



LEGISLATIVE COUNCIL

The Honourable Greg Donnelly MLC

11th October 2016

Inquiry Secretary
Health, Communities, Disability Services and Domestic and Family Violence Prevention
Committee
Parliament House
George Street
BRISBANE QLD 4000

Dear Inquiry Secretary,

RE: Health (Abortion Law Reform) Amendment Bill 2016

May I commence by thanking you for granting me a short extension with respect to making a submission to this inquiry. With respect to the proposed legislation I have had the opportunity to read the submissions made to the committee (although at the time of writing not yet placed on the committee website) by The Australian Family Association, FamilyVoice Australia and the Australian Christian Lobby and wish to associate myself with the substance of their submissions. The submissions enumerate a range of important reasons why the bill should not be supported by the Queensland Parliament.

Before making some further additional comments about the bill, I wish to address a key issue that I think is foundational to this matter before the committee. It is sometimes asserted by those who support bills like the one under consideration that what we are dealing with, prior to birth, is not an actual human being. It is argued that the unborn has not, does not and should not have standing in terms of being treated as a human being with any legal rights. With the detailed knowledge that medical science currently provides, and has done so for many years, with respect to understanding the human biology of the unborn, claims or assertions that we are dealing with anything but a human being should be completely disregarded. The commencement of a new, unique human life begins at conception and nothing can change that fact. If one believes, as I do, that all human life from conception to natural death must be respected for what it intrinsically is, the act of deliberately taking that life and extinguishing it must be opposed. To assist in the understanding of the precise human nature of the unborn, attachment one is a copy of a booklet entitled *The Biology of Prenatal Development: Program Script, Footnotes, Appendices, Biography, and Index*. The booklet has been produced to accompany the DVD distributed by National Geographic and is readily available on the internet. The DVD is a wonderful production and I can strongly recommend it to anybody interested in developing

a comprehensive understanding of this subject area. The 48 page booklet is well worth reading for all the detail it contains. I particularly draw your attention to pages 3 to 19 that provide a clear and uncomplicated explanation about how a human being develops before birth. What strikes you as you read it is how utterly human the unborn is. One does not need to exaggerate or take any licence. What one is clearly dealing with is a unique human life.

On the matter of what are referred to as late term abortions, I would like to provide to the committee information that I have been obtaining from the Queensland Department of Health since 2011. The information that I have been collecting relates to “terminations involving a foetus with a gestation period of 20 or more weeks.” The information also relates to periods from 1st January to 31st December. Attachments two, three, four, five and six is the information provided to me by the Queensland Department of Health for the calendar years 2011, 2012, 2013, 2014 and 2015. The information that has been provided is contained in the table below:

Calendar Year	Pregnancy terminations involving a foetus with a gestation period of 20 or more weeks.
2011	82
2012	81
2013	99
2014	96
2015	97
Total	455

I am concerned about the number of late term abortions being conducted in Queensland. It is particularly distressing that a number of those who are terminated through this procedure do not have life limiting conditions. It is tragic to contemplate that for example, many of the unborn diagnosed with Down Syndrome, are regularly aborted for no other reason than they may, or actually do, have the condition. I believe that the proposed legislation is likely, on balance, to lead to an increase in the number of late term abortions in Queensland. I do not believe that this is a desirable outcome.

The final point that I wish to make is general in nature but directly relevant to the matter being considered by the inquiry. If one does, as I have done, Google “association between domestic violence and termination of pregnancy” you will find dozens of research papers that have examined this issue both here in Australia and internationally. Attachments seven, eight and nine are articles that I have randomly selected from a search done last week. They speak for themselves so I will not try and summarise them. However, I do not understand that given that we know from the long term research that many women who present for abortions have been subjected to domestic violence, and are seeking an abortion because of these circumstances, that as a society we are doing so little to support them. Clearly, a number of women are having abortions because they are being pressured into them through acts of intimidation and domestic violence perpetrated by boyfriends, de facto

partners, husbands and others. It seems extraordinary to me that while this is well known, virtually nothing is being done at the point of seeking and undertaking an abortion procedure to assist and support the woman who may well only be pursuing the termination because of the domestic violence. Consideration of this should and must, in my respectful submission, be seriously looked at. How can it be in 2016 in Australia that women are undergoing pregnancy terminations not because they particularly want them, but because they have been subjected to domestic violence and feel that they have no other option?

If you would like me to answer further questions or give oral evidence to the inquiry, do not hesitate to contact me on [REDACTED] or by email on [REDACTED]

Yours sincerely,



Greg Donnelly MLC
Parliament of New South Wales



Enquiries to: Sharon Hart
Telephone: (07) 323 41735
E-mail: RTI-Privacy@health.qld.gov.au
Our Ref: RTI 2290

Mr Greg Donnelly
Parliament of New South Wales
Macquarie Street
SYDNEY NSW 2000

Dear Mr Donnelly

I refer to your application, which was received in this office on 15 April 2014, seeking access under the *Right to Information Act 2009* (the RTI Act), to the following documents:

How many pregnancy terminations were conducted involving a foetus with a gestation period of 20 or more weeks? – 1 January 2012 to 31 December 2012.

DECISION

I have identified that the Department of Health holds the following documents which are covered by your application –

Document	Number of Relevant Pages
Report – Termination of Pregnancy with a Gestation period of 20 weeks or more, Public Acute Hospitals, Queensland 2012	2

A total of two pages are covered by your application. I have decided to grant you partial access to two pages as they contain exempt information. A schedule of documents which provides further details regarding my decision is at Attachment 1. The detailed reasons for my decision are set out in Attachment 2.

The date of my decision is **6 June 2014**.

Processing Charges

Section 5(1)(a) of the *Right to Information Regulation 2009* states that if the total amount of time spent by an officer or officers to process an RTI application is five hours or less, no time-based charges will be incurred.

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147-163 Charlotte Street
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Phone
(07) 323 41735

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As your application has taken less than five hours to finalise, no processing charges are payable.

Access charges

Section 6 of the RTI Regulation sets out the access charges in relation to an application made under the RTI Act. As you have chosen to access the documents on electronically, no access charges are applicable.

REVIEW RIGHTS

If you disagree with the decision for your application, you may apply to have the decision reviewed.

The RTI Act provides two separate levels of review of access decisions:

- **Internal review***, conducted by another, not less senior, officer of the agency that made the access decision
- **External review**, conducted by the independent Office of the Information Commissioner.

* Please note that internal review is an optional step. You may elect to apply for internal review, or alternatively, you may apply directly to the Office of the Information Commissioner for external review. (Please do not seek both levels of review at the same time).

To apply for internal review

An application for internal review must be made in writing within 20 business days after the date of this decision letter. No specific form of application is required. Your application can be lodged in one of the following ways:

In person: Privacy and Right to Information Unit
Level 12, Department of Health Building, 147-163 Charlotte St, Brisbane
Post: Privacy and Right to Information Unit, Department of Health
GPO Box 48, Brisbane Qld 4001
Email: RTI-Privacy@health.qld.gov.au
Online: <https://www.smartservice.qld.gov.au/services/information-requests/review.action>

To apply for external review

If you wish to apply for an external review of my decision, your application should be lodged in writing within 20 business days after the date of this decision letter.

Your application can be lodged with the Information Commissioner in one of the following ways:

In person: Level 8, 160 Mary Street, Brisbane
Post: PO Box 10143, Adelaide Street, Brisbane Qld 4000
Fax: (07) 3405 1122
Email: administration@oic.qld.gov.au
Online: <http://www.oic.qld.gov.au/application-external-review>

DISCLOSURE LOG

In accordance with section 78 of the RTI Act, the documents to which you have been granted access must be included in the disclosure log on the Department of Health's website: <http://www.health.qld.gov.au/rti/html/disclosure-log.asp>

There are exceptions to publication of documents on the disclosure log (for example, if publication is prevented by law it would be defamatory or it would unreasonably invade an individual's privacy – see s.78B(2) of the RTI Act for full details of the exceptions to disclosure). As previously advised, once you have been provided with access to the documents, they will be published, as soon as practicable, to the disclosure log.

Please do not hesitate to contact me on telephone number (07) 3234 1735 should you have any queries regarding your application.

Yours sincerely



Sharon Hart
A/Senior Privacy and Right to Information Officer
Privacy and Right to Information Unit
Department of Health

6 June 2014

ATTACHMENT 1

RTI APPLICATION NUMBER: 2290
APPLICANT: Mr Greg Donnelly

DOCUMENT	FULL RELEASE	PARTIAL RELEASE	RTI PROVISION
Report - Termination of Pregnancy with a Gestation period of 20 weeks or more, Public Acute Hospitals, Queensland 2012		1-2	s.47(3)(b)

ATTACHMENT 2**STATEMENT OF REASONS**
APPLICANT: Mr Greg Donnelly

As stated in my decision letter, I have decided to grant you partial access to two pages on the basis that the pages contain exempt information.

Power to refuse access to a document

An agency may refuse access to a document under s 47 of the Right to Information Act 2009 (Qld) (RTI Act). Section 47 of the RTI Act relevantly provides –

47 Grounds on which access may be refused

(1) This section sets out the grounds on which access may be refused.

(2) It is the Parliament's intention that –

- (a) The grounds are to be interpreted narrowly; and*
- (b) An agency or Minister may give access to a document even if a ground on which access may be refused applies*

(3) On an application, an agency may refuse access to a document of the agency and a Minister may refuse access to a document of the Minister –

(a) To the extent the document comprises exempt information under section 48;

or

(b) To the extent the document comprises information the disclosure of which would, on balance, be contrary to the public interest under section 49;

Information which is contrary to the public interest

Access has been refused to information contained on the two pages on the ground that the information is exempt from disclosure pursuant to section 47(3)(b) of the RTI Act. This section provides that access to a document may be refused to the extent the document comprises exempt information under section 75 of the RTI Act, which states –

75 Deletion of contrary to public interest information

Subject to section 55, if –

- (c) an access application is made for a document containing contrary to public interest information; and*
- (d) it is practicable to give access to a copy of the document from which the contrary to public interest information has been deleted; and*
- (e) it appears to the agency or Minister concerned (whether from the terms of the application or after consultation with the applicant) that the applicant would wish to be given access to the copy;*

the agency or Minister must give access accordingly.

Section 47(3)(b) of the RTI Act provides that access to a document may be refused to the extent the document comprises information the disclosure of which would, on balance, be contrary to the public interest under section 49 of the RTI Act.

In making my decision that disclosure of the information would, on balance, be contrary to the public interest, I have undertaken the steps as set out in section 49(3) of the RTI Act –

Identify any irrelevant factors – section 49(3)(a)

None of the irrelevant factors as indicated in schedule 4, part 1 of the RTI Act was applicable when considering the release of the document in issue.

Factors favouring disclosure – section 49(3)(b)

- Your general right to seek access, under the RTI Act, to documents held by the Department of Health.
- Disclosure of the information could promote open discussion of public affairs and enhance the Government's accountability.

Factors favouring nondisclosure – section 49(3)(c)

- Disclosure of the information could reasonably be expected to prejudice the protection of an individual's (that is, member of the public's) right to privacy.
- An individual's personal information is a private concern, communication of which is generally only the prerogative of the individual rather than the government.
- The persons who may be identified the release of this Information have not authorised the release of their personal information.

Disregard any irrelevant factor – section 49(3)(d)

No irrelevant factors were applicable when considered the release of the document in issue.

Public Interest Balancing Test – section 49(3)(e)-(g)

The refused information consists of a breakdown of the number of sensitive medical procedures performed at a number of Queensland public hospitals. In deciding to exempt this matter at the hospital/facility level, I have applied the principle of 'mosaic analysis', or 'cumulative prejudice'.

The 'mosaic analysis' principle recognises that discrete pieces of information, viewed in isolation, may not identify particular individuals, but may well enable the identities of individuals to be ascertained, when taken together with other segments of matter in the documents to be released, and additional information already in the public domain.

In the context of the above, I have considered whether this possibly identifiable information should be released. In my opinion, any information which, in conjunction with the statistical data being released in this application and the information already in the

public domain, could lead to the identification of an individual, and therefore falls within the 'mosaic analysis' argument.

In my opinion, the public interest in protecting individual health and personal information would not be satisfied if such information were released. I therefore consider that this information at the facility level is exempt matter under the RTI Act. I believe the public interest is served through release of this data at the Hospital and Health Service level.

**Termination of Pregnancy with a Gestation period of 20 weeks or more,
Public Acute Hospitals, Queensland 2012**

HHS 2012	Facility	Terminations
Cairns and Hinterland		6
Central Queensland		1
Darling Downs		5
Gold Coast		7
Metro North		
Metro North Total		24
Metro South		
Metro South Total		12
Sunshine Coast		5
Townsville		6
West Moreton		10
Wide Bay		
Wide Bay Total		5
Total		81

Notes:

1. Termination of pregnancy: Gestation ≥ 20 weeks and a medical abortion performed (ICD10AM 004).

Source: Perinatal Data Collection, Health Statistics Unit, Department of Health

Prepared by: Statistical Reporting and Coordination, Health Statistics Unit, Department of Health

Date: 24 April 2014

**Termination of Pregnancy with a Gestation period of 20 weeks or more,
Public Acute Hospitals, Queensland 2012**

HHS 2012	Terminations
Cairns and Hinterland	6
Cape York	-
Central Queensland	1
Central West	-
Children's Health Queensland	-
Darling Downs	5
Gold Coast	7
Mackay	-
Mater Public Hospitals	-
Metro North	24
Metro South	12
North West	-
South West	-
Sunshine Coast	5
Torres Strait-Northern Peninsula	-
Townsville	6
West Moreton	10
Wide Bay	5
Total	81

Notes:

1. Termination of pregnancy: Gestation ≥ 20 weeks and a medical abortion performed (ICD10AM O04).

Source: Perinatal Data Collection, Health Statistics Unit, Department of Health

Prepared by: Statistical Reporting and Coordination, Health Statistics Unit, Department of Health

Date: 24 April 2014



Enquiries to: Sharon Hart
Telephone: (07) 323 41735
E-mail: RTI-Privacy@health.qld.gov.au
Our Ref: RTI 3138

Mr Greg Donnelly
Parliament of New South Wales
Macquarie Street
SYDNEY NSW 2000

Dear Mr Donnelly

I refer to your application, which was received in this office on 1 April, 2016, seeking access under the *Right to Information Act 2009* (the RTI Act), to the following documents:

'How many pregnancy terminations were conducted involving a foetus with a gestation period of 20 or more weeks between 1 January 2015 and 31 December 2015 at multiple hospitals and health facilities (Qld).'

Third party consultation has extended the legislative timeframe for processing of this application.

DECISION

I have identified that the Department of Health holds the following documents which are covered by your application –

Document	Number of Relevant Pages
Report – Termination of Pregnancy with a Gestation period of 20 weeks or more, Selected Public Acute Hospitals as per RTI Request, Queensland 2015 (preliminary)	2

A total of two pages are covered by your application. I have decided to grant you access to two pages in part. A schedule of documents which provides further details regarding my decision is at Attachment 1. The detailed reasons for my decision are set out in Attachment 2.

The date of my decision is **24 May 2016**.

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Processing Charges

Section 5(1)(a) of the Right to Information Regulation 2009 states that if the total amount of time spent by an officer or officers to process an RTI application is five hours or less, no time-based charges will be incurred.

As your application has taken less than five hours to finalise, no processing charges are payable.

Access charges

Section 6 of the RTI Regulation sets out the access charges in relation to an application made under the RTI Act. As you have chosen to access the documents electronically, no access charges are applicable.

REVIEW RIGHTS

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Email: administration@oic.qld.gov.au
Online: <http://www.oic.qld.gov.au/about/right-to-information/apply-for-external-review-of-an-access-or-amendment-decision>

DISCLOSURE LOG

In accordance with section 78 of the RTI Act, the documents to which you have been granted access must be included in the disclosure log on the Department of Health's website:

<http://www.health.qld.gov.au/system-governance/contact-us/access-info/disclosure-logs/default.asp>

There are exceptions to publication of documents on the disclosure log (for example, if publication is prevented by law it would be defamatory or it would unreasonably invade an individual's privacy – see s.78B(2) of the RTI Act for full details of the exceptions to disclosure). As previously advised, once you have been provided with access to the documents, they will be published, as soon as practicable, to the disclosure log.

Please do not hesitate to contact me on telephone number (07) 3234 1735 should you have any queries regarding your application.

Yours sincerely



Sharon Hart
Right to Information Officer
Privacy and Right to Information Unit
Department of Health

24 May 2016

ATTACHMENT 1

RTI APPLICATION NUMBER: 3138
APPLICANT: Mr Greg Donnelly

DOCUMENT	FULL RELEASE	PARTIAL RELEASE	RTI PROVISION
Report – Termination of Pregnancy with a Gestation period of 20 weeks or more, Selected Public Acute Hospitals as per RTI Request, Queensland 2015 (preliminary)			
		1-2	s.47(3)(b)
TOTAL		2	

ATTACHMENT 2**STATEMENT OF REASONS**
APPLICANT: Mr Greg Donnelly**PARTIAL ACCESS TO DOCUMENTS**

As stated in my decision letter, I have decided to grant you partial access to two pages on the basis that the pages contain exempt information.

Power to refuse access to a document

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47 Grounds on which access may be refused

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(2) *It is the Parliament's intention that –*

- (a) *The grounds are to be interpreted narrowly; and*
- (b) *An agency or Minister may give access to a document even if a ground on which access may be refused applies*

(3) *On an application, an agency may refuse access to a document of the agency and a Minister may refuse access to a document of the Minister –*

(a) *To the extent the document comprises exempt information under section 48;*

or

(b) *To the extent the document comprises information the disclosure of which would, on balance, be contrary to the public interest under section 49;*

Information which is contrary to the public interest

Access has been refused to information contained on the two pages on the ground that the information is exempt from disclosure pursuant to section 47(3)(b) of the RTI Act. This section provides that access to a document may be refused to the extent the document comprises exempt information under section 75 of the RTI Act, which states –

75 Deletion of contrary to public interest information

Subject to section 55, if –

- (c) *an access application is made for a document containing contrary to public interest information; and*
- (d) *it is practicable to give access to a copy of the document from which the contrary to public interest information has been deleted;*
and

(e) it appears to the agency or Minister concerned (whether from the terms of the application or after consultation with the applicant) that the applicant would wish to be given access to the copy;

the agency or Minister must give access accordingly.

Section 47(3)(b) of the RTI Act provides that access to a document may be refused to the extent the document comprises information the disclosure of which would, on balance, be contrary to the public interest under section 49 of the RTI Act.

In making my decision that disclosure of the information would, on balance, be contrary to the public interest, I have undertaken the steps as set out in section 49(3) of the RTI Act –

Identify any irrelevant factors – section 49(3)(a)

None of the irrelevant factors as indicated in schedule 4, part 1 of the RTI Act was applicable when considering the release of the document in issue.

Factors favouring disclosure – section 49(3)(b)

- Your general right to seek access, under the RTI Act, to documents held by the Department of Health.
- Disclosure of the information could promote open discussion of public affairs and enhance the Government's accountability.

Factors favouring nondisclosure – section 49(3)(c)

- Disclosure of the information could reasonably be expected to prejudice the protection of an individual's (that is, member of the public's) right to privacy.
- An individual's personal information is a private concern, communication of which is generally only the prerogative of the individual rather than the government.
- The persons who may be identified by the release of this information have not authorised the release of their personal information.

Disregard any irrelevant factor – section 49(3)(d)

No irrelevant factors were applicable when considered the release of the document in issue.

Public Interest Balancing Test – section 49(3)(e)-(g)

The refused information consists of a breakdown of the number of sensitive medical procedures performed at a number of Queensland public hospitals. In deciding to exempt this matter at the hospital/facility level, I have applied the principle of 'mosaic analysis', or 'cumulative prejudice'.

The 'mosaic analysis' principle recognises that discrete pieces of information, viewed in isolation, may not identify particular individuals, but may well enable the identities of individuals to be ascertained, when taken together with other segments of matter in the documents to be released, and additional information already in the public domain.

In the context of the above, I have considered whether this possibly identifiable information should be released. In my opinion, any information which, in conjunction with the statistical data being released in this application and the information already in the public domain, could lead to the identification of an individual, and therefore falls within the 'mosaic analysis' argument.

In my opinion, the public interest in protecting individual health and personal information would not be satisfied if such information were released. I therefore consider that this information at the facility level is exempt matter under the RTI Act. I believe the public interest is served through release of this data at the Hospital and Health Service level.

**Termination of Pregnancy with a Gestation period of 20 weeks or more,
Selected Public Acute Hospitals as per RTI Request, Queensland 2015 (preliminary)**

Hospital and Health Service	Hospital	Terminations
Cairns and Hinterland		5
Central Queensland		
Darling Downs		5
Gold Coast		9
Metro North		21
Metro South		8
Sunshine Coast		8
Townsville		13
West Moreton		8
Wide Bay		
Total		97

Notes:

1. Termination of pregnancy: Gestation ≥ 20 weeks and a termination performed for medical reasons (ICD10AM Q04 - Medical Abortion).
2. Data are preliminary, subject to change.

Source: Perinatal Data Collection (PDC), Statistical Services Branch, Department of Health, Queensland

Prepared by: Statistical Reporting and Coordination Unit, Statistical Services Branch, Department of Health

Date: 11 April 2016 [RTI 4138]

**Termination of Pregnancy with a Gestation period of 20 weeks or more,
Selected Public Acute Hospitals as per RTI Request, Queensland 2015 (preliminary)**

Hospital and Health Service	Terminations
Cairns and Hinterland	5
Central Queensland	6
Darling Downs	5
Gold Coast	9
Metro North	26
Metro South	11
Sunshine Coast	8
Townsville	13
West Moreton	8
Wide Bay	6
Total	97

Notes:

1. Termination of pregnancy: Gestation ≥ 20 weeks and a termination performed for medical reasons (ICD10AM O04 - Medical Abortion).
2. Data are preliminary, subject to change.

Source: Perinatal Data Collection (PDC), Statistical Services Branch, Department of Health, Queensland

Prepared by: Statistical Reporting and Coordination Unit, Statistical Services Branch, Department of Health

Date: 11 April 2016 [RTI 3138]



Enquiries to: Sharon Hart
Telephone: (07) 323 41735
E-mail: RTI-Privacy@health.qld.gov.au
Our Ref: RTI 2661

Mr Greg Donnelly
Parliament of New South Wales
Macquarie Street
SYDNEY NSW 2000

Dear Mr Donnelly

I refer to your application, which was received in this office on 9 March 2015, seeking access under the *Right to Information Act 2009* (the RTI Act), to the following documents:

How many pregnancy terminations were conducted involving a foetus with a gestation period of 20 or more weeks between 1 January 2014 and 31 December 2014. Location: at multiple Queensland hospitals and health facilities.

Third party consultation has extended the legislative timeframe for processing of this application.

DECISION

I have identified that the Department of Health holds the following documents which are covered by your application –

Document	Number of Relevant Pages
Report – Termination of Pregnancy with a Gestation period of 20 weeks or more, Selected Public Acute Hospitals as per RTI Request, Queensland 2014 (preliminary)	2

A total of two pages are covered by your application. I have decided to grant you access to two pages in part. A schedule of documents which provides further details regarding my decision is at Attachment 1. The detailed reasons for my decision are set out in Attachment 2.

The date of my decision is **29 April 2015**.

Processing Charges

Section 5(1)(a) of the Right to Information Regulation 2009 states that if the total amount of time spent by an officer or officers to process an RTI application is five hours or less, no time-based charges will be incurred.

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If you disagree with the decision for your application, you may apply to have the decision reviewed.

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Please do not hesitate to contact me on telephone number (07) 3234 1735 should you have any queries regarding your application.

Yours sincerely



Sharon Hart
Right to Information Officer
Privacy and Right to Information Unit
Department of Health

29 April 2015

ATTACHMENT 1**RTI APPLICATION NUMBER: RTI 2661****APPLICANT: Mr Greg Donnelly**

DOCUMENT	FULL RELEASE	PARTIAL RELEASE	RTI PROVISION
Report – Termination of Pregnancy with a Gestation period of 20 weeks or more, Selected Public Acute Hospitals as per RTI Request, Queensland 2014 (preliminary)			
		1-2	s.47(3)(b)
TOTAL		2	

ATTACHMENT 2**STATEMENT OF REASONS**
APPLICANT: Mr Greg Donnelly**PARTIAL ACCESS TO DOCUMENTS**

As stated in my decision letter, I have decided to grant you partial access to two pages on the basis that the pages contain exempt information.

Power to refuse access to a document

An agency may refuse access to a document under s 47 of the Right to Information Act 2009 (Qld) (RTI Act). Section 47 of the RTI Act relevantly provides –

47 Grounds on which access may be refused

- (1) This section sets out the grounds on which access may be refused.*
- (2) It is the Parliament's intention that –*
 - (a) The grounds are to be interpreted narrowly; and*
 - (b) An agency or Minister may give access to a document even if a ground on which access may be refused applies*
- (3) On an application, an agency may refuse access to a document of the agency and a Minister may refuse access to a document of the Minister –*
 - (a) To the extent the document comprises exempt information under section 48;*
 - or*
 - (b) To the extent the document comprises information the disclosure of which would, on balance, be contrary to the public interest under section 49;*

Information which is contrary to the public interest

Access has been refused to information contained on the two pages on the ground that the information is exempt from disclosure pursuant to section 47(3)(b) of the RTI Act. This section provides that access to a document may be refused to the extent the document comprises exempt information under section 75 of the RTI Act, which states –

75 Deletion of contrary to public interest information

Subject to section 55, if –

- (c) an access application is made for a document containing contrary to public interest information; and*
- (d) it is practicable to give access to a copy of the document from which the contrary to public interest information has been deleted;*
and

(e) it appears to the agency or Minister concerned (whether from the terms of the application or after consultation with the applicant) that the applicant would wish to be given access to the copy;

the agency or Minister must give access accordingly.

Section 47(3)(b) of the RTI Act provides that access to a document may be refused to the extent the document comprises information the disclosure of which would, on balance, be contrary to the public interest under section 49 of the RTI Act.

In making my decision that disclosure of the information would, on balance, be contrary to the public interest, I have undertaken the steps as set out in section 49(3) of the RTI Act –

Identify any irrelevant factors – section 49(3)(a)

None of the irrelevant factors as indicated in schedule 4, part 1 of the RTI Act was applicable when considering the release of the document in issue.

Factors favouring disclosure – section 49(3)(b)

- Your general right to seek access, under the RTI Act, to documents held by the Department of Health.
- Disclosure of the information could promote open discussion of public affairs and enhance the Government's accountability.

Factors favouring nondisclosure – section 49(3)(c)

- Disclosure of the information could reasonably be expected to prejudice the protection of an individual's (that is, member of the public's) right to privacy.
- An individual's personal information is a private concern, communication of which is generally only the prerogative of the individual rather than the government.
- The persons who may be identified by the release of this information have not authorised the release of their personal information.

Disregard any irrelevant factor – section 49(3)(d)

No irrelevant factors were applicable when considered the release of the document in issue.

Public Interest Balancing Test – section 49(3)(e)-(g)

The refused information consists of a breakdown of the number of sensitive medical procedures performed at a number of Queensland public hospitals. In deciding to exempt this matter at the hospital/facility level, I have applied the principle of 'mosaic analysis', or 'cumulative prejudice'.

The 'mosaic analysis' principle recognises that discrete pieces of information, viewed in isolation, may not identify particular individuals, but may well enable the identities of individuals to be ascertained, when taken together with other segments of matter in the documents to be released, and additional information already in the public domain.

In the context of the above, I have considered whether this possibly identifiable information should be released. In my opinion, any information which, in conjunction with the statistical data being released in this application and the information already in the public domain, could lead to the identification of an individual, and therefore falls within the 'mosaic analysis' argument.

In my opinion, the public interest in protecting individual health and personal information would not be satisfied if such information were released. I therefore consider that this information at the facility level is exempt matter under the RTI Act. I believe the public interest is served through release of this data at the Hospital and Health Service level.

**Termination of Pregnancy with a Gestation period of 20 weeks or more,
Selected Public Acute Hospitals as per RTI Request, Queensland 2014 (preliminary)**

Hospital and Health Service	Hospital	Terminations
Cairns and Hinterland		7
Cairns and Hinterland Total		7
Central Queensland		
Central Queensland Total		7
Darling Downs		5
Darling Downs Total		5
Gold Coast		13
Mackay		
Metro North		
Metro North Total		19
Metro South		
Metro South Total		19
Sunshine Coast		
Townsville		7
West Moreton		8
Wide Bay		
Wide Bay Total		6
Total		96

Notes:

1. Termination of pregnancy: Gestation ≥ 20 weeks and a termination performed for medical reasons (ICD10AM O84 - Medical Abortion).
2. Data are preliminary, subject to change.

Source: Perinatal Data Collection and Queensland Hospital Admitted Patient Data Collection,
Health Statistics Branch, Department of Health

Prepared by: Statistical Reporting and Coordination, Health Statistics Branch, Department of Health

Date: 17 March 2014

**Termination of Pregnancy with a Gestation period of 20 weeks or more,
Selected Public Acute Hospitals as per RTI Request, Queensland 2014 (preliminary)**

Hospital and Health Service	Terminations
Cairns and Hinterland	7
Central Queensland	7
Darling Downs	5
Gold Coast	13
Mackay	
Metro North	19
Metro South	19
Sunshine Coast	
Townsville	7
West Moreton	8
Wide Bay	6
Total	96

Notes:

1. Termination of pregnancy: Gestation ≥ 20 weeks and a termination performed for medical reasons (ICD10AM O04 - Medical Abortion).
2. Data are preliminary, subject to change.

Source: Perinatal Data Collection and Queensland Hospital Admitted Patient Data Collection,
Health Statistics Branch, Department of Health

Prepared by: Statistical Reporting and Coordination, Health Statistics Branch, Department of Health

Date: 18 March 2015



Enquiries to: Sharon Hart
Telephone: (07) 323 41735
E-mail: RTI-Privacy@health.qld.gov.au
Our Ref: RTI 2469

Mr Greg Donnelly
Parliament of New South Wales
Macquarie Street
SYDNEY NSW 2000

Dear Mr Donnelly

I refer to your application, which was received in this office on 25 September 2014, seeking access under the *Right to Information Act 2009* (the RTI Act), to the following documents –

*'How many pregnancy terminations were conducted involving a foetus with a gestation period of 20 or more weeks from 1/01/2013 to 31/12/13.
Location: Multiple Hospitals and Communities.'*

Third party consultation has extended the legislative timeframe for processing of this application.

DECISION

I have identified that the Department of Health holds the following documents which are covered by your application –

Document	Number of Relevant Pages
Report – Termination of Pregnancy with a Gestation period of 20 weeks or more, Public Acute Hospitals, Queensland 2013	2

A total of two pages are covered by your application. I have decided to grant you access to two pages in part. A schedule of documents which provides further details regarding my decision is at Attachment 1. The detailed reasons for my decision are set out in Attachment 2.

The date of my decision is **13 November 2014**.

Processing Charges

Section 5(1)(a) of the *Right to Information Regulation 2009* (the RTI Regulation) states that if the total amount of time spent by an officer or officers to process an RTI application is five hours or less, no time-based charges will be incurred.

Office
Department of Health
147-163 Charlotte Street
BRISBANE Q 4000

Postal
GPO Box 48
BRISBANE Q 4001

Phone
(07) 323 41735

Email
RTI-Privacy@health.qld.gov.au

As your application has taken less than five hours to finalise, no processing charges are payable.

Access charges

Section 6 of the RTI Regulation sets out the access charges in relation to an application made under the RTI Act. As you have chosen to access the document electronically, no access charges are applicable.

REVIEW RIGHTS

If you disagree with the decision for your application, you may apply to have the decision reviewed.

The RTI Act provides two separate levels of review of access decisions:

- **Internal review***, conducted by another, not less senior, officer of the agency that made the access decision
- **External review**, conducted by the independent Office of the Information Commissioner.

* Please note that internal review is an optional step. You may elect to apply for internal review, or alternatively, you may apply directly to the Office of the Information Commissioner for external review. (Please do not seek both levels of review at the same time).

To apply for internal review

An application for internal review must be made in writing within 20 business days after the date of this decision letter. No specific form of application is required. Your application can be lodged in one of the following ways:

In person: Privacy and Right to Information Unit
Level 12, Department of Health Building, 147-163 Charlotte St, Brisbane
Post: Privacy and Right to Information Unit, Department of Health
GPO Box 48, Brisbane Qld 4001
Email: RTI-Privacy@health.qld.gov.au
Online: <https://www.smartservice.qld.gov.au/services/information-requests/review.action>

To apply for external review

If you wish to apply for an external review of my decision, your application should be lodged in writing within 20 business days after the date of this decision letter.

Your application can be lodged with the Information Commissioner in one of the following ways:

In person: Level 8, 160 Mary Street, Brisbane
Post: PO Box 10143, Adelaide Street, Brisbane Qld 4000
Fax: (07) 3405 1122
Email: administration@oic.qld.gov.au

Online: <http://www.oic.qld.gov.au/about/right-to-information/apply-for-external-review-of-an-access-or-amendment-decision>

DISCLOSURE LOG

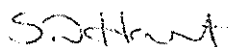
In accordance with section 78 of the RTI Act, the documents to which you have been granted access must be included in the disclosure log on the Department of Health's website:

<http://www.health.qld.gov.au/system-governance/contact-us/access-info/disclosure-logs/default.asp>

There are exceptions to publication of documents on the disclosure log (for example, if publication is prevented by law it would be defamatory or it would unreasonably invade an individual's privacy – see s.78B(2) of the RTI Act for full details of the exceptions to disclosure). As previously advised, once you have been provided with access to the documents, they will be published, as soon as practicable, to the disclosure log.

Please do not hesitate to contact me on telephone number (07) 3234 1735 should you have any queries regarding your application.

Yours sincerely



Sharon Hart
Right to Information Officer
Privacy and Right to Information Unit
Department of Health

13 November 2014

ATTACHMENT 1

RTI APPLICATION NUMBER: 2469
APPLICANT: Mr Greg Donnelly

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Termination of Pregnancy with a Gestation period of 20 weeks or more,
Public Acute Hospitals, Queensland 2013 (preliminary)

Hospital and Health Service	Hospital	Terminations
Cairns and Hinterland		10
Central Queensland		
Central Queensland Total		13
Darling Downs		5
Gold Coast		
Mackay		
Metro North		
Metro North Total		32
Metro South		
Metro South Total		11
Sunshine Coast		6
Townsville		5
West Moreton		11
Wide Bay		
Wide Bay Total		
Total		99

Notes:

1. Termination of pregnancy: Gestation ≥ 20 weeks and a termination performed for medical reasons (ICD10AM O04 - Medical Abortion).
2. Data are preliminary, subject to change.

Prepared by: Statistical Reporting and Coordination, Health Statistics Branch, Department of Health

Source: Perinatal Data Collection, Health Statistics Branch, Department of Health

Date: 8 October 2014

**Termination of Pregnancy with a Gestation period of 20 weeks or more,
Public Acute Hospitals, Queensland 2013 (preliminary)**

Hospital and Health Service	Terminations
Cairns and Hinterland	10
Central Queensland	13
Darling Downs	5
Gold Coast	
Mackay	
Metro North	32
Metro South	11
Sunshine Coast	6
Townsville	5
West Moreton	11
Wide Bay	
Total	99

Notes:

1. Termination of pregnancy: Gestation ≥ 20 weeks and a termination performed for medical reasons (ICD10AM O04 - Medical Abortion).
2. Data are preliminary, subject to change.

Source: Perinatal Data Collection, Health Statistics Branch, Department of Health

Prepared by: Statistical Reporting and Coordination, Health Statistics Branch, Department of

Date: 8 October 2014

Associations between Intimate Partner Violence and Termination of Pregnancy: A Systematic Review and Meta-Analysis

Megan Hall, Lucy C. Chappell, Bethany L. Parnell, Paul T. Seed, Susan Bewley*

Women's Health Academic Centre, King's College London, London, United Kingdom

Abstract

Background: Intimate partner violence (IPV) and termination of pregnancy (TOP) are global health concerns, but their interaction is undetermined. The aim of this study was to determine whether there is an association between IPV and TOP.

Methods and Findings: A systematic review based on a search of Medline, Embase, PsycINFO, and Ovid Maternity and Infant Care from each database's inception to 21 September 2013 for peer-reviewed articles of any design and language found 74 studies regarding women who had undergone TOP and had experienced at least one domain (physical, sexual, or emotional) of IPV. Prevalence of IPV and association between IPV and TOP were meta-analysed. Sample sizes ranged from eight to 33,385 participants. Worldwide, rates of IPV in the preceding year in women undergoing TOP ranged from 2.5% to 30%. Lifetime prevalence by meta-analysis was shown to be 24.9% (95% CI 19.9% to 30.6%); heterogeneity was high ($I^2 > 90\%$), and variation was not explained by study design, quality, or size, or country gross national income per capita. IPV, including history of rape, sexual assault, contraceptive sabotage, and coerced decision-making, was associated with TOP, and with repeat TOPs. By meta-analysis, partner not knowing about the TOP was shown to be significantly associated with IPV (pooled odds ratio 2.97, 95% CI 2.39 to 3.69). Women in violent relationships were more likely to have concealed the TOP from their partner than those who were not. Demographic factors including age, ethnicity, education, marital status, income, employment, and drug and alcohol use showed no strong or consistent mediating effect. Few long-term outcomes were studied. Women welcomed the opportunity to disclose IPV and be offered help. Limitations include study heterogeneity, potential underreporting of both IPV and TOP in primary data sources, and inherent difficulties in validation.

Conclusions: IPV is associated with TOP. Novel public health approaches are required to prevent IPV. TOP services provide an opportune health-based setting to design and test interventions.

Please see later in the article for the Editors' Summary.

Citation: Hall M, Chappell LC, Parnell BL, Seed PT, Bewley S (2014) Associations between Intimate Partner Violence and Termination of Pregnancy: A Systematic Review and Meta Analysis. PLoS Med 11(1): e1001581. doi:10.1371/journal.pmed.1001581

Academic Editor: Edward J. Mills, University of Ottawa, Canada

Received: August 27, 2013; **Accepted:** November 20, 2013; **Published:** January 7, 2014

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Funding: There was no funding associated with this work.

Competing Interests: SB has received charitable grant funding to study violence in pregnancy (Economic and Social Research Council, Guys & St Thomas' Charitable Foundation, Friends of Guys Charity) and received a fee (£900) for expert obstetric advisory work from Marie Stopes International. LCC is a Freelance Associate Editor for PLOS Medicine. MH, BLP, and PTS declare no competing interests.

Abbreviations: CASP, Critical Appraisal Skills Programme; GNI, gross national income; IPV, intimate partner violence; OR, odds ratio; TOP, termination of pregnancy; WHO, World Health Organization.

* E mail: susan.bewley@kcl.ac.uk

Table 1. Search strategy.

Database	Dates Searched	Search Terms 1	Search Terms 2	Search Terms 3	Limitations
Ovid Medline	1946 21 September 2013	Abortion, induced/OR abortion, therapeutic/OR induce* abortion*.mp OR therapeutic abortion*.mp OR medical abortion*.mp OR termination of pregnancy.mp	Domestic violence/OR spouse abuse/OR battered women/OR domestic violence.mp OR spouse abuse.mp OR domestic abuse.mp OR battered women.mp OR battered female.mp OR intimate partner violence.mp OR partner abuse.mp OR wife beating.mp OR battering.mp	1 AND 2	LIMIT 3: Human
OVID Embase	1980 21 September 2013	As for Ovid Medline	As for Ovid Medline	1 AND 2	LIMIT 3: Human
OVID PsycINFO	1806 21 September 2013	Abortion, induced/OR induce* abortion*.mp OR therapeutic abortion*.mp OR medical abortion*.mp OR termination of pregnancy.mp	Domestic violence/OR partner abuse/OR battered females/OR domestic violence.mp OR spouse abuse.mp OR domestic abuse.mp OR battered women.mp OR battered female.mp OR intimate partner violence.mp OR partner abuse.mp OR wife beating.mp OR battering.mp	1 AND 2	LIMIT 3: Human
OVID Maternity and Infant Care	1971 21 September 2013	Induce* abortion*.mp OR therapeutic abortion*.mp OR medical abortion*.mp OR termination of pregnancy.mp	Domestic violence.mp OR spouse abuse.mp OR domestic abuse.mp OR battered women.mp OR battered female.mp OR intimate partner violence.mp OR partner abuse.mp OR wife beating.mp OR battering.mp	1 AND 2	

doi:10.1371/journal.pmed.1001581.t001

Introduction

Intimate partner violence (IPV) has been defined by the World Health Organization (WHO) as “behaviour within an intimate relationship that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviours” encompassing both current and past intimate partners [1]. Estimated prevalence varies globally and within countries, and is partly dependent on definition and methodology; lifetime exposure has been found to range from 15% in Japan to 71% in Ethiopia (estimated by WHO multi country studies), has been estimated at 24% in the UK based on UK Home Office crime statistics [2], and has been estimated to be around 35% (inclusive of stalking) in the US [3]. Rape within intimate relationships has been reported to be common across a number of continents, with lifetime prevalence of forced sex ranging from 5.9% to 42% [4].

Health consequences of IPV are known to include, but not be limited to, increased physical injuries and gastrointestinal, gynaecological, and psychiatric co morbidities [4–7]. Violence may begin or intensify during pregnancy and is associated with adverse obstetric outcomes [8] and maternal death [9,10]. Increased homicide [5,11,12] and suicide are found among individuals experiencing IPV [5,13].

Randomised trial evidence has shown that training primary care professionals in selective questioning of women about IPV increases disclosure and referral to specialist IPV services [14]. Antenatal routine questioning for IPV is recommended in both the US and UK [15,16], despite uncertainty over the harms and benefits of universal questioning and subsequent intervention [17]. Ongoing pregnancy is considered to be a time of increased risk of IPV, yet women seeking termination of pregnancy (TOP) are not such a focus of attention [18]. An evidence based understanding of the association between IPV and TOP would directly inform the development of strategies for effective interventions for IPV. To our knowledge there has been no previous systematic review of the literature.

The aim of this study was to determine whether there is an association between IPV and TOP.

Methods

Selection Criteria

Studies were considered eligible for inclusion if they (1) included women who were seeking or had undergone a TOP and studied at least one aspect of IPV in this group; (2) were a randomised control trial, case control study, cohort study, cross sectional analysis, experimental study, or secondary study with data of interest; and (3) were peer reviewed. Studies focusing on violence by individuals other than current or former intimate partners were excluded. No restrictions were placed on the setting, time, or language of the studies. Quantitative data were not necessary for inclusion.

Search Strategy

The population of interest was women seeking or having undergone a TOP in any setting; the exposure was the presence or absence of IPV; the control group, where reported, was a separate cohort of comparable individuals (e.g., pregnant women not seeking TOP, pregnant women not reporting IPV, or women attending a gynaecology clinic); the statistic of interest was the association between IPV and TOP. We included articles where the relative timing of IPV and TOP could not be delineated. The search strategy was devised using a combination of Medical Subject Headings (MeSH terms) and free text terms with synonyms (see Table 1). Searches were carried out in Medline (1946–21 September 2013), Embase (1980–21 September 2013), PsycINFO (1806–21 September 2013), and Ovid Maternity and Infant Care (1971–21 September 2013) from the earliest possible date until 21 September 2013. In addition, a search of Web of Science and hand searches of reference lists of all included articles were carried out. Nine authors were contacted regarding results, and they identified further articles. There was no restriction on language. If multiple

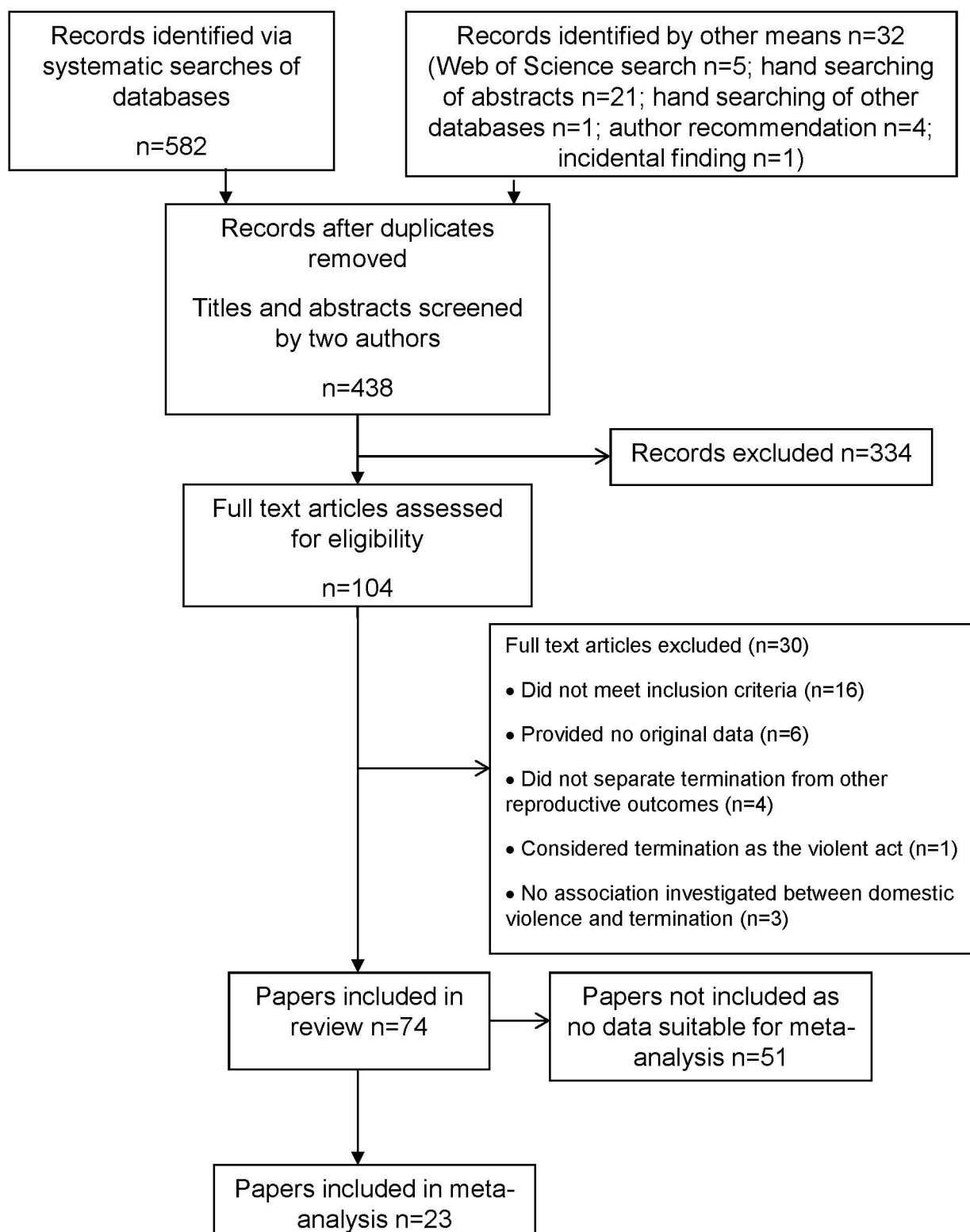


Figure 1. PRISMA flow diagram.
doi:10.1371/journal.pmed.1001581.g001

Table 2. Characteristics of included cohort studies.

Study	Population; Country	Exposure	Outcome	CASP Score (/30)
Fergusson et al. 2007 [25]	492 women participating in a 25 y longitudinal study of a New Zealand birth cohort; New Zealand.	Pregnancy ending in TOP before 21 y of age.	Outcome was social and economic outcomes for women aged 21–25 y. Women who had become pregnant and not had a TOP had consistently poorer outcomes (reduced educational achievement, lower income, higher welfare dependence, poorer partner relationships including exposure to partner violence). There was a significant tendency for pregnancy without TOP to be associated with a higher rate of exposure to partner violence ($p<0.01$).	22
Taft and Watson 2007 [26]	Cohorts of Australian women aged 18–23 y taking part in a long term longitudinal study ($n=14,779$); Australia.	1 y history of physical and/or sexual violence. Lifetime history of violent relationship.	Women who reported ever experiencing partner violence had OR of 2.65 (95% CI 1.96 to 3.60) for TOP compared to non abused women. Women who reported partner and recent physical or sexual violence had even higher odds (OR = 3.52, 95% CI 2.14 to 5.81).	19
Stenson et al. 2001 [27]	All women ($n=1,038$) registered for antenatal care in Uppsala, and who gave birth there, between September 1997 and February 1998; Sweden.	Lifetime, pregnancy, and year prior to pregnancy histories of physical and/or sexual abuse. Fear of partner.	Women who reported abuse had undergone more TOPs than those who did not ($p<0.001$). 30 of 837 women who did not report IPV reported multiple TOPs, as opposed to 7 of 14 women reporting IPV ($p<0.001$).	24

doi:10.1371/journal.pmed.1001581.t002

articles based on the same study were identified, duplication was avoided by only using the data reported for different sub groups.

Data Extraction

All titles were independently screened by two authors (M. H. and S. B.). If either considered a title relevant, both reviewers independently screened the abstract. All articles were included for full text assessment if either author considered the abstract relevant or there was uncertainty. Full text assessment to determine inclusion was independently carried out by two authors (M. H. and S. B.). Any disagreements were discussed, and any study whose inclusion remained ambivalent was referred to a third author (L. C. C.).

A standard form was devised (see Table S1) prior to data extraction and quality scoring. Data were extracted on study type; population; setting, country, and region; demographic and health factors; intervention; comparator population; definition of IPV; screening tools used; and incidence and prevalence of IPV among general populations and in relation to TOP. Data from the articles were independently extracted by two authors (M. H. and B. L. P.). Results addressing violence by individuals other than current or previous intimate partners were excluded. Any uncertainties were discussed, and referred to a third author (L. C. C.) if necessary. Data extraction and quality scoring of articles published in languages other than English ($n=3$) were undertaken by one author (M. H.) and the translator.

Quality Appraisal

Quality appraisal of quantitative and qualitative studies was carried out using Critical Appraisal Skills Programme (CASP) scales [19] as modified by Oram and colleagues [20] (see Tables S2 and S3), consisting of 15 and ten criteria, respectively, each of which could be scored between zero and two (maximum scores 30 and 20). Two authors (M. H. and B. L. P.) carried out full quality appraisal of all articles. Any disagreements were discussed, and referred to a third author (L. C. C.) if necessary. Quantitative CASP scores of ≥ 25 , ≥ 20 , ≥ 15 , and ≤ 14 and qualitative CASP scores of ≥ 17 , ≥ 14 , ≥ 12 , and \leq

11 were considered high, medium, low, and very low quality, respectively.

Meta-Analysis and Regression

The prevalences of IPV (as percentages) were converted to log odds prior to combining using the DerSimonian and Laird random effects method of meta analysis [21]. Resulting estimates and confidence intervals were reconverted to percentages prior to display. Forest plots show actual percentages on the log odds scale and are displayed sub grouped by gross national income (GNI) per capita, as previous reports (e.g., from WHO) have chosen similar economic groupings [22]. Comparisons between groups used odds ratios (ORs). Estimated heterogeneity (I^2) is displayed for all group and sub group analyses. We investigated the possibility of a sub group of recent or high quality studies with consistent methods and consistent results that could be used to give generally applicable results.

Meta analysis regression is a meta analysis technique developed specifically to explain large and unexplained differences in results between studies (also known as heterogeneity). The method used assumes that the differences are in part random and in part explainable [23].

Potential sources of heterogeneity were investigated using meta analysis regression: country's GNI per capita (in intervals of INT\$10,000), study quality (measured by CASP score), date of study (decade), study design (cross sectional, cohort, or case control), setting (urban versus regional versus national), and study size (total number of participants as a continuous variable). Egger's test was performed in order to assess potential publication bias [24].

The review was performed according to protocol (Text S1) and in line with PRISMA guidelines (Table S4).

Results

Study Selection Process

The study selection process is shown in Figure 1. Of a total of 438 articles identified for screening after removal of duplicates, 104 were considered eligible for full text screening, and 74 were

Table 3. Characteristics of included case-control studies.

Study	Population; Country	Exposure	Comparison	Outcome	CASP Score (/30)
Gee et al. 2009 [28]	1,463 women aged 18 y and over presenting for TOP at a Planned Parenthood Center; US.	Lifetime and 12 mo history of physical and sexual IPV. Partner willingness to use, and having control of, contraception.	Women presenting to general gynaecology clinic.	21% women reported history of IPV. By a multivariate model, women who had experienced IPV were more likely to report lack of birth control use due to partner unwillingness to use birth control, prevention of access to birth control, or the partner's desire for the woman to become pregnant. Women who reported IPV were also significantly more likely to have reported going without birth control in the past 4 mo (70.9% of 285 women reporting IPV, compared to 64.5% of 698 women not reporting IPV). Numbers of TOPs significantly associated with IPV with each additional TOP there is a 16% increased odds that woman has a positive IPV history.	23
Romito et al. 2009 [29]	445 women undergoing TOP at a hospital over a certain period of time; Italy.	12 mo history of physical, psychological, or sexual violence. Current physical, psychological, or sexual violence.	Women having live birth in the same hospital.	Physical and psychological violence were more prevalent among the TOP seeking population than among the live birth group (4.6% versus 0.9% and 11.0% versus 2.5%, respectively, $p < 0.001$ in both cases). There was no significant difference in rates of sexual violence among the two groups (1.8% versus 0.5%, $p = 0.056$).	25
Bourassa and Berube 2007 [30]	All (350) women who presented for voluntary TOP at a family planning clinic in Quebec; Canada.	Lifetime abuse by partner. Past year psychological, physical, and/or sexual abuse by partner. Physical abuse during pregnancy by partner.	Women presenting to a perinatal nurse as part of ongoing pregnancy care.	Women presenting for TOP were at higher risk than the control group for IPV. Prevalence ratios: 1.41 lifetime abuse; 2.75 past year IPV; 3.88 physical/sexual IPV past year. Single women were more likely to report IPV ($p < 0.0001$).	25
Lipsky et al. 2005 [31]	Women 16–41 y who reported IPV to Seattle police department between 1995 and 1998, and who subsequently filed a singleton live birth or fetal death with the State of Washington that indicated that they were pregnant within the timeframe of the incident of violence ($n = 389$); US.	IPV reported to the police.	Women who filed a singleton live birth or fetal death with Washington State 1995–1998, but who had no history of violence reported to the police ($n = 3,090$).	Population of interest rate of TOP = 34%; control group rate of TOP = 24% (significant difference).	17
Helweg Larsen and Kruse 2003 [32]	1,815 women aged 15–49 y who presented to hospital in 1995 with injuries resulting from IPV; Denmark.	Physical injury from IPV resulting in hospital attendance.	Women aged 15–49 y who presented to hospital in 1995 for reasons other than IPV related injuries.	Women who had presented for violence related injuries were more likely to have a TOP within the following year. Abused women aged 20–29 y were more likely to have a TOP at any stage in the follow up than their non abused counterparts.	22
Leung et al. 2002 [33]	245 patients requesting TOP at Hong Kong hospital; China.	Lifetime, past year, and current pregnancy history of physical violence. Lifetime history of emotional violence. Past year history of sexual violence. Living in fear. Whether or not violence has affected decision to have TOP.	General gynaecology patients ($n = 256$).	Lifetime history of physical, emotional, and sexual abuse was significantly higher among the TOP seeking population than the control group. The same was also found to be true of the past year history of physical or sexual violence, and sexual violence alone (all $p < 0.001$). Past year history of physical violence alone was also significantly higher in the TOP group ($p < 0.01$). There was no significant difference in numbers of women living in fear among the two groups. Boyfriends were more likely to carry out physical violence than husbands, although the two groups were equally likely to perpetrate sexual violence.	24

Table 3. Cont.

Study	Population; Country	Exposure	Comparison	Outcome	CASP Score (/30)
Yimin et al. 2002 [34]	1,137 unmarried women, under the age of 22 y, presenting for TOP who reported a history of sexual coercion; China.	Beaten or abused by partner.	1,246 women presenting for TOP who did not report a history of sexual coercion.	Women who reported sexual coercion were also more likely to report being abused or beaten ($p < 0.01$ in both cases).	18
Yimin et al. 2001 [35]	667 women presenting for TOP who reported a history of sexual coercion; China.	Abused or experienced battery at hands of partner.	726 women presenting for TOP who did not report a history of sexual coercion.	Women who reported sexual coercion were also more likely to report abuse or battery ($p < 0.01$ for both).	15

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included in the review [25–98]. Tables 2–9 detail the studies, grouped into tables by design and additionally by continent for cross-sectional studies and listed within tables by reverse chronology.

Key Features of Studies

The publication dates of the studies ranged from 1985 to 2013, with the majority (67/74, 91%) having been reported since 2000. Sixty-eight studies included quantitative data, with six being exclusively qualitative. The majority of quantitative studies were cross-sectional (57), with the remaining being cohort (three) and case-control (eight, of which five used a pregnant and three used a non-pregnant comparator group). Geographically, the study locations spanned six continents: North America (35), Asia (12), Europe (10), Africa (8), Australasia (6), and South America (2), with one further study analysing data from several continents. Women were asked about IPV in a variety of settings, including home, gynaecology wards, termination clinics, and other specialist medical clinics, and in various ways, including telephone or written questionnaire and national scale surveys. Among the quantitative studies there were 10 high, 31 medium, 19 low, and eight very low quality reports (mean score 20.2, standard deviation 4.0). Of the qualitative studies two were medium, one low, and three very low quality (mean score 11.5, standard deviation 2.2). The majority of studies analysed exclusively women (69), with few analysing exclusively men (two) or both men and women (three). Sample sizes ranged from eight to 33,385 participants (eight, 30, and 36 studies had <100, 100–999, and $\geq 1,000$ participants, respectively; median number of participants 942, interquartile range 208 to 2,391). The exposures included physical violence (53), sexual violence (47), and emotional violence (19), with many articles looking at combinations (42). Table S5 shows the associations of clinical and demographic factors with IPV in women seeking TOP.

Prevalence and Meta-Analysis of Lifetime Prevalence

Among women who underwent TOP, reported rates of IPV in the preceding year ranged from 2.5% [43] to 30% [76], while lifetime rates of IPV in this population varied from 14% [88] to 40% [59]. Meta-analysis of lifetime prevalence of IPV among TOP-seeking populations was found to be 24.9% (95% CI 19.9% to 30.6%), as shown in Figure 2. Following systematic meta-analysis regression, we found that the high level of variation between studies was not explicable by study quality, type, or size, or country GNI per capita (Table S6). The association between

IPV and TOP is shown in Figure 3; variation is not explained by GNI per capita. I^2 values for heterogeneity were high, as expected when pooling data with proportions.

Meta-Analysis of Risk Factors

Meta-analysis was undertaken for four factors where data were available (woman being single versus married, partner not knowing about the TOP, partner support for the TOP, and previous TOP), but was not possible for others, as the definitions of both IPV and the risk factors varied, or there was a lack of numerical data or only a single study in many cases. Figure 4 shows no association (pooled OR 2.97, 95% CI 2.39 to 3.69) between being single and IPV among a TOP-seeking population. There was an association (pooled OR 2.32, 95% CI 2.00 to 2.69) between partner not knowing about the TOP and IPV (Figure 5), but no association between partner support for the TOP and IPV (pooled OR 1.37, 95% CI 0.82 to 2.30) (Figure 6). Meta-analysis of three studies reporting on the association between IPV and previous TOP showed no significant association (pooled OR 1.42, 95% CI 0.85 to 2.36) (Figure 7), but five of six further studies reported individual significant associations, though with inadequate quantitative data to include in the meta-analysis. Table S5 shows the associations of clinical and demographic factors with IPV in women seeking TOP.

Associations with Reproductive and Pregnancy Factors

Past obstetric history. Nine studies showed that women who reported IPV were more likely than the comparator group to have a history of multiple TOPs (Tables 3–5) [27,28,38,41,42,44,51,60,65]. The highest quality study found that women presenting for a third TOP were over two and half times more likely to have a history of physical or sexual violence than women presenting for their first [51]. There was no significant association between number of pregnancies and IPV (gravidity in group of women reporting IPV: mean 3.2, standard deviation 2.0; among women not reporting IPV: mean 3.0, standard deviation 2.0) [41], although one medium quality study found a higher odds of history of previous miscarriage among women reporting IPV at a termination clinic, as compared to those not reporting IPV (OR 1.6, 95% CI 1.1–2.2) [41].

Coercion, contraception, and conception. One study investigating pregnancy intention found that women in violent relationships were more likely to say that the pregnancy “had been imposed” upon them by their partner (13% versus 2% for women

Table 4. Characteristics of included cross-sectional studies from the Americas.

Study	Population; Country	Exposure	Outcome	CASP Score (/30)
Jones et al. 2013 [36]	9,493 women seeking second trimester TOP; US.	Physically hurt or forced to participate in sexual activities by father of current pregnancy.	13.7% of women who required a TOP at ≥ 12 weeks' gestation reported violence. At ≥ 16 weeks' gestation, this percentage rose to 39.1% (OR 1.23, 95% CI 0.79 to 1.91).	19
Ely et al. 2011 [37]	120 unmarried TOP patients aged 14–21 y; US.	Abuse at hands of co conceiving partner. CADRI	4% of respondents reported experiencing abuse at hands of co conceiving partner. Mean CADRI score: 115.9 (standard deviation 26.6, $n = 96$).	18
Ely and Otis 2011 [38]	188 women aged 18–46 y seeking TOP at a clinic in southeast US; US.	Emotional, physical, and/or sexual abuse victimisation in the past 30 d.	14.2% reported emotional abuse, 6.4% physical abuse, 3.9% sexual abuse (numbers include overlap). Women who reported a history of previous TOPs were more likely to also report that they had been abused by the father of their pregnancy ($\chi^2 = 5.20$, $p = 0.05$, Cramer's $V = 0.171$). Personal stress, depression, reduced self esteem, and increased sexual discord were all found to be significantly associated with IPV among women seeking TOP. 1.4% of 138 women not reporting IPV reported a partner refusing to use a condom, as compared to 52% of 25 women reporting IPV.	17
Jones et al. 2011 [39]	9,493 women presenting for TOP. Required ability to read any of English, Spanish, or Portuguese; US.	IPV perpetrated by co conceiving partner. Co conceiving partner's involvement in TOP.	6%, 3%, and 7% respondents described physical, sexual, and emotional violence, respectively, at hands of co conceiving partner. Exposure to IPV reduces the likelihood of the woman believing her partner to know about the TOP (OR 0.28, 95% CI 0.21 to 0.37).	22
Jones and Finer 2012 [40]	9,493 women seeking TOP; US.	Physical or sexual violence perpetrated by father of pregnancy.	654/9,493 women reported IPV, with 549 reports of physical and 243 reports of sexual violence.	24
Roth et al. 2011 [41]	1,060 pregnant women who were ≤ 63 d gestation and were recruited for a medical abortion trial; US.	Lifetime and current pregnancy history of physical and sexual violence.	21.6% of women reported experiencing IPV. These women were significantly more likely to have a history of prior TOPs ($p = 0.02$), and were also more likely to have discrepancy between GA calculated from last menstrual period and ultrasound GA ($p < 0.001$). No significant association between IPV and age was noted, with women reporting IPV having an average age of 26.0 ± 5.5 y, as compared to 25.9 ± 5.8 y among women not reporting IPV. Women reporting IPV were more likely to be single (OR 3.0, 95% CI 1.7 to 5.3) or divorced, separated, or widowed (OR 3.0, 95% CI 1.9 to 7.7) than married.	24
Steinberg and Finer 2011 [42]	2,070 women aged 15–54 y who participated in the National Comorbidity Survey; US.	Physical violence perpetrated by an intimate partner.	30.8% of women reporting one TOP reported IPV; 24.3% of women reporting two TOPs reported IPV; 40.7% of women reporting three TOPs reported IPV.	19

Table 4. Cont.

Study	Population; Country	Exposure	Outcome	CASP Score (/30)
Saftlas et al. 2010 [43]	986 women resident in Iowa and ≥ 18 y presenting for TOP, with proficiency in English and/or Spanish; US.	12 mo history of physical and/or sexual abuse, and of battering (where battering was defined as "chronic, nonphysical abuse characterised by controlling behaviours and abuse of powers").	9.9% and 2.5% of participants reported physical and sexual IPV, respectively. 8.4% of women reported battering, with 58.3% of this group reporting battering alone. Women not reporting being in a relationship at the time of recruitment to study reported the highest rates of physical or sexual IPV (16.0%).	22
Silverman et al. 2010 [44]	1,318 English, Spanish, or Portuguese speaking men aged 18–25 y who reported having had sex at any stage in their life. Recruited from community health centres in Boston; US.	Lifetime history of physical and/or sexual violence.	31.9% of participants reported perpetrating physical or sexual violence against a female partner. TOP involvement was more common among men who reported IPV than those who did not (48.9% versus 25.9%; ARR 1.79, 95% CI 1.54 to 2.06). Men reporting IPV perpetration were also more likely to be involved in ≥ 2 TOPs (ARR 3.39, 95% CI 2.06–5.56).	21
Thiel de Bocanegra et al. 2010 [45]	Women living in IPV shelters in the San Francisco area, who were ≥ 18 y old, and had been in a violent heterosexual relationship for ≥ 3 mo prior to entering the shelter ($n = 53$); US.	Birth control sabotage, partner unwillingness to use condoms, forced sex, partner infidelity, and unintended pregnancy.	21/53 [40%] women stated that their partner had told them not to use birth control, with 10 of these women being prevented from obtaining it. 11 women concealed the use of birth control from their partner, and one the use of emergency contraceptive. Two thirds of women reported being forced to have sex by their partner. A total of 68 unintended pregnancies were reported, with 17 ending in TOP. Women reported both being prevented from obtaining, and being forced to have, TOP.	13
Coleman et al. 2009 [46]	18–61 y old, non institutionalised residents of Chicago. Sufficient levels of English or Spanish required for completion of survey. Sexually active with at least one partner within the past 12 mo (906 women, 658 men); US.	Physical IPV within current relationship. Conflict within current relationship.	Women who reported TOP in current relationship had higher violence scores (2.50) compared to those with no history of TOP (1.93) or TOP prior to current partnership (1.86), $p < 0.05$ for both adjusted comparisons.	21
Ely et al. 2009 [47]	120 unmarried TOP patients aged 14–21 y; US.	IPV perpetration and/or victimisation in relationship with co-conceiving partner.	Average dating violence score 115.28 (average level). Lowest score: 70; highest score: 224. IPV and TOP were significantly associated with increased stress, aggression, and suicidal ideation among participants, but not depression or reduced self-esteem.	20
Prager et al. 2007 [48]	Consecutive sample of 398 women who received TOP at urban hospital, excluding women seeking TOP for fetal anomaly; US.	IPV and sexual abuse not specified.	No significant difference was found between rate of violence among women undergoing first TOP and those undergoing repeat TOP ($p = 0.898$).	13
Kazi et al. 2008 [49]	286 women who volunteered for TOP, contraceptive, and other gynaecological research studies; US.	Presence of physical or sexual violence historically, and over the past 2 mo, or during pregnancy (if involved in TOP trial).	No significant difference between any of the groups reporting either historical or recent abuse was noted ($p = 0.44$ and $p = 0.24$, respectively).	22
Finer et al. 2005 [50]	1,209 women seeking TOP from 11 large providers of the service; US.	Husband or partner abusive towards woman or her children. Husband or partner wants woman to have TOP.	3% of women reported having an abusive husband or partner as a reason for having a TOP. 24% of women stated that their reason for having a TOP was that it was what their partner wanted.	18

Table 4. Cont.

Study	Population; Country	Exposure	Outcome	CASP Score (/30)
Fisher et al. 2005 [51]	1,143 women presenting at a regional TOP provider in Ontario; Canada.	Lifetime history of physical abuse by a male partner. History of sexual abuse or coercion.	26.4% of women reported significant conflict with the father of their pregnancy; 19.5% reported physical abuse from at least one male partner; 27% reported past history of sexual violence at any stage of life. Women undergoing repeat TOPs were more likely than those seeking a first TOP to report physical abuse by a male partner, sexual abuse, or sexual violence ($p<0.001$). They were also more likely to report significant conflict with the man involved in current pregnancy ($p<0.01$).	24
Hathaway et al. 2005 [52]	38 women participating in a hospital based IPV programme; US.	Limitation of reproductive autonomy by male partner.	Seven participants described a partner attempting to force them into TOP [18.4%]. Two of these women underwent TOP [5.3%].	13
Raj et al. 2005 [53]	208 South Asian women in heterosexual relationship living in Boston, MA; US	Physical or sexual abuse, or injury perpetrated by current partner.	Unwanted pregnancy is more likely in the abused population (OR 3.39, 96% CI 1.33 to 8.66). Within abused group there were also descriptions of forced or coerced TOP.	22
Woo et al. 2005 [54]	All English and/or Spanish speaking patients seeking TOP at a single clinic in Texas ($n=818$); US.	Lifetime emotional violence. Lifetime, past year, and pregnancy physical violence. Past year sexual violence. Fear of someone.	13.8% of respondents stated a significant abuse history, and 2.8% reported abuse within the current pregnancy. 17.2% of respondents did not disclose their TOP to their partner. 20.9% of this group stated that this was because the partner would oppose the TOP; 7.9% stated disclosure would result in physical harm. Women who had a history of abuse were less likely to tell their partner about the TOP than those without ($p=0.001$).	26
Janssen et al. 2003 [55]	4,750 women delivering at >20 weeks' gestation at a hospital in British Columbia; Canada.	Physically abused during current pregnancy; fear of partner during current pregnancy.	Women reporting IPV are more likely to have a past medical history of TOP ($p<0.03$).	18
Winn et al. 2003 [56]	205 patients attending postnatal follow up in Washington State; US.	Self disclosed current or past physical or sexual abuse on medical records.	History of abuse associated with TOP ($r=0.38$, $p<0.000$).	15
Wiebe and Janssen 2001 [57]	254 women attending an abortion clinic in British Columbia; Canada.	Recent IPV.	15% reported IPV within the past 12 mo, with 8.3% reporting physical abuse, 7.1% reporting sexual abuse, and 8.3% stating they were afraid of their partner. No significant association between IPV disclosure and age was noted, with average age of all participants 28.0 ± 6.5 y, and of women reporting IPV 28.0 ± 7.0 y.	16
Letourneau et al. 1999 [58]	191 women attending a general gynaecology clinic (students not included); US.	Lifetime history of physical or emotional abuse perpetrated by intimate partner or someone close to patient. Lifetime history of being forced to have sex.	Victims of violence were more likely to report a history of TOP than those without violence in history ($p<0.05$). Of women reporting violence, 50% had undergone a TOP (20/40).	16
Glander et al. 1998 [59]	486 women aged 18 y or over seeking TOP and reporting history of IPV; US.	Lifetime, recent, and current pregnancy physical violence. Forced sex in relation to conception of current pregnancy and first intercourse.	39.5% respondents identified themselves as having a history of IPV. Women reporting IPV history significantly more likely not to have told their partner about their pregnancy than control group ($p=0.02$). They were also more likely not to involve the partner in the decision to have a TOP ($p<0.01$).	21

Table 4. Cont.

Study	Population; Country	Exposure	Outcome	CASP Score (/30)
Evins and Chescheir 1996 [60]	51 women self referring for TOP; US.	Lifetime physical abuse. Past year physical abuse. Abuse during pregnancy. Sexual abuse within past year.	11/51 [22%] women described past year history of IPV. 100% of women battered during ongoing pregnancy were also battered prior to pregnancy. Among 16 women reporting IPV there was a total of 6 previous TOPs, as compared to 10 previous TOPs among 29 women not reporting IPV.	16
Holmes et al. 1996 [61]	4,008 female residents of the US, aged ≥ 18 y at time of first study; US	Lifetime prevalence of rape; prevalence of rape related pregnancy; outcomes of rape related pregnancy.	29.4% of rapes disclosed were perpetrated by a boyfriend and 17% by a husband. Rape related pregnancy was ended with TOP in 50% of reported cases.	21
Torres and Forrest 1988 [62]	Patients at major providers of TOP in the US. 1,900 patients were included in total, 420 of whom were at ≥ 16 wk gestation; US.	Reasons for choosing to terminate pregnancy. In particular: fear of telling partner about TOP; feeling pressurised into having TOP by someone close; husband or partner mistreats participant or her children.	1% of women stated that their primary reason for having a TOP is that their partner/husband wanted them to, and 6% stated that their primary reason is that their partner/husband mistreats either them or their children. Fear of telling partner of a pregnancy and/or feeling pressure to have a TOP were both cited as reasons for delaying decision to have TOP. Fear of telling partner (or parents) about pregnancy was also stated as a reason for late TOP, as was being pressurised into not having TOP.	13
Borins and Forsythe 1985 [63]	100 patients attending a women's psychiatry clinic in Toronto; Canada.	Physical and/or sexual abuse as an adult or child.	Physical and/or sexual abuse significantly correlated with TOP: $\chi^2 = 10.14$, $df = 1$, $p < 0.001$.	15
Diniz et al. 2011 [64]	147 women seeking TOP; Brazil.	Definition not stated.	88% of women reported lifetime history of IPV, with 47% experiencing IPV in the current pregnancy.	13

Percentages in brackets are calculated percentages not reported in the original studies.

ARR, adjusted risk ratio; CADRI, Conflict in Adolescent Dating Relationships Inventory; GA, gestational age.

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not in physically or sexually violent relationship) [29]. A further two studies found that pregnancy associated with sexual coercion and ending in TOP was also 1.8 to 3.8 fold more likely to be associated with IPV [34,35]. One study found that women in violent relationships were significantly more likely to report going without contraceptives compared to women not reporting IPV (Table 3) [28], with another study finding that they were more likely to use them (Table 4) [38]. In four studies, of which two were very low quality, women reported being actively prevented from obtaining contraception by their partner, or that their partner was refusing or deceiving them about birth control use (Tables 3 and 4) [28,38,45,52]. It was reported that a partner preventing access to contraception led to concealed use of contraceptives among some women [45].

One cross sectional population telephone survey of over 4,000 women found that over 46% of 616 “completed rapes” were perpetrated by a husband or boyfriend, and that 50% of 20 rape related pregnancies ended in TOP [61]. One low quality study of women who migrated as adults from the Indian subcontinent to the US and had a history of seeking sex selection services found that a third of 65 women described past physical abuse and neglect related specifically to not producing a male child [94].

Factors Relating to Termination of Pregnancy

Decision-making. Women reporting IPV were more likely to report an unwanted pregnancy (7.4% of 163 women not reporting

IPV versus 23.3% of 44 women reporting IPV) [53]. Additionally, a high quality study, though with small numbers, found that women attending a termination clinic with a planned pregnancy were more likely to report IPV (50% of 12 women) than those who did not plan their pregnancy (5.6% of 337 women) [30]. There was evidence from very low quality studies that some women felt coerced by their violent partner into having a TOP (Table 4) [45,52]. One medium quality study found that 2% of 1,215 women in a termination clinic reported being forced into the decision by their partner [88]. One small, very low quality study of 38 women participating in a hospital based IPV programme found that 18% reported feeling “pressured” into TOP and 5% were forced into undergoing the procedure [52].

There was consistent evidence that women in violent relationships were more likely not to tell their partner about their decision to terminate (pooled OR 2.97, 95% CI 2.39 to 3.69; Figure 5) [38,39,54]. Women with an IPV history were less likely to have their partner fund their TOP (27% of 25 women reporting IPV had their partner pay for their TOP versus 63% of 155 women not reporting IPV) [38].

Gestation and method of termination of pregnancy. Two studies, one of high and one of low quality, failed to find any association between IPV and gestation at TOP [54,57], although one lower quality study reported that women having a second trimester TOP were more likely to report a history of forced sex than women having a first trimester TOP (35.3% of 410 versus 11.5% of 139), [84], and another found that women later in

Table 5. Characteristics of included cross-sectional studies from Europe.

Study	Population; Country	Exposure	Outcome	CASP Score (/30)
Laanpere et al. 2013 [65]	2,735 women aged 15–44 y participating in a national household survey; Estonia.	Physical or sexual violence encountered in the past 12 mo, perpetrated by current or former partner.	Among women who reported IPV, 150/362 reported at least one TOP, compared to 604/1,604 women not reporting IPV. Women reporting IPV were more likely to report repeat TOP: adjusted OR 1.72 (95% CI 1.24 to 2.37).	23
Makenzius et al. 2012 [66]	590 men whose partners underwent a TOP at a particular clinic; Sweden	Physical, sexual, and psychological violence perpetrated against the male participants in the past 12 mo.	Among the men whose partners were seeking their first TOP, violence was reported in 24/402 [6%] cases; of those women seeking a second or greater TOP, 23/188 [12%] reported violence, $p = 0.01$.	18
Johnson et al. 2007 [67]	920 women attending a gynaecology outpatient clinic in Hull, England; UK.	Lifetime history of emotional abuse.	Emotional abuse more prevalent among women seeking TOP than among women seeking gynaecological care for other reasons ($p < 0.001$, $\chi^2 = 17.9$).	22
John et al. 2004 [68]	825 women attending a general gynaecology clinic in Hull; UK.	Past year physical violence, forced sexual activity, and fear.	Among women presenting for TOP, 24/86 reported IPV (28%). Among women reporting IPV, 24/171 reported history of IPV (14%). By χ^2 test this was not significant.	18
Keeling et al. 2004 [69]	All women (312) attending pregnancy counselling clinic in northwest England over 7 mo period. Only women who intended to have TOP were included; UK.	Lifetime and past year history of physical, sexual, and emotional abuse. Current physical abuse. Living in fear.	35.1% (95% CI 29.8 to 40.4) of participants disclosed lifetime physical or emotional abuse. 24.5% of this group were still with perpetrator at time of TOP. 44% of this group described weapon or non weapon related injury to head, and 8.8% described injury to genitals. Prevalence of physical abuse within the past 12 mo was 19.5% (95% CI 14.9 to 24.0); 39.5% of this group reported still being with the perpetrator. Current (past fortnight) abuse was reported by five women. 3.7% (95% CI 1.5 to 5.9) of women reported forced sex within the past 12 mo. 55% of this group thought their pregnancy to be related to this event. 54.6% of these events were perpetrated by a current or former partner or husband. 6.6% of women reported living in fear: 90% of this group had a lifetime history of violence, 45% a past year history.	21
Zsuzsa et al. 2004 [70]	6,980 women participating in a cross sectional health check of residents aged 18 y or over; Hungary.	Physical violence perpetrated by partner, parents, or relative. In particular, physical violence within past year. Currently living in fear. Stress in marriage.	15.5% of women who reported a TOP also reported physical abuse perpetrated by partner, in contrast to 6.7% of women who did not report a TOP ($p < 0.001$, OR 2.529, 95% CI 2.112 to 3.027). Likewise, physical abuse from relatives ($p < 0.001$, OR 1.630, 95% CI 1.370 to 1.940), fear of someone ($p < 0.001$, OR 2.082, 95% CI 1.547 to 2.801), and physical abuse in the past year ($p < 0.008$, OR 1.675, 95% CI 1.181 to 2.374) were all more common among women reporting TOP.	25
Hedin and Janson 2000 [71]	207 Swedish born women, with Swedish born partners, attending an antenatal clinic; Sweden.	Physical and/or sexual violence perpetrated by partner during the current pregnancy.	Of 23 women who reported abuse in the current pregnancy, 10 reported a previous TOP [43%], as compared to 46/184 [25%] women not reporting abuse.	17

Percentages in brackets are calculated percentages not reported in the original studies.

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their second trimester (over 16 versus 13–15 weeks' gestation) at time of TOP were more likely to report IPV (OR 1.23, 95% CI 0.79 to 1.91) [40]. One further study found that women who reported IPV were more likely to have the gestational age of the fetus redated on ultrasound (64.9% of 243 women reporting IPV versus 49.9% of 817 women not reporting IPV) [41].

Psychosocial problems. In women who had undergone TOP, there was a significant association between reported IPV

and psychosocial problems including depression [38,47], suicidal ideation [47], stress [38,47], and disturbing thoughts [47], although the temporal relationships were unclear (Table 4) [38,47]. No studies identified the subsequent impact of IPV and TOP on the woman, her partner, or their relationship.

Disclosure and intervention. Five studies examined disclosure in termination clinics: IPV questionnaires were highly

Table 6. Characteristics of included cross-sectional studies from Africa.

Study	Population; Country	Exposure	Outcome	CASP Score (/30)
Pallitto et al. 2013 [72]	Ever partnered women selected for participation in the WHO Multi Country Study on Women's Health and Domestic Violence against Women ($n = 17,518$); Bangladesh, Brazil, Ethiopia, Japan, Namibia, Peru, Samoa, Serbia, Montenegro, Thailand, United Republic of Tanzania.	Lifetime history of physical or sexual violence perpetrated by partner.	Women who had experienced IPV had increased odds of having undergone a TOP (adjusted OR 2.68, 95% CI 2.34 to 30.6).	26
Antai and Adaji 2012 [73]	19,226 women aged 15–49 y. Demographic and Health Survey; Nigeria.	Physical, sexual, or emotional violence perpetrated by current or former partner.	Lifetime prevalence of IPV among women who had undergone a TOP: 21% physical violence; 6% sexual violence; 19% emotional violence.	26
Stöckl et al. 2012 [74]	3,270 women recruited from several districts within Tanzania. WHO Multi Country Study on Women's Health and Domestic Violence against Women; Tanzania.	Lifetime physical and/or sexual IPV (perpetrated by a partner).	Women who report having experienced both physical and sexual IPV are more likely to have undergone a TOP than those who do not.	24
Alio et al. 2011 [75]	2,570 women aged 15–49 y. Demographic and Health Survey; Cameroon.	Physical, sexual, or emotional IPV in last year.	OR _{adj} for TOP: 1.59 (95% CI 1.10 to 2.31) with physical violence; 1.87 (95% CI 1.23 to 2.83) with sexual violence; 1.43 (95% CI 0.98 to 2.08) with emotional violence.	27
Okenwa et al. 2011 [76]	Nationally representative sample of women of reproductive age ($n = 33,385$). Demographic and Health Survey; Nigeria.	Exposure to physical, emotional, and/or sexual IPV over past 12 mo.	Women who had undergone TOP, miscarriage, or stillbirth were more likely to have experienced physical, sexual, and/or emotional violence than women who had not undergone TOP ($p < 0.001$). Rates of violence among women who had undergone TOP, miscarriage, or stillbirth as compared to those who had not differed as follows: 20% versus 14%, 6% versus 3%, and 30% versus 22% for physical, sexual, and emotional abuse, respectively.	26
Emenike et al. 2008 [77]	5,878 women aged 15–49 y resident in or visiting households; Demographic and Health Survey; Kenya.	Lifetime history of physical, emotional, and/or sexual violence.	Women exposed to physical, emotional, or sexual violence were more likely to have experienced a TOP ($p < 0.001$).	25
Kaye et al. 2006 [78]	Women presenting with abortion complications (miscarriage or TOP) (miscarriage $n = 609$; TOP $n = 333$); Uganda.	IPV during pregnancy.	IPV during pregnancy was a risk factor for TOP (OR 18.65, 95% CI 11.23 to 30.96, standard error 4.823, $p < 0.001$).	24
Kaye et al. 2005 [79]	Women presenting with abortion complications (miscarriage or TOP) (miscarriage $n = 609$; TOP $n = 333$); Uganda.	Physical or sexual IPV during pregnancy.	Most common reason for TOP among adolescents and older women was "relationship issues" (including IPV). Domestic violence associated with TOP: point estimate 18.42, 95% CI 11.09 to 30.58, $p < 0.0001$.	20
Kaye 2001 [80]	Every third women seen in a given time period with complications of TOP or miscarriage ($n = 311$); Uganda.	Physical, emotional, and sexual violence.	38.9% of women who reported TOP stated IPV as reason for choosing to terminate pregnancy.	14

OR_{adj}, adjusted odds ratio.

doi:10.1371/journal.pmed.1001581.t006

acceptable [90], although non responding women differed from those who responded and had undergone more TOPs [41]. Women in violent relationships were as likely to attend for follow up (52.2% of 413 non abused women defaulted versus 46.6% of 88 abused women) [33] and more likely to know about community resources for IPV (80% of 16 women reporting IPV versus 67% of 35 women not reporting IPV) [60]. Some women reported events

that would meet the definition of IPV but did not identify themselves as experiencing IPV [98]. Nevertheless, many women wished to talk about IPV with regard to further management or intervention [33], with some citing their doctor as the main source of information [60]. However, during a period of universal screening only 51% of 499 women were asked about IPV; certain sub groups of women were more likely to be asked about IPV (e.g.,

Table 7. Characteristics of included cross-sectional studies from Asia.

Study	Population; Country	Exposure	Outcome	CASP Score (/30)
Nair et al. 2013 [81]	220 women living in slums who reported both IPV and a partner who had risky alcohol use; India.	30 d history of spousal physical or sexual violence.	11 of 77 [14%] women who reported IPV in the past 30 d had undergone a TOP, compared to 23/143 [16%] women not reporting violence in the past 30 d.	19
Nguyen et al. 2012 [82]	1,281 women in four districts of the Thai Nguyen province; Viet Nam.	Lifetime physical, sexual, and emotional gender based violence based on the WHO definition.	Among women reporting any violence, 40.93% reported having undergone a TOP, compared to 30.54% of women not reporting violence ($p<0.001$). Results for physical, sexual, and emotional violence individually were also significant.	25
Shah et al. 2011 [83]	43 women who presented to a Pakistani hospital with complications of an unsafe TOP; Pakistan.	Physical and/or emotional violence. Time frame not specified.	Physical and/or emotional violence was given as a reason for TOP in 17.2% of cases.	13
Kalyanwala et al. 2010 [84]	549 unmarried, young women seeking TOP in Bihar and Jharkhand; India.	Forced or persuaded to have sex.	One in six participants stated that their pregnancy was the result of forced sex. Women forced to have sex were more likely to have a second trimester TOP.	19
Lee Rife 2010 [85]	2,444 women aged 15–39 y living in India with at least one child. Selected by randomised household probability sample surveying; India.	Physical violence (hitting, slapping, kicking, beating, weapon use) perpetrated by husband from time of marriage to birth of first child.	Women who had had TOPs had higher odds of experiencing IPV (OR_{adj} 3.74).	16
Silverman et al. 2007 [86]	National sample of Bangladeshi women ($n=2,677$) of childbearing age, married and living with their husband. Their husbands were also included; Bangladesh.	Husband asked about his perpetration of forced sex and physical IPV towards his current wife.	Women experiencing physical (but not sexual) IPV were at increased risk of having undergone a TOP in the past 5 y (OR_{adj} 1.54); women experiencing physical and sexual IPV were at increased risk of having undergone a TOP at any stage (OR_{adj} 1.43).	24
Leung et al. 2005 [87]	Patients requesting TOP ($n=300$), infertility treatment ($n=500$), obstetric care ($n=514$), or general gynaecology treatment ($n=300$) at a Hong Kong hospital; China.	Physical health, psychological health, social relationships, and environment assessed.	Obstetric and TOP patients showed significantly higher prevalence of lifetime violence compared to the other two groups ($p<0.001$). Most of these patients described emotional or verbal abuse. Quality of life was significantly reduced in all domains—physical, social, environmental, and psychological health ($p=0.014$, 0.027, 0.002, and <0.001 , respectively). It was noted that women reporting IPV were significantly more likely to be single or separated than married, with 35.0% of the 117 women reporting IPV being single or separated, compared to only 14.9% of 1,497 women not reporting IPV.	23
Wu et al. 2005 [88]	Women who were requesting a TOP and who had lived in the local city for at least 1 y ($n=1,215$); China.	Physical, emotional, or sexual violence occurring during or prior to current pregnancy.	Lifetime experience of IPV was 22.6%. 2.1% of women stated that their current partner was forcing them to have a TOP. 14.6% of women reported that they were afraid of their partner. Women who had been abused were at significantly higher likelihood of multiple TOPs than women who had not been abused ($p<0.001$, OR 1.7, 95% CI 1.41 to 2.67). No significant difference in age between the two groups was noted, with average age in the group reporting IPV being 24.8 ± 6.4 y, as compared to 25.7 ± 6.4 y in the group not reporting IPV.	23

Percentages in brackets are calculated percentages not reported in the original studies.

OR_{adj} , adjusted OR.

doi:10.1371/journal.pmed.1001581.t007

Table 8. Characteristics of included cross-sectional studies from Australasia.

Study	Population; Country	Exposure	Outcome	CASP Score (/30)
Fanslow et al. 2008 [89]	Random sample of 2,855 women aged 18–64 y, obtained from Auckland and Waikato; New Zealand.	Physical and/or sexual IPV perpetrated by husband, a man that the woman had lived with, or current, regular male sexual partner.	Controlling for other variables, women who had experienced IPV were 2.5 times more likely to report a TOP than those who had never experienced IPV (21.4% versus 9.9%, $p < 0.0001$).	24
Whitehead and Fanslow 2005 [90]	125 women who agreed to see a social worker whilst attending an abortion clinic; New Zealand.	Lifetime and past year histories of physical abuse and sexual abuse (forced or pressured into having sex).	Reported lifetime prevalence of physical or sexual abuse was 50.8%. 69% of women who reported a lifetime history of physical abuse also reported that their partner/father of pregnancy was a perpetrator of their abuse. 42% reported that a family member was responsible.	18
Taft et al. 2004 [91]	Cohort of Australian women aged 18–23 y who are part of a long term longitudinal study ($n = 14,784$). Survey 1 from prospective cohort study; Australia.	1 y history of physical and/or sexual violence. Lifetime history of violent relationship.	Lifetime partner violence was strongly associated with the following pregnancy outcomes: miscarriage and TOP ($p < 0.001$) and birth, miscarriage, and TOP ($p = 0.05$). Recent partner violence was associated with the second of these outcomes ($p < 0.001$). Neither situation was significantly related to TOP alone. Women reporting IPV were less likely to be married than single (OR 0.70, 95% CI 0.59 to 0.83), and more likely to be separated, divorced, or widowed than single (OR 2.62, 95% CI 1.78 to 3.86).	20
Webster et al. 1996 [92]	1,014 women seeking pregnancy care in Brisbane hospital; Australia.	Historic abuse (victim was >16 y old but abuse ended before current pregnancy began) and current pregnancy abuse. Physical, emotional, and sexual abuse studied.	29.7% of women disclosed past or present abuse history. Women reporting abuse were significantly more likely to have had a previous TOP than women who reported no history of violence ($p = 0.0034$).	22

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white women, in a Canadian study, in which white women made up 55% of the TOP seeking population [$n = 499$], but 63% of those asked about IPV [$n = 254$] [57].

Demographic Factors

Female factors. The majority of studies focused on female factors. The results relating to impact of age on the association between IPV and TOP were discrepant, and interpretation is hindered by different age groups being used. One paper reported that past year incidence of IPV was higher among women under the age of 20 y seeking TOP (50.0%) than among those 20 y or over (26.9%); however, the converse [29,30] or no significant association (Tables 4, 6, and 7) [41,57,75,88] has also been reported.

There was contradictory evidence for variance between women of different race or ethnicity, with two studies finding converse associations; one found that significantly fewer white Caucasian women (12% of 160 women) reported IPV as compared to non-white women (21% of 94 women, $p = 0.003$) [57]; another study of women seeking elective pregnancy termination reported that a greater proportion of white women (48% of 226) had experienced IPV compared to black women (31% of 223, $p = 0.001$) [59]. This finding may not be generalisable to other locations. No significant associations were found with women's level of education in two studies [41,88] or with women's income [41]. Three studies reported no significant association with employment status [41,69,88], whilst two suggested that unemployed women or non skilled labourers were more likely to report both IPV and TOP (25.3% of 291 women seeking TOP and reporting IPV were

unemployed versus 19.1% of 1,096 women seeking TOP and not reporting IPV) [28,33].

Three studies of similar medium quality assessed drug and alcohol use; one study found that, compared to women not reporting IPV, women in a termination clinic who reported IPV were also more likely to smoke (25.6% of 117 women experiencing IPV versus 11.0% of 1,497 non abused women) and drink (12.8% of women experiencing IPV versus 4.9% of non abused women) [87], but other studies found no significant association [88] or reported an association only anecdotally [59].

An association between negative physical quality of life scores and IPV and TOP was found in one medium quality study (Table 7) [87].

Relationship factors. Five studies, one of high and four of medium quality, found that, compared to married women, those who were single, separated, divorced, or widowed were more likely to have a history of IPV and TOP (Tables 3, 4, and 7) [30,41,43,87,91], though one medium quality study found no significant association [88], and one further study of women experiencing IPV found married women were more likely to report a TOP (89% of 23,909 married women compared to 11% of 9,408 unmarried women) [73]. Women who reported difficulties in their relationship were also more likely to report IPV when asked at a termination clinic in all studies (with one study finding that 7.7% of 350 women undergoing a TOP reported difficulties in their relationship, as opposed to 1.8% of 653 women continuing pregnancy) [30,38,59]. One study found no significant association between prevalence of IPV and household income (27.2% of 669

Table 9. Characteristics of included qualitative studies.

Study	Population; Country	Exposure	Outcome	CASP Score (/20)
Kalyanwala et al. 2012 [93]	26 unmarried, young women seeking TOP; India.	Forced sex, or persuasion into having sex.	Those who reported that their pregnancy was the result of an incident of forced sex often reported fear of, as well as real, family violence.	14
Puri et al. 2011 [94]	65 women who had migrated from the Indian subcontinent to the US at the age of 18 y or greater, and had a history of seeking sex selection services; US.	Any marital violence related to fetal sex and/or sex selective TOP.	62% of women described verbal abuse from their female in laws or husband; one third described past physical abuse and neglect related specifically to their failing to produce a male child.	14
Williams and Brackley 2009 [95]	8 women aged 18–45 y with a self reported history of IPV within the past year, or since becoming pregnant, presenting for TOP (unintended pregnancy) and who could read, write, and comprehend English; US.	Self reported IPV within past year, or since becoming pregnant.	Researchers identified consistent themes within abuse patterns: women reported that the violence was “not that bad” initially, it then escalated, and, finally, they believed that if they were to carry their pregnancy to term, their partner would return.	12
Belton 2007 [96]	Burmese women migrating to Thailand, living in the Tak province. 180 case notes reviewed; 31 public hospital case notes reviewed; 43 women and 10 men interviewed; case notes of 14 women who died during or shortly following obstetric care reviewed; 20 midwives interviewed; Thailand.	Relationship with father of pregnancy; fear of father of pregnancy.	5/43 [12%] women reported IPV as a motivation to end their pregnancy. 3/10 [30%] men disclosed controlling, threatening, or physically abusive behaviours against their wife.	10
Renker 2002 [97]	139 women aged between 18 and 19 y who were pregnant; US.	Physical violence in the lead up to and during a pregnancy.	40/139 [29%] pregnant teenagers identified as having been abused in the years leading up to their current pregnancy, and 13 of these 40 [33%] reported pregnancy in the same year that ended in miscarriage or TOP.	10
Souza and Ferreira 2000 [98]	12 women attending a local hospital for post TOP care; Brazil.	Physical, sexual, and emotional violence.	Although all women accepted the definitions of IPV they were shown, and some identified that they had experienced such activities, none of the participants answered positively when asked directly whether or not their partner had acted violently towards them.	9

Percentages in brackets are calculated percentages not reported in the original studies.
doi:10.1371/journal.pmed.1001581.t009

women reporting TOP were in the lowest income bracket, as compared to 26.5% of 139 women not reporting TOP) [54].

Male factors. One article studied men attending community health centres and identified that men who admitted to IPV perpetration were more likely to report having “been involved in a pregnancy” that ended in TOP (48.9% of 188 men reporting IPV perpetration also reported involvement in TOP, as opposed to 22.7% of 402 men not reporting IPV perpetration) [44]. Another study of partners of women having a first or subsequent TOP found higher rates of IPV experienced by the men involved in a second or more TOP (12% of 188 men whose partner was having a second or subsequent TOP reported “being a victim” of IPV versus 6% of men whose partner was having a first TOP) [66]. One low quality study noted that 36% of 16 women reporting IPV stated that their perpetrating partner had been the victim of abuse as a child [60].

For IPV in women presenting for TOP, there was no evidence of bias relating to non publication of small non significant studies; Egger’s test [24] for small study effects was non significant ($p = 0.13$). These associations, the uncertainties, and gaps in knowledge are shown diagrammatically in Figure 8.

There were no intervention studies.

Discussion

Summary of Main Findings

The literature is extensive, but variable in quality, and largely focused on female factors. High rates of physical, sexual, and emotional IPV were found across six continents among women seeking a TOP. According to meta analysis, partner not knowing about the TOP was associated with IPV among women seeking TOP. However, lack of partner support for TOP is not associated with IPV among women seeking TOP. The literature also suggests that women in abusive relationships were more likely to report inability to make autonomous contraceptive choices, partner contraceptive sabotage, and sexual violence, and they were less likely to have informed their partner about the pregnancy or involved him in decision making about it. IPV was cited as a reason for wanting TOP, and rape related pregnancy had a particularly high chance of leading to TOP. The meta analysis did not find that multiple TOPs were associated with IPV, but its

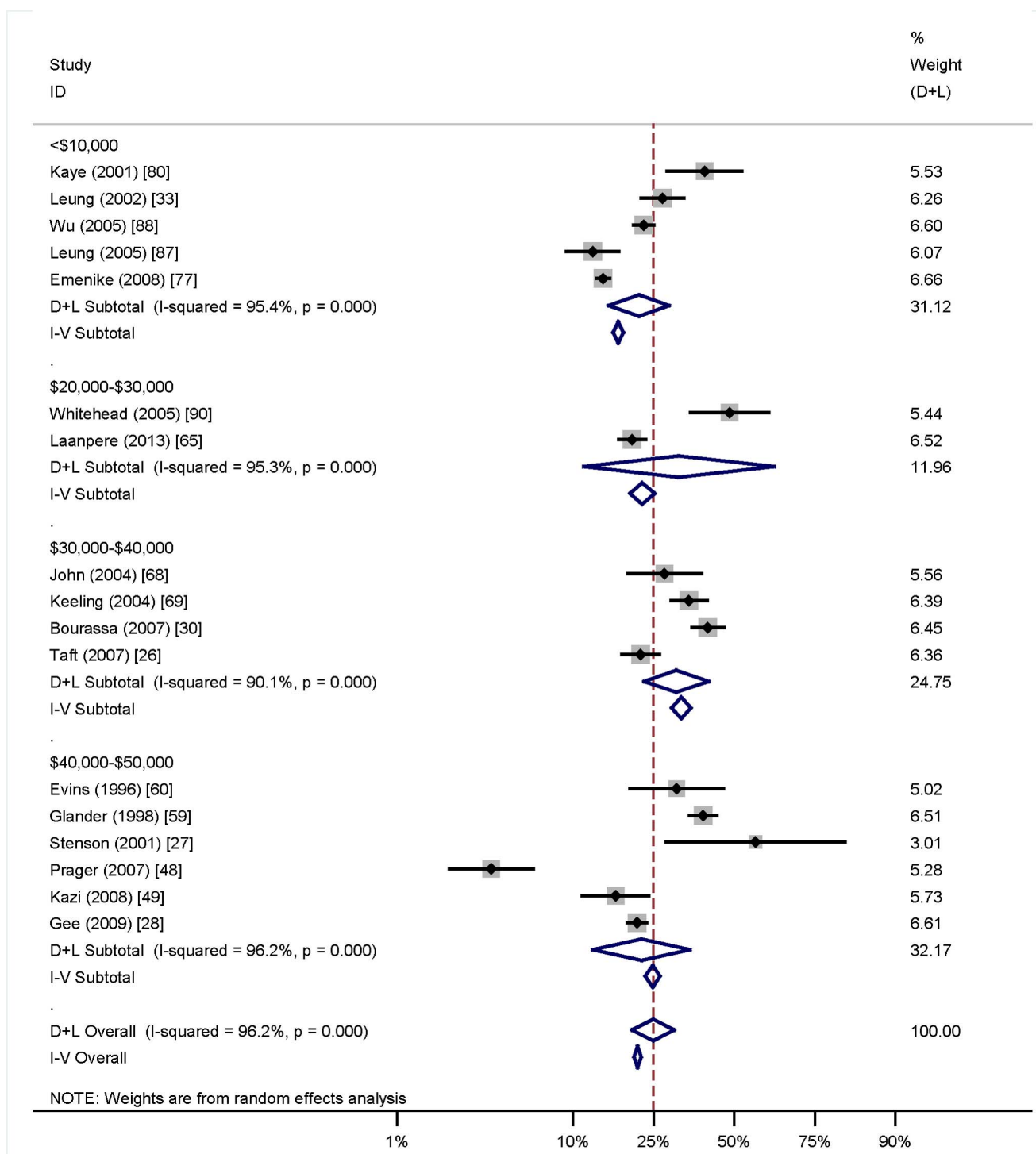


Figure 2. Prevalence of intimate partner violence among women seeking termination of pregnancy grouped by country's gross national income per capita (in intervals of Int\$10,000). Weights are from random effects analysis. D+L, combined effects using the DerSimonian and Laird [21] random effects method; I V, combined effects using the inverse variance fixed effects method.
doi:10.1371/journal.pmed.1001581.g002

credibility is undermined by both the number of studies that did (albeit unquantified) and the association reported by men who stated they had been perpetrators of IPV. Although it was not always determined whether experiencing IPV was a determining factor in the decision to end, rather than continue, a pregnancy, the findings support the concept that violence can sometimes lead to an initial pregnancy (via coercion, rape, sexual assault, or

contraceptive sabotage) and to a subsequent TOP (via coercion). There was a lack of data regarding long term outcomes for women in violent relationships who underwent TOP, but associations with repeat TOP (and possibly miscarriage) lend support to the notion of a repetitive cycle of abuse and pregnancy. Not informing the male partner may then be explicable as a reason to avoid partner involvement or further abuse.

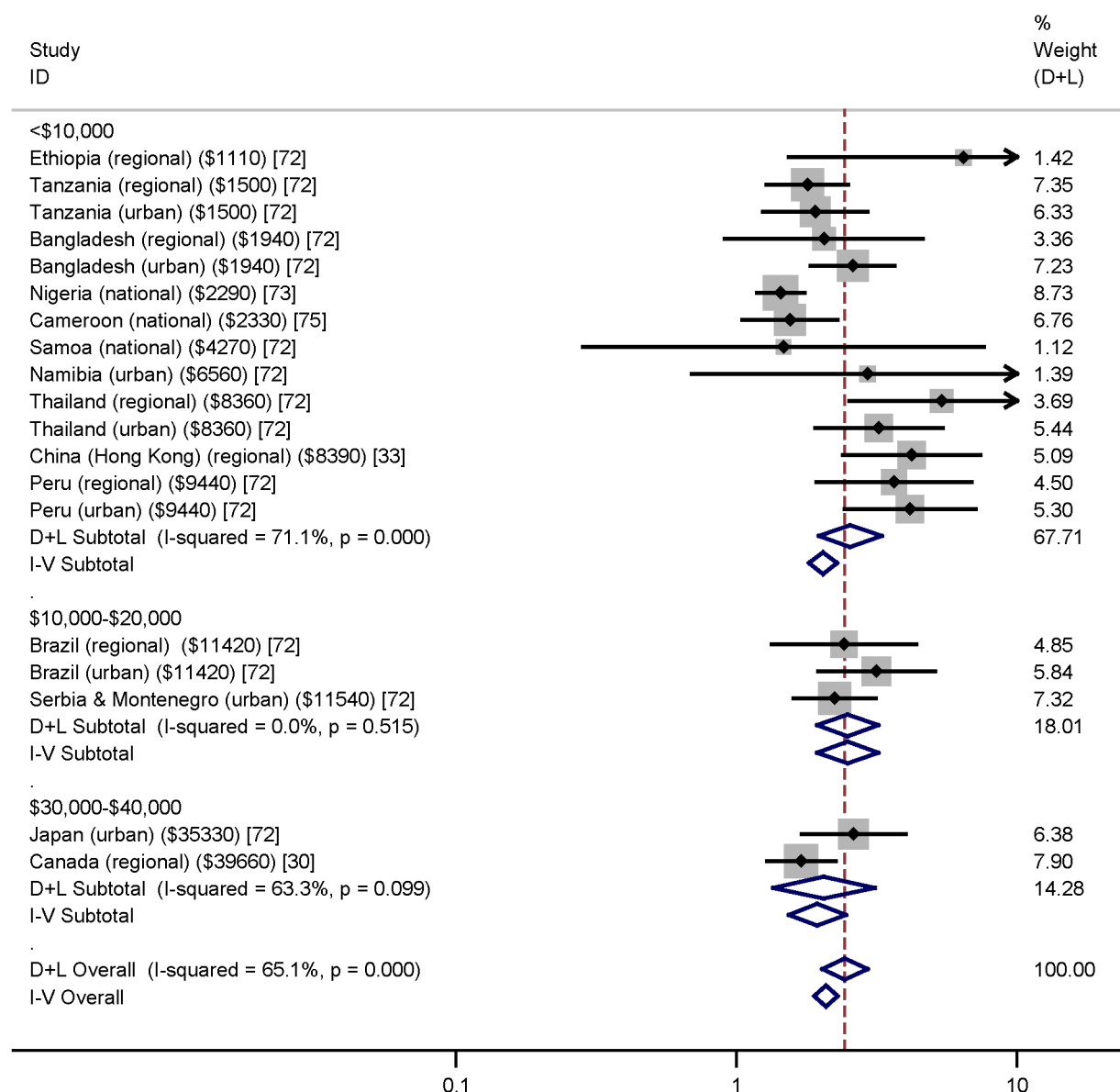


Figure 3. Associations between intimate partner violence and termination of pregnancy grouped by country's gross national income per capita (in intervals of Int\$10,000) and with setting (urban, regional, or national) given. Weights are from random effects analysis. D+L, combined effects using the DerSimonian and Laird [21] random effects method; I V, combined effects using the inverse variance fixed effects method. Countries grouped by GNI (shown in parentheses). doi:10.1371/journal.pmed.1001581.g003

Strengths and Limitations

Strengths of the review and meta analysis include use of multiple databases, no language restriction, hand searching of reference lists, double data entry, and quality assessment of both quantitative and qualitative studies from a wide variety of settings, thus improving reliability and generalisability. Limitations include unexplained large differences in both prevalences and odds ratios between studies (heterogeneity), likelihood of underreporting of both IPV [99] and TOP (particularly when both are stigmatised) in the primary data sources, and inherent difficulties in validation. There is potential publication bias towards research showing a positive relationship. The meta analysis may be biased, as only those studies quantitatively reporting a significant result could be included, whilst those stating an association (without providing data for inclusion) had to be excluded. It was not possible to determine the legality of,

or access to, TOP for each country or state at the specific time point of study; thus, the analysis has not included evaluation of such barriers. It was not possible to determine temporal relationships and patterns of abuse, pregnancy, and TOP.

Comparison with Other Studies

Only one review has previously examined the association between IPV and TOP within a study of broader sexual health issues [100], concluding that TOP and repeat TOP were associated with IPV, but without reporting on other associations. The review was single authored, lacked systematic analysis, and included only eight studies. Other relevant systematic reviews and observational studies on IPV have included women with ongoing pregnancies, women with pregnancy loss, or all women of reproductive age, noting poorer mental, physical, and pregnancy outcomes for the women

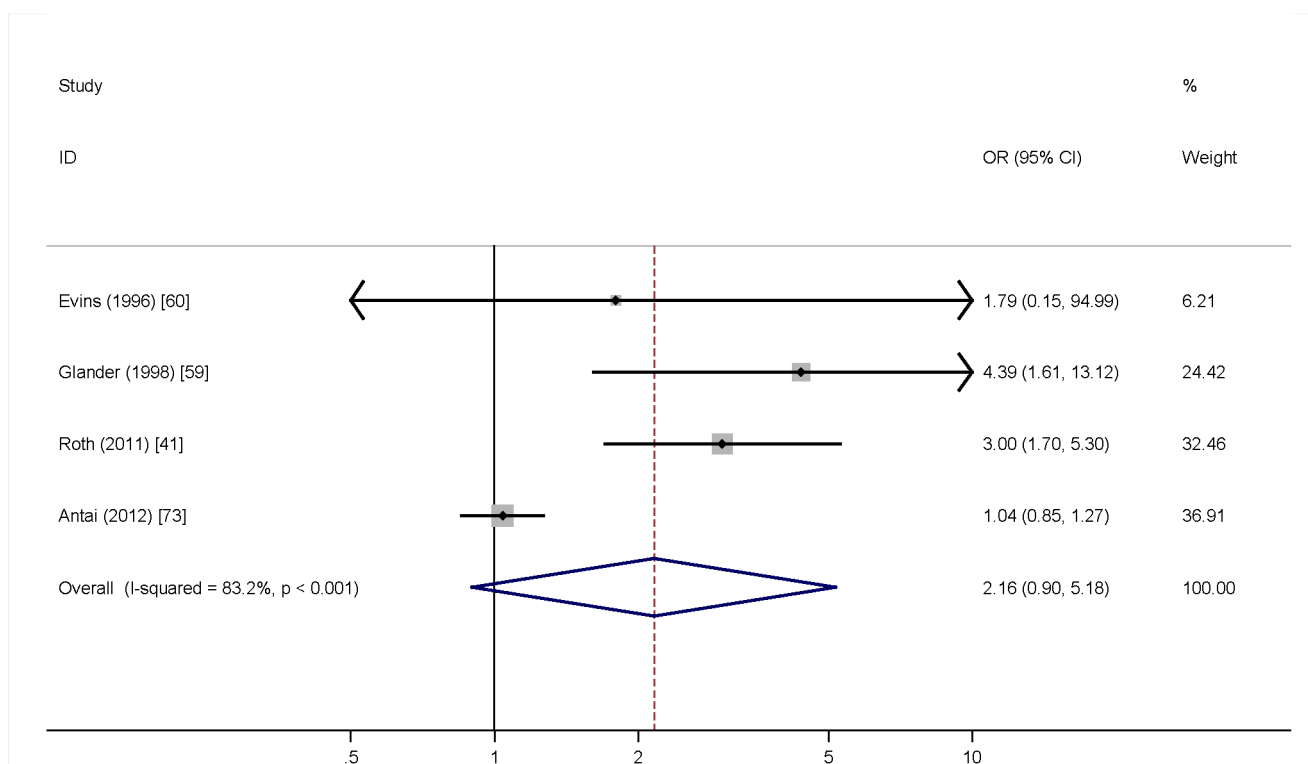


Figure 4. Single status and intimate partner violence. Weights are from random effects analysis. OR, odds ratio.
doi:10.1371/journal.pmed.1001581.g004

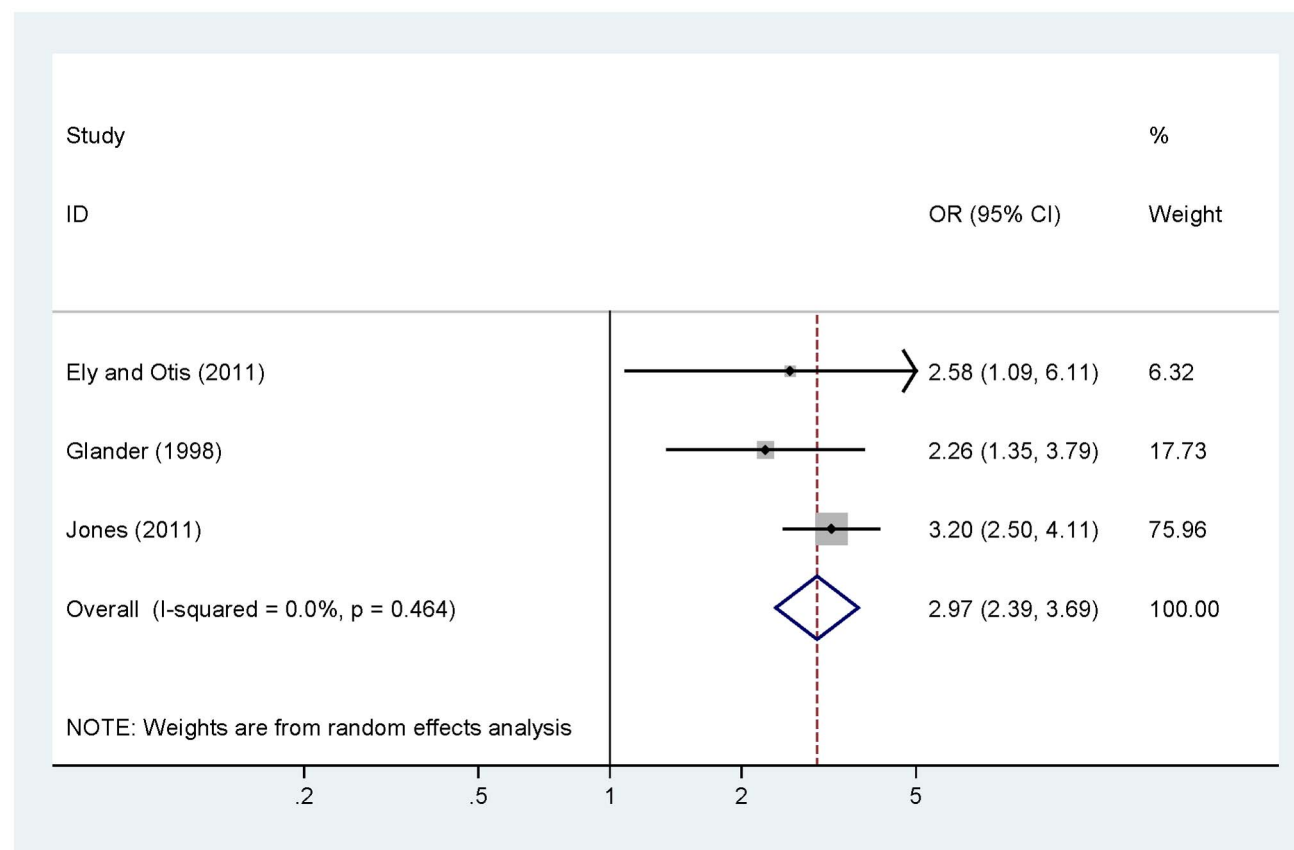


Figure 5. Partner knowledge of termination of pregnancy and intimate partner violence. Weights are from random effects analysis. OR, odds ratio.
doi:10.1371/journal.pmed.1001581.g005

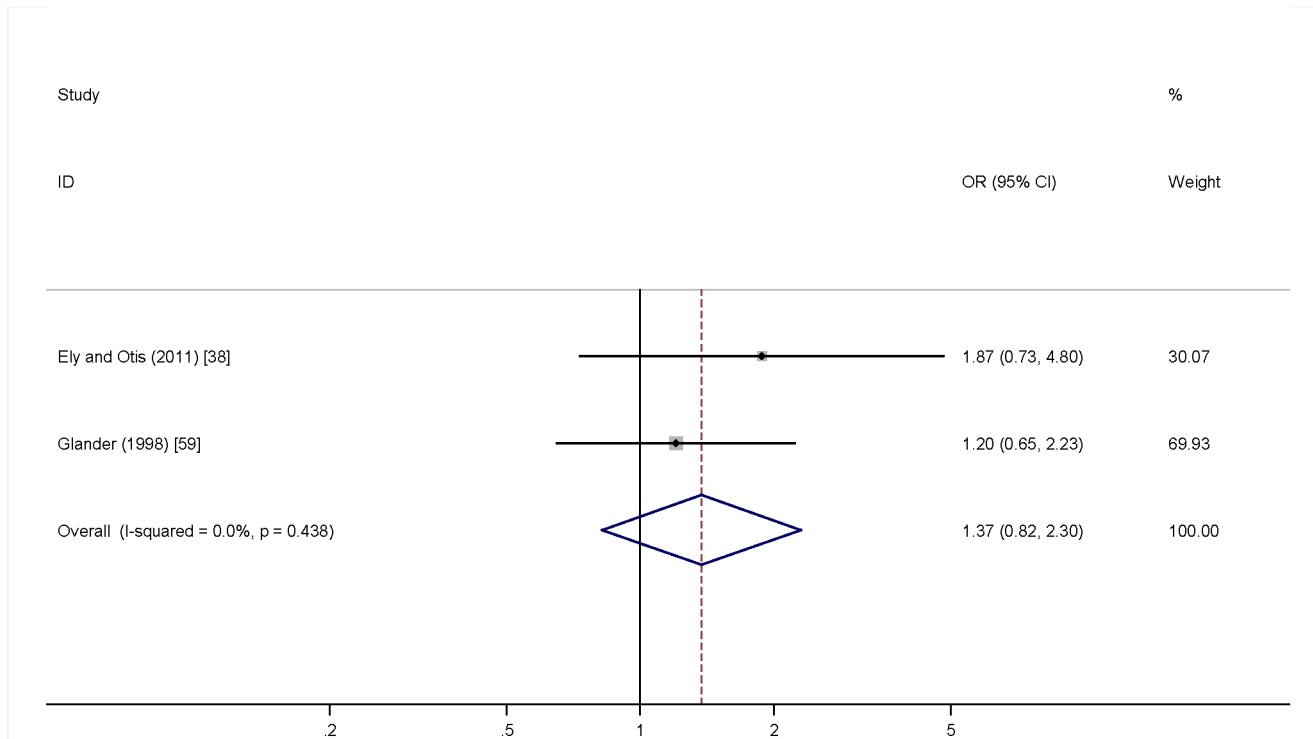


Figure 6. Partner support for termination of pregnancy and intimate partner violence. Weights are from random effects analysis. OR, odds ratio.
doi:10.1371/journal.pmed.1001581.g006

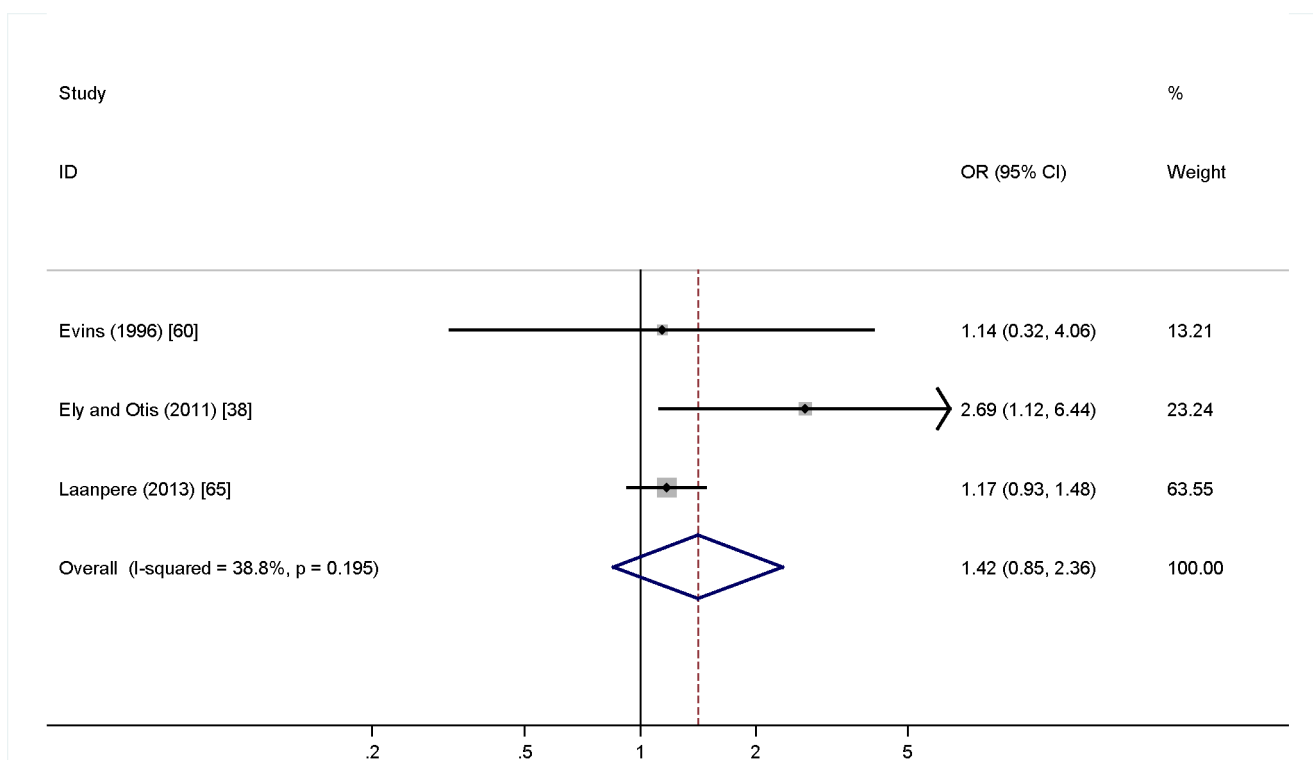


Figure 7. Previous terminations of pregnancy and intimate partner violence. Weights are from random effects analysis. OR, odds ratio.
doi:10.1371/journal.pmed.1001581.g007

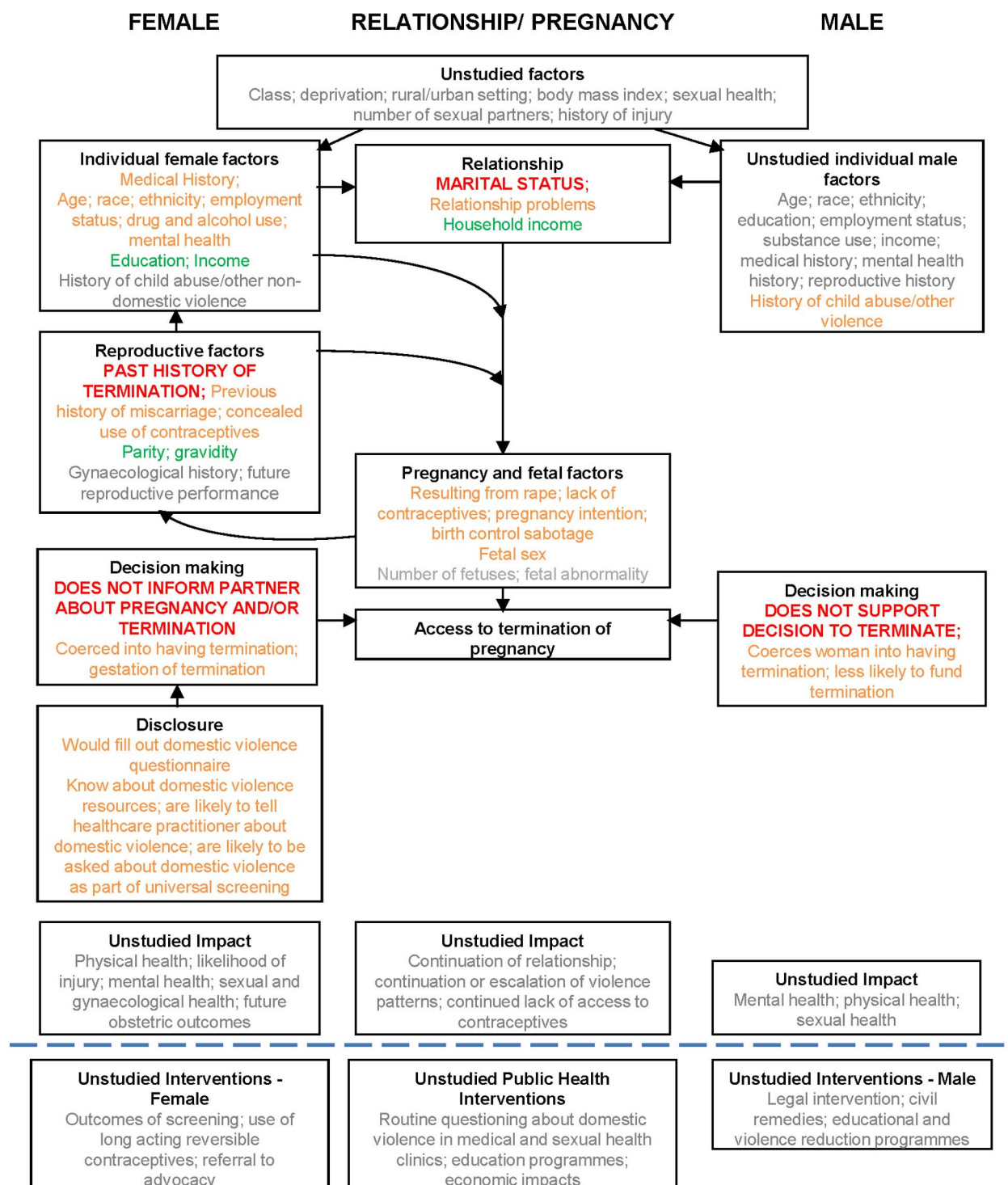


Figure 8. Matrix of associations between domestic violence and termination of pregnancy. Key to associations: red, associations meta analysed; amber, associations not meta analysed but shown in literature; green, no significant association described in the literature; grey, not studied.
doi:10.1371/journal.pmed.1001581.g008

experiencing IPV [101–104]. One review found an association between presence of depressive or anxiety disorders in women and increased likelihood of IPV compared to women without mental disorders, but the direction of causality could not be determined, as

few studies were longitudinal [104]. IPV was also associated with physical injury: presentation to hospital accident and emergency departments with unwitnessed head, neck, or facial injuries was a significant marker for IPV [103]. A large observational study

conducted by WHO found that women who reported a history of partner violence were more likely to report physical and mental health problems including emotional distress and suicidal thoughts, as well as difficulties with activities of daily living [101]. Comparison groups that might prove useful would be women with ongoing but unplanned pregnancy (no specific studies available) and women with ongoing wanted pregnancy. In ongoing pregnancies, IPV was associated with 1.5 fold increased risks of low birth weight and preterm birth [102]. A large observational study has reported poorer maternal outcomes, including hypertension, renal and urinary tract infection, and vaginal bleeding, with IPV [8].

Implications and Clinical Relevance

Health care professionals should be aware of the high rates of physical, sexual, and emotional violence among women seeking TOP, and particularly the clinical factors associated with greatest risk: previous TOP, lack of contraception, initially planned pregnancy, ultrasound redating, and the partner not funding or not being told about the TOP. There are potential associations for IPV with young age, marital status, ethnicity, and low household income. IPV compromises both the safety and health of the woman requesting the TOP, and potentially that of her partner and any existing children if a woman retaliates or children witness or experience the violence directly. In attempting to prevent repeat TOP [105], a narrow focus, especially on long acting contraception, that excludes addressing the wider needs of a woman in a violent relationship might leave a woman less likely to become pregnant but just as vulnerable to IPV. Good practice obligates that termination services should have robust policies for ensuring women's safety and confidentiality, providing information and referral pathways for those who disclose IPV, and exemplar guidance exists [16].

Some groups have evaluated whether screening for IPV is justified in selected populations of women. Theoretically, early identification and effective intervention for violence may reduce repeat unintended pregnancy and TOP, as well as improve longer term health outcomes. Three systematic reviews [106–108] have concluded that screening is warranted, leading the US Preventative Task Force to recommend that clinicians should screen women of childbearing age for interpersonal violence, such as IPV, and refer women who screen positive to intervention services [109]. The UK National Institute for Health and Care Excellence is currently undertaking a consultation regarding guidance on identification and prevention of IPV [110]. However, interventions in this area are inherently complex and difficult to research [111], and evidence for the effectiveness of counselling intervention programmes or other interventions remains limited [106,112,113]. Of all approaches evaluated, intensive advocacy (aiming to provide women with information and support to facilitate access to community resources) appears the most promising in reducing physical abuse 1–2 y after the intervention, but impact on quality of life or mental health is not proven [112]. The majority of interventions studied have focused on the female experiencing IPV, but some have undertaken theoretical analysis of models in which changes in the behaviours of the male perpetrators are included [114]. A comparative study of promising health based IPV interventions in primary care and maternity services across Europe found that key implementation issues of IPV interventions included clinical champions, leadership roles, funded and coordinated multiagency partnerships with clear referral pathways, multidisciplinary and participant feedback, and evaluation of outcomes [115]. Interventions as part of the pathway for women seeking TOP require further consideration.

Future Research

No study we found set out to examine the association or temporal relationships between IPV and TOP, which would require (at a minimum) including women with and without an IPV history and with and without a history of TOP. There is extremely limited information about male partners of women seeking TOP, as perpetrators or as experiencing IPV, and which male related factors contribute to increased likelihood of IPV. Greater information is required on long term outcomes of violence and TOP on both partners. The findings of pregnancy “concealment” and higher rates of murder and suicide with IPV [116,117] mean that researchers must be cautious and aware of women's safety. Harms have been identified following health based IPV interventions, such as breaches of confidentiality [115]. Therefore, a public health approach that does not focus solely on the woman (either as “problem” or “solution”) or health services should be considered, for example, using educational, social norm, and/or criminal justice interventions. Nevertheless, given the clear associations, termination services provide an appropriate setting in which to assess screening for, or give information about, IPV, whether pre or post TOP, and for offering an intervention that women desire, such as a “one stop” offer of referral to specialist IPV services, especially in view of low return to clinics for follow up [118]. Given that routine identification of women experiencing IPV and provision of a standard intervention has recently been shown to have no impact on quality of life or mental well being, there is now a need for considering new strategies, including alternative intervention models and targeting perpetrators as well as the women affected [119–121]. On the basis of this review, research into the suitability, acceptability, and design of an intervention programme is justified, and should be tested preferably in a randomised control trial. Any legal barriers to intervention and reporting, such as criminalisation of TOP, should also be investigated and described.

Conclusion

IPV is associated with TOP. Novel public health approaches are required to address IPV against women and repeat TOP. Termination services provide an opportune health based setting in which to design and test interventions at the individual level.

Supporting Information

Table S1 Data extraction form.
(DOCX)

Table S2 Quantitative CASP form.
(DOCX)

Table S3 Qualitative CASP form.
(DOCX)

Table S4 PRISMA table.
(DOCX)

Table S5 IPV and associated factors.
(DOCX)

Table S6 Lifetime prevalence of intimate partner violence in women presenting for termination of pregnancy: meta-analysis regression to compare odds ratios between study categories.
(DOCX)

Text S1 Protocol.
(DOCX)

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Conceived and designed the experiments: SB MH PTS LC. Performed the experiments: MH BP LC PTS SB. Analyzed the data: MH BP LC PTS SB. Wrote the first draft of the manuscript: MH LC SB. Contributed to the writing of the manuscript: MH LC BP PTS SB. ICMJE criteria for authorship read and met: MH LC BP PTS SB. Agree with manuscript results and conclusions: MH LC BP PTS SB.

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Editors' Summary

Background. Intimate partner violence (sometimes referred to as domestic violence) is one of the commonest forms of violence against women and is a global health problem. The World Health Organization defines intimate partner violence as any act of physical, psychological, or sexual aggression or any controlling behavior (for example, restriction of access to assistance) perpetrated by the woman's current or past intimate partner. Although men also experience it, intimate partner violence is overwhelmingly experienced by women, particularly when repeated or severe. Studies indicate that the prevalence (the percentage of a population affected by a condition) of intimate partner violence varies widely within and between countries: the prevalence of intimate partner violence among women ranges from 15% in Japan to 71% in Ethiopia, and the lifetime prevalence of rape (forced sex) within intimate relationships ranges from 5.9% to 42% across the world, for example. Overall, a third of women experience intimate partner violence at some time during their lifetimes. The health consequences of such violence include physical injury, depression, suicidal behavior, and gastrointestinal disorders.

Why Was This Study Done? Intimate partner violence can also lead to gynecological disorders (conditions affecting the female reproductive organs), unwanted pregnancy, premature labour and birth, and sexually transmitted infections. Because violence may begin or intensify during pregnancy, some countries recommend routine questioning about intimate partner violence during antenatal care. However, women seeking termination of pregnancy (induced abortion) are not routinely asked about intimate partner violence. Every year, many women worldwide terminate a pregnancy. Nearly half of these terminations are unsafe, and complications arising from unsafe abortions are responsible for more than 10% of maternal deaths (deaths from pregnancy or childbirth-related complications). It is important to know whether intimate partner violence and termination of pregnancy are associated in order to develop effective strategies to deal with both these global health concerns. Here, the researchers conducted a systematic review and meta-analysis to investigate the associations between intimate partner violence and termination or pregnancy. A systematic review identifies all the research on a given topic using predefined criteria; meta-analysis combines the results of several studies.

What Did the Researchers Do and Find? The researchers identified 74 studies that provided information about experiences of intimate partner violence among women who had had a termination of pregnancy. Data in these studies indicated that, worldwide, intimate partner violence rates among women undergoing termination ranged from 2.5% to 30% in the preceding year and from 14% to 40% over their lifetime. In the meta-analysis, the lifetime prevalence of intimate partner violence was 24.9% among termination-seeking populations. The identified studies provided evidence that intimate partner violence was associated with termination and with repeat termination. In one study, for example, women presenting for a third termination were more than two and a half times more likely to have a history of physical or sexual violence than women presenting for their first termination. Moreover, according to the meta-analysis, women in violent relationships were three times as likely to conceal a termination from their partner as women in non-violent relationships. Finally, the studies indicated that women undergoing terminations of pregnancy welcomed the opportunity to disclose their

experiences of intimate partner violence and to be offered help.

What Do These Findings Mean? These findings indicate that intimate partner violence is associated with termination of pregnancy and that a woman's partner not knowing about the termination is a risk factor for intimate partner violence among women seeking termination. Overall, the researchers' findings support the concept that violence can lead to pregnancy and to subsequent termination of pregnancy, and that there may be a repetitive cycle of abuse and pregnancy. The accuracy of these findings is limited by heterogeneity (variability) among the included studies, by the likelihood of underreporting of both intimate partner violence and termination in the included studies, and by lack of validation of reports of violence through, for example, police reports. Nevertheless, health-care professionals should consider the possibility that women seeking termination of pregnancy may be experiencing intimate partner violence. In trying to prevent repeat terminations, health-care professionals should be aware that while focusing on preventing conception may reduce the chances of a woman becoming pregnant, she may still be vulnerable to abuse. Finally, given the clear associations between intimate partner violence and termination of pregnancy, the researchers suggest that termination services represent an appropriate setting in which to test interventions designed to reduce intimate partner violence.

Additional Information. Please access these websites via the online version of this summary at <http://dx.doi.org/10.1371/journal.pmed.1001581>.

- The World Health organization provides detailed information about intimate partner violence and about termination of pregnancy (some information available in several languages)
- MedlinePlus provides links to other resources about intimate partner violence and about termination of pregnancy (in English and Spanish)
- The World Bank has a webpage that discusses the role of the health sector in preventing gender-based violence and a webpage with links to other resources about gender-based violence
- The Gender and Health Research Unit of the South African Medical Research Council provides links to further resources about intimate partner violence (research briefs/policy briefs/fact sheets/research reports)
- DIVERHSE (Domestic & Interpersonal Violence: Effecting Responses in the Health Sector in Europe) is a European forum for health professionals, nongovernmental organizations, policy-makers, and academics to share their expertise and good practice in developing and evaluating interventions to address violence against women and children in a variety of health-care settings
- London School of Hygiene & Tropical Medicine's Gender Violence and Health Centre also has a number of research resources
- The UK National Health Service Choices website provides personal stories of intimate partner violence during pregnancy
- The March of Dimes provides information on identifying intimate partner violence during pregnancy and making a safety plan



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Social issues in reproductive health

A comparison of the prevalence of domestic violence between patients seeking termination of pregnancy and other general gynecology patients

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Abstract

Objectives: (1) To determine and compare the prevalence of domestic violence among abortion-seeking patients with other general gynecology patients; (2) to see if a follow-up interview 6 weeks after abortion can improve the abuse disclosure rate; (3) to see if the abused victims accept direct referral to their gynecologists/social workers for help. **Methods:** This is a prospective questionnaire survey in a university teaching hospital on patients seeking abortion and an approximately equal number of other general gynecology patients. Participants were interviewed by a designated project nurse in a private setting, using a structured questionnaire (Modified Abuse Assessment Screen Questionnaire) to assess the past and recent history of abuse. The interview was repeated 6 weeks after the abortion for the abortion-seeking group. **Results:** Five hundred and one participants were interviewed, including 245 seeking abortion (TOP group) and 256 other general gynecology patients (non-TOP group). The lifetime prevalence of abuse in the TOP group (27.3%) was significantly higher than the non-TOP group (8.2%) ($P < 0.001$). Repeating the interview 6 weeks after the abortion did not increase the disclosure rate. Most abused victims were unwilling to disclose their information of abuse to their gynecologists or social workers at the time of interview. **Conclusions:** Domestic violence is a significant problem among the gynecology patients, particularly those seeking abortion. A single interview prior to abortion is adequately effective for screening. However, the most effective and acceptable way of helping these victims needs to be explored further. © 2002 International Federation of Gynecology and Obstetrics. Published by Elsevier Science Ireland Ltd. All rights reserved.

Keywords: Domestic violence; Termination of pregnancy

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1. Introduction

Domestic violence is defined as 'a pattern of intentionally coercive and violent behavior toward an individual with whom there is or has been an intimate relationship. These behaviors can be used to establish control of an individual and can include physical and sexual abuse, psychological abuse with verbal intimidation, progressive social isolation or deprivation and economic control' [1]. It is an increasingly important public health issue.

For the obstetric-gynecology populations, domestic violence has been best studied among women with on-going pregnancies, with a reported life-time prevalence of 11–41% [2–8] and a prevalence of 4–22% [2,3,6–12] during current pregnancies. Most of the domestic violence studies on gynecology patients were centered on women seeking termination of pregnancy, with a reported lifetime prevalence of 31–39.5% [13,14]. Little is known about the prevalence of abuse among other groups of gynecology patients. It is possible that the high prevalence of domestic violence seen among the patients seeking abortion, which justifies a routine domestic violence screening program, simply go undetected among other gynecology patients.

Almost all domestic violence studies on women seeking abortion involved only a single interview or self-administered questionnaire. It has been reported that repeating an interview during an on-going pregnancy can improve the disclosure rate of domestic violence [9]. It is interesting to know whether repeating the interview on patients seeking termination of pregnancy can also improve the detection rate of abuse.

Hence, the objectives of this study are: (1) to determine and compare the prevalence of domestic violence among patients seeking termination of pregnancy with the other general gynecology patients; (2) to see if a follow-up interview 6 weeks after the abortion procedure can improve the disclosure rate of abuse; and (3) to see if the abused victims accept direct referral to their gynecologists/social workers for help. To our knowledge, this is the first study to make such comparisons and to explore the acceptability of the victims to direct referral to gynecologists/so-

cial workers for help. It is hoped that an understanding of the prevalence and pattern of domestic violence, and thus the screening needs from different groups of gynecology patients can be improved, which will be helpful in planning and allocating resources for the domestic violence screening programs.

2. Materials and methods

All patients seeking termination of pregnancy at Queen Mary Hospital, Hong Kong, between February and July, 1999 were approached. All, except those who refused to participate, were interviewed. An approximately equal number of general gynecology patients not seeking abortion were randomly selected (the first of every three consecutively admitted non-abortion-seeking general gynecology patients) for comparison. All participants were interviewed by a designated research nurse in a private setting, in the absence of their male partners. The study was approved by the Ethics Committee of the hospital. Informed verbal consent was obtained from each participant prior to the interview, with the help of an information sheet explaining the purpose and nature of the study, and the help that could be provided such as counseling by the clinical psychologist, useful telephone hotlines.

The prevalence of abuse among those seeking abortion was assumed to be similar to that reported in the literature i.e. ~30% and the prevalence of abuse among those non-abortion-seeking patients was expected to be half of the former group, i.e. 15%. With a power of 80% and a significant level set at 0.05, it was calculated that approximately 250 participants would be needed in each group.

A structured questionnaire modified from the Abuse Assessment Screen Questionnaire [5,9] (Table 1) was used to assess the past and recent history of domestic violence. For the Chinese speaking participants, the Chinese version of the Abuse Assessment Screen Questionnaire, which has been validated in a previous local study [6], was used. For those with a recent history of abuse, whether their decision for termination of

pregnancy had been affected by such experience and whether they would like to reveal the information of abuse to their gynecologists and/or medical social workers were asked.

Demographic data, including age, parity, marital status, occupation, education level, total monthly family income, as well as information on smoking and drinking habits and drug use, were collected. Demographic data of the partners were obtained. For patients seeking termination of pregnancy, the interview was repeated 6 weeks later at the outpatient clinic, by the same research nurse. The questionnaire used was the same except that history of physical abuse since the termination of pregnancy, instead of that since pregnant, was asked (Question 3).

A commercial statistical package, *SPSS Base 8.0* for Windows 95 (SPSS, Inc.) was used for statistical analysis. Those with a past and/or recent history of physical, emotional and/or sexual abuse ('yes' to Questions 1, 2, 3 and/or 4), were taken as the 'abused group'. The prevalence of domestic violence among patients seeking abortion (the TOP group) and those not seeking abortion (the non-TOP group) were determined and compared using the Chi-square test. Among the TOP group, the prevalence of abuse obtained by interview before abortion and that obtained on follow-up 6 weeks later were compared using the Chi-square test. Correlation of the occurrence of domestic violence with different demographic parameters was determined by Student's *t*-test and the Chi-square test. A *P*-value of less than 0.05 was considered statistically significant.

3. Results

Ten abortion-seeking women and eight other general gynecology patients refused to participate. A total of 501 patients were interviewed, including 245 patients seeking abortion (TOP group) and 256 general gynecology patients not seeking abortion (non-TOP group). The non-abortion seeking women were admitted for threatened/silent miscarriage of wanted pregnancies, uterine fibroid, dysfunctional uterine bleeding. Most of the participants were Chinese.

Table 1
Modified Abuse Assessment Screen Questionnaire

1. Have you ever been emotionally or physically abused by your partner or someone important to you?	Yes/No
2. Within the past year, have you been hit, slapped, kicked or otherwise physically hurt by someone? If yes, by whom? Husband/Ex-husband/ Boyfriend/Stranger/Others	Yes/No (Specify) No. of times (–)
3. Since you have been pregnant, have you been hit, slapped, kicked or otherwise physically hurt by someone? If yes, by whom? Husband/Ex-husband/ Boyfriend/Stranger/Others Indicate the area of injury (a body map given): Score the most severe incident according to the following scale: a. Threats of abuse, including use of a weapon b. Slapping, pushing; no injuries and/or lasting pain c. Punching, kicking, bruises, cuts and/or continuing pain d. Beaten up, severe contusions, burns, broken bones e. Head, internal and/or permanent injury f. Use of weapon, wound from weapon	Yes/No (Specify) No. of times (–)
4. Within the past year, has anyone forced you to have sexual activities? If yes, by whom? Husband/Ex-husband/ Boyfriend/Stranger/Others	Yes/No (Specify) No. of times (–)
5. Are you afraid of your partner or anyone listed above?	Yes/No
6. Is your decision for termination of pregnancy affected by the above-mentioned experience (for those who answer 'yes' to Questions 2/3/4)	Yes/No
7. Do you want us to reveal this information for further management to: (for those who answer 'yes' to Questions 2/3/4) a. the gynecologist looking after you? b. the medical social worker?	Yes/No Yes/No

The demographic characteristics of the TOP and the non-TOP groups are shown in Table 2. The TOP group participants tended to be younger,

Table 2
Comparison of patient characteristics between the TOP group and the non-TOP group

	TOP group (<i>n</i> = 245) (%)	Non-TOP group (<i>n</i> = 256) (%)	<i>P</i> -value ^a
Age (mean ± S.D.) (years)	27.0 ± 8.0	37.7 ± 12.1	< 0.001
Ethnicity			
Chinese	223 (91.0)	242 (94.5)	0.166
Non-Chinese	22 (9.0)	15 (5.5)	
Parity			
0	122 (49.8)	113 (44.1)	0.211
≥ 1	123 (50.2)	143 (55.9)	
Marital status			
Married	110 (44.8)	188 (73.7)	< 0.001
Single/divorced/widowed	125 (51.2)	(26.3)	
Missing	1	1	
Occupation			
Professional/clerical	56 (22.9)	77 (30.1)	0.133
Manual workers/others	69 (28.2)	58 (22.7)	
Unemployed/housewife	120 (49.0)	121 (47.3)	
Education level			
< Primary	8 (3.3)	27 (10.5)	< 0.001
Primary	16 (6.5)	36 (14.1)	
Secondary	178 (72.7)	146 (57.0)	
Tertiary	43 (17.6)	47 (18.4)	
Total monthly family income			
≤ HK\$10 000	84 (34.4)	51 (20.0)	< 0.001
> HK\$10 000	160 (65.6)	204 (80.0)	
Missing	1	1	
Smoking			
Yes	88 (35.9)	19 (7.4)	< 0.001
No	157 (64.1)	237 (92.6)	
Drinking			
Yes	15 (6.1)	8 (3.1)	0.136
No	230 (93.9)	248 (96.9)	
Use of drugs			
Yes	9 (3.7)	3 (1.2)	0.083
No	236 (96.3)	253 (98.8)	

^a Chi-square test or Student's *t*-test.

with lower income, better educational standard, and more of them were smokers and single.

The demographic characteristics of the abused victims and the non-abused women are shown in Table 3. Among the TOP group, low monthly family income (≤ HK\$10 000) and having a husband who is a manual worker or unemployed were found to be risk factors for domestic violence ($P = 0.006$ and 0.024 , respectively). Among the non-TOP group, risk factors associated with domestic violence include: (1) being single/divorced/widowed ($P < 0.001$); (2) total monthly

family income ≤ HK\$ 10 000 ($P = 0.044$) and (3) smokers ($P = 0.012$).

The prevalence of domestic violence among the two groups is shown in Table 4. The TOP group was found to have a significantly higher prevalence of abuse, compared with other general gynecology patients. Most women suffered from emotional abuse only. (Table 5). Those seeking abortion tended to suffer more severe physical abuse (Table 6). Among the TOP group, boyfriends were the more common perpetrators (33.3%), compared with husbands (13.3%) for

Table 3
Comparison of patient characteristics between the abused group and the non-abused group

	Abused group (n = 88) (%)	Non-abused group (n = 413) (%)	P-value ^a
Age (mean ± S.D.) (years)	29.2 ± 9.0	33.2 ± 11.9	0.008
Marital status			
Married	41 (47.1)	266 (64.6)	0.003
Single/divorced/widowed	46 (52.9)	146 (35.4)	
Missing	1		
Education level			
< Primary	2 (2.3)	33 (8.0)	0.174
Primary	9 (10.2)	43 (10.4)	
Secondary	62 (70.5)	262 (63.4)	
Tertiary	15 (17.0)	75 (18.2)	
Total monthly family income			
≤ HK\$10 000	40 (46.0)	95 (23.1)	< 0.001
> HK\$10 000	47 (54.0)	317 (76.9)	
Missing	1	1	
Smoking			
Yes	34 (38.6)	73 (17.7)	< 0.001
No	54 (61.4)	340 (82.3)	

^a Chi-square test or Student's *t*-test.

physical abuse. For sexual abuse, both boyfriends and husbands were equally important perpetrators (in 45.8% and 50.0% of cases, respectively). The median number of abuse episodes for physical and sexual abuse in the past 1 year was one and four, respectively. For the non-TOP group, all perpetrators were the husbands. The median

numbers of abuse episodes for physical and sexual abuse in the past 1 year were 1 and 2.5 respectively.

Among those with recent history of abuse, 27.3% (9/33) admitted that their decision for termination of pregnancy had been affected by their experience of abuse. Only 18.8% of partici-

Table 4
Comparison between the prevalence of domestic violence among the TOP group and the non-TOP group

	TOP group (n = 245) (%)	Non-TOP group (n = 256) (%)	P-value ^a
Life-time prevalence (physical/emotional/sexual abuse; 'yes' to Q1, 2, 3 and/or 4)	67 (27.3)	21 (8.2)	< 0.001
Physical and/or sexual abuse in past 1 year (yes' to Q2, 3 and/or 4)	33 (13.5)	8 (3.1)	< 0.001
Ever been physically and/or emotionally abused (yes' to Q1)	58 (23.7)	18 (7.0)	< 0.001
Physical abuse in past 1 year (yes' to Q2)	15 (6.1)	3 (1.2)	< 0.01
Sexual abuse in past 1 year (yes' to Q4)	24 (9.8)	6 (2.3)	< 0.001
Afraid of partners (yes' to Q5)	18 (7.3)	9 (3.5)	> 0.05

^a Chi-square test.

Table 5

Pattern of abuse among those ever being physically and/or emotionally abused

	TOP group (n = 245) (%)	Non-TOP group (n = 256) (%)	P-value ^a
Emotional abuse only	24 (9.8)	11 (4.3)	< 0.05
Physical abuse only	21 (8.6)	2 (0.8)	< 0.001
Both emotional and physical abuse	13 (5.3)	5 (2.0)	< 0.05
Total	58 (23.7)	18 (7.0)	

^a Chi-square test.

pants with recent abuse would like to reveal the information of abuse to their gynecologists and/or social workers for further management.

On follow-up 6 weeks after the abortion, 118 patients (48.2%) defaulted. The default rates among the abused and non-abused group were similar (52.2% vs. 46.6%, $P = 0.475$). Among those who attended the follow-up visit, none refused to be interviewed. The defaulters tended to be younger (age 24.8 ± 7.1 vs. 29.2 ± 8.2 , $P < 0.001$). More of them were single/widowed/divorced ($P = 0.008$) and smokers ($P < 0.001$) compared with those who attended the follow-up visit. On repeating the interview, a lower prevalence rate of domestic violence was observed. However, this difference did not reach statistical significance (Table 7). Two participants reported a history of physical abuse since the abortion. One was not abused when she was pregnant.

4. Discussion

Domestic violence screening has been advocated by various professional authorities. To pro-

vide an effective screening program out of the stringent resources available, a thorough understanding of the local prevalence and pattern of abuse among the target populations is essential.

Prevalence of domestic violence was significantly higher among the abortion-seeking women, compared with other general gynecology patients (Table 4). This may partly be attributed to the patient characteristics of the abortion-seeking patients, who tended to be younger, single and smokers (Table 2), which were also found to be the risk factors associated with domestic violence in this study (Table 3). Moreover, physical abuse tends to be more serious among the TOP group. These suggest that among the gynecology patients, those seeking abortion is an ultra-high risk group for abuse. They may potentially benefit from screening for domestic violence during abortion counseling. However, as some authors suggested [15], effective intervention programs should be available before universal screening can be recommended. However, the 8.2% prevalence among the other general gynecology patients should not be disregarded lightly, though it was much lower than that among the TOP group. If

Table 6

Pattern of physical abuse (the most severe incident)

	TOP group (n = 245) (%)	Non-TOP group (n = 256) (%)	P-value ^a
Threats only	17 (6.9)	4 (1.6)	< 0.01
Pushing/slapping without injuries or lasting pain	9 (3.7)	2 (0.8)	< 0.05
Bruises or cuts with continuing pain	6 (2.4)	1 (0.4)	< 0.05
Use of weapons/beaten up	2 (0.8)	0 (0)	> 0.05
Total	34	7	

^a Chi-square test.

resources allow, all gynecology patients may benefit from domestic violence screening sometime during their consultation.

The lifetime prevalence of domestic violence among patients seeking abortion was 27.3%, with 13.5% having a recent history of physical and/or sexual abuse. This is even higher than the prevalence among pregnant women (17.9%) seen at antenatal clinics in the same locality [6]. Abortion-seeking patients also seemed to suffer from more serious physical injuries (Table 5), whereas physical abuse among the obstetric patients tends to limit to threats or minor abuse [6,16]. These suggest that the risk of domestic violence among those with unwanted pregnancies, to the extent of seeking abortion, is higher, compared with those continuing their pregnancies.

The local prevalence of abuse seems to be slightly lower than that reported in western literature [13,14]. Since most women were Chinese, the lower reported rate may be contributed by the traditional Chinese teaching that one should not expose one's family affairs and shames to strangers. In domestic violence screening, cultural background can be an important factor to deter an abused woman from seeking help.

Contrary to repeating an interview during ongoing pregnancies [9], the abuse disclosure rate at a repeat interview 6 weeks after the abortion was even lower than the first interview (Table 7). Unlike the antenatal patients, the rapport between abortion-seeking patients and health care professionals hardly increases with time, since these patients often have a short hospital stay (most of them were day-patients), and will not be seen regularly once discharged. In addition, patients seeking abortion have a high default rate on follow-up. Our data suggest that a single interview before the abortion procedure is adequately effective for screening. Victims should be counseled to see they do have choices and can take steps to regain control of their lives before they are discharged. Useful telephone numbers of local refuge can be distributed. Owing to the small sample size and the short period of follow-up, the change in prevalence and pattern of abuse since termination of pregnancy cannot be properly assessed in this study.

Most abused patients (81.3% in the TOP group and 90% in the non-TOP group) were unwilling to disclose the information of abuse to their gynecologists or social workers for help at the time of

Table 7

Comparison between the prevalence of domestic violence detected by interview before termination of pregnancy and that performed six weeks later

	First interview (before TOP) (n = 245) (%)	Second interview (6 weeks after TOP) (n = 127) (%)	P-value*
Lifetime prevalence (physical/emotional/sexual abuse; 'yes' to Q1, 2, 3 and/or 4)	67 (27.3)	26 (20.5)	> 0.05
Physical and/or sexual abuse in past 1 year (yes' to Q2, 3 and/or 4)	33 (13.5)	11 (8.7)	> 0.05
Ever been physically and/or emotionally abused (yes' to Q1)	58 (23.7)	24 (18.9)	> 0.05
Physical abuse in past 1 year (yes' to Q2)	15 (6.1)	5 (3.9)	> 0.05
Sexual abuse in past 1 year (yes' to Q4)	24 (9.8)	6 (4.7)	> 0.05
Afraid of partners (yes' to Q5)	18 (7.3)	7 (5.5)	> 0.05

* Chi-square test.

interview. Direct referral to the gynecologists or social workers seemed not to be an acceptable way of offering help to the abused victims. Other approaches of intervention need to be explored.

One of the shortcomings of this study is that the TOP and the non-TOP groups were not demographically matched. The TOP group tended to be younger, single and smokers. These characteristics probably contributed to the higher prevalence of domestic violence among the TOP group. To further explore whether abortion-seeking per se is an additional risk factor for domestic violence, a controlled study with both groups having similar demographic characteristics should be used.

5. Conclusions

Domestic violence is a significant problem among gynecology patients, particularly those seeking termination of pregnancy. A single interview prior to abortion, using a structured questionnaire, is adequately effective for domestic violence screening. However, the most effective and acceptable approach of helping the victims needs to be further explored as direct referral to medical caregivers or social workers at the time of interview seemed unacceptable to most of them.

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Intimate partner violence during pregnancy: analysis of prevalence data from 19 countries

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Abstract: We aimed to describe the prevalence of intimate partner violence (IPV) during pregnancy across 19 countries, and examine trends across age groups and UN regions. We conducted a secondary analysis of data from the Demographic and Health Surveys (20 surveys from 15 countries) and the International Violence Against Women Surveys (4 surveys from 4 countries) carried out between 1998 and 2007. Our data suggest that intimate partner violence during a pregnancy is a common experience. The prevalence of IPV during pregnancy ranged from approximately 2.0% in Australia, Cambodia, Denmark and the Philippines to 13.5% in Uganda among ever-pregnant, ever-partnered women; half of the surveys estimated prevalence to be between 3.9 and 8.7%. Prevalence appeared to be higher in African and Latin American countries relative to the European and Asian countries surveyed. In most settings, prevalence was relatively constant in the younger age groups (age 15–35), and then appeared to decline very slightly after age 35. Intimate partner violence during pregnancy is more common than some maternal health conditions routinely screened for in antenatal care. Global initiatives to reduce maternal mortality and improve maternal health must devote increased attention to violence against women, particularly violence during pregnancy. ©2010 Reproductive Health Matters. All rights reserved.

Keywords: intimate partner violence, pregnancy, maternal health

INTIMATE partner violence (IPV) is the most common form of violence against women worldwide.^{1–4} It can occur during both pregnancy and the perinatal period, and is increasingly being recognised as an important risk factor for adverse health outcomes for both mother and newborn. Established direct health effects of physical intimate partner violence during pregnancy include increased likelihood of miscarriage,⁵ premature labour or delivery,⁶

low birthweight,^{7,8} higher levels of depression during and after pregnancy⁹ and injury.¹⁰ Indirect health effects include substance abuse,¹¹ delay in seeking antenatal care,¹² insufficient weight gain during pregnancy¹³ and reduced levels of breastfeeding.¹⁴

Knowing the prevalence of intimate partner violence during pregnancy is the first step in helping to inform the development and implementation of interventions to prevent and treat

sequelae. Antenatal care provides a potentially important window of opportunity for identifying women experiencing violence during pregnancy. For many women in low resource settings, this will be their only point of contact with health care providers. Ideally, women will be seen four times during a pregnancy and once post-partum, and the possibility of follow-up therefore offers an ideal setting for addressing issues of abuse. Providing support on a repeated basis can potentially help women reduce their risk of violence and its consequences, as has been demonstrated in intervention studies in the USA¹³ and Hong Kong.¹⁴

Comparable population-based data on the prevalence of intimate partner violence during pregnancy are lacking. Available estimates vary widely, from about 3%¹⁵ to 30%,^{1,16–18} Most studies on prevalence have come from small clinical samples in maternity wards,¹⁶ which often serve particular patient groups and communities, such as immigrant or minority groups,¹⁹ rural communities,²⁰ adolescents,²¹ and women from affluent areas.²² A number of other studies include participants from rural and urban areas of the USA,²³ Canada,²⁴ Peru,²⁵ Mexico,¹⁷ Rwanda,²⁶ Nigeria,²⁷ Saudi Arabia,²⁸ Iran,¹⁶ as well as from India,²⁹ Pakistan,³⁰ UK,¹⁵ and New Zealand.³¹

Studies vary greatly in respect to the survey methods employed, which include face-to-face, telephone, computer-based and questionnaire interviews, which may affect response rates.^{23,32} A large number of studies have based their measurement of violence during pregnancy on non-validated assessment tools, and differ with respect to the range of potential perpetrators included. Some studies ask about violence inflicted during pregnancy by any perpetrator,^{24,30} while others focus solely on asking about violence by intimate partners.³¹ Other factors which differ across research studies include the time periods explored; for example, some focus on intimate partner violence in any pregnancy,³¹ some on the last pregnancy,²³ others in the previous year among pregnant women,²⁶ or at different time points during the pregnancy.^{15,33} Additionally, data on the prevalence of intimate partner violence during pregnancy are often presented separately from data on other forms of intimate partner violence, making it difficult to discern if patterns are distinct.

While these studies have been useful for putting intimate partner violence during pregnancy

on the public health policy agenda in their respective countries, there remains a need for population-based data using validated and standardized measures of intimate partner violence during pregnancy.

Methods

To find out the prevalence of intimate partner violence during pregnancy, we conducted a secondary analysis and examined trends by age and region of cross-sectional household data from the Demographic and Health Surveys (DHS, 20 surveys in 15 countries) and the International Violence against Women Surveys (IVAWS, 4 surveys in 4 countries), which cover four global regions between 1998 and 2007. Survey information is outlined in [Table 1](#).

DHS characteristics

The Demographic and Health Surveys (DHS) are carried out at approximately five-year intervals in a range of mainly low- and middle-income countries.³⁴ These surveys use largely standardized questionnaires and methodologies and cover a range of topics, including demographics; reproductive, maternal and child health; sexual behaviour and nutrition. In-country organizations (usually National Statistical offices) are responsible for implementing the surveys, with technical assistance from Macro International and major funding from the US Agency for International Development (USAID). In the late 1990s, a standardized module of questions on domestic violence was developed; it has since been added to the DHS in 27 countries. Twenty surveys in 15 of these countries provide information on the prevalence of violence during pregnancy.

Sampling

The surveys are administered to eligible individuals in nationally representative samples of households in each country. Sample selection is multi-stage, with census enumeration areas selected in the first stage with probability proportional to size. Households are selected randomly from a completed listing of households within the selected enumeration areas. All women aged 15–49 in sample households are eligible to be interviewed.³⁵ The domestic violence module is typically administered in a sub-sample of selected households, to one randomly selected

Table 1. Survey characteristics

Country	Year	Sample size ^a	Response rate ^{b,c}
DHS			
Azerbaijan	2006	5,803	98%
Cambodia	2000	2,460	99%
Cambodia	2005	2,938	98%
Cameroon	2004	3,349	94%
Colombia	2000	11,585	93%
Colombia	2005	41,344	93%
Dominican Republic	1999	10,307	90%
Dominican Republic	2002	8,868	93%
Dominican Republic	2007	955	93%
DR Congo	2007	3,507	97%
Haiti	2000	3,575	98%
Haiti	2005	3,433	99%
Jordan	2000	3,476	98%
Malawi	2004	9,863	96%
Moldova	2005	5,758	95%
Nicaragua	1998	8,508	92%
Rwanda	2005	4,066	98%
Uganda	2006	2,169	95%
Zambia	2007	5,259	97%
Zimbabwe	2005	6,351	90%
IVAWS			
Australia	2002	6,677	39%
Denmark	2003	3,589	52%
Mozambique	2004	2,015	96%
Philippines	2005	2,602	99%

a In DHS, number of eligible women for domestic violence module subsample

b In DHS, response rate for eligible women for the whole survey. Between 96–100% of women who completed the whole survey and were also eligible for the domestic violence module completed the module.

c Method of interviewing was face-to-face except in Australia and Denmark, where it was by telephone.

eligible woman per household, in accordance with World Health Organization (WHO) ethical and safety guidelines.^{35,36} Homeless women and those living in shelters or institutions are excluded in all countries.

Interviewer training

Interviewers receive several weeks of rigorous training for administering the DHS survey; in countries where the domestic violence module

is fielded, interviewers receive additional training on linkages between gender, violence and health; building rapport with the respondent; ensuring privacy and what to do when privacy is not possible or is interrupted; and providing information on sources of assistance. In the DHS, women are interviewed only by women.

IVAWS characteristics

The International Violence Against Women Survey (IVAWS) is a single-round survey which has been completed in nine countries. The IVAWS project is co-ordinated internationally by the European Institute for Crime Prevention and Control, with inputs from the United Nations Office on Drug and Crime, United Nations Inter-regional Crime and Justice Research Institute, and Statistics Canada. It has been conducted by independent investigators in each country, and each country participates on a self-funded basis. In contrast to the DHS, these surveys are specifically designed to measure the prevalence of intimate partner and other forms of violence against women. All nine surveys included questions on violence during pregnancy and four contained sufficient additional information to permit estimates to be made of the prevalence of intimate partner violence among women with children.

Sampling

Telephone surveys were conducted by random digit-dialling or sampling from telephone directories. Face-to-face surveys were conducted by two-stage cluster sampling: the first stage was the selection of cities or provinces; the second stage was the selection of districts within these cities or provinces. Households were selected using a random walk method. All women aged 18–69 years were eligible for inclusion; only one woman per household was selected in accordance with the ethical principles identified by WHO³⁶ and Johnson et al.⁴ In households with more than one eligible woman, the woman with the next birthday was selected to participate. Surveys were conducted either face-to-face or by telephone, a decision that was left to project coordinators in each country. In some countries, therefore, results do not reflect the experiences of women in households without landlines or women with mobile phones only. Homeless

women and those living in shelters or institutions were excluded in all countries.

Interviewer training

National coordinators from each country attended a group session to discuss issues related to survey implementation, including interviewer training and sensitization. In each country, female interviewers were selected based on their having some awareness about violence against women, and were provided with additional standardized training regarding the effects of violence against women, common myths about violence, ways to encourage honest disclosure of relevant experiences, and the importance of providing emotional support to women disclosing violence by referring them to local agencies.⁴

Definitions of violence and partnership status

The definitions of violence and partnership used in the DHS and IVAWS are outlined in Tables 2 and 3; items constituting severe abuse are starred. In the DHS, women who have ever been pregnant are asked whether they have ever been hit, slapped, kicked or physically hurt by anyone, and if yes, who that person was. Women are counted as having experienced intimate partner violence during pregnancy if the person perpetrating the violence was a current or past husband or cohabiting partner. In IVAWS, women who reported experiencing any form of physical

and/or sexual intimate partner violence were then asked if any of these acts had ever occurred while they were pregnant.

Statistical analysis

The prevalence of each form of intimate partner violence was calculated separately for each survey and country. DHS estimates are weighted to adjust for non-response, selection of one woman per household and to achieve national representativeness. Standard errors for DHS estimates are corrected for the complex sampling schemes employed (calculated using Taylor linearization). IVAWS estimates are weighted according to the age profiles provided by the UN Statistical Division for the year of the survey to adjust for bias due to non-response.

The prevalence of intimate partner violence during pregnancy in IVAWS could not be calculated directly, as the surveys did not collect information on the number of ever-pregnant women in their samples. To create estimates, we used information within the survey on whether or not a woman had children residing in the household as a proxy for ever-pregnancy. This excluded women with no living children and those whose children were no longer residing in the household.

In this paper, we present descriptive data on the prevalence of intimate partner violence during pregnancy, and compare this with prevalence of

Table 2. Demographic and Health Survey definitions

Female population	Intimate partner definition	Form of IPV	Violence definition
Ever-married/cohabited women aged 15–49	Current (for currently married/cohabiting women) or last husband or partner (for currently widowed, divorced or separated women)	Lifetime, past year, and severe†	Experience of the following acts by an intimate partner ever in the relationship: pushed, shaken or had something thrown at you; slapped; arm twisted or hair pulled; *punched with a fist or something that could hurt; *kicked, dragged, or beaten; *choked or burned on purpose; *threatened with knife, gun or other weapon; *attacked with knife, gun or other weapon.
Ever-married/co-habited, ever-pregnant women aged 15–49	Any husband or cohabiting partner	IPV during pregnancy	During any pregnancy, ever being: hit; slapped; kicked; or physically hurt by any other means by a husband or cohabiting partner.

† There are minor variations in the list and groupings of acts included in some DHSs.

* Experience of any of these acts was coded as severe violence.

Table 3. International Violence Against Women Survey definitions

Female population	Intimate partner	Form of IPV definition	Violence definition
Ever-married/ cohabited/dated women, aged 18–69	Current or former male partner with whom woman has been married, cohabited or dated	Lifetime, past year, severe	Experience of the following acts by an intimate partner, since age 16: threatened to hurt you physically in a way that frightened you; *threw something at you or hit you with something that hurt or frightened you; *tried to strangle or suffocate you, burn or scald you on purpose; *slapped, kicked, bit or hit you with a fist; *pushed or grabbed you or twisted your arm or pulled your hair in a way that hurt or frightened you; *used or threatened to use a knife or gun on you; *was physically violent towards you in a way that I have not already mentioned; *forced you into sexual intercourse by threatening you, holding you down, or hurting you in some way; *attempted to force you into sexual intercourse by threatening you, holding you down or hurting you in some way; *touched you sexually when you did not want him to in a way that was distressing to you; *forced or attempted to force you into sexual activity with someone else, including being forced to have sex for money or in exchange for goods; *was sexually violent towards you in a way that I have not already mentioned.
Ever-married/ cohabited/dated women, aged 18-69, in households with at least one child	Current or former male partner with whom woman has been married, cohabited or dated	IPV during pregnancy	If a woman answered yes to any of the above questions, she was asked if any of the above ever occurred while she was pregnant.

**Experience of any of these acts was coded as severe violence.*

other forms of intimate partner violence (Table 4). The overall prevalence of intimate partner violence during pregnancy is then summarised by survey and UN region (Figure 1). To examine age patterns, we calculated pooled estimates of prevalence and standard error of intimate partner violence during pregnancy for each age group for each region. We used a random effects inverse variance meta-analysis, which weights individual study estimates according to their precision. We plotted these mean prevalence figures by age group and region (Figure 2). Finally, to examine changes in the prevalence of physical intimate partner violence during pregnancy by age group over time, we plotted age-specific prevalence by survey year for four countries which had a DHS

conducted in more than one year (Figure 3). Analyses were conducted using STATA 11.0.

Results

The prevalence of intimate partner violence during pregnancy among ever-pregnant women ranged from approximately 2% in Australia, Denmark, Cambodia and Philippines to 13.5% among ever-pregnant women in Uganda (Table 4, Figure 1). Over half of the surveys had a prevalence estimate between 3.8 and 8.8%. Prevalence appeared to be higher in the African and Latin American countries relative to the European and Asian countries surveyed, although estimates within regions (and countries) were highly variable.

Table 4. Prevalence of intimate partner violence in 19 countries (23 surveys), 1998–2007^a

Country	Year	No. ever pregnant women ^b	Physical IPV during pregnancy ^c		No. ever partnered women ^b	Ever IPV		Past year IPV ^d		Severe IPV	
			%	SE		%	SE	%	SE	%	SE
DHS											
Azerbaijan	2006	4,054	4.0	0.4	4,140	13.3	0.7	9.9	0.7	5.0	0.5
Cambodia	2000	2,301	2.0	0.3	2,204	17.1	0.9	15.4	0.9	9.9	0.8
Cambodia	2005	2,239	2.8	0.4	2,188	13.6	1.1	9.4	0.8	7.2	0.8
Cameroon	2004	2,491	8.6	0.8	2,574	43.0	1.3	28.2	1.2	21.7	1.1
Colombia	2000	7,403	10.6	0.4	7,480	40.7	0.7	‡	‡	22.2	0.5
Colombia	2005	24,449	8.1	0.3	24,864	39.5	0.5	22.2	0.4	22.6	0.4
Dominican Republic	1999	714	6.5	1.1	739	27.6	2.2	16.4	1.5	13.7	1.4
Dominican Republic	2002	7,086	5.1	0.5	7,386	19.2	0.7	10.8	0.6	12.7	0.6
Dominican Republic	2007	8,024	5.7	0.4	8,334	17.0	0.8	11.7	0.6	10.3	0.6
DR Congo	2007	2,743	9.4	0.9	2,778	64.4	1.8	63.0	1.8	38.1	1.9
Haiti	2000	2,475	5.3	0.7	2,517	26.1	1.4	20.8	1.5	15.2	1.4
Haiti	2005	2,497	4.1	0.6	2,605	19.4	1.3	17.5	1.3	11.6	0.9
Jordan	2000	3,269	5.0	0.5	3,356	22.8	1.4	14.6	1.1	10.5	0.9
Malawi	2004	8,365	3.8	0.3	8,294	27.8	0.7	19.5	0.6	13.8	0.5
Moldova	2005	4,138	6.6	0.4	4,488	24.3	0.8	14.6	0.7	11.4	0.6
Nicaragua	1998	9,886	11.1	0.4	10,274	28.7	0.6	12.6	0.5	22.6	0.5
Rwanda	2005	2,802	8.8	0.6	2,714	32.5	1.0	18.4	0.8	18.5	0.8
Uganda	2006	1,716	13.5	1.0	1,664	57.4	1.9	44.8	1.8	39.5	1.6
Zambia	2007	4,122	9.0	0.6	4,033	49.5	1.1	43.0	1.2	23.8	0.9
Zimbabwe	2005	4,811	5.6	0.4	4,537	35.0	1.0	30.4	0.9	21.7	0.8
IVAWS											
Australia	2002	6,386	2.0	0.2	6,386	26.6	0.5	4.4	0.2	19.7	0.5
Denmark	2003	3,569	1.8	0.3	3,570	22.2	0.7	1.3	0.2	17.0	0.6
Mozambique	2004	1,781	7.3	0.7	1,781	39.5	1.1	18.0	0.9	34.0	1.1
Philippines	2005	2,183	2.0	0.3	2,183	10.2	0.6	3.2	0.4	7.7	0.6

a All prevalence estimates are weighted and SE estimates adjusted for survey design where appropriate.

b See Table 2 for detailed definitions of ever-partnered, ever-pregnant women.

c For IVAWS, includes sexual and physical IPV.

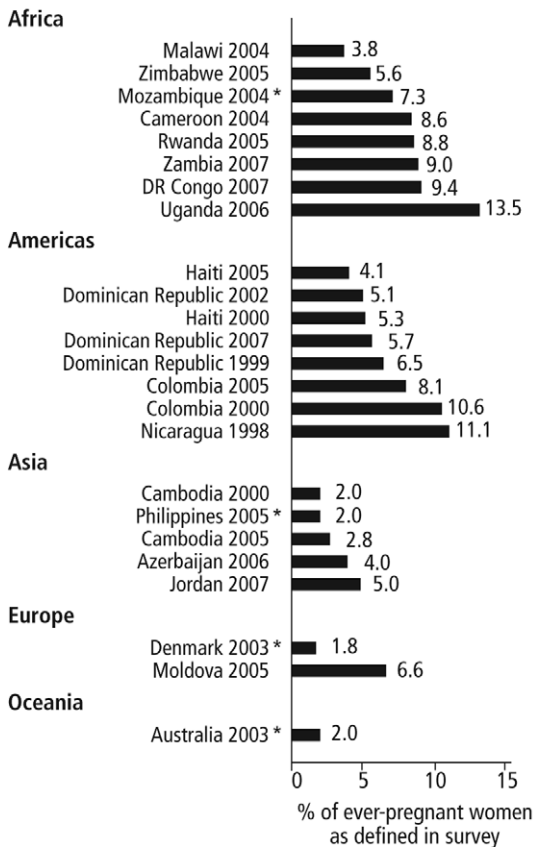
d For some DHS, widows were not asked about IPV in the past year.

‡ Not asked in Colombia 2000.

The prevalence of lifetime intimate partner violence ranged from 10.7% in the Philippines to 64.4% in the Democratic Republic of Congo (DRC) (Table 4). Prevalence of past year intimate partner violence ranged from just over 1% in Denmark to 63.0% in the DRC. Severe intimate partner violence over the woman's lifetime ranged from 5.0% in Azerbaijan to 39.5% in Uganda. Although the data on lifetime, past year and severe intimate partner violence have slightly different denominators to data on intimate part-

ner violence during pregnancy, they suggest that intimate partner violence during pregnancy occurs at lower levels than lifetime and past-year intimate partner violence. In almost all settings, intimate partner violence during pregnancy also occurs at lower levels than lifetime severe intimate partner violence. The only exception to these patterns was Denmark, where intimate partner violence during pregnancy was more common than severe intimate partner violence and past-year violence.

Figure 1. Prevalence of physical IPV during pregnancy



*IVAWS estimates also include sexual IPV during pregnancy.

However, countries with a high prevalence of lifetime severe intimate partner violence do not necessarily also report a proportionately high prevalence of intimate partner violence during pregnancy. Azerbaijan had among the lowest prevalence of lifetime severe intimate partner violence (5.0%), but nearly the same prevalence of intimate partner violence during pregnancy (4.0%). Conversely, Uganda, DRC and Mozambique had among the highest prevalences of severe intimate partner violence (39.5%, 38.1%, and 34.0%, respectively), but lower levels of intimate partner violence during pregnancy (13.5%, 9.4%, and 7.3%, respectively).

The age-specific patterns of having ever experienced intimate partner violence during preg-

nancy appear to follow roughly similar patterns across surveys in all settings (Figure 2). Despite the possibility that older women would have more time to potentially be exposed to violence during pregnancy, in nearly all settings the prevalence was relatively constant in the younger age groups (age 15–35), and then declined very slightly in both the African and Latin American countries in the oldest age groups (age 35 and up), although estimates vary somewhat within groups.

Cambodia, Colombia, Dominican Republic and Haiti had more than one DHS in different years. In these studies, 95% confidence intervals are overlapping, indicating no statistically significant temporal changes in the levels of violence over time within specific age groups (Figure 3). The only exception is Colombia, where the data suggest a trend towards lower prevalence in all age groups in the 2005 versus the 2000 survey.

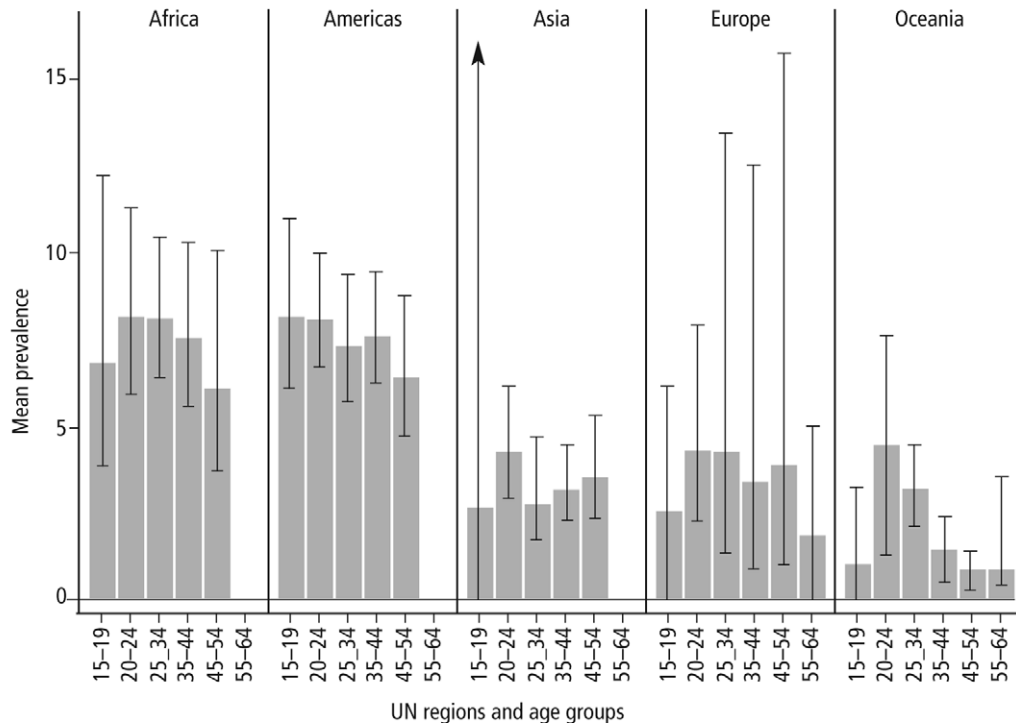
Discussion

This is the first analysis of internationally comparable data on the population prevalence of intimate partner violence during pregnancy. Our data suggest that intimate partner violence during a pregnancy is a common experience. However, prevalence varies considerably within and between global regions. Data on age trends show fairly consistent age patterns across regions, with a relatively constant prevalence across younger age groups (up to around age 35) and a slight decline after age 35.

Our data show that prevalence of intimate partner violence during pregnancy remains relatively constant until about age 35, which suggests that in many settings, the violence occurs in a first or early pregnancy. The decline in reported violence during pregnancy in older age groups may be due to recall bias – younger women are probably less prone to recall bias because they are more likely to have experienced intimate partner violence in the past year² and to have been recently pregnant relative to women in older age groups.

However, we cannot rule out the possibility that these age patterns are the result of a cohort effect, where women born in earlier years had a lower risk of intimate partner violence during pregnancy. Although our analysis of age patterns over different survey years within countries did

Figure 2. Prevalence of physical IPV during pregnancy by region and age^{a,b}



^a IVAWS estimates also include sexual IPV during pregnancy.

^b DHS estimates include women aged 15–49; estimates for those aged 45–49 are applied to the age group 45–54 in this analysis. IVAWS included those aged 18–69; however, the reported prevalence in those aged 55–69 in Africa and Asia was zero. No IVAWS were conducted in the Americas. The reported prevalence for those aged 65–69 was zero in all regions.

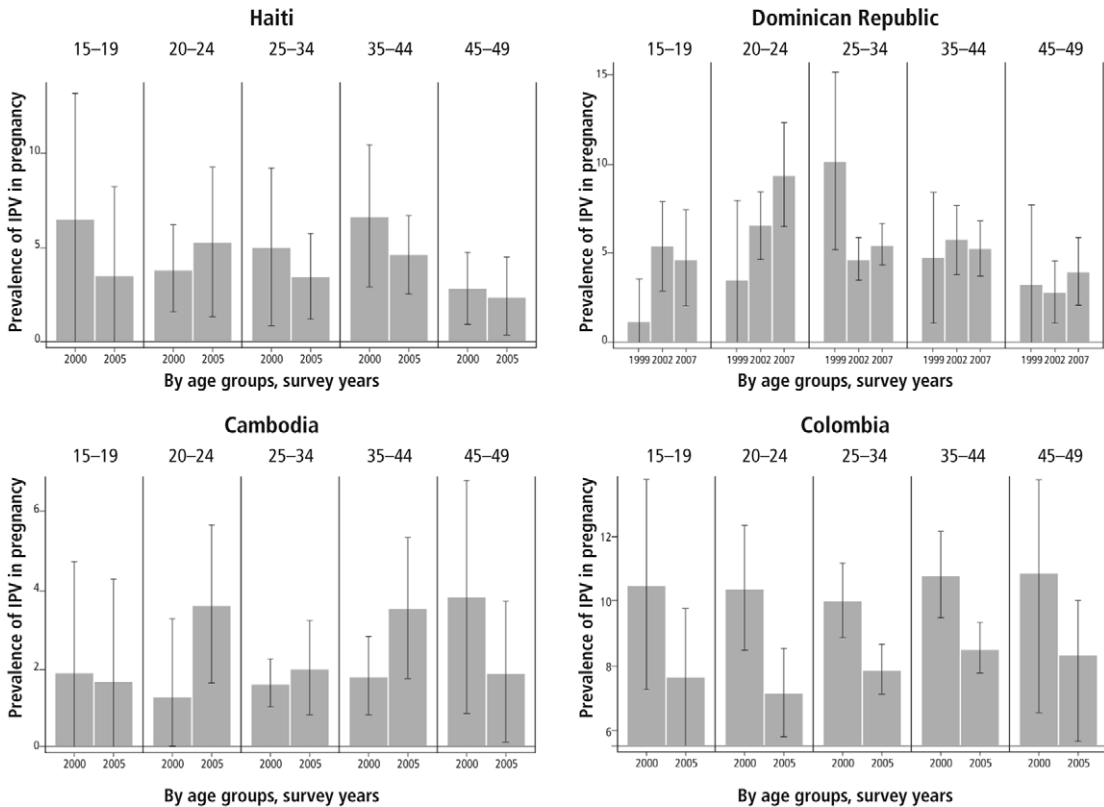
not reveal any clear changes in prevalence within age groups (Figure 3), it may be that opposing fertility trends affect prevalence. In many countries, age at first pregnancy is increasing; thus women who do begin childbearing at young ages may represent a more socio-economically disadvantaged group who have a higher risk of intimate partner violence. Fertility is also declining in many countries and women are having first pregnancies at later ages; thus exposure to violence in pregnancy will happen at an older age because pregnancy happens at older ages, relative to previous surveys.

The prevalence figures for intimate partner violence during pregnancy presented here are generally comparable to those found in the literature, including the WHO Multi-Country Study on Women's Health and Domestic Violence against

Women, another internationally comparative population-based survey. In the WHO survey, the levels of violence during pregnancy among ever-pregnant women were highest in rural Peru (27.6%), rural Tanzania (12.3%), and rural Bangladesh (12.4%), and lowest in Japan (1.2%), Serbia (3.4%), and rural and urban Thailand (3.8% and 4.2%, respectively).¹ These WHO data suggest differences between rural and urban settings in several countries, although not always in a consistent direction.

We found that countries reporting high levels of severe intimate partner violence did not necessarily also report high levels of intimate partner violence during pregnancy, suggesting that cultural factors may be important determinants of the prevalence of intimate partner violence during pregnancy. These could include differences in

Figure 3. Prevalence of physical IPV during pregnancy by age and year of survey, for countries with data from multiple years



attitudes about wife-beating, egalitarianism in male-female relationships, and male partner beliefs in the centrality of the wife-mother role for women.¹⁸

Several previous studies have found that violence may be more likely during a first pregnancy, because the stress of transition to parenthood can trigger intimate partner violence during pregnancy,³⁷ and because young pregnant women may be less emotionally ready for pregnancy and more economically dependent on their partners.³⁸ Other work indicates that violence during pregnancy may simply be a continuation of pre-existing intimate partner violence. The United States Pregnancy Risk Assessment Monitoring System Study indicates that for most US women, violence decreases during pregnancy, but for some women it continues or becomes more severe.³⁹ However, in the WHO study in Brazil, Ethiopia and Serbia,

women indicated that intimate partner violence started during pregnancy.¹

Strengths and limitations

Although the DHS and IVAWS are internationally comparable, in practice, there are slight methodological variations between the individual surveys, which may limit comparability. For IVAWS, the number of ever-pregnant women was estimated using a proxy variable which captured the number of women with children residing in the household. This is likely to have undercounted the number of ever-pregnant women, thus slightly inflating the prevalence estimates, especially for older women. Response rates were very high for the DHS and IVAWS in most low- and middle-income settings, however the IVAWS surveys conducted in higher income settings had lower response rates. Although this is typical of surveys conducted in high-income settings

and telephone surveys, this limits their population representativeness.

Our estimates include women who may not have attended antenatal care, which is a key limitation of prevalence studies conducted in antenatal clinics in lower income settings. In the least developed countries, one in three women do not receive any antenatal care.⁴⁰ Further, in the WHO study, women in rural Ethiopia, rural Bangladesh and rural Tanzania who had experienced intimate partner violence were significantly less likely to have attended for antenatal care.¹

All survey data rely on women's reports about their experiences of violence, and so may be subject to recall and response bias. Despite extensive interviewer training and efforts to ensure privacy for respondents in both IVAWS and DHS, women still may not have felt able to disclose experiences of violence during pregnancy; thus, the figures presented are likely to be underestimates.⁴¹

Although this research provides important information about the global prevalence of intimate partner violence during pregnancy, it also

has limited detail about the contexts in which violence occurs. For example, the surveys did not collect detailed information about which pregnancy violence occurred in – yet the findings from a study on violence during pregnancy in Tanzania found that most violence occurred during one pregnancy only.⁴² Similarly, the DHS asked only about physical violence during pregnancy, while IVAWS asked about physical and sexual violence. Detailed information about the impact of emotional violence is not available, although different types of intimate partner violence can have different health consequences for women.⁴³

Implications and conclusions

Our data suggest that violence during pregnancy is more common than several recognized maternal health conditions for which it is current practice to screen during antenatal care. This includes pre-eclampsia, which complicates 2–8% of pregnancies globally,^{44,45} and gestational diabetes, which has between 1–5% prevalence in

the UK and USA.⁴⁶ Both of these conditions are potentially fatal if left untreated.⁴⁵ Although the extent of maternal mortality, miscarriage and stillbirth associated with intimate partner violence during pregnancy remains unknown, intimate partner violence is a leading cause of death among adult women in the USA⁴⁷ and is associated with maternal mortality in the UK.⁴⁸ Abuse during pregnancy is also associated with kidney infections, suboptimal weight gain, and having lower birthweight babies.⁴⁹

Antenatal care offers a window of opportunity, but more research is needed, in particular to assess the feasibility and effectiveness of interventions that can be integrated into antenatal care in resource-poor settings.⁴⁴ Expansion of antenatal care services, and/or alternate modes of intervention to reach women in low-income settings who do not attend antenatal care, are also crucial.

Women are not immune from violence during pregnancy. Given the prevalence of intimate partner violence during pregnancy and its potential impact on maternal and newborn health, it is important that global initiatives to reduce maternal mortality and morbidity and improve maternal health devote increased attention to violence against women, particularly during pregnancy. More research needs to be undertaken, using comparable methodologies, to both assess the magnitude and nature of the problem and to test potential interventions that can be implemented in resource-poor settings.

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Résumé

Nous souhaitons décrire la prévalence de la violence exercée sur les femmes enceintes par un partenaire intime dans 19 pays, et examiner les tendances par groupes d'âge et régions des Nations Unies. Nous avons mené une analyse secondaire des données d'enquêtes démographiques et sanitaires (20 enquêtes dans 15 pays) et d'enquêtes internationales sur la violence faite aux femmes (quatre enquêtes dans quatre pays) réalisées entre 1998 et 2007. Nos données indiquent que la violence du partenaire intime pendant la grossesse est fréquente. Sa prévalence allait d'environ 2,0% en Australie, au Cambodge, au Danemark et aux Philippines à 13,5% en Ouganda parmi les femmes ayant déjà été enceintes et ayant déjà eu un partenaire ; la moitié des enquêtes estimaient cette prévalence entre 3,9 et 8,7%. La prévalence semblait plus élevée dans les pays d'Afrique et d'Amérique latine que dans les pays d'Europe et d'Asie ayant fait l'objet des enquêtes. Dans la plupart des pays, la prévalence était relativement constante dans les groupes d'âge les plus jeunes (15-35 ans) et semblait décliner très légèrement après 35 ans. La violence du partenaire intime pendant la grossesse est plus fréquente que certaines conditions de santé maternelle qui font l'objet d'un dépistage systématique dans les consultations prénatales. Les initiatives mondiales pour réduire la mortalité maternelle et améliorer la santé maternelle doivent consacrer davantage d'attention à la violence faite aux femmes, en particulier pendant la grossesse.

Resumen

Nos propusimos describir la prevalencia de violencia de pareja íntima (VPI) durante el embarazo en 19 países y examinar las tendencias en diferentes grupos etarios y regiones de la ONU. Realizamos un análisis de datos secundarios de las Encuestas Demográficas y de Salud (20 encuestas de 15 países) y de las Encuestas Internacionales sobre Violencia contra las Mujeres (4 encuestas de 4 países) realizadas entre 1998 y 2007. Nuestros datos indican que la violencia de pareja íntima durante el embarazo es una experiencia común. La prevalencia de la VPI durante el embarazo varió de un 2.0% en Australia, Camboya, Dinamarca y Filipinas al 13.5% en Uganda entre mujeres alguna vez embarazadas, que alguna vez tuvieron pareja; la mitad de las encuestas calcularon una prevalencia del 3.9% al 8.7%. La prevalencia pareció ser más alta en países africanos y latinoamericanos comparada con los países europeos y asiáticos encuestados. En la mayoría de los entornos, la prevalencia era relativamente constante en los grupos más jóvenes (de 15 a 35 años) y pareció disminuir muy poco después de los 35 años de edad. La violencia de pareja íntima durante el embarazo es más común que algunos problemas de salud materna para los cuales se hacen pruebas de detección sistemática durante la atención prenatal. Las iniciativas internacionales por disminuir la tasa de mortalidad materna y mejorar la salud materna deben dedicar mayor atención a la violencia contra las mujeres, particularmente la violencia durante el embarazo.