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## Assessing implementation of screening and counseling for intimate partner violence in health care settings among women of childbearing age in Israel

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3 **Assessing implementation of screening and counseling for intimate partner violence in**  
4 **health care settings among women of childbearing age in Israel**  
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## ABSTRACT

**Objectives:** To assess implementation of universal screening and information provision for intimate partner violence (IPV), we studied the proportion of women who have ever been screened (ES) for IPV at a health care setting, received information (RI) about relevant services, or both, and explored disparities in screening by ethnicity and other characteristics.

**Design:** In 2014-15 we undertook a cross-sectional study, conducting interviews among a stratified sample of 1,401 women.

**Setting:** A sample of 63 maternal and child health clinics (MCH) clinics in four geographical districts (North, Haifa, Center and South) of Israel.

**Participants:** Women aged 16-48yrs pregnant or up to 6 months after birth.

**Primary and Secondary Outcome Measures:** We used multivariable generalized estimation equation (GEE) analysis to determine different characteristics of women ES (Has anyone at the HCS ever asked you whether you have experienced IPV?); and RI (Have you ever received information about what to do in case you experience IPV?), and both (ES&RI).

**Results:** Less than half of participants (48.8%) reported ES, 50.5% RI, and 30% ES&RI. Any IPV or types of IPV were not associated with ES or ES&RI, but were associated with RI in an unexpected direction. Women at higher risk for IPV (Arab minority women, lower education, and unmarried) were less likely to report being ES and RI or both. The odd ratio (OR) and 95%confidence intervals (CI) for not ER&RI were: 1.58(1.00-2.49) among Arab compared to Jewish women; 1.95(1.42-2.66) among low education versus academic education women; 1.34(1.03-1.73) among not working versus working, and 1.57 (1.00-2.48) in Haifa district compared to the southern district.

**Conclusions:** While Israel has a policy for universal IPV screening and providing information regarding IPV within HCS, the inequalities we found suggest a case-finding approach resulting in missed opportunities to help women with higher risk for IPV.

### Strengths and limitations of this study

- Our study is the first that we know of to quantify implementation of IPV screening and information provision, with attention to ethnicity and other characteristics of women who do or do not receive these services.
- Our trained interviewers met women in trusted, local health-care settings, thus reducing reluctance to participate and to disclose IPV.
- Interviews were conducted in the preferred language of participants (Hebrew, Arabic), thereby facilitating participation.
- Having ever screened or received information were self-reported, reporting bias could have occurred.
- Minority women who do not speak Hebrew or Arabic could have been overlooked, as we did not offered interview in other languages.

## INTRODUCTION

Affecting more than one third of women globally,<sup>1</sup> intimate partner violence (IPV) has been shown to have a major effect on women's physical and mental health.<sup>2</sup> Women who experience IPV tend to use more the health care services (HCS)<sup>3,4</sup> and are likely to disclose abuse for the first time to a healthcare provider (HCP),<sup>5</sup> as the latter are seen as trusted professionals.<sup>6</sup> Therefore, HCPs can play a critical role in detection of IPV at HCS if they ask women about IPV.<sup>7</sup> Screening can encourage women to disclose IPV, which might increase detection and, just as importantly, become an opportunity to counsel women and provide them with information about supportive services.<sup>7,8</sup> While the effectiveness of IPV screening yet to be fully demonstrated in research,<sup>9</sup> studies do show that screening within HCS can help tackle the problem by providing victims with information and consultation on how to cope, and referring them on to support or help agencies.<sup>7,10</sup>

There are two distinct approaches to screening women for IPV in the context of the HCS: universal screening, where every woman interacting with healthcare services is screened; and selective screening, or the case-finding method, which focuses on screening women who appear to be at risk of IPV. Proponents of universal screening argue that the severity of the burden of suffering from IPV necessitates a universal protocol.<sup>11,12</sup> They note that screening for IPV at HCS is associated with minimal risk, discomfort and emotional distress and has been shown to increase detection, reduce IPV, and improve the health of screened women.<sup>13</sup> However, some reviews cast doubt on this view citing a lack of evidence regarding the benefits of universal screening, and suggest a case-finding approach to identifying IPV.<sup>9,14</sup> Regardless, since the late 1990s, many health professional associations have published clinician guidelines on how to identify and respond to women who have been abused,<sup>15</sup> and health professionals are now increasingly required to undertake screening in accordance with national health policies. For example, in 2013, the Preventive Services Task Force (USPTF)

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2  
3 in the US recommended universal screening for IPV of all women of childbearing age and  
4 referral for intervention services for women who are screen positive.<sup>16</sup> Conversely, some  
5  
6 European countries (e.g., the UK and Sweden) have enacted case finding as their IPV  
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8 screening method.<sup>9 17</sup>

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11 Even in countries where medical organizations have recommended universal screening for  
12 IPV at HCS,<sup>11 17-19</sup> including the US, studies show that HCPs do not necessarily carry out this  
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14 mandate.<sup>17 20 21</sup> In clinic-based studies in the US, the proportion of screening at least once by  
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16 physicians was 11-39%.<sup>22</sup> This low proportion appears to be due to different barriers  
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18 including, clinicians not feeling confident about screening, not knowing what questions to ask  
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20 or how to respond if a woman says she is being abused, feeling there is not enough time to  
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22 screen or that other issues take precedence women not trusting the provider with this  
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24 information.<sup>8</sup> Gutmanis<sup>23</sup> identified misconceptions about IPV among HCPs such as:  
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26 “domestic violence is rare,” and “domestic violence is a private matter that should be resolved  
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28 without outside intervention.”<sup>21</sup> Nursing staff, while generally expressing more favorable  
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30 views toward screening than physicians, have also been shown to face internal barriers to  
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32 screening, especially a fear of offending patients during questioning.<sup>23</sup>

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35 Meanwhile, research shows women generally support universal IPV screening,<sup>24</sup> and a meta-  
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37 analysis of 25 studies showed they want HCPs to be nonjudgmental, nondirective, and  
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39 understanding of the complexity of partner violence.<sup>6</sup> However, other studies suggest that  
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41 minority women and those with low socioeconomic-status, who experience higher prevalence  
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43 of IPV,<sup>25-27</sup> might be less likely to be screened by HCPs or receive information about IPV  
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45 services. One study in Hawaii showed that minority women receive less counseling on IPV  
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47 during prenatal care.<sup>28</sup> This suggests that minority women are screened for IPV less often.  
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49 However, none of the studies we know of show such disparities, and few studies have been  
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51 conducted on disparities in IPV screening and counseling among women at risk for IPV.  
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### IPV screening in HCS settings in Israel

Israel is an apt setting for investigating implementation of universal IPV screening due to its ethnic makeup, with a majority Jewish population and a minority indigenous Arab population who are highly stratified by class, socioeconomics and geography, which might differentially affect people's likelihood of experiencing IPV<sup>25</sup> as well as screening/counseling. As part of an attempt to cope with domestic violence in Israel, in 2003 the Israeli Ministry of Health issued *Director General Circular no. 20/90*,<sup>29</sup> which demanded universal IPV screening. The *Circular* states that every woman admitted to a hospital should be questioned by the appropriate medical, nursing or social work staff to screen for abuse, and, if identified as a victim of abuse, should be treated promptly and with discretion considering her personal comfort and specific needs. The *Circular* also sets up a protocol for documentation of screening and stipulates that victims who are identified in the hospital setting may be hospitalized for up to 24 hours for purposes of protection and shelter if no other means of shelter or protection is accessible.<sup>29</sup>

Yet, a 2010 report by the Ministry of Health (MOH) has shown that HCPs hesitate to implement the *Circular's* recommendations.<sup>30</sup> The report, based on in-depth interviews with nurses and physicians about barriers to IPV screening, found that nurses are more likely to ask about IPV than physicians, but that both are reluctant to screen for IPV.<sup>30</sup> Meanwhile, Ben-Natal et.al., (2011), used a sample of 100 physicians and nurses from obstetrics and gynecology departments in a central Israel hospital, and found that the most cited reasons for failure to screen among HCPs was that they are embarrassed over screening protocols including questioning patients.<sup>31</sup> Another nationwide study conducted in 2000 showed that only 3% of women were asked about domestic violence by a physician at primary care clinics.<sup>32</sup>



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3 Despite these findings little data yet exists to assess implementation of universal screening for  
4 IPV or provision of information for related services within Israeli HCSs. Our study aims to  
5 examine the proportion of women who have ever been screened (ES) for IPV within HSC and  
6 who have received information (RI) about IPV services, and both and to determine  
7 characteristics, including ethnicity, of women who were ES, RI and both (ES & RI).  
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## 15 **METHODS**

### 16 **Study Design and Sampling**

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18 The cross-sectional study on “Family Relations, Violence and Health” was conducted  
19 between October 2014 and October 2015 with an approval of the Public Health Division of  
20 the Israeli Ministry of Health and the Ethics Committee at Ben-Gurion University of the  
21 Negev. A detailed description of the study can be found elsewhere,<sup>25</sup> but briefly, 63 Maternal  
22 and Child Health (MCH) clinics located in four regions of Israel (South, Center, North and  
23 Haifa) were sampled using a stratified sampling procedure. The number of clinics in each  
24 region was determined based on the proportion of births and women’s ethnicity (Arabs vs.  
25 Jews).  
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### 37 **Participants and data collection**

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39 Participants were recruited at the 63 MCH clinics that were sampled for the study. One month  
40 before the data collection, the study coordinators distributed leaflets with information about  
41 the study at the study MCH clinics. Trained female interviewers asked eligible mothers  
42 (pregnant, or up to 6 months after birth) to participate in the study. Women who agreed to  
43 participate were invited into a separate room at the clinics. Women were interviewed face-to-  
44 face in Arabic or Hebrew after signing an informed consent form. If a participant was detected  
45 as having experienced IPV, she was encouraged by the interviewer and study team to talk  
46 with her nurse at the MCH to be referred to support services. In addition, all study participants  
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received written contact information on services for women who are victims of violence. A total of 1,401 women were interviewed, with a response rate of 76% among Arab women, 73% among Jewish women.

## Measures

Dependent variables:

*Ever screened (ES) for IPV*: a yes/no question: “Has anyone at a HCS ever asked you whether you have experienced IPV?”

*Received information (RI) about IPV services*: a yes/no question: “Did you ever receive information about what to do in case you experience IPV?”; this question was asked regardless responses to the preceding question.

*Index variable of ever screened and received information (ES&RI)*: We created an index variable that included positive answers for the previous two questions vs. all other answers.

Independent Variables:

*Any intimate partner violence (IPV)*: a positive answer to any of the 10 acts of violence perpetrated by a participant's intimate partner.<sup>25 33</sup>

*Types of IPV*: resulted from factor analysis for the above 10 acts of IPV and categorized as: Physical or sexual violence; Emotional or verbal violence; and Social or economic violence.<sup>25</sup>

*Ethnicity*: self-determined (1. Arab and 2. Jewish).

*Immigrant Status*: Women not born in Israel (answers: 1. Israel, 2. other).

*Age*: 16-24, 25-34 and 35-48 years old.

*Marital status*: 1. married, and 2. not married including single, divorced, separated, not-cohabitating, or other.

*Women's status during the interview*: a composite variable based on answers to three questions: ‘Are you currently pregnant?’ (yes/ no), 2. ‘Do you have children?’ (yes/no), and ‘How many children do you have?’ We categorized answers as follows: 1. Pregnant with no

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3 children, 2. Pregnant with children, 3. Not pregnant with 1-2 children, and 4. Not pregnant  
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5 with 3 children or more.

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7 *Women's education and husband's education:* 1. High school or less, 2. Postsecondary  
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9 education, and 3. University education (Bachelor's, Master's or Doctorate).

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11 *Employment status for women and husbands:* A yes/no question about current work outside  
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13 the household by both participants and their partners.

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15 *Family source of income:* 1. Work only, 2. Social allowances only, or 3. Other source, which  
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17 included any combination of work and social allowances, and work and other resources, such  
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19 as a grant, family support, land, or other source of income.

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21 *Religiosity:* This included: 1. Religious or very religious, 2. Traditional, 3. Not religious.<sup>34 35</sup>

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23 *Ministry of Health (MOH) district:* Based on the country's geographic areas. We categorized  
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25 those into four: North, Haifa, Center and South (which included Beer-Sheva and Ashkelon  
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27 districts).

### 28 29 30 31 **Statistical Analysis**

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33 We calculated the prevalence (%) of our main variables (ES, RI and the index variable of  
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35 ES&RI) for the total sample of women and examined women's characteristics across these  
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37 variables using the Chi Square test. Next, we examined univariate associations between IPV,  
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39 types of IPV and ES, RI and the ES&RI index variable. Since Arab and Jewish women  
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41 differed in most of the independent and dependent variables, we examined interactions  
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43 between ethnicity and each of the associations between independent variables and ER, RI and  
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45 the index variable (ES&RI). The interaction with the MOH district variable was positive.  
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47 Therefore, we decided to conduct our multivariate analysis for each ethnic group (Arab and  
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49 Jewish) in addition to the multivariable analysis for the total sample. We used Generalized  
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51 Estimating Equation analysis (GEE) in the multivariable analysis to adjust for the MCH clinic  
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53 cluster effect, while adjusting for significant ( $P < 0.05$ ) independent variables that were  
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2 associated with ES, RI and the ES&RI index variable in the univariate analysis. Three  
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4 multivariable analysis models were fitted for each study group in order to examine  
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6 characteristics of women who received the services we studied: ES, RI and ES&RI.  
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9 The correlation between the study independent variables was lower than our threshold of  
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11  $R > 0.4$ , and we did not exclude any of these variables from the multivariable analysis, as  
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13 multi-collinearity was not likely (See Appendix 1).  
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## 15 16 17 **RESULTS**

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19 Less than half of the women reported ever having been screened (ES) for IPV (48.4%), close  
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21 to half (50.5%) received information (RI) about services for coping with IPV, and only 30.4%  
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23 reported both ES&RI (Table 1).  
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26 Table 1 also presents characteristics of women who received each of these services out of the  
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28 total sample of participants. Notably, experiencing any IPV, physical, and emotional IPV  
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30 were not associated with having ES for IPV. However, women who reported less social IPV  
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32 were more likely to report ES. In addition, reporting ES was higher among Jewish women;  
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34 married women; those not pregnant with three children and more; women with postsecondary  
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36 education or an academic degree; employed women with main source of family income from  
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38 work; religious or very religious women; and those living in the North or Center districts.  
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40 Age, immigrant status, and partner employment were not associated with reporting ES for  
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42 IPV.  
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46 Reporting RI on services for coping with IPV was more likely among women who reported  
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48 not experiencing any IPV, or emotional or social IPV. Physical IPV was not associated with  
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50 RI. However, reporting RI was higher among Jewish women, older women, women not  
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52 pregnant with 1-2 children, women with academic education, employed women and partners  
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54 with an income source from work and other sources, women who are not religious, and  
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women who live in Haifa district. RI was not associated with immigrant status or marital status (Table 1).

Women who reported both ES & RI were more likely to be Jewish, older, not pregnant during the interview, with children, with higher education, employed, and with family income from other sources. However, the variables of any IPV, types of IPV, immigrant status, marital status, partner employment, religiosity and MOH district were not associated with reporting both services (ES&RI).

**Table 1- Univariate association for ever being screened (ES) for intimate partner violence (IPV), receiving information (RI) about IPV services, and both, among women in the study sample in Israel, 2014-2015**

Women's characteristics	Total sample	ES for IPV		RI about IPV services		ES & RI	
	N=1401 N (%)	N (%)	P=	N (%)	P=	N (%)	P=
<b>Total =</b>		<b>675 (48.4)</b>		<b>708 (50.5)</b>		<b>425 (30.4)</b>	
<b>Any IPV</b>			0.250		0.011		0.134
Yes	558 (60.2)	259 (46.5)		259 (46.4)		157 (28.1)	
No	843 (39.8)	416 (49.6)		449 (53.4)		268 (31.9)	
<b>Physical IPV</b>			0.805		0.925		0.677
No	1333 (95.1)	643 (48.4)		674 (50.6)		407 (30.6)	
Yes	64 (4.6)	32 (50.0)		32 (50.0)		18 (28.1)	
<b>Emotional IPV</b>			0.397		0.005		0.104
No	997 (71.4)	489 (49.2)		527 (52.9)		316 (31.8)	
Yes	399 (28.6)	186 (46.7)		178 (44.6)		109 (27.3)	
<b>Social IPV</b>			0.038		0.007		0.115
No	1033 (73.7)	516 (50.1)		544 (52.7)		326 (31.6)	
Yes	364 (26.1)	159 (43.8)		162 (44.5)		99 (27.2)	
<b>Ethnicity</b>			<0.001		<0.001		<0.001
Arab	434 (31.1)	162 (37.3)		166 (38.1)		89 (20.4)	
Jewish	965 (68.9)	513 (53.4)		542 (56.3)		336 (34.9)	
<b>Age</b>			0.096		0.004		0.010
16-24	247 (17.6)	104 (42.4)		101 (40.9)		56 (22.8)	
25-34	844 (60.3)	413 (49.1)		444 (52.7)		263 (31.2)	
35-48	309 (22.1)	158 (51.3)		162 (52.4)		106 (34.3)	
<b>Immigrant</b>			0.954		0.234		0.588
Not immigrant	1133 (81.4)	547 (48.4)		565 (50.0)		340 (30.1)	
Immigrant	259 (18.6)	124 (48.2)		140 (54.1)		82 (31.8)	
<b>Marital status</b>			0.018		0.129		0.237
Married	1329 (95.2)	650 (49.1)		666 (50.2)		407 (30.7)	
Other	67 (4.8)	23 (34.3)		40 (59.7)		16 (23.9)	
<b>Women's status during interview</b>			<0.001		<0.001		<0.001
Not pregnant with 3+children	390 (28.0)	204 (52.6)		194 (49.7)		136 (34.9)	
Not pregnant with 1-2 children	737 (52.9)	376 (51.1)		412 (55.9)		234 (31.8)	
Pregnant with children	187 (13.4)	70 (37.8)		62 (33.3)		38 (20.4)	
Pregnant without children	80 (5.7)	21 (26.3)		36 (45.0)		14 (17.5)	
<b>Education (woman)</b>			<0.001		<0.001		<0.001
High school or less	537 (38.3)	204 (38.2)		211 (39.3)		111 (20.7)	
Postsecondary or college	251 (17.9)	134 (53.6)		126 (50.6)		82 (32.8)	
Bachelor degree or above	613 (43.8)	337 (55.2)		371 (60.5)		232 (37.8)	

<b>Employment (woman)</b>			<0.001	<0.001	<0.001
Yes	781 (56.6)	414 (53.0)		445 (56.8)	279 (35.7)
No	59.8 (43.4)	252 (42.1)		257 (42.8)	141 (23.5)
<b>Employment (partner)</b>			0.791	0.005	0.229
Yes	1222 (88.0)	592 (48.7)		633 (51.9)	379 (31.1)
No	166 (12.0)	79 (47.6)		67 (40.0)	44 (26.5)
<b>Household income source</b>			0.001	<0.001	0.005
Work only	982 (70.1)	466 (47.6)		493 (50.3)	290 (29.6)
Social allowances only	79 (5.6)	25 (31.6)		25 (31.6)	14 (17.7)
Work and other source	340 (24.3)	184 (54.4)		190 (56.0)	121 (35.7)
<b>Religiosity</b>			0.002	0.041	0.604
Not religious	440 (31.5)	220 (50.1)		244 (55.6)	135 (30.7)
Traditional	608 (43.5)	262 (43.4)		298 (49.0)	177 (29.2)
Religious or very religious	351 (25.1)	193 (55.1)		166 (47.4)	113 (32.3)
<b>MOH District</b>			0.001	0.019	0.344
South	358 (25.7)	160 (45.1)		166 (46.5)	113 (31.7)
Haifa	212 (15.2)	82 (38.7)		127 (59.9)	54 (25.5)
North	334 (24.0)	183 (54.8)		165 (49.4)	102 (30.5)
Center	485 (35.0)	248 (51.1)		248 (51.0)	156 (32.1)

For the multivariable analysis, we considered variables that were significantly associated with each of our outcome variables of ES, RI and both (ES&RI) in the univariate analysis. Since we found significant interactions of ethnicity (Jewish vs. Arab) and the associations between MOH district variable and ES, RI and ES&RI, we conducted GEE multivariable analysis for each of these dependent variables (ES, RI and both) for the total sample of women, and then separately for each ethnic group. The results of the multivariable analysis are presented in Tables 2-4.

Results of the GEE for having been ES for IPV among the total sample (Table 2) show that the odds ratio (OR) of not having been ES was higher among women at higher risk for IPV. This includes Arab compared to Jewish women (OR,95%confidence intervals (CI)=1.98,1.16-3.36); and women who experience IPV compared to women who do not experience IPV (OR,95%CI=1.30,1.01-1.67). Unmarried women compared to married are almost twice as likely to report not having ES (OR,95%CI=2.07,1.23-3.27). Women with lower education (high school or less) have higher likelihood of reporting not having ES compared to women with higher education (OR,95%CI=1.75,1.29-2.38).

Among Arab minority women, not having ES was reported more often among women who were not pregnant with 1-2 children at the time of the interview, compared to not pregnant with 3 children or more (OR, 95%CI=1.61,1.04-2.47). Meanwhile, traditional Arab women were less likely to report not having ES for IPV, compared to non-religious Arab women (OR, 95%CI=0.56,0.36-0.89). In addition, women in the North were less likely to report not having ES compared to women in the South (OR,95%CI=0.14,0.06-0.32).

For Jewish women, not having ES was reported more often by: unmarried compared to married women (OR, 95%CI=2.02,1.20-3.40); those with lower education compared to higher or academic education (OR, 95%CI=1.96,1.40-2.76); and women living in Haifa district compared to the Southern district (OR,95%CI=2.08,1.20-3.58). Religious Jewish women were less likely to report not have been ES for IPV compared to not religious women (OR,95%CI=0.66,0.49-0.90).

**Table 2- Multivariable analysis for not ever been screened for IPV in a health care setting in the total sample and among Arab and Jewish women**

	Total sample (N=1355)		Arab women (N=425)		Jewish women (N=930)	
	OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
<b>Ethnicity</b>						
Arab	<b>1.98 (1.16, 3.36)</b>	<b>0.012</b>				
Jewish	1.00					
<b>Women's status at interview</b>						
Pregnant without children	1.88 (0.87, 4.06)	0.107	2.88 (0.94, 8.79)	0.064	1.32 (0.36, 4.82)	0.674
Pregnant with children	1.14 (0.70, 1.87)	0.592	1.39 (0.73, 2.62)	0.316	0.93 (0.46, 1.89)	0.837
Not pregnant with 1-2 children	0.99(0.75, 1.30)	0.945	<b>1.61 (1.04, 2.47)</b>	<b>0.031</b>	0.87 (0.64, 1.18)	0.368
Not pregnant with 3 and more children	1.00		1.00		1.00	
<b>Marital status</b>						
Unmarried	<b>2.07 (1.27, 3.35)</b>	<b>0.003</b>	1.22 (0.06, 24.017)	0.894	<b>2.02 (1.20, 3.40)</b>	<b>0.008</b>
Married	1.00		1.00		1.00	
<b>Women's education</b>						
High school and less	<b>1.75 (1.29, 2.38)</b>	<b>0.000</b>	1.26 (0.61, 2.61)	0.529	<b>1.96 (1.40, 2.76)</b>	<b>0.000</b>
Beyond high school	1.03 (0.72, 1.50)	0.857	0.71 (0.34, 1.49)	0.369	1.09 (0.69, 1.74)	0.706
BA MA PhD	1.00		1.00		1.00	
<b>Women's employment</b>						
No doesn't work	1.09 (0.87, 1.37)	0.454	1.00 (0.64, 1.58)	0.989	1.18 (0.91, 1.53)	0.199
Yes works	1.00		1.00		1.00	
<b>Family source of income</b>						
Other	0.88 (0.65, 1.20)	0.424	0.57 (0.32, 1.02)	0.059	0.95 (0.69, 1.32)	0.773
Social allowances only	1.22 (0.66, 2.26)	0.531	1.70 (0.65, 4.43)	0.277	0.77 (0.33, 1.80)	0.544
From work only	1.00		1.00		1.00	
<b>Religiosity</b>						
Religious	0.78 (0.58, 1.05)	0.103	1.04 (0.69, 1.58)	0.849	<b>0.66 (0.49, 0.90)</b>	<b>0.009</b>
Traditional	0.91 (0.65, 1.27)	0.583	<b>0.56 (0.36, 0.89)</b>	<b>0.013</b>	0.96 (0.64, 1.44)	0.858
Not religious	1.00		1.00		1.00	
<b>Any IPV</b>						

Yes IPV	<b>1.30 (1.01, 1.67)</b>	<b>0.044</b>	1.13 (0.76, 1.69)	0.545	1.36 (0.97, 1.89)	0.073
No IPV	1.00		1.00		1.00	
<b>MOH district</b>						
Center	0.96 (0.57, 1.62)	0.878	0.25 (0.06, 1.04)	0.056	1.57 (0.97, 2.53)	0.068
North	0.56 (0.32, 1.01)	0.054	<b>0.14 (0.06, 0.32)</b>	<b>0.000</b>	1.25 (0.82, 1.90)	0.294
Haifa	1.35 (0.82, 2.24)	0.240	0.44 (0.18, 1.08)	0.072	<b>2.08 (1.20, 3.58)</b>	<b>0.009</b>
South	1.00		1.00		1.00	

Regarding RI on services for coping with IPV among women in the total sample (Table 3), we found that not RI was higher among: Arab compared to Jewish women (OR,95%CI=1.79, 1.24-2.56); pregnant women with children compared with women who were not pregnant with 3 children and more at the time of the interview (OR,95%CI=1.69,1.02-2.78); women with high school education or less compared with women with academic education (OR,95%CI=1.82,1.37-2.34); and women with postsecondary education compared to women with academic-level education (OR,95%CI=1.31, 1.04-1.66). However, women living in the North and Haifa were less likely to report not RI compared to women living in the South (OR,95%CI=0.70,0.52-0.93 and OR,95%CI=0.66, 0.42-1.04, respectively).

Among Arab women, not reporting RI was higher among pregnant women with children compared with women who were not pregnant with 3 children and more (OR,95%CI=2.22, 1.17-4.22), and among women with lower education compared to higher education (OR, 95%CI=2.21,1.31-3.72). However, women living in the Northern district compared with the South were less likely to report not RI (OR, 95%CI=0.45, 0.23-0.88).

As for Jewish participants, compared to younger women, older women were less likely to report not RI (OR,95%CI= 0.59, 0.39-0.88). However, women with lower education compared to academic-educated women were more likely to report not RI (OR, 95%CI=1.57,1.11-2.21). Also, women living in the Center compared to women in the South were more likely to report not RI (OR, 95%CI=1.51,1.17-1.95).



**Table 3- Multivariable analysis for not receiving information about IPV services at a health care setting in the total sample and among Arab and Jewish women in Israel, 2014-2015**

	Total sample (N=1350)		Arab women (N=427)		Jewish women (N=923)	
	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P
<b>Ethnicity</b>						
Arab	<b>1.79 (1.24, 2.56)</b>	<b>0.002</b>				
Jewish	1.00					
<b>Women's age</b>						
35-48	0.86 (0.60, 1.24)	0.410	1.84 (0.85, 3.97)	0.119	<b>0.59 (0.39, 0.88)</b>	<b>0.010</b>
25-34	0.89 (0.65, 1.20)	0.432	1.02 (0.65, 1.60)	0.938	0.73 (0.48, 1.13)	0.158
16-24	1.00		1.00		1.00	
<b>Women's status at interview</b>						
Pregnant without children	0.87 (0.53, 1.42)	0.569	1.19 (0.60, 2.34)	0.616	0.63 (0.26, 1.54)	0.314
Pregnant with children	<b>1.69 (1.02, 2.78)</b>	<b>0.041</b>	<b>2.22 (1.17, 4.22)</b>	<b>0.015</b>	1.30 (0.63, 2.71)	0.481
Not pregnant with 1-2 children	0.86 (0.61, 1.20)	0.365	1.15 (0.70, 1.88)	0.588	0.76 (0.52, 1.12)	0.166
Not pregnant with 3 and more children	1.00		1.00		1.00	
<b>Women's education</b>						
High school and less	<b>1.82 (1.37, 2.43)</b>	<b>0.000</b>	<b>2.21 (1.31, 3.72)</b>	<b>0.003</b>	<b>1.57 (1.11, 2.21)</b>	<b>0.010</b>
Beyond high school	<b>1.31 (1.04, 1.66)</b>	<b>0.024</b>	1.08 (0.61, 1.90)	0.790	1.42 (1.09, 1.83)	0.009
BA MA PhD	1.00		1.00		1.00	
<b>Women's employment</b>						
No doesn't work	1.20 (0.97, 1.49)	0.091	1.10 (0.69, 1.76)	0.690	1.23 (0.98, 1.53)	0.074
Yes works	1.00		1.00		1.00	
<b>Partner employment</b>						
No not working	1.33 (0.88, 2.01)	0.179	1.37 (0.55, 3.38)	0.496	1.32 (0.81, 2.15)	0.267
Yes works	1.00		1.00		1.00	
<b>Family source of income</b>						
Other	0.87 (0.66, 1.14)	0.299	1.24 (0.67, 2.30)	0.499	0.82 (0.62, 1.08)	0.162
Social allowances only	1.09 (0.65, 1.84)	0.745	0.92 (0.39, 2.17)	0.849	1.03 (0.51, 2.05)	0.942
From work only	1.00		1.00		1.00	
<b>Religiosity</b>						
Religious	1.05 (0.76, 1.45)	0.767	0.89 (0.45, 1.78)	0.741	1.03 (0.70, 1.51)	0.877
Traditional	0.89 (0.64, 1.24)	0.487	0.57 (0.28, 1.18)	0.130	1.04 (0.72, 1.50)	0.851
Not religious	1.00		1.00		1.00	
<b>Any IPV</b>						
Yes IPV	1.08 (0.82, 1.41)	0.582	1.17 (0.71, 1.91)	0.540	1.00 (0.73, 1.37)	0.999
No IPV	1.00		1.00		1.00	
<b>MOH district</b>						
Center	1.22 (0.87, 1.69)	0.246	0.45 (0.17, 1.19)	0.108	<b>1.51 (1.17, 1.95)</b>	<b>0.001</b>
North	<b>0.70 (0.52, 0.93)</b>	<b>0.015</b>	<b>0.45 (0.23, 0.88)</b>	<b>0.019</b>	0.85 (0.69, 1.05)	0.136
Haifa	<b>0.66 (0.42, 1.04)</b>	<b>0.072</b>	0.41 (0.16, 1.04)	0.061	0.86 (0.56, 1.33)	0.500
South	1.00		1.00		1.00	

The multivariable results for participants reporting having both ES&RI are presented in Table 4. For the total sample, not reporting both services (ES&RI) was nearly one and a half times more likely in Arab compared to Jewish women (OR,95%CI=1.58,1.00-2.49), almost two times more likely in women with high school education or less compared to those with academic education (OR, 95%CI=1.95,1.42-2.66), unemployed compared to employed women (OR,95%CI=1.34,1.03-1.73), and women living in Haifa compared to the South (OR, 95%CI=1.57,1.00-2.48). Arab women who did not report ES&RI were almost three times

more likely to be of older age, compared to younger age (OR,95%CI=2.94,1.04-8.30), and not pregnant compared to pregnant (OR,95%CI= 2.29,1.05-4.99 and 2.04,1.16-3.59). However, Arab women were less likely to report not having both ES&RI when they live in the Center and North compared to the South (OR, 95%CI=0.27,0.10-0.72 and 0.35,0.15-0.84, respectively).

As for Jewish women, not reporting both ES&RI was lower among women at older age compared to younger age. However, not reporting both ES & RI was more likely among lower educated women compared to higher education women (OR,95%CI=1.99,1.34-2.95), and women living in the Center and Haifa compared to the South (OR, 95%CI=1.96,1.29-2.97 and 1.95,1.20-3.15, respectively).

**Table 4- Multivariable analysis for combined variable of not ever being screened for IPV and not receiving information in a health care setting in the total sample and among Arab and Jewish women in Israel, 2014-2015**

	Total sample (N=1363)		Arab women (N=429)		Jewish women (N=934)	
	OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
<b>Ethnicity</b>						
Arab	<b>1.58 (1.00, 2.49)</b>	<b>0.051</b>				
Jewish	1.00					
<b>Women's age</b>						
35-48	0.91 (0.60, 1.38)	0.653	<b>2.94 (1.04, 8.30)</b>	<b>0.041</b>	<b>0.59 (0.34, 1.00)</b>	<b>0.050</b>
25-34	1.00 (0.69, 1.45)	0.992	1.41 (0.84, 2.37)	0.198	0.74 (0.43, 1.26)	0.263
16-24	1.00		1.00		1.00	
<b>Women's status at interview</b>						
Pregnant without children	1.71 (0.88, 3.30)	0.111	2.18 (0.82, 5.82)	0.119	1.44 (0.46, 4.47)	0.529
Pregnant with children	1.66 (0.98, 2.82)	0.062	<b>2.29 (1.05, 4.99)</b>	<b>0.038</b>	1.24 (0.64, 2.41)	0.523
Not pregnant with 1-2 children	1.15 (0.83, 1.58)	0.402	<b>2.04 (1.16, 3.59)</b>	<b>0.013</b>	1.00 (0.70, 1.42)	0.979
Not pregnant with 3 and more children	1.00		1.00		1.00	
<b>Women's education</b>						
High school and less	<b>1.95 (1.42, 2.66)</b>	<b>0.000</b>	1.52 (0.77, 3.02)	0.227	<b>1.99 (1.34, 2.95)</b>	<b>0.001</b>
Beyond high school	1.17 (0.87, 1.57)	0.307	0.79 (0.40, 1.58)	0.509	1.26 (0.89, 1.78)	0.187
BA MA PhD	1.00		1.00		1.00	
<b>Women's employment</b>						
No doesn't work	<b>1.34 (1.03, 1.73)</b>	<b>0.027</b>	1.33 (0.81, 2.18)	0.263	1.37 (0.99, 1.89)	0.056
Yes works	1.00		1.00		1.00	
<b>Family source of income</b>						
Other	0.89 (0.65, 1.24)	0.498	0.90 (0.47, 1.72)	0.742	0.94 (0.67, 1.32)	0.720
Social allowances only	1.25 (0.72, 2.17)	0.423	0.99 (0.43, 2.25)	0.974	1.30 (0.60, 2.84)	0.503
From work only	1.00		1.00		1.00	
<b>Any IPV</b>						
No IPV	1.17 (0.89, 1.56)	0.266	1.15 (0.64, 2.05)	0.640	1.16 (0.83, 1.62)	0.377
Yes, IPV	1.00		1.00		1.00	
<b>MOH district</b>						
Center	1.39 (0.89, 2.15)	0.143	<b>0.27 (0.10, 0.72)</b>	<b>0.010</b>	<b>1.96 (1.29, 2.97)</b>	<b>0.002</b>
North	0.88 (0.59, 1.33)	0.544	<b>0.35 (0.15, 0.84)</b>	<b>0.018</b>	1.11 (0.76, 1.60)	0.590
Haifa	<b>1.57 (1.00, 2.48)</b>	<b>0.052</b>	0.72 (0.25, 2.08)	0.540	<b>1.95 (1.20, 3.15)</b>	<b>0.007</b>
South	1.00		1.00		1.00	

## DISCUSSION

Universal screening for IPV is recommended within HCS in many countries, as it helps women exposed to IPV to disclose abuse and receive information and counseling.<sup>7 13</sup> However, thus far implementation of universal screening across settings is incomplete.<sup>8</sup> In this study, we asked women of childbearing age in Israel's HCSs if they had ever been screened (ES) for IPV and whether they had ever received information (RI) on what to do in case they are victims of IPV and we created an index variable of both (ES&RI). We found that despite having a universal IPV screening since 2003, this policy is not being followed in HCS settings countrywide in Israel. Less than half (48.4%) of participants reported ever being screened for IPV via HCS. This result is consistent with previous research on screening.<sup>8 12</sup> A realist-informed systematic review of studies focused on implementing universal IPV screening found that in most countries less than half of women were screened.<sup>8</sup> Based on our results it appears that HCPs in Israel need more institutional support to achieve universal screening, which has been recommended elsewhere.<sup>36</sup> Training and enhanced knowledge regarding IPV would help remove barriers among HCPs, including embarrassment about asking women about domestic violence.<sup>30 37</sup>

Despite this, our finding that half the women in our sample were ES is encouraging, as previous Israeli studies found far fewer reports of IPV screening. However, those studies included only small samples. One such study conducted among HCPs in the ob\gyn department of a hospital in central Israel found that only 8 women treated by HCPs per 100 had been screened for IPV, while 12% of women reported having been screened.<sup>37</sup> Given the documented barriers identified by clinicians for universal screening, this discrepancy between reports by staff versus women requires future investigation into women's attitudes towards screening.

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3 Another important finding from our study is that ES for IPV was not associated with IPV.  
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5 Only social IPV was associated with ES, but the direction of the association was opposite to  
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7 our hypothesis: higher social IPV was associated with lower reports of ES. These findings  
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9 contradict previous research findings showing that screening was positively associated with  
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11 reports on IPV.<sup>8 13</sup> Longitudinal research is required in Israel to explore these associations.  
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13 However, it is possible that women with IPV are less likely to report ever being screened for  
14  
15 IPV. In addition, our study sample included young and healthy women less likely to interact  
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17 with HCSs, and therefore less likely to encounter HCPs for IPV screening. Still, all the  
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19 women used MCH clinics at least once (for prenatal care) and, as such, should have been  
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21 screened at these clinics, as per MOH policy.<sup>29</sup>

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24 Disparities we found in IPV screening based on women's ethnicity and socioeconomic status  
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26 show that ES is only partially implemented. As a result, women who are at higher risk for IPV  
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28 (Arab women, lower education, and unmarried) were less likely to be screened for IPV.

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30 Religiosity was also an important factor when we examined ES within each ethnic group.  
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32 These findings suggest that case finding or selective/partial screening fails to identify women  
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34 at risk for IPV. This might explain why ES was not associated with IPV or specific IPV types  
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36 in our study, as women at higher risk for IPV were screened at equal rates. The significant  
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38 interaction we found between ethnicity and MOH district in the association with ES,  
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40 meanwhile, shows that IPV screening is implemented differentially between Arab and Jewish  
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42 women in these districts.  
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46 Results on receiving information (RI) regarding IPV services were similar to those on ES:  
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48 only close to half (50.5%) of participants reported RI. However, any IPV and emotional and  
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50 social types of IPV were associated with RI, but not in the direction we had hypothesized.

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52 Women reported experiencing IPV consistently reported less RI. This association did not  
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54 persist in the multivariate analysis, where in the total sample of women, those with higher risk  
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3 for IPV received less information. This included Arab women, pregnant women with children,  
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5 and women with lower (non-academic) education, and those living in the southern part of the  
6  
7 country. The multivariable analysis for Arab women, meanwhile, showed that women with  
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9 children who were not pregnant at the time of interview, and women with less than high  
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11 school education and living in the southern part of the country were less likely to RI. Among  
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13 Jewish women, younger (16-24yrs), lower educated women living in the Center of Israel were  
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15 less likely to receive information.  
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18 We did not hypothesize that HCPs would find provision of information about IPV  
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20 embarrassing or a source of offense to any of the women who visit MCH clinics. Our result  
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22 should be examined against the medical records of the women. If these disparities are  
23  
24 confirmed, this should be an alarm for policy makers.  
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26  
27 The combined variable we created that includes positive answers on ES&RI confirmed our  
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29 results for each of the variables when examined alone, but revealed an even poorer picture  
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31 regarding IPV service implementation within HCS: only about one third of the women  
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33 reported receiving both services. Further, the multivariable analysis for the combined variable  
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35 showed that women at high risk for IPV were less likely to report receiving both services  
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37 (ES&RI). This includes Arab, lower educated and unemployed women, as well as those living  
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39 in the Haifa district. For Arab women, lower ES&RI was associated with older age, not being  
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41 pregnant at the time of interview, and living in the South. Jewish women of younger ages (16-  
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43 24yrs), with lower education, and living in the Center and in Haifa were less likely to have  
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45 ES&RI. Increased awareness among HCPs about the importance of providing both IPV  
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47 services appears warranted, as well as institutional support for HCPs, including training and  
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49 follow-up protocols to ensure documentation.  
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## Conclusions

Despite Israel's longstanding universal screening policy for IPV, our study identified gaps in implementation of screening and counseling in maternal health clinics. Women at higher risk for IPV were less likely to have been screened or have received information about IPV. These results call for further research to explore barriers among HCPs to IPV service provision. We also conclude that case-finding screening and counseling for IPV is associated with inequalities, specifically for women at higher risk for IPV.

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2  
3 **Author contributions** ND initiated the study, supervised all study, conducted the data  
4 analysis and prepared the paper for publication. RS helped with data programing and data  
5 cleaning. ABP helped with the data collection and prepared the study codebook. ISV and PO  
6 contributed to the study design, critically read previous versions of the paper and suggested  
7 revisions. RL was a research assistant who helped in some updates of the background. All  
8 authors read and confirmed the last version of the paper.  
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15  
16

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18  
19

20 **Patient consent** Not required  
21  
22

23 **Ethics approval** The study was approved by the Human Subjects Research Committee of  
24 Ben-Gurion University of the Negev. Approval no. 1128-1.  
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28 **Data sharing statement** No additional data are available  
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## Appendix 1- Correlations between the study independent variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>1. Ethnicity</b>	1	-.320**	-.234**	-.114**	.227**	.352**	.427**	0.044	-.175**	.162**	.192**	.314**	.357**	.370**	-.136**
<b>2. Women's age</b>		1	.061*	.059*	-.296**	-.218**	-.210**	-0.052	.087**	-.159**	-.059*	-.106**	-.183**	-.152**	.169**
<b>3. Immigrant</b>			1	.108**	-0.052	-.067*	-0.046	0.000	.059*	-.153**	0.009	-0.052	-0.044	-.057*	0.021
<b>4. Marital status</b>				1	-0.028	.066*	-0.014	.090**	.089**	-.137**	0.016	0.039	0.022	0.016	-0.025
<b>5. Women status at interview</b>					1	.128**	.103**	-0.028	-.131**	-0.005	-0.009	.114**	.148**	.135**	-.266**
<b>6. Women's education</b>						1	.355**	.118**	-0.025	.130**	.153**	.170**	.229**	.181**	-.167**
<b>7. Women's employment</b>							1	.108**	-0.017	.131**	.114**	.167**	.208**	.195**	-.127**
<b>8. Partner employment</b>								1	.205**	.206**	0.039	.074**	.087**	.093**	-.134**
<b>9. Family income source</b>									1	0.051	0.014	-0.024	0.025	0.015	-0.028
<b>10. Religiosity</b>										1	0.042	.074**	.130**	.137**	-.118**
<b>11. Physical IPV</b>											1	.309**	.237**	.269**	-0.043
<b>12. Emotional IPV</b>												1	.375**	.775**	-.118**
<b>13. Social IPV</b>													1	.728**	-.116**
<b>14. Any IPV</b>														1	-.113**
<b>15. MOH district</b>															1

## STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No	Recommendation	
<b>Title and abstract</b>	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	Yes
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	Yes
<b>Introduction</b>			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	Yes, pages 5-7
Objectives	3	State specific objectives, including any prespecified hypotheses	Page 8
<b>Methods</b>			
Study design	4	Present key elements of study design early in the paper	Page 8
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Page 8
Participants	6	<i>Cross-sectional study</i> —Give the eligibility criteria, and the sources and methods of selection of participants	Pages 8-9
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	Pages 9-10
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	Pages 9-10 when relevant
Bias	9	Describe any efforts to address potential sources of bias	Page 9
Study size	10	Explain how the study size was arrived at	Pages 8-9
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Pages 10-11
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	Pages 10-11
		(b) Describe any methods used to examine subgroups and interactions	
		(c) Explain how missing data were addressed	
		<i>Cross-sectional study</i> —If applicable, describe analytical methods taking account of sampling strategy	
		(e) Describe any sensitivity analyses	
Continued on next page			
<b>Results</b>			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	Table 1 and page 9

		(b) Give reasons for non-participation at each stage	NR
		(c) Consider use of a flow diagram	NR
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Table 1 and page 9
		(b) Indicate number of participants with missing data for each variable of interest	Table 1
		(c) <i>Cohort study</i> —Summarise follow-up time (eg, average and total amount)	NR
Outcome data	15*		
		<i>Cross-sectional study</i> —Report numbers of outcome events or summary measures	Table 1 and page 9
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	Tables 1 and
		(b) Report category boundaries when continuous variables were categorized	Table 1 and pages 9-13
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NR
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	Tables 2-4 and pages 11-13
<b>Discussion</b>			
Key results	18	Summarise key results with reference to study objectives	Page 16
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Page 19
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Pages 16-18
Generalisability	21	Discuss the generalisability (external validity) of the study results	Page 16
<b>Other information</b>			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Page 20

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at [www.strobe-statement.org](http://www.strobe-statement.org).

# BMJ Open

## Screening and receiving information for intimate partner violence in health care settings: a cross-sectional study of Arab and Jewish women of childbearing age in Israel

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Keywords:	Intimate partner violence screening, Information provision on services, Health care services

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3 **Screening and receiving information for intimate partner violence in health care settings: a**  
4 **cross-sectional study of Arab and Jewish women of childbearing age in Israel**  
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## ABSTRACT

**Objectives:** We studied the proportion of women who have ever been screened (ES) for IPV in a health care setting, received information (RI) about relevant services, or both, and explored disparities in screening and information provision by ethnicity and other characteristics.

**Design:** In 2014-15 we undertook a cross-sectional study, conducting interviews using a structured questionnaire among a stratified sample of 1,401 Arab and Jewish women in Israel.

**Setting:** A sample of 63 maternal and child health clinics (MCH) clinics in four geographical districts.

**Participants:** Women aged 16-48yrs, pregnant or up to 6 months after childbirth.

**Primary and Secondary Outcome Measures:** We used multivariable generalized estimation equation (GEE) analysis to determine characteristics of women who were ES (Has anyone at the HCS ever asked you whether you have experienced IPV?); RI (Have you ever received information about what to do if you experience IPV?); and both (ES&RI).

**Results:** Less than half of participants (48.8%) reported ES; 50.5% RI; and 30% were both ES&RI. Having experienced any IPV was not associated with ES or ES&RI, but was associated with RI in an unexpected direction. Women at higher risk for IPV (Arab minority women, lower education, unmarried) were less likely to report being ES, RI or both. The odds ratio (OR) and 95% confidence intervals (CI) for not ER&RI were: 1.58(1.00-2.49) among Arab compared to Jewish women; 1.95(1.42-2.66) among low education versus academic education women; 1.34(1.03-1.73) among not working versus working. ES, RI and both differ across districts.

**Conclusions:** While Israel mandates screening and providing information regarding IPV among all women visiting the HCS, we found inequalities, suggesting inconsistencies in policy implementation and missed opportunities to detect IPV and support women.



### Strengths and limitations of this study

- Our study is the first that we know of to quantify implementation of IPV screening and information provision, with attention to ethnicity and other characteristics of women who do or do not receive these services.
- We found inequalities in IPV screening and information provision, suggesting inconsistent implementation of the screening policy by health care providers.
- Interviews were conducted in the preferred language of participants (Hebrew, Arabic), thereby facilitating participation.
- Having ever been screened for, or received information on IPV were self-reported, thus record bias could have occurred.
- As our sample was composed of women visiting Ministry of Health MCH clinics, women visiting other clinics were not included, which might pose a selection bias.

## INTRODUCTION

Affecting more than one third of women globally,<sup>1</sup> intimate partner violence (IPV) has been shown to have a major effect on women's physical and mental health.<sup>2</sup> Women who experience IPV tend to use more health care services (HCS)<sup>3 4</sup> and are likely to disclose abuse for the first time to a healthcare provider (HCP),<sup>5</sup> as the latter are often seen as trusted professionals.<sup>6</sup> Therefore, HCPs can play a critical role in detection of IPV within HCS if they ask women about IPV.<sup>7</sup> While the effectiveness of IPV screening has yet to be fully demonstrated in research,<sup>8</sup> studies show that it can encourage women to disclose IPV, which might increase detection.<sup>7 9</sup> Just as importantly, IPV screening within HCS can become an occasion to provide victims with information about and referrals to supportive services,<sup>7 9</sup> as well as to consult with them on how to cope.<sup>7 10</sup>

A Cochrane review<sup>8</sup> distinguishes between different approaches to identifying women exposed to IPV in HCS contexts; *universal screening* prescribes screening for all women interacting with healthcare services in all locations via standardized questions and procedures, regardless of "symptoms" or risk factors; *selective or targeted screening* focuses on women with specific characteristics, such as when pregnant or seeking to terminate a pregnancy, and screens them using the same question; *routine inquiry* asks all women about IPV, but using varying methods or questions according to HCPs and particular women's situations. A *case-finding* is different from screening and it asks women about IPV if they present with symptoms or characteristics of IPV exposure. Proponents of universal screening argue that the severity of the burden of suffering from IPV necessitates a universal protocol.<sup>11 12</sup> They note that screening for IPV within HCS is

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2  
3 associated with minimal risk, discomfort and emotional distress, and has been shown to increase  
4 detection, reduce IPV, and improve the health of screened women.<sup>13</sup> However, some reviews cast  
5 doubt on this view, citing a lack of evidence regarding the benefits of universal screening, and  
6 suggest a case-finding approach to identifying IPV.<sup>8 14</sup> Regardless, since the late 1990s, many  
7 health-professional associations have published clinician guidelines on how to identify and  
8 respond to women who have been abused,<sup>15 16</sup> and health professionals are now increasingly  
9 required to undertake screening in accordance with national health policies. For example, in  
10 2013, the Preventive Services Task Force (USPTF) in the US recommended universal IPV  
11 screening of all women of childbearing age and referral for intervention services for women who  
12 screen positive.<sup>17</sup> Conversely, some European countries (e.g., the UK and Sweden) have enacted  
13 a case finding approach to detect women with IPV.<sup>8 18 19</sup>

14  
15 However, even in countries where medical organizations have recommended universal screening  
16 for IPV within HCS,<sup>11 16 18 20 21</sup> studies show that HCPs do not necessarily carry out this  
17 mandate.<sup>18 22 23</sup> In clinic-based studies in the US, the proportion of screening at least once by  
18 physicians was 11-39%.<sup>24</sup> This low proportion appears to be due to different barriers; clinicians  
19 may not feel confident about screening, not know what questions to ask, or how to respond if a  
20 woman says she is being abused, may feel there is not enough time to screen, or may see other  
21 issues as taking precedence.<sup>9 23</sup> Barriers can also come from women, who may not trust the  
22 provider enough to disclose this sensitive information.<sup>9 25</sup> This may relate to HPC attitudes  
23 towards IPV. For example, Gutmanis<sup>23</sup> identified misconceptions about IPV among HCPs, such  
24 as: “domestic violence is rare,” and “domestic violence is a private matter that should be resolved  
25 without outside intervention.”<sup>23</sup> Nursing staff, while generally expressing more favorable views  
26 toward screening than physicians, have also been shown to face internal barriers to screening,  
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3 especially a fear of offending patients during questioning.<sup>26</sup> While these seem to be individual  
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5 level barriers among HCPs, Gracia-Moreno identified health system–level barriers, including the  
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7 interests of government leadership and the political will to implement a comprehensive health-  
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9 system approach, as affecting whether or not HCPs carry out their role in identifying and helping  
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11 women victims of IPV and sexual violence.<sup>27</sup>  
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14 Meanwhile, research shows women generally support universal IPV screening,<sup>28</sup> and a meta-  
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16 analysis of 25 studies showed they want HCPs to be nonjudgmental, nondirective, and  
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18 understanding of the complexity of partner violence.<sup>6 19</sup> However, other studies suggest that  
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20 minority women and those with low socioeconomic status, who experience higher prevalence of  
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22 IPV,<sup>29-31</sup> might be less likely to be screened by HCPs or receive information about IPV services.  
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26 One study in Hawaii showed that, compared to White women, women from minority groups  
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28 receive less counseling on IPV during prenatal care.<sup>32</sup> This suggests that minority women are  
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30 screened for IPV less often. However, none of the studies we know of shows such disparities, and  
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32 few studies have been conducted on disparities in IPV screening and information provision  
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34 among women at risk for IPV.  
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### 37 **IPV screening in HCS settings in Israel**

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39 Israel is an apt setting for investigating implementation of universal IPV screening due to its  
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41 ethnic makeup, with majority-Jewish and minority indigenous-Arab populations highly stratified  
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43 by class, socioeconomic status and geography. This stratification might differentially affect the  
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45 likelihood that women will feel at ease disclosing IPV in a health care setting.<sup>33</sup> A recent study on  
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47 IPV found that Arab minority women and low-income women in Israel are more likely to report  
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49 IPV compared to Jewish women. Risk factors for IPV among Arab women included younger age,  
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51 higher level of religiosity, and living in urban areas.<sup>33</sup> To respond to domestic violence, in 2003  
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53 the Israeli Ministry of Health issued *Director General Circular no. 23/03*,<sup>34</sup> which mandated  
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3 universal IPV screening for all women who visit HCSs. Yet, the Circular's approach to screening  
4 is inconclusive.<sup>34</sup> It states that "all women who present at the HCS should be asked about IPV"  
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6 which echoes universal screening or routine inquiry (depending on the screening tool), but also  
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8 notes that "specific emphasis should be on women who present with symptoms," implying a case  
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10 finding (not screening). It goes on to say that all pregnant women who visit MCH clinics should  
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12 be asked about IPV, suggesting targeted or selective screening.<sup>34</sup> This inconclusive wording  
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14 contrasts with the conclusive approaches delineated in the abovementioned Cochrane review  
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16 definitions.<sup>8</sup> The Circular thus fails to offer clear direction for IPV screening. This might be a  
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18 source of confusion for HCPs.  
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24 Indeed, a 2010 report by the Ministry of Health (MOH) showed that HCPs hesitate to implement  
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26 the Circular's recommendations.<sup>35</sup> The report, based on in-depth interviews with nurses and  
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28 physicians, identified different barriers to IPV screening and found that nurses are more likely to  
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30 ask about IPV than physicians, but that both are reluctant to screen.<sup>35</sup> Few studies on the practice  
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32 of IPV screening in Israel are available, and most have used small hospital-based samples. For  
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34 example, Ben-Natan et al. (2011)<sup>36</sup> studied a sample of 100 physicians and nurses from obstetrics  
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36 and gynecology departments in a Central Israel hospital. They found that the most cited reason  
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38 for failure to screen for IPV among HCPs was that they are embarrassed by the intimate nature of  
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40 screening, including questioning patients.<sup>36</sup> And a previous nationwide study conducted in 2000  
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42 showed that only 3% of women were asked about domestic violence (not IPV) by a physician at  
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44 primary care clinics.<sup>37</sup>  
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50 Despite these findings, little data yet exist to assess implementation of IPV screening or provision  
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52 of information about related services across Israeli HCSs. Our study aims to examine the  
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54 proportion of women who have ever been screened (ES) for IPV within HSCs, who have received  
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3 information (RI) about IPV services, and both; and to determine characteristics, including  
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5 ethnicity, associated with ES, RI, and both (ES & RI).  
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## 10 **METHODS**

### 11 **Study Design and Sampling**

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15 Data were obtained from our cross-sectional study on “Family Relations, Violence and Health,”  
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17 <sup>29</sup> conducted between October 2014 and October 2015 with approval by the Public Health  
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19 Division of the Israeli Ministry of Health and the Ethics Committee at Ben-Gurion University of  
20  
21 the Negev. Data collection followed the WHO ethical recommendations on safety of women  
22  
23 victims of abuse.<sup>38</sup> A more detailed description of sampling can be found elsewhere,<sup>29</sup> but briefly,  
24  
25 we selected Maternal and Child Health (MCH) clinics via a stratified sampling procedure based  
26  
27 on Israel’s main regions (South, Center, North and Haifa), the proportion of births in each region  
28  
29 or district, and the ethnic composition (Arabs vs. Jews) of the population of women in the region.  
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31 MCH clinics are located in neighborhoods and provide prenatal care, well-child follow-up, and  
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33 required immunizations for different population groups. In this manner we selected 63 MCH  
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35 clinics: 33 in Jewish localities, 21 in Arab localities, and 9 in mixed localities.  
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### 40 **Participants and data collection**

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42 Participants were recruited at the 63 MCH clinics that were sampled for the study. One month  
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44 before data collection the study coordinators distributed leaflets at these clinics with information  
45  
46 about the study. Trained female interviewers asked eligible mothers (pregnant, or 6 weeks to 6  
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48 months after childbirth) to participate in the study. Women who agreed to participate were invited  
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50 into a separate room at the clinics, where they were interviewed face to face using a structured  
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52 questionnaire in the women's preferred language (Arabic or Hebrew) after signing an informed  
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3 consent form. If a participant was detected as having experienced IPV, the interviewer and the  
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5 study team encouraged her to talk with the MCH nurse who could refer her to a social worker in  
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7 the community's social services office. In addition, all study participants received written contact  
8  
9 information on community services that support women who are victims of violence. A total of  
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11 1,401 women were interviewed (436 Arab and 965 Jewish), with a response rate of 76% among  
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13 Arab women, 73% among Jewish women.  
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## 16 17 **Measures**

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19 Dependent variables:

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21 *Ever screened (ES) for IPV*: a yes/no question: "Has anyone at a HCS ever asked you whether  
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23 you have experienced IPV?"  
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27 *Received information (RI) about IPV services*: a yes/no question: "Have you ever received  
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29 information about what to do in case you experience IPV?"; this question was asked regardless of  
30  
31 responses to the preceding question.  
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34 *An index variable of ever screened and received information (ES&RI)*: We created an index  
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36 variable that included positive answers to the previous two questions versus all other answers.  
37

38  
39 Independent Variables:

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41 *Any intimate partner violence (IPV)*: any positive answer to a list of 10 questions about acts of  
42  
43 violence perpetrated by a participant's intimate partner at any time.<sup>29 39</sup> These acts include  
44  
45 physical violence, psychological violence, social control and economic violence. For example,  
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47 'Your partner has hit you, kicked you, pushed you, or thrown things at you?'; 'Does your partner  
48  
49 try to isolate you from your family and friends?' and 'Are you fearful of drastic changes in your  
50  
51 partner's mood?'. Our list of questions was based on those used in the Preventive Services Task  
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53 Force Family screening tool on IPV,<sup>39</sup> and on questions that are used for IPV screening in some  
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3 MCH clinics in Israel. For information about the tool used to assess IPV, please see Daoud et al.,  
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5 2017.<sup>33</sup>  
6

7 *Types of IPV:* resulted from factor analysis for the above 10 acts of IPV, and were categorized as:  
8  
9 physical or sexual violence (e.g., beating, slapping, and kicking; forced sex); emotional or verbal  
10  
11 violence (e.g., threats of harm, constant humiliation, insults); and social or economic violence<sup>33</sup>  
12  
13 (controlling behaviors, such as- isolating a woman from her family and friends; monitoring her  
14  
15 movements; and restricting access to financial resources including employment, education or  
16  
17 medical care).  
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20  
21 *Ethnicity:* self-determined as 1. Arab or 2. Jewish.  
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24 *Immigrant Status:* born in Israel or another country.  
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27 *Age:* 16-24, 25-34 and 35-48 years old.  
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30 *Marital status:* 1. married, and 2. not married, including single, divorced, separated, not-  
31  
32 cohabitating, or other.

33  
34 *Women's status during the interview:* a composite variable based on answers to three questions:  
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36 'Are you currently pregnant?' (yes/ no), 2. 'Do you have children?' (yes/no), and 'How many  
37  
38 children do you have?' We categorized answers as follows: 1. Pregnant with no children, 2.  
39  
40 Pregnant with children, 3. Not pregnant with 1-2 children, and 4. Not pregnant with 3 children or  
41  
42 more.  
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45 *Women's education and husband's education:* 1. High school or less, 2. Postsecondary education,  
46  
47 and 3. University education (Bachelor's, Master's or Doctorate).  
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50 *Employment status for women and husbands:* A yes/no question about current work outside the  
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52 household by participants and their partners.  
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3 *Family source of income:* 1. Work only, 2. Social allowances only, or 3. Other source, which  
4 included any combination of work and social allowances, and work and other resources, such as a  
5 grant, family support, land, or other source of income.  
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10 *Religiosity:* 1. Religious or very religious, 2. Traditional, 3. Not religious.<sup>40 41</sup>

11  
12 *Ministry of Health (MOH) district:* Based on the country's geographic areas. We categorized  
13 these into four districts: We named these districts as A, B, C and D to keep the information about  
14 the district's performance anonymous.  
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### 18 **Statistical Analysis**

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20 We calculated the proportion (%) of our main variables (ES, RI and the index variable of ES&RI)  
21 for the total sample of women, and examined women's characteristics across these variables  
22 using the Chi Square test. Next, we examined univariate associations between IPV; types of IPV;  
23 and ES, RI and the ES&RI index variable. Since Arab and Jewish women differed in most of the  
24 independent and dependent variables, we examined interactions between ethnicity and each of the  
25 associations between independent variables and ER, RI and the index variable (ES&RI). The  
26 interaction with the MOH district variable was positive. Therefore, we decided to conduct our  
27 multivariate analysis for each ethnic group (Arab and Jewish) in addition to the multivariable  
28 analysis for the total sample. We used Generalized Estimating Equation analysis (GEE) in the  
29 multivariable analysis to adjust for the MCH clinic cluster effect, while adjusting for significant  
30 ( $P<0.05$ ) independent variables that were associated with ES, RI and the ES&RI index variable in  
31 the univariate analysis. Three multivariable analysis models were fitted for each study group in  
32 order to examine characteristics of women who received the services we studied: ES, RI and  
33 ES&RI.  
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3 The correlation between the study independent variables was lower than our threshold of  $R > 0.4$ ,  
4 and we did not exclude any of these variables from the multivariable analysis, as multi-  
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7 collinearity was not likely (see Appendix 1).  
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### 10 **Patient and public involvement**

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13 Patients and the public were not involved in this research  
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15

### 16 **RESULTS**

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20 Less than half of the women reported ever having been screened (ES) for IPV (48.4%), close to  
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22 half (50.5%) received information (RI) about services for coping with IPV, and only 30.4%  
23  
24 reported both ES&RI (Table 1).  
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27  
28 Table 1 also presents characteristics of women who received each of these services out of the  
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30 total sample of participants. Notably, experiencing any IPV, physical, and emotional IPV was not  
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32 associated with having ES for IPV. However, women who reported less social IPV were more  
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34 likely to report ES. In addition, reporting ES was higher among Jewish women; married women;  
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36 those not pregnant with three children or more; women with postsecondary education or an  
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38 academic degree; employed women with main source of family income from work; religious or  
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40 very religious women; and those living in districts C and D. Age, immigrant status, and partner  
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42 employment were not associated with reporting ES for IPV.  
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46 Reporting RI on services for coping with IPV was more likely among women who reported not  
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48 experiencing any IPV, or emotional or social IPV. Physical IPV was not associated with RI.

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50 However, reporting RI was higher among Jewish women; older women; women not pregnant;  
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52 with 1-2 children; women with academic education; employed women, and women with  
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54 employed partners; women with an income source from work and other sources; women who are  
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not religious; and women who live in district B. RI was not associated with immigrant or marital status (Table 1).

Women who reported both ES & RI were more likely to be Jewish, older, not pregnant during the interview, with children, with higher education, employed, and with family income from other sources. However, the variables of any IPV, types of IPV, immigrant status, marital status, partner employment, religiosity, and MOH district were not associated with reporting both services (ES&RI).

**Table 1- Univariate association for ever being screened (ES) for intimate partner violence (IPV), receiving information (RI) about IPV services, and both, among women in the study sample in Israel, 2014-2015**

Women's characteristics	Total sample N=1401		ES for IPV		RI about IPV services		ES & RI	
	N (%)	N (%)	P=	N (%)	P=	N (%)	P=	
<b>Total =</b>		<b>675 (48.4)</b>		<b>708 (50.5)</b>		<b>425 (30.4)</b>		
<b>Any IPV</b>			0.250		0.011		0.134	
Yes	843 (39.8)	259 (46.5)		259 (46.4)		157 (28.1)		
No	558 (60.2)	416 (49.6)		449 (53.4)		268 (31.9)		
<b>Physical IPV</b>			0.805		0.925		0.677	
No	1333 (95.1)	643 (48.4)		674 (50.6)		407 (30.6)		
Yes	64 (4.6)	32 (50.0)		32 (50.0)		18 (28.1)		
<b>Emotional IPV</b>			0.397		0.005		0.104	
No	997 (71.4)	489 (49.2)		527 (52.9)		316 (31.8)		
Yes	399 (28.6)	186 (46.7)		178 (44.6)		109 (27.3)		
<b>Social IPV</b>			0.038		0.007		0.115	
No	1033 (73.7)	516 (50.1)		544 (52.7)		326 (31.6)		
Yes	364 (26.1)	159 (43.8)		162 (44.5)		99 (27.2)		
<b>Ethnicity</b>			<0.001		<0.001		<0.001	
Arab	434 (31.1)	162 (37.3)		166 (38.1)		89 (20.4)		
Jewish	965 (68.9)	513 (53.4)		542 (56.3)		336 (34.9)		
<b>Age</b>			0.096		0.004		0.010	
16-24	247 (17.6)	104 (42.4)		101 (40.9)		56 (22.8)		
25-34	844 (60.3)	413 (49.1)		444 (52.7)		263 (31.2)		
35-48	309 (22.1)	158 (51.3)		162 (52.4)		106 (34.3)		
<b>Immigrant</b>			0.954		0.234		0.588	
Not immigrant	1133 (81.4)	547 (48.4)		565 (50.0)		340 (30.1)		
Immigrant	259 (18.6)	124 (48.2)		140 (54.1)		82 (31.8)		
<b>Marital status</b>			0.018		0.129		0.237	
Married	1329 (95.2)	650 (49.1)		666 (50.2)		407 (30.7)		
Other	67 (4.8)	23 (34.3)		40 (59.7)		16 (23.9)		
<b>Women's status during interview</b>			<0.001		<0.001		<0.001	
Not pregnant with 3+children	390 (28.0)	204 (52.6)		194 (49.7)		136 (34.9)		
Not pregnant with 1-2 children	737 (52.9)	376 (51.1)		412 (55.9)		234 (31.8)		

3	Pregnant with children	187 (13.4)	70 (37.8)	62 (33.3)	38 (20.4)	
4	Pregnant without children	80 (5.7)	21 (26.3)	36 (45.0)	14 (17.5)	
5	<b>Education (woman)</b>			<0.001	<0.001	<0.001
6	High school or less	537 (38.3)	204 (38.2)	211 (39.3)	111 (20.7)	
7	Postsecondary or college	251 (17.9)	134 (53.6)	126 (50.6)	82 (32.8)	
8	Bachelor degree or above	613 (43.8)	337 (55.2)	371 (60.5)	232 (37.8)	
9	<b>Employment (woman)</b>			<0.001	<0.001	<0.001
10	Yes	781 (56.6)	414 (53.0)	445 (56.8)	279 (35.7)	
11	No	59.8 (43.4)	252 (42.1)	257 (42.8)	141 (23.5)	
12	<b>Employment (partner)</b>			0.791	0.005	0.229
13	Yes	1222 (88.0)	592 (48.7)	633 (51.9)	379 (31.1)	
14	No	166 (12.0)	79 (47.6)	67 (40.0)	44 (26.5)	
15	<b>Household income source</b>			0.001	<0.001	0.005
16	Work only	982 (70.1)	466 (47.6)	493 (50.3)	290 (29.6)	
17	Social allowances only	79 (5.6)	25 (31.6)	25 (31.6)	14 (17.7)	
18	Work and other source	340 (24.3)	184 (54.4)	190 (56.0)	121 (35.7)	
19	<b>Religiosity</b>			0.002	0.041	0.604
20	Not religious	440 (31.5)	220 (50.1)	244 (55.6)	135 (30.7)	
21	Traditional	608 (43.5)	262 (43.4)	298 (49.0)	177 (29.2)	
22	Religious or very religious	351 (25.1)	193 (55.1)	166 (47.4)	113 (32.3)	
23	<b>MOH* District</b>			0.001	0.019	0.344
24	A	358 (25.7)	160 (45.1)	166 (46.5)	113 (31.7)	
25	B	212 (15.2)	82 (38.7)	127 (59.9)	54 (25.5)	
26	C	334 (24.0)	183 (54.8)	165 (49.4)	102 (30.5)	
27	D	485 (35.0)	248 (51.1)	248 (51.0)	156 (32.1)	

\* MOH Ministry of Health

For the multivariable analysis, we considered variables that were significantly associated in the bivariate analysis with each of our outcome variables of ES, RI and both (ES&RI). Since we found significant interactions of ethnicity (Jewish vs. Arab) and the associations between the MOH district variable and ES, RI and ES&RI, we conducted GEE multivariable analysis for each of these dependent variables (ES, RI and both) for the total sample of women, and then separately for each ethnic group. The results of the multivariable analysis are presented in Tables 2-4.

Results of the GEE for having been ES for IPV among the total sample (Table 2) show that the odds ratio (OR) of not having been ES was higher among women at higher risk for IPV. This includes Arab compared to Jewish women (OR, 95% confidence intervals (CI)=1.98,1.16-3.36); and women who experience IPV compared to women who do not experience IPV (OR, 95%CI=1.30,1.01-1.67). Unmarried women compared to married were almost twice as likely to report not having ES (OR, 95%CI=2.07,1.23-3.27). Women with lower education (high school or

less) had a higher likelihood of reporting not having ES compared to women with higher education (OR, 95%CI=1.75,1.29-2.38).

Among Arab minority women, not having ES was reported more often among women who were not pregnant, with 1-2 children at the time of the interview, compared to those not pregnant with 3 children or more (OR, 95%CI=1.61,1.04-2.47). Meanwhile, traditional Arab women were less likely to report not having ES for IPV compared to non-religious Arab women (OR, 95%CI=0.56,0.36-0.89). In addition, women in district C were less likely to report not having ES compared to women in district A (OR, 95%CI=0.14,0.06-0.32).

For Jewish women, not having ES was reported more often by: unmarried compared to married women (OR, 95%CI=2.02,1.20-3.40); those with lower education compared to higher or academic education (OR, 95%CI=1.96,1.40-2.76); and women living in district B compared to district A (OR, 95%CI=2.08,1.20-3.58). Religious Jewish women were less likely to report not having ES for IPV compared to non-religious women (OR, 95%CI=0.66,0.49-0.90).

**Table 2- Multivariable analysis for not ever been screened for IPV in a health care setting in the total sample and among Arab and Jewish women**

	Total sample (N=1355)		Arab women (N=425)		Jewish women (N=930)	
	OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
<b>Ethnicity</b>						
Arab	<b>1.98 (1.16, 3.36)</b>	<b>0.012</b>				
Jewish	1.00					
<b>Women's status at interview</b>						
Pregnant without children	1.88 (0.87, 4.06)	0.107	2.88 (0.94, 8.79)	0.064	1.32 (0.36, 4.82)	0.674
Pregnant with children	1.14 (0.70, 1.87)	0.592	1.39 (0.73, 2.62)	0.316	0.93 (0.46, 1.89)	0.837
Not pregnant with 1-2 children	0.99(0.75, 1.30)	0.945	<b>1.61 (1.04, 2.47)</b>	<b>0.031</b>	0.87 (0.64, 1.18)	0.368
Not pregnant with 3 or more children	1.00		1.00		1.00	
<b>Marital status</b>						
Unmarried	<b>2.07 (1.27, 3.35)</b>	<b>0.003</b>	1.22 (0.06, 24.017)	0.894	<b>2.02 (1.20, 3.40)</b>	<b>0.008</b>
Married	1.00		1.00		1.00	
<b>Women's education</b>						
High school and less	<b>1.75 (1.29, 2.38)</b>	<b>0.000</b>	1.26 (0.61, 2.61)	0.529	<b>1.96 (1.40, 2.76)</b>	<b>0.000</b>
Beyond high school	1.03 (0.72, 1.50)	0.857	0.71 (0.34, 1.49)	0.369	1.09 (0.69, 1.74)	0.706
BA MA PhD	1.00		1.00		1.00	
<b>Women's employment</b>						
No doesn't work	1.09 (0.87, 1.37)	0.454	1.00 (0.64, 1.58)	0.989	1.18 (0.91, 1.53)	0.199
Yes works	1.00		1.00		1.00	

<b>Family source of income</b>							
Other	0.88 (0.65, 1.20)	0.424	0.57 (0.32, 1.02)	0.059	0.95 (0.69, 1.32)	0.773	
Social allowances only	1.22 (0.66, 2.26)	0.531	1.70 (0.65, 4.43)	0.277	0.77 (0.33, 1.80)	0.544	
From work only	1.00		1.00		1.00		
<b>Religiosity</b>							
Religious	0.78 (0.58, 1.05)	0.103	1.04 (0.69, 1.58)	0.849	<b>0.66 (0.49, 0.90)</b>	<b>0.009</b>	
Traditional	0.91 (0.65, 1.27)	0.583	<b>0.56 (0.36, 0.89)</b>	<b>0.013</b>	0.96 (0.64, 1.44)	0.858	
Not religious	1.00		1.00		1.00		
<b>Any IPV</b>							
Yes IPV	<b>1.30 (1.01, 1.67)</b>	<b>0.044</b>	1.13 (0.76, 1.69)	0.545	1.36 (0.97, 1.89)	0.073	
No IPV	1.00		1.00		1.00		
<b>MOH* district</b>							
D	0.96 (0.57, 1.62)	0.878	0.25 (0.06, 1.04)	0.056	1.57 (0.97, 2.53)	0.068	
C	0.56 (0.32, 1.01)	0.054	<b>0.14 (0.06, 0.32)</b>	<b>0.000</b>	1.25 (0.82, 1.90)	0.294	
B	1.35 (0.82, 2.24)	0.240	0.44 (0.18, 1.08)	0.072	<b>2.08 (1.20, 3.58)</b>	<b>0.009</b>	
A	1.00		1.00		1.00		

\* MOH Ministry of Health

Regarding RI on services for coping with IPV, among women in the total sample (Table 3) we found that not RI was higher among: Arab compared to Jewish women (OR, 95%CI=1.79, 1.24-2.56); pregnant women with children compared with women who were not pregnant with 3 children or more at the time of the interview (OR, 95%CI=1.69,1.02-2.78); women with high school education or less compared with women with academic education (OR, 95%CI=1.82,1.37-2.34); and women with postsecondary education compared to women with academic-level education (OR, 95%CI=1.31, 1.04-1.66). Women living in district C and district B were less likely to report not RI compared to women living in district A (OR, 95%CI=0.70,0.52-0.93 and OR, 95%CI=0.66, 0.42-1.04, respectively).

Among Arab women, not reporting RI was higher among pregnant women with children compared with women who were not pregnant with 3 children or more (OR, 95%CI=2.22, 1.17-4.22), and among women with lower education compared to higher education (OR, 95%CI=2.21,1.31-3.72). Women living in district C compared with district A were less likely to report not RI (OR, 95%CI=0.45, 0.23-0.88).

As for Jewish participants, compared to younger women, older women were less likely to report not RI (OR, 95%CI= 0.59, 0.39-0.88). However, women with lower education compared to

academic educated women were more likely to report not RI (OR, 95% CI=1.57,1.11-2.21). Also, women living in the district D compared to women in district A were more likely to report not RI (OR, 95%CI=1.51,1.17-1.95).

**Table 3- Multivariable analysis for not receiving information about IPV services in a health care setting in the total sample and among Arab and Jewish women in Israel, 2014-2015**

	Total sample (N=1350)		Arab women (N=427)		Jewish women (N=923)	
	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P
<b>Ethnicity</b>						
Arab	<b>1.79 (1.24, 2.56)</b>	<b>0.002</b>				
Jewish	1.00					
<b>Women's age</b>						
35-48	0.86 (0.60, 1.24)	0.410	1.84 (0.85, 3.97)	0.119	<b>0.59 (0.39, 0.88)</b>	<b>0.010</b>
25-34	0.89 (0.65, 1.20)	0.432	1.02 (0.65, 1.60)	0.938	0.73 (0.48, 1.13)	0.158
16-24	1.00		1.00		1.00	
<b>Women's status at interview</b>						
Pregnant without children	0.87 (0.53, 1.42)	0.569	1.19 (0.60, 2.34)	0.616	0.63 (0.26, 1.54)	0.314
Pregnant with children	<b>1.69 (1.02, 2.78)</b>	<b>0.041</b>	<b>2.22 (1.17, 4.22)</b>	<b>0.015</b>	1.30 (0.63, 2.71)	0.481
Not pregnant with 1-2 children	0.86 (0.61, 1.20)	0.365	1.15 (0.70, 1.88)	0.588	0.76 (0.52, 1.12)	0.166
Not pregnant with 3 or more children	1.00		1.00		1.00	
<b>Women's education</b>						
High school and less	<b>1.82 (1.37, 2.43)</b>	<b>0.000</b>	<b>2.21 (1.31, 3.72)</b>	<b>0.003</b>	<b>1.57 (1.11, 2.21)</b>	<b>0.010</b>
Beyond high school	<b>1.31 (1.04, 1.66)</b>	<b>0.024</b>	1.08 (0.61, 1.90)	0.790	1.42 (1.09, 1.83)	0.009
BA MA PhD	1.00		1.00		1.00	
<b>Women's employment</b>						
No doesn't work	1.20 (0.97, 1.49)	0.091	1.10 (0.69, 1.76)	0.690	1.23 (0.98, 1.53)	0.074
Yes works	1.00		1.00		1.00	
<b>Partner employment</b>						
No not working	1.33 (0.88, 2.01)	0.179	1.37 (0.55, 3.38)	0.496	1.32 (0.81, 2.15)	0.267
Yes works	1.00		1.00		1.00	
<b>Family source of income</b>						
Other	0.87 (0.66, 1.14)	0.299	1.24 (0.67, 2.30)	0.499	0.82 (0.62, 1.08)	0.162
Social allowances only	1.09 (0.65, 1.84)	0.745	0.92 (0.39, 2.17)	0.849	1.03 (0.51, 2.05)	0.942
From work only	1.00		1.00		1.00	
<b>Religiosity</b>						
Religious	1.05 (0.76, 1.45)	0.767	0.89 (0.45, 1.78)	0.741	1.03 (0.70, 1.51)	0.877
Traditional	0.89 (0.64, 1.24)	0.487	0.57 (0.28, 1.18)	0.130	1.04 (0.72, 1.50)	0.851
Not religious	1.00		1.00		1.00	
<b>Any IPV</b>						
Yes IPV	1.08 (0.82, 1.41)	0.582	1.17 (0.71, 1.91)	0.540	1.00 (0.73, 1.37)	0.999
No IPV	1.00		1.00		1.00	
<b>MOH* district</b>						
D	1.22 (0.87, 1.69)	0.246	0.45 (0.17, 1.19)	0.108	<b>1.51 (1.17, 1.95)</b>	<b>0.001</b>
C	<b>0.70 (0.52, 0.93)</b>	<b>0.015</b>	<b>0.45 (0.23, 0.88)</b>	<b>0.019</b>	0.85 (0.69, 1.05)	0.136
B	<b>0.66 (0.42, 1.04)</b>	<b>0.072</b>	0.41 (0.16, 1.04)	0.061	0.86 (0.56, 1.33)	0.500
A	1.00		1.00		1.00	

\* MOH Ministry of Health

The multivariable results for participants reporting having both ES&RI are presented in Table 4.

For the total sample, not reporting both services (ES&RI) was nearly one and a half times more

likely among Arab compared to Jewish women (OR, 95%CI=1.58,1.00-2.49), almost two times more likely in women with high school education or less compared to those with academic education (OR, 95%CI=1.95,1.42-2.66), unemployed compared to employed women (OR, 95%CI=1.34,1.03-1.73), and women living in district B compared to district A (OR, 95%CI=1.57,1.00-2.48). Arab women who did not report ES&RI were almost three times more likely to be of older age, compared to younger age (OR,95%CI=2.94,1.04-8.30), and not pregnant compared to pregnant (OR,95%CI= 2.29,1.05-4.99 and 2.04,1.16-3.59). However, Arab women were less likely to report not having both ES&RI if they live in district D and district C compared to district A (OR, 95%CI=0.27,0.10-0.72 and 0.35,0.15-0.84, respectively).

As for Jewish women, not reporting both ES&RI was lower among women at older age compared to younger age. However, not reporting both ES & RI was more likely among lower educated women compared to higher educated women (OR, 95%CI=1.99,1.34-2.95), and women living in district D and district B compared to district A (OR, 95%CI=1.96,1.29-2.97 and 1.95,1.20-3.15, respectively).

**Table 4- Multivariable analysis for the combined variable of not ever being screened for IPV and not receiving information in a health care setting in the total sample and among Arab and Jewish women in Israel, 2014-2015**

	Total sample (N=1363)		Arab women (N=429)		Jewish women (N=934)	
	OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
<b>Ethnicity</b>						
Arab	<b>1.58 (1.00, 2.49)</b>	<b>0.051</b>				
Jewish	1.00					
<b>Women's age</b>						
35-48	0.91 (0.60, 1.38)	0.653	<b>2.94 (1.04, 8.30)</b>	<b>0.041</b>	<b>0.59 (0.34, 1.00)</b>	<b>0.050</b>
25-34	1.00 (0.69, 1.45)	0.992	1.41 (0.84, 2.37)	0.198	0.74 (0.43, 1.26)	0.263
16-24	1.00		1.00		1.00	
<b>Women's status at interview</b>						
Pregnant without children	1.71 (0.88, 3.30)	0.111	2.18 (0.82, 5.82)	0.119	1.44 (0.46, 4.47)	0.529
Pregnant with children	1.66 (0.98, 2.82)	0.062	<b>2.29 (1.05, 4.99)</b>	<b>0.038</b>	1.24 (0.64, 2.41)	0.523
Not pregnant with 1-2 children	1.15 (0.83, 1.58)	0.402	<b>2.04 (1.16, 3.59)</b>	<b>0.013</b>	1.00 (0.70, 1.42)	0.979
Not pregnant with 3 or more children	1.00		1.00		1.00	
<b>Women's education</b>						
High school and less	<b>1.95 (1.42, 2.66)</b>	<b>0.000</b>	1.52 (0.77, 3.02)	0.227	<b>1.99 (1.34, 2.95)</b>	<b>0.001</b>
Beyond high school	1.17 (0.87, 1.57)	0.307	0.79 (0.40, 1.58)	0.509	1.26 (0.89, 1.78)	0.187
BA MA PhD	1.00		1.00		1.00	



<b>Women's employment</b>							
No doesn't work	<b>1.34 (1.03, 1.73)</b>	<b>0.027</b>	1.33 (0.81, 2.18)	0.263	1.37 (0.99, 1.89)	0.056	
Yes works	1.00		1.00		1.00		
<b>Family source of income</b>							
Other	0.89 (0.65, 1.24)	0.498	0.90 (0.47, 1.72)	0.742	0.94 (0.67, 1.32)	0.720	
Social allowances only	1.25 (0.72, 2.17)	0.423	0.99 (0.43, 2.25)	0.974	1.30 (0.60, 2.84)	0.503	
From work only	1.00		1.00		1.00		
<b>Any IPV</b>							
No IPV	1.17 (0.89, 1.56)	0.266	1.15 (0.64, 2.05)	0.640	1.16 (0.83, 1.62)	0.377	
Yes, IPV	1.00		1.00		1.00		
<b>MOH* district</b>							
D	1.39 (0.89, 2.15)	0.143	<b>0.27 (0.10, 0.72)</b>	<b>0.010</b>	<b>1.96 (1.29, 2.97)</b>	<b>0.002</b>	
C	0.88 (0.59, 1.33)	0.544	<b>0.35 (0.15, 0.84)</b>	<b>0.018</b>	1.11 (0.76, 1.60)	0.590	
B	<b>1.57 (1.00, 2.48)</b>	<b>0.052</b>	0.72 (0.25, 2.08)	0.540	<b>1.95 (1.20, 3.15)</b>	<b>0.007</b>	
A	1.00		1.00		1.00		

\* MOH Ministry of Health

## DISCUSSION

Screening for IPV is recommended within HCS in many countries,<sup>16 27</sup> as it helps women who experience IPV to disclose abuse and receive information about supportive social and health care services.<sup>7 13</sup> While there are different screening approaches, thus far, implementation of IPV screening across settings is incomplete.<sup>9</sup> Insufficient system support for HCPs, as well as lack of skills and resources among HCPs are major barriers to fuller implementation and, therefore, health-care system action to support these women.<sup>27</sup> In the current study, we asked women of childbearing age if they had ever been screened (ES) for IPV in Israel's HCS, and whether they had ever received information (RI) on what to do in case they experience IPV. We also created an index variable of both (ES&RI). We found that despite the MOH Circular from 2003 on IPV, which mandates screening for every woman who interacts with HCS, including MCH clinics. this policy is not being followed consistently countrywide. Less than half (48.4%) of our study participants reported ever being screened for IPV via HCS. This result might be related to confusion among HCPs over screening methods, as the 2003 Circular is not conclusive in this regard. On the one hand, it mandates a universal screening, and on the other, it specifies conditions for case-finding.<sup>34</sup> Despite this, our results are consistent with previous research on

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3 IPV screening.<sup>9 12</sup> A realist-informed systematic review of studies on IPV screening  
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5 implementing found that in most countries less than half of women were screened.<sup>9</sup> Based on our  
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7 results it appears that HCPs in Israel need more health system support to achieve greater  
8  
9 screening coverage. Therefore, the Ministry of Health in Israel should offer consistent, sustained  
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11 training to enhance knowledge among HCPs regarding IPV and IPV screening, and remove  
12  
13 barriers, including embarrassment, when screening women about IPV.<sup>35 42</sup> Despite the fact that  
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15 enhanced training for IPV screening might not increase the screening over mandatory screening,  
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17 it can increase safety planning for women victims of IPV as was shown in the MOVE study in  
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19 Australia.<sup>43</sup>  
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24 Despite this, our finding that half the women in our sample were ES is encouraging, as previous  
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26 studies in Israel have found far fewer reports of IPV screening.<sup>36 42 44</sup> However, those studies  
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28 included only small samples. One such study, conducted in the ob\gyn department of a hospital in  
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30 central Israel, found that only 12% of women patients reported having been screened for domestic  
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32 violence in the past year.<sup>42</sup> e  
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36 Another important finding from our study is that ES was not associated with most types of IPV  
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38 variables. Only the association between ES and social and economic IPV was significant, but the  
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40 direction of the association was opposite to our hypothesis: women exposed to social and  
41  
42 economic IPV were less likely to ever have been screened. While these results might be related to  
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44 power issues, due to smaller subsamples of women in our study who reported different types of  
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46 IPV, it should raise the attention of policy makers at the MOH.  
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50 The disparities we found in IPV screening based on women's ethnicity and socioeconomic status  
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52 are of concern, as they show inequalities in screening between groups in Israel. Women who are  
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54 at higher risk for IPV (Arab minority women, those with lower education, and unmarried women)  
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3 were less likely to be screened for IPV. Religiosity was also an important factor when we  
4  
5 examined ES within each ethnic group. These findings also suggest that without a conclusive  
6  
7 HCS screening protocol for IPV, some women at risk for IPV are not being identified. This is  
8  
9 consistent with a qualitative study in the US showing that a lack of a clear screening policy was a  
10  
11 barrier to disclosure of IPV.<sup>25</sup> This lack of a clear IPV screening policy might explain why ES  
12  
13 was not significantly associated with any IPV and some specific IPV types in our study.  
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15 Our results about failure to screen women who are at risk of IPV might be related to different  
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17 barriers, including a lack of training on their part for how to screen; lack of time in busy clinics;  
18  
19 or reluctance to screen due to prejudices related to IPV. These barriers were mentioned in a  
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21 Ministry of Health quality assessment report on IPV screening that was based on interviews with  
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23 HCPs.<sup>35</sup> While previous research shows that screening and referral alone are not sufficient to  
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25 support women living with domestic violence,<sup>45</sup> as these women have multiple social and health  
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27 needs,<sup>46-48</sup> enhanced training would help in increasing the safety planning for these women.<sup>43</sup>  
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33 The significant interaction we found between ethnicity and MOH district (area of living) in the  
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35 association with ES, meanwhile, shows that IPV screening is implemented differentially among  
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37 Arab and Jewish women in these districts. While we do not know the ethnic composition of  
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39 HCPs, or whether Arab and Jewish women are reluctant to disclose IPV to HCPs of another or  
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41 same ethnicity, previous research has shown that Arab women tend to use fewer professional  
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43 services for coping with IPV, regardless of HCP ethnicity.<sup>49</sup> Future research should examine  
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45 HCP's attitudes, consider the prospect of cultural bias in IPV screening, and examine whether  
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47 HCPs make assumptions about the lack of support in the community for minority women who  
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49 experience IPV.<sup>35</sup>  
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3 Our results on receiving information (RI) regarding IPV services were similar to those on ES: just  
4 over half (50.5%) of participants reported RI. However, any IPV, emotional IPV and social and  
5 economic IPV were associated with RI, but not in the direction we had hypothesized. Women  
6 who reported experiencing IPV consistently reported less RI. This association did not persist in  
7 the multivariate analysis, where, in the total sample of women, those with higher risk for IPV  
8 received less information. This included Arab women, pregnant women with children, women  
9 with lower (non-academic) education, and those living in district A, which is more economically  
10 disadvantaged compared to the other three districts. The multivariable analysis for Arab women,  
11 meanwhile, showed that women with children, not pregnant at the time of interview, and women  
12 with less than high school education and living in district A (that has a higher concentration of  
13 Arab women living in economically disadvantaged conditions) were less likely to RI. Among  
14 Jewish women, younger (16-24yrs), lower educated women living in district D (more  
15 economically advantaged region compared to the other three) were less likely to receive  
16 information.

17  
18 Since, according to Ministry of Health policy in Israel, it is mandatory that all women receive  
19 information about IPV services, provision of information should be reported by all study  
20 participants. However, we found that only about half of the women had RI on IPV services. RI  
21 should be recorded in all women's medical files, and our result can then be examined against  
22 those medical records. If the disparities are confirmed, this should be an alarm bell for policy  
23 makers.

24  
25 The combined variable we created that includes positive answers on ES&RI confirmed our results  
26 for each of the variables when examined alone, but revealed an even poorer picture regarding IPV  
27 service implementation within HCS: only about one third of the women reported receiving both

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3 services. Further, the multivariable analysis for the combined variable showed that women at high  
4 risk for IPV were less likely to report receiving both services (ES&RI). This included Arab, lower  
5 educated and unemployed women, as well as those living in district B (characterized by an  
6 ethnically mixed population). We do not know why these differences by district exist in our  
7 study, and we believe this requires future research. For Arab women, lower ES&RI was  
8 associated with older age, not being pregnant at the time of interview, and living in district A  
9 (economically disadvantaged area). Jewish women of younger ages (16-24yrs), with lower  
10 education, and living in districts D (more economically advantaged) and B (characterized by  
11 ethnically mixed population) were less likely to have ES&RI. Increased awareness among HCPs  
12 about the importance of providing both IPV services appears warranted, as well as institutional  
13 support for HCPs, including training and follow-up protocols to ensure documentation.  
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### 28 **Study limitations**

29  
30 Our study makes a novel contribution to research assessing IPV screening within health care  
31 services. However the study has some limitations that should be noted. First, our measure of IPV  
32 asks about any (current or past) events, but the timing of these acts, including when they began, is  
33 not known. Likewise, our interview asked about past screening, but did not specify when. Future  
34 research should ask when IPV began, as well as determine screening timing. Next, recall bias was  
35 likely in our study, as some women might not remember that they have been screened or received  
36 information. However, it is reasonable to assume that this is most likely to occur in women who  
37 had not experienced IPV, as it would often be of less importance to them. This could result in  
38 underestimation of the association between ES, RI or both and having experienced IPV. A  
39 selection bias might also be a possibility, as our study was based on a sample of women who visit  
40 MCH clinics of the MOH in Israel. Still, we used a stratified sample, and the sociodemographic  
41 characteristics of our sample are very close to those for women of reproductive age in Israel.<sup>50</sup>  
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3 Future research should examine screening among women in other HCS settings in Israel, such as  
4 primary care clinics, MCH clinics run by the Sick Funds (health care management organizations),  
5  
6 and others in the municipalities of Jerusalem and Tel-Aviv.  
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## 9 10 **Conclusions**

11  
12 Despite Israel's longstanding IPV screening policy for all owmen visitng HCS, our study  
13  
14 identified gaps in implementation of screening and information provision within HCS. Women at  
15  
16 higher risk for IPV were less likely to have been screened or have received information about  
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18 IPV. These results call for further research to explore individual and system-level barriers to  
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20 implementation of universal screening and provision of information on IPV among HCPs.  
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22 Identifying and removing these barriers is vital, as our results show inequalities in conducting  
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24 screening and information provision on support services, specifically for women at higher risk for  
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3 **Author contributions** ND initiated the study, supervised all the study stages, conducted the data  
4 analysis, and prepared the paper for publication. RS helped with data programming and data  
5 cleaning. ABP helped with data collection and prepared the study codebook. ISV and PO  
6 contributed to the study design, critically read previous versions of the paper, and suggested  
7 revisions. RL worked as a research assistant who helped in some updates of the background. All  
8 authors read and confirmed the final version of the paper.  
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16

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18 **Competing interest** None Declared  
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22 **Patient consent** Not required  
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24  
25 **Ethics approval** The study was approved by the Human Subjects Research Committee of Ben-  
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30 **Data sharing statement** No additional data are available  
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Appendix 1- Correlations between the study independent variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>1. Ethnicity</b>	1	-.320**	-.234**	-.114**	.227**	.352**	.427**	0.044	-.175**	.162**	.192**	.314**	.357**	.370**	-.136**
<b>2. Women’s age</b>		1	.061*	.059*	-.296**	-.218**	-.210**	-0.052	.087**	-.159**	-.059*	-.106**	-.183**	-.152**	.169**
<b>3. Immigrant</b>			1	.108**	-0.052	-.067*	-0.046	0.000	.059*	-.153**	0.009	-0.004	-0.044	-.057*	0.021
<b>4. Marital status</b>				1	-0.028	.066*	-0.014	.090**	.089**	-.137**	0.016	0.035**	0.022	0.016	-0.025
<b>5. Women status at interview</b>					1	.128**	.103**	-0.028	-.131**	-0.005	-0.009	.114**	.148**	.135**	-.266**
<b>6. Women’s education</b>						1	.355**	.118**	-0.025	.130**	.153**	.170**	.229**	.181**	-.167**
<b>7. Women’s employment</b>							1	.108**	-0.017	.131**	.114**	.167**	.208**	.195**	-.127**
<b>8. Partner employment</b>								1	.205**	.206**	0.039	.074**	.087**	.093**	-.134**
<b>9. Family income source</b>									1	0.051	0.014	-0.004	0.025	0.015	-0.028
<b>10. Religiosity</b>										1	0.042	.074**	.130**	.137**	-.118**
<b>11. Physical IPV</b>											1	.309**	.237**	.269**	-0.043
<b>12. Emotional IPV</b>												1	.375**	.775**	-.118**
<b>13. Social and economic IPV</b>													1	.728**	-.116**
<b>14. Any IPV</b>														1	-.113**
<b>15. MOH* district</b>															1

\* Ministry of Health

For peer review only

## STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No	Recommendation	
<b>Title and abstract</b>	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	Yes
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	Yes
<b>Introduction</b>			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	Pages 4-7
Objectives	3	State specific objectives, including any prespecified hypotheses	Page 7
<b>Methods</b>			
Study design	4	Present key elements of study design early in the paper	Page 7
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Page 7
Participants	6	<i>Cross-sectional study</i> —Give the eligibility criteria, and the sources and methods of selection of participants	Pages 8
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	Pages 8-10
Data sources/measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	Pages 8-10 when relevant
Bias	9	Describe any efforts to address potential sources of bias	Page 8-10 and 22
Study size	10	Explain how the study size was arrived at	Pages 19
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Pages 10-11
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	Pages 10-11
		(b) Describe any methods used to examine subgroups and interactions	
		(c) Explain how missing data were addressed	
		<i>Cross-sectional study</i> —If applicable, describe analytical methods taking account of sampling strategy	
		(e) Describe any sensitivity analyses	
Continued on next page			
<b>Results</b>			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	Table 1 and pages 11-12
		(b) Give reasons for non-participation at each stage	NR
		(c) Consider use of a flow diagram	NR

Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Table 1 and pages 11-12
		(b) Indicate number of participants with missing data for each variable of interest	Table 1
		(c) <i>Cohort study</i> —Summarise follow-up time (eg, average and total amount)	NR
Outcome data	15*		
		<i>Cross-sectional study</i> —Report numbers of outcome events or summary measures	Table 1 and page
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	Tables 2-4 and text Pages 13-16
		(b) Report category boundaries when continuous variables were categorized	Tables 2-4 and text Pages 13-16
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NR
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	Appendix 1
<b>Discussion</b>			
Key results	18	Summarise key results with reference to study objectives	Pages 18-19
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Page 22
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Pages 18-23
Generalisability	21	Discuss the generalisability (external validity) of the study results	Page 22
<b>Other information</b>			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Page 24

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at [www.strobe-statement.org](http://www.strobe-statement.org).

# BMJ Open

## Screening and receiving information for intimate partner violence in health care settings: a cross-sectional study of Arab and Jewish women of childbearing age in Israel

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Secondary Subject Heading:	Health services research
Keywords:	Intimate partner violence screening, Information provision on services, Health care services

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3 **Screening and receiving information for intimate partner violence in health care settings: a**  
4 **cross-sectional study of Arab and Jewish women of childbearing age in Israel**  
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53 health care services  
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## ABSTRACT

**Objectives:** We studied the proportion of women who have ever been screened (ES) for IPV in a health care setting, received information (RI) about relevant services, or both, and explored disparities in screening and information provision by ethnicity and other characteristics.

**Design:** In 2014-15 we undertook a cross-sectional study, conducting interviews using a structured questionnaire among a stratified sample of 1,401 Arab and Jewish women in Israel.

**Setting:** A sample of 63 maternal and child health clinics (MCH) clinics in four geographical districts.

**Participants:** Women aged 16-48yrs, pregnant or up to 6 months after childbirth.

**Primary and Secondary Outcome Measures:** We used multivariable generalized estimation equation (GEE) analysis to determine characteristics of women who were ES (Has anyone at the HCS ever asked you whether you have experienced IPV?); RI (Have you ever received information about what to do if you experience IPV?); and both (ES&RI).

**Results:** Less than half of participants (48.8%) reported ES; 50.5% RI; and 30% were both ES&RI. Having experienced any IPV was not associated with ES or ES&RI, but was associated with RI in an unexpected direction. Women at higher risk for IPV (Arab minority women, lower education, unmarried) were less likely to report being ES, RI or both. The odds ratio (OR) and 95% confidence intervals (CI) for not ER&RI were: 1.58(1.00-2.49) among Arab compared to Jewish women; 1.95(1.42-2.66) among low education versus academic education women; 1.34(1.03-1.73) among not working versus working. ES, RI and both differ across districts.

**Conclusions:** While Israel mandates screening and providing information regarding IPV among all women visiting the HCS, we found inequalities, suggesting inconsistencies in policy implementation and missed opportunities to detect IPV and support women.

### Strengths and limitations of this study

- Our study is the first that we know of to quantify implementation of IPV screening and information provision, with attention to ethnicity and other characteristics of women who do or do not receive these services.
- We found inequalities in IPV screening and information provision, suggesting inconsistent implementation of the screening policy by health care providers.
- Interviews were conducted in the preferred language of participants (Hebrew, Arabic), thereby facilitating participation.
- Having ever been screened for, or received information on IPV were self-reported, thus record bias could have occurred.
- As our sample was composed of women visiting Ministry of Health MCH clinics, women visiting other clinics were not included, which might pose a selection bias.

## INTRODUCTION

Affecting more than one third of women globally,<sup>1</sup> intimate partner violence (IPV) has been shown to have a major effect on women's physical and mental health.<sup>2</sup> Women who experience IPV tend to use more health care services (HCS)<sup>3 4</sup> and are likely to disclose abuse for the first time to a healthcare provider (HCP),<sup>5</sup> as the latter are often seen as trusted professionals.<sup>6</sup> Therefore, HCPs can play a critical role in detection of IPV within HCS if they ask women about IPV.<sup>7</sup> While the effectiveness of IPV screening has yet to be fully demonstrated in research,<sup>8</sup> studies show that it can encourage women to disclose IPV, which might increase detection.<sup>7 9</sup> Just as importantly, IPV screening within HCS can become an occasion to provide victims with information about and referrals to supportive services,<sup>7 9</sup> as well as to consult with them on how to cope.<sup>7 10</sup>

A Cochrane review<sup>8</sup> distinguishes between different approaches to identifying women exposed to IPV in HCS contexts; *universal screening* prescribes screening for all women interacting with healthcare services in all locations via standardized questions and procedures, regardless of "symptoms" or risk factors; *selective or targeted screening* focuses on women with specific characteristics, such as when pregnant or seeking to terminate a pregnancy, and screens them using the same question; *routine inquiry* asks all women about IPV, but using varying methods or questions according to HCPs and particular women's situations. A *case-finding* is different from screening and it asks women about IPV if they present with symptoms or characteristics of IPV exposure. Proponents of universal screening argue that the severity of the burden of suffering from IPV necessitates a universal protocol.<sup>11 12</sup> They note that screening for IPV within HCS is

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2  
3 associated with minimal risk, discomfort and emotional distress, and has been shown to increase  
4 detection, reduce IPV, and improve the health of screened women.<sup>13</sup> However, some reviews cast  
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6 doubt on this view, citing a lack of evidence regarding the benefits of universal screening, and  
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8 suggest a case-finding approach to identifying IPV.<sup>8 14</sup> Regardless, since the late 1990s, many  
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10 health-professional associations have published clinician guidelines on how to identify and  
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12 respond to women who have been abused,<sup>15 16</sup> and health professionals are now increasingly  
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14 required to undertake screening in accordance with national health policies. For example, in  
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16 2013, the Preventive Services Task Force (USPTF) in the US recommended universal IPV  
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18 screening of all women of childbearing age and referral for intervention services for women who  
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20 screen positive.<sup>17</sup> Conversely, some European countries (e.g., the UK and Sweden) have enacted  
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22 a case finding approach to detect women with IPV.<sup>8 18 19</sup>

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29 However, even in countries where medical organizations have recommended universal screening  
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31 for IPV within HCS,<sup>11 16 18 20 21</sup> studies show that HCPs do not necessarily carry out this  
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33 mandate.<sup>18 22 23</sup> In clinic-based studies in the US, the proportion of screening at least once by  
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35 physicians was 11-39%.<sup>24</sup> This low proportion appears to be due to different barriers; clinicians  
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37 may not feel confident about screening, not know what questions to ask, or how to respond if a  
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39 woman says she is being abused, may feel there is not enough time to screen, or may see other  
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41 issues as taking precedence.<sup>9 23</sup> Barriers can also come from women, who may not trust the  
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43 provider enough to disclose this sensitive information.<sup>9 25</sup> This may relate to HPC attitudes  
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45 towards IPV. For example, Gutmanis<sup>23</sup> identified misconceptions about IPV among HCPs, such  
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47 as: “domestic violence is rare,” and “domestic violence is a private matter that should be resolved  
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49 without outside intervention.”<sup>23</sup> Nursing staff, while generally expressing more favorable views  
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51 toward screening than physicians, have also been shown to face internal barriers to screening,  
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3 especially a fear of offending patients during questioning.<sup>26</sup> While these seem to be individual  
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5 level barriers among HCPs, Gracia-Moreno identified health system–level barriers, including the  
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7 interests of government leadership and the political will to implement a comprehensive health-  
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9 system approach, as affecting whether or not HCPs carry out their role in identifying and helping  
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11 women victims of IPV and sexual violence.<sup>27</sup>  
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14 Meanwhile, research shows women generally support universal IPV screening,<sup>28</sup> and a meta-  
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16 analysis of 25 studies showed they want HCPs to be nonjudgmental, nondirective, and  
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18 understanding of the complexity of partner violence.<sup>6 19</sup> However, other studies suggest that  
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20 minority women and those with low socioeconomic status, who experience higher prevalence of  
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22 IPV,<sup>29-31</sup> might be less likely to be screened by HCPs or receive information about IPV services.  
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26 One study in Hawaii showed that, compared to White women, women from minority groups  
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28 receive less counseling on IPV during prenatal care.<sup>32</sup> This suggests that minority women are  
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30 screened for IPV less often. However, none of the studies we know of shows such disparities, and  
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32 few studies have been conducted on disparities in IPV screening and information provision  
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34 among women at risk for IPV.  
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### 37 **IPV screening in HCS settings in Israel**

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39 Israel is an apt setting for investigating implementation of universal IPV screening due to its  
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41 ethnic makeup, with majority-Jewish and minority indigenous-Arab populations highly stratified  
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43 by class, socioeconomic status and geography. This stratification might differentially affect the  
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45 likelihood that women will feel at ease disclosing IPV in a health care setting.<sup>33</sup> A recent study on  
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47 IPV found that Arab minority women and low-income women in Israel are more likely to report  
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49 IPV compared to Jewish women. Risk factors for IPV among Arab women included younger age,  
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51 higher level of religiosity, and living in urban areas.<sup>33</sup> To respond to domestic violence, in 2003  
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53 the Israeli Ministry of Health issued *Director General Circular no. 23/03*,<sup>34</sup> which mandated  
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3 universal IPV screening for all women who visit HCSs. Yet, the Circular's approach to screening  
4 is inconclusive.<sup>34</sup> It states that "all women who present at the HCS should be asked about IPV"  
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6 which echoes universal screening or routine inquiry (depending on the screening tool), but also  
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8 notes that "specific emphasis should be on women who present with symptoms," implying a case  
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10 finding (not screening). It goes on to say that all pregnant women who visit MCH clinics should  
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12 be asked about IPV, suggesting targeted or selective screening.<sup>34</sup> This inconclusive wording  
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14 contrasts with the conclusive approaches delineated in the abovementioned Cochrane review  
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16 definitions.<sup>8</sup> The Circular thus fails to offer clear direction for IPV screening. This might be a  
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18 source of confusion for HCPs.  
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24 Indeed, a 2010 report by the Ministry of Health (MOH) showed that HCPs hesitate to implement  
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26 the Circular's recommendations.<sup>35</sup> The report, based on in-depth interviews with nurses and  
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28 physicians, identified different barriers to IPV screening and found that nurses are more likely to  
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30 ask about IPV than physicians, but that both are reluctant to screen.<sup>35</sup> Few studies on the practice  
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32 of IPV screening in Israel are available, and most have used small hospital-based samples. For  
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34 example, Ben-Natan et al. (2011)<sup>36</sup> studied a sample of 100 physicians and nurses from obstetrics  
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36 and gynecology departments in a Central Israel hospital. They found that the most cited reason  
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38 for failure to screen for IPV among HCPs was that they are embarrassed by the intimate nature of  
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40 screening, including questioning patients.<sup>36</sup> And a previous nationwide study conducted in 2000  
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42 showed that only 3% of women were asked about domestic violence (not IPV) by a physician at  
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44 primary care clinics.<sup>37</sup>  
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50 Despite these findings, little data yet exist to assess implementation of IPV screening or provision  
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52 of information about related services across Israeli HCSs. Our study aims to examine the  
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54 proportion of women who have ever been screened (ES) for IPV within HSCs, who have received  
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3 information (RI) about IPV services, and both; and to determine characteristics, including  
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5 ethnicity, associated with ES, RI, and both (ES & RI).  
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## 10 **METHODS**

### 11 **Study Design and Sampling**

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15 Data were obtained from our cross-sectional study on “Family Relations, Violence and Health,”  
16  
17 <sup>29</sup> conducted between October 2014 and October 2015 with approval by the Public Health  
18  
19 Division of the Israeli Ministry of Health and the Ethics Committee at Ben-Gurion University of  
20  
21 the Negev. Data collection followed the WHO ethical recommendations on safety of women  
22  
23 victims of abuse.<sup>38</sup> A more detailed description of sampling can be found elsewhere,<sup>29</sup> but briefly,  
24  
25 we selected Maternal and Child Health (MCH) clinics via a stratified sampling procedure based  
26  
27 on Israel’s main regions (South, Center, North and Haifa), the proportion of births in each region  
28  
29 or district, and the ethnic composition (Arabs vs. Jews) of the population of women in the region.  
30  
31 MCH clinics are located in neighborhoods and provide prenatal care, well-child follow-up, and  
32  
33 required immunizations for different population groups. In this manner we selected 63 MCH  
34  
35 clinics: 33 in Jewish localities, 21 in Arab localities, and 9 in mixed localities.  
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38  
39

### 40 **Participants and data collection**

41  
42 Participants were recruited at the 63 MCH clinics that were sampled for the study. One month  
43  
44 before data collection the study coordinators distributed leaflets at these clinics with information  
45  
46 about the study. Trained female interviewers asked eligible mothers (pregnant, or 6 weeks to 6  
47  
48 months after childbirth) to participate in the study. Women who agreed to participate were invited  
49  
50 into a separate room at the clinics, where they were interviewed face to face using a structured  
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52 questionnaire in the women's preferred language (Arabic or Hebrew) after signing an informed  
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3 consent form. If a participant was detected as having experienced IPV, the interviewer and the  
4  
5 study team encouraged her to talk with the MCH nurse who could refer her to a social worker in  
6  
7 the community's social services office. In addition, all study participants received written contact  
8  
9 information on community services that support women who are victims of violence. A total of  
10  
11 1,401 women were interviewed (436 Arab and 965 Jewish), with a response rate of 76% among  
12  
13 Arab women, 73% among Jewish women.  
14  
15

## 16 17 **Measures**

18  
19 Dependent variables:

20  
21 *Ever screened (ES) for IPV*: a yes/no question: "Has anyone at a HCS ever asked you whether  
22  
23 you have experienced IPV?"  
24  
25

26  
27 *Received information (RI) about IPV services*: a yes/no question: "Have you ever received  
28  
29 information about what to do in case you experience IPV?"; this question was asked regardless of  
30  
31 responses to the preceding question.  
32

33  
34 *An index variable of ever screened and received information (ES&RI)*: We created an index  
35  
36 variable that included positive answers to the previous two questions versus all other answers.  
37

38  
39 Independent Variables:

40  
41 *Any intimate partner violence (IPV)*: any positive answer to a list of 10 questions about acts of  
42  
43 violence perpetrated by a participant's intimate partner at any time.<sup>29 39</sup> These acts include  
44  
45 physical violence, psychological violence, social control and economic violence. For example,  
46  
47 'Your partner has hit you, kicked you, pushed you, or thrown things at you?'; 'Does your partner  
48  
49 try to isolate you from your family and friends?' and 'Are you fearful of drastic changes in your  
50  
51 partner's mood?'. Our list of questions was based on those used in the Preventive Services Task  
52  
53 Force Family screening tool on IPV,<sup>39</sup> and on questions that are used for IPV screening in some  
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3 MCH clinics in Israel. For information about the tool used to assess IPV, please see Daoud et al.,  
4  
5 2017.<sup>33</sup>  
6

7 *Types of IPV:* resulted from factor analysis for the above 10 acts of IPV, and were categorized as:  
8  
9 physical or sexual violence (e.g., beating, slapping, and kicking; forced sex); emotional or verbal  
10  
11 violence (e.g., threats of harm, constant humiliation, insults); and social or economic violence<sup>33</sup>  
12  
13 (controlling behaviors, such as- isolating a woman from her family and friends; monitoring her  
14  
15 movements; and restricting access to financial resources including employment, education or  
16  
17 medical care).  
18  
19

20  
21 *Ethnicity:* self-determined as 1. Arab or 2. Jewish.  
22

23  
24 *Immigrant Status:* born in Israel or another country.  
25

26  
27 *Age:* 16-24, 25-34 and 35-48 years old.  
28

29  
30 *Marital status:* 1. married, and 2. not married, including single, divorced, separated, not-  
31  
32 cohabitating, or other.

33  
34 *Women's status during the interview:* a composite variable based on answers to three questions:  
35  
36 'Are you currently pregnant?' (yes/ no), 2. 'Do you have children?' (yes/no), and 'How many  
37  
38 children do you have?' We categorized answers as follows: 1. Pregnant with no children, 2.  
39  
40 Pregnant with children, 3. Not pregnant with 1-2 children, and 4. Not pregnant with 3 children or  
41  
42 more.  
43

44  
45 *Women's education and husband's education:* 1. High school or less, 2. Postsecondary education,  
46  
47 and 3. University education (Bachelor's, Master's or Doctorate).  
48

49  
50 *Employment status for women and husbands:* A yes/no question about current work outside the  
51  
52 household by participants and their partners.  
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3 *Family source of income:* 1. Work only, 2. Social allowances only, or 3. Other source, which  
4 included any combination of work and social allowances, and work and other resources, such as a  
5 grant, family support, land, or other source of income.  
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10 *Religiosity:* 1. Religious or very religious, 2. Traditional, 3. Not religious.<sup>40 41</sup>

11  
12 *Ministry of Health (MOH) district:* Based on the country's geographic areas. We categorized  
13 these into four districts: We named these districts as A, B, C and D to keep the information about  
14 the district's performance anonymous.  
15  
16  
17

### 18 19 **Statistical Analysis**

20  
21 We calculated the proportion (%) of our main variables (ES, RI and the index variable of ES&RI)  
22 for the total sample of women, and examined women's characteristics across these variables  
23 using the Chi Square test. Next, we examined univariate associations between IPV; types of IPV;  
24 and ES, RI and the ES&RI index variable. Since Arab and Jewish women differed in most of the  
25 independent and dependent variables, we examined interactions between ethnicity and each of the  
26 associations between independent variables and ER, RI and the index variable (ES&RI). The  
27 interaction with the MOH district variable was positive. Therefore, we decided to conduct our  
28 multivariate analysis for each ethnic group (Arab and Jewish) in addition to the multivariable  
29 analysis for the total sample. We used Generalized Estimating Equation analysis (GEE) in the  
30 multivariable analysis to adjust for the MCH clinic cluster effect, while adjusting for significant  
31 ( $P < 0.05$ ) independent variables that were associated with ES, RI and the ES&RI index variable in  
32 the univariate analysis. Three multivariable analysis models were fitted for each study group in  
33 order to examine characteristics of women who received the services we studied: ES, RI and  
34 ES&RI.  
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3 The correlation between the study independent variables was lower than our threshold of  $R > 0.4$ ,  
4 and we did not exclude any of these variables from the multivariable analysis, as multi-  
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6  
7 collinearity was not likely (see Appendix 1).  
8  
9

### 10 **Patient and public involvement**

11 Patients and the public were not involved in this research  
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13  
14  
15

## 16 **RESULTS**

17  
18 Less than half of the women reported ever having been screened (ES) for IPV (48.4%), close to  
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20  
21 half (50.5%) received information (RI) about services for coping with IPV, and only 30.4%  
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23  
24 reported both ES&RI (Table 1).  
25  
26

27 Table 1 also presents characteristics of women who received each of these services out of the  
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29  
30 total sample of participants. Notably, experiencing any IPV, physical, and emotional IPV was not  
31  
32 associated with having ES for IPV. However, women who reported less social IPV were more  
33  
34 likely to report ES. In addition, reporting ES was higher among Jewish women; married women;  
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36 those not pregnant with three children or more; women with postsecondary education or an  
37  
38 academic degree; employed women with main source of family income from work; religious or  
39  
40 very religious women; and those living in districts C and D. Age, immigrant status, and partner  
41  
42 employment were not associated with reporting ES for IPV.  
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46 Reporting RI on services for coping with IPV was more likely among women who reported not  
47  
48 experiencing any IPV, or emotional or social IPV. Physical IPV was not associated with RI.  
49

50 However, reporting RI was higher among Jewish women; older women; women not pregnant;  
51  
52 with 1-2 children; women with academic education; employed women, and women with  
53  
54 employed partners; women with an income source from work and other sources; women who are  
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56  
57

not religious; and women who live in district B. RI was not associated with immigrant or marital status (Table 1).

Women who reported both ES & RI were more likely to be Jewish, older, not pregnant during the interview, with children, with higher education, employed, and with family income from other sources. However, the variables of any IPV, types of IPV, immigrant status, marital status, partner employment, religiosity, and MOH district were not associated with reporting both services (ES&RI).

**Table 1- Univariate association for ever being screened (ES) for intimate partner violence (IPV), receiving information (RI) about IPV services, and both, among women in the study sample in Israel, 2014-2015**

Women's characteristics	Total sample N=1401		ES for IPV		RI about IPV services		ES & RI	
	N (%)	N (%)	P=	N (%)	P=	N (%)	P=	
<b>Total =</b>		<b>675 (48.4)</b>		<b>708 (50.5)</b>		<b>425 (30.4)</b>		
<b>Any IPV</b>			0.250		0.011		0.134	
Yes	843 (39.8)	259 (46.5)		259 (46.4)		157 (28.1)		
No	558 (60.2)	416 (49.6)		449 (53.4)		268 (31.9)		
<b>Physical IPV</b>			0.805		0.925		0.677	
No	1333 (95.1)	643 (48.4)		674 (50.6)		407 (30.6)		
Yes	64 (4.6)	32 (50.0)		32 (50.0)		18 (28.1)		
<b>Emotional IPV</b>			0.397		0.005		0.104	
No	997 (71.4)	489 (49.2)		527 (52.9)		316 (31.8)		
Yes	399 (28.6)	186 (46.7)		178 (44.6)		109 (27.3)		
<b>Social IPV</b>			0.038		0.007		0.115	
No	1033 (73.7)	516 (50.1)		544 (52.7)		326 (31.6)		
Yes	364 (26.1)	159 (43.8)		162 (44.5)		99 (27.2)		
<b>Ethnicity</b>			<0.001		<0.001		<0.001	
Arab	434 (31.1)	162 (37.3)		166 (38.1)		89 (20.4)		
Jewish	965 (68.9)	513 (53.4)		542 (56.3)		336 (34.9)		
<b>Age</b>			0.096		0.004		0.010	
16-24	247 (17.6)	104 (42.4)		101 (40.9)		56 (22.8)		
25-34	844 (60.3)	413 (49.1)		444 (52.7)		263 (31.2)		
35-48	309 (22.1)	158 (51.3)		162 (52.4)		106 (34.3)		
<b>Immigrant</b>			0.954		0.234		0.588	
Not immigrant	1133 (81.4)	547 (48.4)		565 (50.0)		340 (30.1)		
Immigrant	259 (18.6)	124 (48.2)		140 (54.1)		82 (31.8)		
<b>Marital status</b>			0.018		0.129		0.237	
Married	1329 (95.2)	650 (49.1)		666 (50.2)		407 (30.7)		
Other	67 (4.8)	23 (34.3)		40 (59.7)		16 (23.9)		
<b>Women's status during interview</b>			<0.001		<0.001		<0.001	
Not pregnant with 3+children	390 (28.0)	204 (52.6)		194 (49.7)		136 (34.9)		
Not pregnant with 1-2 children	737 (52.9)	376 (51.1)		412 (55.9)		234 (31.8)		

3	Pregnant with children	187 (13.4)	70 (37.8)	62 (33.3)	38 (20.4)	
4	Pregnant without children	80 (5.7)	21 (26.3)	36 (45.0)	14 (17.5)	
5	<b>Education (woman)</b>			<0.001	<0.001	<0.001
6	High school or less	537 (38.3)	204 (38.2)	211 (39.3)	111 (20.7)	
7	Postsecondary or college	251 (17.9)	134 (53.6)	126 (50.6)	82 (32.8)	
8	Bachelor degree or above	613 (43.8)	337 (55.2)	371 (60.5)	232 (37.8)	
9	<b>Employment (woman)</b>			<0.001	<0.001	<0.001
10	Yes	781 (56.6)	414 (53.0)	445 (56.8)	279 (35.7)	
11	No	59.8 (43.4)	252 (42.1)	257 (42.8)	141 (23.5)	
12	<b>Employment (partner)</b>			0.791	0.005	0.229
13	Yes	1222 (88.0)	592 (48.7)	633 (51.9)	379 (31.1)	
14	No	166 (12.0)	79 (47.6)	67 (40.0)	44 (26.5)	
15	<b>Household income source</b>			0.001	<0.001	0.005
16	Work only	982 (70.1)	466 (47.6)	493 (50.3)	290 (29.6)	
17	Social allowances only	79 (5.6)	25 (31.6)	25 (31.6)	14 (17.7)	
18	Work and other source	340 (24.3)	184 (54.4)	190 (56.0)	121 (35.7)	
19	<b>Religiosity</b>			0.002	0.041	0.604
20	Not religious	440 (31.5)	220 (50.1)	244 (55.6)	135 (30.7)	
21	Traditional	608 (43.5)	262 (43.4)	298 (49.0)	177 (29.2)	
22	Religious or very religious	351 (25.1)	193 (55.1)	166 (47.4)	113 (32.3)	
23	<b>MOH* District</b>			0.001	0.019	0.344
24	A	358 (25.7)	160 (45.1)	166 (46.5)	113 (31.7)	
25	B	212 (15.2)	82 (38.7)	127 (59.9)	54 (25.5)	
26	C	334 (24.0)	183 (54.8)	165 (49.4)	102 (30.5)	
27	D	485 (35.0)	248 (51.1)	248 (51.0)	156 (32.1)	

\* MOH Ministry of Health

For the multivariable analysis, we considered variables that were significantly associated in the bivariate analysis with each of our outcome variables of ES, RI and both (ES&RI). Since we found significant interactions of ethnicity (Jewish vs. Arab) and the associations between the MOH district variable and ES, RI and ES&RI, we conducted GEE multivariable analysis for each of these dependent variables (ES, RI and both) for the total sample of women, and then separately for each ethnic group. The results of the multivariable analysis are presented in Tables 2-4.

Results of the GEE for having been ES for IPV among the total sample (Table 2) show that the odds ratio (OR) of not having been ES was higher among women at higher risk for IPV. This includes Arab compared to Jewish women (OR, 95% confidence intervals (CI)=1.98,1.16-3.36); and women who experience IPV compared to women who do not experience IPV (OR, 95%CI=1.30,1.01-1.67). Unmarried women compared to married were almost twice as likely to report not having ES (OR, 95%CI=2.07,1.23-3.27). Women with lower education (high school or

less) had a higher likelihood of reporting not having ES compared to women with higher education (OR, 95%CI=1.75,1.29-2.38).

Among Arab minority women, not having ES was reported more often among women who were not pregnant, with 1-2 children at the time of the interview, compared to those not pregnant with 3 children or more (OR, 95%CI=1.61,1.04-2.47). Meanwhile, traditional Arab women were less likely to report not having ES for IPV compared to non-religious Arab women (OR, 95%CI=0.56,0.36-0.89). In addition, women in district C were less likely to report not having ES compared to women in district A (OR, 95%CI=0.14,0.06-0.32).

For Jewish women, not having ES was reported more often by: unmarried compared to married women (OR, 95%CI=2.02,1.20-3.40); those with lower education compared to higher or academic education (OR, 95%CI=1.96,1.40-2.76); and women living in district B compared to district A (OR, 95%CI=2.08,1.20-3.58). Religious Jewish women were less likely to report not having ES for IPV compared to non-religious women (OR, 95%CI=0.66,0.49-0.90).

**Table 2- Multivariable analysis for not ever been screened for IPV in a health care setting in the total sample and among Arab and Jewish women**

	Total sample (N=1355)		Arab women (N=425)		Jewish women (N=930)	
	OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
<b>Ethnicity</b>						
Arab	<b>1.98 (1.16, 3.36)</b>	<b>0.012</b>				
Jewish	1.00					
<b>Women's status at interview</b>						
Pregnant without children	1.88 (0.87, 4.06)	0.107	2.88 (0.94, 8.79)	0.064	1.32 (0.36, 4.82)	0.674
Pregnant with children	1.14 (0.70, 1.87)	0.592	1.39 (0.73, 2.62)	0.316	0.93 (0.46, 1.89)	0.837
Not pregnant with 1-2 children	0.99(0.75, 1.30)	0.945	<b>1.61 (1.04, 2.47)</b>	<b>0.031</b>	0.87 (0.64, 1.18)	0.368
Not pregnant with 3 or more children	1.00		1.00		1.00	
<b>Marital status</b>						
Unmarried	<b>2.07 (1.27, 3.35)</b>	<b>0.003</b>	1.22 (0.06, 24.017)	0.894	<b>2.02 (1.20, 3.40)</b>	<b>0.008</b>
Married	1.00		1.00		1.00	
<b>Women's education</b>						
High school and less	<b>1.75 (1.29, 2.38)</b>	<b>0.000</b>	1.26 (0.61, 2.61)	0.529	<b>1.96 (1.40, 2.76)</b>	<b>0.000</b>
Beyond high school	1.03 (0.72, 1.50)	0.857	0.71 (0.34, 1.49)	0.369	1.09 (0.69, 1.74)	0.706
BA MA PhD	1.00		1.00		1.00	
<b>Women's employment</b>						
No doesn't work	1.09 (0.87, 1.37)	0.454	1.00 (0.64, 1.58)	0.989	1.18 (0.91, 1.53)	0.199
Yes works	1.00		1.00		1.00	

<b>Family source of income</b>							
Other	0.88 (0.65, 1.20)	0.424	0.57 (0.32, 1.02)	0.059	0.95 (0.69, 1.32)	0.773	
Social allowances only	1.22 (0.66, 2.26)	0.531	1.70 (0.65, 4.43)	0.277	0.77 (0.33, 1.80)	0.544	
From work only	1.00		1.00		1.00		
<b>Religiosity</b>							
Religious	0.78 (0.58, 1.05)	0.103	1.04 (0.69, 1.58)	0.849	<b>0.66 (0.49, 0.90)</b>	<b>0.009</b>	
Traditional	0.91 (0.65, 1.27)	0.583	<b>0.56 (0.36, 0.89)</b>	<b>0.013</b>	0.96 (0.64, 1.44)	0.858	
Not religious	1.00		1.00		1.00		
<b>Any IPV</b>							
Yes IPV	<b>1.30 (1.01, 1.67)</b>	<b>0.044</b>	1.13 (0.76, 1.69)	0.545	1.36 (0.97, 1.89)	0.073	
No IPV	1.00		1.00		1.00		
<b>MOH* district</b>							
D	0.96 (0.57, 1.62)	0.878	0.25 (0.06, 1.04)	0.056	1.57 (0.97, 2.53)	0.068	
C	0.56 (0.32, 1.01)	0.054	<b>0.14 (0.06, 0.32)</b>	<b>0.000</b>	1.25 (0.82, 1.90)	0.294	
B	1.35 (0.82, 2.24)	0.240	0.44 (0.18, 1.08)	0.072	<b>2.08 (1.20, 3.58)</b>	<b>0.009</b>	
A	1.00		1.00		1.00		

\* MOH Ministry of Health

Regarding RI on services for coping with IPV, among women in the total sample (Table 3) we found that not RI was higher among: Arab compared to Jewish women (OR, 95%CI=1.79, 1.24-2.56); pregnant women with children compared with women who were not pregnant with 3 children or more at the time of the interview (OR, 95%CI=1.69,1.02-2.78); women with high school education or less compared with women with academic education (OR, 95%CI=1.82,1.37-2.34); and women with postsecondary education compared to women with academic-level education (OR, 95%CI=1.31, 1.04-1.66). Women living in district C and district B were less likely to report not RI compared to women living in district A (OR, 95%CI=0.70,0.52-0.93 and OR, 95%CI=0.66, 0.42-1.04, respectively).

Among Arab women, not reporting RI was higher among pregnant women with children compared with women who were not pregnant with 3 children or more (OR, 95%CI=2.22, 1.17-4.22), and among women with lower education compared to higher education (OR, 95%CI=2.21,1.31-3.72). Women living in district C compared with district A were less likely to report not RI (OR, 95%CI=0.45, 0.23-0.88).

As for Jewish participants, compared to younger women, older women were less likely to report not RI (OR, 95%CI= 0.59, 0.39-0.88). However, women with lower education compared to



academic educated women were more likely to report not RI (OR, 95% CI=1.57,1.11-2.21). Also, women living in the district D compared to women in district A were more likely to report not RI (OR, 95%CI=1.51,1.17-1.95).

**Table 3- Multivariable analysis for not receiving information about IPV services in a health care setting in the total sample and among Arab and Jewish women in Israel, 2014-2015**

	Total sample (N=1350)		Arab women (N=427)		Jewish women (N=923)	
	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P
<b>Ethnicity</b>						
Arab	<b>1.79 (1.24, 2.56)</b>	<b>0.002</b>				
Jewish	1.00					
<b>Women's age</b>						
35-48	0.86 (0.60, 1.24)	0.410	1.84 (0.85, 3.97)	0.119	<b>0.59 (0.39, 0.88)</b>	<b>0.010</b>
25-34	0.89 (0.65, 1.20)	0.432	1.02 (0.65, 1.60)	0.938	0.73 (0.48, 1.13)	0.158
16-24	1.00		1.00		1.00	
<b>Women's status at interview</b>						
Pregnant without children	0.87 (0.53, 1.42)	0.569	1.19 (0.60, 2.34)	0.616	0.63 (0.26, 1.54)	0.314
Pregnant with children	<b>1.69 (1.02, 2.78)</b>	<b>0.041</b>	<b>2.22 (1.17, 4.22)</b>	<b>0.015</b>	1.30 (0.63, 2.71)	0.481
Not pregnant with 1-2 children	0.86 (0.61, 1.20)	0.365	1.15 (0.70, 1.88)	0.588	0.76 (0.52, 1.12)	0.166
Not pregnant with 3 or more children	1.00		1.00		1.00	
<b>Women's education</b>						
High school and less	<b>1.82 (1.37, 2.43)</b>	<b>0.000</b>	<b>2.21 (1.31, 3.72)</b>	<b>0.003</b>	<b>1.57 (1.11, 2.21)</b>	<b>0.010</b>
Beyond high school	<b>1.31 (1.04, 1.66)</b>	<b>0.024</b>	1.08 (0.61, 1.90)	0.790	1.42 (1.09, 1.83)	0.009
BA MA PhD	1.00		1.00		1.00	
<b>Women's employment</b>						
No doesn't work	1.20 (0.97, 1.49)	0.091	1.10 (0.69, 1.76)	0.690	1.23 (0.98, 1.53)	0.074
Yes works	1.00		1.00		1.00	
<b>Partner employment</b>						
No not working	1.33 (0.88, 2.01)	0.179	1.37 (0.55, 3.38)	0.496	1.32 (0.81, 2.15)	0.267
Yes works	1.00		1.00		1.00	
<b>Family source of income</b>						
Other	0.87 (0.66, 1.14)	0.299	1.24 (0.67, 2.30)	0.499	0.82 (0.62, 1.08)	0.162
Social allowances only	1.09 (0.65, 1.84)	0.745	0.92 (0.39, 2.17)	0.849	1.03 (0.51, 2.05)	0.942
From work only	1.00		1.00		1.00	
<b>Religiosity</b>						
Religious	1.05 (0.76, 1.45)	0.767	0.89 (0.45, 1.78)	0.741	1.03 (0.70, 1.51)	0.877
Traditional	0.89 (0.64, 1.24)	0.487	0.57 (0.28, 1.18)	0.130	1.04 (0.72, 1.50)	0.851
Not religious	1.00		1.00		1.00	
<b>Any IPV</b>						
Yes IPV	1.08 (0.82, 1.41)	0.582	1.17 (0.71, 1.91)	0.540	1.00 (0.73, 1.37)	0.999
No IPV	1.00		1.00		1.00	
<b>MOH* district</b>						
D	1.22 (0.87, 1.69)	0.246	0.45 (0.17, 1.19)	0.108	<b>1.51 (1.17, 1.95)</b>	<b>0.001</b>
C	<b>0.70 (0.52, 0.93)</b>	<b>0.015</b>	<b>0.45 (0.23, 0.88)</b>	<b>0.019</b>	0.85 (0.69, 1.05)	0.136
B	<b>0.66 (0.42, 1.04)</b>	<b>0.072</b>	0.41 (0.16, 1.04)	0.061	0.86 (0.56, 1.33)	0.500
A	1.00		1.00		1.00	

\* MOH Ministry of Health

The multivariable results for participants reporting having both ES&RI are presented in Table 4.

For the total sample, not reporting both services (ES&RI) was nearly one and a half times more

likely among Arab compared to Jewish women (OR, 95%CI=1.58,1.00-2.49), almost two times more likely in women with high school education or less compared to those with academic education (OR, 95%CI=1.95,1.42-2.66), unemployed compared to employed women (OR, 95%CI=1.34,1.03-1.73), and women living in district B compared to district A (OR, 95%CI=1.57,1.00-2.48). Arab women who did not report ES&RI were almost three times more likely to be of older age, compared to younger age (OR,95%CI=2.94,1.04-8.30), and not pregnant compared to pregnant (OR,95%CI= 2.29,1.05-4.99 and 2.04,1.16-3.59). However, Arab women were less likely to report not having both ES&RI if they live in district D and district C compared to district A (OR, 95%CI=0.27,0.10-0.72 and 0.35,0.15-0.84, respectively).

As for Jewish women, not reporting both ES&RI was lower among women at older age compared to younger age. However, not reporting both ES & RI was more likely among lower educated women compared to higher educated women (OR, 95%CI=1.99,1.34-2.95), and women living in district D and district B compared to district A (OR, 95%CI=1.96,1.29-2.97 and 1.95,1.20-3.15, respectively).

**Table 4- Multivariable analysis for the combined variable of not ever being screened for IPV and not receiving information in a health care setting in the total sample and among Arab and Jewish women in Israel, 2014-2015**

	Total sample (N=1363)		Arab women (N=429)		Jewish women (N=934)	
	OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
<b>Ethnicity</b>						
Arab	<b>1.58 (1.00, 2.49)</b>	<b>0.051</b>				
Jewish	1.00					
<b>Women's age</b>						
35-48	0.91 (0.60, 1.38)	0.653	<b>2.94 (1.04, 8.30)</b>	<b>0.041</b>	<b>0.59 (0.34, 1.00)</b>	<b>0.050</b>
25-34	1.00 (0.69, 1.45)	0.992	1.41 (0.84, 2.37)	0.198	0.74 (0.43, 1.26)	0.263
16-24	1.00		1.00		1.00	
<b>Women's status at interview</b>						
Pregnant without children	1.71 (0.88, 3.30)	0.111	2.18 (0.82, 5.82)	0.119	1.44 (0.46, 4.47)	0.529
Pregnant with children	1.66 (0.98, 2.82)	0.062	<b>2.29 (1.05, 4.99)</b>	<b>0.038</b>	1.24 (0.64, 2.41)	0.523
Not pregnant with 1-2 children	1.15 (0.83, 1.58)	0.402	<b>2.04 (1.16, 3.59)</b>	<b>0.013</b>	1.00 (0.70, 1.42)	0.979
Not pregnant with 3 or more children	1.00		1.00		1.00	
<b>Women's education</b>						
High school and less	<b>1.95 (1.42, 2.66)</b>	<b>0.000</b>	1.52 (0.77, 3.02)	0.227	<b>1.99 (1.34, 2.95)</b>	<b>0.001</b>
Beyond high school	1.17 (0.87, 1.57)	0.307	0.79 (0.40, 1.58)	0.509	1.26 (0.89, 1.78)	0.187
BA MA PhD	1.00		1.00		1.00	

<b>Women's employment</b>							
No doesn't work	<b>1.34 (1.03, 1.73)</b>	<b>0.027</b>	1.33 (0.81, 2.18)	0.263	1.37 (0.99, 1.89)	0.056	
Yes works	1.00		1.00		1.00		
<b>Family source of income</b>							
Other	0.89 (0.65, 1.24)	0.498	0.90 (0.47, 1.72)	0.742	0.94 (0.67, 1.32)	0.720	
Social allowances only	1.25 (0.72, 2.17)	0.423	0.99 (0.43, 2.25)	0.974	1.30 (0.60, 2.84)	0.503	
From work only	1.00		1.00		1.00		
<b>Any IPV</b>							
No IPV	1.17 (0.89, 1.56)	0.266	1.15 (0.64, 2.05)	0.640	1.16 (0.83, 1.62)	0.377	
Yes, IPV	1.00		1.00		1.00		
<b>MOH* district</b>							
D	1.39 (0.89, 2.15)	0.143	<b>0.27 (0.10, 0.72)</b>	<b>0.010</b>	<b>1.96 (1.29, 2.97)</b>	<b>0.002</b>	
C	0.88 (0.59, 1.33)	0.544	<b>0.35 (0.15, 0.84)</b>	<b>0.018</b>	1.11 (0.76, 1.60)	0.590	
B	<b>1.57 (1.00, 2.48)</b>	<b>0.052</b>	0.72 (0.25, 2.08)	0.540	<b>1.95 (1.20, 3.15)</b>	<b>0.007</b>	
A	1.00		1.00		1.00		

\* MOH Ministry of Health

## DISCUSSION

Screening for IPV is recommended within HCS in many countries,<sup>16 27</sup> as it helps women who experience IPV to disclose abuse and receive information about supportive social and health care services.<sup>7 13</sup> While there are different screening approaches, thus far, implementation of IPV screening across settings is incomplete.<sup>9</sup> Insufficient system support for HCPs, as well as lack of skills and resources among HCPs are major barriers to fuller implementation and, therefore, health-care system action to support these women.<sup>27</sup> In the current study, we asked women of childbearing age if they had ever been screened (ES) for IPV in Israel's HCS, and whether they had ever received information (RI) on what to do in case they experience IPV. We also created an index variable of both (ES&RI). We found that despite the MOH Circular from 2003 on IPV, which mandates screening for every woman who interacts with HCS, including MCH clinics. this policy is not being followed consistently countrywide. Less than half (48.4%) of our study participants reported ever being screened for IPV via HCS. This result might be related to confusion among HCPs over screening methods, as the 2003 Circular is not conclusive in this regard. On the one hand, it mandates a universal screening, and on the other, it specifies conditions for case-finding.<sup>34</sup> Despite this, our results are consistent with previous research on

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3 IPV screening.<sup>9 12</sup> A realist-informed systematic review of studies on IPV screening  
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5 implementing found that in most countries less than half of women were screened.<sup>9</sup> Based on our  
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7 results it appears that HCPs in Israel need more health system support to achieve greater  
8  
9 screening coverage. Therefore, the Ministry of Health in Israel should offer consistent, sustained  
10  
11 training to enhance knowledge among HCPs regarding IPV and IPV screening, and remove  
12  
13 barriers, including embarrassment, when screening women about IPV.<sup>35 42</sup> Despite the fact that  
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15 enhanced training for IPV screening might not increase the screening over mandatory screening,  
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17 it can increase safety planning for women victims of IPV as was shown in the MOVE study in  
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19 Australia.<sup>43</sup>  
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24 Despite this, our finding that half the women in our sample were ES is encouraging, as previous  
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26 studies in Israel have found far fewer reports of IPV screening.<sup>36 42 44</sup> However, those studies  
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28 included only small samples. One such study, conducted in the ob\gyn department of a hospital in  
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30 central Israel, found that only 12% of women patients reported having been screened for domestic  
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32 violence in the past year.<sup>42</sup> e  
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36 Another important finding from our study is that ES was not associated with most types of IPV  
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38 variables. Only the association between ES and social and economic IPV was significant, but the  
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40 direction of the association was opposite to our hypothesis: women exposed to social and  
41  
42 economic IPV were less likely to ever have been screened. While these results might be related to  
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44 power issues, due to smaller subsamples of women in our study who reported different types of  
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46 IPV, it should raise the attention of policy makers at the MOH.  
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50 The disparities we found in IPV screening based on women's ethnicity and socioeconomic status  
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52 are of concern, as they show inequalities in screening between groups in Israel. Women who are  
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54 at higher risk for IPV (Arab minority women, those with lower education, and unmarried women)  
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3 were less likely to be screened for IPV. Religiosity was also an important factor when we  
4  
5 examined ES within each ethnic group. These findings also suggest that without a conclusive  
6  
7 HCS screening protocol for IPV, some women at risk for IPV are not being identified. This is  
8  
9 consistent with a qualitative study in the US showing that a lack of a clear screening policy was a  
10  
11 barrier to disclosure of IPV.<sup>25</sup> This lack of a clear IPV screening policy might explain why ES  
12  
13 was not significantly associated with any IPV and some specific IPV types in our study.  
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15 Our results about failure to screen women who are at risk of IPV might be related to different  
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17 barriers, including a lack of training on their part for how to screen; lack of time in busy clinics;  
18  
19 or reluctance to screen due to prejudices related to IPV. These barriers were mentioned in a  
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21 Ministry of Health quality assessment report on IPV screening that was based on interviews with  
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23 HCPs.<sup>35</sup> While previous research shows that screening and referral alone are not sufficient to  
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25 support women living with domestic violence,<sup>45</sup> as these women have multiple social and health  
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27 needs,<sup>46-48</sup> enhanced training would help in increasing the safety planning for these women.<sup>43</sup>  
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33 The significant interaction we found between ethnicity and MOH district (area of living) in the  
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35 association with ES, meanwhile, shows that IPV screening is implemented differentially among  
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37 Arab and Jewish women in these districts. While we do not know the ethnic composition of  
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39 HCPs, or whether Arab and Jewish women are reluctant to disclose IPV to HCPs of another or  
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41 same ethnicity, previous research has shown that Arab women tend to use fewer professional  
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43 services for coping with IPV, regardless of HCP ethnicity.<sup>49</sup> Future research should examine  
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45 HCP's attitudes, consider the prospect of cultural bias in IPV screening, and examine whether  
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47 HCPs make assumptions about the lack of support in the community for minority women who  
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49 experience IPV.<sup>35</sup>  
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3 Our results on receiving information (RI) regarding IPV services were similar to those on ES: just  
4 over half (50.5%) of participants reported RI. However, any IPV, emotional IPV and social and  
5 economic IPV were associated with RI, but not in the direction we had hypothesized. Women  
6 who reported experiencing IPV consistently reported less RI. This association did not persist in  
7 the multivariate analysis, where, in the total sample of women, those with higher risk for IPV  
8 received less information. This included Arab women, pregnant women with children, women  
9 with lower (non-academic) education, and those living in district A, which is more economically  
10 disadvantaged compared to the other three districts. The multivariable analysis for Arab women,  
11 meanwhile, showed that women with children, not pregnant at the time of interview, and women  
12 with less than high school education and living in district A (that has a higher concentration of  
13 Arab women living in economically disadvantaged conditions) were less likely to RI. Among  
14 Jewish women, younger (16-24yrs), lower educated women living in district D (more  
15 economically advantaged region compared to the other three) were less likely to receive  
16 information.

17  
18 Since, according to Ministry of Health policy in Israel, it is mandatory that all women receive  
19 information about IPV services, provision of information should be reported by all study  
20 participants. However, we found that only about half of the women had RI on IPV services. RI  
21 should be recorded in all women's medical files, and our result can then be examined against  
22 those medical records. If the disparities are confirmed, this should be an alarm bell for policy  
23 makers.

24  
25 The combined variable we created that includes positive answers on ES&RI confirmed our results  
26 for each of the variables when examined alone, but revealed an even poorer picture regarding IPV  
27 service implementation within HCS: only about one third of the women reported receiving both

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3 services. Further, the multivariable analysis for the combined variable showed that women at high  
4 risk for IPV were less likely to report receiving both services (ES&RI). This included Arab, lower  
5 educated and unemployed women, as well as those living in district B (characterized by an  
6 ethnically mixed population). We do not know why these differences by district exist in our  
7 study, and we believe this requires future research. For Arab women, lower ES&RI was  
8 associated with older age, not being pregnant at the time of interview, and living in district A  
9 (economically disadvantaged area). Jewish women of younger ages (16-24yrs), with lower  
10 education, and living in districts D (more economically advantaged) and B (characterized by  
11 ethnically mixed population) were less likely to have ES&RI. Increased awareness among HCPs  
12 about the importance of providing both IPV services appears warranted, as well as institutional  
13 support for HCPs, including training and follow-up protocols to ensure documentation.  
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### 28 **Study limitations**

29  
30 Our study makes a novel contribution to research assessing IPV screening within health care  
31 services. However the study has some limitations that should be noted. First, our measure of IPV  
32 asks about any (current or past) events, but the timing of these acts, including when they began, is  
33 not known. Likewise, our interview asked about past screening, but did not specify when. Future  
34 research should ask when IPV began, as well as determine screening timing. Next, recall bias was  
35 likely in our study, as some women might not remember that they have been screened or received  
36 information. However, it is reasonable to assume that this is most likely to occur in women who  
37 had not experienced IPV, as it would often be of less importance to them. This could result in  
38 underestimation of the association between ES, RI or both and having experienced IPV. A  
39 selection bias might also be a possibility, as our study was based on a sample of women who visit  
40 MCH clinics of the MOH in Israel. Still, we used a stratified sample, and the sociodemographic  
41 characteristics of our sample are very close to those for women of reproductive age in Israel.<sup>50</sup>  
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3 Future research should examine screening among women in other HCS settings in Israel, such as  
4 primary care clinics, MCH clinics run by the Sick Funds (health care management organizations),  
5  
6 and others in the municipalities of Jerusalem and Tel-Aviv.  
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## 9 10 **Conclusions**

11  
12 Despite Israel's longstanding IPV screening policy for all owmen visitng HCS, our study  
13  
14 identified gaps in implementation of screening and information provision within HCS. Women at  
15  
16 higher risk for IPV were less likely to have been screened or have received information about  
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18 IPV. These results call for further research to explore individual and system-level barriers to  
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20 implementation of universal screening and provision of information on IPV among HCPs.  
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22 Identifying and removing these barriers is vital, as our results show inequalities in conducting  
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24 screening and information provision on support services, specifically for women at higher risk for  
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3 **Author contributions** ND initiated the study, supervised all the study stages, conducted the data  
4 analysis, and prepared the paper for publication. RS helped with data programming and data  
5 cleaning. ABP helped with data collection and prepared the study codebook. ISV and PO  
6 contributed to the study design, critically read previous versions of the paper, and suggested  
7 revisions. RL worked as a research assistant who helped in some updates of the background. All  
8 authors read and confirmed the final version of the paper.  
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16

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18 **Competing interest** None Declared  
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22 **Patient consent** Not required  
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24  
25 **Ethics approval** The study was approved by the Human Subjects Research Committee of Ben-  
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30 **Data sharing statement** No additional data are available  
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## Appendix 1- Correlations between the study independent variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>1. Ethnicity</b>	1	-.320**	-.234**	-.114**	.227**	.352**	.427**	0.044	-.175**	.162**	.192**	.314**	.357**	.370**	-.136**
<b>2. Women's age</b>		1	.061*	.059*	-.296**	-.218**	-.210**	-0.052	.087**	-.159**	-.059*	-.106**	-.183**	-.152**	.169**
<b>3. Immigrant</b>			1	.108**	-0.052	-.067*	-0.046	0.000	.059*	-.153**	0.009	-0.004	-0.044	-.057*	0.021
<b>4. Marital status</b>				1	-0.028	.066*	-0.014	.090**	.089**	-.137**	0.016	0.031	0.022	0.016	-0.025
<b>5. Women status at interview</b>					1	.128**	.103**	-0.028	-.131**	-0.005	-0.009	.114**	.148**	.135**	-.266**
<b>6. Women's education</b>						1	.355**	.118**	-0.025	.130**	.153**	.170**	.229**	.181**	-.167**
<b>7. Women's employment</b>							1	.108**	-0.017	.131**	.114**	.167**	.208**	.195**	-.127**
<b>8. Partner employment</b>								1	.205**	.206**	0.039	.074**	.087**	.093**	-.134**
<b>9. Family income source</b>									1	0.051	0.014	-0.004	0.025	0.015	-0.028
<b>10. Religiosity</b>										1	0.042	.074**	.130**	.137**	-.118**
<b>11. Physical IPV</b>											1	.309**	.237**	.269**	-0.043
<b>12. Emotional IPV</b>												1	.375**	.775**	-.118**
<b>13. Social and economic IPV</b>													1	.728**	-.116**
<b>14. Any IPV</b>														1	-.113**
<b>15. MOH* district</b>															1

\* Ministry of Health

## STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No	Recommendation	
<b>Title and abstract</b>	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	Yes
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	Yes
<b>Introduction</b>			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	Pages 4-7
Objectives	3	State specific objectives, including any prespecified hypotheses	Page 7
<b>Methods</b>			
Study design	4	Present key elements of study design early in the paper	Page 7
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Page 7
Participants	6	<i>Cross-sectional study</i> —Give the eligibility criteria, and the sources and methods of selection of participants	Pages 8
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	Pages 8-10
Data sources/measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	Pages 8-10 when relevant
Bias	9	Describe any efforts to address potential sources of bias	Page 8-10 and 22
Study size	10	Explain how the study size was arrived at	Pages 19
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Pages 10-11
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	Pages 10-11
		(b) Describe any methods used to examine subgroups and interactions	
		(c) Explain how missing data were addressed	
		<i>Cross-sectional study</i> —If applicable, describe analytical methods taking account of sampling strategy	
		(e) Describe any sensitivity analyses	
Continued on next page			
<b>Results</b>			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	Table 1 and pages 11-12
		(b) Give reasons for non-participation at each stage	NR
		(c) Consider use of a flow diagram	NR



Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Table 1 and pages 11-12
		(b) Indicate number of participants with missing data for each variable of interest	Table 1
		(c) <i>Cohort study</i> —Summarise follow-up time (eg, average and total amount)	NR
Outcome data	15*		
		<i>Cross-sectional study</i> —Report numbers of outcome events or summary measures	Table 1 and page
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	Tables 2-4 and text Pages 13-16
		(b) Report category boundaries when continuous variables were categorized	Tables 2-4 and text Pages 13-16
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NR
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	Appendix 1
<b>Discussion</b>			
Key results	18	Summarise key results with reference to study objectives	Pages 18-19
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Page 22
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Pages 18-23
Generalisability	21	Discuss the generalisability (external validity) of the study results	Page 22
<b>Other information</b>			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Page 24

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at [www.strobe-statement.org](http://www.strobe-statement.org).

# BMJ Open

## Screening and receiving information for intimate partner violence in health care settings: a cross-sectional study of Arab and Jewish women of childbearing age in Israel

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<b>Primary Subject Heading</b>:	Public health
Secondary Subject Heading:	Health services research
Keywords:	Intimate partner violence screening, Information provision on services, Health care services

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3 **Screening and receiving information for intimate partner violence in health care**  
4 **settings: a cross-sectional study of Arab and Jewish women of childbearing age in Israel**  
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7 Nihaya Daoud,<sup>1</sup> Alexandra Berger-Polsky,<sup>1</sup> Ruslan Sergienko,<sup>1</sup> Patricia O'Campo,<sup>2</sup> Rebecca  
8 Lef,<sup>3</sup> Ilana Shoham-Vardi<sup>1</sup>  
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48 **Word count:** 5094  
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53 health care services  
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## ABSTRACT

**Objectives:** We studied the proportion of women who have ever been screened (ES) for IPV in a health care setting, received information (RI) about relevant services, or both, and explored disparities in screening and information provision by ethnicity and other characteristics.

**Design:** In 2014-15 we undertook a cross-sectional study, conducting interviews using a structured questionnaire among a stratified sample of 1,401 Arab and Jewish women in Israel.

**Setting:** A sample of 63 maternal and child health clinics (MCH) clinics in four geographical districts.

**Participants:** Women aged 16-48yrs, pregnant or up to 6 months after childbirth.

**Primary and Secondary Outcome Measures:** We used multivariable generalized estimation equation (GEE) analysis to determine characteristics of women who were ES (Has anyone at the health care services (HCS) ever asked you whether you have experienced IPV?); RI (Have you ever received information about what to do if you experience IPV?); and both (ES&RI).

**Results:** Less than half of participants (48.8%) reported ES; 50.5% RI; and 30% were both ES&RI. Having experienced any IPV was not associated with ES or ES&RI, but was associated with RI in an unexpected direction. Women at higher risk for IPV (Arab minority women, lower education, unmarried) were less likely to report being ES, RI or both. The odds ratio (OR) and 95% confidence intervals (CI) for not ER&RI were: 1.58(1.00-2.49) among Arab compared to Jewish women; 1.95(1.42-2.66) among low education versus academic education women; 1.34(1.03-1.73) among not working versus working. ES, RI and both differ across districts.

**Conclusions:** While Israel mandates screening and providing information regarding IPV for women visiting the HCS, we found inequalities, suggesting inconsistencies in policy implementation and missed opportunities to detect IPV. To increase IPV screening and

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3 information provision, the MOH should circulate clarification and provide support to health  
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5 care providers to conduct these activities.  
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### 10 **Strengths and limitations of this study**

- 11 • Our study is the first that we know of to quantify implementation of IPV screening and  
12 information provision, with attention to ethnicity and other characteristics of women  
13 who do or do not receive these services.  
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- 15 • We found inequalities in IPV screening and information provision, suggesting  
16 inconsistent implementation of the screening policy by health care providers.  
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- 18 • One limitation is that having ever been screened for, or received information on IPV  
19 were self-reported, thus record bias could have occurred.  
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- 21 • Another limitation is that our sample was composed of women visiting Ministry of  
22 Health MCH clinics, women visiting other clinics were not included, which might  
23 pose a selection bias.  
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## INTRODUCTION

Affecting more than one third of women globally,<sup>1</sup> intimate partner violence (IPV) has been shown to have a major effect on women's physical and mental health.<sup>2</sup> Women who experience IPV tend to use more health care services (HCS)<sup>3,4</sup> and are likely to disclose abuse for the first time to a healthcare provider (HCP),<sup>5</sup> as the latter are often seen as trusted professionals.<sup>6</sup> Therefore, HCPs can play a critical role in detection of IPV within HCS if they ask women about IPV.<sup>7</sup> While the effectiveness of IPV screening has yet to be fully demonstrated in research,<sup>8</sup> studies show that it can encourage women to disclose IPV, which might increase detection.<sup>7,9</sup> Just as importantly, IPV screening within HCS can become an occasion to provide victims with information about and referrals to supportive services,<sup>7,9</sup> as well as to consult with them on how to cope.<sup>7,10</sup>

A Cochrane review<sup>8</sup> distinguishes between different approaches to identifying women exposed to IPV in HCS contexts; *universal screening* prescribes screening for all women interacting with healthcare services in all locations via standardized questions and procedures, regardless of "symptoms" or risk factors; *selective or targeted screening* focuses on women with specific characteristics, such as when pregnant or seeking to terminate a pregnancy, and screens them using the same question; *routine inquiry* asks all women about IPV, but using varying methods or questions according to HCPs and particular women's situations. A *case-finding* is different from screening and it asks women about IPV if they present with symptoms or characteristics of IPV exposure. Proponents of universal screening argue that the severity of the burden of suffering from IPV necessitates a universal protocol.<sup>11,12</sup> They note that screening for IPV within HCS is associated with minimal risk, discomfort and emotional distress, and has been shown to increase detection, reduce IPV, and improve the health of screened women.<sup>13</sup> However, some reviews cast doubt on this view, citing a lack of evidence regarding the benefits of universal screening, and suggest a case-finding approach to

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3 identifying IPV.<sup>8 14</sup> Regardless, since the late 1990s, many health-professional associations  
4 have published clinician guidelines on how to identify and respond to women who have been  
5 abused,<sup>15 16</sup> and health professionals are now increasingly required to undertake screening in  
6 accordance with national health policies. For example, in 2013, the Preventive Services Task  
7 Force (USPTF) in the US recommended universal IPV screening of all women of  
8 childbearing age and referral for intervention services for women who screen positive.<sup>17</sup>  
9  
10 Conversely, some European countries (e.g., the UK and Sweden) have enacted a case finding  
11 approach to detect women with IPV.<sup>8 18 19</sup>

22 However, even in countries where medical organizations have recommended universal  
23 screening for IPV within HCS,<sup>11 16 18 20 21</sup> studies show that HCPs do not necessarily carry out  
24 this mandate.<sup>18 22 23</sup> In clinic-based studies in the US, the proportion of screening at least once  
25 by physicians was 11-39%.<sup>24</sup> This low proportion appears to be due to different barriers;  
26 clinicians may not feel confident about screening, not know what questions to ask, or how to  
27 respond if a woman says she is being abused, may feel there is not enough time to screen, or  
28 may see other issues as taking precedence.<sup>9 23</sup> Barriers can also come from women, who may  
29 not trust the provider enough to disclose this sensitive information.<sup>9 25</sup> This may relate to HPC  
30 attitudes towards IPV. For example, Gutmanis<sup>23</sup> identified misconceptions about IPV among  
31 HCPs, such as: “domestic violence is rare,” and “domestic violence is a private matter that  
32 should be resolved without outside intervention.”<sup>23</sup> Nursing staff, while generally expressing  
33 more favorable views toward screening than physicians, have also been shown to face internal  
34 barriers to screening, especially a fear of offending patients during questioning.<sup>26</sup> While these  
35 seem to be individual level barriers among HCPs, Gracia-Moreno identified health  
36 system-level barriers, including the interests of government leadership and the political will  
37 to implement a comprehensive health-system approach, as affecting whether or not HCPs  
38 carry out their role in identifying and helping women victims of IPV and sexual violence.<sup>27</sup>  
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3 Meanwhile, research shows women generally support universal IPV screening,<sup>28</sup> and a meta-  
4 analysis of 25 studies showed they want HCPs to be nonjudgmental, nondirective, and  
5 understanding of the complexity of partner violence.<sup>6 19</sup> However, other studies suggest that  
6 minority women and those with low socioeconomic status, who experience higher prevalence  
7 of IPV,<sup>29-31</sup> might be less likely to be screened by HCPs or receive information about IPV  
8 services. One study in Hawaii showed that, compared to White women, women from minority  
9 groups receive less counseling on IPV during prenatal care.<sup>32</sup> This suggests that minority  
10 women are screened for IPV less often. However, none of the studies we know of shows such  
11 disparities, and few studies have been conducted on disparities in IPV screening and  
12 information provision among women at risk for IPV.  
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### 26 **IPV screening in HCS settings in Israel**

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28 Israel is an apt setting for investigating implementation of universal IPV screening due to its  
29 ethnic makeup, with majority-Jewish and minority indigenous-Arab populations highly  
30 stratified by class, socioeconomic status and geography. This stratification might differentially  
31 affect the likelihood that women will feel at ease disclosing IPV in a health care setting.<sup>33</sup> A  
32 recent study on IPV found that Arab minority women and low-income women in Israel are  
33 more likely to report IPV compared to Jewish women. Risk factors for IPV among Arab  
34 women included younger age, higher level of religiosity, and living in urban areas.<sup>33</sup> To  
35 respond to domestic violence, in 2003 the Israeli Ministry of Health issued *Director General*  
36 *Circular no. 23/03*,<sup>34</sup> which mandated universal IPV screening for all women who visit HCSs.  
37 Yet, the Circular's approach to screening is inconclusive.<sup>34</sup> It states that "all women who  
38 present at the HCS should be asked about IPV" which echoes universal screening or routine  
39 inquiry (depending on the screening tool), but also notes that "specific emphasis should be on  
40 women who present with symptoms," implying a case finding (not screening). It goes on to  
41 say that all pregnant women who visit MCH clinics should be asked about IPV, suggesting  
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3 targeted or selective screening.<sup>34</sup> This inconclusive wording contrasts with the conclusive  
4 approaches delineated in the abovementioned Cochrane review definitions.<sup>8</sup> The Circular thus  
5 fails to offer clear direction for IPV screening. This might be a source of confusion for HCPs.  
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10 Indeed, a 2010 report by the Ministry of Health (MOH) showed that HCPs hesitate to  
11 implement the Circular's recommendations.<sup>35</sup> The report, based on in-depth interviews with  
12 nurses and physicians, identified different barriers to IPV screening and found that nurses are  
13 more likely to ask about IPV than physicians, but that both are reluctant to screen.<sup>35</sup> Few  
14 studies on the practice of IPV screening in Israel are available, and most have used small  
15 hospital-based samples. For example, Ben-Natan et al. (2011)<sup>36</sup> studied a sample of 100  
16 physicians and nurses from obstetrics and gynecology departments in a Central Israel hospital.  
17 They found that the most cited reason for failure to screen for IPV among HCPs was that they  
18 are embarrassed by the intimate nature of screening, including questioning patients.<sup>36</sup> And a  
19 previous nationwide study conducted in 2000 showed that only 3% of women were asked  
20 about domestic violence (not IPV) by a physician at primary care clinics.<sup>37</sup>  
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Despite these findings, little data yet exist to assess implementation of IPV screening or provision of information about related services across Israeli HCSs. Our study aims to examine the proportion of women who have ever been screened (ES) for IPV within HSCs, who have received information (RI) about IPV services, and both; and to determine characteristics, including ethnicity, associated with ES, RI, and both (ES & RI).

## METHODS

### Study Design and Sampling

Data were obtained from our cross-sectional study on "Family Relations, Violence and Health"<sup>29</sup> (<https://www.ncbi.nlm.nih.gov/pubmed/29294734>), conducted between October 2014 and October 2015 with approval by the Public Health Division of the Israeli Ministry of

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3 Health and the Ethics Committee at Ben-Gurion University of the Negev. Data collection  
4 followed the WHO ethical recommendations on safety of women victims of abuse.<sup>38</sup> A more  
5 detailed description of sampling can be found elsewhere,<sup>29</sup> but briefly, we selected Maternal  
6 and Child Health (MCH) clinics via a stratified sampling procedure based on Israel's main  
7 regions (South, Center, North and Haifa), the proportion of births in each region or district,  
8 and the ethnic composition (Arabs vs. Jews) of the population of women in the region. MCH  
9 clinics are located in neighborhoods and provide prenatal care, well-child follow-up, and  
10 required immunizations for different population groups. In this manner we selected 63 MCH  
11 clinics: 33 in Jewish localities, 21 in Arab localities, and 9 in mixed localities.

### 23 **Participants and data collection**

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26 Participants were recruited at the 63 MCH clinics that were sampled for the study. One month  
27 before data collection the study coordinators distributed leaflets at these clinics with  
28 information about the study. Trained female interviewers asked eligible mothers (pregnant, or  
29 6 weeks to 6 months after childbirth) to participate in the study. Women who agreed to  
30 participate were invited into a separate room at the clinics, where they were interviewed face  
31 to face using a structured questionnaire in the women's preferred language (Arabic or  
32 Hebrew) after signing an informed consent form. If a participant was detected as having  
33 experienced IPV, the interviewer and the study team encouraged her to talk with the MCH  
34 nurse who could refer her to a social worker in the community's social services office. In  
35 addition, all study participants received written contact information on community services  
36 that support women who are victims of violence. A total of 1,401 women were interviewed  
37 (436 Arab and 965 Jewish), with a response rate of 76% among Arab women, 73% among  
38 Jewish women. Our sample size was calculated using Winpepi software (version 11.65). Our  
39 calculation was based on results of a study conducted in Northern Israel by Fisher et al.  
40 (2003)<sup>39</sup>. They found 8% prevalence of IPV in the total sample, with 26% of Arab women  
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3 reporting IPV compared to 16% of Jewish women. To detect a 10% difference of IPV  
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5 between these two ethnic groups with a significance level of 5%, power of 90%, and  
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7 prevalence of IPV 8%, we needed a total sample of 1156 women with a cluster size of 25  
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9 participants per cluster (MCH clinic) and 46 clusters (MCH clinics). This was after  
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11 multiplying by 0.005 for the Inter Cluster Correlation effect, as recommended in cluster  
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13 design health studies.<sup>40</sup> We added 20% to the sample size (as originally this was a cohort  
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15 design study and we assumed women would be lost for follow-up). Therefore, the final  
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17 sample size was 1401 women interviewed at 63 clinics, as we ended up interviewing 14 more  
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19 women than the required sample of 1387 women.  
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## 23 **Measures**

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26 Dependent variables:

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28 *Ever screened (ES) for IPV:* a yes/no question: “Has anyone at a HCS ever asked you whether  
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30 you have experienced IPV?”  
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33 *Received information (RI) about IPV services:* a yes/no question: “Have you ever received  
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35 information about what to do in case you experience IPV?”; this question was asked  
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37 regardless of responses to the preceding question.  
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40 *An index variable of ever screened and received information (ES&RI):* We created an index  
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42 variable that included positive answers to the previous two questions versus all other answers.  
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45 Independent Variables:

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47 *Any intimate partner violence (IPV):* any positive answer to a list of 10 questions about acts of  
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49 violence perpetrated by a participant's intimate partner at any time.<sup>29 41</sup> These acts include  
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51 physical violence, psychological violence, social control and economic violence. For example,  
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53 ‘Your partner has hit you, kicked you, pushed you, or thrown things at you?’; ‘Does your  
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55 partner try to isolate you from your family and friends?’ and ‘Are you fearful of drastic  
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57 changes in your partner’s mood?’, Our list of questions was based on those used in the  
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3 Preventive Services Task Force Family screening tool on IPV,<sup>41</sup> and on questions that are  
4 used for IPV screening in some MCH clinics in Israel. For information about the tool used to  
5 assess IPV, please see Daoud et al., 2017.<sup>33</sup>  
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10 *Types of IPV:* resulted from factor analysis for the above 10 acts of IPV, and were categorized  
11 as: physical or sexual violence (e.g., beating, slapping, and kicking; forced sex); emotional or  
12 verbal violence (e.g., threats of harm, constant humiliation, insults); and social or economic  
13 violence<sup>33</sup> (controlling behaviors, such as- isolating a woman from her family and friends;  
14 monitoring her movements; and restricting access to financial resources including  
15 employment, education or medical care).  
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19 *Ethnicity:* self-determined as 1. Arab or 2. Jewish.  
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23 *Immigrant Status:* born in Israel or another country.  
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27 *Age:* 16-24, 25-34 and 35-48 years old.  
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31 *Marital status:* 1. married, and 2. not married, including single, divorced, separated, not-  
32 cohabitating, or other.  
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36 *Women's status during the interview:* a composite variable based on answers to three  
37 questions: 'Are you currently pregnant?' (yes/ no), 2. 'Do you have children?' (yes/no), and  
38 'How many children do you have?' We categorized answers as follows: 1. Pregnant with no  
39 children, 2. Pregnant with children, 3. Not pregnant with 1-2 children, and 4. Not pregnant  
40 with 3 children or more.  
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44 *Women's education and husband's education:* 1. High school or less, 2. Postsecondary  
45 education, and 3. University education (Bachelor's, Master's or Doctorate).  
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49 *Employment status for women and husbands:* A yes/no question about current work outside  
50 the household by participants and their partners.  
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3 *Family source of income:* 1. Work only, 2. Social allowances only, or 3. Other source, which  
4 included any combination of work and social allowances, and work and other resources, such  
5 as a grant, family support, land, or other source of income.  
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10 *Religiosity:* 1. Religious or very religious, 2. Traditional, 3. Not religious.<sup>42 43</sup>  
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12 *Ministry of Health (MOH) district:* Based on the country's geographic areas. We categorized  
13 these into four districts: We named these districts as A, B, C and D to keep the information  
14 about the district's performance anonymous.  
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### 18 19 **Statistical Analysis**

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21 We calculated the proportion (%) of our main variables (ES, RI and the index variable of  
22 ES&RI) for the total sample of women, and examined women's characteristics across these  
23 variables using the Chi Square test. Next, we examined univariate associations between IPV;  
24 types of IPV; and ES, RI and the ES&RI index variable. Since Arab and Jewish women  
25 differed in most of the independent and dependent variables, we examined interactions  
26 between ethnicity and each of the associations between independent variables and ER, RI and  
27 the index variable (ES&RI). The interaction with the MOH district variable was positive.  
28 Therefore, we decided to conduct our multivariate analysis for each ethnic group (Arab and  
29 Jewish) in addition to the multivariable analysis for the total sample. We used Generalized  
30 Estimating Equation analysis (GEE) in the multivariable analysis to adjust for the MCH clinic  
31 cluster effect, while adjusting for significant ( $P < 0.05$ ) independent variables that were  
32 associated with ES, RI and the ES&RI index variable in the univariate analysis. Three  
33 multivariable analysis models were fitted for each study group in order to examine  
34 characteristics of women who received the services we studied: ES, RI and ES&RI.  
35 The correlation between the study independent variables was lower than our threshold of  
36  $R > 0.4$ , and we did not exclude any of these variables from the multivariable analysis, as  
37 multi-collinearity was not likely (see Appendix 1).  
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## Patient and public involvement

Patients and the public were not involved in this research

## RESULTS

Less than half of the women reported ever having been screened (ES) for IPV (48.4%), close to half (50.5%) received information (RI) about services for coping with IPV, and only 30.4% reported both ES&RI (Table 1).

Table 1 also presents characteristics of women who received each of these services out of the total sample of participants. Notably, experiencing any IPV, physical, and emotional IPV was not associated with having ES for IPV. However, women who reported less social IPV were more likely to report ES. In addition, reporting ES was higher among Jewish women; married women; those not pregnant with three children or more; women with postsecondary education or an academic degree; employed women with main source of family income from work; religious or very religious women; and those living in districts C and D. Age, immigrant status, and partner employment were not associated with reporting ES for IPV.

Reporting RI on services for coping with IPV was more likely among women who reported not experiencing any IPV, or emotional or social IPV. Physical IPV was not associated with RI. However, reporting RI was higher among Jewish women; older women; women not pregnant; with 1-2 children; women with academic education; employed women, and women with employed partners; women with an income source from work and other sources; women who are not religious; and women who live in district B. RI was not associated with immigrant or marital status (Table 1).

Women who reported both ES & RI were more likely to be Jewish, older, not pregnant during the interview, with children, with higher education, employed, and with family income from other sources. However, the variables of any IPV, types of IPV, immigrant status, marital

status, partner employment, religiosity, and MOH district were not associated with reporting both services (ES&RI).

**Table 1- Univariate association for ever being screened (ES) for intimate partner violence (IPV), receiving information (RI) about IPV services, and both, among women in the study sample in Israel, 2014-2015**

Women's characteristics	Total sample	ES for IPV		RI about IPV services		ES & RI	
	N=1401 N (%)	N (%)	P=	N (%)	P=	N (%)	P=
<b>Total =</b>		<b>675 (48.4)</b>		<b>708 (50.5)</b>		<b>425 (30.4)</b>	
<b>Any IPV</b>			0.250		0.011		0.134
Yes	843 (39.8)	259 (46.5)		259 (46.4)		157 (28.1)	
No	558 (60.2)	416 (49.6)		449 (53.4)		268 (31.9)	
<b>Physical IPV</b>			0.805		0.925		0.677
No	1333 (95.1)	643 (48.4)		674 (50.6)		407 (30.6)	
Yes	64 (4.6)	32 (50.0)		32 (50.0)		18 (28.1)	
<b>Emotional IPV</b>			0.397		0.005		0.104
No	997 (71.4)	489 (49.2)		527 (52.9)		316 (31.8)	
Yes	399 (28.6)	186 (46.7)		178 (44.6)		109 (27.3)	
<b>Social IPV</b>			0.038		0.007		0.115
No	1033 (73.7)	516 (50.1)		544 (52.7)		326 (31.6)	
Yes	364 (26.1)	159 (43.8)		162 (44.5)		99 (27.2)	
<b>Ethnicity</b>			<0.001		<0.001		<0.001
Arab	434 (31.1)	162 (37.3)		166 (38.1)		89 (20.4)	
Jewish	965 (68.9)	513 (53.4)		542 (56.3)		336 (34.9)	
<b>Age</b>			0.096		0.004		0.010
16-24	247 (17.6)	104 (42.4)		101 (40.9)		56 (22.8)	
25-34	844 (60.3)	413 (49.1)		444 (52.7)		263 (31.2)	
35-48	309 (22.1)	158 (51.3)		162 (52.4)		106 (34.3)	
<b>Immigrant</b>			0.954		0.234		0.588
Not immigrant	1133 (81.4)	547 (48.4)		565 (50.0)		340 (30.1)	
Immigrant	259 (18.6)	124 (48.2)		140 (54.1)		82 (31.8)	
<b>Marital status</b>			0.018		0.129		0.237
Married	1329 (95.2)	650 (49.1)		666 (50.2)		407 (30.7)	
Other	67 (4.8)	23 (34.3)		40 (59.7)		16 (23.9)	
<b>Women's status during interview</b>			<0.001		<0.001		<0.001
Not pregnant with 3+children	390 (28.0)	204 (52.6)		194 (49.7)		136 (34.9)	
Not pregnant with 1-2 children	737 (52.9)	376 (51.1)		412 (55.9)		234 (31.8)	
Pregnant with children	187 (13.4)	70 (37.8)		62 (33.3)		38 (20.4)	
Pregnant without children	80 (5.7)	21 (26.3)		36 (45.0)		14 (17.5)	
<b>Education (woman)</b>			<0.001		<0.001		<0.001
High school or less	537 (38.3)	204 (38.2)		211 (39.3)		111 (20.7)	
Postsecondary or college	251 (17.9)	134 (53.6)		126 (50.6)		82 (32.8)	
Bachelor degree or above	613 (43.8)	337 (55.2)		371 (60.5)		232 (37.8)	
<b>Employment (woman)</b>			<0.001		<0.001		<0.001
Yes	781 (56.6)	414 (53.0)		445 (56.8)		279 (35.7)	
No	59.8 (43.4)	252 (42.1)		257 (42.8)		141 (23.5)	
<b>Employment (partner)</b>			0.791		0.005		0.229
Yes	1222 (88.0)	592 (48.7)		633 (51.9)		379 (31.1)	
No	166 (12.0)	79 (47.6)		67 (40.0)		44 (26.5)	
<b>Household income source</b>			0.001		<0.001		0.005
Work only	982 (70.1)	466 (47.6)		493 (50.3)		290 (29.6)	
Social allowances only	79 (5.6)	25 (31.6)		25 (31.6)		14 (17.7)	
Work and other source	340 (24.3)	184 (54.4)		190 (56.0)		121 (35.7)	
<b>Religiosity</b>			0.002		0.041		0.604

Not religious	440 (31.5)	220 (50.1)	244 (55.6)	135 (30.7)	
Traditional	608 (43.5)	262 (43.4)	298 (49.0)	177 (29.2)	
Religious or very religious	351 (25.1)	193 (55.1)	166 (47.4)	113 (32.3)	
<b>MOH* District</b>					0.344
A	358 (25.7)	160 (45.1)	166 (46.5)	113 (31.7)	
B	212 (15.2)	82 (38.7)	127 (59.9)	54 (25.5)	
C	334 (24.0)	183 (54.8)	165 (49.4)	102 (30.5)	
D	485 (35.0)	248 (51.1)	248 (51.0)	156 (32.1)	

\* MOH Ministry of Health

For the multivariable analysis, we considered variables that were significantly associated in the bivariate analysis with each of our outcome variables of ES, RI and both (ES&RI). Since we found significant interactions of ethnicity (Jewish vs. Arab) and the associations between the MOH district variable and ES, RI and ES&RI, we conducted GEE multivariable analysis for each of these dependent variables (ES, RI and both) for the total sample of women, and then separately for each ethnic group. The results of the multivariable analysis are presented in Tables 2-4.

Results of the GEE for having been ES for IPV among the total sample (Table 2) show that the odds ratio (OR) of not having been ES was higher among women at higher risk for IPV. This includes Arab compared to Jewish women (OR, 95% confidence intervals (CI)=1.98,1.16-3.36); and women who experience IPV compared to women who do not experience IPV (OR, 95%CI=1.30,1.01-1.67). Unmarried women compared to married were almost twice as likely to report not having ES (OR, 95%CI=2.07,1.23-3.27). Women with lower education (high school or less) had a higher likelihood of reporting not having ES compared to women with higher education (OR, 95%CI=1.75,1.29-2.38).

Among Arab minority women, not having ES was reported more often among women who were not pregnant, with 1-2 children at the time of the interview, compared to those not pregnant with 3 children or more (OR, 95%CI=1.61,1.04-2.47). Meanwhile, traditional Arab women were less likely to report not having ES for IPV compared to non-religious Arab women (OR, 95%CI=0.56,0.36-0.89). In addition, women in district C were less likely to report not having ES compared to women in district A (OR, 95%CI=0.14,0.06-0.32).



For Jewish women, not having ES was reported more often by: unmarried compared to married women (OR, 95%CI=2.02,1.20-3.40); those with lower education compared to higher or academic education (OR, 95%CI=1.96,1.40-2.76); and women living in district B compared to district A (OR, 95%CI=2.08,1.20-3.58). Religious Jewish women were less likely to report not having ES for IPV compared to non-religious women (OR, 95%CI=0.66,0.49-0.90).

**Table 2- Multivariable analysis for not ever been screened for IPV in a health care setting in the total sample and among Arab and Jewish women**

	Total sample (N=1355)		Arab women (N=425)		Jewish women (N=930)	
	OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
<b>Ethnicity</b>						
Arab	<b>1.98 (1.16, 3.36)</b>	<b>0.012</b>				
Jewish	1.00					
<b>Women's status at interview</b>						
Pregnant without children	1.88 (0.87, 4.06)	0.107	2.88 (0.94, 8.79)	0.064	1.32 (0.36, 4.82)	0.674
Pregnant with children	1.14 (0.70, 1.87)	0.592	1.39 (0.73, 2.62)	0.316	0.93 (0.46, 1.89)	0.837
Not pregnant with 1-2 children	0.99(0.75, 1.30)	0.945	<b>1.61 (1.04, 2.47)</b>	<b>0.031</b>	0.87 (0.64, 1.18)	0.368
Not pregnant with 3 or more children	1.00		1.00		1.00	
<b>Marital status</b>						
Unmarried	<b>2.07 (1.27, 3.35)</b>	<b>0.003</b>	1.22 (0.06, 24.017)	0.894	<b>2.02 (1.20, 3.40)</b>	<b>0.008</b>
Married	1.00		1.00		1.00	
<b>Women's education</b>						
High school and less	<b>1.75 (1.29, 2.38)</b>	<b>0.000</b>	1.26 (0.61, 2.61)	0.529	<b>1.96 (1.40, 2.76)</b>	<b>0.000</b>
Beyond high school	1.03 (0.72, 1.50)	0.857	0.71 (0.34, 1.49)	0.369	1.09 (0.69, 1.74)	0.706
BA MA PhD	1.00		1.00		1.00	
<b>Women's employment</b>						
No doesn't work	1.09 (0.87, 1.37)	0.454	1.00 (0.64, 1.58)	0.989	1.18 (0.91, 1.53)	0.199
Yes works	1.00		1.00		1.00	
<b>Family source of income</b>						
Other	0.88 (0.65, 1.20)	0.424	0.57 (0.32, 1.02)	0.059	0.95 (0.69, 1.32)	0.773
Social allowances only	1.22 (0.66, 2.26)	0.531	1.70 (0.65, 4.43)	0.277	0.77 (0.33, 1.80)	0.544
From work only	1.00		1.00		1.00	
<b>Religiosity</b>						
Religious	0.78 (0.58, 1.05)	0.103	1.04 (0.69, 1.58)	0.849	<b>0.66 (0.49, 0.90)</b>	<b>0.009</b>
Traditional	0.91 (0.65, 1.27)	0.583	<b>0.56 (0.36, 0.89)</b>	<b>0.013</b>	0.96 (0.64, 1.44)	0.858
Not religious	1.00		1.00		1.00	
<b>Any IPV</b>						
Yes IPV	<b>1.30 (1.01, 1.67)</b>	<b>0.044</b>	1.13 (0.76, 1.69)	0.545	1.36 (0.97, 1.89)	0.073
No IPV	1.00		1.00		1.00	
<b>MOH* district</b>						
D	0.96 (0.57, 1.62)	0.878	0.25 (0.06, 1.04)	0.056	1.57 (0.97, 2.53)	0.068
C	0.56 (0.32, 1.01)	0.054	<b>0.14 (0.06, 0.32)</b>	<b>0.000</b>	1.25 (0.82, 1.90)	0.294
B	1.35 (0.82, 2.24)	0.240	0.44 (0.18, 1.08)	0.072	<b>2.08 (1.20, 3.58)</b>	<b>0.009</b>
A	1.00		1.00		1.00	

\* MOH Ministry of Health

Regarding RI on services for coping with IPV, among women in the total sample (Table 3) we found that not RI was higher among: Arab compared to Jewish women (OR, 95%CI=1.79,

1.24-2.56); pregnant women with children compared with women who were not pregnant with 3 children or more at the time of the interview (OR, 95%CI=1.69,1.02-2.78); women with high school education or less compared with women with academic education (OR, 95%CI=1.82,1.37-2.34); and women with postsecondary education compared to women with academic-level education (OR, 95%CI=1.31, 1.04-1.66). Women living in district C and district B were less likely to report not RI compared to women living in district A (OR, 95%CI=0.70,0.52-0.93 and OR, 95%CI=0.66, 0.42-1.04, respectively).

Among Arab women, not reporting RI was higher among pregnant women with children compared with women who were not pregnant with 3 children or more (OR, 95%CI=2.22, 1.17-4.22), and among women with lower education compared to higher education (OR, 95%CI=2.21,1.31-3.72). Women living in district C compared with district A were less likely to report not RI (OR, 95%CI=0.45, 0.23-0.88).

As for Jewish participants, compared to younger women, older women were less likely to report not RI (OR, 95%CI= 0.59, 0.39-0.88). However, women with lower education compared to academic educated women were more likely to report not RI (OR, 95% CI=1.57,1.11-2.21). Also, women living in the district D compared to women in district A were more likely to report not RI (OR, 95%CI=1.51,1.17-1.95).

**Table 3- Multivariable analysis for not receiving information about IPV services in a health care setting in the total sample and among Arab and Jewish women in Israel, 2014-2015**

	Total sample (N=1350)		Arab women (N=427)		Jewish women (N=923)	
	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P
<b>Ethnicity</b>						
Arab	<b>1.79 (1.24, 2.56)</b>	<b>0.002</b>				
Jewish	1.00					
<b>Women's age</b>						
35-48	0.86 (0.60, 1.24)	0.410	1.84 (0.85, 3.97)	0.119	<b>0.59 (0.39, 0.88)</b>	<b>0.010</b>
25-34	0.89 (0.65, 1.20)	0.432	1.02 (0.65, 1.60)	0.938	0.73 (0.48, 1.13)	0.158
16-24	1.00		1.00		1.00	
<b>Women's status at interview</b>						
Pregnant without children	0.87 (0.53, 1.42)	0.569	1.19 (0.60, 2.34)	0.616	0.63 (0.26, 1.54)	0.314
Pregnant with children	<b>1.69 (1.02, 2.78)</b>	<b>0.041</b>	<b>2.22 (1.17, 4.22)</b>	<b>0.015</b>	1.30 (0.63, 2.71)	0.481
Not pregnant with 1-2 children	0.86 (0.61, 1.20)	0.365	1.15 (0.70, 1.88)	0.588	0.76 (0.52, 1.12)	0.166
Not pregnant with 3 or more children	1.00		1.00		1.00	

<b>Women's education</b>							
High school and less	<b>1.82 (1.37, 2.43)</b>	<b>0.000</b>	<b>2.21 (1.31, 3.72)</b>	<b>0.003</b>	<b>1.57 (1.11, 2.21)</b>	<b>0.010</b>	
Beyond high school	<b>1.31 (1.04, 1.66)</b>	<b>0.024</b>	1.08 (0.61, 1.90)	0.790	1.42 (1.09, 1.83)	0.009	
BA MA PhD	1.00		1.00		1.00		
<b>Women's employment</b>							
No doesn't work	1.20 (0.97, 1.49)	0.091	1.10 (0.69, 1.76)	0.690	1.23 (0.98, 1.53)	0.074	
Yes works	1.00		1.00		1.00		
<b>Partner employment</b>							
No not working	1.33 (0.88, 2.01)	0.179	1.37 (0.55, 3.38)	0.496	1.32 (0.81, 2.15)	0.267	
Yes works	1.00		1.00		1.00		
<b>Family source of income</b>							
Other	0.87 (0.66, 1.14)	0.299	1.24 (0.67, 2.30)	0.499	0.82 (0.62, 1.08)	0.162	
Social allowances only	1.09 (0.65, 1.84)	0.745	0.92 (0.39, 2.17)	0.849	1.03 (0.51, 2.05)	0.942	
From work only	1.00		1.00		1.00		
<b>Religiosity</b>							
Religious	1.05 (0.76, 1.45)	0.767	0.89 (0.45, 1.78)	0.741	1.03 (0.70, 1.51)	0.877	
Traditional	0.89 (0.64, 1.24)	0.487	0.57 (0.28, 1.18)	0.130	1.04 (0.72, 1.50)	0.851	
Not religious	1.00		1.00		1.00		
<b>Any IPV</b>							
Yes IPV	1.08 (0.82, 1.41)	0.582	1.17 (0.71, 1.91)	0.540	1.00 (0.73, 1.37)	0.999	
No IPV	1.00		1.00		1.00		
<b>MOH* district</b>							
D	1.22 (0.87, 1.69)	0.246	0.45 (0.17, 1.19)	0.108	<b>1.51 (1.17, 1.95)</b>	<b>0.001</b>	
C	<b>0.70 (0.52, 0.93)</b>	<b>0.015</b>	<b>0.45 (0.23, 0.88)</b>	<b>0.019</b>	0.85 (0.69, 1.05)	0.136	
B	<b>0.66 (0.42, 1.04)</b>	<b>0.072</b>	0.41 (0.16, 1.04)	0.061	0.86 (0.56, 1.33)	0.500	
A	1.00		1.00		1.00		

\* MOH Ministry of Health

The multivariable results for participants reporting having both ES&RI are presented in Table 4. For the total sample, not reporting both services (ES&RI) was nearly one and a half times more likely among Arab compared to Jewish women (OR, 95%CI=1.58,1.00-2.49), almost two times more likely in women with high school education or less compared to those with academic education (OR, 95%CI=1.95,1.42-2.66), unemployed compared to employed women (OR, 95%CI=1.34,1.03-1.73), and women living in district B compared to district A (OR, 95%CI=1.57,1.00-2.48). Arab women who did not report ES&RI were almost three times more likely to be of older age, compared to younger age (OR,95%CI=2.94,1.04-8.30), and not pregnant compared to pregnant (OR,95%CI= 2.29,1.05-4.99 and 2.04,1.16-3.59). However, Arab women were less likely to report not having both ES&RI if they live in district D and district C compared to district A (OR, 95%CI=0.27,0.10-0.72 and 0.35,0.15-0.84, respectively).

As for Jewish women, not reporting both ES&RI was lower among women at older age compared to younger age. However, not reporting both ES & RI was more likely among lower educated women compared to higher educated women (OR, 95%CI=1.99,1.34-2.95),

and women living in district D and district B compared to district A (OR, 95%CI=1.96,1.29-2.97 and 1.95,1.20-3.15, respectively).

**Table 4- Multivariable analysis for the combined variable of not ever being screened for IPV and not receiving information in a health care setting in the total sample and among Arab and Jewish women in Israel, 2014-2015**

	Total sample (N=1363)		Arab women (N=429)		Jewish women (N=934)	
	OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
<b>Ethnicity</b>						
Arab	<b>1.58 (1.00, 2.49)</b>	<b>0.051</b>				
Jewish	1.00					
<b>Women's age</b>						
35-48	0.91 (0.60, 1.38)	0.653	<b>2.94 (1.04, 8.30)</b>	<b>0.041</b>	<b>0.59 (0.34, 1.00)</b>	<b>0.050</b>
25-34	1.00 (0.69, 1.45)	0.992	1.41 (0.84, 2.37)	0.198	0.74 (0.43, 1.26)	0.263
16-24	1.00		1.00		1.00	
<b>Women's status at interview</b>						
Pregnant without children	1.71 (0.88, 3.30)	0.111	2.18 (0.82, 5.82)	0.119	1.44 (0.46, 4.47)	0.529
Pregnant with children	1.66 (0.98, 2.82)	0.062	<b>2.29 (1.05, 4.99)</b>	<b>0.038</b>	1.24 (0.64, 2.41)	0.523
Not pregnant with 1-2 children	1.15 (0.83, 1.58)	0.402	<b>2.04 (1.16, 3.59)</b>	<b>0.013</b>	1.00 (0.70, 1.42)	0.979
Not pregnant with 3 or more children	1.00		1.00		1.00	
<b>Women's education</b>						
High school and less	<b>1.95 (1.42, 2.66)</b>	<b>0.000</b>	1.52 (0.77, 3.02)	0.227	<b>1.99 (1.34, 2.95)</b>	<b>0.001</b>
Beyond high school	1.17 (0.87, 1.57)	0.307	0.79 (0.40, 1.58)	0.509	1.26 (0.89, 1.78)	0.187
BA MA PhD	1.00		1.00		1.00	
<b>Women's employment</b>						
No doesn't work	<b>1.34 (1.03, 1.73)</b>	<b>0.027</b>	1.33 (0.81, 2.18)	0.263	1.37 (0.99, 1.89)	0.056
Yes works	1.00		1.00		1.00	
<b>Family source of income</b>						
Other	0.89 (0.65, 1.24)	0.498	0.90 (0.47, 1.72)	0.742	0.94 (0.67, 1.32)	0.720
Social allowances only	1.25 (0.72, 2.17)	0.423	0.99 (0.43, 2.25)	0.974	1.30 (0.60, 2.84)	0.503
From work only	1.00		1.00		1.00	
<b>Any IPV</b>						
No IPV	1.17 (0.89, 1.56)	0.266	1.15 (0.64, 2.05)	0.640	1.16 (0.83, 1.62)	0.377
Yes, IPV	1.00		1.00		1.00	
<b>MOH* district</b>						
D	1.39 (0.89, 2.15)	0.143	<b>0.27 (0.10, 0.72)</b>	<b>0.010</b>	<b>1.96 (1.29, 2.97)</b>	<b>0.002</b>
C	0.88 (0.59, 1.33)	0.544	<b>0.35 (0.15, 0.84)</b>	<b>0.018</b>	1.11 (0.76, 1.60)	0.590
B	<b>1.57 (1.00, 2.48)</b>	<b>0.052</b>	0.72 (0.25, 2.08)	0.540	<b>1.95 (1.20, 3.15)</b>	<b>0.007</b>
A	1.00		1.00		1.00	

\* MOH Ministry of Health

## DISCUSSION

### *IPV screening*

Screening for IPV is recommended within HCS in many countries,<sup>16 27</sup> as it may help women who experience IPV to disclose abuse and receive information about supportive social and health care services.<sup>7 13</sup> While there are different screening approaches, thus far, implementation of IPV screening across settings is incomplete.<sup>9</sup> Insufficient system support

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3 for HCPs, as well as lack of skills and resources among HCPs are major barriers to fuller  
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5 implementation. Therefore, health care–system action is required to support these women.<sup>27</sup>  
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7 In the current study, we asked women of childbearing age if they had ever been screened (ES)  
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9 for IPV in Israel's HCS, and whether they had ever received information (RI) on what to do in  
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11 case they experience IPV. We also created an index variable of both (ES&RI). We found that  
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13 despite the MOH Circular from 2003 on IPV, which mandates screening for every woman  
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15 who interacts with HCS, including MCH clinics. this policy is not being followed consistently  
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17 countrywide. Less than half (48.4%) of our study participants reported ever being screened for  
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19 IPV via HCS. This result might be related to confusion among HCPs over screening methods,  
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21 as the 2003 Circular is not conclusive in this regard. On the one hand, it mandates a universal  
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23 screening, and on the other, it specifies conditions for case-finding.<sup>34</sup> Despite this, our results  
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25 are consistent with previous research on IPV screening.<sup>9 12</sup> A realist-informed systematic  
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27 review of studies found that in most countries less than half of women were screened for IPV  
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29 within HCS.<sup>9</sup> Based on our results it appears that HCPs in Israel need more health-system  
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31 support to achieve greater screening coverage. Therefore, the Ministry of Health (MOH) in  
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33 Israel should offer consistent, sustained training to enhance knowledge among HCPs  
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35 regarding IPV and IPV screening, and remove barriers, including embarrassment, when  
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37 screening women for IPV.<sup>35 44</sup> Despite the fact that enhanced training for IPV screening might  
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39 not increase the screening over mandatory screening, it can increase safety planning for  
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41 women victims of IPV as was shown in the MOVE study in Australia.<sup>45</sup>  
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43 Despite this, our finding that half the women in our sample were ES is encouraging, as  
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45 previous studies in Israel have found far fewer reports of IPV screening.<sup>36 44 46</sup> However, those  
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47 studies included only small samples. One such study, conducted in the ob\gyn department of a  
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49 hospital in central Israel, found that only 12% of women patients reported having been  
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51 screened for domestic violence in the past year.<sup>44 e</sup>  
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### *Associations between ever screened and IPV*

Another important finding from our study is that ES was not associated with most types of IPV variables. Only the association between ES and social and economic IPV was significant, but the direction of the association was opposite to our hypothesis: women exposed to social and economic IPV were less likely to ever have been screened. While these results might be related to power issues, due to smaller subsamples of women in our study who reported different types of IPV, it should raise the attention of policy makers at the MOH.

The disparities we found in IPV screening based on women's ethnicity and socioeconomic status are of concern, as they show inequalities in screening between groups in Israel. Women who are at higher risk for IPV (Arab minority women, those with lower education, and unmarried women) were less likely to be screened for IPV. Religiosity was also an important factor when we examined ES within each ethnic group. These findings also suggest that without a conclusive HCS screening protocol for IPV, some women at risk for IPV are not being identified. This is consistent with a qualitative study in the US showing that a lack of a clear screening policy was a barrier to disclosure of IPV.<sup>25</sup> This lack of a clear IPV screening policy might explain why ES was not significantly associated with any IPV and some specific IPV types in our study.

Our results about failure to screen women who are at risk of IPV might be related to different barriers, including a lack of training on their part for how to screen; lack of time in busy clinics; or reluctance to screen due to prejudices related to IPV. These barriers were mentioned in a Ministry of Health quality assessment report on IPV screening that was based on interviews with HCPs.<sup>35</sup> While previous research shows that screening and referral alone are not sufficient to support women living with domestic violence,<sup>47</sup> as these women have multiple social and health needs,<sup>48-50</sup> enhanced training would help in increasing the safety planning for these women.<sup>45</sup>

### ***IPV screening by ethnicity***

The significant interaction we found between ethnicity and MOH district (area of living) in the association with ES, meanwhile, shows that IPV screening is implemented differentially among Arab and Jewish women in these districts. While we do not know the ethnic composition of HCPs, or whether Arab and Jewish women are reluctant to disclose IPV to HCPs of another or same ethnicity, previous research has shown that Arab women tend to use fewer professional services for coping with IPV, regardless of HCP ethnicity.<sup>51</sup> Future research should examine HCP's attitudes, consider the prospect of cultural bias in IPV screening, and examine whether HCPs make assumptions about the lack of support in the community for minority women who experience IPV.<sup>35</sup>

### ***Receiving information on supportive services***

Our results on receiving information (RI) regarding IPV services were similar to those on ES: just over half (50.5%) of participants reported RI. However, any IPV, emotional IPV and social and economic IPV were associated with RI, but not in the direction we had hypothesized. Women who reported experiencing IPV consistently reported less RI. This association did not persist in the multivariate analysis, where, in the total sample of women, those with higher risk for IPV received less information. This included Arab women, pregnant women with children, women with lower (non-academic) education, and those living in district A, which is more economically disadvantaged compared to the other three districts. The multivariable analysis for Arab women, meanwhile, showed that women with children, not pregnant at the time of interview, and women with less than high school education and living in district A (that has a higher concentration of Arab women living in economically disadvantaged conditions) were less likely to RI. Among Jewish women, younger (16-24yrs), lower educated women living in district D (more economically advantaged region compared to the other three) were less likely to receive information.

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3 Since, according to Ministry of Health policy in Israel, it is mandatory that all women receive  
4 information about IPV services, provision of information should be reported by all study  
5 participants. However, we found that only about half of the women had RI on IPV services.  
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10 RI should be recorded in all women's medical files, and our result can then be examined  
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13 against those medical records. If the disparities are confirmed, this should be an alarm bell for  
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16 policy makers.

### 17 ***Ever screened and received information***

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19 The combined variable we created that includes positive answers on ES&RI confirmed our  
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22 results for each of the variables when examined alone, but revealed an even poorer picture  
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25 regarding IPV service implementation within HCS: only about one third of the women  
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28 reported receiving both services. Further, the multivariable analysis for the combined variable  
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31 showed that women at high risk for IPV were less likely to report receiving both services  
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34 (ES&RI). This included Arab, lower educated and unemployed women, as well as those living  
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37 in district B (characterized by an ethnically mixed population). We do not know why these  
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40 differences by district exist in our study, and we believe this requires future research. For  
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43 Arab women, lower ES&RI was associated with older age, not being pregnant at the time of  
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46 interview, and living in district A (economically disadvantaged area). Jewish women of  
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49 younger ages (16-24yrs), with lower education, and living in districts D (more economically  
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52 advantaged) and B (characterized by ethnically mixed population) were less likely to have  
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55 ES&RI. Increased awareness among HCPs about the importance of providing both IPV  
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58 services appears warranted, as well as institutional support for HCPs, including training and  
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61 follow-up protocols to ensure documentation.

### 54 **Study limitations**

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58 Our study makes a novel contribution to research assessing IPV screening within health care  
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61 services. However the study has some limitations that should be noted. First, our measure of



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3 IPV asks about any (current or past) events, but the timing of these acts, including when they  
4 began, is not known. Likewise, our interview asked about past screening, but did not specify  
5 when. Future research should ask when IPV began, as well as determine screening timing.  
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10 Next, recall bias was likely in our study, as some women might not remember that they have  
11 been screened or received information. However, it is reasonable to assume that this is most  
12 likely to occur in women who had not experienced IPV, as it would often be of less  
13 importance to them. This could result in underestimation of the association between ES, RI or  
14 both and having experienced IPV. A selection bias might also be a possibility, as our study  
15 was based on a sample of women who visit MCH clinics of the MOH in Israel. Still, we used  
16 a stratified sample, and the sociodemographic characteristics of our sample are very close to  
17 those for women of reproductive age in Israel.<sup>52</sup> Future research should examine screening  
18 among women in other HCS settings in Israel, such as primary care clinics, MCH clinics run  
19 by the Sick Funds (health care management organizations), and others in the municipalities of  
20 Jerusalem and Tel-Aviv. Our study sample size was sufficiently large to detect a difference of  
21 10% in screening prevalence between women exposed and unexposed to IPV, assuming 50%  
22 screening among unexposed women and 60% screening in exposed women, or 40% vs 50%  
23 (power=95.3%). We actually found a difference that was not statistically significant and in the  
24 opposite direction to our hypothesis—i.e., that women unexposed to IPV were more likely to  
25 have been screened than exposed women (49.6% vs. 46.5%). We believe it is safe to conclude  
26 that women exposed to IPV are not more likely to be screened than women not exposed to  
27 IPV. However, there might have been power issues for detecting the association between  
28 screening of IPV within each ethnic group (Arab and Jewish women), and specifically for  
29 Arab women (small sample). Future research should include larger samples of women from  
30 each of these ethnic groups in Israel.  
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## Conclusions and implications for policy and practice

Despite Israel's longstanding IPV screening policy for all women visiting HCS, our study identified gaps in implementation of screening and information provision within HCS.

Women at higher risk for IPV were less likely to have been screened or to have received information about IPV. These results call for further research to explore individual and system-level barriers to implementation of universal screening and provision of information on IPV among HCPs. Identifying and removing these barriers is vital, as our results show inequalities in conducting screening and information provision on support services, specifically for women at higher risk for IPV. HCPs in Israel need more health-system support to achieve greater screening coverage and to provide women with information on supportive services for IPV. Therefore, to aid in the early detection of IPV and prevent more severe IPV, the Ministry of Health in Israel should offer consistent, sustained training to enhance knowledge, change attitudes, and remove barriers among HCPs regarding IPV screening and providing information about supportive services for IPV.

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3 **Author contributions** ND initiated the study, supervised all the study stages, conducted the  
4 data analysis, and prepared the paper for publication. RS helped with data programming and  
5 data cleaning. ABP helped with data collection and prepared the study codebook. ISV and PO  
6 contributed to the study design, critically read previous versions of the paper, and suggested  
7 revisions. RL worked as a research assistant who helped in some updates of the background.  
8 All authors read and confirmed the final version of the paper.  
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16  
17

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19  
20

21 **Patient consent** Not required  
22  
23

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25 Ben-Gurion University of the Negev. Approval no. 1128-1. All participants signed an  
26 informed consent form.  
27  
28  
29  
30

31 **Data sharing statement** All data relevant to the study are included in the article or uploaded  
32 as supplementary information  
33  
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## Appendix 1- Correlations between the study independent variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>1. Ethnicity</b>	1	-.320**	-.234**	-.114**	.227**	.352**	.427**	0.044	-.175**	.162**	.192**	.314**	.357**	.370**	-.136**
<b>2. Women's age</b>		1	.061*	.059*	-.296**	-.218**	-.210**	-0.052	.087**	-.159**	-.059*	-.106**	-.183**	-.152**	.169**
<b>3. Immigrant</b>			1	.108**	-0.052	-.067*	-0.046	0.000	.059*	-.153**	0.009	-0.052	-0.044	-.057*	0.021
<b>4. Marital status</b>				1	-0.028	.066*	-0.014	.090**	.089**	-.137**	0.016	0.032**	0.022	0.016	-0.025
<b>5. Women status at interview</b>					1	.128**	.103**	-0.028	-.131**	-0.005	-0.009	.114**	.148**	.135**	-.266**
<b>6. Women's education</b>						1	.355**	.118**	-0.025	.130**	.153**	.170**	.229**	.181**	-.167**
<b>7. Women's employment</b>							1	.108**	-0.017	.131**	.114**	.167**	.208**	.195**	-.127**
<b>8. Partner employment</b>								1	.205**	.206**	0.039	.074**	.087**	.093**	-.134**
<b>9. Family income source</b>									1	0.051	0.014	-0.021	0.025	0.015	-0.028
<b>10. Religiosity</b>										1	0.042	.074**	.130**	.137**	-.118**
<b>11. Physical IPV</b>											1	.309**	.237**	.269**	-0.043
<b>12. Emotional IPV</b>												1	.375**	.775**	-.118**
<b>13. Social and economic IPV</b>													1	.728**	-.116**
<b>14. Any IPV</b>														1	-.113**
<b>15. MOH* district</b>															1

\* Ministry of Health

## STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No	Recommendation	
<b>Title and abstract</b>	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	Yes
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	Yes
<b>Introduction</b>			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	Pages 4-7
Objectives	3	State specific objectives, including any prespecified hypotheses	Page 7
<b>Methods</b>			
Study design	4	Present key elements of study design early in the paper	Page 7
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Page 7
Participants	6	<i>Cross-sectional study</i> —Give the eligibility criteria, and the sources and methods of selection of participants	Pages 8
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	Pages 8-10
Data sources/measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	Pages 8-10 when relevant
Bias	9	Describe any efforts to address potential sources of bias	Page 8-10 and 22
Study size	10	Explain how the study size was arrived at	Pages 19
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Pages 10-11
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	Pages 10-11
		(b) Describe any methods used to examine subgroups and interactions	
		(c) Explain how missing data were addressed	
		<i>Cross-sectional study</i> —If applicable, describe analytical methods taking account of sampling strategy	
		(e) Describe any sensitivity analyses	
Continued on next page			
<b>Results</b>			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	Table 1 and pages 11-12
		(b) Give reasons for non-participation at each stage	NR
		(c) Consider use of a flow diagram	NR

Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Table 1 and pages 11-12
		(b) Indicate number of participants with missing data for each variable of interest	Table 1
		(c) <i>Cohort study</i> —Summarise follow-up time (eg, average and total amount)	NR
Outcome data	15*		
		<i>Cross-sectional study</i> —Report numbers of outcome events or summary measures	Table 1 and page
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	Tables 2-4 and text Pages 13-16
		(b) Report category boundaries when continuous variables were categorized	Tables 2-4 and text Pages 13-16
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NR
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	Appendix 1
<b>Discussion</b>			
Key results	18	Summarise key results with reference to study objectives	Pages 18-19
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Page 22
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Pages 18-23
Generalisability	21	Discuss the generalisability (external validity) of the study results	Page 22
<b>Other information</b>			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Page 24

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at [www.strobe-statement.org](http://www.strobe-statement.org).