Women as perpetrators of IPV: the experience of Mozambique

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Abstract

Purpose – *The purpose of this study is to examine the occurrence, severity, chronicity, and predictors of inflicted IPV among women visiting the Forensic Services in Maputo city (Mozambique) as victims of IPV by their partner.*

Design/methodology/approach – *The study was cross-sectional: the data were collected from 1,442 women over 12 months (consecutive cases) and were analysed with bivariate and multivariate methods.*

Findings – *The overall occurrence of inflicted IPV across severity (one or more types) was 69.4 percent (chronicity, mean/SD 44.8 ± 65.8). Psychological aggression was reported by 64 percent of women (chronicity, mean/SD 23.1 ± 32.4); physical assault by 38.2 percent (chronicity, mean/SD 10.3 ± 24.6); sexual coercion by 39.1 percent (chronicity, mean/SD 7.2 ± 16.2); and injuries by 22.6 percent (chronicity, mean/SD 4.2 ± 12.4). Further, 14.5 percent (chronicity, mean/SD 140.2 ± 86.3) of the women used all abuse types against their partners: 18.2 percent (chronicity, mean/SD 113.1 ± 75.9) injury, and psychological and physical abuse; 14.7 percent (chronicity, mean/SD 64.9 ± 64.3) injury, and physical and sexual abuse; 16.3 percent (chronicity, mean/SD 94.1 ± 57.2) injury, and psychological and sexual abuse; and 24.9 percent (chronicity, mean/SD 99.5 ± 72) psychological, physical, and sexual abuse. Controlling behaviours, co-occurring perpetration, abuse as a child, and certain types of own victimization were the more important factors associated with the inflicted abuse.*

Research limitations/implications – *More research into women's experiences of IPV as perpetrators, particularly in relation to co-occurring inflicted abuse, control, and abuse as a child, is warranted in Sub-Saharan Africa. An important limitation here is the lack of a control group (e.g. general population).*

Practical implications – *The present findings may be useful for the development of strategies to prevent/treat IPV in Mozambique.*

Originality/value – *In spite of its limitations, the current study may have provided new insights into women's use of violence against their partners.*

Keywords *Intimate partner violence, Domestic violence, Women as perpetrators, Own victimization, Controlling behaviours, Abuse as a child, Socio-economics, Women, Sub Saharan Africa*

Paper type *Research paper*

Introduction

In the issue of intimate partner violence (IPV), the focus is usually on women as victims and men as offenders. Studies show that IPV against women is common worldwide, not least in Sub-Saharan Africa (Amoakohene, 2004; Andersson *et al.*, 2007; Borwankar *et al.*, 2008; Chakwana, 2005; CSO, 2007; Dunkle *et al.*, 2004a, b; GSS, 2009; Jewkes *et al.*, 2001, 2002; Karamagi *et al.*, 2006; Kaye *et al.*, 2005; Khasakhala-Mwenesi *et al.*, 2004; Klomengah, 2008; Koenig *et al.*, 2003, 2004; McCloskey *et al.*, 2005; Ntaganira *et al.*, 2008; WHO, 2002, 2005).

Much of the research on IPV is unidirectional (women as victims), but there is an increased interest in investigating the issue of women as perpetrators, and in the relationship between perpetration and victimization. The importance of abuse as a child and controlling behaviours for perpetration and victimization is also attracting mounting attention. Studies indicate that women in heterosexual relationships are more likely than men or equally likely as men to use

physical and psychological violence, and that dominance, ''multiple'' forms of abuse and repeated abuse may be generally equivalent among women and men (Archer, 2000, 2002; Graham-Kevan and Archer, 2003a, b; Harned, 2001; Laroche, 2005; Moffitt *et al.*, 2001; Straus and Gelles, 1986; Straus, 2004, 2008). The sexual abuse of men by women may not be negligible (Anderson and Struckman-Johnson, 1998; Krahé *et al.*, 2003; McKeown and Kidd, 2002) and it has been reported that the rates of sexual coercion do not differ between heterosexual partners in university student samples (Hines, 2007). Even women selected to represent victims of male IPV have reported using physical violence against their male partners (Giles-Sims, 1983; Graham-Kevan and Archer, 2003a, b; Saunders, 1986).

It has been suggested that women's partner violence is a reaction/defence to men's violence (Dobash *et al.*, 1992; Hendy *et al.*, 2003; Langhinrichsen-Rohling *et al.*, 1995; Lloyd and Emery, 1994; Morse, 1995), but these claims may be at odds with data showing that where one partner is the sole perpetrator, this individual is more likely to be a woman than a man (Gray and Foshee, 1997; Morse, 1995; O'Leary *et al.*, 1989; Riggs, 1993). Women's experiences of abuse during childhood appear to be related to subsequent experiences of perpetration (Barnes *et al.*, 2009; Feerick *et al.*, 2002; Hendy *et al.*, 2003; Hines, 2007; Krahé *et al.*, 2003; Leisring *et al.*, 2003; Magdol *et al.*, 1998) and victimization (Carlson *et al.*, 2003; Coid *et al.*, 2001; Desai *et al.*, 2002; Fleming *et al.*, 1999; Merrill *et al.*, 1999; Messman-Moore and Long, 2000; Roodman and Clum, 2001; Whitfield *et al.*, 2003), and men with a history of sexual abuse during childhood are at high risk for re-victimization (sexual) as adults (Desai *et al.*, 2002; Stevenson and Gajarsky, 1991).

However, most of these studies concern Anglo-Saxon countries (e.g. the USA) and often involve high school/college couples and dating partners (Fiebert, 2010; Straus, 2004, 2008), although there is a growing number of studies with general population and community samples (Laroche, 2005; Moffitt *et al.*, 2001).

Women's abuse of their male partners and the relationship between inflicted and sustained IPV has not drawn much attention in Sub-Saharan Africa. A few studies suggest that women initiate and abuse male partners at rates from 0.5 to 27 percent (Chakwana, 2005; CSO, 2007; GSS, 2009; Khasakhala-Mwenesi *et al.*, 2004; Koenig *et al.*, 2003; UBOS, 2007; van der Straten *et al.*, 1998; WHO, 2005)[1] and males have complained of being physically abused by their female partners in Nigeria (Obi and Ozumba, 2007; $n = 600$, 5.84 percent), South-Africa (Wong *et al.*, 2008; $n = 195$, 99.4 percent) and Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Zambia and Zimbabwe (Andersson *et al.*, 2007; $n = 195$, 99.4 percent)[2]. However, these studies usually focus on physical assault and the independent contribution of important factors (e.g. socio-economic) in women's abuse of male partners may not have been sufficiently addressed nor the connection between perpetration and victimization. Although women in Sub-Saharan Africa may exert control over male partners (GSS, 2009) and their IPV experiences appear to be related to male control (Borwankar *et al.*, 2008; CSO, 2007; Dunkle *et al.*, 2004a; GSS, 2009; WHO, 2005), the contribution of control in the abuse of men has been investigated only in one study with students from Ghana (Próspero *et al.*, 2009). The findings indicate that men and women had similar rates regarding controlling behaviours, victimization and perpetration, and that control predicted IPV.

Women's experiences of abuse as children may be relatively common in Sub-Saharan Africa (Finkehor, 1994; Jewkes *et al.*, 2002; Lalor, 2004a, b; McCrann *et al.*, 2006; Ntaganira *et al.*, 2008; WHO, 2002), but only two studies observed a positive relation between abuse as a child and later IPV exposure (Jewkes *et al.*, 2002; Ntaganira *et al.*, 2008). However, to the best of our knowledge, the influence of women's experiences of abuse as a child on their adult IPV perpetration has not been addressed.

Thus, there is a shortage of studies in Sub-Saharan Africa, in particular Mozambique, concerning women as IPV offenders, even among women who are known victims of male IPV and who seek help. Also, we have not found studies where women's IPV experiences as perpetrators are addressed in relation to own experiences of abuse during childhood and sustained IPV as adults, and only one study has scrutinized the relation between controlling

behaviours and IPV. In view of the scarcity of data in Sub-Saharan Africa, not least in Mozambique, regarding women's IPV perpetration and its connection with variables such as victimization and controlling behaviours, we examined these issues in a sample of 1,500 women visiting the Forensic Services at the Central Hospital in Maputo (Maputo, Mozambique) as victims of IPV by their partner. Information about the women's IPV experiences as offenders and which factors are connected to such experiences may be useful in various ways. For instance, these data may be important to clarify whether the IPV experiences as perpetrators and related factors among women in Mozambique differ or are similar to those reported by women from other countries. By exploring these issues, we may provide confident data on their situation that could assist policy makers, and health analysts, planners and providers in tailoring interventions targeting both inflicted and sustained IPV as well as risk factors and effects.

Specifically, this study described women's IPV experiences as perpetrators during the past 12 months in relation to each abuse type (psychological, physical, sexual, injury), overall abuse and co-occurring abuse, examined the relationship between perpetration (e.g. physical), demographic/socio-economic (e.g. age) and life-style (e.g. alcohol use) variables, and identified/quantified factors associated with each type of perpetration considering other factors (e.g. abuse as a child).

Method

Setting and participants

The participants were 1,500 women aged between 15 and 49 years living in Maputo city, Mozambique (women in this age span in Maputo total 424,194). The women contacted the Forensic Services at the Maputo Central Hospital as victims of IPV by their partner and the data were gathered during one year (consecutive cases). Of this sample, 1,442 women agreed to take part in the study and 58 declined (response rate, 96.1 percent). However, the number of women responding to questions about violence perpetration totalled to 1,429/1,431 (Tables I-III).

Measures

This study focused on women's experiences of various IPV types (e.g. physical) as perpetrators and the relation of these experiences to demographic/socio-economics, life-style and other variables (e.g. abuse as a child).

''IPV'' was measured with the conflict tactics scales (CTS2) scales (Straus *et al.*, 1996), consisting of 39 items about the behaviour of the respondent and partner (78 items). The CTS2 covers negotiation (e.g. work out a problem), severe/minor psychological aggression (e.g. shout or yell), severe/minor physical assault (e.g. beat up), severe/minor sexual coercion (e.g. threaten to have sex), severe/minor injury (e.g. bruises), chronicity (how often the acts occurred) and who started the violence. The acts may have occurred once, twice, 3-5, 6-10, 11-20 or >20 times during the past year, had not occurred during the past year/but before or never occurred. Validity and reliability are good (Straus *et al.*, 1996). For this study, the questions on negotiation and who started the violence were not processed. Cronbach α's for women as perpetrators were 0.79 for physical assault, 0.73 for psychological aggression, 0.70 for sexual coercion and 0.63 for injury.

''Abuse as a child'' was measured with four open items, one each for psychological abuse (e.g. shouted or yelled at), physical abuse (e.g. beaten up), sexual abuse (e.g. forced to have sex) and injury (e.g. bruised), and chronicity (how often the acts occurred). The acts may have occurred once, twice, 3-5, 6-10, 11-20 or >20 times or never occurred[3]. The items obtained data about the respondent's exposure to violence before the age of 15 years. Cronbach α's were 0.72 for physical abuse, 0.70 for psychological abuse, 0.68 for sexual abuse and 0.71 for injury[4].

Controlling behaviours were measured with the revised form of the controlling behaviours scale (CBS-R; Graham-Kevan and Archer, 2003a, b, 2005). The 24-item CBS-R has a good

Table I The prevalence, chronicity and co-occurrence of inflicted IPV among women

Variables	*Perpetrators* n = *1,431*
Psychological aggression (*n*)	
Minor	877
Prevalence (percentage)	61.3
Chronicity, mean ± SD	16.4 ± 23.2
Severe	579
Prevalence (percentage)	40.5
Chronicity, mean ± SD	6.7 ± 14.3
Total[a]	916
Prevalence (percentage)	64
Chronicity, mean± SD	23.1 ± 32.4
Physical assault (*n*)	(1,429)
Minor	479
Prevalence (percentage)	33.5
Chronicity, mean ± SD	5.8 ± 14.5
Severe	364
Prevalence (percentage)	25.5
Chronicity, mean ± SD	4.5 ± 12.8
Total[a]	546
Prevalence (percentage)	38.2
Chronicity, mean± SD	10.3 ± 24.6
Sexual coercion (*n*)	
Minor	474
Prevalence (percentage)	33.1
Chronicity, mean ± SD	5.3 ± 11.2
Severe	268
Prevalence (percentage)	18.7
Chronicity, mean ± SD	1.9 ± 6.7
Total[a]	560
Prevalence (percentage)	39.1
Chronicity, mean± SD	7.2 ± 16.2
Injury (*n*)	
Minor	242
Prevalence (percentage)	16.9
Chronicity, mean ± SD	1.8 ± 6.1
Severe	237
Prevalence (percentage)	16.6
Chronicity, mean ± SD	2.4 ± 8.3
Total[a]	324
Prevalence (percentage)	22.6
Chronicity, mean± SD	4.2 ± 12.4
Overall abuse (*n*)[b]	
Minor	945
Prevalence (percentage)	66
Chronicity, mean± SD	29.2 ± 39.8
Severe	700
Prevalence (percentage)	48.9
Chronicity, mean ± SD	15.6 ± 32.3
Total	993
Prevalence (percentage)	69.4
Chronicity, mean ± SD	44.8 ± 65.8
Co-occurrence of abuse (*n*)	
All types[c]	207
Prevalence (percentage)	14.5
Chronicity, mean± SD	140.2 ± 86.3
Three types[d]	260
Prevalence (percentage)	18.2
Chronicity, mean± SD	113.1 ± 75.9

(*continued*)

Table I

Variables	*Perpetrators* n = *1,431*
Three types[e]	210
Prevalence (percentage)	14.7
Chronicity, mean ± SD	64.9 ± 64.3
Three types[f]	234
Prevalence (percentage)	16.3
Chronicity, mean ± SD	94.1 ± 57.2
Three types[g]	356
Prevalence (percentage)	24.9
Chronicity, mean ± SD	99.5 ± 72.0

Notes: [a]Exposed to both minor and severe; [b]exposed to minor, severe abuse (one or more types); [c]all types (injury, psychological, physical, sexual across severity); [d]injury, psychological and physical across severity; [e]injury, physical and sexual across severity; [f]injury, psychological and sexual across severity; [g]psychological, physical and sexual across severity

discriminative ability (Graham-Kevan and Archer, 2003a, b, 2005) and does not involve any items of physical aggression. Items include ''control the other's money,'' ''use nasty looks and gestures to make the other feel bad or silly,'' ''try to restrict time one spent with family or friends'' and ''try to make the other feel jealous.'' The response format has a range of 0-4 (never to always). The women were asked to report how often they used each act of control toward their partner in the past year and how often their partner used each act on them. High scores correspond to high control. Cronbach α's for women as using control and being controlled were 0.91 and 0.93[4].

Data were also gathered on life-style variables:

- use of alcohol and cigarettes in a ''yes/no'' format; and
- a body mass index (BMI) was computed for each woman with the formula kg/m^2.

In addition, we measured a range of demographic/socio-economic variables, i.e. age, marital status, children at home, housing, education, occupational status, socio-economic status, and salary/financial resources. Financial strain (concerns about how to make ends meet) was assessed with one question in a ''no/sometimes/often/always'' format. A woman was defined as experiencing financial strain if she chose any response other than ''no.'' These items were largely derived from a classification system concerning socio-economic issues, etc. which is used in Mozambique (Ministry Council – Ministry of Finances).

Design and procedure

The study was cross-sectional and data were collected during 12 months (consecutive cases) among women who contacted the Forensic Services at the Maputo Central Hospital (Mozambique) as victims of IPV by their partner[5]. In the first phase, trained female interviewers (medical students at the Faculty of Medicine/nurses at the Forensic Services) carefully informed the women about the research, the degree of their participation and the way information would be processed. Strong emphasis was put on the voluntary nature of participation, confidentiality and that non-participation would not lead to any negative effects. In the second phase, if the women agreed to take part, an interview (on average 1 hour) was conducted in a private room by means of a questionnaire (see measures)[6]. Data processing and their preservation were conducted according to the usual anonymous and confidentiality rules thus only making public results from aggregated data. Feedback information on the study will be made available to participants, on request, as aggregate data relationships. The research was approved by The National Ethical Committee at the Ministry of Health of Mozambique.

Table II Demographic/socio-economic and life-style characteristics of women as perpetrators of IPV

	Psychological (n = *1,431*)				*Physical* (n = *1,429*)			
	Yes		No		Yes		No	
Variables	n	%	n	%	n	%	n	%
Age (*years*) (n)	NS				NS			
Mean ± SD	29.7 ± 8		30.1 ± 8.8		28.7 ± 7		29.3 ± 8.6	
Marital status (n)	(1,404)	$\chi^2(3)= 48.8, p < 0.0001$			(1,402)	NS		
Single	484	54.1	256	50.3	263	49.5	476	54.7
Married/cohabitant	291	32.5	113	22.2	178	33.5	225	25.8
Divorced/separated	86	9.6	92	18.1	63	11.9	115	13.2
Widow	34	3.8	48	9.4	27	5.1	55	6.3
Children at home (n)	(1,347)	$\chi^2(1)=9.7, p = 0.0019$			(1,345)	NS		
Yes	619	71.5	381	79.2	394	76.9	605	72.6
Housing (n)	(1,407)	NS			(1,405)	NS		
Conventional[a]	777	86.2	420	83.1	440	82.2	756	86.9
Non-conventional[b]	124	13.8	86	16.9	95	17.8	114	13.1
Education (n)	(1,422)	$\chi^2(3)= 25.2, p < 0.0001$			(1,420)	NS		
No[d]	43	4.8	48	9.4	32	5.9	59	6.7
Low[e]	223	25.4	161	31.5	142	26.2	242	27.6
Inter[f]	511	55.7	249	48.7	295	54.4	463	52.7
High[g]	134	14.1	53	10.4	73	13.5	114	13
Occupational status (n)	(1,380)	$\chi^2(3)= 11, p = 0.012$			(1,378)	NS		
Blue-collar worker	483	54.6	315	63.7	291	56.2	506	58.9
Low white-collar worker	43	4.8	22	4.4	28	5.4	37	4.3
Middle/high white-collar worker	105	11.9	48	9.7	71	13.7	82	9.5
Student/other	254	28.7	110	22.2	128	24.7	235	27.3
Socio-economic status (n)	(1,416)	$\chi^2(3)= 19.9, p = 0.0002$			(1,414)	$\chi^2(3)= 19.8, p = 0.0002$		
Work for others[h]	317	34.8	148	29.3	215	39.6	249	28.6
Liberal/own business[i]	146	16	102	20.2	78	14.4	170	19.5
Student	256	28.1	109	21.6	131	24.1	233	26.7
Domestic/other[j]	192	21.1	146	28.9	119	21.9	219	25.2
Salary/financial resources (n)	(1,386)	NS			(1,384)	NS		
Yes	423	47.2	214	43.8	267	49.8	369	43.5
Financial strain (n)	(1,404)	$\chi^2(1)= 14.3, p = 0.0002$			(1,402)	NS		
Yes	743	82.3	450	89.8	444	82.9	747	86.2
BMI (n)	(1,315)	NS			(1,313)	$F(1, 1,311) = 16.8, p < 0.0001$		
Mean ± SD	24.9 ± 4.6		24.7 ± 4.8		25.5 ± 4.7		24.4 ± 4.6	
Alcohol use (n)	(1,411)	$\chi^2(1)= 11.1, p = 0.0009$			(1,410)	$\chi^2(1)=24.3, p < 0.0001$		
Yes	361	40.1	159	31.2	241	44.9	278	31.8
Cigarette use (n)	(1,398)	NS			(1,397)	$\chi^2(1)= 19.8, p < 0.0001$		
Yes	65	7.3	33	6.5	58	10.9	40	4.6

Variables	*Sexual* (n = 1,431)				*Injury* (n = *1,431*)			
	Yes		*No*		*Yes*		*No*	
	n	%	n	%	n	%	n	%
Age (*years*) (n)	NS				NS			
Mean ± SD	28.8 ± 7.8		29.3 ± 8.7		29.2 ± 7.2		29.1 ± 8.7	
Marital status (n)	(1,404)	NS			(1,404)	NS		
Single	292	53.1	448	52.5	148	47.1	592	54.3
Married/cohabitant	169	30.7	235	27.5	103	32.8	301	27.6
Divorced/separated	61	11.1	117	13.7	46	14.7	132	12.1

(*continued*)

Table II

	Psychological (n = *1,431*)				*Physical* (n = *1,429*)			
	Yes		No		Yes		No	
Variables	n	%	n	%	n	%	n	%
Widow	28	5.1	54	6.3	17	5.4	65	6
Children at home (n)	(1,347)	NS			(1,347)	$\chi^2(1)=31.9, p < 0.0001$		
Yes	394	75.8	606	73.3	266	86.6	734	70.6
Housing (n)	(1,407)	NS			(1,407)	$\chi^2(1)=7.4, p = 0.0065$		
Conventional[a]	463	84.2	734	85.6	257	80.3	940	86.5
Non-conventional[b]	87	15.8	123	14.4	63	19.7	147	13.5
Education (n)	(1,422)	$\chi^2(2)=12.3, p = 0.0065$			(1,422)	NS		
No[d]	27	4.8	64	7.4	18	5.6	73	6.6
Low[e]	138	24.8	246	28.4	94	29.2	290	26.4
Inter[f]	301	54	459	53.1	168	52.2	592	53.8
High[g]	91	16.4	96	11.1	42	13	145	13.2
Occupational status (n)	(1,380)	NS			(1,380)	$\chi^2(3)=35.4, p < 0.0001$		
Blue-collar worker	300	56.1	498	58.9	192	63.4	606	56.3
Low white-collar worker	29	5.4	36	4.3	18	5.9	47	4.4
Middle/high white-collar worker	72	13.4	81	9.6	50	16.5	103	9.5
Student/other	134	25.1	230	27.2	43	14.2	321	29.8
Socio-economic status (n)	(1,416)	$\chi^2(3)=18.6, p = 0.0003$			(1,416)	$\chi^2(3)=57.2, p < 0.0001$		
Work for others[h]	217	39.1	248	28.8	156	48.5	309	28.3
Liberal/own business[i]	93	16.8	155	18	55	17.1	193	17.6
Student	136	24.5	229	26.6	43	13.3	322	29.4
Domestic/other[j]	109	19.6	229	26.6	68	21.1	270	24.7
Salary/financial resources (n)	(1,386)	$\chi^2(1)=10.2, p = 0.0014$			(1,386)	$\chi^2(1)=18.8, p < 0.0001$		
Yes	278	51.3	359	42.5	180	56.6	457	42.8
Financial strain (n)	(1,404)	$\chi^2(1)=14.1, p = 0.0002$			(1,404)	NS		
Yes	442	80.5	751	87.8	283	88.7	910	83.4
BMI (n)	(1,315)	NS			(1,315)	$F(1, 1,313) = 19.7, p < 0.0001$		
Mean ± SD	24.9 ± 4.4		24.7 ± 4.9		25.9 ± 4.8		24.5 ± 4.6	
Alcohol use (n)	(1,411)	$\chi^2(1)=22.9, p < 0.0001$			(1,411)	$\chi^2(1)=7.9, p = 0.0047$		
emsp;Yes	245	44.5	275	31.9	139	43.6	381	34.9
Cigarette use (n)	(1,398)	$\chi^2(1)=20.4, p = 0.0001$			(1,398)	$\chi^2(1)=60.5, p < 0.0001$		
Yes	59	10.9	39	4.6	53	16.9	45	4.2

Notes: [a]Own/rent housing in cement; [b]own/rent housing in local materials; [c]student rooms; [d]cannot read/write; [e]primary school/similar; [f]secondary school/similar; [g]university/similar; [h]clerks; [i]accountants; [j]at home/unemployed

Table III Factors associated with psychological ($n = 1,136$), physical ($n = 1,168$) and sexual ($n = 1,228$) violence, and injury ($n = 1,062$) among women as perpetrators

Independent variables	*Odds ratio* / R^2 changes (in brackets) *Psychological*[a]	*CI (95 percent)* *Psychological*[a]	*Odds ratio* / R^2 changes (in brackets) *Physical*[a]	*CI (95 percent)* *Physical*[a]	*Odds ratio* / R^2 changes (in brackets) *Sexual*[a]	*CI (95 percent)* *Sexual*[a]	*Odds ratio* / R^2 changes (in brackets) *Injury*[a]	*CI (95 percent)* *Injury*[a]
Demographics/socio-economics (block 1)								
Marital status[c]			NA[b]		NA[b]		NA[b]	
Married/cohabitant	1.3	0.762-2.1						
Divorced	0.370*	0.172-0.795						
Widow	0.821	0.322-2.1						
Single[e]	1							
Children at home[c]			NA[b]		NA[b]			
Yes	0.542*	0.311-0.946					2.6**	1.4-5
No[e]	1						1	
Housing[c]	NA[b]							
Non-conventional[f]							1.1	0.581-2.2
Conventional[e,g]							1	
Education[c]			NA[b]				NA[b]	
Low[h]	2.7*	1.1-6.9			0.869	0.445-1.7		
Intermediate[i]	3.7**	1.5-9.3			0.943	0.501-1.8		
High[j]	4**	1.4-11.6			1.5	0.726-2.9		
Cannot read/write[e]	1				1			
Occupational status[c]			NA[b]		NA[b]			
Blue-collar worker	0.455	0.102-2					0.654	0.103-4.1
Low white-collar worker	0.351	0.051-2.4					1	0.122-8.2
Inter/high white-collar worker	0.337	0.058-1.9					0.917	0.127-6.6
Student/other[e]	1						1	
Socio-economic status[c]								
Work for others[k]	2.7	0.606-12.2	0.734	0.476-1.1	1.3	0.793-2.1	1.2	0.212-7.3
Liberal/own business[l]	2	0.454-9.2	0.633	0.376-1.1	1.9*	1.1-3.3	1.4	0.238-8.6
Domestic/other[m]	1.6	0.395-6.2	0.905	0.565-1.4	1	0.682-1.6	1.4	0.244-7.9
Student[e]	1		1		1		1	
Salary/financial resources[c]	NA[b]		NA[b]					
Yes					1	0.666-1.6	1.1	0.555-2
No[e]					1		1	
Financial strain[c]			NA[b]				NA[b]	
Yes	0.460**	0.256-0.826			0.554**	0.375-0.818		
No[e]	1				1			
R^2 change	(12.2)				(4)		(8.2)	
Life-style (block 2)								
BMI[d]	NA[b]		1.1**	1-1.1	NA[b]		1*	1-1.1
Drinking[c]								
Yes	0.952	0.625-1.4	1.4	0.979-1.9	1.1	0.858-1.6	0.497**	0.319-0.774
No[e]	1		1		1		1	
Smoking[c]	NA							

(*continued*)

Table III

Independent variables	*Odds ratio* / R^2 changes (in brackets) *Psychological*[a]	*CI (95 percent)*	*Odds ratio* / R^2 changes (in brackets) *Physical*[a]	*CI (95 percent)*	*Odds ratio* / R^2 changes (in brackets) *Sexual*[a]	*CI (95 percent)*	*Odds ratio* / R^2 changes (in brackets) *Injury*[a]	*CI (95 percent)*
Yes			1.1	0.489-2.6	1.2	0.66-2.4	3.3**	1.4-7.8
No[e]			1		1		1	
R^2 change	(1)		(4.6)		(2.4)		(5)	
Control over partner (block 3)								
Control[d]	1****	1-1.1	1****	1-1.1	1****	1-1.1	1**	1-1
R^2 change	(15.3)		(17.8)		(13.9)		(15.8)	
Controlled by partner (block 4)								
Control[d]	0.980**	0.967-0.994	0.994	0.984-1	0.878****	0.968-0.987	1****	1-1
R^2 change	(0.05)		(0.02)		(0.04)		(1.9)	
Perpetration (block 5)								
Psychological[c]	NA[b]							
Yes			7.4****	3.2-17.1	1.7	0.960-3.1	4.2*	1.1-16.3
No[e]			1		1		1	
Physical[c]								
Yes	3.8****	1.9-7.6	NA[b]		2****	1.4-2.8	2.9****	1.7-4.7
No[e]	1				1		1	
Sexual[c]								
Yes	1.5	0.863-2.7	2.1****	1.4-3	NA[b]		2.3***	1.4-3.7
No[e]	1		1				1	
Injury[c]								
Yes	1.7	0.643-4.5	3.5****	2.2-5.6	2.1****	1.4-3.2	NA[b]	
No[e]	1		1		1			
R^2 change	(27)		(33.6)		(20.2)		(24.1)	
Victimization (block 6)								
Psychological[c]					2.3**	1.3-4.3	1	
Yes	NA[b]		2.1	0.971-4.8	1		0.884	0.251-3.1
No[e]			1				1	
Physical[c]								
Yes	9.6****	5.4-17.1	NA[b]		1.6*	1-2.5	4.2**	1.7-10.3
No[e]	1				1		1	
Sexual[c]								
Yes	3.6****	2.2-6.1	1.2	0.819-1.9	NA		1.8	0.966-3.3
No[e]	1		1				1	
Injury[c]								
Yes	3.1**	1.5-6.2	2***	1.3-3	1.4	0.980-2.1	NA[b]	
No[e]	1		1		1			
R^2 change	(13.6)		(1.3)		(1.8)		(1.6)	
Abuse as a child (block 7)								
Psychological[c]								
Yes	0.724	0.241-2.2	1.3	0.599-2.7	1	0.540-2.1	0.537	0.214-1.3
No[e]	1		1		1		1	

(*continued*)

Table III

Independent variables	*Odds ratio* / R^2 changes (in brackets) *Psychological*[a]	*CI (95 percent)*	*Odds ratio* / R^2 changes (in brackets) *Physical*[a]	*CI (95 percent)*	*Odds ratio* / R^2 changes (in brackets) *Sexual*[a]	*CI (95 percent)*	*Odds ratio* / R^2 changes (in brackets) *Injury*[a]	*CI (95 percent)*
Physical[c]								
Yes	1.6*	1-2.4	0.919	0.644-1.3	1.1	0.790-1.5	1.2	0.765-1.8
No[e]	1		1		1		1	
Sexual								
Yes	1.7	0.558-5.5	1.9	0.837-4.4	0.647	0.334-1.2	3*	1.3-7.2
No[e]	1		1		1		1	
Injury[c]								
Yes	0.743	0.280-1.9	1.3	0.704-2.5	1.9*	1.1-3.4	1.3	0.636-2.5
No[e]	1		1		1		1	
R^2 change	(0.03)		(0.03)		(0.06)		(0.09)	
Total R^2	(69.9)		(59.5)		(43.3)		(57.5)	

Notes: Significance at: *$p<0.05$, **$p < 0.01$, ***$p < 0.001$ and ****$p < 0.0001$ levels; [a]different models are used in terms of independent variables; [b]NA, non-applicable; [c]category variables; [d]continuous variables; [e]comparison categories; [f]own/rent housing in local materials; [g]own/rent housing in cement; [h]primary school/similar; [i]secondary school/similar; [j]university/similar; [k]clerks; [l]accountants; [m]at home/unemployed

Statistical analyses

Each type of inflicted IPV (psychological, physical, sexual, injury) and co-occurring IPV[7] (all types; injury, psychological and physical; injury, physical and sexual; injury, psychological and sexual; psychological, physical and sexual) were described in terms of raw figures, percentages, and means/SD. The relation between IPV types, demographics/socio-economics and life-style were examined with ANOVAs and χ^2-tests. The significance level for bivariate analyses was set at $p < 0.0125$ and for multivariate at $p < 0.05$.

Four multiple block-wise logistic regressions were conducted to identify/quantify factors connected with inflicted IPV types, one each (psychological, physical, sexual, injury) during the past 12 months, while controlling for other possible factors. In a block-wise logistic regression, variables are entered into the regression equation block by block and the contribution of every block in explaining the dependent variable is expressed as Nagelkerke R^2 changes. Nagelkerke R^2 (Peng *et al.*, 2002) is an approximation to descriptive goodness-of-fit statistics to assess the fit of the proposed logistic model (quantify the strength of association between variables). In addition, the data were expressed in form of odds ratio and CI95 percent.

In the regressions, the candidate factors were variables that differentiated inflicted IPV types (e.g. physical) in the bivariate analyses (marital status, children at home, housing, education, occupational status, socio-economic status, salary/financial resources, financial strain, BMI, smoking and alcohol). Furthermore[8], abuse as a child (psychological, physical, sexual, injury), controlling behaviours (control over/by partner), and inflicted/sustained IPV types (e. g. physical) were added. However, the models were adapted to each of the regressions. All variables with more than two categories were transformed into dummy variables. Single data were lost for a number of variables, as indicated by the Ns and degrees of freedom.

Results

Occurrence, chronicity and co-occurrence of inflicted IPV

As shown in Table I, women used severe and minor IPV against their partners (psychological, physical, sexual, injury) as well as a combination of abuse types. About 41 percent (chronicity, mean/SD 6.7 ± 14.3) of women exposed their partners to severe psychological aggression; 25.5 percent (chronicity, mean/SD 4.5 ± 12.8) to severe physical assault; 18.7 percent (chronicity, mean/SD 1.9 ± 6.7) to severe sexual coercion; and 16.6 percent (chronicity, mean/SD 2.4 ± 8.3) to severe injury (e.g. broken bones). The overall occurrence of inflicted IPV (one or more types, across severity) was 69.4 percent (chronicity, mean/SD 44.8 ± 65.8.), and severe abuse amounted to 48.9 percent (chronicity, mean/SD 15.6 ± 32.3). Additionally, co-occurring abuse across severity showed the following patterns: 14.5 percent (chronicity, mean/SD 140.2 ± 86.3) of the women used all abuse types against their partners; 18. 2 percent (chronicity, mean/SD 113.1 ± 75.9) injury, psychological and physical abuse; 14.7 percent (chronicity, mean/SD 64.9 ± 64.3) injury, physical and sexual abuse; 16.3 percent, (chronicity, mean/SD 94.1 ± 57.2) injury, psychological and sexual abuse; and 24.9 percent (chronicity, mean/SD 99.5 ± 72) psychological, physical and sexual abuse.

Inflicted IPV in relation to demographic/socio-economic and life-style variables

Psychological aggression. As shown in Table II, psychologically abusive women were more often married/cohabitant, more often had secondary education, had children at home less, were more often student/other (occupational status), more often worked for others (socio-economic status), were less financially strained and more often used alcohol.

Physical assault. Physically abusive women more often worked for others (socio-economic status), more often used alcohol/cigarettes and had a higher BMI.

Sexual coercion. Sexually abusive women more often had secondary education, more often worked for others (socio-economic status), more often had salary/financial resources, reported less financial strain and more often used alcohol/cigarettes.

Injury. Women who inflicted injuries were less likely to have children at home, lived more often in non-conventional housing, were more often middle/high white-collar workers (occupational status), more often worked for others (socio-economic status), more often had salary/financial resources and a higher BMI, and more often used alcohol/cigarettes.

Factors associated with inflicted IPV

Psychological aggression. As shown in Table III, being divorced, having children at home and financial strain were negatively associated with psychological aggression and positively associated with any kind of education. The demographic/socio-economic block accounted for 12.2 percent of the variation in psychological aggression. Use of alcohol was the only variable in the life-style block, but was not independently associated with psychological aggression. The explained variance was 1 percent. Control in the ''control over partner'' block was positively associated with psychological aggression and control in the ''controlled by partner'' block negatively. The explained variance was 15.3 and 0.05 percent, respectively. Of the variables in the block ''perpetration'' (inflicted physical assault, sexual coercion, injury), only physical assault was positively associated with psychological aggression. The explained variance was 27 percent. All the variables in the block ''victimisation'' (sustained physical assault, sexual coercion, injury) were positively associated with psychological aggression. The explained variance was 13.6 percent. Of the variables in the block ''abuse as child'' (psychological, physical, sexual, injury), only physical abuse was associated (positively) with psychological aggression. The explained variance was 0.03 percent. Overall, the model explained 69.9 percent of the variance in psychological aggression.

Physical assault. None of the variables in the demographic/socio-economic block were independently associated with physical assault. The explained variance was 1.7 percent. Of the variables in the ''life-style'' block, only BMI was positively associated with physical assault. The explained variance was 4.6 percent. Control in the ''control over partner'' block was positively associated with physical assault. The explained variance was 17.8 percent. Control in the ''controlled by partner'' block was not independently associated with physical assault. The explained variance was 0.02 percent. All the variables in the ''perpetration'' block (inflicted psychological aggression, sexual coercion, injury) were positively associated with physical IPV. The explained variance was 33.6 percent. Of the variables in the ''victimization'' block (sustained psychological aggression, sexual coercion, injury), only injury was positively associated with physical assault. The explained variance was 1.3 percent. None of the variables in the block ''abuse as a child'' (psychological, physical, sexual, injury) were independently associated with physical assault. The explained variance was 0.03 percent. Overall, the model explained 59.5 percent of the variance in physical assault.

Sexual coercion. Of the ''demographic/socio-economic'' block, only liberal/own business was positively associated with sexual coercion and financial strain negatively. The explained variance was 4 percent. None of the variables in the ''life-style'' block were independently associated with sexual coercion. The explained variance was 2.4 percent. Control in the ''control over partner'' block was positively associated with sexual coercion and control in the ''controlled by partner'' block negatively. The explained variance was 13.9 and 0.04 percent, respectively. Of the variables in the block ''perpetration'' (inflicted psychological aggression, physical assault, injury), physical assault and injuries were positively associated with sexual coercion. The explained variance was 20.2 percent. Of the variables in the block ''victimization'' (sustained psychological aggression, physical assault, injury), only psychological and physical victimization were positively associated with sexual coercion. The explained variance was 1.8 percent. Of the variables in the block ''abuse as a child'' (psychological, physical, sexual, injury), only injury was positively associated with sexual coercion. The explained variance was .06 percent. Overall, the model explained 43.3 percent of the variance in sexual IPV.

Injury. Of the variables in the ''demographic/socio-economic'' block, only having children at home was positively associated with injury. The explained variance was 8.2 percent. BMI and smoking were positively associated with injury and alcohol negatively. The explained variance was 5 percent. Control in the blocks ''control over partner'' and ''controlled by

partner'' were positively associated with injury. The explained variance was 15.8 and 1.9 percent, respectively. All the variables in the block ''perpetration'' (inflicted psychological aggression, physical assault, sexual coercion) were positively associated with injury. The explained variance was 24.1 percent. Of the variables in the block ''victimisation'' (sustained psychological aggression, physical assault, sexual coercion), only physical victimization was positively associated with injury. The explained variance was 1.6 percent. Of the variables in the bock ''abuse as child'' (psychological, physical, sexual, injury), only sexual abuse was positively associated with injury. The explained variance was 0.09 percent. Overall, the model explained 57.5 percent of the variance in injury.

Discussion

Occurrence, chronicity and co-occurrence of inflicted IPV

As shown in Table I, 69.4 percent (chronicity, mean/SD 44.8 ± 65.8) of the women reported using one or more types of abuse (psychological aggression, physical assault, sexual coercion, injury) against their partners, and 48.9 percent (chronicity, mean/SD 15.6 ± 32.3) used severe acts.

Our figures on overall abuse are higher that those of studies (somewhat similar to ours) with general population samples from elsewhere (e.g. the USA) and in Sub-Sahara Africa (GSS, 2009; Tjaden and Thoennes, 2000; UBOS, 2007). The exception is a study from Canada reporting a prevalence rate of 71 percent (Laroche, 2005), but this study focused on physical assault with one item on sexual coercion. Concerning our findings on the chronicity (44.8 ± 65.8) and severity (48.9 percent) of abuse, they are difficult to compare to these studies as such data are not presented, or reported differently. Discrepancies may pertain to differences such as how many types of abuse are included, type of respondents, definition of abuse and methods of data collection.

Co-occurring perpetration across severity levels was relatively common, 14.5 percent (chronicity, mean/SD 140.2 ± 86.3) of the women used all abuse types against their partners; 18.2 percent (chronicity, mean/SD 113.1 ± 75.9) used injury, psychological aggression and physical assault; 14.7 percent (chronicity, mean/SD 64.9 ± 64.3) used injury, physical assault and sexual coercion; 16.3 percent, (chronicity, mean/SD 94.1 ± 57.2) used injury, psychological aggression and sexual coercion; and 24.9 percent (chronicity, mean/SD 99.5 ± 72) used psychological aggression, physical assault and sexual coercion.

As far as we know, no previous study has addressed women's use of co-occurring abuse against their partners (all types; injury, physical assault and psychological aggression; injury, physical assault and sexual coercion). One exception is a study from Ghana (GSS, 2009) in which 25.3 percent of men were exposed to any form of emotional or physical abuse or both, and 6.9 percent to any form of emotional and physical abuse. Thus, our findings may serve as an incitement to further research both cross-sectional and longitudinal.

Of all types of inflicted abuse, the most common was psychological aggression, with 64 percent (chronicity, mean/SD 23.1 ± 32.4) of women reporting using it against partners, and 40.5 percent (chronicity, mean/SD 6.7 ± 14.3) using severe acts.

Our figures of psychological aggression are higher than those observed in studies from Sub-Saharan Africa with general population samples, which report rates from 22.7 to 23.8 percent (GSS, 2009; UBOS, 2007), but lower than those reported in a Russian study with female students, i.e. 74.2 percent (Lysova and Douglas, 2008) and an American study with couples, i.e. 74 percent (Straus and Sweet, 1992). However, our figures are within the range of those presented by McKeown and Kidd (2002) in their report of 13 Anglo-Saxon studies with general population samples, i.e. 1.2-89.7 percent. Divergences may pertain to differences in sample characteristics (e.g. age) and data collection methods, and/or that our sample consisted of women who sought help for IPV experiences. Additionally, in some cases there are differences between the studies in the definition of psychological aggression. Our figures on the chronicity (23.1 ± 32.4) and severity (40.5 percent) of psychological aggression

exceed those observed in the aforementioned Russian study, i.e. 14.3 and 22.1 percent, respectively, (Lysova and Douglas, 2008). This may be due to these factors being more common/salient in women who seek help for IPV experiences than in students.

Slightly over 38 percent (chronicity, mean/SD 10.3 ± 24.6) of women had physically assaulted their partners, and 25.5 percent (chronicity, mean/SD 4.5 ± 12.8) used severe acts.

Our rates of physical aggression are greater than those shown in studies from elsewhere (e.g. the USA) and in Sub-Sahara Africa with general population and student samples, which range from 0.6 to 37.7 percent (GSS, 2009; Lysova and Douglas, 2008; McKeown and Kidd, 2002; Straus and Ramirez, 2007; Tjaden and Thoennes, 2000; UBOS, 2007). One exception is a general population study from Canada (Laroche, 2005) that reported a prevalence rate of 71 percent; although a sexual item was included. However, our rates are within the range of those presented in studies derived from the International Dating Violence Research and National Youth Survey, i.e. 16.2-48.2 percent (Chan *et al.*, 2008; Morse, 1995; Straus, 2008). Discrepancies may be due to the fact that our sample involved women who sought help for IPV experiences. However, differences in defining physical aggression and data collection methods may also be involved. Our figures on the chronicity of physical aggression (10. 3 ± 24.6) are lower than those reported with student samples (Lysova and Douglas, 2008; Straus and Ramirez, 2007), which range from 11.6 to 16.2. However, our results are within the range of those found by Morse (1995), i.e. 6.1-27.9. Our rates on the severity of physical assault (25.5 percent) are higher than those reported by others with student samples (Lysova and Douglas, 2008; Morse, 1995; Straus and Ramirez, 2007), which range from 11.4 to 22.8 percent. However, our rates are within the range of those found by McKeown and Kidd (2002) with general population samples, i.e. 4-49.6 percent. Divergences may be due to differences in sample characteristics and definition of physical abuse.

Somewhat over 39 percent of the women sexually coerced their partners (chronicity, mean/SD 7.2 ± 16.2), and 18.7 percent (chronicity, mean/SD 1.9 ± 6.7) used severe acts.

The rates of sexual coercion in our study are higher than those observed elsewhere (e.g. the USA) and in Sub-Saharan Africa with community/general population/student samples, which range from 5.7 to 28.9 percent (Chan *et al.*, 2008; Hines, 2007; Krahé *et al.*, 2003; Lysova and Douglas, 2008; McKeown and Kidd, 2002; UBOS, 2007). Differences may be related to divergences in data collection methods and/or that our sample consisted of women who sought help for IPV experiences. In some cases, sexual coercion is defined differently. Our figures on the chronicity of sexual coercion (7.2 ± 16.2) are lower than those shown in the aforementioned Russian study, i.e. 10.9 (Lysova and Douglas, 2008), which is consistent with literature documenting that IPV is highest for young women. Our results concerning the severity of sexual coercion (18.7 percent) may be difficult to compare with other studies due to a lack of such data or that the latter are presented differently.

Approximately, 23 percent (chronicity, mean/SD 4.2 ± 12.4) of the women injured their partners, and 16.6 percent (chronicity, mean/SD 2.4 ± 8.3) of the injuries were severe.

The rates of injury in our study, although in the upper range, are consistent with previous observations from elsewhere (e.g. the USA) with general population and student samples, which vary between 0.7 and 22.4 percent (Chan *et al.*, 2008; Lysova and Douglas, 2008; McKeown and Kidd, 2002; Straus, 2004). These findings suggest that the type of sample and country may not be of major importance regarding the occurrence of injuries. Our results concerning the chronicity (4.2 ± 12.4) and severity (16.6 percent) of injuries are both lower and higher than those reported in the aforementioned Russian study, i.e. 6.5 and 1.2 percent, respectively, (Lysova and Douglas, 2008). Divergences may pertain to differences in sample characteristics and data collection methods. In any case, injury severity may be more common/salient in women who seek help for IPV experiences than in university students.

In general, our prevalence rates of inflicted IPV surpass those observed in other studies, not least from Sub-Saharan Africa. Differences in rates may be partly explained by discrepancies in the definition of IPV, the population (women who sought help for IPV experiences) and data collection methods. At any rate, our findings remind us of the interactive nature of IPV. Women are not mere passive recipients of IPV, but actively involved

in inflicting it, a phenomenon also reported by others, although mainly in Western societies (Archer, 2000, 2002; Capaldi and Owen, 2001; Capaldi *et al.*, 2007; Chan *et al.*, 2008; Fiebert, 2010; GSS, 2009; Harned, 2001; Hendy *et al.*, 2003; Hines, 2007; Krahé *et al.*, 2003; Laroche, 2005; Lysova and Douglas, 2008; McKeown and Kidd, 2002; Morse, 1995; Straus, 2004; Straus and Ramirez, 2007; Tjaden and Thoennes, 2000; UBOS, 2007). Our data on the chronicity and severity of abuse are difficult to compare with other observations due to a lack of such information or the data being reported differently. However, our figures are higher than those shown in comparable studies which used a similar assessment strategy and definition of IPV, but differed in the sample characteristics.

Demographics/socio-economics/life-style related to types of IPV

The bivariate analyses showed that women who used one or more types of violence (psychological aggression, physical assault, sexual coercion, injuries) more often used alcohol and worked for others (socio-economic status), whereas those who used physical assault and sexual coercion and caused injuries were more often smokers. Women who used psychological aggression and sexual coercion more often had secondary education and were less financially strained, whereas those who used physical assault and caused injuries had a higher BMI. Women who used sexual coercion and caused injuries more often had salary/financial resources, whereas those who used psychological aggression and caused injuries more often had children at home. Finally, women who caused injuries more often lived in non-conventional housing and were more often middle/high white-collar workers, whereas those who used psychological aggression were more often married/cohabitant.

Logistic regressions revealed that only a few demographic/socio-economic and life-style variables were independently associated with inflicted IPV, i.e. low/secondary/high education levels, divorce/separation, having a liberal profession/own business, having children at home, experiencing less financial strain, BMI, and using alcohol and cigarettes. Other variables independently associated with inflicted IPV in several cases were controlling behaviours towards and by partners, own victimization, co-occurring perpetration and abuse as a child.

Correlates of inflicted IPV

Having an education and a liberal profession/own business were positively associated with psychological aggression and sexual coercion, respectively. One explanation could be that in Mozambique the empowerment conferred by education and socio-economic status, may have led the women to counteract traditional gender roles, and thus carried an increased likelihood to abuse partners in order to impose their will. It is also possible that the more educated and empowered the women were, the greater the likelihood in admitting violence towards partners. For these reasons, women may have made a rational choice to be violent when they realized that the likelihood is very low that they would be prosecuted. In addition, one can speculate that women may also understand that men have difficulties in reporting any offence because they are afraid of being institutionalized or stigmatised. Moreover, the women may have concluded that in socio-cultural context of Mozambique and elsewhere, men will not assume they are victimized. In any case, the current results seem to be in line with previous research from elsewhere, e.g. the USA (Chan *et al.*, 2008; Hines and Saudino, 2003; Hines, 2007; Krahé *et al.*, 2003; Lysova and Douglas, 2008).

Divorce/separation was negatively associated with psychological aggression. This may be explained by the termination of the relationship reducing the women's likelihood of using psychological aggression. Interestingly, our results seem to be at odds with data indicating that inflicted psychological aggression is a contributing factor in divorce/separation (Dal Grande *et al.*, 2003; Romans *et al.*, 2007). In any case, our findings require more exploration. Future research, not least longitudinal, should further clarify the association between divorce/separation and women's abuse.

The relationship between having children at home and inflicted abuse was conflicting. Having children at home was negatively associated with psychological aggression and

positively with injuries. One could speculate that this concerned the defence of the children. In the face of abuse of the children, the women would react with great anger, and opt for a tangible, unambiguous and potent response, i.e. injuries, and thereby increase the chance of diverting/stopping the abuse. It is also possible that the women were seriously criticized for their caring of the children and they reacted to this violently by injuring their partners. Data, mostly from Western countries, indicate that having children increases the ''risk'' of IPV, but usually for women as victims (Dal Grande *et al.*, 2003; Romans *et al.*, 2007). In any case, further research into the relationship between women's abuse of partners and having children at home is warranted, not least with longitudinal studies.

Financial strain was negatively associated with inflicted psychological aggression and sexual coercion. This may be due to the women being dependent on partners for their daily living and thus less inclined to use violence. In contrast, other data indicate that, for instance, low household income and unemployment, reflecting financial difficulties, increase the ''risk'' for IPV against women (Dal Grande *et al.*, 2003; Romans *et al.*, 2007). In view of our findings, longitudinal studies of the relationship between financial problems and women as abusers are warranted.

High BMI was positively associated with inflicted physical assault and injuries. One explanation may be that women were harassed by their partners due to the high BMI and they reacted to this by using violence. Another explanation would be that women with a high BMI felt very distressed (e.g. anxious) and diverted/alleviated their feelings by being violent. One could also speculate that the high BMI provided the women with a ''feeling'' of physical empowerment that facilitated the use of abuse in conflict situations. We have only found one study of the relationship between high BMI and domestic violence, with findings suggesting that obese women were at higher ''risk'' of becoming victims of IPV (Yount and Li, 2011). However, studies concerning women's experiences of physical assault and sexual coercion during childhood and military-related sexual coercion seem to ''predict'' obesity (Alvarez *et al.*, 2007; Frayne *et al.*, 2003). Considering our findings, more longitudinal research into the association between high BMI and women as abusers is indicated.

Alcohol use was negatively associated with inflicted injuries. This is apparently at odds with previous data showing a relation between alcohol use and IPV, although mainly with women as victims (Boles and Miotto, 2003; Graham *et al.*, 2004; Hines and Straus, 2007; Thompson and Kingree, 2006). In our case, one could speculate that the use of alcohol did not involve high levels of intoxication, which decreased the ''risk'' of abuse. It is also possible that the use of alcohol involved high levels of intoxication disenabling the women and thus decreased the ''risk'' of abuse. In view of our findings, more research into women's use of alcohol and their own abuse is warranted, not least longitudinally.

Using cigarettes was positively associated with inflicted injuries. This is in line with previous data showing that many women who are perpetrators of IPV smoke (Stuart *et al.*, 2005, 2006). In our case, one could speculate, for example, that the women were insulted and harassed by partners due to their smoking and this resulted in a fight with injuries. In any case, more research into the relation between women's smoking habits and own abuse is warranted, not least longitudinally.

Controlling behaviours towards partners were positively associated with all forms of inflicted abuse. One could hypothesize that in Mozambique women used coercive control as instrumental aggression to counter dominant partners, shift the dominant position in the family or obtain something blocked by dominant partners, and this would only be achieved by using violence. Interestingly, only one study in Sub-Saharan Africa has addressed this. In a sample of female and male students from Ghana, Próspero *et al.* (2009) found that both genders used a similar frequency of controlling behaviours victimization and perpetration, and that control ''predicted'' physical IPV. Studies from elsewhere (e.g. the UK), mostly about physical assault and sexual coercion, have also reported an association between controlling behaviours and victimization/perpetration among both sexes (Capaldi *et al.*, 2007; Graham-Kevan and Archer, 2003a, b, 2005, 2008; Graham-Kevan, 2009; Hines, 2007; Johnson and Leone, 2005;

Laroche, 2005; Straus, 2008). Again, in view of our findings, further research, especially longitudinal studies, into women's use of control and their own abuse is warranted.

Controlling behaviours by partners were positively associated with inflicted injuries. One explanation could be that women engaged in aggression to counter the control exercised by their partners. It is also possible that the partners used controlling behaviours to reinstate their dominance in the relationship, oppose and neutralize the perpetrators control or obtain something blocked by the perpetrators, who reacted by using injurious acts. Paradoxically, controlling behaviours by partners were negatively associated with inflicted psychological aggression and sexual coercion. This finding is not easily to explain, but may be due to different patterns of response among women. Some women may not have accepted their partner's control and reacted violently, while others, because they were afraid of the consequences, accepted the control and thus were less likely to use violence. In any case, our findings to some extent appear to be in line with the aforementioned data from Ghana (Próspero *et al.*, 2009) and elsewhere (e.g. the UK), reporting a relation between controlling behaviours and victimization/perpetration among both sexes, although mostly concerning physical/sexual violence (Capaldi *et al.*, 2007; Graham-Kevan and Archer, 2003a, b, 2005, 2008; Graham-Kevan, 2009; Hines, 2007; Johnson and Leone, 2005; Laroche, 2005; Straus, 2008).

There was an association between sustained and inflicted IPV. Sustained physical aggression, sexual coercion and injuries were associated with inflicted psychological aggression; injuries with physical assault; psychological aggression and physical assault with sexual coercion; and physical assault with injuries. Along similar lines, the different types of inflicted abuse tended to overlap and co-occur, i.e. inflicted psychological aggression with physical assault, sexual coercion and injuries; physical assault with injuries; sexual coercion with psychological aggression and physical assault, and injuries with physical assault. Little attention has been paid to these associations in Sub-Saharan Africa, although a few studies suggest that women take the initiative and abuse male partners (Chakwana, 2005; CSO, 2007; GSS, 2009; Khasakhala-Mwenesi *et al.*, 2004; Koenig *et al.*, 2003; UBOS, 2007; van der Straten *et al.*, 1998; WHO, 2005). Data from elsewhere (e.g. the USA) also indicate that women's perpetration of abuse may be, for instance, defence and retaliation reactions to a partner's abuse (Dobash *et al.*, 1992; Hendy *et al.*, 2003; Langhinrichsen-Rohling *et al.*, 1995; Lloyd and Emery, 1994; McKeown and Kidd, 2002; Morse, 1995). However, we did not ask the women what the reasons were for their abusive acts. Overall, this pattern of results clearly indicates that women are involved in complex, highly violent relationships, the reasons for which need to be further disentangled in future research with more appropriate designs than the cross-sectional approach. More precisely, there is a need for further research on women's patterns of perpetration and mechanisms over time (longitudinally). In any case, our results are consistent with data from Sub-Saharan Africa and elsewhere (e.g. the USA) with different samples showing that women can be violent (Anderson and Struckman-Johnson, 1998; Andersson *et al.*, 2007; Archer, 2000, 2002; Chakwana, 2005; CSO, 2007; Dobash and Dobash, 2004; Fiebert, 2010; Giles-Sims, 1983; Graham-Kevan and Archer, 2003a, b; Gray and Foshee, 1997; GSS, 2009; Harned, 2001; Hendy *et al.*, 2003; Hines, 2007; Khasakhala-Mwenesi *et al.*, 2004; Koenig *et al.*, 2003; Krahé *et al.*, 2003; Langhinrichsen-Rohling *et al.*, 1995; Laroche, 2005; Lloyd and Emery, 1994; McKeown and Kidd, 2002; Moffitt *et al.*, 2001; Morse, 1995; O'Leary *et al.*, 1989; Obi and Ozumba, 2007; Riggs, 1993; Saunders, 1986; Straus and Gelles, 1986; Straus, 2004, 2008; UBOS, 2007; van der Straten *et al.*, 1998; WHO, 2005; Wong *et al.*, 2008).

Three types of sustained abuse during childhood (physical, sexual, injuries) were positively associated with inflicting violence during adulthood. Physical abuse during childhood was associated with psychological aggression; sexual abuse with injuries; and injuries with sexual coercion. One could hypothesise that women who were abused during childhood learned that violence is a central and acceptable ''tool'' when, for example, dealing with disagreements, communicating and expressing emotions in relationships. This may have resulted in the development of cognitive, behavioural, attitudinal and emotional patterns consistent with the learning experiences. The women would have ''distorted views'' of what

relationships are about, what their roles in the relationship are and what can be expected from partners, thus increasing the likelihood of using violence in an intimate relationship. In fact, the women could have a tendency to select partners that are consistent with their ''distorted views'' and act thereafter. In any case, our findings seem in line with observations that abuse during childhood can lead to perpetration as an adult (Barnes *et al.*, 2009; Feerick *et al.*, 2002; Hendy *et al.*, 2003; Hines, 2007; Krahé *et al.*, 2003; Leisring *et al.*, 2003; Magdol *et al.*, 1998). In view of our findings, further research into the relationship between abuse during childhood and women's perpetration of violence as adults is warranted, not least longitudinally.

Limitations

First, issues of causality cannot be resolved with a cross-sectional approach. Another type of design is required, i.e. repeated measures, to determine causality. Second, the women were recruited in Maputo city, had previous IPV experiences and a control group (e.g. general population) was not included. The sample may not be representative of women in the rest of the country and their IPV experiences could differ from those of women in general. The women may not even be representative of women with previous experiences of IPV. Thus, the generalisability of the study's results cannot be guaranteed. On the other hand, the aim of this study was to examine women with known IPV experiences and our findings seem to be congruent with research using different samples. Third, our women were known to the Forensic Services for their IPV experiences, but no objective measurement of all their experiences was conducted (e.g. hospital records of child abuse). Thus, the accuracy of data was to a great extent dependent on the women's subjective assessment of their situation. Fourth, the measurement of alcohol use in a ''yes/no'' form may have been too rudimentary to fully capture its influence on violence. The results could have been different, for example, had we measured drinking patterns such as how much alcohol was consumed in a typical drinking day. Fifth, although the CTS2 have some limitations (e.g. cover a limited number of psychological abuse dimensions), the CTS2 is the most widely used instrument for identifying IPV, and indeed captures central facets of IPV in a reliable and valid way (Straus *et al.*, 1996). In spite of these limitations, the current study may have provided new insights into women's use of violence against their partners.

Conclusions

The frequency and chronicity levels of abuse by the women in this study were marked. Particularly worrying was the degree of inflicted severe IPV and its chronic character as well as the co-occurring abuse, but also the abuse of these women as an adult and during childhood. Controlling behaviours, sustained abuse, co-occurring inflicted abuse and to some extent childhood abuse were more important factors for these women's experiences of perpetrators of IPV than demographic/socio-economic and life-style variables. Despite its limitations, the present study contributes to the literature on women's IPV perpetration, not least in the context of Sub-Saharan Africa.

Implications for practice

- Our results shed further light on women's abusive behaviours towards their partners.
- Our results may be useful for changing advocacy and legal policies concerning IPV, but also to change public perceptions of the phenomenon.
- Our results may be useful for the development of prevention and treatment interventions that consider both partners conflict-related behaviours and the women's abuse histories.
- Our results may serve as an incitement to further research both cross-sectional and longitudinal concerning for instance the relationship between women's use of control, violence and co-occuring violence upon partners and own victimisation, not least in the context of Sub-Saharan Africa.

Notes

1. Women as respondents.
2. Men as respondents.
3. The scaling was based on CTS2.
4. Bivariate data are not shown.
5. The contact occurred through the Police, Organização da Mulher Moçambicana (Mozambican Women Organization) or personally.
6. The interviewers asked the questions given in the questionnaire. The questionnaire consisted of 36 pages covering a large range of issues (e.g. violence, mental health).
7. This means that the women had exposed their partners for each and every abuse type across severity or three of them in different combinations across severity. In other words, we counted the number of cases with four or three types of abuse across severity and calculated the chronicity.
8. Data on abuse as a child, controlling behaviours and victimization are shown only in the regressions. Owing to multicolloniarity, abuse as a perpetrator (e.g. physical) was not used as an independent factor for physical abuse as a perpetrator and so forth. A similar procedure was used for victimization.

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