

Implementing intimate partner violence care in a rural sub-district of South Africa: a qualitative evaluation

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ABSTRACT

Background

Despite a high burden of disease, in many health districts in the Western Cape, South Africa, intimate partner violence is known to be poorly recognised and managed. To address this gap in service an innovative intersectoral model for the delivery of comprehensive intimate partner violence (IPV) care was piloted in the Witzenberg, a rural, agricultural sub-district known to have a high incidence of IPV. It was not known whether the initiative was a success from the perspective of the women using the service, from the service providers or from the managers.

Methods

A qualitative evaluation was conducted. Ten service users were interviewed to explore their experience of the intervention. Two focus groups were conducted amongst health care workers, and one focus group and six interviews were conducted with the intersectoral implementation team, to understand their experience of implementing the intervention. Documents relating to the pilot were also analysed. A contextualized thematic content analysis approach was used, triangulating the various sources of data, and utilising inductive as well as deductive approaches.

Results

Over the pilot period 75 women received the intervention. Study participants described their experience of it as overwhelmingly positive, with some experiencing improvements in their home lives. Significant access barriers included unaffordable indirect costs, fear of loss of confidentiality, and fear of children being removed from the home. For health care workers, barriers to inquiry about intimate partner violence included its normalisation in this community, poor understanding of the complexities of living with violence and frustration in managing a difficult emotional problem. Health system constraints impacted on the pilot, affecting continuity of care, privacy and integration of the intervention into routine functioning, and the

process of intersectoral action was hindered by the formation of alliances. Contextual factors, for example high levels of alcohol misuse and socioeconomic disempowerment highlighted the need for a multifaceted approach to addressing intimate partner violence.

Conclusion

The results of this qualitative evaluation draw attention to the need to take a health systems approach and focus on contextual factors when implementing complex interventions. They will be used to inform decisions about instituting appropriate intimate partner violence care in the rest of the province. Additionally, there is a pressing need for clear policies and guidelines framing intimate partner violence as a health issue.

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PART A: PROTOCOL

Evaluating the implementation of an intervention for intimate partner violence in the district health system of the Western Cape

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Introduction

Background

Intimate Partner Violence in South Africa

Interpersonal violence is the second highest contributor to years of life lost in South Africa. Of this very high burden, in women, intimate partner violence (IPV) accounts for 62.4% [1]. The rate of intimate femicide in South Africa has been found to be 8.8 in 100 000, the highest rate reported worldwide [2].

For women suffering intimate partner violence the negative effects span all aspects of health, from direct mortality to increased risk factors for poor health outcomes.

Besides direct mortality from injuries, there is the potential for IPV to lead to mortality through suicide [3], maternal causes [4] and an association with HIV [5]. Increased morbidity is even wider-spread, stemming from increased mental, physical (including injuries) and reproductive health problems.

Mental health problems that are more prevalent among women who have experienced IPV include depression, post-traumatic stress disorder, suicidality and alcohol and substance abuse [6].

Women who have experienced IPV are more likely to report poor overall health and more likely to suffer physical symptoms including pain [3]. They are also more likely to have gastrointestinal symptoms and diagnosed functional gastrointestinal disorders, gynaecological disorders, and many more physical disorders [7].

There is also a higher risk of being HIV positive for victims of IPV, even after adjusting for risk-taking behaviours [5]. This could be due to male perpetrators being more likely to engage in risky behaviours outside of the relationship and therefore being more likely to transmit HIV [8]. Women who are in controlling or abusive relationships are also less able to negotiate condom use. Risky behaviours associated with IPV include multiple partners, transactional sex and substance abuse [5].

Pregnancy-related problems include associations between IPV and poor maternal and foetal health outcomes. Poor maternal health outcomes include increased sexually transmitted infections, vaginal bleeding and premature rupture of membranes. Poor foetal outcomes include low birth weight and preterm delivery [4]. There is also evidence that IPV is linked to unintended pregnancy [9].

Despite seldom seeking help from available services [10], women who have a history of IPV have been shown to have significantly higher levels of healthcare utilization [11]. This suggests that the health services are an important opportunity to identify and intervene in IPV.

IPV interventions

The high burden of IPV and its many health-related effects place IPV as a major public health issue. Despite this, there is a relative lack of evidence-based interventions for the detection and management of IPV, particularly in the primary care setting [10,12].

In general, at primary care level management consists of screening and referral to specialized services. How effective screening is in improving outcomes depends on the intervention offered after referral. At the time of a review published in 2003 [12], no studies that met inclusion criteria had evaluated interventions in the primary care setting. More recently, a randomized control trial conducted in urban primary care clinics in the United States of America [13] assigned women to either a simple assessment followed by referral or a simple assessment followed by nurse case management, and found that both groups had decreased self-reported levels of threats of abuse and assaults.

Current evidence points to comprehensive health system approaches that incorporate intersectoral action being more effective. A recent review suggests that creating a supportive environment for the intervention, as opposed to focusing only on changing the way individual providers behave is key to such an approach [10].

This is supported by other evidence, with another review finding that interventions with institutional support, effective protocols, thorough ongoing training and immediate access or referrals to services tended to have better outcomes [14].

Colombini [15] offers a framework for integration of IPV services into the health system. Three levels of integration are outlined, selective integration at a provider or facility level, comprehensive integration at a provider or facility level, and systems-level integration. Challenges to integration exist at the provider, facility and systems level. The project being evaluated here is an attempt to integrate an intervention into the district health system of the Western Cape, and could be described as systems-level integration because some services are offered at primary care level facilities, with referral to other resources at different sites. It is noted in this review that most interventions did not evaluate the processes of integration [15].

The intervention piloted in the Witzenberg

From April 2012 an intimate partner violence intervention was piloted in the health services of the Witzenberg sub-district of the Western Cape. The pilot is a collaboration between the Western Cape Government Department of Health and Department of Social Development, and is provided from within the health services.

The health services in the sub-district consist of a district level hospital, nine fixed primary care facilities, mobile facilities each attached to a fixed facility and home-based services. Patients identified from any of these sources are offered the service, as described below, in one of the fixed primary care facilities. Thus, a health care professional in this model refers to any doctor or nurse working in the health services of the sub-district, and women may be identified for the service by any health care professional or community-based worker. The intervention was developed by Dr. Kate Joyner based on her prior research into IPV in the Western Cape primary care health services [16].

It consists of a three-tiered model, represented below.



Figure 1: Three tier model for IPV intervention

1st tier: Case-finding

The first tier is provided by health care professionals and consists of identifying women experiencing IPV who are attending health facilities. A selective screening approach is used, where only women with specific cues or who are suspected of experiencing IPV are asked about it. When a cue is identified, a question is asked by the provider: “Are you unhappy in your relationship?” Following the answer to this question, a history of IPV is confirmed.

Appropriate clinical care is then provided. This includes treatment of injuries, forensic documentation (J88 form, or appropriate documentation in the medical record), identification and treatment of sexually transmitted infections, offer of pregnancy test or family planning as appropriate, and offer of HIV testing.

Training for this tier consisted of a two hour session that covered general issues about IPV as well as the appropriate management of IPV. A flow chart was provided with suggested cues and steps in management. All health care professionals in the relevant facilities were invited to attend the training sessions. 61 attended (52 nurses and 9 doctors), 23 from the district hospital and 38 from primary care facilities, each facility having at least one health care professional that was trained.

The next step is for the health care professional to offer referral to the IPV service.

2nd tier: Assessment and intervention

The second tier of the intervention is provided by a social worker employed by the Department of Social Development. A protocol is used to conduct a comprehensive assessment and provide psychosocial care. An appropriate management plan is devised, including referrals where necessary. Referral resources include legal support and mental health services. The interaction should be patient-centred with a guiding style.

The protocol includes: a full history of abuse and previous attempts to access help, a danger assessment and development of a safety plan, case-finding for mental disorders including screening for alcohol abuse, counselling and referral to appropriate resources.

2nd tier: Empowerment group

Following this assessment and intervention session, women may attend an empowerment group facilitated by the same social worker. A personal empowerment process was developed by the Department of Health for use in chronic diseases, but covers issues relevant to motivation and lifestyle change. A flipchart is used to cover five group sessions.

3rd tier: community-based support groups

Women will then be able to attend community-based support groups should they wish to. These groups have the potential to provide social support for women who feel very isolated, and ensure continuity in the community. It is envisioned that the IPV survivors may be able to facilitate the support groups as they build their own capacity to do so. At this time support groups have not yet been set up in the Witzenberg and this tier will only be implemented in future phases of the project. The third tier will thus not be evaluated here.

Operational Management Team

As part of the monitoring of the project, an operational management team meets monthly to discuss progress and challenges. This team consists of members from

the Department of Health at district and provincial level as well as the Department of Social Development, the South African Police Service and the University of Stellenbosch. The University of Stellenbosch provide technical support and training through Dr. Kate Joyner and Prof Bob Mash who also developed the model.

Intersectoral action

The WHO defines intersectoral action for health as follows: a recognised relationship between part or parts of the health sector with part or parts of another sector which has been formed to take action on an issue to achieve health outcomes (or intermediate health outcomes) in a way that is more effective, efficient or sustainable than could be achieved by the health sector acting alone [17].

Recently, increased recognition of the underlying social determinants of health and the need for multiple sectors to play a role in addressing these determinants, has led to increased interest in how intersectoral action for health can be achieved.

A recent scoping review found that 43 countries have initiated government-led intersectoral action for health equity since 1987, the majority in the last ten years [18]. The review concluded that in general improved descriptions of the processes of intersectoral action would be useful.

Many factors enabling and preventing success of intersectoral action have been described [19,20,21] and can be used as a framework for discussing implementation of intersectoral action, bearing in mind the importance of the context of the intervention.

Evaluating implementation

Assessing implementation is necessary to determine to what extent outcomes may be due to an intervention [22]. In a review of how implementation affects prevention and promotion programme outcomes and what factors affect implementation, Durlak and DuPre [22] concluded that there is evidence that more effective implementation is associated with improved outcomes. They reviewed 81 studies of prevention and promotion programmes related to child and adolescent

health in multiple settings to determine whether certain factors were associated with effective implementation, and used an ecological framework to categorise these factors. A framework that groups factors into community level factors, provider characteristics, characteristics of the innovation, delivery system factors, and support system factors was devised. This framework can be used to assist assessment of the implementation process.

Statement of Research Question

This research will investigate patients' experiences of the intervention, as well as the service providers' experiences of its implementation, to answer the question of how a model for intervening in IPV can be implemented in the district health system of the Western Cape.

Purpose

The results of this evaluation can be used to make recommendations to guide the implementation of this and similar interventions on a wider scale.

Aim

To evaluate the implementation of an intimate partner violence intervention in the district health system of the Western Cape and explore provider and user perspectives and experiences of this implementation.

Objectives

- 1) To describe the implementation process of the IPV programme into the routine functioning of health services in the sub-district.
- 2) To describe the experiences of managers and service providers from the Department of Health and the Department of Social Development in implementing an IPV intervention in the district health system.
- 3) To describe the managers' and service providers' motivations in implementing the project.
- 4) To investigate managers' and service providers' perceptions of the value of the project.

- 5) To investigate managers' and service providers' perceptions of their roles and the role of the health services in intervening in IPV.
- 6) To describe the processes of intersectoral collaboration within the intervention and the experiences of managers and service providers with these processes.
- 7) To understand how patients have experienced the intervention and which aspects of the intervention patients have found to be beneficial or not.

Research Design

This evaluation will be undertaken using qualitative methods, combining focus groups, depth interviews and document review. It will be supported by data gathered in the process of monitoring the pilot. This will include attendance data, appointment books and registers of women offered the service at individual service points.

Interviews

Two categories of depth interviews are planned- interviews with service users in order to explore in-depth their experiences of the intervention, and interviews with key informants involved in providing the intervention, in order to explore their experiences of the implementation process.

Service users will only be interviewed individually because of the sensitive and confidential nature of the topics under discussion.

Service users

Service users will be purposively selected to participate based on their interactions with providers. Women who have participated in the intervention and are likely to be forthcoming about their experience will be invited to participate. Due to the limited resources available to this study, the aim will be to sample between five and ten patients from at least three service points.

They will be accessed by asking the social worker providing the intervention to identify women who would likely be willing to participate, and ask them whether they would be willing to be contacted by the researcher. They will be asked only after the intervention has been provided, to ensure that patients are very clear that there will be no negative effects should they choose not to participate.

An attempt will also be made to access women who have been identified as experiencing IPV by health care professionals and have declined to participate in the intervention. This could provide valuable information about gaps in service delivery and access issues, as well as other barriers to the uptake of the intervention amongst women using health services.

The attempt to access these women will be made through a community contact that is aware of several such women in her community and has agreed to find out if they would be willing to participate in this research. The researcher will only approach women who have indicated that they would be willing to be involved, and participation will be completely voluntary. The importance of strict confidentiality will be emphasised during the process of accessing participants. The aim will be a sample of at least three women.

Service providers

Key informants who will be invited to participate include:

- The social worker providing the second tier of the intervention
- A manager from the Department of Social Development
- A Department of Health district manager who was the driver for this project in the health services
- The psychologist and mental health nurse of the sub-district who are on the operational management team
- A member of the South African Police Service who is on the operational management team

A social worker employed by the Department of Social Development provided the second tier of the intervention, and as such was largely at the forefront of service provision. Her experiences of providing the intervention and of working within the health services will be of value in exploring both the provision of this tier of the service as well as the health system processes from another perspective.

A manager from the Department of Social Development will also be interviewed. This is the direct supervisor of the social worker providing the second tier, who was also on the operational management team.

One Department of Health district manager will be invited to participate as a key informant, the driver of this project within the health services.

The psychologist and mental health nurse in the sub-district will also be invited to participate, as they have both provided support to the social worker and were on the operational management team. They have insight into the intervention, as well as being key in the provision of services to women experiencing IPV before and during the pilot. They were also engaged during the pilot to provide extra support to the social worker where needed.

Similarly, a member of the South African Police Service who was part of the operational management team will be invited to participate. He is also active in managing IPV within the police services.

Focus groups

Focus groups will be conducted only with service providers. They will aim to develop an understanding of the organisational and cultural norms within the health services, and how these norms affected the implementation of this project. They will consist of eight to ten members each.

Three focus groups are planned:

- Managers at the district level of the health services
- Service providers in primary care facilities

- Service providers at the district level hospital of the sub-district

The group of managers will consist of all managers at the district level who have been involved in the project and are willing to participate. This will include all the remaining members of the operational management team. The inclusion of different levels of management may impair open sharing of experiences, and so the driver of the project who is on a higher management level will be interviewed separately.

The groups of service providers will be chosen from primary care providers working in the Witzenberg and those working at the district hospital. The participants will be chosen strategically to consist of those with a range of responses to the project judging by the number of their referrals into the second tier of the intervention.

Of the primary care providers, a range from different clinics will be sought, including clinics closer to and more remote from the town of Ceres.

The choice to hold separate groups for different levels of care is an attempt to better understand the different roles and challenges each level of care within the district health system has experienced in implementing this intervention.

A summary of the interviews and focus group participants is represented in Table 1 below:

	Interviews	Focus groups
Clients	5-10 Received service	
	3 Declined to utilise service (if possible)	
Managers	DSD manager	1 District level managers
	SAPS representative	
	District manager driving project	
Providers	Social worker	1 District hospital
	Psychologist	1 Primary care facilities
	Mental health nurse	

Table 1: Interview and focus group participants

Documents

Documents pertaining to the intervention, for example meeting minutes and service level agreements, will be used to develop an understanding of the processes involved in the setting up of the project teams and implementing the intervention.

Field notes kept by the researcher throughout the pilot will be also be drawn on and analysed.

Instruments

The Researcher

The researcher is a public health registrar placed in the Health Impact Assessment Directorate of the Western Cape Government Department of Health (provincial office), and as such was assigned to monitor and evaluate the pilot project for the Department of Health. This meant involvement in parts of the training and being on the operational management team. Role players within this project are all aware of this function.

This may be significant to how the key informants relate to the researcher in that there may be some reluctance to admit to negative attitudes toward the project. Every effort will be made to impress upon them that their experiences and perceptions may be useful in improving the service.

Discussion Schedule

Five discussion schedules will be used. For service providers and managers there are three: one for the managers' focus group and a slightly modified version for managers interviews, and one for the providers' focus groups. For users, there is a schedule for those who have been through the service and a modified schedule for those who have not.

Discussion schedules were developed to meet the study objectives. Appropriate prompts are provided for most questions. For the managers, questions cover roles in the project, experiences of the project, challenges, perceived usefulness of the project, integration into the health system, team functioning and role of the health system in IPV.

Questions for providers cover experiences of the intervention, challenges, perceived value of the intervention, integration, self-efficacy, training and role of the health services in IPV.

User schedules cover expectations, benefits and harms of the service, possible improvements, appropriateness of the setting, and appropriateness of screening.

For those who have not been through the service, questions cover reasons for not accessing the service, expectations and potential improvements.

Analysis

Analysis will be contextualised interpretive content analysis.

Interviews and focus groups will be audio- recorded and transcribed, with simultaneous translation into English where necessary. Interviews will be conducted largely in English, using Afrikaans where the participant is uncomfortable in English. The interviews will all be conducted by the researcher, who will also conduct the analysis. Transcripts will be checked for accuracy by the interviewer.

An initial reading of the transcripts will be used to check for accuracy and to become familiar with the material, following which a further reading will be used to draw themes inductively from the data. Coding will then be undertaken using these themes. Field notes and documents (where appropriate) will be analysed in the same way as transcripts. Where documents are not appropriate for content analysis because of their superficial nature, they will be used to enrich understanding of the background and set-up of the project. Atlas-ti 6 (Scientific Software Development, 2011) will be used to manage data.

Ethics

Confidentiality

Confidentiality will be maintained by having no personal identifiers on the interview or focus group transcripts or notes, and using codes to refer to interviews and focus group participants at all times. Audio files and electronic transcripts will be password protected, and any original or printed material will be kept in a locked cupboard. In reporting, no reference to any characteristics likely to lead to identification of the participants will be made, except where this has been specifically consented to (with regard to service users absolute confidentiality will be maintained throughout).

Informed consent

Written informed consent will be obtained using the forms attached. This will include separate consent to audio recording. All relevant information regarding the study will be given, and the voluntary nature of participation stressed. Participants will be advised that they may discontinue the interview at any time with no negative consequences. This will be emphasised, as those participants who are employees of the Department of Health may feel that participating is expected of them as part of their work, and patients must be made aware that their access to services will in no way be hampered if they choose not to participate or to withdraw.

Although every effort to avoid this will be made, certain key informants (for example the social worker delivering the intervention) may be identifiable in reporting because of their unique roles. For this reason, a separate consent will be obtained from them. This will specify that although they will not be named, there may be the possibility that those closely aligned with the project would be able to identify them. This will be avoided wherever possible.

Non-maleficence

It is unlikely there will be any negative consequences to participants who are service providers. In the event that an emotional response is evoked to the extent that participants may need counselling, resources will be made available to them (through resources available to the project).

Service users who are interviewed will already have been referred to appropriate resources as part of the intervention. It is unlikely that any severe negative emotion will arise in the interview that has not already come up during the intervention. However, should anything occur to occasion concern that additional counselling or referral might be required, the resources available to the intervention will be offered.

Women who have not participated in the intervention prior to being interviewed have a potentially greater risk of harm from participating in this research. All of these women will be offered referral to the service following their interviews, or to

any appropriate services necessary, for example counselling or legal assistance. These resources are already in place as part of the intervention. Strict confidentiality will be maintained. Women will be interviewed at health facilities, and will be given a sick certificate for that day. All appointments and communication will refer to women's health and not to domestic violence or IPV.

Justice

The purpose of this research is to contribute to improving the management of IPV by contributing to the design of interventions that are implementable in the district health services. Although this would not directly benefit the participants, it could help to ensure their perspectives and needs are taken into account in the future. Every attempt will be made to ensure validity in the analysis and reporting of results.

Logistics

Timeline

Data collection will occur in March 2013, in line with the end of the 12 month pilot project. The aim is to complete the write up by March 2014.

Budget

Item	Cost
Transcription	R500×17=R8500
Accommodation in Ceres	R350×4=R1400
Stationery	Costs covered
Total	R9900

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PART B: LITERATURE REVIEW

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Objectives

This literature review aims to contextualise the protocol titled: *Evaluating the implementation of an intervention for intimate partner violence in the district health system of the Western Cape*.

The objectives were to review key publications regarding the following, with a more comprehensive focus on the South African context:

1. Burden and health effects of intimate partner violence
2. Health sector based interventions for intimate partner violence
3. The integration of intimate partner violence interventions into health systems
4. Service user and health care worker perspectives on intimate partner violence care

Search Strategy

Multiple searches were conducted between August 2012 and January 2014, using PubMed, CINAHL and PsycINFO. All types of study design were included. Keywords included *intimate partner violence; domestic abuse; violence against women; gender based violence; South Africa; developing countries; intervention; health systems; health care worker; health care provider*.

Summary of the literature

Although this review focused on the South African context, relevant international literature is included. Of note is a remarkable convergence between studies conducted in South Africa and in many other settings.

Definitions

There are several terms used to describe various forms of violence against women. Intimate partner violence (IPV) refers to “behaviour by an intimate partner that causes physical, sexual or psychological harm, including acts of physical aggression,

sexual coercion, psychological abuse and controlling behaviours” [1]. Gender based violence refers more broadly to any act of violence committed against a person because of their gender, and includes intimate partner violence and sexual violence. Domestic violence is also an umbrella term, defined broadly in the Domestic Violence Act (No 116 of 1998) [2] to include physical, sexual and emotional abuse, harassment and stalking, damage to property and other controlling or abusive behaviours, within any domestic relationship.

The Act makes provision for women to obtain protection orders against their partners, imposes a legal obligation on police officers and clerks to inform women of their rights, and allows police to arrest abusers without a warrant and seize their weapons [2].

Burden of Disease

The WHO estimates that 30% of women globally who have been in a relationship have experienced physical or sexual intimate partner violence [3]. In the WHO Africa region, this estimate is as high as 36.6% (95% CI 32.7; 40.5%) [3]. These figures do not include emotional violence which is often omitted from prevalence studies, although it appears to be common and have serious mental health implications [4].

In South Africa, interpersonal violence is the second highest contributor to years of life lost [5], and in women, intimate partner violence (IPV) accounts for 62.4% of this high burden [5]. A survey of women in three South African provinces found lifetime levels of physical abuse of between 19 and 28% [6], and in Cape Town 42.3% of working men interviewed reported perpetrating physical violence in a relationship in the previous ten years [7].

Health effects

For women experiencing intimate partner violence the negative effects span all aspects of health, and can lead to mortality, morbidity and increased risk factors for poor health outcomes. These effects are mediated through multiple pathways, including physical trauma, psychological trauma and stress, and controlling behaviours leading to limited reproductive control and lack of autonomy in health care seeking [3].

Mortality can be caused through homicide, or indirectly through suicide [8], maternal causes [9] and an association with HIV [9]. Increased morbidity results from increased mental disorders, injuries, increased chronic conditions and physical complaints and reproductive health problems, including sexually transmitted infections and HIV [3,8,11].

Mental disorders that are more prevalent among women who have experienced IPV include depression, post-traumatic stress disorder, suicidality and alcohol and substance abuse [12]. A recent study in South Africa found that of women who obtained protection orders against intimate partners, 66.4% experienced severe depression symptoms, and 51.9% experienced severe post-traumatic stress disorder symptoms [13]. A recent systematic review of longitudinal studies was able to conclude that IPV is associated with incident depression symptoms, adding to evidence of a causal relationship [14].

Women who have experienced IPV are more likely to report poor overall health and more likely to suffer physical symptoms including pain [8]. They are also more likely to have gastrointestinal symptoms and diagnosed functional gastrointestinal disorders, gynaecological disorders, and many more physical disorders [11].

IPV is associated with an increased risk of being HIV positive, even after adjusting for risk-taking behaviours [10]. Besides the biological risk due to forced sex, male perpetrators are more likely to engage in risky behaviours outside of the relationship and are therefore more likely to transmit HIV [15]. Women who are in controlling or abusive relationships are also less able to negotiate condom use [3]. Risky behaviours associated with IPV include multiple partners, transactional sex and substance abuse [10].

Pregnancy outcomes are worse for women experiencing IPV, in terms of both maternal and foetal health. Poor maternal health outcomes include increased sexually transmitted infections, vaginal bleeding and premature rupture of membranes. Poor foetal outcomes include low birth weight and preterm delivery [9]. There is also evidence that IPV is linked to unintended pregnancy [16].

Women who have a history of IPV have been shown to have significantly higher

levels of healthcare utilisation [17] and the estimated economic burden is significant [18].

The high global burden of IPV, its numerous health effects, its impact on efforts to prevent HIV and the opportunity afforded to health care providers to inquire about violence, have contributed to growing recognition that IPV is an issue of major public health concern.

Conceptualising IPV

Many theoretical perspectives and frameworks have been used to explain and guide research on IPV. For example, the feminist perspective highlights patriarchy and male dominance as causes of IPV, while the sociological perspective points to prior experiences of violence and unequal resources in relationships [19]. An ecological framework approach attempts to pull together factors that lead to violence on multiple levels, incorporating individual, relationship, societal and structural causes [20]. No one theory fully explains IPV, and causes are complex and interrelated, with dynamic, non-linear pathways [21].

A theoretical model developed by Jewkes [21] describes two community-level factors that operate as necessary causes of IPV. These are gender inequality, or male superiority, and social acceptance of the use of violence to resolve conflict. Both are prevalent features of South African communities [21].

Poverty interacts with these factors by hampering the ability of women to leave violent relationships, and potentially leading men who are disempowered economically to gain power by exerting dominance over women [22]. Masculine identity is a possible mediator in the relationship between poverty and IPV, with men living in poverty unable to fulfil their conceptualisation of masculinity, leading to violence [21].

On a relationship level, the existence of conflict and negative styles of conflict-management, and on an individual level, alcohol abuse, are important contributors to IPV. Relationship conflict has been hypothesised to be a mediator in the relationship between both poverty [21] and alcohol [22] and IPV, with conflict arising around household finances or either partner's drinking leading to violence.

Conflict that is most likely to lead to IPV is related to women contravening accepted gender roles. In South Africa, this often translates to women having multiple partners, women drinking alcohol or conflict about male drinking [21].

Often IPV is conceptualised as a single phenomenon, but theoretical and empirical work [23,24] has described subtypes that assist in expanding on the psychosocial effects of IPV, and in highlighting gender inequities relating to the experience of violence. Johnson's [23] typology describes four forms of IPV: intimate terrorism, violent resistance, mutual violent control, and situational couple violence, with differing dynamics and degrees of coercive control. Situational couple violence does not involve attempts to gain control, whereas intimate terrorism refers to the ongoing use of violence to exert control. Violent resistance is a response to a partner's attempts to exert control, and mutual violent control is violence used by both partners to control each other.

There is evidence that a life course perspective could be useful both in understanding IPV risk, and in developing prevention programmes. Experiences in childhood and early adulthood, such as childhood abuse, earlier age at first sex or forced first sex, have been shown to increase IPV risk in women [25,26]. The WHO multi-country study on women's health and domestic violence found that risk was highest when both the woman and her partner experienced a risk factor [25], highlighting the importance of prevention approaches that target both men and women. In addition, empirical evidence has demonstrated that cumulative violence, and violence experienced in multiple domains over the life course, has negative effects on health and psychosocial development [27,28].

The Response of the Health Sector to IPV

Despite growing recognition that IPV is an important public health issue, there has been a relative lack of evidence regarding the most effective health system responses [29,30,31]. A Cochrane review of IPV interventions concluded that there is insufficient evidence to show whether current health sector- based approaches are effective in reducing violence or improving psychological well-being [31]. This points to a need for the development of new health sector responses [32], as well as more rigorous evaluations of interventions and their integration into health

systems, particularly in primary care, which is relatively under-represented in the literature [30,33].

There is, however, sufficient evidence that intervening for IPV in a primary care setting can be beneficial. A recent systematic review of interventions based in primary care found that 76% of 17 included studies showed an improvement in at least one measured outcome, including reductions in IPV, improvement in health-related quality of life and increased safety promoting behaviours [34]. Included studies were largely of United States origin, with only one study originating in South Africa, one in Peru and one in Hong Kong.

In addition, the WHO has recently published clinical and policy guidelines for responding to IPV and sexual violence [1], synthesising the best available evidence in an attempt to increase the prominence of IPV as a health concern amongst policy makers and health care providers.

On a policy level, the guidelines recommend integrating services into existing structures as far as possible, as well as having multiple models of care appropriate for different levels, but prioritising primary care [1]. These recommendations are all based on very low quality evidence, reflecting the relative lack of quality evaluations of health system responses. The guideline outlines minimum requirements for an appropriate health sector response, including having clear local policies and protocols, ensuring supportive management including financial resources, providing comprehensive care as well as resource materials, working intersectorally, appropriate monitoring and evaluation, and providing support for carers [1].

Screening and intervening

In primary care, intervention for IPV usually consists of screening or identification of women experiencing IPV, followed either by on-site intervention or referral to further specialised services [34]. Universal screening for IPV is controversial, although the need to identify cases non-routinely in health care settings is widely accepted [35]. The U.S. Preventive Services Task Force, since 2013, has recommended universal screening for IPV in women of childbearing age [36]. However, a more recently published, well-conducted randomised controlled trial

(the WEAVE study) found no difference in primary outcomes between women who were routinely screened for violence and a control group [37]. This trial, in addition to prior evidence [38,39], has led to the expert conclusion that universal screening for IPV is ineffective in improving health [32]. Although screening is able to identify women experiencing IPV, uptake of interventions is impeded by numerous barriers and is often low, and in the setting of asymptomatic women, current intervention approaches have not been shown to be of benefit.

Inquiring about and discussing violence in specific cases during health care encounters (selective screening or case-finding) has been recommended as an alternative approach [32,40], followed by more complex, individualized interventions [32]. This approach has been demonstrated to be feasible, with a cluster randomised controlled trial showing training and support can significantly increase the number of women identified and referred to services in the absence of universal screening [41].

Several trials of IPV interventions in primary care have recently taken place, most of them in developed countries, utilising doctors, nurses and lay providers to deliver interventions either on or off-site [37,38, 41,42]. These interventions commonly use empathic approaches and attempt to empower women by helping them to understand their situation, improve their safety and access community resources [34].

One randomised controlled trial with two levels of intervention (a referral resource card and a protocol administered by a nurse) found both intervention groups to experience significant decreases in violence, suggesting that even the act of disclosure may be an important driver of change for women experiencing IPV [42].

System level interventions

Reviews of IPV interventions have emphasised that comprehensive, system-wide approaches have been the most effective [29,43,44]. IPV interventions are complex, and therefore require more than health care provider training to enable effective programme functioning within a health system. For example, a realist review (focusing on programme mechanisms to understand how and why programmes

work) found that providers can be supported by four elements of an IPV programme: institutional support at high levels, effective protocols, ongoing training and immediate access to support services [43].

Colombini [45] has suggested a framework for the integration of IPV services into health systems. Three levels of integration are outlined: selective integration at provider or facility level, comprehensive integration at provider or facility level, and systems-level integration. Challenges to integration exist at all three levels. System level barriers include the lack of effective referral systems, lack of privacy, high staff turnover and insufficient coordination between multiple stakeholders [45]. These system level barriers need to be addressed to ensure effective intervention.

A framework developed by Atun et al. [46] facilitates analysis of the integration of interventions into health systems functions. Five key components are identified that interact to affect the adoption of interventions. The components are the type of problem targeted, the intervention itself, the adoption system, made up of multiple interconnected actors and their context, health system characteristics and the broader environmental context. IPV interventions would be viewed as complex, because high user and stakeholder engagement are required, and interventions attempt to change behaviour [46].

The evidence base informing the scale up of IPV interventions and their integration into health systems is lacking [47]. However, examples of published investigations that do exist provide lessons of interest to those wishing to institute an appropriate response to IPV. In Malaysia, the national scale up of One Stop Crisis Centres, an integrated health sector response to IPV, was investigated. Factors relating to health system structure and organisation, as well as external policy constraints were found to be barriers to implementation [47]. Several system level factors arising from this case study could be applicable in other contexts. Commitment at policy level was found to be necessary, which could be communicated to service delivery level by incorporating appropriate indicators into routine reporting. Adequate training as well as adjustments to service delivery, to ensure providers have the necessary time and privacy available to them, were required. Finally, flexibility of the model was important to allow its implementation at different levels of care.

An investigation of the integration of gender-based violence laws into the regional health systems of Spain found institutionalisation to be a challenge [48]. Advancements were often made through the actions of highly motivated individuals, raising concerns about sustainability. Budget allocation was found to be a key component of institutionalising change. It is also noted that since IPV is complex to respond to, protocols, while necessary, were insufficient and need to be supported by adequate training [48].

In South Africa, Vezimfilho, a model health sector response to IPV, was developed and implemented in four districts [49]. Important findings from an evaluation of the implementation process included the need for a systemic response, with political commitment, policies, protocols and effective referral systems being essential [49]. In addition, capacity building needed to include addressing values and attitudes towards IPV and gender norms, as well as interpersonal skills in health care providers. Support from managers in the health system and strong relationships between multiple stakeholders were seen as key to a sustainable approach [44]. System barriers to implementation included insufficient staff and lack of confidence in managerial support, while on a societal level providers' attitudes and perceptions relating to gender hampered implementation [49]. The social barriers relating to gender imply that a comprehensive health sector response requires advocating for wider social change.

Primary prevention

Primary prevention of IPV remains a challenge. Two programmes have been tested in South Africa, attempting to address both IPV and HIV by focusing on the gendered nature of these interlinked epidemics.

The Intervention with Microfinance for AIDS and Gender Equity (IMAGE) study implemented a microfinance intervention combined with participatory training that focused on gender and HIV, and encouraged community mobilisation. After 2 years, women enrolled in the intervention group experienced 55% less IPV in the previous twelve months, compared to the control group (risk ratio 0.45, 95% CI 0.23;0.91) [50]. Although it was unable to show a difference in HIV incidence in communities, the trial showed that a structural intervention that empowers households

economically can decrease violence.

Stepping Stones is a participatory programme aiming to prevent HIV through improving gender equity in relationships, and thereby decreasing sexual risk behaviour. This programme was adapted for the South African context, and implemented and evaluated through a cluster randomised controlled trial. The trial was unable to show a decrease in HIV incidence, but did demonstrate a decrease in incidence of Herpes simplex virus 2, and men who underwent the intervention reported perpetrating IPV significantly less often after 2 years of follow-up [51].

Other instances exist, for example the SHARE project and SASA! Study in Uganda [52,53] and a study comparing different combinations of interventions aiming to promote gender equitable behaviour in Brazil [54]. In addition, a recent systematic review of IPV prevention interventions specifically targeting adolescents, found that half of the included trials were effective [55]. A trial of a structured home visitation programme for high risk pregnant women in the Netherlands showed a decrease in IPV in the intervention group [56]. The long term effects on the participants' children are as yet unknown.

These examples not only demonstrate that IPV can be prevented through the efforts of the health sector acting in concert with other stakeholders, but also highlight the importance of addressing gender inequity when responding to IPV.

Women's perspectives on IPV care

The WHO clinical and policy guidelines for responding to intimate partner violence and sexual violence against women advocate for woman-centred care [1]. Much literature on the topic of women's experiences and expectations of health services in the context of IPV is available. This includes articles synthesising qualitative research in an attempt to increase evidence availability for policy-making and programme design [57,58]. There are many points of commonality, bearing in mind that the majority of this research was conducted in developed countries.

Consistently, women who have experienced IPV have described an appropriate response by health care providers to be non-judgmental, understanding and empathetic [57,58]. Women want their health care providers to understand the

complexities and consequences of living with violence and the difficulties they face because of it [58,59]. They also want an acknowledgment from their providers that what they are experiencing is abuse, and that it is unacceptable and wrong [60,61].

When these features are present the encounter can be validating and helpful, and raising the issue of violence can be viewed as caring [58,62]. When they are absent, however, and particularly when the health care provider neglects psychosocial aspects of care, the encounter can be detrimental [59], and can lead to a reluctance to disclose violence in the future [57].

Another feature women have described as being of central importance is having health care providers respect their autonomy [60,62]. However, one survey found that 71% of women who disclosed IPV reported feeling their health care provider wanted them to leave their relationship, and 37.5% reported that they had been directly advised to do so [63]. Women have also expressed feeling judged when they did not follow the advice of providers to leave their relationship [58,61].

Consistent with the need for a non-directive and validating encounter, South African women experiencing IPV reported that counselling was the service they most often wanted (between 36.1% and 45.8% in different provinces) [6].

Common barriers to accessing help through health services include fear of the abuser and fear of having children removed from the home as a consequence of disclosing violence [57,58]. Related to the provider, the fear of judgment and not being believed or understood [58,59], as well as the fear of loss of confidentiality are common barriers [57,58,62]. At a systemic level, the lack of privacy often encountered in health care settings and a lack of continuity can prevent disclosure [57].

Overall, the appropriateness of the health care encounter depends on the empathetic and non-directive attitude of the provider, the attention paid to emotional issues and the maintenance of confidentiality. If these elements are present, having a health care provider raise the issue of violence is usually viewed by women experiencing IPV as supportive and helpful [58].

Health care provider perspectives

Access to reproductive health services can be significantly affected by the attitudes of health care workers [64]. In the case of IPV, perceptions regarding the role of the health system and health care workers in intervening for IPV, and attitudes regarding the underlying causes of violence can influence how a patient is managed [65].

Health care workers have dual roles, as care givers and community members, and often share cultural understandings of violence with their communities. They also experience a similar prevalence of violence to the rest of the community [66].

In a rural South African setting, primary health care nurses were found to reflect the dominant culture of normalised violence, expressing a preference to deal with abuse within the family structure. Both male and female nurses perceived abuse as a form of discipline, often caused by the actions of abused women. A distinction was drawn between “normal” levels of abuse and abuse resulting in very severe injuries, for which it was considered more acceptable to seek outside help [66].

Addressing IPV remains a challenge for many health care workers, with studies citing numerous barriers to responding appropriately. On a provider level, these include discomfort dealing with emotional issues [67,68] and unrealistic expectations about the outcome of intervention [65]. One survey found that most (58%) health care workers had unrealistic expectations of IPV intervention [69]. This highlights the need to address how health care workers understand the complexities of violence, in particular the realities of why women remain in violent relationships. The same survey found that providers were able to empathise with women who were financially unable to leave their relationships, but were less empathetic towards middle-class or educated women who didn't leave their partners [69].

In medical culture, the view of the health care provider as the decision-maker in the patient-provider relationship is prominent [70]. This can affect how providers see their IPV encounters, in that a woman choosing not to follow advice, and either leave the relationship or seek legal redress, could be interpreted as a failure of the

interaction. The provider's inability to provide a solution to the problem may be seen as an inability to intervene effectively [65].

On a systems level, a lack of time has been cited in many different settings [67,68,71,72]. A Malaysian study found that although providers lacked time to appropriately deal with IPV, whether or not this impacted on the provision of care depended on individual providers varying interest in responding to violence [65].

A lack of training is also a common barrier [72,73], with evidence suggesting that those health care workers who have had training tend to ask about IPV more often [74] and intervene more [75]. A survey of doctors in South Africa reported that only 9.7% of respondents had received any IPV training [76]. Similarly, a lack of protocols is perceived by providers to inhibit IPV management [67,73] and those who have protocols available report assisting patients more often [75].

Further systemic barriers include ineffective referral networks [68,72,73] and inadequacies of the health care setting in terms of creating a trusting and private environment [67,71].

There appears to be some disparity between what women experiencing IPV want from health services and what the health system is currently providing. While women feel validated when an understanding of their complex situation is displayed, health care providers are undertrained in IPV, and may have unrealistic expectations. While women want non-directive counselling and support, health care providers may be uncomfortable with psychosocial issues and want to offer assistance in the form of advice, usually to leave the relationship or get legal help. In addition, system level barriers impact on the ability of providers to offer appropriate care, and social and structural barriers impede access.

Further research needs

There is sufficient evidence that IPV is a common and serious public health concern, and that addressing IPV in health services has the potential to improve outcomes. Further evaluations of health sector responses to IPV are needed, to assist health systems to determine the most appropriate models of care and how these can be

integrated into current systems in the context of multiple systemic and societal barriers. Further research is needed to explore how best to support health systems in providing IPV care, including ensuring health care workers have the appropriate skills to intervene, how to operationalise intersectoral approaches to IPV in health systems, and how to improve access to, including acceptability of, services. Evaluations, including process evaluations, of scaled up programmes are also needed, to provide guidance on the roll out of evidence-based interventions.

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PART C: JOURNAL MANUSCRIPT

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Implementing intimate partner violence care in a rural sub-district of South Africa: a qualitative evaluation

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Abstract

Background

Despite a high burden of disease, in many health districts in the Western Cape, South Africa, intimate partner violence is known to be poorly recognised and managed. To address this gap in service an innovative intersectoral model for the delivery of comprehensive intimate partner violence (IPV) care was piloted in the Witzenberg, a rural, agricultural sub-district known to have a high incidence of IPV. It was not known whether the initiative was a success from the perspective of the women using the service, from the service providers or from the managers.

Methods

A qualitative evaluation was conducted. Ten service users were interviewed to explore their experience of the intervention. Two focus groups were conducted amongst health care workers, and one focus group and six interviews were conducted with the intersectoral implementation team, to understand their experience of implementing the intervention. Documents relating to the pilot were also analysed. A contextualized thematic content analysis approach was used, triangulating the various sources of data, and utilising inductive as well as deductive approaches.

Results

Over the pilot period 75 women received the intervention. Study participants described their experience of it as overwhelmingly positive, with some experiencing improvements in their home lives. Significant access barriers included unaffordable indirect costs, fear of loss of confidentiality, and fear of children being removed from the home. For health care workers, barriers to inquiry about intimate partner violence included its normalisation in this community, poor understanding of the complexities of living with violence and frustration in managing a difficult emotional problem. Health system constraints impacted on the pilot, affecting continuity of care, privacy and integration of the intervention into routine functioning, and the process of intersectoral action was hindered by the formation of alliances.

Contextual factors, for example high levels of alcohol misuse and socioeconomic disempowerment highlighted the need for a multifaceted approach to addressing intimate partner violence.

Conclusion

The results of this qualitative evaluation draw attention to the need to take a health systems approach and focus on contextual factors when implementing complex interventions. They will be used to inform decisions about instituting appropriate intimate partner violence care in the rest of the province. Additionally, there is a pressing need for clear policies and guidelines framing intimate partner violence as a health issue.

Keywords

Interpersonal violence, Intimate partner violence, Domestic violence, Spouse abuse, Mental health, Health services, Health systems

Background

Intimate partner violence (IPV) is a pervasive and complex issue that characterises partnerships worldwide. Almost 30% of women who have been in a relationship globally report having experienced physical or sexual IPV. In the World Health Organisation (WHO) Africa region this figure is 36.6% [1]. In South Africa, interpersonal violence is the second highest contributor to years of life lost, after HIV [2]. Of this very high burden, in women IPV accounts for 62.4% [2], and 42.3% of working men have reported perpetrating physical violence in a relationship [3]. These figures are likely to be underestimates, as the stigma surrounding IPV often leads to underreporting [4]. In addition, they focus on physical and sexual abuse, and exclude emotional abuse which is less well described but appears to have a high prevalence and serious mental health implications [5].

For women experiencing intimate partner violence, negative effects span all aspects of health, from direct mortality to increasing risk factors for poor health outcomes. Mortality can be caused through homicide, or indirectly through suicide [6], maternal causes [7] and as a consequence of HIV infection [8]. Morbidity could be due to multiple causes, including physical trauma, psychological trauma and stress. In addition, the controlling behaviours of perpetrators can lead to limited reproductive control and lack of autonomy in health seeking behaviour [1].

Recognition that IPV is an important public health concern is increasing, and has recently been supported by the publication of the first WHO clinical and policy guidelines for responding to IPV and sexual violence [9]. Despite this, there is limited literature describing scaled up programmes or integrated health system responses [10].

Following the publication of a trial of universal screening for IPV that showed no improvement in quality of life or mental health outcomes [11], it appears that utilising a case-finding approach during health care encounters and responding in a woman-centred way, is likely to be of more value [12]. The challenge for health systems is to integrate IPV identification and management into health services in a way that has reasonable sensitivity and addresses systemic constraints to providing

this kind of care.

Many barriers to successful implementation of IPV programmes have been reported, on both provider and systems levels. Health care workers' (HCWs) attitudes toward IPV and other reproductive services affect both women's utilisation of services and the quality of the interaction [13,14]. In another rural area of South Africa, nurses working in primary care experienced a similar prevalence of violence, and expressed similar values and attitudes about IPV, as the rest of their communities [15]. Discomfort dealing with emotional issues [16] and the unrealistic assumption that women should always leave, and always want to leave violent relationships, may also affect providers' confidence in intervening for IPV.

On a systems level, HCW concerns include lack of time during consultations [16,17,18], lack of training for HCWs, both prequalification and in-service [17,19], weak referral networks [16,17,19], lack of confidence in management support [20], insufficient flexibility and policy constraints [10]. On a policy level, political commitment translated into clear policies and protocols, is necessary for successful IPV intervention [20,21].

In the South African primary health care system, despite the significant burden of disease, there is no standardised protocol in place for identifying or caring for IPV, resulting in generally poor recognition and inconsistent management [22]. In an attempt to address this, a pilot project implementing a model for comprehensive IPV care in a rural sub-district of the Western Cape Province was undertaken between April 2012 and March 2013. The project was an intersectoral collaboration between the provincial Departments of Health and Social Development and the University of Stellenbosch, and aimed to integrate the intervention into the health system of the sub-district, with the intention of future expansion. This study is a qualitative evaluation of the pilot's implementation.

Methods

Setting

The Witzenberg is a rural sub-district of the Cape Winelands District in the Western Cape, South Africa. It had a population of 115 946 in 2011 [23]. The Cape Winelands is considered to be a tourist attraction, but experiences wide socioeconomic disparities. In 2010, the Witzenberg had the highest age-standardised all-cause mortality rate in the Western Cape [24]. It is largely agricultural, and much of the work is seasonal, with migrant workers coming into the area during harvest season. Rural farm-worker communities in the Western Cape are generally characterised by a poor standard of living and access to services, as well as pervasive alcohol abuse. Women work in this context under particularly adverse conditions, and gendered power inequalities are further entrenched by unequal labour practices [25].

In 2012, there were nine fixed primary care facilities and one district hospital in the sub-district, as well as mobile health and community-based services. The sub-district was poorly resourced in terms of mental health services, with one mental health nurse and one full-time equivalent psychologist.

The model

A description of the development of the piloted model has been published elsewhere [26]. The first step is the identification of women experiencing IPV, using a targeted case-finding approach. The focus is on recognising cues in women presenting to primary care, for example vague, nonspecific symptoms, headaches and mental health complaints, as well as conditions that are known to be associated with IPV, such as HIV and other sexually transmitted infections. Women are asked about violence, managed clinically and offered referral to a dedicated IPV service.

This dedicated service was provided by a social worker employed by the Department of Social Development in the primary care facility closest to the user's home, with an intern providing back up in case of illness or annual leave. A social worker was chosen to deliver the service in recognition of a joint mandate for IPV, and because of the limited amount of time nurses have available in each primary

care encounter. The social worker had half her time, or ten working days a month, allocated to the pilot, which translated to one day a month being spent at each facility. The design of the pilot was to utilise staff already engaged in service provision, so as to assess whether the service could be implemented in other settings with similar human resource availability and burden of disease.

The service is comprehensive, encompassing psychosocial and legal care. The first contact with the user is an assessment and intervention, and is conducted according to a protocol, covering a full history of abuse and previous attempts to access help, a safety assessment and development of a safety plan, case-finding for mental disorders (including screening for alcohol abuse), counselling, and referral to appropriate resources (see figure 1).

Following this contact, according to the model, users should enter a life-skills group facilitated by the same provider and covering issues relating to self-efficacy, self-care and motivation to change. There are five sessions, whereafter community based support groups should provide ongoing peer support, facilitated and coordinated by the Department of Social Development. However, during the pilot period neither of the group phases of the model was implemented as it was felt not to be practical during the start-up phases. There was no replacement protocol for follow up, and the service provider determined whether and how users were followed up according to her usual methods of working.

The implementation team held monthly meetings to address operational issues and the psychologist working in the sub-district was available to provide support to the service provider should she experience vicarious traumatisation.

Training was provided by the University of Stellenbosch. Several two hour sessions were facilitated for HCWs, resulting in 52 nurses and nine doctors receiving training (48% of HCWs in the sub-district, achieving coverage of all facilities). The content was identification of women experiencing IPV, attitudes and misconceptions surrounding IPV, and the model and how to work with it. The social worker providing the service, as well as 19 other social workers working within the sub-district, received more extensive training over four days. This included motivational

interviewing, mental health assessment, use of the protocol, life-skills and support groups.

Resources provided to the pilot consisted of the Department of Health funding training and technical support from the University of Stellenbosch, and the Department of Social Development allocating the service provider and her routine operational costs, for example transport. There was no specific operational budget for the pilot, and no dedicated staffing.

Study Design

A qualitative evaluation of the pilot was conducted, aiming to understand how the model was implemented. The experience of the process by implementers, providers, intervention- users as well as the extent of, and potential for, integration of the model into health system functions were explored. A qualitative, process evaluation was considered to be most appropriate, firstly because of the pilot nature of the intervention, meaning the details of how implementation occurred were of particular interest, and also because of the context-specific and sensitive nature of IPV.

To examine users' perspectives, semi-structured interviews were conducted with ten women. They were selected purposively, with HCWs identifying women who were likely to be forthcoming about their experiences, and attempting to cover a range of facilities, including those in more remote areas.

Two focus groups were conducted with HCWs, one with primary care level nurses, and one with doctors and nurses from the district hospital, in order to explore their experiences of implementing the intervention. All interested HCWs were invited to attend the focus groups, resulting in groups of six and nine. Only the district hospital operates 24 hours a day and the emergency centre is responsible for seeing all trauma cases. Primary care facilities and the district hospital were differentiated because women present to them differently and follow different pathways of care.

All members of the implementation team were interviewed. One focus group was conducted, consisting of managers from the Department of Health, with the

exception of the project leader, with whom a semi-structured interview was conducted. This encouraged the sharing of both positive and negative viewpoints of the project team. In addition, semi-structured interviews were conducted with the social worker providing the intervention and her supervisor from the Department of Social Development, as well as the members of the implementation team from the South African Police Service and the University of Stellenbosch.

Documents relating to the pilot were analysed, including initial proposals and agreements and minutes of the implementation team meetings. Monitoring data assessing the number of appointments and the number of women who received the service, as well as their characteristics, were used along with the documents, interviews and focus groups to build a picture of the implementation process. Table 1 outlines the sources of data and collection approaches.

Data was collected in March and April 2013. The principal investigator conducted the interviews and facilitated the focus groups, in English or Afrikaans depending on the preference of participants. All audio recordings were translated into English and simultaneously transcribed.

Discussion schedules were used for each category of participant and data collection method. For service users, discussion schedules covered their experiences of the service, including their experiences of being asked about violence during a health care encounter, previous attempts to access help, expectations of the service, and benefits and harms as a result of the service. Managers and service providers were asked about their experiences of working on the pilot, including challenges and successes; how it affected daily functioning, training, and support; and experiences with intersectoral work. In addition, questions were asked about the perceived need for the intervention, and what role each department and professional should play in intervening for IPV.

Analysis

In order to analyse the integration of the model into health systems functions, a conceptual framework developed by Atun et al. was used [27]. Integration is defined as: “the extent, pattern, and rate of adoption and eventual assimilation of

health interventions into each of the critical functions of a health system” [27], and five key components are identified that interact to affect the adoption of interventions. These are the type of problem targeted by the intervention, the intervention itself, the adoption system (made up of multiple interconnected actors and the context within they operate), health system characteristics and the broader environmental context. The health system is viewed as a complex adaptive system. This pilot can be viewed as a complex intervention (less easily reproduced and needing more adaptation to integrate into local context), largely because success depends on high user and stakeholder engagement and behavioural factors.

To achieve an in-depth understanding of how the intervention was implemented, thematic analysis was used (as described by Braun and Clarke) [28]. This approach was chosen for its flexibility and ability to explore patterns and underlying relationships, while preserving the influence of context [28]. It involved multiple readings of the transcripts, documents, and field notes, and an exploration for themes, grouping them and looking for connections, an inductive approach. This was followed by an exploration of the data using the Atun et al. conceptual framework described above [27], a deductive approach. Different categories of participants and data types were analysed sequentially. All data were iteratively coded and a code diary was kept. Data were organised using Open Code software [29]. Triangulation of data from all sources and respondents allowed a unified understanding to be developed, incorporating the viewpoints of all role-players. Contradictory data were purposely sought and examined to improve the trustworthiness of conclusions. Reflexivity was encouraged using field notes and a research diary kept throughout the evaluation. Final themes were based on the conceptual framework and modified in order to adequately describe the user perspective and integrate inductively generated themes.

Ethical considerations

Ethical approval was obtained from the University of Cape Town Faculty of Health Sciences Human Research Ethics Committee (reference 655/2012) and permission to conduct the research was granted by the Department of Health. Written informed consent was obtained from all participants, in English or Afrikaans

according to their preference.

Results

In this section, the number and characteristics of service users are described, followed by findings relating to their environment and experiences, and finally a description of implementation issues and barriers to care.

In the 11 months during which the intervention was provided, 165 women had appointments for the service, and 75 women received the initial intervention according to the protocol. Only 45% of those who were referred and successfully made an appointment attended. No community-based support groups took place, and only the first of five life-skills group sessions was facilitated at two venues. These numbers were felt by the implementation team to be low, and raised questions about whether this was a justifiable use of the service provider's time. The characteristics of users are presented in table 2 (missing responses are not included within categories).

The median age of users was 32 years, ranging from 16-58 years, and severe abuse was experienced, with women reporting on average nine different forms of abuse. Eighty-two per cent of women were scored as being at high or severe risk of injury or death, according to the safety assessment contained in the protocol for care, modified for the South African context [30]. Forty-eight per cent had not previously accessed legal assistance, and 65% were referred for further mental health assessment.

Ten women were interviewed in an attempt to understand how users experienced the intervention. They were spread over six different primary care facilities. Compared to the rest of the service users, they had similar demographic characteristics and the abuse they experienced was of a similar severity. However, more of the interview participants had previously accessed legal help and were referred for further mental health assessment. The participants are described in table 3.

Environment

Both users and HCWs described living in an environment permeated by violence. Users experienced physical, emotional, financial and sexual abuse at the hands of their partners, as well as their partners' families or their own family members. They described living in fear and anger, in some cases leading to the perpetration of acts of violence against their partners. High levels of alcohol misuse were perceived to be associated with IPV and family and community violence.

"Because as soon as I am sober, then [he] upsets me. He comes to me with his drunk things, and says things and how do I take it? ... He doesn't hit me when he's sober. He doesn't mess with me. But if I'm drunk and he's drunk..." (Interview 15)

"So we live in a very violent sub-district, and it's nearly all alcohol-related." (Focus group 1)

IPV was understood to be a social norm, with traditional gender roles holding sway. Women had very little autonomy, particularly over sex in their relationships. They were deeply disempowered socially and economically, and were expected to fulfil the roles imposed by a patriarchal society.

"Because he still hurts me every day. And when he's at home I must play the darling wife, I must do what he wants and I must sleep with him... I am really trying my best to be a wife to him and respect him in everything he does... And then people come from outside and they say, wash his clothes, show him how you feel. You are still his wife, wash and iron his clothes. Get his food ready." (Interview 5)

Users' experience of the intervention

Participants appreciated having someone listen to them and share the weight of their problems, and experienced cathartic feelings of release as a result. For many, it was clear that they had not had this experience outside of the service, due to limited social support.

"But I know she can listen to all my problems that I have. I don't have to bottle it up. I don't have to sit every time and think, oh, what must I do now so he can stop

shouting at me like that?" (Interview 3)

"It was a very good experience that day. I also felt sad when I had to talk about it, but after I spoke about it I felt a lot better. I felt relieved once I spoke about it."

(Interview 4)

"She listened to all my stuff, and the way I summed her up, she shared my feelings."

(Interview 6)

"When I was done talking to her, everything was alright again. She understood me and I understood her... It went very well. We spoke like people who knew each other... when I was in conversation with her, everything disappeared from me."

(Interview 8)

The understanding, support and validation they felt they received was of increased importance in the context of isolation imposed by the controlling behaviour of abusers, the feelings of shame associated with abuse, and the constant negative input of emotional abuse.

"What was in my heart, I poured it all out... and I felt like a person again." (Interview 4)

"I felt good... because I was able to talk to someone who was maybe able to understand me; someone who said something to me that was positive." (Interview 5)

"I felt she cared... then I could feel there is someone who cares for me... That day I was done with her I felt like a brand new person. I had courage, a lot of courage to go on." (Interview 8)

"I felt that which she gave me healed me a bit afterwards." (Interview 9)

The intervention and the positive experience of being heard and supported led to improvements in communication within relationships, or with children, although temporary in some cases.

"But with me and my children a lot of things changed. Because I talked to them..."

(Interview 5)

“It went well for a few days. I spoke to him, and told him what he must give to me and what I need from him. But... it’s just fighting every time.” (Interview 6)

“It was a little better. There is still arguing now and then, but it is not so bad anymore. Because we understand each other at home now. There is not such a lot of alcohol at home anymore.” (Interview 9)

“In my house I changed a lot of things, because I feel me and my children are much closer to each other than we were. And we can talk to each other especially me and my eldest daughter, we can talk openly...” (Interview 13)

No harms were reported as a consequence of the intervention and there was variation in whether partners were informed of the reason for the visit. However, confidentiality was an overriding concern, particularly relating to the clinic environment.

“That time a lot of one’s personal things leaked here. That is why I am very cautious when I come to the clinic. I will not easily walk in here and go and talk to a sister because I know what has happened before.” (Interview 14)

A dominant theme was a desire for services to work with men. Participants recognised that those perpetrating the abuse have a lot of “stress” and difficulty communicating, particularly regarding their own emotions. Alcohol and substance abuse were also identified as major underlying factors needing to be addressed. In addition, offering help to women experiencing abuse and not the perpetrators was interpreted by women as neglecting to address the cause of the problem.

Access

Access can be conceptualised as the degree of fit between health systems and users across three dimensions: availability, affordability and acceptability [31]. Access barriers were identified in each of these domains, either relating to access to health services in general, or to this intervention in particular.

Availability of the intervention was very limited in that it was provided only once a

month at each fixed primary care facility. This was due to a lack of resources, with one service provider having ten days a month dedicated to the intervention, spread over a large geographical area. The timing of the intervention was problematic for the same reason, with women having to wait up to a month from the time of their referral. This is likely to have affected their motivation and readiness to attend.

Although primary health care is free in South Africa, indirect costs including transport and loss of income, made the intervention unaffordable to many women. Seasonal employment is common in the area, and workers are not paid for time off to attend clinic appointments.

“Because you don’t get paid if you don’t come to work. You can be sick and come to the clinic, but you don’t get paid... I feel at least I’m working, and it helps me to earn a few cents for the two boys and the girl.” (Interview 4)

Threats to acceptability included fears that children would be removed from their mother’s care as a result of any interaction with a social worker. Women feared social workers would be likely to take children away from the home if violence or drinking was disclosed. This led to reluctance to attend appointments.

“A lot of times people told me your child will be taken away and all those things... The only thing I had in the back of my mind, I just waited for the moment they will take away my child. And then I told her everything, and then she explained to me what she came to do. She also said she isn’t coming to take away the children.” (Interview 8)

“All I could think about was that I have children in the house and these things are happening in the house, and that they might take the children away.” (Interview 13)

Confidentiality was an important concern in light of the small communities to which people belong and the stigma associated with IPV. Participants feared their partners would find out about the visit either through a breach of confidentiality or a community member seeing them at the clinic. An associated fear was that a visiting social worker would identify them as having social or mental health problems.

Finally, there was a misconception amongst both users and HCWs that the

intervention was largely about legal redress for IPV. This has previously been the dominant response of the health services, and women were wary that they may be pressurised to lay a charge against their partners if they attended.

Implementation

The support and resources required to implement an intersectoral intervention having this level of complexity were underestimated at strategic level. The motivation to work intersectorally stemmed from the recognition of a joint mandate, but also from a desire to share resources and capacity in an under-resourced environment. The intersectoral nature of the implementation team led to additional complexities both in terms of the structure of the intervention and relational issues between partners at various levels. The scale of the intervention (service provision through multiple service delivery platforms in a large geographical area) further added to these challenges.

In the planning phases, the intersectoral team failed to adequately clarify roles. During the process of adapting the model for implementation, the local implementation team felt that they had not been adequately consulted and had been allowed insufficient flexibility. A change in managers responsible for the pilot at this crucial stage contributed to divisions during the adaptation process, and may have negatively impacted ownership. Further, engagement between the implementation team and service providers (both HCWs and social workers) was absent. This led to a lack of trust and resistance from service providers in the initial phases. When attempting to provide supervision to service providers, complications regarding rigid management hierarchies and communication challenges led to the formation of alliances, further decreasing trust. At a service delivery level, this may have negatively impacted the quality of the intervention, as service providers were not as receptive to the ongoing training and mentoring that was offered as they could otherwise have been.

At a strategic level, not all partners were adequately represented on the implementation team in terms of decision making power, and levels of support for the intervention from higher management structures varied.

Health System barriers

Participants in this study identified that IPV is likely to require more than one user-provider interaction, and that continuity of care would be crucial in providing appropriate care over a sustained time period. The South African primary health care system has historically been geared toward acute episodic care [32], and continuity of care remains a challenge. The primary health care system is also geared to curative care, and HCWs usually do not have the counselling skills needed to facilitate behaviour change.

Other system level barriers to implementation existed. Inefficient referral systems often put the onus on the user to make appointments which may have required taking time off work or making expensive cellular phone calls. There was also a lack of time in the consultation to introduce subjects that may lead to difficult and lengthy discussions, and multiple things to remember in the context of comprehensive care led to HCWs forgetting to inquire about IPV. Mental illness and social problems are also stigmatised, and privacy is difficult to maintain due to infrastructure and systems constraints. Confidentiality is a concern for users, and participants expressed fears that confidentiality would be lost, either through HCWs or community members who may have witnessed them attending this service.

The role of the health system in addressing IPV was dominantly understood to consist of identifying women experiencing IPV and linking them to further services, but not taking primary responsibility for their care. This was consistent with how this pilot was implemented, as social workers were responsible for comprehensive (excluding medical) care. However, the ingrained perception that IPV is not a health problem is likely to have impacted negatively on the integration of inquiry about violence into routine HCW functioning.

“Because the actual bigger body of the whole thing lies with the counselling, and that's the social worker's role. The bigger role is definitely with the social worker and not with health. Health, definitely to identify and to refer... but the core function lies with the social worker.” (Focus group 1)

The perception from the user perspective that the health services would not be an

appropriate place to discuss emotional or social problems, or that HCWs would respond only by directing users to legal interventions, appears to have been a significant access barrier.

Provider level barriers

Lack of experience on the part of the social workers as well as a perceived lack of commitment, due at least in part to resource constraints (for example difficulties accessing transport and telecommunications), led to decreased levels of confidence in the intervention from HCWs. Booking women for the service who subsequently did not come, general feelings of hopelessness when confronted with the possibility of intervening in IPV, and frustration generated when women not leaving violent relationships was interpreted as a failure of the intervention, compounded this lack of confidence and impacted negatively on referrals.

The professional values of service providers have previously been found to be important in providing IPV care [26]. Similarly, in this pilot, it was found that complete implementation would have required exceptional commitment, particularly as the social workers had to advocate for a new service while working in the health system for the first time. Other factors that affected the capacity of the social workers included a high concurrent case load, lack of management support and organisational limitations. Limited mental health knowledge and skills, and viewing mental health as outside of their scope of practice, led to reluctance to tackle the mental health aspects of the intervention, and additional training and mentoring were required to ensure this was done adequately.

Support from a psychologist, attempting to mediate the effects of vicarious traumatisation for service providers, was offered but not taken up, suggesting that this type of support needs to be provided in a more structured manner.

Social barriers

High levels of violence experienced in this community and widely accepted traditional gender norms have led to some HCWs accepting that IPV is a normal part of life. There was an underlying lack of understanding of the complexities of living

with violence and trying to leave a violent relationship. The gendered aspects of IPV were often overlooked. IPV as a health condition was defined according to the severity of abuse, and whether HCWs felt that users' situations warranted referral. Users missing appointments was also interpreted as an indication that they did not need or desire the service.

"Then I would ask them, but why did you not refer? And they would say to me, but you know, that has been happening for so long... And some of them will even say to me, but you know, they wanted it or they asked for it. Something happened and she actually made her husband angry, so it isn't really intimate partner violence... so it's actually okay, so why refer?" (Focus group 1)

"So you must have the time to get behind what's really going on: is it really domestic abuse or what, or is it something that happened only once." (Focus group 2)

In the district hospital, HCWs were so used to violence that women presenting with assault by a partner were regarded as a normal occurrence and not singled out for further psychosocial management.

Discussion

This pilot represented an attempt to integrate a complex intervention for comprehensive intimate partner violence care into a rural district health system, which is not well suited to the care of chronic conditions, lacking mental health resources and with numerous barriers to access. IPV is a phenomenon with complex social and structural roots. Poverty, gender inequality and alcohol misuse are entrenched in the Witzenberg, and women are more vulnerable to exploitation in this agricultural community than their (already socioeconomically disempowered) male counterparts. For an intervention to have a significant impact, the stigma surrounding IPV as well as underlying values and attitudes to gender would have to be transformed, amongst both service providers and community members.

User experiences of the intervention were overwhelmingly positive, in some cases leading to improvements in their home lives. WHO guidelines recommend that a woman-centred approach be taken when responding to IPV [9]. Literature on

women's expectations and experiences of health services shows that they want health care providers to be non-judgemental, empathic and understanding and to provide validation [33,34,35], and that when these features are absent, the encounter can be damaging rather than helpful [36]. In a South African study the service women reported wanting most often was counselling [4]. Users described experiencing the approach of the intervention as consistent with these guidelines. They felt understood, supported and validated and appreciated being listened to. In the context of poor social support and imposed isolation, these features were valued.

The guidelines further recommend assisting women to access information and resources, assisting them to increase safety and providing or mobilising social support [9]. Referrals to mental health services in this pilot were high (although referral pathways were not always effective) but facilitating access to other resources was less successful. Referral networks both within the health system and between other agencies need to be strengthened to support continuity and allow women access to further community resources. A lack of structured follow-up also contributed to gaps in continuity of care. The high number of mental health referrals is consistent with a previous South African study that found 66.4% of women obtaining protection orders against their partners to have severe depression symptoms, and 51.9% to have severe PTSD symptoms [37]. It also highlights the importance of mental health skills and experience in IPV care providers.

Both users and implementers expressed a desire for services to work with men, both because they were perceived to need psychosocial support, and in addressing violence in the home. How to intervene with men should be considered, in the context of health services that are often not appropriately geared to meet men's needs, as well as prevailing constructions of masculinity negatively influencing their utilisation of health services [38].

During the time period of the pilot, the police services of the largest town in the Witzenberg recorded 373 domestic violence complaints (A. Douglas, personal communication, July 2013). This underlines the significant number of women actively seeking help for IPV, albeit not from the health services, and led to the

implementation team viewing the number of users generated by the pilot as inadequate. Expectations that because levels of violence are high in the area, women would be readily identified proved unrealistic, because of the complex social and structural factors underlying IPV, as well as health system constraints.

Reasons for low referrals to the intervention and low attendance amongst those who were referred included access constraints that affect health services more generally and specifically relating to the service, as well as provider, system and societal level barriers to HCWs inquiring about IPV.

Availability of the intervention was limited, and the costs of missing work or finding transport often made it unaffordable. Key threats to acceptability included a lack of trust in the confidentiality of the health services, often cited in the literature as a barrier to disclosing IPV [33,35,39], as well as a fear that disclosure would lead to social workers removing their children from the home.

Important barriers to HCWs inquiring about violence included the normalisation of IPV leading to HCWs giving the intervention a low priority. Access to reproductive services is significantly affected by HCWs attitudes [14], and whether and how they inquire about IPV is crucial to successful intervention, despite the dedicated IPV service being provided in a manner acceptable to users.

Poor recognition that IPV is a valid health problem, and the perception that the health system plays a limited role in providing IPV care, also affected attitudes toward the intervention. Coherent national and provincial policy frameworks are needed to begin to shift these views, furthering the efforts of the WHO in publishing clinical and policy guidelines which clearly frame IPV as a health issue.

The piloted model allows for integration of services from the perspective of the HCW, with the primary care provider inquiring about IPV and providing initial medical care and referral. This was not fully achieved, however, and neither the dedicated IPV service, nor other health system functions such as training and governance, were integrated. There is no consensus that interventions targeting specific health problems should always be fully integrated [40], but the current reengineering of the primary health care system towards comprehensive primary

care suggests that integration would lead to better sustainability. In addition, participants in management roles expressed that integration of services is a priority for them, and WHO guidelines recommend that IPV services be as integrated as possible [9].

The challenging nature of working intersectorally was highlighted during this pilot, particularly relating to differing levels of management support, decentralisation of control and availability of resources, as well as lack of clarity regarding partners' functions. The formal structures of intersectoral action were found to be important, but more significant were the effects of informal relationships, communication and shared ownership and understanding, and the formation of alliances proved destructive.

A contradiction became apparent between the recognised need to deliver integrated services through intersectoral platforms, and the tight parameters within which managers and service providers are required to operate. The theory of professional closure, describing the carving out of exclusive professional definitions to create increased status or reward, can be applied to interactions between the various professionals involved in this intervention and their power dynamics [41]. Considering the development of professions in this light adds to an understanding of the difficulties inherent in working intersectorally.

Implications

The barriers to implementation described above require that a health systems approach be taken in considering scale up of this model, interrogating how all elements of the health system would be affected by implementation. In so doing it could attempt to strengthen referral systems, continuity of care, HCW skills and platforms for intersectoral action. A high degree of flexibility would be required, allowing adaptation to local context and resources. The service should be integrated into health system functions as far as possible in order avoid an unsustainable vertical service. In addition, the pervasiveness of alcohol and its links to violence highlight the need for a multifaceted approach to providing care for IPV.

Longer term evaluation of this intervention is needed to examine user outcomes

and determine its effectiveness. Elements of the model, including the most appropriate professional to deliver the intervention, having the intervention situated in primary care facilities and engagement with the community, should be further refined before considering scale-up. There is a need for appropriate services for women presenting to the primary health care system who are experiencing IPV, as well as policies and protocols guiding these services, but the resource and management requirements for implementation should not be underestimated.

Limitations

This evaluation did not examine outcomes, so the effects of the intervention on violence, quality of life and mental health measures are unknown. Processes and context were explored, which will necessarily vary in different settings, limiting generalisability. However, health system barriers to providing IPV care are likely to be similar in similar settings. In addition, women who either declined the intervention or did not attend their appointments were not interviewed, so their perspectives were missed. It is very possible that other access barriers would have been identified had this not been the case.

The principal investigator in this study was employed by the Department of Health. This may have impaired participants' ability to answer certain questions critically. In terms of the users, social desirability bias may have been introduced. However, it may also be viewed as a strength as it allowed a fuller understanding of the organisational context within which the pilot was implemented.

Conclusion

This study evaluated the process of implementing a model for comprehensive IPV care in a rural sub-district of the South African district health system. It was an ambitious undertaking, requiring system-wide implementation, multiple stakeholders and external training, while fundamentally challenging entrenched value systems of privilege and power. Contextual factors such as high levels of alcohol abuse and the double exploitation of women in this farming community added to these challenges and point to the need for multilevel approaches to

addressing IPV.

The pilot model was not fully implemented in that the group phases did not occur, and was hindered by barriers to inquiry about IPV (evidenced by low referral numbers) as well as by access barriers, including those limiting acceptability (evidenced by a low proportion of women keeping appointments). The value of a qualitative process evaluation has been demonstrated, and the findings will be used to inform decisions about instituting appropriate IPV care in the rest of the province.

Abbreviations

IPV, Intimate partner violence; WHO, World Health Organisation; HCW, Health care worker.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

KR contributed to the conception and design of the study, analysed and interpreted the data and drafted the manuscript. VZ and KJ contributed to the conception and design of the study, interpretation of the data and reviewed the manuscript. All authors read and approved the final manuscript.

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Figures

Figure 1- Model for IPV care implemented in the Witzenberg

Flow chart describing the model of care implemented in the Witzenberg, including service providers responsible for each step during the pilot.



Tables

Table 1: Data collection approaches and data sources

Data collection approach	Sources of data	
	Category	Details
Individual interviews (total=15)	Service users	10 women
	Service providers	1 social worker
	Managers	1 Department of Health
		1 Department of Social Development
		1 SAPS
Focus groups (total=3)	Service providers	1 primary care facilities
		1 district hospital
	Managers	1 Department of Health
Monitoring data	Service users	Service records
Document analysis	Minutes of meetings; Memorandum of Understanding; proposals	
Field notes	Principal researcher, kept throughout pilot	

Table 2: Characteristics of service users

Characteristics of service users during pilot (N=75)		
Age (median, IQR)	32 (25, 41)	
		Percentage (frequency)*
Relationship to abuser	Married	34% (22)
	Cohabiting	41% (26)
	In a relationship	11% (7)
	Previous relationship	14% (9)
Types of abuse	Physical abuse	89% (58)
	Emotional abuse	88% (57)
	Sexual abuse	62% (40)
	Financial abuse	51% (33)
Frequency of abuse (2 years)	More than 20 times	40% (20)
	10 to 20 times	24% (12)
	Less than 10 times	36% (18)
Safety score**	High risk	54% (35)
	Severe risk	28% (18)
Previous legal help	Protection order	34% (22)
	Charge laid	48% (31)
	Did not access help	48% (31)
Referrals to mental health	Any mental health referral	65% (42)
	Suspected depression	83% (35)
	Suspected anxiety	19% (6)
	Suspected PTSD	14% (8)
	Suspected alcohol abuse	19% (8)
	Suspected substance abuse	5% (2)
	Multiple suspected diagnoses	33% (13)

*Missing data not included

** According to safety assessment in protocol for care

Table 3: Profile of interview participants

Interview participants (n=10)		
	Median	IQR
Age	35	30, 43
Months since intervention	6	5, 7
		Frequency
Interview site	Clinic	6
	Home	4
Clinic at which intervention was received		
	Nduli	2
	Tulbagh	2
	Breerivier	2
	Op Die Berg	2
	Prince Alfred Hamlet	1
	Bella Vista	1

APPENDICES

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Appendix A: Discussion schedule, managers focus group

As you know, I am doing this research to try and understand what worked and what didn't work in the IPV pilot project, and how we can improve the process in the future or in other places. I am interested in your experiences and your thoughts and feelings about the project.

To start with, I'd like to understand what people's roles were in the project.

How did you find working on this project?

What challenges did you encounter with this project?

Prompts:

- Rural area
- Challenges working with IPV
- Response from service providers
- Response from patients

Did you find that the intervention fitted well into the way the district health services normally run?

Prompts:

- Able to adapt the intervention to fit the system?
- Referrals
- Normal tasks
- Time

Do you think there is a need for an intervention of this kind?

Prompts:

- Burden of disease
- Need in health services

- Need in this area

How useful was the project?

Prompts:

- Does it meet the need?
- Helpful for patients

How could the project have been improved?

How did the team implementing the project function?

Prompts:

- Communication
- Conflict resolution
- Morale

How did you find working with other sectors?

Prompts:

- Advantages/disadvantages
- What helped
- What hindered

Were the providers adequately trained and supported?

What role do you think a nurse or doctor should play in IPV?

Prompts:

- Treating injuries
- Detection
- Mental health care
- Forensics

- Counselling/advice
- Referral

What kind of role do you think the health services should play in IPV?

Prompts:

- Managing patients
- Prevention

Appendix B: Discussion schedule, managers interview

As you know, I am doing this research to try and understand what worked and what didn't work in the IPV pilot project, and how we can improve the process in the future or in other places. I am interested in your experiences and your thoughts and feelings about the project.

To start with, what was your role in the project?

How did you find working on this project?

What challenges did you encounter with this project?

Prompts:

- Rural area
- Challenges working with IPV
- Response from service providers
- Response from patients

Did you find that the intervention fitted well into the way the district services normally run?

Prompts:

- Able to adapt the intervention to fit the system?
- Referrals
- Normal tasks
- Time

Do you think there is a need for an intervention of this kind?

Prompts:

- Burden of disease
- Need in health services
- Need in this area

How useful was the project?

Prompts:

- Purpose of the project
- Does it meet the need?

How could the project have been improved?

How did the team implementing the project function?

Prompts:

- Communication
- Conflict resolution

How did you find working with other sectors?

Prompts:

- Advantages/disadvantages
- What helped
- What hindered

Were the providers adequately trained and supported?

What role do you think a nurse or doctor should play in IPV? (For DSD: social worker; SAPS: police)

Prompts:

- Treating injuries
- Detection
- Mental health care
- Forensics
- Counselling/advice
- Referral

What kind of role do you think the health services should play in IPV? (For DSD: social development; SAPS: SAPS)

Prompts:

- Screening
- Managing patients
- Prevention

Appendix C: Discussion Schedule, providers focus group

As you know, I am doing this research to try and understand what worked and what didn't work in the IPV pilot project, and how we can improve the process in the future or in other places. I am interested in your experiences and your thoughts and feelings about the project.

How did you find this intervention?

Prompts:

- Benefits

What challenges did you have working with this intervention?

Prompts:

- Patients don't want to talk
- Time
- Difficult to ask
- Upsetting
- New projects

Do you think there is a need for something like this?

Prompts:

- Burden of disease
- Need in health services
- Need in this area

Did you think this intervention meets this need? In what ways?

Prompts:

- Unmet need

How well do you think the intervention fitted into the system?

How could it have been better?

Do you feel you have the skills needed to provide this intervention?

Prompts:

- Counseling
- Mental health
- What other skills needed?

Did you get enough training?

- Usefulness of the training
- Knowledge of IPV
- How to manage

Did you feel that you had the support you needed to provide the intervention?

Prompts:

- Driver of the project
- Questions or problems
- What else could have been done
- Support for integrating new projects

What role do you think a doctor or nurse should play in IPV?

Prompts:

- Treating injuries
- Forensics
- Counselling/advice
- Referral

What role do you think the health services should play in IPV?

Prompts:

- Screening
- Managing patients
- Prevention

Appendix D: Discussion schedule, user interview

As you know, I am doing this research to find out how useful you and others found this service and how we can improve it in future.

To start with, can you tell me how you came to know about this service?

Prompts:

- Referred from where?

If appropriate: How did you feel when asked about this problem by your doctor or nurse?

Have you ever looked for help for this problem before?

Prompts:

- From clinic
- From police
- From elsewhere

If yes, tell me about those experiences...

What did you expect when you made your appointment?

When you came to your appointment how did you feel it went?

Did you feel there were any parts of the service that were particularly helpful?

Prompts:

- Legal
- Talking about it/assessment
- Referrals

Did you feel there was anything that wasn't helpful?

Did anything change for you because of the service?

Was there anything that you thought was harmful or made things worse for you?

Prompts:

- Partner or someone else finding out
- Fear of someone finding out
- Being distressed

What could have been done differently to help you?

How did you find the clinic as the setting of the interview?

Would you recommend someone else in your position should come for this service?

Appendix E: Discussion schedule, users who have not been through the service

As you know, I am doing this research to find out how we can improve this service so that more women like yourself could benefit from it in the future.

First, I'd like to know if you have ever been asked about this problem by your doctor or nurse.

If you have, how did you feel when that happened? If not, do you want your doctor or nurse to ask you about this problem?

Have you ever looked for help for this problem before?

Prompts:

- From clinic
- From police
- From elsewhere

If yes, tell me about those experiences...

When you heard about this service, what did you think it would be about?

Prompts:

- What were you told?

Do you feel that you need help for this problem?

Do you want to get help for this problem at the clinic?

What made you decide this service was not for you?

Prompts:

- Don't need help
- Distance from clinic
- Childcare/job
- Fear of partner finding out

- Staff attitude

What kind of things would be helpful to you?

Prompts:

- Counseling
- Listening and support
- Legal services
- Help with work/grant/children
- HIV test
- Pregnancy test

Appendix F: Informed consent, interviews

Informed Consent Form for Participation in Research Study: Evaluating the implementation of an intervention for intimate partner violence in the district health system of the Western Cape



UNIVERSITY OF CAPE TOWN

Principal Investigator: Dr Kate Rees, University of Cape Town

0214839344

kate.rees@westerncape.gov.za

Reference Number: _____

You are invited to participate in the study: Evaluating the implementation of an intervention for intimate partner violence in the district health system of the Western Cape

Why is this study being done?

My name is Kate Rees; I am a medical doctor and graduate student in Public Health conducting research as part of my training. I am also conducting an evaluation of an intervention for intimate partner violence as part of my work for the Western Cape Government Department of Health.

The purpose of the study is to understand the implementation of this intervention, and how providers and users experienced the intervention in order to improve it in the future.

What do I have to do if I participate in this study?

- If you choose to participate in this study you will be asked questions in an interview lasting approximately one hour.
- This interview will take place in a private place that is convenient for you.
- The interview will be recorded with your permission.
- The questions that will be asked are about your experiences of the IPV intervention.

What are the consequences of not participating?

There will be no negative consequences if you choose not to participate. Participation is completely voluntary.

What are the possible risks?

The risks that may be expected as a result of the study include experiencing distress or discomfort in being asked questions you may find sensitive. You do not have to answer all the questions, and may skip a question or end the interview at any time.

What are the potential benefits?

There will be no direct benefit to you in participating in this study. However, the information gained in this study will be disseminated in an attempt to ensure that the design of future interventions for IPV consider the information gained from this research.

How will confidentiality be maintained?

All information you share will be kept completely confidential. Your name will not appear anywhere on the interview transcript, or in any analysis or report. All electronic records will be password protected, and audio recordings will be destroyed on completion of the project.

Informed Consent to Participate in the Study

I have had all of the above information explained to me and I understand the explanation. I have been offered the chance to ask any questions.

Name

Date

Signature

Informed Consent to audio record the interview

The purpose and handling of the audio recording has been explained to me and I

understand this explanation.

Name

Date

Signature

Appendix G: Informed consent, focus groups

Informed Consent Form for Participation in Research Study: Evaluating the implementation of an intervention for intimate partner violence in the district health system of the Western Cape



UNIVERSITY OF CAPE TOWN

Principal Investigator: Dr Kate Rees, University of Cape Town

0214839344

kate.rees@westerncape.gov.za

Reference Number: _____

You are invited to participate in the study: Evaluating the implementation of an intervention for intimate partner violence in the district health system of the Western Cape

Why is this study being done?

My name is Kate Rees; I am a medical doctor and graduate student in Public Health conducting research as part of my training. I am also conducting an evaluation of an intervention for intimate partner violence as part of my work for the Western Cape Government Department of Health.

The purpose of the study is to understand the implementation of this intervention, and how providers and users experienced the intervention in order to improve it in the future.

What do I have to do if I participate in this study?

- If you choose to participate in this study you will be asked questions in a group lasting approximately one hour.
- The group will be asked to keep everything discussed confidential.
- The group will be recorded with your permission.
- The questions that will be asked are about your experiences of the IPV intervention.

What are the consequences of not participating?

There will be no negative consequences if you choose not to participate. Participation is completely voluntary.

What are the possible risks?

The risks that may be expected as a result of the study include experiencing distress or discomfort in being asked questions you may find sensitive. You do not have to answer all the questions, and may skip a question or end the interview at any time.

What are the potential benefits?

There will be no direct benefit to you in participating in this study. However, the information gained in this study will be disseminated in an attempt to ensure that the design of future interventions for IPV consider the information gained from this research.

How will confidentiality be maintained?

All information you share will be kept completely confidential. Your name will not appear anywhere on the interview transcript, or in any analysis or report. All electronic records will be password protected, and audio recordings will be destroyed on completion of the project.

Informed Consent to Participate in the Study

I have had all of the above information explained to me and I understand the explanation. I have been offered the chance to ask any questions.

Name

Date

Signature

Informed Consent to audio record the interview

The purpose and handling of the audio recording has been explained to me and I

understand this explanation.

Name

Date

Signature

Appendix H: Informed consent, service provider interviews

Informed Consent Form for Participation in Research Study: Evaluating the implementation of an intervention for intimate partner violence in the district health system of the Western Cape



UNIVERSITY OF CAPE TOWN

Principal Investigator: Dr Kate Rees, University of Cape Town

0214839344

kate.rees@westerncape.gov.za

Reference Number: _____

You are invited to participate in the study: Evaluating the implementation of an intervention for intimate partner violence in the district health system of the Western Cape

Why is this study being done?

My name is Kate Rees; I am a medical doctor and graduate student in Public Health conducting research as part of my training. I am also conducting an evaluation of an intervention for intimate partner violence as part of my work for the Western Cape Government Department of Health.

The purpose of the study is to understand the implementation of this intervention, and how providers and users experienced the intervention in order to improve it in the future.

What do I have to do if I participate in this study?

- If you choose to participate in this study you will be asked questions in an interview lasting approximately one hour.
- This interview will take place in a private place that is convenient for you.
- The interview will be recorded with your permission.

- The questions that will be asked are about your experiences of the IPV intervention.

What are the consequences of not participating?

There will be no negative consequences if you choose not to participate. Participation is completely voluntary.

What are the possible risks?

The risks that may be expected as a result of the study include experiencing distress or discomfort in being asked questions you may find sensitive. You do not have to answer all the questions, and may skip a question or end the interview at any time.

What are the potential benefits?

There will be no direct benefit to you in participating in this study. However, the information gained in this study will be disseminated in an attempt to ensure that the design of future interventions for IPV consider the information gained from this research.

How will confidentiality be maintained?

All information you share will be kept completely confidential. Your name will not appear anywhere on the interview transcript, or in any analysis or report. All electronic records will be password protected, and audio recordings will be destroyed on completion of the project. There is a possibility that people closely acquainted with the project will be able to identify you when reading the report based on your role within this project. Every effort will be made to avoid this.

Informed Consent to Participate in the Study

I have had all of the above information explained to me and I understand the explanation. I have been offered the chance to ask any questions.

Name

Date

Signature

Informed Consent to audio record the interview

The purpose and handling of the audio recording has been explained to me and I understand this explanation.

Name

Date

Signature

Appendix I: Ethics approval letter



UNIVERSITY OF CAPE TOWN

Faculty of Health Sciences
Human Research Ethics Committee
Room E52-24 Groote Schuur Hospital Old Main Building
Observatory 7925
Ms S Ariefdien - Tel: [021]4066492 • Fax: [021]4066411
email: sumayah.ariefdien@uct.ac.za

20 December 2012

HREC REF: 655/2012

Dr K Rees,
c/o Dr V Zweigenthal
School of Public Health & Family Medicine
4th Floor, Entrance 5
Falmouth Building

CC: Dr V Zweigenthal
Public Health & Family Medicine
Falmouth Building

Dear Dr Rees,

PROJECT TITLE: EVALUATING THE IMPLEMENTATION OF AN INTERVENTION FOR INTIMATE PARTNER VIOLENCE IN THE DISTRICT HEALTH SYSTEM OF THE WESTERN CAPE

Thank you for submitting your new study to the Faculty of Health Sciences Human Research Ethics Committee

It is a pleasure to inform you that the Ethics Committee has formally approved the above-mentioned study.


Approval is granted until 28 December 2013

Please submit an annual progress report (FHS016) if the research continues beyond the expiry date. Please submit a brief summary of findings if you complete the study within the approval period so that we can close our file (FHS010).

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the HREC REF in all your correspondence.

Yours sincerely

 Signature removed
PROFESSOR MARC BLOCKMAN
CHAIRPERSON, FHS HUMAN RESEARCH ETHICS

Federal Wide Assurance Number: FWA00001637.
Institutional Review Board (IRB) number: IRB00001938

This serves to confirm that the University of Cape Town Human Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Convention on Harmonisation Good Clinical Practices (ICH GCP) and Declaration of Helsinki guidelines.

The Human Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines (e.g. Note for Guidance on Good Clinical Practices (CPMP/ICH/13595) and FLA Code Federal Regulation Part 312.55 and 312.

Appendix J: Department of Health approval letter



STRATEGY & HEALTH SUPPORT
healthres@pcw.gov.za
Tel: +27 21 463 9800; fax: +27 21 463 9995
1st Floor, Norton Rose House, 8 Riebeeck Street, Cape Town, 8001
www.cape.gov.za

REFERENCE: RP 009/2013
ENQUIRIES: Ms Charlene Roderick

5th floor Norton Rose House
Riebeeck Street
Cape Town
8000

For attention: Dr. Kato Ross

Re: Evaluating the implementation of an intervention for intimate partner violence in the district health system of the Western Cape

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research.

Please contact the following people to assist you with any further enquiries.

Clinic in the Witzenberg sub-district Ms S Neethling Contact No. 023-348 8145

Kindly ensure that the following are adhered to:

1. Arrangements can be made with managers, providing that normal activities at requested facilities are not interrupted.
2. Researchers, in accessing provincial health facilities, are expressing consent to provide the department with an electronic copy of the final report within six months of completion of research. This can be submitted to the provincial Research Co-ordinator (healthres@pcw.gov.za).
3. The reference number above should be quoted in all future correspondence.

Yours sincerely

Signature removed

DR NT Ntledi
DIRECTOR, HEALTH IMPACT ASSESSMENT
DATE 7/3/2013
CC DR L PHILLIPS DIRECTOR, CAPE WINELANDS

Page 1 of 1

Appendix K: BMC Health Services Research author guidelines

<http://www.biomedcentral.com/bmchealthservres/authors/instructions/researcharticle>

Accessed 26/03/2014

Instructions for authors

Research articles

[Criteria](#) | [Submission process](#) | [Preparing main manuscript text](#) | [Preparing illustrations and figures](#) | [Preparing tables](#) | [Preparing additional files](#) | [Style and language](#)

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Criteria

Research articles should report on original primary research, but may report on systematic reviews of published research provided they adhere to the appropriate reporting guidelines which are detailed in our [Editorial Policies](#). Please note that non-commissioned pooled analyses of selected published research will not be considered.

Submission process

Manuscripts must be submitted by one of the authors of the manuscript, and should not be submitted by anyone on their behalf. The submitting author takes responsibility for the article during submission and peer review.

Please note that *BMC Health Services Research* levies an article-processing charge on all accepted Research articles; if the submitting author's institution is a [BioMed Central member](#) the cost of the article-processing charge may be covered by the membership (see [About](#) page for detail). Please note that the membership is only automatically recognised on submission if the submitting author is based at the member institution.

To facilitate rapid publication and to minimize administrative costs, *BMC Health Services Research* prefers [online submission](#).

Files can be submitted as a batch, or one by one. The submission process can be interrupted at any time; when users return to the site, they can carry on where they left off.

See below for examples of [word processor](#) and [graphics file formats](#) that can be accepted for the main manuscript document by the online submission system. Additional files of any type, such as [movies](#), animations, or [original data files](#), can also be submitted as part of the manuscript.

During submission you will be asked to provide a cover letter. Use this to explain why your manuscript should be published in the journal, to elaborate on any issues relating to our editorial policies in the '[About BMC Health Services Research](#)' page, and to declare any potential competing interests. You will be also asked to provide the contact details (including email addresses) of potential peer reviewers for your manuscript. These should be experts in their field, who will be able to provide an objective assessment of the manuscript. Any suggested peer reviewers should not have published with any of the authors of the manuscript within the past five years, should not be current collaborators, and should not be members of the same research institution. Suggested reviewers will be considered alongside potential reviewers recommended by the Editorial team, Editorial Advisors, Section Editors and Associate Editors.

Assistance with the process of manuscript preparation and submission is available from [BioMed Central customer support team](#).

We also provide a collection of links to useful tools and resources for scientific authors on our [Useful Tools](#) page.

File formats

The following word processor file formats are acceptable for the main manuscript document:

- Microsoft word (DOC, DOCX)
- Rich text format (RTF)
- Portable document format (PDF)
- TeX/LaTeX (use [BioMed Central's TeX template](#))
- DeVice Independent format (DVI)

TeX/LaTeX users: Please use [BioMed Central's TeX template](#) and BibTeX stylefile if you use TeX format. During the TeX submission process, please submit your TeX file as the main manuscript file and your bib/bbl file as a dependent file. Please also convert your TeX file into a PDF and submit this PDF as an additional file with the name 'Reference PDF'. This PDF will be used by internal staff as a reference point to check the layout of the article as the author intended. Please also note that all figures must be coded at the end of the TeX file and not inline.

If you have used another template for your manuscript, or if you do not wish to use BibTeX, then please submit your manuscript as a DVI file. We do not recommend converting to RTF.

For all TeX submissions, all relevant editable source must be submitted during the submission process. Failing to submit these source files will cause unnecessary delays in the publication procedures.

Publishing Datasets

Through a special arrangement with [LabArchives](#), LLC, authors submitting manuscripts to BMC Health Services Research can obtain a [complimentary subscription to LabArchives](#) with an allotment of 100MB of storage. LabArchives is an Electronic Laboratory Notebook which will enable scientists to share and publish data files in situ; you can then link your paper to these data. Data files linked to published articles are assigned digital object identifiers (DOIs) and will remain available in perpetuity. Use of LabArchives or similar data publishing services does not replace preexisting data deposition requirements, such as for nucleic acid sequences, protein sequences and atomic coordinates.

Instructions on assigning DOIs to datasets, so they can be permanently linked to publications, can be found on the LabArchives website. Use of LabArchives' software has no influence on the editorial decision to accept or reject a manuscript.

Authors linking datasets to their publications should include an [Availability of supporting data](#) section in their manuscript and cite the dataset in their reference list.

Preparing main manuscript text

General guidelines of the journal's style and language are given [below](#).

Overview of manuscript sections for Research articles

Manuscripts for Research articles submitted to *BMC Health Services Research* should be

divided into the following sections (in this order):

- [Title page](#)
- [Abstract](#)
- [Keywords](#)
- [Background](#)
- [Methods](#)
- [Results and discussion](#)
- [Conclusions](#)
- [List of abbreviations used](#) (if any)
- [Competing interests](#)
- [Authors' contributions](#)
- [Authors' information](#)
- [Acknowledgements](#)
- [Endnotes](#)
- [References](#)
- [Illustrations and figures](#) (if any)
- [Tables and captions](#)
- [Preparing additional files](#)

The **Accession Numbers** of any nucleic acid sequences, protein sequences or atomic coordinates cited in the manuscript should be provided, in square brackets and include the corresponding database name; for example, [EMBL:AB026295, EMBL:AC137000, DDBJ:AE000812, GenBank:U49845, PDB:1BFM, Swiss-Prot:Q96KQ7, PIR:S66116].

The databases for which we can provide direct links are: EMBL Nucleotide Sequence Database ([EMBL](#)), DNA Data Bank of Japan ([DDBJ](#)), GenBank at the NCBI ([GenBank](#)), Protein Data Bank ([PDB](#)), Protein Information Resource ([PIR](#)) and the Swiss-Prot Protein Database ([Swiss-Prot](#)).

You can [download a template](#) (Mac and Windows compatible; Microsoft Word 98/2000) for your article.

For reporting standards please see the information in the [About](#) section.

Title page

The title page should:

- provide the title of the article
- list the full names, institutional addresses and email addresses for all authors
- indicate the corresponding author

Please note:

- the title should include the study design, for example "A versus B in the treatment of C: a randomized controlled trial X is a risk factor for Y: a case control study"
- abbreviations within the title should be avoided

Abstract

The Abstract of the manuscript should not exceed 350 words and must be structured into separate sections: **Background**, the context and purpose of the study; **Methods**, how the study was performed and statistical tests used; **Results**, the main findings; **Conclusions**, brief summary and potential implications. Please minimize the use of abbreviations and do not cite references in the abstract. **Trial registration**, if your research article reports the results of a controlled health care intervention, please list your trial registry, along with the unique identifying number (e.g. **Trial registration**: Current Controlled Trials ISRCTN73824458). Please note that there should be no space between the letters and numbers of your trial registration number. We recommend manuscripts that report randomized controlled trials follow the [CONSORT extension for abstracts](#).

Keywords

Three to ten keywords representing the main content of the article.

Background

The Background section should be written in a way that is accessible to researchers without

specialist knowledge in that area and must clearly state - and, if helpful, illustrate - the background to the research and its aims. Reports of clinical research should, where appropriate, include a summary of a search of the literature to indicate why this study was necessary and what it aimed to contribute to the field. The section should end with a brief statement of what is being reported in the article.

Methods

The methods section should include the design of the study, the setting, the type of participants or materials involved, a clear description of all interventions and comparisons, and the type of analysis used, including a power calculation if appropriate. Generic drug names should generally be used. When proprietary brands are used in research, include the brand names in parentheses in the Methods section.

For studies involving human participants a statement detailing ethical approval and consent should be included in the methods section. For further details of the journal's editorial policies and ethical guidelines see ['About this journal'](#).

For further details of the journal's data-release policy, see the policy section in ['About this journal'](#).

Results and discussion

The Results and discussion may be combined into a single section or presented separately. Results of statistical analysis should include, where appropriate, relative and absolute risks or risk reductions, and confidence intervals. The Results and discussion sections may also be broken into subsections with short, informative headings.

Conclusions

This should state clearly the main conclusions of the research and give a clear explanation of their importance and relevance. Summary illustrations may be included.

List of abbreviations

If abbreviations are used in the text they should be defined in the text at first use, and a list of abbreviations can be provided, which should precede the competing interests and authors' contributions.

Competing interests

A competing interest exists when your interpretation of data or presentation of information may be influenced by your personal or financial relationship with other people or organizations. Authors must disclose any financial competing interests; they should also reveal any non-financial competing interests that may cause them embarrassment were they to become public after the publication of the manuscript.

Authors are required to complete a declaration of competing interests. All competing interests that are declared will be listed at the end of published articles. Where an author gives no competing interests, the listing will read 'The author(s) declare that they have no competing interests'.

When completing your declaration, please consider the following questions:

Financial competing interests

- In the past five years have you received reimbursements, fees, funding, or salary from an organization that may in any way gain or lose financially from the publication of this manuscript, either now or in the future? Is such an organization financing this manuscript (including the article-processing charge)? If so, please specify.
- Do you hold any stocks or shares in an organization that may in any way gain or lose financially from the publication of this manuscript, either now or in the future? If so, please specify.
- Do you hold or are you currently applying for any patents relating to the content of the manuscript? Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript? If so, please specify.
- Do you have any other financial competing interests? If so, please specify.

Non-financial competing interests

Are there any non-financial competing interests (political, personal, religious, ideological, academic, intellectual, commercial or any other) to declare in relation to this manuscript? If so, please specify.

If you are unsure as to whether you, or one your co-authors, has a competing interest please discuss it with the editorial office.

Authors' contributions

In order to give appropriate credit to each author of a paper, the individual contributions of authors to the manuscript should be specified in this section.

According to [ICMJE guidelines](#), An 'author' is generally considered to be someone who has made substantive intellectual contributions to a published study. To qualify as an author one should 1) have made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; 2) have been involved in drafting the manuscript or revising it critically for important intellectual content; 3) have given final approval of the version to be published; and 4) agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. Acquisition of funding, collection of data, or general supervision of the research group, alone, does not justify authorship.

We suggest the following kind of format (please use initials to refer to each author's contribution): AB carried out the molecular genetic studies, participated in the sequence alignment and drafted the manuscript. JY carried out the immunoassays. MT participated in the sequence alignment. ES participated in the design of the study and performed the statistical analysis. FG conceived of the study, and participated in its design and coordination and helped to draft the manuscript. All authors read and approved the final manuscript.

All contributors who do not meet the criteria for authorship should be listed in an acknowledgements section. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a department chair who provided only general support.

Authors' information

You may choose to use this section to include any relevant information about the author(s) that may aid the reader's interpretation of the article, and understand the standpoint of the author(s). This may include details about the authors' qualifications, current positions they hold at institutions or societies, or any other relevant background information. Please refer to authors using their initials. Note this section should not be used to describe any competing interests.

Acknowledgements

Please acknowledge anyone who contributed towards the article by making substantial contributions to conception, design, acquisition of data, or analysis and interpretation of data, or who was involved in drafting the manuscript or revising it critically for important intellectual content, but who does not meet the criteria for authorship. Please also include the source(s) of funding for each author, and for the manuscript preparation. Authors must describe the role of the funding body, if any, in design, in the collection, analysis, and interpretation of data; in the writing of the manuscript; and in the decision to submit the manuscript for publication. Please also acknowledge anyone who contributed materials essential for the study. If a language editor has made significant revision of the manuscript, we recommend that you acknowledge the editor by name, where possible.

The role of a scientific (medical) writer must be included in the acknowledgements section, including their source(s) of funding. We suggest wording such as 'We thank Jane Doe who provided medical writing services on behalf of XYZ Pharmaceuticals Ltd.'

Authors should obtain permission to acknowledge from all those mentioned in the Acknowledgements section.

Endnotes

Endnotes should be designated within the text using a superscript lowercase letter and all notes (along with their corresponding letter) should be included in the Endnotes section. Please format this section in a paragraph rather than a list.

References

All references, including URLs, must be numbered consecutively, in square brackets, in the order in which they are cited in the text, followed by any in tables or legends. Each reference must have an individual reference number. Please avoid excessive referencing. If automatic numbering systems are used, the reference numbers must be finalized and the bibliography must be fully formatted before submission.

Only articles, datasets, clinical trial registration records and abstracts that have been published or are in press, or are available through public e-print/preprint servers, may be cited; unpublished abstracts, unpublished data and personal communications should not be included in the reference list, but may be included in the text and referred to as "unpublished observations" or "personal communications" giving the names of the involved

researchers. Obtaining permission to quote personal communications and unpublished data from the cited colleagues is the responsibility of the author. Footnotes are not allowed, but endnotes are permitted. Journal abbreviations follow Index Medicus/MEDLINE. Citations in the reference list should include all named authors, up to the first 30 before adding 'et al.'.

Any *in press* articles cited within the references and necessary for the reviewers' assessment of the manuscript should be made available if requested by the editorial office.

Style files are available for use with popular bibliographic management software:

- [BibTeX](#)
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- [Reference Manager](#)
- [Zotero](#)

Examples of the *BMC Health Services Research* reference style are shown [below](#). Please ensure that the reference style is followed precisely; if the references are not in the correct style they may have to be retyped and carefully proofread.

All web links and URLs, including links to the authors' own websites, should be given a reference number and included in the reference list rather than within the text of the manuscript. They should be provided in full, including both the title of the site and the URL, in the following format: **The Mouse Tumor Biology Database** [http://tumor.informatics.jax.org/mtbwi/index.do]. If an author or group of authors can clearly be associated with a web link, such as for weblogs, then they should be included in the reference.

Examples of the *BMC Health Services Research* reference style

Article within a journal

Koonin EV, Altschul SF, Bork P: **BRCA1 protein products: functional motifs.** *Nat Genet* 1996,**13**:266-267.

Article within a journal supplement

Orengo CA, Bray JE, Hubbard T, LoConte L, Sillitoe I: **Analysis and assessment of ab initio three-dimensional prediction, secondary structure, and contacts**

prediction. *Proteins* 1999,**43**(Suppl 3):149-170.

In press article

Kharitonov SA, Barnes PJ: **Clinical aspects of exhaled nitric oxide.** *Eur Respir J*, in press.

Published abstract

Zvaifler NJ, Burger JA, Marinova-Mutafchieva L, Taylor P, Maini RN: **Mesenchymal cells, stromal derived factor-1 and rheumatoid arthritis [abstract].** *Arthritis Rheum* 1999, **42**:s250.

Article within conference proceedings

Jones X: **Zeolites and synthetic mechanisms.** In *Proceedings of the First National Conference on Porous Sieves: 27-30 June 1996; Baltimore.* Edited by Smith Y. Stoneham: Butterworth-Heinemann; 1996:16-27.

Book chapter, or article within a book

Schnepf E: **From prey via endosymbiont to plastids: comparative studies in dinoflagellates.** In *Origins of Plastids. Volume 2.* 2nd edition. Edited by Lewin RA. New York: Chapman and Hall; 1993:53-76.

Whole issue of journal

Ponder B, Johnston S, Chodosh L (Eds): **Innovative oncology.** In *Breast Cancer Res* 1998, **10**:1-72.

Whole conference proceedings

Smith Y (Ed): *Proceedings of the First National Conference on Porous Sieves: 27-30 June 1996; Baltimore.* Stoneham: Butterworth-Heinemann; 1996.

Complete book

Margulis L: *Origin of Eukaryotic Cells.* New Haven: Yale University Press; 1970.

Monograph or book in a series

Hunninghake GW, Gadek JE: **The alveolar macrophage.** In *Cultured Human Cells and Tissues.* Edited by Harris TJR. New York: Academic Press; 1995:54-56. [Stoner G (Series Editor): *Methods and Perspectives in Cell Biology*, vol 1.]

Book with institutional author

Advisory Committee on Genetic Modification: *Annual Report.* London; 1999.

PhD thesis

Kohavi R: **Wrappers for performance enhancement and oblivious decision graphs**. *PhD thesis*. Stanford University, Computer Science Department; 1995.

Link / URL

The Mouse Tumor Biology Database [<http://tumor.informatics.jax.org/mtbwi/index.do>]

Link / URL with author(s)

Corpas M: **The Crowdfunding Genome Project: a personal genomics community with open source values** [<http://blogs.biomedcentral.com/bmcblog/2012/07/16/the-crowdfunding-genome-project-a-personal-genomics-community-with-open-source-values/>]

Dataset with persistent identifier

Zheng, L-Y; Guo, X-S; He, B; Sun, L-J; Peng, Y; Dong, S-S; Liu, T-F; Jiang, S; Ramachandran, S; Liu, C-M; Jing, H-C (2011): **Genome data from sweet and grain sorghum (Sorghum bicolor)**. *GigaScience*. <http://dx.doi.org/10.5524/100012>.

Clinical trial registration record with persistent identifier

Mendelow, AD (2006): **Surgical Trial in Lobar Intracerebral Haemorrhage**. *Current Controlled Trials*. <http://dx.doi.org/10.1186/ISRCTN22153967>

Preparing illustrations and figures

Illustrations should be provided as separate files, not embedded in the text file. Each figure should include a single illustration and should fit on a single page in portrait format. If a figure consists of separate parts, it is important that a single composite illustration file be submitted which contains all parts of the figure. There is no charge for the use of color figures.

Please read our [figure preparation guidelines](#) for detailed instructions on maximising the quality of your [figures](#).

Formats

The following file formats can be accepted:

- PDF (preferred format for diagrams)
- DOCX/DOC (single page only)
- PPTX/PPT (single slide only)

- EPS
- PNG (preferred format for photos or images)
- TIFF
- JPEG
- BMP

Figure legends

The legends should be included in the main manuscript text file at the end of the document, rather than being a part of the figure file. For each figure, the following information should be provided: Figure number (in sequence, using Arabic numerals - i.e. Figure 1, 2, 3 etc); short title of figure (maximum 15 words); detailed legend, up to 300 words.

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