients: systematic review. British Journal of Psychiatry 2013;202:94–9.
Polivy J, Herman CP. Causes of eating disorders. Annual Review of Psychology 2002;53:187–213.

Public Health Resource Unit. CASP appraisal tools. http://www.sph.nhs.uk/sph-files/casp-appraisal-tools; 2006. Accessed on 06.01.12.

Ramsay J, Carter Y, Davidson L, Dunne D, Eldridge S, Feder G, et al. Advocacy interventions to reduce or eliminate violence and promote the physical and psychosocial well-being of women who experience intimate partner abuse. Cochrane Database of Systematic Reviews 2009. http://dx.doi.org/10.1002/14651858.CD005043.pub2. Art. No.: CD005043.

Rayworth BB, Wise LA, Harlow BL. Childhood abuse and risk of eating disorders in women. Epidemiology 2004;15:271.

Rivara FP, Anderson ML, Fishman P, Bonomi AE, Reid RJ, Carrell D, et al. Intimate partner violence and health care costs and utilization for children living in the home. Pediatrics 2007;120:1270–7.

Root MPP. The incidence of victimization experiences in a bulimic sample. Journal of Interpersonal Violence 1988;3:161–73.

Stice E. Risk and maintenance factors for eating pathology: a meta-analytic review. Psychological Bulletin 2002;128:825–48.

Stroup DF, Berlin JA, Morton SC, Olkin I, Williamson GD, Rennie D, et al. Meta-analysis of observational studies in epidemiology: a proposal for reporting. Meta-analysis of observational studies in epidemiology (MOOSE) group. Journal of the American Medical Association 2000;283:2008–12.

Swinbourne JM, Touyz SW. The co-morbidity of eating disorders and anxiety disorders: a review. European Eating Disorders Review 2007;15:253–74.

Trevillion K, Oram S, Feder G, Howard LM. Experiences of domestic violence and mental disorders: a systematic review and meta-analysis. PLoS One 2012;7, e51740. http://dx.doi.org/10.1371/journal.pone.0051740.

Walby S, Allen J. Domestic violence, sexual assault and stalking: findings from the British crime survey. London: Home Office; 2004.

Waller G. Sexual abuse as a factor in eating disorders. British Journal of Psychiatry 1991;159:664–71.

Wonderlich SA, Brewerton TD, Jocic Z, Dansky BS, Abbott DW. Relationship of childhood sexual abuse and eating disorders. Journal of the American Academy of Child and Adolescent Psychiatry 1997;36:1107–15.