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Post-traumatic stress disorders in women victims-survivors of violence: a mixed-methods pilot study in a French coordinated structure

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4 methods pilot study in a French coordinated structure
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4 study in a French coordinated structure
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8
9 1 **ABSTRACT**

10 2 **Objectives:** To examine the prevalence of Post-Traumatic Stress Disorder (PTSD) in victims-
11 survivors of Intimate Partner Violence (IPV) consulting at the specialized and original facility
12 “Maison des Femmes” (MdF) or in two close Municipal Health Centers (MHCs).
13
14 4 “Maison des Femmes” (MdF) or in two close Municipal Health Centers (MHCs).

15 5 **Design:** A mixed-methods study using a convergent parallel design from July 2020 to June 2021.

16 6 **Setting/participants:** A questionnaire was proposed to women aged 18 years and over having
17 suffered from IPV, in the MdF and in two MHCs. We also conducted qualitative interviews with
18 a sub-sample of the women, asking for victims-survivors’ perceptions of the effect of the MdF’s
19 care.
20
21 8 a sub-sample of the women, asking for victims-survivors’ perceptions of the effect of the MdF’s
22 care.
23 9 care.

24 10 **Primary and secondary outcome measures:** Presence of a PTSD using the PTSD self-report
25 checklist of symptoms (PCL-5), possibility of reaching women by phone 6 months after the
26 inclusion visit, level of self-rated global health, number of emergency visits in the past 6 months,
27 substances use, readiness to change and safety behaviors.
28
29 13 substances use, readiness to change and safety behaviors.

30 14 **Results:** A total of 67 women (mean age: 34 years[SD=9.7]) responded to our questionnaire.
31 PTSD diagnosis was retained for 40 women (59.7%). Around 30% of participants self-rated their
32 global health as bad. Less than 30% (n=18) of women were regular smokers, and only 7.5% of
33 participants had a problematic alcohol use (Audit-C score ≥ 4), 19.4% women used psychotropic
34 drugs. Six months after inclusion, a half of participants had been reached by phone. Analysis of
35 the qualitative interviews clarified victims-survivors’ perceptions of the MdF’s specific care:
36 social networking, multidisciplinary approach, specialized listening, healthcare facilities, evasion
37 and “feeling at home”.
38
39 20 social networking, multidisciplinary approach, specialized listening, healthcare facilities, evasion
40 and “feeling at home”.
41
42 21 and “feeling at home”.

43 22 **Conclusions:** The high prevalence of PTSD at inclusion was nearly the same between the three
44 centers. This mixed-methods comparison will serve as a pilot study for a larger comparative trial
45 to assess the long-term impact of the MdF’s specialized care on victims-survivors’ mental health,
46 compared with the care of uncoordinated structures.
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48 24 compared with the care of uncoordinated structures.

49 25 **Trial registration number:** NCT04304469
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STRENGTHS AND LIMITATIONS OF THE STUDY

- This is the first study assessing the prevalence of post-traumatic stress disorders (PTSD) in victims-survivors of interpersonal violence in the Maison Des Femmes (MdF), being the first French structure dedicated to the care of women victims-survivors of violence.
- Our qualitative interviews outlined for the first time the perceptions of the women visiting the MdF.
- This study validates the feasibility of a future larger comparative trial.
- We did not collect data on other traumatic events, and health outcomes measured in this study are based solely on the women's self-reported perceptions.

KEYWORDS

Gender-based violence

Intimate Partner violence

Mental health

Interdisciplinary care

FUNDING STATEMENT

The study was funded by crowd funding and promoted by the Dijon Bourgogne's Teaching hospital.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The Committee for the Protection of Persons of Ile de France 6 provided ethical approval for this study (reference number 92-19 NI Cat.3, file number 19.12.10.36712).

Trained research assistants ask every participant for a written informed consent before recruitment.

AVAILABILITY OF DATA AND MATERIALS

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3 The datasets generated and analyzed during the current study are not publicly available due to
4 their containing information that could compromise the privacy/safety of research participants but
5 are available from the corresponding author on reasonable request.
6

7 AUTHOR'S DISCLOSURE

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10 The authors declare that they have no competing interests.
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14 WORD COUNT

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Post-traumatic stress disorders in women victims-survivors of violence: a pilot study in a French coordinated structure

1. INTRODUCTION

According to the WHO, violence against Women (VaW) is a global public health matter with significant physical and mental health-related consequences for the victims [1]. Intimate partner violence (IPV) is the most widespread form of VaW [2]. Worldwide, around 30% of girls and women aged 15 and older have experienced IPV in their lifetime[3]. IPV are associated with an increased risk of developing numerous short and long-term adverse psychological outcomes, including depression, generalized anxiety disorder, and Post-Traumatic Stress Disorder (PTSD) [4], a psychiatric disorder that may occur in people who have experienced, or witnessed, a traumatic event [5].

Women who experienced violence have specific needs, arising from the often-repeated and complex nature of the trauma [6]. They also tend to accumulate other risk factors for poor mental health, such as economic insecurity, parenting stress and social isolation [7]. In France, victims-survivors of IPV, especially the most socially disadvantaged ones, face multiple barriers to healthcare access [8]. Particularly, there is a lack of dedicated care facilities and providers trained in caring for these women's specific medical, psychosocial, parenting and judicial needs. French Health professionals are strongly encouraged to ask their female patients about any experience of physical or sexual violence [9]. But they have rarely received the specific training to deal with these issues with confidence and professionalism, and often lack the resources to refer women victims of IPV to appropriate care facilities and health providers.

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3 46 As described in a recent publication [10], « La Maison des Femmes » (MdF, Women's Home),
4
5 47 established in 2016, is a medical and social structure specifically dedicated to provide
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7 48 individualized multidisciplinary care for victims-survivors of VaW, such as IPV. It offers care
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9 49 combining health, social and judicial aspects in a single structure. The MdF consists of 3 units: a
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11 50 Family Planning Center (FPC, consultations for contraception and abortions), a violence care unit
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13 51 (composed of psychiatrist, general practitioners, midwives, psychologists, social workers,
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15 52 lawyers, police officers, and support groups) and a female genital mutilation care unit (surgeons
16
17 53 and sex therapists). The MdF is located in the poorest department in mainland France, Seine-
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19 54 Saint-Denis, a department right next to Paris, where one in four women attending the FPCs
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21 55 suffers, or has suffered, from IPV [10].
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27 56 Several structures providing coordinated multidisciplinary care, directly inspired by the model of
28
29 57 the Saint Denis women's center, have been created in France. As the economic model has not yet
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31 58 been established, the question arises of evaluating the service provided by these coordinated care
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33 59 structures, particularly in terms of their capacity to improve the mental health and reduce the
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35 60 post-traumatic stress of women victims of IPV.
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39 61 The main objective of this study was to examine individual characteristics, and the prevalence of
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41 62 PTSD, in victims-survivors of IPV consulting at the MdF or in two others FPCs located in the
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43 63 same area of the Paris conurbation.
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2. METHODS

2.1. Data source and study population

We carried out surveys from July 2020 to June 2021 in three Family Planning Centers (FPC): one in the Mdf, and 2 in Municipal Health Centers (MHC) from the same department (MHC 1 in Saint Denis, MHC 2 in Aubervilliers).

All women aged 18 years and over consulting in one of the three FPCs, having suffered or suffering from IPV and able to understand the objectives of the study were eligible (interpreters could be contacted by phone if necessary). Trained research assistants (RA) were available in each of the study centers to screen women for eligibility, explain the study, and ask for a written informed consent before recruitment. Women under 18 years old or under tutorship were excluded. RA also assisted participants in completing the questionnaire.

We contacted every participant by phone 6 months after.

2.2. Patient and public involvement

For security and confidentiality reasons, it was not appropriate or possible to involve patients or the public in the design, or conduct, or reporting, or dissemination plans of our research.

2.3. Outcome measures

Data were collected using a self-administered questionnaire that included questions about participants' socio-demographic characteristics, as well as a range of health and substance use data.

The main outcome was a PTSD diagnosis, measured using the PTSD self-report checklist of 20 PTSD symptoms defined in the DSM-5 (PCL-5) [11]. PCL-5 is a widely used self-administrated questionnaire to detect and evaluate a PTSD, with a validated French version [12]. Each item on

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3 87 this scale is rated on a five-point Likert scale reflecting severity of a particular symptom from 0
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5 88 (not at all) to 4 (extremely) during the past month, with a threshold score of 33.
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8 89 Other outcomes included: the possibility of reaching women by phone 6 months after the
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10 90 inclusion visit, the level of self-rated global health (Likert scale: “Very good”, “Good”, “Quite
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12 91 good”, “Bad”, “Very Bad”), the self-reported number of emergency visits in the past 6 months,
13
14 92 the substances use: smoking status, alcohol (evaluated by the Alcohol Use Disorders
15
16 93 Identification Test-Consumption/AUDIT-C [13]), drugs (“Did you use hypnotics, sleep pills,
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18 94 antidepressants or anxiolytics in the past 6 months ?”), the readiness to change, the safety
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20 95 behaviors (evaluated by questions inspired by the Safety behavior Checklist [14]) and the help
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22 96 seeking behaviors in the past 6 months (evaluated by questions inspired by Van Parys et al. [15]).
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27 97 2.4. Qualitative interviews

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29 98 We conducted semi-structured interviews with a sub-sample of the participants in the
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31 99 MdF and in the MHC-1, according to the grounded theory. The interviews were all conducted by
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33 100 the same researcher, a MD qualified in qualitative research who used an interview guide. The
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35 101 interview guide was developed by the coauthors and reviewed and tested by 2 psychologists to
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37 102 verify the comprehensibility of the questions. The guide included questions about: history of
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39 103 violence, women’s perception of the effect of the care provided at MdF and in the MHC,
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41 104 women’s perception of their needs and their mental and physical health. Interviews were
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43 105 anonymized, transcribed, analyzed and interpreted following practical guidance for conducting
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45 106 qualitative research [16].
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51 107 2.5. Ethics

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53 108 The Committee for the Protection of Persons of ANONYMIZED provided ethical
54
55 109 approval for this study (ANONYMIZED). As recommended by the WHO, our study paid
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3 110 particular attention to minimizing the risk affecting the safety of the respondents: confidentiality,
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5 111 safe climate at all time, informed consent, and basic care and support available locally for
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7 112 victims-survivors [17].
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10 11 113 2.6. Analysis

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13 114 This mixed-method study used a convergent parallel design [18]. Quantitative data
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15 115 analysis was conducted using SAS for Windows (version 9.4). To describe the socio-
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17 116 demographic characteristics, perceived social support, health and substance use indicators
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19 117 descriptive statistics was used consisting of frequency, percentage, and mean and standard
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21 118 deviation.
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25 119 As concerned the qualitative interviews, we conducted an inductive content analysis using a
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27 120 grounded theory approach [19]. The qualitative data were analysed with NVivo V12 software.
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29 121 The transcribed text was coded, then the codes were sorted into categories and main themes, and
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31 122 were illustrated using verbatim quotations. We used a checklist of quality criteria (i.e. credibility,
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33 123 dependability, conformability, transferability, and authenticit) to improve the trustworthiness of
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35 124 our results [19].
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43 126 3. RESULTS

44 45 46 127 3.1. Sample description

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48 128 A total of 67 women responded to our questionnaire: 40 in the MdF, 12 in the MHC-1 and
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50 129 15 in the MHC-2.
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54 130 The characteristics of study participants are described in Table 1. Majority of the participants
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56 131 (57%) were aged below 35 years, with a mean age of 34 [SD=9.7], and had at least one child
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3 132 (73.1%). Slightly more than half of participants (53.0%) were not born in France. Around 25% of
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5 133 participants (n=17) declared having no one to turn to for help or assistance if they needed it,
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7 134 while more than one third (n=25) had at least two people to turn to for help.
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11 135 Six months after inclusion, a half of participants (52.2%) had been reached by phone (65.0% in
12
13 136 MdF, 25.0% in MHC1 and 40.0% in MHC2).
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15 16 137 3.2. Prevalence of PTSD 17

18 138 Participants reported an average PCL-5 score of 37.1(SD = 16.6) (Table 2). Forty women
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20 139 (59.7%) had a PCL-5 score of at least 33, which is the recognized cut-off value for defining the
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22 140 presence of PTSD diagnosis (table 2). The prevalence of PTSD was quite similar between the
23
24 141 three groups.
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27 28 142 3.3. Health and substance use outcomes 29

30 143 Around 40% of participants (n=26) self-rated their global health as a good or very good.
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32 144 The same percentage of participants reported consulting at an emergency room in the past 6
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34 145 months.
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38 146 Less than 30% (n=18) of women were regular smokers, and only 7.5% of participants had a
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40 147 problematic alcohol use with an Audit-C score greater than or equal to 4, one out of five women
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42 148 used psychotropic drugs.
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45 46 149 3.4. Qualitative data 47

48 150 For this pilot study, nine women have been interviewed (6 in the MdF, 3 in the MHC-1)
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50 151 (Table 3, SUPPLEMENTARY).
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3 152 They were aged 27 to 55 years old (mean age: 38.8), six were employed. Seven women
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5 153 had at least one child. Only one was in a couple, and they have suffered from domestic violence
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8 154 between 1.5 and 13 years (mean: 5.4 years) (table 3).
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11 155 With regard to the perception of difficulties encountered by the women victims of violence, four
12
13 156 main themes emerged from the thematic analysis: a feeling of loneliness, the need to be listened
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15 157 to, the specificity of the symptoms of the victims-survivors, and the difficulties in accessing
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17 158 healthcare (Figure 1).
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21 159 “I spend all day long alone like this, with my thoughts, I don’t know where to go, and I’m still
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23 160 turning in circles...” (MHC1)
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26 161 “In fact I think we should be in a bubble with psychologists all the time [laughs] to be listened
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28 162 and to feel that we’re not alone.” (MHC2)
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31 163 “We need real professionals, who understand what we’re going through” (MdF5)
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34 164 “I wanted to go to another support group but I’ve been told that I have to wait because there are
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36 165 too many people... I cried not because there was no room for me but because we are so many,
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38 166 and there is no room for anyone...” (MdF3)
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42 167 With regards to the perception of the specific care of the MdF, six main themes emerged. Four of
43
44 168 them correspond to the four themes developed in figure 1: social networking, multidisciplinary
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46 169 approach, specialized listening, healthcare facilities, and the other two themes highlight
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48 170 additional advantages provided by the MdF: evasion, and “feeling at home” (figure 2).
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52 171 “We live in a society where we are forced to believe that women are our competitors... But here
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54 172 we are sisters.” (MdF5)
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3 173 “That’s what interested me here, being able to get out of my head and to concentrate on a
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5 174 physical activity [...] it makes it possible to find an appeasement, what I call a “air bubble” so I
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8 175 can restart” (Mdf4)

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11 176 “I’m in a house here, it’s a house that is made for us [...]. There’s a roof like a house, I mean it’s
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13 177 friendly, at first I said to myself “what am I doing here?” [...] and finally every time I come I can
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15 178 say everything, I feel like it won’t come out the walls, I feel like whatever I say I won’t be
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18 179 judged”. (Mdf6)

21 180 4. DISCUSSION

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24 181 This study highlights the very substantial (60%) prevalence of PTSD symptoms in a
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26 182 sample of women who have experienced IPV and consulting at Family Planning Centers in the
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29 183 Parisian region.

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31 184 Our results have showed that the proportion of women suffering from PTSD is not different
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34 185 according to the care structure and have outlined the recruitment capacity for a future larger
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36 186 study.

39 187 4.1. Prevalence of PTSD

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41 188 These results are consistent with those reported by other authors who have described an
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44 189 association between the exposure to IPV and the presence of PTSD [20,21]. The prevalence of
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46 190 PTSD among victims-survivors of IPV varies depending on the studies and on the tool used to
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48 191 quantify PTSD, ranging from 33 to 84%, with a mean of 61% [22].

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51 192 To assess the benefit of a multidisciplinary and cooperated approach on the mental health of the
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54 193 victims-survivors, as the Mdf provides, a comparison between the three centers a few months
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56 194 after the inclusion with a repeated measure of PTSD would be advisable. The fact that the

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3 195 prevalence of PTSD at inclusion is nearly the same between the three centers in our study seems
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5 196 to eliminate the bias of centers, and encourages us to consider a larger comparative study aiming
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7 197 to compare the MdF long-term impact on the mental health of victims-survivors with the one of
8
9 198 standard-of-care structures. We were unable to contact a majority of women from the MHCs six
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11 199 months after inclusion, whereas two out of three women from the MdF had been reached. This
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13 200 could reinforce the fact that women may value the care provided by the MdF more than the one
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15 201 provided by non-dedicated structures, but it will be an additional difficulty for a subsequent
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17 202 comparative study.
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22 203 4.2. A multicomponent model

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24 204 The MdF is a structure that provides multicomponent trauma-informed and holistic care.
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26 205 Getting out of IPV is a process with multiple stages [23]. Our qualitative results reinforce the fact
27
28 206 that MdF seems to fit to the needs of the victims-survivors throughout their trajectory. MdF
29
30 207 supplies essential interventions recommended by the WHO to prevent VaW [24]. These
31
32 208 interventions correspond to models presented as highly efficient to improve the mental health of
33
34 209 IPV survivors [25]. On the top of that, respondents also described the MdF as a warm place
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36 210 where they could escape from reality, a new concept that needs to be explored in the future.
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41 211 4.3. Perspectives

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43 212 This study will serve as a basis for a larger comparative trial of the long-term impact of
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45 213 specialized care of the MdF on PTSD compared to the care in non-specialized structures: the
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47 214 “IRONND-L” study (“*Evaluation of the impact of the care of women victims of sexist and sexual*
48
49 215 *violence, according to a coordinated multidisciplinary approach in women's homes or traditional*
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51 216 *health centers or family planning, on mental and physical health: a prospective, quasi-*
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53 217 *experimental, multicenter, national study*”). We are planning a quantitative and a qualitative
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3 218 component, as well as a medico economic study. The main objective aims to assess the evolution
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5 219 of PTSD between the initial visit and 6 months after in women victims-survivors of violence,
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8 220 according to whether they are treated in structures offering a coordinated multidisciplinary
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10 221 approach (MdF), or in health centers or family planning. We also aim to assess the presence of
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12 222 sleep disorders, the quality of life, the presence of depressive and anxiety symptoms, the use of
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14 223 substances, the women's perception of their safety and well-being and that of their children.

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16
17 224 In the pilot study, the mean PCL-5 score was = 37.1 (sd= 16.6). Therefore, a minimum of 150
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19 225 women per group is required to achieve a power of 80% and 5% significance level (two-sided), to
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21 226 detect a mean difference of 5.5 between the two groups, assuming that the standard deviation of
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23 227 the differences is 17 (Figure 2). Thus, 200 women per group will need to be recruited to account
24
25 228 for a potential 35% rate of loss to follow-up. Therefore, we plan to include a total of 400 women
26
27 229 in the IROND-L study.

31 32 230 4.4. Strengths and limitations

33
34 231 This is the first French study assessing the prevalence of PTSD in victims-survivors of
35
36 232 IPV in MHCs and the MdF, being the first French structure dedicated to the care of women
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38 233 victims of violence. The high prevalence of PTSD outlined in our study justifies the need for
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40 234 launching larger quantitative and qualitative researches on the mental health of the victims.

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44 235 However, this study has several limitations. Firstly, it was conducted in health facilities and
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46 236 therefore does not include women in IPV situations who do not have access to healthcare or those
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48 237 who face significant barriers to seeking care. Nevertheless, we do not believe that our population
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50 238 is biased towards more advantaged women. Indeed, even though limited, our sample embraces a
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52 239 wide range of situations, with 53% of women born outside of France, 37% having social security
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54 240 coverage reserved for those with no or low income from work or illegal immigrant status,
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3 241 suggesting that the facilities where the study was conducted have a broad recruitment base.
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5 242 Further, we did not collect data on other stressful or traumatic events. Moreover, health outcomes
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7 243 measured in this study are based solely on the women's self-reported perceptions, rather than on
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9 244 possibly more valid clinical observations. These limitations must be addressed in the future
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11 245 questionnaire of the larger comparative trial.
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15 246 4.5. Conclusions

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17 247 Given the links between violence and women's mental health found in this study,
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19 248 recommendations to encourage clinicians to inquire about their patients' experiences of violence
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21 249 should be maintained. However, health care providers also need to be properly trained and
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23 250 informed to refer identified violence victims to appropriate adequate and trauma informed care.
24
25 251 The future IROND-L study needs to assess the effect of coordinated interventions such as the
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27 252 ones offered at MdF on women's mental health. This future study is of particular importance as
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29 253 the MDF model is to be duplicated throughout France, at the request of the French government
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31 254 [26], and is part of an overall French national public health policy for the care of victims of
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33 255 violence.
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45 AUTHOR STATEMENT

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48 NR: Conceptualization, Methodology, Software, Investigation, Writing – Original Draft, Writing
49 –Review and Editing

50 ND: Methodology, Software

51 FE-K: Conceptualization, Methodology, Writing –Review and Editing

52 MB: Conceptualization, Methodology, Supervision, Writing –Review and Editing

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3 LF: Investigation
4 GH: Investigation, Writing –Review and Editing
5 SM: Writing –Review and Editing
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7 Each author has confirmed compliance with the journal’s requirements for authorship.
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TABLES

Table 1: Sociodemographic characteristics of study participants (n=67)

	ALL N=67 % (n)	Maison des Femmes N=40 % (n)	MHC-1 N=12 % (n)	MHC-2 N=15 % (n)
Age (years) (n=67)				
Mean [SD, range]	34.1 [9.7, 18-71]	31.3 [8.2, 18-71]	40.3 [8.7, 29-55]	36.5 [10.0, 21-52]
Median	33	29	37	37
Ages (years, 4 classes)				
18-24	14.9 (10)	20.0 (8)	0 (0)	13.3 (2)
25-34	41.8 (28)	52.5 (21)	25.0 (3)	26.7 (4)
35-49	34.3 (23)	25.0 (10)	50.0 (6)	46.7 (7)
≥50	9.0 (6)	2.5 (1)	25.0 (3)	13.3 (2)
In a couple (n=67)				
Yes	49.2 (33)	50.0 (20)	50.0 (6)	46.7 (7)
In a couple for (n=32)				
Less than a year	25.0 (8)	10.0 (4)	20.0 (1)	42.8 (3)
1-5 years	37.5 (12)	20.0 (8)	40.0 (2)	28.6 (2)
6-15 years	28.1 (9)	15.0 (6)	40.0 (2)	14.3 (1)
>15 years	9.4 (3)	5.0 (2)	0 (0)	14.3 (1)
Has children (n=67)				
Yes	73.1 (49)	67.5 (27)	83.3 (10)	80.0 (12)
Housing situation (n=66)				
Lives alone (tenant or owner of the house)	51.5 (34)	51.3 (20)	58.3 (7)	46.7 (7)
Lives with (ex)spouse (tenant or owner)	13.6 (9)	18.0 (7)	0 (0)	13.3 (2)
(Ex)spouse alone (tenant or owner of the dwelling)	1.5 (1)	0 (0)	0 (0)	6.7 (1)
Staying with family/friends	24.2 (16)	20.5 (8)	33.3 (4)	26.7 (4)
Staying in a hostel	9.1 (6)	10.3 (4)	8.3 (1)	6.7 (1)
Born in France (n=66)				
Yes	47.0 (31)	43.6 (17)	50.0 (6)	53.3 (8)
Geographic origin (n=62)				
North Africa	24.2 (15)	21.1 (8)	25.0 (3)	33.3 (4)
Sub-Saharan Africa	43.5 (27)	52.6 (20)	33.3 (4)	25.0 (3)
Caribbean/Americas	8.1 (5)	10.5 (4)	8.3 (1)	0 (0)
Asia/Middle East	3.2 (2)	0 (0)	(0)	16.7 (2)
Europe outside France	4.8 (3)	5.3 (2)	(0)	8.3 (1)

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France	16.1 (10)	10.5 (4)	33.3 (4)	16.7 (2)
Health coverage (n=67)				
Health insurance	44.8 (30)	37.5 (15)	66.7 (8)	46.7 (7)
Social security	17.9 (12)	22.5 (9)	0 (0)	20.0 (3)
Universal Health Coverage (CMU)	25.4 (17)	30.0 (12)	16.7 (2)	20.0 (3)
State medical assistance (AME)	4.5 (3)	0 (0)	16.7 (2)	6.7 (1)
No coverage	7.5 (5)	10.0 (4)	0 (0)	6.7 (1)
Professional situation (n=66)				
Inactive	39.4 (26)	38.5 (15)	16.7 (2)	60.0 (9)
Unemployed	13.6 (9)	10.3 (4)	25.0 (3)	13.3 (2)
Working	37.9 (25)	38.5 (15)	58.3 (7)	20.0 (3)
Student	9.1 (6)	12.8 (5)	0 (0)	6.7 (1)
Level of education (n=67)				
No diploma	20.9 (14)	20.0 (8)	16.7 (2)	26.7 (4)
French Baccalaureate or equivalent	16.4 (11)	20.0 (8)	8.3 (1)	13.3 (2)
Undergraduate (Bac +2)	28.4 (19)	25.0 (10)	41.7 (5)	26.7 (4)
Vocational education (CAP/BEP)	20.9 (14)	20.0 (8)	16.7 (2)	26.7 (4)
Primary or elementary education	13.4 (9)	15.0 (6)	16.7 (2)	6.7 (1)
Monthly household income (n=67)				
< 850 €	37.3 (25)	37.5 (15)	25.0 (3)	46.7 (7)
850 € à 1100 €	9.1 (6)	10.0 (4)	16.7 (2)	0 (0)
1100 € à 1800 €	35.8 (24)	30.0 (12)	41.7 (5)	46.7 (7)
1800 € à 2500 €	10.5 (7)	12.5 (5)	16.7 (2)	0 (0)
>2500 €	7.5 (5)	10.0 (4)	0 (0)	6.7 (1)
Support (n=67)				
No one	25.4 (17)	22.5 (9)	33.3 (4)	26.7 (4)
One people	37.3 (25)	45.0 (18)	25.0 (3)	26.7 (4)
At least 2 peoples	37.3 (25)	32.5 (13)	41.7 (5)	46.7 (7)
Number of women that can be reached by phone 6 months after inclusion				
	52.2 (35)	65.0 (26)	25.0 (3)	40.0 (6)
Safety precaution (n=67)				
1	3.0 (2)	2.5 (1)	8.3 (1)	0 (0)
2	10.6 (7)	10.0 (4)	8.3 (1)	14.3 (2)
3	19.7 (13)	17.5 (7)	25.0 (3)	21.4 (3)
4 (None)	66.7 (44)	70.0 (28)	58.3 (7)	64.3 (9)
Willingness to change (n=67)				

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2					
3	0 (None)	26.9 (18)	27.5 (11)	25.0 (3)	26.7 (4)
4	1	23.9 (16)	27.5 (11)	25.0 (3)	13.3 (2)
5	2	49.3 (33)	45.0 (18)	50.0 (6)	60.0 (9)
6					
7	Help seeking (n=67)				
8	0	7.5 (5)	7.5 (3)	0 (0)	13.3 (2)
9	1	6.0 (4)	5.0 (2)	16.7 (2)	0 (0)
10	2	9.0 (6)	7.5 (3)	0 (0)	20.0 (3)
11	3	25.4 (17)	22.5 (9)	33.3 (4)	26.7 (4)
12	4	19.4 (13)	20.0 (8)	33.3 (4)	6.7 (1)
13	5	22.4 (15)	20.0 (8)	16.7 (2)	33.3 (5)
14	6 (None)	10.5 (7)	17.5 (7)	0 (0)	0 (0)
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Table 2: Medical characteristics of study participants (n=67)

	ALL N=67 % (n)	Maison des Femmes N=40 % (n)	MHC-1 N=12 % (n)	MHC-2 N=15 % (n)
27	PCL-5			
28	Mean [SD]	37.1 [16.6]	37.7 [18.1]	35.7 [13.7]
29	Score \geq 33	59.7 (40)	57.5 (23)	60.0 (9)
30	Self-rated Global health			
31	Very Bad	10.6 (7)	12.5 (5)	9.0 (1)
32	Bad	23.3 (16)	20.0 (8)	36.4 (4)
33	Quite Good	25.8 (17)	25.0 (10)	27.3 (3)
34	Good	31.8 (21)	35.0 (14)	18.2 (2)
35	Very Good	7.6 (5)	7.5 (3)	9.0 (1)
36	Emergency Room visit(s) in the past 6 months			
37	Yes	40.3 (27)	47.5 (19)	25.0 (3)
38	Active Smoker			
39	Yes	26.9 (18)	27.5 (11)	33.3 (5)
40	AUDIT-C\geq4			
41	Yes	7.5 (5)	10.0 (4)	6.7 (1)
42	Use of Psychotropic Drugs			
43	Yes	19.4 (13)	20.0 (8)	20.0 (3)
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FIGURES

Figure 1: Perception of the difficulties encountered by the victims-survivors of violence

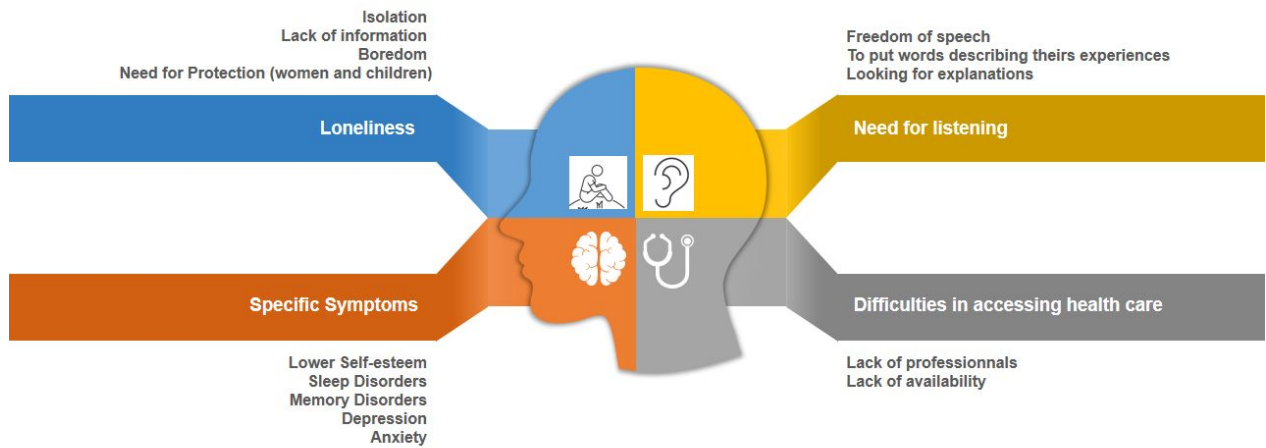


Figure 2: Perceptions of the specific care of the Maison des Femmes



SUPPLEMENTARY MATERIALS

Table 1: Sociodemographic description of the women interviewed in the qualitative study (N=9)

	Age (years)	Employment	Duration of the violence (years)	Marital status	Number of children
MdF1	27	Inactive	3	Unmarried cohabitation	1
MdF2	37	Active	6	Single	1
MdF3	41	Inactive	6	Single	0
MHC1	34	Active	9	Single	2
MdF4	43	Active	unknown	Single	3
MdF5	48	Inactive	13	Single	1
MdF6	34	Active	3	Single	0
MHC2	55	Inactive	2	Single	1
MHC3	30	Active	1.5	Single	1

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Post-traumatic stress disorders in women victims-survivors of violence: a pilot study in a French coordinated structure

STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cohort studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	1
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	1
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4
Objectives	3	State specific objectives, including any prespecified hypotheses	5
Methods			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	6
		(b) For matched studies, give matching criteria and number of exposed and unexposed	NA
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	6-7
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	6
Bias	9	Describe any efforts to address potential sources of bias	6
Study size	10	Explain how the study size was arrived at	6
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	8
		(b) Describe any methods used to examine subgroups and interactions	8

		(c) Explain how missing data were addressed	6
		(d) If applicable, explain how loss to follow-up was addressed	NA
		(e) Describe any sensitivity analyses	NA
Results			
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	8
		(b) Give reasons for non-participation at each stage	8
		(c) Consider use of a flow diagram	NA
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	9
		(b) Indicate number of participants with missing data for each variable of interest	NA
		(c) Summarise follow-up time (eg, average and total amount)	6
Outcome data	15*	Report numbers of outcome events or summary measures over time	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	9
		(b) Report category boundaries when continuous variables were categorized	9
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	NA
Discussion			
Key results	18	Summarise key results with reference to study objectives	11
Limitations			
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	11-12
Generalisability	21	Discuss the generalisability (external validity) of the study results	12-13
Other information			
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	2

*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.

1
2 **Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE
3 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
4 <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.
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For peer review only

BMJ Open

Post-traumatic stress disorders in women victims-survivors of intimate partner violence: a mixed-methods pilot study in a French coordinated structure

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3 1 **Post-traumatic stress disorders in women victims-survivors of**
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6 2 **intimate partner violence: a mixed-methods pilot study in a French**
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9 3 **coordinated structure**
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38 39 with the women.
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41 Abstract

42 **Objectives:** To examine the prevalence of Post-Traumatic Stress Disorder (PTSD) in victims-
43 survivors of Intimate Partner Violence (IPV) consulting at the specialized and original facility
44 “Maison des Femmes” (MdF) or in two close Municipal Health Centres (MHCs).

45 **Design:** A mixed-methods study using a convergent parallel design from July 2020 to June 2021.

46 **Setting/participants:** A questionnaire was proposed to women aged 18 years and over having
47 suffered from IPV, in the MdF and in two MHCs. We also conducted qualitative interviews with a
48 sub-sample of the women, asking for victim-survivors’ perceptions of the effect of the MdF’s care.

49 **Primary and secondary outcome measures:** Presence of a PTSD using the PTSD self-report
50 checklist of symptoms (PCL-5), possibility of reaching women by phone 6 months after the
51 inclusion visit, level of self-rated global health, number of emergency visits in the past 6 months,
52 substances use, readiness to change and safety behaviours.

53 **Results:** A total of 67 women (mean age: 34 years [SD=9.7]) responded to our questionnaire.
54 PTSD diagnosis was retained for 40 women (59.7%). Around 30% of participants self-rated their
55 global health as bad. Less than 30% (n=18) of women were regular smokers, and only 7.5% of
56 participants had a problematic alcohol use (Audit-C score ≥ 4), 19.4% women used psychotropic
57 drugs. Six months after inclusion, a half of participants had been reached by phone. Analysis of the
58 qualitative interviews clarified victim-survivors’ perceptions of the MdF’s specific care: social
59 networking, multidisciplinary approach, specialized listening, healthcare facilities, evasion and
60 “feeling at home”.

61 **Conclusions:** The high prevalence of PTSD at inclusion was nearly the same between the three
62 centres. This mixed-methods comparison will serve as a pilot study for a larger comparative trial
63 to assess the long-term impact of the MdF’s specialized care on victims-survivors’ mental health,
64 compared with the care of uncoordinated structures.

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3 65 **Trial registration number:** NCT04304469
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8 67 **STRENGTHS AND LIMITATIONS OF THIS STUDY**
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- 10 - This is the first study to assess the prevalence of post-traumatic stress disorder (PTSD)
11 among victim-survivors of intimate partner violence attending France's first facility
12 dedicated to the treatment of violence against women: the *Maison Des Femmes* (MdF).
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 - 15 - The study has the advantage of combining quantitative and qualitative methods to consider
16 the possibility of a larger-scale trial.
17
 - 18 - We were able to consider women in situations of violence and precariousness who are
19 difficult to interview in practice (safety, confidentiality, shame, etc.).
20
 - 21 - However, this study lacks information on other traumatic events experienced by the
22 respondents and on the duration and/or repetition of the violence.
23
 - 24 - Health outcomes measured in this study are based solely on the women's self-reported
25 perceptions, rather than on possibly more valid clinical observations
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35 68
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38 69 **Keywords:** Gender-based violence, Intimate Partner violence, Mental health, Interdisciplinary
39 care
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46 Teaching hospital. Grant number: N/A
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51 75 **Ethics approval and consent to participate.**
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3 76 The Committee for the Protection of Persons of Ile de France 6 provided ethical approval for this
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5 77 study (reference number 92-19 NI Cat.3, file number 19.12.10.36712).
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8 78 Trained research assistants ask every participant for a written informed consent before recruitment.
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12 80 **Availability of data and material.**
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14 81 The datasets generated and analysed during the current study are not publicly available due to their
15
16 82 containing information that could compromise the privacy/safety of research participants but are
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18 83 available from the corresponding author on reasonable request.
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24 85 **Author's disclosure:** The authors declare that they have no competing interests.
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89 **Introduction.**

90 According to the WHO, violence against Women (VaW) is a global public health matter with
91 significant physical and mental health-related consequences for the victims [1]. Intimate partner
92 violence (IPV) is the most widespread form of VaW [2]. Worldwide, around 30% of girls and
93 women aged 15 and older have experienced IPV in their lifetime[3]. IPV are associated with an
94 increased risk of developing numerous short and long-term adverse psychological outcomes,
95 including depression, generalized anxiety disorder, and Post-Traumatic Stress Disorder (PTSD)
96 [4], a psychiatric disorder that may occur in people who have experienced, or witnessed, a traumatic
97 event [5].

98 Women who experienced violence have specific needs, arising from the often-repeated and
99 complex nature of the trauma [6]. They also tend to accumulate other risk factors for poor mental
100 health, such as economic insecurity, parenting stress and social isolation [7]. In France, victims-
101 survivors of IPV, especially the most socially disadvantaged ones, face multiple barriers to
102 healthcare access [8]. Particularly, there is a lack of dedicated care facilities and providers trained
103 in caring for these women's specific medical, psychosocial, parenting and judicial needs. French
104 Health professionals are strongly encouraged to ask their female patients about any experience of
105 physical or sexual violence [9]. But they have rarely received the specific training to deal with
106 these issues with confidence and professionalism, and often lack the resources to refer women
107 victims of IPV to appropriate care facilities and health providers.

108 As described in a recent publication [10], « La Maison des Femmes » (MdF, Women's Home),
109 established in 2016, is a medical and social structure specifically dedicated to provide
110 individualized multidisciplinary care for victims-survivors of VaW, such as IPV. It offers care
111 combining health, social and judicial aspects in a single structure. The MdF consists of 3 units: a

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3 112 Family Planning Centre (FPC, consultations for contraception and abortions), a violence care unit
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5 113 (composed of psychiatrist, general practitioners, midwives, psychologists, social workers, lawyers,
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7 114 police officers, and support groups) and a female genital mutilation care unit (surgeons and sex
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9 115 therapists). The MdF is located in the poorest department in mainland France, Seine-Saint-Denis,
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11 116 a department right next to Paris, where one in four women attending the FPCs suffers, or has
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13 117 suffered, from IPV [10].

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16 118 Several structures providing coordinated multidisciplinary care, directly inspired by the model of
17
18 119 the Saint Denis women's centre, have been created in France. As the economic model has not yet
19
20 120 been established, the question arises of evaluating the service provided by these coordinated care
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22 121 structures, particularly in terms of their capacity to improve the mental health and reduce the post-
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24 122 traumatic stress of women victims of IPV.

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27 123 The main objective of this study was to examine individual characteristics, and the prevalence of
28
29 124 PTSD, in victims-survivors of IPV consulting at the MdF or in two others Municipal Health Centres
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31 125 located in the same area of the Paris conurbation.

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35 36 37 127 **Methods**

38 39 128 *Data source and study population*

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42 129 We carried out surveys from July 2020 to June 2021 in three Family Planning Centers (FPC): one
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44 130 in the Mdf, and 2 in MHC from the same department (MHC-1 in Saint Denis, MHC-2 in
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46 131 Aubervilliers).

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49 132 All women aged 18 years and over consulting in one of the three FPCs, having suffered or suffering
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51 133 from IPV and able to understand the objectives of the study were eligible (interpreters could be
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53 134 contacted by phone if necessary). Trained research assistants (RA) were available in each of the
54
55 135 study centres to screen women for eligibility, explain the study, and ask for a written informed

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3 136 consent before recruitment. Women under 18 years old or under tutorship were excluded. RA also
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5 137 assisted participants in completing the questionnaire.
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8 138 We contacted each participant by telephone 6 months later.
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12 140 *Patient and public involvement*
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14 141 For security and confidentiality reasons, it was not appropriate or possible to involve patients or
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16 142 the public in the design, or conduct, or reporting, or dissemination plans of our research.
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21 144 *Outcome measures*
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23 145 Data were collected using a self-administered questionnaire that included questions about
24
25 146 participants' socio-demographic characteristics, as well as a range of health and substance use data.
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27 147 The main outcome was a PTSD diagnosis, measured using the PTSD self-report checklist of 20
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29 148 PTSD symptoms defined in the DSM-5 (PCL-5) [11]. PCL-5 is a widely used self-administrated
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31 149 questionnaire to detect and evaluate a PTSD, with a validated French version [12]. Each item on
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33 150 this scale is rated on a five-point Likert scale reflecting severity of a particular symptom from 0
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35 151 (not at all) to 4 (extremely) during the past month, with a threshold score of 33.
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37 152 Other outcomes included: the possibility of reaching women by phone 6 months after the inclusion
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39 153 visit, the level of self-rated global health (Likert scale: “Very good”, “Good”, “Quite good”, “Bad”,
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41 154 “Very Bad”), the self-reported number of emergency visits in the past 6 months, the substances
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43 155 use: smoking status, alcohol (evaluated by the Alcohol Use Disorders Identification Test-
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45 156 Consumption/AUDIT-C [13]), drugs (“Did you use hypnotics, sleep pills, antidepressants or
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47 157 anxiolytics in the past 6 months ?”), the readiness to change, the safety behaviors (evaluated by
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49 158 questions inspired by the Safety behavior Checklist [14]) and the help seeking behaviors in the past
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51 159 6 months (evaluated by questions inspired by Van Parys et al. [15]).
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5 161 *Qualitative interviews*

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7 162 We conducted semi-structured interviews with a sub-sample of the participants in the MdF and in
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9 163 the MHC-1, according to the grounded theory (the interview guide is available in Supplementary
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11 164 figure). The interviews were all conducted by the same researcher, a MD qualified in qualitative
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13 165 research who used an interview guide. The interview guide was developed by the coauthors and
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15 166 reviewed and tested by 2 psychologists and one social researcher to verify the comprehensibility
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17 167 of the questions. The guide included questions about: history of violence, women's perception of
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19 168 the effect of the care provided at MdF and in the MHCs, women's perception of their needs and
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21 169 their mental and physical health. Interviews were anonymized, transcribed, analyzed and
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23 170 interpreted following practical guidance for conducting qualitative research [16].
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30 172 *Ethics*

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32 173 The Committee for the Protection of Persons of Ile de France 6 provided ethical approval for this
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34 174 study (reference number 92-19 NI Cat.3, file number 19.12.10.36712). As recommended by the
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36 175 WHO, our study paid particular attention to minimizing the risk affecting the safety of the
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38 176 respondents: confidentiality, safe climate at all time, informed consent, and basic care and support
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40 177 available locally for victims-survivors [17].
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47 179 *Analysis*

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49 180 This mixed-method study used a convergent parallel design [18]. Quantitative data analysis was
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51 181 conducted using SAS for Windows (version 9.4). To describe the socio-demographic
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53 182 characteristics, perceived social support, health and substance use indicators descriptive statistics
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55 183 was used consisting of frequency, percentage, and mean and standard deviation.
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3 184 As concerned the qualitative interviews, we conducted an inductive content analysis using a
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5 185 grounded theory approach [19]. The qualitative data were analysed with NVivo V12 software. The
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7 186 transcribed text was coded, then the codes were sorted into categories and main themes, and were
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9 187 illustrated using verbatim quotations. We used a checklist of quality criteria (i.e. credibility,
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11 188 dependability, conformability, transferability, and authenticity) to improve the trustworthiness of
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13 189 our results [19].
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19 191 **Results**

20 192 *Sample description*

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22 193 A total of 67 women responded to our questionnaire: 40 in the MdF, 12 in the MHC-1 and 15 in
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24 194 the MHC-2.

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26 195 The characteristics of study participants are described in Table 1 (more detailed characteristics are
27
28 196 described in Supplementary-table 1). Majority of the participants (57%) were aged below 35 years,
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30 197 with a mean age of 34 [SD=9.7], and had at least one child (73.1%). Slightly more than half of
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32 198 participants (53.0%) were not born in France. Around 25% of participants (n=17) declared having
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34 199 no one to turn to for help or assistance if they needed it, while more than one third (n=25) had at
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36 200 least two people to turn to for help.
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41 201 Six months after inclusion, a half of participants (52.2%) had been reached by phone (65.0% in
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43 202 MdF, 25.0% in MHC-1 and 40.0% in MHC-2).
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47 203 *Prevalence of PTSD*

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49 204 Participants reported an average PCL-5 score of 37.1 (SD = 16.6) (Table 2). Forty women (59.7%)
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51 205 had a PCL-5 score of at least 33, which is the accepted cut-off value for defining the presence of
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53 206 PTSD diagnosis (table 2). The prevalence of PTSD was quite similar between the three groups.
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5 209 *Health and substance use outcomes*
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8 210 Around 40% of participants (n=26) self-rated their global health as a good or very good. The same
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10 211 percentage of participants reported consulting at an emergency room in the past 6 months.
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12 212 Less than 30% (n=18) of women were regular smokers, and only 7.5% of participants had a
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14 213 problematic alcohol use with an Audit-C score greater than or equal to 4, one out of five women
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16 214 used psychotropic drugs.
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21 216 *Qualitative data*
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24 217 For this pilot study, nine women have been interviewed (6 in the MdF, 3 in the MHC-1)
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26 218 (supplementary table 2).
27

28 219 They were aged 27 to 55 years old (mean age: 38.8), six were employed. Seven women had at least
29
30 220 one child. Only one was in a couple, and they have suffered from domestic violence between 1.5
31
32 221 and 13 years (mean: 5.4 years).
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34

35 222 With regard to the perception of difficulties encountered by the women victims of violence, four
36
37 223 main themes emerged from the thematic analysis: a feeling of loneliness, the need to be listened
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39 224 to, the specificity of the symptoms of the victims-survivors, and the difficulties in accessing
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41 225 healthcare (Figure 1).
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44 226 “I spend all day long alone like this, with my thoughts, I don’t know where to go, and I’m still
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46 227 turning in circles...” (MHC1)
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49 228 “In fact I think we should be in a bubble with psychologists all the time [laughs] to be listened and
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51 229 to feel that we’re not alone.” (MHC2)
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54 230 “We need real professionals, who understand what we’re going through” (MdF5)
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3 231 “I wanted to go to another support group but I’ve been told that I have to wait because there are
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5 232 too many people... I cried not because there was no room for me but because we are so many, and
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7 233 there is no room for anyone...” (MdF3)

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10 234 With regards to the perception of the specific care of the MdF, six main themes emerged. Four of
11
12 235 them correspond to the four themes developed in figure 1: social networking, multidisciplinary
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14 236 approach, specialized listening, healthcare facilities, and the other two themes highlight additional
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16 237 advantages provided by the MdF: evasion, and “feeling at home” (figure 2).

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19 238 “We live in a society where we are forced to believe that women are our competitors... But here
20
21 239 we are sisters.” (MdF5)

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24 240 “That’s what interested me here, being able to get out of my head and to concentrate on a physical
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26 241 activity [...] it makes it possible to find an appeasement, what I call a “air bubble” so I can restart”
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28 242 (MdF4)

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31 243 “I’m in a house here, it’s a house that is made for us [...]. There’s a roof like a house, I mean it’s
32
33 244 friendly, at first I said to myself “what am I doing here?” [...] and finally every time I come I can
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35 245 say everything, I feel like it won’t come out the walls, I feel like whatever I say I won’t be judged”.
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37 246 (MdF6).

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249 **Discussion**

250 This study highlights the very substantial (60%) prevalence of PTSD symptoms in a sample of
251 women who have experienced IPV and consulting at Family Planning Centers in the Parisian
252 region.

253 Our results have showed that the proportion of women suffering from PTSD is not different
254 according to the care structure and have outlined the recruitment capacity for a future larger study.

256 *Prevalence of PTSD*

257 These results are consistent with those reported by other authors who have described an association
258 between the exposure to IPV and the presence of PTSD [20,21]. The prevalence of PTSD among
259 victims-survivors of IPV varies depending on the studies and on the tool used to quantify PTSD,
260 ranging from 33 to 84%, with a mean of 61% [22].

261 To assess the benefit of a multidisciplinary and cooperated approach on the mental health of the
262 victims-survivors, as the MdF provides, a comparison between the three centres a few months after
263 the inclusion with a repeated measure of PTSD would be advisable. The fact that the prevalence of
264 PTSD at inclusion is almost the same between the three centres in our study seems to eliminate
265 centre bias, and encourages us to consider a larger comparative study aimed at comparing the long-
266 term impact of the MdF on the mental health of victim-survivors with that of standard-of-care
267 structures. This study, the IROND-L study, has just been funded by the French Ministry for Health,
268 submitted to an ethic committee and is likely to start early in 2024. We were unable to contact a
269 majority of women from the MHCs six months after inclusion, whereas two out of three women
270 from the MdF had been reached. This could reinforce the fact that women may value the care
271 provided by the MdF more than that provided by non-dedicated structures, but it will present an
272 additional difficulty for a subsequent comparative study.

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3 273 *A multicomponent model*
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5 274 The MdF is a structure that provides multicomponent trauma-informed and holistic care. Getting
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8 275 out of IPV is a process with multiple stages [23]. Our qualitative results reinforce the fact that MdF
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10 276 seems to fit to the needs of the victims-survivors throughout their trajectory. MdF supplies essential
11
12 277 interventions recommended by the WHO to prevent VaW [24]. These interventions correspond to
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14 278 models presented as highly efficient to improve the mental health of IPV survivors [25]. On the
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17 279 top of that, respondents also described the MdF as a warm place where they could escape from
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19 280 reality, a new concept that needs to be explored in the future.
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24 282 **Perspectives**
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26 283 This study will serve as a basis for a larger comparative trial of the long-term impact of specialized
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28 284 care of the MdF on PTSD compared to the care in non-specialized structures: the “IROND-L”
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30 285 study (“*Evaluation of the impact of the care of women victims of sexist and sexual violence,*
31
32 286 *according to a coordinated multidisciplinary approach in women's homes or traditional health*
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34 287 *centres or family planning, on mental and physical health: a prospective, quasi-experimental,*
35
36 288 *multicentre, national study*”). We are planning a quantitative and a qualitative component, as well
37
38 289 as a medico economic study. The main objective aims to assess the evolution of PTSD between the
39
40 290 initial visit and 6 months later in women victims-survivors of violence, according to whether they
41
42 291 are treated in structures offering a coordinated multidisciplinary approach (MdF), or in health
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44 292 centres or family planning. We also aim to assess the presence of sleep disorders, the quality of
45
46 293 life, the presence of depressive and anxiety symptoms substances use, the reason for seeking care,
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48 294 and the women’s perception of their safety and well-being and that of their children.
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53 295 In the pilot study, the mean PCL-5 score was = 37.1 (sd= 16.6). Therefore, a minimum of 150
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55 296 women per group is required to achieve a power of 80% and 5% significance level (two-sided), to
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3 297 detect a mean difference of 5.5 between the two groups, assuming that the standard deviation of
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5 298 the differences is 17 (Figure 2). Thus, 180 women per group will need to be recruited to account
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7 299 for a potential 35% rate of loss to follow-up. The IROND-L study will include 360 women victims
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9 300 of violence and will be conducted in five metropolitan department, and we hope it will increase
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11 301 generalisability of the results. However, generalisability may not be transposable as the MdF
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13 302 approach is new and quite unique worldwide.
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17 303 Lastly, the future qualitative component will also require much greater recruitment to interview
18
19 304 more profiles that are different and approach data saturation, which this pilot study could not
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21 305 achieve.
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25 307 **Strengths and limitations**

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28 308 This is the first French study assessing the prevalence of PTSD in victims-survivors of IPV in
29
30 309 MHCs and the MdF, being the first French structure dedicated to the care of women victims of
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32 310 violence. The high prevalence of PTSD outlined in our study justifies the need for launching larger
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34 311 quantitative and qualitative researches on the mental health of the victims.
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37 312 However, this study has several limitations. Firstly, it was conducted in health facilities and
38
39 313 therefore does not include women in IPV situations who do not have access to healthcare or those
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41 314 who face significant barriers to seeking care. Nevertheless, we do not believe that our population
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43 315 is biased towards more advantaged women. Indeed, even though limited, our sample embraces a
44
45 316 wide range of situations, with 53% of women born outside of France, 37% having social security
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47 317 coverage reserved for those with no or low income from work or illegal immigrant status,
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49 318 suggesting that the facilities where the study was conducted have a broad recruitment base.
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53 319 Even if we have no formal explanation for the low follow-up rate, financial difficulties have been
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55 320 described as an important factor in the loss to follow-up [26]. As our study took place in the poorest
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3 321 area in France, we had anticipated, but without fair estimate, that the follow-up rate would be low.
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5 322 It was indeed one of our objectives to provide data to design the IROND-L study.
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7 323 It is known, and we have shown [10] that violent episodes occur more frequently during a break-
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10 324 up phase (separation, job search) and that women who are victims of violence are therefore
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12 325 logically more likely to move house or change their telephone number in order to escape their
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14 326 violent partner. It is therefore logical that these women are more difficult to monitor.
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17 327 Moreover, we decided to focus on domestic violence in this pilot study, and did not collect data on
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19 328 other stressful or traumatic events. Only the qualitative part of this study explored the duration
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21 329 and/or repetition of the violence and/or the duration since the possible end of the violence. This
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23 330 information will have to be considered and collected in the future quantitative and qualitative
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25 331 questionnaires of the larger IROND-L comparative study.
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28 332 Finally, the health outcomes measured in this study are based solely on women's self-reported
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30 333 perceptions, rather than on potentially more valid clinical observations. These limitations will be
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32 334 addressed in the future comparative study using a quasi-experimental design, where care pathways
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34 335 and the consumption of medical goods and services, will be assessed based on medical records and
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36 336 health insurance database.
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42 338 **Conclusions**
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44 339 Given the links between violence and women's mental health found in this study, recommendations
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46 340 to encourage clinicians to inquire about their patients' experiences of violence should be
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48 341 maintained. However, health care providers also need to be properly trained and informed to refer
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50 342 identified violence victims to appropriate adequate and trauma informed care. The future IROND-L
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52 343 study needs to assess the effect of coordinated interventions such as the ones offered at MdF on
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54 344 women's mental health. This future study is of particular importance as the MDF model is to be
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3 345 duplicated throughout France, at the request of the French government [27], and is part of an overall
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5 346 French national public health policy for the care of victims of violence.
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10 348 **Author's statement**

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12 349 Noémie Roland (NR), Marc Bardou (MB) and Fabienne El-Khoury (FE-K) conceived, planned,
13
14 350 and designed the study. Ghada Hatem (GH), Alice Bardou (AB), Leila Yacini (LY) and Laura
15
16 351 Feldmann (LF) collected the questionnaires and collated the data. Noëlla Delmas (ND), Sarah
17
18 352 Mahdjoub (SM) and FE-K performed the data management. ND, SM and FE-K performed the
19
20 353 statistical analyses. NR, ND, SM and FE-K interpreted the data. NR draft the manuscript. MB and
21
22 354 GH ensured project and study management. All authors reviewed and approved the final
23
24 355 manuscript. The corresponding author (NR) attests that all listed authors meet the authorship
25
26 356 criteria and that no others meeting the criteria have been omitted. MB is the guarantor.
27
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29 357 Each author has confirmed compliance with the journal's requirements for authorship.
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444 TABLES

445 Table 1: Sociodemographic characteristics of study participants (n=67)

	ALL N=67 % (n)	Maison des Femmes N=40 % (n)	MHC-1 N=12 % (n)	MHC-2 N=15 % (n)
Age (years) (n=67)				
Mean [SD, range]	34.1 [9.7, 18-71]	31.3 [8.2, 18-71]	40.3 [8.7, 29-55]	36.5 [10.0, 21-52]
Median	33	29	37	37
Ages (years, 4 classes)				
18-24	14.9 (10)	20.0 (8)	0 (0)	13.3 (2)
25-34	41.8 (28)	52.5 (21)	25.0 (3)	26.7 (4)
35-49	34.3 (23)	25.0 (10)	50.0 (6)	46.7 (7)
≥50	9.0 (6)	2.5 (1)	25.0 (3)	13.3 (2)
In a couple (n=67)				
Yes	49.2 (33)	50.0 (20)	50.0 (6)	46.7 (7)
Has children (n=67)				
Yes	73.1 (49)	67.5 (27)	83.3 (10)	80.0 (12)
Born in France (n=66)				
Yes	47.0 (31)	43.6 (17)	50.0 (6)	53.3 (8)
Health coverage (n=67)				
Health insurance	44.8 (30)	37.5 (15)	66.7 (8)	46.7 (7)
Social security	17.9 (12)	22.5 (9)	0 (0)	20.0 (3)
Universal Health Coverage (CMU)	25.4 (17)	30.0 (12)	16.7 (2)	20.0 (3)
State medical assistance (AME)	4.5 (3)	0 (0)	16.7 (2)	6.7 (1)
No coverage	7.5 (5)	10.0 (4)	0 (0)	6.7 (1)
Professional situation (n=66)				
Inactive	39.4 (26)	38.5 (15)	16.7 (2)	60.0 (9)
Unemployed	13.6 (9)	10.3 (4)	25.0 (3)	13.3 (2)
Working	37.9 (25)	38.5 (15)	58.3 (7)	20.0 (3)
Student	9.1 (6)	12.8 (5)	0 (0)	6.7 (1)
Support (n=67)				
No one	25.4 (17)	22.5 (9)	33.3 (4)	26.7 (4)
One people	37.3 (25)	45.0 (18)	25.0 (3)	26.7 (4)
At least 2 peoples	37.3 (25)	32.5 (13)	41.7 (5)	46.7 (7)
Number of women that can be reached by phone 6 months after inclusion				
	52.2 (35)	65.0 (26)	25.0 (3)	40.0 (6)
Safety precaution (n=67)				
1	3.0 (2)	2.5 (1)	8.3 (1)	0 (0)
2	10.6 (7)	10.0 (4)	8.3 (1)	14.3 (2)
3	19.7 (13)	17.5 (7)	25.0 (3)	21.4 (3)
4 (None)	66.7 (44)	70.0 (28)	58.3 (7)	64.3 (9)
Willingness to change (n=67)				
0 (None)	26.9 (18)	27.5 (11)	25.0 (3)	26.7 (4)
1	23.9 (16)	27.5 (11)	25.0 (3)	13.3 (2)
2	49.3 (33)	45.0 (18)	50.0 (6)	60.0 (9)
Help seeking (n=67)				
0 (None)	10.5 (7)	17.5 (7)	0 (0)	0 (0)
1	22.4 (15)	20.0 (8)	16.7 (2)	33.3 (5)
2	19.4 (13)	20.0 (8)	33.3 (4)	6.7 (1)

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3	3	25.4 (17)	22.5 (9)	33.3 (4)	26.7 (4)
4	4	9.0 (6)	7.5 (3)	0 (0)	20.0 (3)
5	5	6.0 (4)	5.0 (2)	16.7 (2)	0 (0)
6	6	7.5 (5)	7.5 (3)	0 (0)	13.3 (2)

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448 Table 2: Medical characteristics of study participants (n=67)

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	ALL	Maison des Femmes	MHC-1	MHC-2
	N=67	N=40	N=12	N=15
	% (n)	% (n)	% (n)	% (n)
PCL-5				
Mean [SD]	37.1 [16.6]	37.7 [18.1]	35.7 [13.7]	36.9 [15.6]
Score \geq 33	59.7 (40)	57.5 (23)	60.0 (9)	66.7 (8)
Self-rated Global health				
Very Bad	10.6 (7)	12.5 (5)	9.0 (1)	6.7 (1)
Bad	23.3 (16)	20.0 (8)	36.4 (4)	26.7 (4)
Quite Good	25.8 (17)	25.0 (10)	27.3 (3)	26.7 (4)
Good	31.8 (21)	35.0 (14)	18.2 (2)	33.3 (5)
Very Good	7.6 (5)	7.5 (3)	9.0 (1)	6.7 (1)
Emergency Room visit(s) in the past 6 months				
Yes	40.3 (27)	47.5 (19)	25.0 (3)	33.3 (5)
Active Smoker				
Yes	26.9 (18)	27.5 (11)	33.3 (5)	16.7 (2)
AUDIT-C\geq4				
Yes	7.5 (5)	10.0 (4)	6.7 (1)	0
Use of Psychotropic Drugs				
Yes	19.4 (13)	20.0 (8)	20.0 (3)	16.7 (2)

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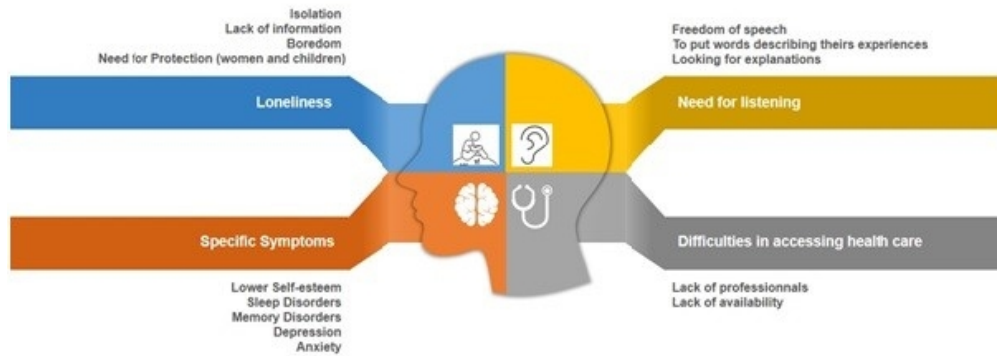
453 Figures legends

454 Figure 1: Perception of the difficulties encountered by the victims-survivors of violence

455 Figure 2: Perceptions of the specific care of the Maison des Femmes

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Perception of the difficulties encountered by the victims-survivors of violence

128x127mm (120 x 120 DPI)



Perceptions of the specific care of the Maison des Femmes

119x119mm (120 x 120 DPI)

Supplementary Table 1: Detailed sociodemographic characteristics of study participants (n=67)

	ALL	Maison des Femmes	MHC-1	MHC-2
	N=67	N=40	N=12	N=15
	% (n)	% (n)	% (n)	% (n)
Age (years) (n=67)				
Mean [SD, range]	34.1 [9.7, 18-71]	31.3 [8.2, 18-71]	40.3 [8.7, 29-55]	36.5 [10.0, 21-52]
Median	33	29	37	37
In a couple for (n=32)				
Less than a year	25.0 (8)	10.0 (4)	20.0 (1)	42.8 (3)
1-5 years	37.5 (12)	20.0 (8)	40.0 (2)	28.6 (2)
6-15 years	28.1 (9)	15.0 (6)	40.0 (2)	14.3 (1)
>15 years	9.4 (3)	5.0 (2)	0 (0)	14.3 (1)
Housing situation (n=66)				
Lives alone (tenant or owner of the house)	51.5 (34)	51.3 (20)	58.3 (7)	46.7 (7)
Lives with (ex)spouse (tenant or owner)	13.6 (9)	18.0 (7)	0 (0)	13.3 (2)
(Ex)spouse alone (tenant or owner of the dwelling)	1.5 (1)	0 (0)	0 (0)	6.7 (1)
Staying with family/friends	24.2 (16)	20.5 (8)	33.3 (4)	26.7 (4)
Staying in a hostel	9.1 (6)	10.3 (4)	8.3 (1)	6.7 (1)
Geographic origin (n=62)				
North Africa	24.2 (15)	21.1 (8)	25.0 (3)	33.3 (4)
Sub-Saharan Africa	43.5 (27)	52.6 (20)	33.3 (4)	25.0 (3)
Caribbean/Americas	8.1 (5)	10.5 (4)	8.3 (1)	0 (0)
Asia/Middle East	3.2 (2)	0 (0)	(0)	16.7 (2)
Europe outside France	4.8 (3)	5.3 (2)	(0)	8.3 (1)
France	16.1 (10)	10.5 (4)	33.3 (4)	16.7 (2)
Level of education (n=67)				
No diploma	20.9 (14)	20.0 (8)	16.7 (2)	26.7 (4)
French Baccalaureate or equivalent	16.4 (11)	20.0 (8)	8.3 (1)	13.3 (2)
Undergraduate (Bac +2)	28.4 (19)	25.0 (10)	41.7 (5)	26.7 (4)
Vocational education (CAP/BEP)	20.9 (14)	20.0 (8)	16.7 (2)	26.7 (4)
Primary or elementary education	13.4 (9)	15.0 (6)	16.7 (2)	6.7 (1)
Monthly household income (n=67)				
< 850 €	37.3 (25)	37.5 (15)	25.0 (3)	46.7 (7)

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850 € à 1100 €	9.1 (6)	10.0 (4)	16.7 (2)	0 (0)
1100 € à 1800 €	35.8 (24)	30.0 (12)	41.7 (5)	46.7 (7)
1800 € à 2500 €	10.5 (7)	12.5 (5)	16.7 (2)	0 (0)
>2500 €	7.5 (5)	10.0 (4)	0 (0)	6.7 (1)

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Supplementary table 2: Sociodemographic description of the women interviewed in the qualitative study (N=9)

	Age (years)	Employment	Duration of the violence (years)	Marital status	Number of children
MdF1	27	Inactive	3	Unmarried cohabitation	1
MdF2	37	Active	6	Single	1
MdF3	41	Inactive	6	Single	0
MHC1	34	Active	9	Single	2
MdF4	43	Active	unknown	Single	3
MdF5	48	Inactive	13	Single	1
MdF6	34	Active	3	Single	0
MHC2	55	Inactive	2	Single	1
MHC3	30	Active	1.5	Single	1

Supplementary figure: Interview guide

Face-to-face interview to be conducted within the healthcare structure (the Maison des Femmes or the Municipal Health Center) with a woman who has declared that she is suffering/or has suffered intimate partner violence.

Part 1: open questions

Why did you come to the Maison des Femmes/Municipal Health Center?

What did the Maison des Femmes/Municipal Health Center do for you?

What do you know about supporting women who have suffered violence at the Maison des Femmes Municipal Health Centers?

In your opinion, which professionals does a woman who has suffered intimate partner violence need to meet?

Which professionals do you think could help her get out of a violent relationship?

How far do you think we should go in helping abused women?

In your opinion, what does the *Maison des Femmes/Municipal Health Center* lack in terms of support for abused women?

Part 2: socio-demographic data and characterization of violence

Age, marital status, geographical origin and number of years in France (if applicable), number of children, department of residence, duration of domestic violence, number of violent partners, types of violence, whether she is still in a relationship with the violent partner, religion/adherence to religion.

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7 **STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cohort studies***
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Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	1
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	1
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4
Objectives	3	State specific objectives, including any prespecified hypotheses	5
Methods			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	6
		(b) For matched studies, give matching criteria and number of exposed and unexposed	NA
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	6-7
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	6
Bias	9	Describe any efforts to address potential sources of bias	6
Study size	10	Explain how the study size was arrived at	6
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	8
		(b) Describe any methods used to examine subgroups and interactions	8

		(c) Explain how missing data were addressed	6
		(d) If applicable, explain how loss to follow-up was addressed	NA
		(e) Describe any sensitivity analyses	NA
Results			
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	8
		(b) Give reasons for non-participation at each stage	8
		(c) Consider use of a flow diagram	NA
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	9
		(b) Indicate number of participants with missing data for each variable of interest	NA
		(c) Summarise follow-up time (eg, average and total amount)	6
Outcome data	15*	Report numbers of outcome events or summary measures over time	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	9
		(b) Report category boundaries when continuous variables were categorized	9
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	NA
Discussion			
Key results	18	Summarise key results with reference to study objectives	11
Limitations			
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	11-12
Generalisability	21	Discuss the generalisability (external validity) of the study results	12-13
Other information			
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	2

*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.

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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.

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