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Abstract

Introduction Several tools have been developed to objectively identify women who are experiencing intimate partner violence (IPV). The objective of this systematic review is to identify and describe the properties and clinical usefulness of the validated tools for detecting IPV published in the past 15 years. **Methods** A systematic review was performed of the bibliographic databases PubMed, Cochrane Library, ENFISPO, IME, CINHALL, CUIDEN and Cuidatge. The search was restricted to articles published in the past 15 years. It was broadened to include grey literature. The articles selected present tools for screening, evaluating and measuring the risk of IPV, along with information on the validation of the tool. They are either written in Spanish or English. **Results** 536 articles were found in total, of which eight were excluded as they appeared in two different databases. A further 461 were excluded after reading the title and summary. 67 full articles were reviewed. 63 articles were finally included and 39 tools. **Conclusion** This systematic review provides a big-picture perspective of validated IPV tools published since 2003. It can help health professionals and researchers choose the most appropriate tool for their specific purposes and context.

Keywords	Review, Questionnaire; Validation; Violence against women; Intimate Partner Violence
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HIGHLIGHTS

- Intimate Partner Violence (IPV) is considered to be a public health problem because of the serious repercussions it has and its high prevalence rate.
- Several tools have been developed to objectively identify women in IPV situations.
- This systematic review summarizes the characteristics and applicability of the tools validated after 2003 that might help clinicians and researchers to select the tool that is most appropriate for their objective and for the specific context.
- It would be desirable to have the “gold standard” or “credible reference standard” tools and the corresponding study of their psychometric properties translated into more languages.

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Title

Characteristics and clinical applicability of the validated scales and tools for screening, evaluating and measuring the risk of intimate partner violence. Systematic literature review (2003-2017)

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Authorship declaration

All of the authors were involved in the conception and design of the study. M Analía Gomez-Fernandez was involved in searching and processing references. M Analía Gomez-Fernandez and Josefina Goberna-Tricas were the authors involved in the revision and analysis of characteristics and quality of scales and tools, but the three authors met on several occasions to agree upon the evolution of the work. All of the authors revised the manuscript and made modifications and all of the authors gave the final approval of the version to be published. It is also part of M Analía Gómez-Fernández's PhD thesis (Doctoral programme in Nursing and Health at the University of Barcelona), under the supervision of Josefina Goberna-Tricas and Montserrat Payá-Sánchez. Her PhD thesis is about IPV during pregnancy.

Declarations of interest

None

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1. Introduction

Violence against women (VAW) was defined by the United Nations (1993) as any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life (United Nations, 1993).

VAW derives from one person having the power and control in an intimate relationship and, therefore, a situation of inequality (Bugarín-González & Bugarín-Diz, 2014). According to the World Health Organisation (WHO), VAW includes physical violence (e.g. hitting, kicking), psychological violence (e.g. constant intimidation, denigration, isolation and humiliation) and sexual violence (e.g. forced sexual intercourse) (WHO, 2003). Other manifestations of VAW are economic violence (e.g. controlling finances, forcing the woman to justify her expenses or not giving her enough money to cover the family's needs), environmental violence (e.g. breaking objects that have special significance for the woman or mistreating pets) and social violence (e.g. making fun of the woman in public or seductive behaviour towards other women in her presence) (Ministry of Health, Social Services and Equality, 2012; Parveen Azam, Dhingra & McGarry, 2016).

Even though VAW (and particularly in the form of intimate partner violence (IPV)) is a high priority health issue, (Pill, Day & Mildred, 2017; Latzman, Vivolo-Kantor, Clinton-Sherrod, Casanueva & Carr, 2017), obtaining reliable, precise and comparable data on the extent of violence worldwide comes with many difficulties due to the heterogeneity of the available tools (Women's Health Observatory, 2005). The nature of the object of study is also problematic as a large part of IPV cases are not brought before the justice system, often because women fear being punished by their partners for revealing their violent situation or the stigma attached (e.g. family and friends).

Nevertheless, the violent acts tend to cause physical injuries and various psycho-affective problems, forcing women to go to health services, e.g. primary healthcare, emergency department or mental health. Consequently, these services offer the opportunity to identify women experiencing IPV, give them support and refer them to the suitable healthcare area (Ministry of Health, Social Services and Equality, 2012). It is important to highlight that universal IPV screening in healthcare settings has been a controversial topic. Even though there is literature that supports it (Bourey, Williams, Bernstein & Stephenson, 2015), a 2014 Cochrane review concludes that there is not sufficient scientific evidence to recommend universal IPV screening in healthcare (O'Doherty et al., 2014). In the same vein, the latest guides and protocols like the 2013 WHO "Violence prevention: the evidence" (WHO, 2013) guide or the Spanish "General protocol for healthcare in situations of gender-based violence" from 2012 (Ministry of Health, Social Services and Equality, 2012), recommend systematic screening as there has been an increase in the number of women identified as experiencing IPV. In the same way, the American College of Obstetricians and Gynecologists (Chisholm, Bullock & Ferguson, 2017) and the Spanish Society of Gynecology and Obstetrics (2017) have been staunch advocates for universal IPV screening. However, the effectiveness and efficiency of universal IPV screening requires several factors and processes to come together: professional training, specific resources and access to them, and a continued healthcare relationship (Norman, Spencer, Eldridge & Feder, 2010).

Several tools have been developed for emergency departments, primary healthcare, prenatal care and mental health centres, among others, to objectively identify women in IPV situations. They usually have a set of questions about the person's everyday relationships and their experiences relating to physical, psychological and sexual violence (WHO, 2013). They make it possible to collect, quantify, standardise and compare information. They can be

classified in the following way: Screening tools: their objective is to detect probable cases. They are brief and quick (10 items or less). Evaluation tools: they perform an exhaustive assessment and are more extensive than screening tools (Lobo, 1987). IPV risk assessment tools: they are aimed at detecting the risk of violence against the partner or ex-partner. They are generally applied in legal and criminal contexts (Women's Health Observatory, 2005). Healthcare tools are validated using psychometrics, which allows us to study the suitability of the scale for the phenomenon that is being measured, as well as the quality of the measurement (Terwee, Bot, de Boer, et al., 2007). However, it is also possible to evaluate suitability, determining the sensitivity and specificity, by comparing the tool with “gold standard” tools (Martín Arribas, 2004; Women's Health Observatory, 2005), otherwise referred to by some authors as “credible reference standard” (Rabin, Jennings, Campbell & Bair-Merritt, 2009; U.S. Preventive Services Task Force, 1999).

Examples of credible reference standards include *Conflict Tactics Scales* (CTS) by Straus (1979), *Index of Spouse Abuse* (ISA) by Hudson and McIntosh (1981), and *Psychological Maltreatment of Women Inventory* (PMWI) by Tolman (Tomasdottir et al., 2016; Tolman, 1989). Regarding our topic of interest, there is a lack of consensus on the most appropriate measure of comparison to use in the sensitivity and specificity tests for IPV detection tools (Rabin, Jennings, Campbell & Bair-Merritt, 2009). There are discrepancies as to whether it is best to use psychometrics or to make comparisons with the so-called “gold standard” tools. In this sense, there are excellent articles (Arkins, Begley & Higgins, 2016) that provide a rigorous description and evaluation of the psychometric properties of the existing scales and an outstanding evaluation of the validation processes for the various tools. As a result, this is not the focus here. The objective is to identify and describe the properties, characteristics and, especially, clinical applicability of the validated tools for detecting IPV that have been published in the past 15 years.

2. Methodology

A systematic review of the English and Spanish databases was carried out in the months between April and September 2017: PubMed (biomedical literature from MEDLINE and journals in life sciences), the Cochrane Library (literature containing high-quality scientific evidence about healthcare), ENFISPO (articles about nursing, physiotherapy and podiatry in Spanish-language journals), IME (biomedicine articles in Spanish-language journals), CINHALL (articles in journals on nursing and other health sciences), CUIDEN (literature on healthcare in Spanish) and Cuidatge (articles on nursing in journals in Spanish or Catalan). Search strategy: In each database, Boolean operators were used with the following keywords for the English databases: (intimate partner violence OR domestic violence OR spouse abuse) AND validation AND (scale OR questionnaire OR test). The following combinations were used for the Spanish databases: (violencia Y test), (violencia Y cuestionario), (violencia Y validación) in ENFISPO, IME and CUIDEN; and (violencia OR género) AND (validación OR escala OR cuestionario OR test) in Cuidatge.

The search was limited to articles published in the past 15 years and it was broadened to find grey literature (i.e. literature published outside the usual scientific bases), exploring the websites of official organisations: the Observatory of Women's Health (OSM is the Spanish acronym), the Spanish Ministry of Health, Social Services and Equality, and the World Health Organisation; the System for Information on Grey Literature in Europe (SIGLE); and repositories for doctoral dissertations: Portal DART-Europe E-theses (a database for European doctoral dissertations) and TESEO (a database for Spanish doctoral dissertations). An active search was also conducted on the internet using the Google and Google Scholar search engines to identify studies published in non-indexed journals. The names of previously identified questionnaires were used as keywords. To evaluate the quality of these studies, the US Preventive Services Task Force criteria for Diagnostic Accuracy Studies was used (U.S.

Preventive Services Task Force, 1999). Said criteria were not used to discard the studies selected for the review; rather, it guaranteed that the studies were analysed using a single set of criteria.

2.1 Selection criteria

As shown in **Figure 1**, 536 articles were identified in total: 513 from databases (244 from PubMed, 5 from Cochrane Library, 4 from ENFISPO, 5 from IME, 238 from CINHALL, 12 from CUIDEN and 5 from Cuidatge) and 23 from the grey literature. After 8 articles were discarded as they appeared in two different databases. Another 461 were discarded after reading the title and summary (as they did not contain IPV tools).

The articles selected present tools for screening, evaluating and measuring the risk of IPV, along with information on the validation of the tools. They were either written in Spanish or English and published in the past 15 years (except for some articles that were published earlier but validated after 2003). Doctoral dissertations, non-original research and conferences were all excluded. The full text of a total of 67 articles was evaluated; three of them were discarded as they did not present validated tools; and a further article was discarded for presenting a tool for measuring physician readiness to manage IPV. Finally, 63 articles were included in the review.

2.2 Data extraction

To process and order the texts, a secondary document with a pre-designed template was created, including: tool name, author and year of publication, original country of publication and language, tool objective, type of violence identified, area of application, number of items, psychometric properties (or other forms of validation) and the existence of a validated

version in other languages (here, the language, author, year of publication and psychometric properties or other forms of validation are also included).

As we have seen, the validation of the tools within the health environment is based on the use of psychometric tests (Terwee, Bot, de Boer, et al., 2007). Cronbach's coefficient alpha by Cronbach & Shavelson (2004) is an average of correlations between variables that evaluates internal consistency. The values $\alpha < 0.50$ are considered unacceptable, 0.50 to 0.59 are poor, 0.60 to 0.69 are questionable, 0.70 to 0.79 are acceptable, 0.80 to 0.89 are good while values that are ≥ 0.90 are considered excellent.

However, it is also possible to evaluate suitability by determining the sensitivity and specificity; sensitivity (in the case that concerns us here) determines the capacity of the tool to detect that a woman is in an IPV situation, while specificity, on the other hand, determines the capacity of the tool to detect that a woman is not in an IPV situation (Martín Arribas, 2004; Women's Health Observatory, 2005). Receiver Operating Characteristic (ROC) is a graphic representation that plots sensitivity against specificity. The ROC varies from 0 - 1.0 where 1.0 is a perfect prediction, to 0.5, which is not a prediction, and 0, which is an inverse prediction (Hilton & Harris, 2007). A ROC curve of 0.60 can be considered a slightly improved prediction with respect to luck (0.5), whereas a result of between 0.70 and 0.79 is considered moderately effective, while anything above 0.80 is highly effective (Douglas et al., 2005).

3. Results

3.1 Search results

Sixty-three articles presenting 39 validated tools were included: ten screening tools, 19 evaluation tools and ten IPV risk assessment tools. From among the 39 tools, 27 were published from 2003 onwards. The remaining 12 tools were published before 2003 (they are

marked with an asterisk in Table 1). What this article presents is their validation or their cultural adaptation and validation in different languages from 2003 onwards.

3.2 Tool characteristics and quality

Table 1 presents a summary of the tools. The tools are classified according to how they have been designed for screening, evaluating and detecting the risk of IPV, that is to say, whether they were originally published in Spanish, English, or were designed in English and then adapted and validated in other languages. The tool description adopts the following scheme: title (the title of the original scale is stated), author and year of publication (of the original scale), country of publication and original language, objective (a summary is provided), description (a summary of the tool's content is given, including the type of violence, area of application, number of items and psychometric properties), and whether there is a validated version in other languages (here, the language of validation, year of publication and psychometric properties/other forms of validation are included).

3.3 Tool objectives

The objective of all the screening tools is to detect probable cases of intimate partner violence against women in clinical settings. Some specifically focus on primary healthcare services, (Majdalani et al., 2005; Peralta & Fleming, 2003; Sherin et al., 1998; Brown et al., 1996) emergency departments (Feldhaus et al., 1997) or during pregnancy (Soeken et al., 1992).

The objective of the evaluation tools is to measure or assess the degree of violence. As with the previous case, most of them are used in clinical settings, although some can also be applied at educational institutions (Rodríguez et al., 2010; Trujano et al., 2006; Wolfe et al., 2001; Straus et al., 1996), prisons (Straus et al., 1996) or social services (Jory, 2004). The risk assessment tools seek to predict the risk of recurrent violence and their application is

normally limited to legal and police settings, with the exception of two tools whose use can also be extended to clinical settings (Messing et al., 2017; Álvarez-Freijo et al., 2011).

3.4 Length

In the 39 tools presented, the average number of items was 22.9. The shortest screening tool was the *Safety Question for Screening Intimate Partner Violence* (Peralta & Fleming, 2003), with a single item. The longest evaluation tool was the *Conflict Tactics Scales* (CTS2) (Straus et al., 1996), with 78 items.

3.5 Validation languages

Nineteen of the tools were originally designed in English and then translated, culturally adapted and validated in different languages such as Arabic (Haddad et al., 2011), Chinese (Tiwari et al., 2015; Tiwari et al., 2007), Spanish (Loinaz-Calvo et al., 2011; Escribà-Agüir et al., 2015; Chen et al., 2005; Garcia-Esteve et al., 2011; Fogarty & Brown, 2002; Fernández-Fuertes et al., 2006; Muñoz-Rivas et al., 2007; Torres et al., 2010; Plazaola-Castaño et al., 2009; Sierra et al., 2011; Buesa & Calvete, 2011; Lopez-Ferré & Andrés- Pueyo, 2007), Greek (Antoniou et al., 2010), Indonesian (Iskandar et al., 2015), Italian (Signorelli et al., 2014) or Japanese (Umeda & Kawakami, 2014). Spanish is the main language in this review.

4. Discussion

Selecting the right tool for health professionals and researchers is a complex process (Douglas et al., 2005). This is true in part because the number of available questionnaires,

especially in health sciences, has considerably increased in the past few decades (Kropp et al., 1994).

The tools identified cover a wide range in terms of objective, length, availability in different languages and the quality of the psychometric properties, all of which lends significant power to the work. The study sees the great diversity of techniques used for the validation of the tools as a limitation. We should highlight the fact that there is no consensus on the most appropriate measure of comparison to test the sensitivity and specificity of IPV detection tools. This limits the data summary in several studies and the ability to determine the value of tools for detecting IPV (Rabin, Jennings, Campbell & Bair-Merritt, 2009). Terwee et al. (2007) argue that the content validity (in other words, that the selected items are indicators of what is being measured) (Martín-Arribas, 2004) is the most important psychometric property in a questionnaire. They state that if this aspect does not match up, then the tool shouldn't be used. Some authors like Nunnally (1967) suggest that, for the first stages of research, a tool with a 0.60 or 0.50 Cronbach's alpha regarding content validity can be enough, however, for basic research at least 0.8 is required, and for applied research, somewhere between 0.90 and 0.95 is optimal. Other authors, however, are more categorical, for example: Loo (2001) considers that tools with a Cronbach's alpha of at least 0.80 are suitable.

In this review, the tools considered excellent in psychometric terms, and therefore deemed most useful for clinical application and research, in other words, those whose Cronbach's alpha is equal to or higher than 0.90 (Cronbach & Shavelson, 2004), are in relation to screening: the *Partner Violence Screen* (PVS) (0.91) when its version validated in Spanish is considered (Garcia-Esteve et al., 2011), as the original version had a sensitivity of 35-75% and a specificity of 80-94% (Feldhaus et al., 1997); similarly, the *Woman Abuse Screening Tool* (58) WAST, in the Spanish version, presents a Cronbach's alpha of 0.91 (Fogarty & Brown, 2002), despite the original version having a lower internal validity (0.75-0.91)

(Brown et al., 1996). The following are the results for the evaluation tools: *Cuestionario de Relación de Parejas de Novios* (CUVINO) (0.95) (Rodríguez et al., 2010), *Cuestionario de Violencia Sufrida y Ejercida de Pareja* (CVSEP) (0.95) (Moral De La Rubia & Ramos Basurto, 2015), *Escala de Abuso Psicológico Aplicado en la Pareja* (EAPA-P) (0.92) (Porrúa-García et al., 2016), *Escala de medición de la Violencia Intrafamiliar* (VIFJ4) (0.93) (Jaramillo et al., 2014), *Índice de severidad de violencia de pareja* (ISVP) (0.99) (Valdez-Santiago et al., 2006), *Violencia Doméstica Frecuencia y Percepción* (VIDOFyP) (0.98) (Trujano et al., 2006), *Domestic Violence Questionnaire* (0.94) (Indu et al., 2011), *Coercion in Intimate Relationships Scale* (SCIRS)(0.91-0.95) (Shackelford & Goetz, 2004), and *Index of Spouse Abuse (ISA)*, both its original version (0.90-0.96) (Hudson & McIntosh, 1981) and Spanish version (0.98-0.99) (Torres et al., 2010; Plazaola-Castaño et al., 2009). However, no risk assessment tool can be considered excellent according to Cronbach and Shavelson (Cronbach & Shavelson, 2004). If we apply the Receiver Operating Characteristic (ROC) criteria to the validated tools, according to which (Douglas, 2000; Douglas, Guy, Reeves & Weir, 2005) the ROC must be higher than 0.80 for the tool to be a good predictor, no tool fulfilled said criteria in this review.

It is important to remember that if an inappropriate measuring tool (for example, if the objective and selected tool do not correspond) or an unreliable tool is chosen, this can lead to bias in the conclusion, a missed opportunity to help women get out of violent situations, and a waste of time and resources (Rabin, Jennings, Campbell & Bair-Merritt, 2009). According to our review, no single tool can be seen as “the best”. Tool selection will depend on the ideal psychometric properties in relation to the objective and context of the evaluation, the target population, and the skills and experience of the staff who will be using the tool (Feder et al., 2009).

It is very important to have the time limitation in the clinical application because of the healthcare workloads, and accordingly we believe that the application of screening tools would be the most appropriate in a hospital environment (especially within emergency services). We also highly recommend that these tools be capable of screening for physical, psychological and sexual violence, that they be easy for professionals to interpret, and that they be comprehensible for the woman (i.e. easy to understand regardless of the woman's level of education). In this review, we find four screening tools that meet these criteria: in Spanish, *Cuestionario breve para detectar situaciones de violencia de género en las consultas clínicas* (Cronbach's α 0.50-0.75) (Majdalani, Alemán, Fayanás, Guedes & Mejía, 2005) and *Escala para la medición de los malos tratos a mujeres* (Cronbach's α 0.70-0.87) (Delgado, Aguar, Castellano & de Dios Luna del Castillo, 2006); in English, *Ongoing Abuse Screen* (OAS) (Cronbach's α 0.60) (Weis et al., 2003); and *Woman Abuse Screening Tool* (WAST), also available in English (Cronbach's α 0.75-0.91) (Brown et al., 1996), and in Spanish (Cronbach's α 0.91) (Fogarty & Brown, 2002) and in Indonesian (Cronbach's α 0.80) (Iskandar et al., 2015). Of the four tools, the last mentioned, the *Woman Abuse Screening Tool* (WAST), is the one that presents the highest Cronbach's α .

However, evaluation tools are deemed more suitable within the area of primary or outpatient care or in the areas of hospital admissions because of the longer continuity of the care and consequently the longer times involved. If we apply the same criterion as that mentioned above, i.e. that the tool include questions on the three types of violence and that only those considered as excellent (Cronbach's $\alpha \geq 0.90$) be selected, we find seven evaluation tools in this review: in Spanish, *Cuestionario de Relación de Parejas de Novios* (CUVINO) (Rodríguez et al., 2010), *Cuestionario de Violencia Sufrida y Ejercida de Pareja* (CVSEP) (Moral De La Rubia & Ramos Basurto, 2015), *Escala de medición de la Violencia Intrafamiliar* (VIFJ4) (Jaramillo et al., 2014), *Índice de severidad de violencia de pareja*

(ISVP) (Valdez-Santiago et al., 2006) and *Violencia Doméstica Frecuencia y Percepción* (VIDOFyP) (Trujano et al., 2006); in English, *Domestic Violence Questionnaire* (Indu et al., 2011) and *Index of Spouse Abuse* (ISA), which is available in its English version (Hudson & McIntosh, 1981) and also in Spanish (Torres et al., 2010; Plazaola-Castaño et al., 2009).

If we want to attain a complete evaluation, one recommended strategy would be to combine both types of tools by first applying a screening tool and then using an evaluation tool if the result is positive or if the health professional suspects that the woman might be in a situation of violence based on other indicators. Accordingly (Murcia Health Service, 2011), a Spanish clinical practice guide on mental health actions with women who have suffered violence by their partners recommends the *Woman Abuse Screening Tool* (WAST) (Fogarty & Brown, 2002) as a screening tool and the *Index of Spouse Abuse* (ISA) (Torres et al., 2010; Plazaola-Castaño et al., 2009) as an evaluation tool.

The tool most commonly labelled as “gold standard” in various publications (see Ernst et al., 2004 or Plazaola-Castaño et al., 2008) is *Index of Spouse Abuse* (ISA) (Hudson & McIntosh, 1981), which has been used to validate new tools such as *Ongoing Abuse Screen* (OAS) (Weis et al., 2003), el *Ongoing Violence Assessment Tool* (OVAT) (Ernst et al., 2004), *Partner Violence Screen* (PVS) (Feldhaus et al., 1997) or *Woman Abuse Screening Tool* (WAST) in its reduced Spanish version (Plazaola-Castaño & Jime, 2009), *Women’s Experience with Battering Scale* (WEB) (Coker, Pope, Smith, Sanderson & Hussey, 2001), *Hurt-Insult-Threaten-Scream* (HITS) Spanish version (Chen et al., 2005), *Slapped, Threatened or Thrown* (STaT) (Paranjape & Liebschutz, 2003), *Abuse Assessment Screen* (AAS) (Soeken et al., 1992). The ISA questionnaire has become very popular (Women’s Health Observatory, 2005) and some of its items have been used to create other questionnaires, for example, *Composite Abuse Scale* (CAS) (Hegarty, Sheehan & Schonfeld, 1999), *Partner Abuse Scales: Physical* (PASPH) and *Partner Abuse Scale: Non-Physical*

(PASNP) (Attala, Hudson & McSweeney, 1994), *Psychological Maltreatment of Women Inventory* (PMWI) (Tolman, 1989).

According to the WHO (WHO, 2013), the most commonly used tools in health systems are: *Abuse Assessment Screen* (AAS) (Soeken et al., 1992), *Hurt-Insulted-Threatened-Screamed* (HITS) (Sherin et al., 1998), *Indicators of Abuse Screen* (IOA) (Reis & Nahmiash, 1998), *Ongoing Violence Assessment Tool* (OVAT) (Ernst et al., 2004), *Partner Violence Screen* (PVS) (Feldhaus et al., 1997), *Slapped, Threatened or Thrown* (STaT) (Paranjape & Liebschutz, 2003), *Woman Abuse Screening Tool* (WAST) (Brown et al., 1996) and *Women's Experience with Battering* (WEB) (Smith, Earp & DeVellis, 1995).

In the case of Spain, in 2005, the Women's Health Observatory (OSM) published the "Tool catalogue for screening and frequency of physical, psychological and sexual abuse," in which 46 tools are listed and analysed: 41 are validated and the remaining 5 are not (Women's Health Observatory, 2005). There was a proliferation of new tools and already existing tools were validated and culturally adapted between 2003 and 2011 (with an annual average of 1.44 validations for screening tools, 2.22 for assessment tools, and 1.11 in the case of IPV risk). From 2012 until the present, activity in this area has been more restrained (with an average of 0.16 validations per year for screening tools, 1 for assessment tools, and none for IPV risk). It is particularly interesting to highlight the increased availability of tools for IPV risk assessment, which seek to detect the risk of violence against a partner or ex-partner. The aforementioned OSM catalogue (2005) listed 3 risk tools, however, this article presents ten.

5. Conclusions

This review gives a big-picture perspective of the tools validated for screening, evaluation and IPV risk assessment published in the past 15 years. Given the large number of tools in the literature, it is a good idea for future research not to focus on developing new ones; rather, it

should compare, adapt and improve (perfect, in some way) the existing tools. We believe that the results presented in Table 1 provide a summary of the tools' properties, which will be useful for health professionals and researchers looking for the most suitable tool for their specific purposes and context.

It would also be interesting to increase the number of applications of the tools that have displayed excellent psychometric properties, as well as to thoroughly consider the extent to which the objectives were fulfilled in the tools that were implemented, and the conditions in which they were applied (difficulties, recurring errors, etc.). Sharing this information would help other professionals to choose the tool they are going to use with greater clarity and security. It would also give them more confidence and agility when it comes to implementing the tool.

Finally, it is highly recommended that the “gold standard” or “credible reference standard” tools be translated into more languages (French, German, Arabic, Russian, Hebrew, etc.), along with the corresponding study of their psychometric properties. This would be of great help for the task of detecting IPV in health settings.

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Table 1. Description of screening, evaluation and IPV risk assessment tools

Tool name	Author (year)	Country (original country)	Objective	Type of violence	Area of application	Items	Cronbach's α	Validation in another language: author (year) and psychometric property
IPV Screening Tools								
Designed in Spanish								
Cuestionario breve para detectar situaciones de violencia de género en las consultas clínicas	Majdalani et al. (2005)	Argentina (Spanish)	Detect cases of violence against women in primary healthcare	Physical, psychological and sexual	Primary healthcare	5	Cronbach's α 0.50-0.75	\emptyset
Escala para la medición de los malos tratos a mujeres	Delgado, et al. (2006)	Spain (Spanish)	Detect violence against women	Physical, psychological and sexual	Clinical	10	Cronbach's α 0.70-0.87	\emptyset
Designed in English								
Ongoing Abuse Screen (OAS)	Weiss, et al. (2003)	USA (English)	Detect violence against women	Physical, psychological and sexual	Clinical	5	Cronbach's α 0.60	\emptyset
Ongoing Intimate Partner Violence (OVAT)	Ernst, et al. (2004)	USA (English)	Detect violence against women	Physical and psychological	Clinical	4	Cronbach's α 0.60	\emptyset
Safety Question for Screening Intimate Partner Violence	Peralta and Fleming (2003)	USA (English)	Detect psychological violence against women in primary healthcare	Psychological	Primary healthcare	1	Compared with CTS: sensitivity:	\emptyset

							8.8%; specificity: 91.2%	
Questions Screen for Intimate Partner Violence (STaT)	Paranjape and Liebschutz (2003)	USA (English)	Detect violence against women	Physical and psychological 1	Clinical	3	Compared with interview and ISA: sensitivity: 64-96%; specificity: 75-100%	∅
Designed in English and available in other languages								
*Abuse Assessment Screen (AAS)	Soeken, et al. (1992)	USA (English)	Detect violence against pregnant women	Physical and sexual	Prenatal care	5	Cronbach's α 0.56	- Chinese: Tiwari et al. (2007) Compared with CTS2: sensitivity: 66.7%; specificity: 66-93% - Spanish: Escribá-Agüir, et al. (2008) Cronbach's α 0.85-0.94 - Greek: Antoniou, et al. (2010) Cronbach's α 0.80
*Hurt-Insult-Threaten-Scream (HITS)	Sherin, et al. (1998)	USA (English)	Detect violence against women	Physical and psychological 1	Primary healthcare	4	Cronbach's α 0.61-0.80	- Spanish: Ping-Hsin, et al. (2005) Cronbach's α 0.61
*Partner Violence Screen (PVS)	Feldhaus, et al. (1997)	USA (English)	Detect physical violence against women	Physical and safety	Emergency department	3	Compared with CTS and ISA: sensitivity:	- Spanish: Garcia-Esteve et al. (2011) Cronbach's α 0.91

							35-75%; specificity: 80-94%	
*Woman Abuse Screening Tool (WAST)	Brown, et al. (1996)	Canada (English)	Detect violence against women	Physical, psychological and sexual	Primary healthcare	8	Cronbach's α 0.75-0.91	- Spanish: Fogarty and Brown (2002) Cronbach's α 0.91 - Reduced Spanish version Plazaola, et al. (2008) Compared with ISA: sensitivity: 91.4%; specificity: 76.2% - Indonesian: Iskandar, et al. (2014) Cronbach's α 0.80
IPV Evaluation Tools								
Designed in Spanish								
Cuestionario de Relación de Parejas de Novios (CUVINO)	Rodríguez, et al. (2007)	Spain (Spanish)	Measure violent behaviours in teenage couples	Physical, psychological and sexual	Clinical and educational	42	Cronbach's α 0.95	\emptyset
Cuestionario de Violencia en la Pareja (CVP)	Cienfuegos and Díaz-Loving (2010)	Mexico (Spanish)	Evaluate violence in couples	Physical, psychological and sexual	Clinical	38	Cronbach's α 0.80	\emptyset
Cuestionario de Violencia Sufrida y Ejercida de Pareja (CVSEP)	Moral and Ramos (2015)	Mexico (Spanish)	Evaluate violence in couples	Physical, psychological and sexual	Clinical	39	Cronbach's α 0.95	\emptyset
Escala de Abuso Psicológico	Porrúa, et al. (2016)	Spain (Spanish)	Evaluate psychological violence in couples	Psychological	Clinical	19	Cronbach's α 0.92	\emptyset

Aplicado en la Pareja (EAPA-P)								
Escala de medición de la Violencia Intrafamiliar (VIFJ4)	Jalamiro, et al. (2014)	Ecuador (Spanish)	Measure the type and severity of violence against women	Physical, psychological and sexual	Clinical	25	Cronbach's α 0.93	\emptyset
Índice de severidad de violencia de pareja (ISVP)	Valdez, et al. (2006)	Mexico (Spanish)	Measure the frequency and severity of violence against women	Physical, psychological and sexual	Clinical	19	Cronbach's α 0.99	\emptyset
Violencia Doméstica: Frecuencia y Percepción (VIDOFyP)	Trujano, et al. (2006)	Mexico (Spanish)	Measure violence against women and how it is perceived	Physical, psychological and sexual	Clinical and educational	30	Cronbach's α 0.98	\emptyset
Designed in English								
Domestic Violence Questionnaire	Indu, et al. (2011)	India (English and Malayalam)	Measure the type and frequency of IPV violence against women	Physical, psychological and sexual	Clinical	20	Cronbach's α 0.94	\emptyset
Intimate Justice Scale	Jori (2004)	USA (English)	Detect psychological and physical violence against women	Physical and psychological	Clinical and Social Services	15	Cronbach's α 0.74-0.90	\emptyset
NorVold Abuse Questionnaire (NorAQ)	Swahnberg and Wijma (2003)	Sweden (English)	Measure the degree of emotional, physical and sexual abuse, and health abuse	Physical, psychological and sexual	Clinical	13	Compared with CTS and SAQ ^a : sensitivity: 85-98%; specificity: 75-96%	- Arabic Haddad et al. (2011) Cronbach's α : 0.75-0.77
Scale of Economic Abuse (SEA)	Adams, et al. (2008)	USA (English)	Measure economic violence against women	Economic	Clinical	28	Cronbach's α 0.87-0.96	\emptyset

Coercion in Intimate Relationships Scale (SCIRS)	Shackelford and Goetz (2004)	USA (English)	Measure sexual violence against women	Sexual	Clinical	34	Cronbach's α 0.91-0.95	\emptyset
Indian Family Violence and Control Scale (IFVCS)	Kalokhe, et al. (2016)	India (English, Hindi and Marathi)	Measure abuse against married women by spouse or spouse's family	Physical, psychological and sexual	Clinical	63	Correlation with CTS2 0.35- 0.84	\emptyset
Revised Controlling Behaviour Scale (CBS-R)	Graham-Kevan and Archer (2005)	UK (English)	Measure psychological and physical violence against a partner	Physical and psychological	Clinical	32	Correlation with CTS2 0.64- 0.92	- Chinese: Tiwari et al. (2014): sensitivity: 96%; specificity: 95%
Designed in English and available in other languages								
*Conflict in Adolescent Dating Relationships Inventory (CADRI)	Wolfe, et al. (2001)	Canada (English)	Measure violent acts in teenage couples	Physical, psychological and sexual	Clinical and education	35	Cronbach's α 0.83-0.85	- Spanish: Fernandez et al. (2006) Cronbach's α 0.62-0.85
*Conflict Tactics Scales (CTS2)	Straus, et al. (1996)	USA (English)	Measure the extent of physical and psychological violence in couples	Physical, psychological and sexual	Health, educational and prisons	78	Cronbach's α 0.78-0.89	- Spanish: Muñoz, et al. (2007) Cronbach's α 0.62-0.81 - Italian Signorelli et al. (2014) Cronbach's α 0.80-0.94 - Japanese Umeda and Kawakami (2014) Cronbach's α 0.18-0.5

*Index of Spouse Abuse (ISA)	Hudson and McIntosh (1981)	USA (English)	Evaluate the severity of violence against women	Physical, psychological and sexual	Clinical	30	Cronbach's α 0.90-0.96	- Spanish: Torres, et al. (2009) Cronbach's α 0.99; Castaño, et al (2009) Cronbach's α 0.98 - Reduced version Sierra, et al. (2011) Cronbach's α 0.93
*Psychological Maltreatment of Women Inventory (PMWI-F)	Tolman (1989)	USA (English)	Measure psychological violence against women	Psychological	Clinical	14	Cronbach's α 0.87-0.92	- Spanish: García-Esteve, et al. (2011) Cronbach's α 0.98
*Subtle and Overt Psychological Abuse of Women Scale-SOPAS	Marshall (1999) Validation: Jones et al. (2005)	USA (English)	Measure psychological violence against women	Psychological	Clinical	65	Correlations with PMWI 0.82-0.89	- Spanish: Buesa and Calvete (2011) Cronbach's α 0.92
IPV Risk Assessment Tools								
Designed in Spanish								
Escala de Predicción del Riesgo de Violencia Grave contra la pareja (EPV)	Echeburúa, et al. (2010)	Spain (Spanish)	Predict the risk of serious violence by partner or ex-partner	Physical, psychological and sexual	Legal and police	20	Cronbach's α 0.71	\emptyset
Riesgo Violencia Mujer – Barcelona (RVD-BCN)	Álvarez Freijo et al. (2011)	Spain (Spanish)	Predict the risk of serious violence by partner or ex-partner	Physical, psychological	Legal and clinical	16	Cronbach's α 0.72	\emptyset
Designed in English								
Danger Assessment-5 (DA-5)	Messing, et al. (2007)	USA (English)	Detect the risk of homicide in an abused woman	Physical, psychological and sexual	Legal and clinical	5	Sensitivity: 72%; Specificity: 58%	\emptyset

Domestic Violence Screening Instrument (DVSI)	Williams and Houghton (2004)	USA (English)	Detect the risk of recidivism in an abusive person	Physical, psychological and sexual	Legal	12	Cronbach's α 0.63-0.85	\emptyset
*Kingston Screening Instrument for Domestic Violence (K-SID)	Gelles (1998) Validation: O'Sullivan et al. (2005)	USA (English)	Detect the risk of recidivism in an abusive person	Physical, psychological and sexual	Legal	10	ROC:0.62	\emptyset
Revised Domestic Violence Screening Instrument (DVSI-R)	Williams and Grant (2006)	USA (English)	Detect the risk of recidivism in an abusive person	Physical, psychological and sexual	Legal	12	Cronbach's α 0.68-0.73	\emptyset
*Method of Assessment of Domestic Violence Situations or Domestic Violence Method (DV-MOSAIC)	De Becker (2000) Validation: Roehl et al. (2005)	USA (English)	Detect the risk of homicide in an abused woman	Physical, psychological and sexual	Legal	46	ROC curve: 0.65	\emptyset
Ontario Domestic Assault Risk Assessment (ODARA)	Hilton and Harris (2009)	Canada (English)	Detect the risk of recidivism in an abusive person	Physical, psychological and sexual	Legal	13	ROC curve: 0.71-0.80	\emptyset
Designed in English and available in other languages								
*Spousal Assault Risk Assessment (SARA)	Kropp, et al. (1994)	Canada (English)	Detect the risk of recidivism in an abusive person	Physical, psychological and sexual	Legal	58	Cronbach's α 0.78	- Spanish: López and Pueyo (2007) Sensitivity: 85%; specificity: 72%

Brief Spousal Assault Form for the Evaluation of Risk (B-SAFER)	Kropp, et al. (2005)	Canada (English)	Detect the risk of recidivism in an abusive person	Physical, psychological and sexual	Legal	10	ROC curve: 0.69-0.70	- Spanish: Loinaz et al. (2011) ROC curve: 0.65
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NOTES:

(Ø): not available in other languages.

(*): Tools published before 2003 although their validation or their cultural adaptation and validation in different languages did not take place until after 2003.

(a): Sexual Abuse Questionnaire (SAQ) (Leserman et al., 1995; Leserman J, Drossman DA, 1995).

Figure 1: Flow diagram of the selected articles.

