親密なパートナーからの暴力を受けた女性患者に対する臨床看護職者の認識尺度開発

学位論文

Development of a clinical nurse recognition scale for female intimate partner violence patients

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ABSTRACT

Aim: We aimed to develop a Recognition Scale for Female Intimate Partner Violence Patients (RS-FIPVP); measure the levels and clarify the structure of IPV recognition among clinical nurses; and confirm the validity and reliability of the scale.

Methods: A cross-sectional, anonymous, self-administered questionnaire survey was administered to clinical nurses (n = 2570) at seven clinical settings in Okinawa, Japan. 1855 valid responses were obtained and used in the analysis. Statistical analysis examined exploratory and confirmatory factor analysis, internal consistency, and construct validity.

Results: Four factors comprising 20 items were extracted for IPV recognition among clinical nurses. Confirmatory factor analysis showed the indices of fitness supported these results. Cronbach's alpha coefficient was 0.83 for total score and 0.71, 0.73, 0.74, and 0.71 for Factors 1, 2, 3, and 4, respectively. Four factors were extracted from oblique factor analysis, with a cumulative variance of 50.0%: "understanding of the victim's situation", "violence that is difficult to detect", "patient characteristics", and "support and coordination". The four factors had a moderate correlation (0.27-0.47, $P < 0.01$) with each other, which indicated construct validity. These findings confirmed fit for the RS-FIPVP.

Conclusions: We developed the RS-FIPVP, a recognition scale to measure and evaluate the recognition of female IPV patients among clinical nurses. The RS-FIPVP may be used to improve the recognition of female IPV patients in nursing continuing education, and also to

measure and evaluate educational interventions. The reliability and validity of the scale were verified; however, further refining, testing, and evaluation are required.

Key words: intimate partner violence, female patients, recognition scale, clinical nurses, factor analysis

INTRODUCTION

The World Health Organization (WHO) defines intimate partner violence (IPV) as behavior by an intimate partner or ex-partner that causes physical, sexual, or psychological harm, and includes physical aggression, sexual coercion, psychological abuse, and controlling behavior (WHO, 2013a). IPV occurs in all settings and among all socioeconomic, religious, and cultural groups. The overwhelming global burden of IPV is borne by women (WHO & Pan American Health Organization, 2012), and it is one of the most prevalent health-related conditions suffered by women that significantly affects their survival and well-being, including physical, mental, and reproductive health (Davidson & Golembeski, 2014). IPV is a serious health hazard worldwide, resulting in an increase in major health problems among victims, including injuries; chronic pain; gastrointestinal and gynecological issues, including sexually transmitted diseases; depression; and post-traumatic stress disorder (Campbell, 2002). Campbell (2002) reported that IPV has been noted in 3-13% of pregnancies in studies from around the world and is associated with detrimental outcomes to mothers and infants. In

findings from 10 countries, including Japan, from the WHO multi-country study on women's health and domestic violence against women, for all settings combined, women who reported partner violence at least once in their life reported significantly more emotional distress, suicidal thoughts, and suicide attempts than non-abused women (Ellsberg, Jansen, Heise, Watts, & Garcia-Moreno, 2008).

In a U.S. study, Walker (1979) indicated that the battering cycle appears to have three district phases: "the tension building stage", "the acute battering incident", and "kindness and contrite loving behavior", and it is difficult for the victim to escape due to fear, loneliness, despair, and financial instability. The American Medical Association has issued Diagnostic and Treatment Guidelines on Domestic Violence (American Medical Association, 1992), indicating the requirement to confirm through routine screening whether patients have suffered violence.

According to the WHO (2013b), studies have shown that screening for IPV (i.e., systematically asking all women about violence) increases the identification of women affected by IPV, but it does not reduce the occurrence of IPV, nor has it been shown to have any notable benefit for women's health. There is insufficient evidence to support the idea that screening leads to a reduction in IPV (WHO, 2013b), and therefore, it is difficult to evaluate the efficacy of screening in identifying or reducing IPV.

In Japan, the prevalence of spousal physical violence experienced by adult women is

25.9%, followed by psychological violence (17.8%) and sexual violence (14.1%), and the prevalence for men is 13.3%, 9.5%, and 3.4%, respectively (Gender Equality Bureau Cabinet Office, 2012). Also, the number of cases reported to Domestic Violence Advice Centers and the police has increased annually since 2002 (Gender Equality Bureau Cabinet Office, 2013).

The Act on the Prevention of Spousal Violence and the Protection of Victims (Act No. 31 of 2001, revised 2007) was set in Japan (Gender Equality Bureau Cabinet Office, 2008) as a first step in addressing the issue. Since then, the issue of IPV has been included in nursing education. At present, nursing students learn about the health problems caused by IPV, the role of the nurse as a medical professional helping victims deal with IPV, and nursing and coordinating efforts to identify victims. There are still few reports on the level of knowledge regarding IPV among nurses working in clinical settings and on whether they are responding appropriately in practice (Kataoka, Shitaya, Kano, & Otake, 2004; Kawahara & Nakatsuka, 2011; Nagasaka et al., 2012).

Although violence against women has gained increasing recognition as a human rights issue, IPV often remains hidden, stigmatized, under-recognized, and under-reported (Davidson & Golembeski, 2014).

In Japan, female IPV victims often consult clinical settings, but clinical nurses are seldom aware they are IPV victims and are not able to appropriately identify them for support. Common characteristics observed in Japanese female IPV victims are that they feel ashamed

and blame themselves, they value having endurance and keeping family secrets and they consider males superior and think females should obey males (Kozu, 1999; Nagae & Dancy, 2010; Weingourt, Maruyama, Sawada, & Yoshino, 2001; Yoshihama, 2000).

The prevalence and risk of IPV are increasing; therefore, health care institutions and clinical nurses should be able to identify and respond to IPV patients appropriately. However, clinical nurses' recognition of IPV is not sufficient in Japanese clinical settings, and thus, a recognition scale developed specifically for Japan is needed.

Although there are available screening IPV scales, including the Women's Experience with Battering Scale (WEB) (Smith, Tessaro, & Earp, 1995), the Hurt, Insult, Threaten and Scream Scale (HITS) (Sherin, Sinacore, Li, Zitter, & Shakil, 1998), the Woman Abuse Screening Tool (WAST) (MacMillan et al., 2009), and the Conflict Tactics Scale 2 (CTS2) (Straus, Hamby, Boney-McCoy, & Sugarman,1996), a literature search of the PubMed database showed that recognition scales related to IPV are relatively few.

The aim of this study was to develop a Recognition Scale for Female Intimate Partner Violence Patients (RS-FIPVP); measure the levels and clarify the structure of IPV recognition among clinical nurses and midwives; and to confirm the validity and reliability of the scale.

METHODS

Research design

This was a cross-sectional study using a questionnaire survey.

Participants

The subjects were all clinical nurses employed in seven clinical settings (five prefectural hospitals, one municipal hospital, and one national university hospital) in Okinawa Prefecture, Japan. All of the clinical settings had general clinical departments, an emergency center, an obstetrics and gynecology department, and a neonatal intensive care unit. The initial subjects were 2570 clinical nurses employed in these clinical settings, regardless of number of years of clinical experience, specific department of affiliation, work status, or position level (Figure 1).

Questionnaire survey

A cross-sectional questionnaire survey was undertaken, using an anonymous self-administered questionnaire. The initial item pool (30 items) was extracted by conducting a literature search of the PubMed database using the key words “domestic violence laws”, “health problems”, “women’s abuse”, “victims of IPV”, and “recognition necessary for clinical nurses”. The topics covered by these key words are considered essential for clinical nurses to identify and respond IPV victims. The level of recognition necessary for nurses in clinical settings was extracted from the Japanese and international literature (American Medical Association, 1992; Kataoka et al., 2004; Miyaji, 2008; Natan & Rais, 2010; WHO,

2010), and carefully selected by all co-authors.

A 5-point Likert scale was used in the questionnaire, with the responses “Agree”, “Somewhat agree”, “Neither agree nor disagree”, “Somewhat disagree”, and “Disagree”, being scored from 1 to 5, respectively. Scores were allocated so that higher scores indicated higher levels of IPV recognition.

In addition to the 30 items thought to indicate IPV recognition, the survey contained questions on sex, age, years of clinical experience, nursing unit, experience in learning about IPV, and experience in directly responding to IPV patients.

The authors conducted a face validity test instead of a pilot study. Before the main survey, the authors carried out a pre-test with 10 nurses and midwives employed in a clinical setting with general clinical departments that was not one of the clinical settings in the main survey. In response to participant comments in the pre-test, revisions were made to phrase the questions more clearly to avoid potential misunderstanding, and the order of question items was changed (layout revisions).

The questionnaire was checked by the authors and several specialists (six nurses, four midwives, and one clinical psychologist) and then finalized.

Survey implementation

In 2012, an explanation of the study objectives was given to managers (directors and nursing administrators) of the seven clinical settings, and permission to conduct the survey in

their institutions was requested. The authors visited participating clinical settings to distribute the questionnaires and individual response envelopes, which included information leaflets requesting cooperation in the survey. The head nurses of each department then distributed the questionnaires to all clinical nurses working in their department. Questionnaires were returned within each department, and then collected by the nursing administrators. The authors then collected the questionnaires from the nursing administrators.

Data analysis

All data were analyzed using IBM SPSS ver. 19.0 (SPSS Japan, Tokyo, Japan) and IBM SPSS Amos for Japan ver. 19.0 (SPSS Japan). Statistical analysis examined exploratory/confirmatory factor analyses, internal consistency, and construct validity. The significance level was set at $P < 0.05$ (two-tailed).

Item analysis

At the starting point of the analysis, the correlation matrix was subjected to factor analysis. In the development of a new instrument, it is common for some items to be eliminated from consideration prior to conducting factor analysis; this systematic evaluation of individual items is called item analysis (Munro, 2005). It is usual to look for correlations with other variables between 0.30 and 0.70 (Munro, 2005). Pearson's correlations were calculated for all 30 items, and 21 items with moderate correlations (0.30-0.70) were extracted and nine items

with low correlations ($r < 0.3$) were removed (Figure 1).

Exploratory factor analysis (EFA)

EFA was conducted on the remaining 21 items. Generalized least squares (weighted least squares) was used as the method of analysis. The direct oblimin method was used for factor rotation. The number of factors was decided in accordance with the Scree Plot and Kaiser-Guttman rule using factors with an eigenvalue of 1 or more. To judge the validity of factor analysis, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were used.

Results of EFA of the 21 items produced four factors, but one item that had a minimum factor loading score < 0.2 was removed. Factor analysis was then conducted a second time on the remaining 20 items.

Finally, the RS-FIPVP was developed with four factors consisting of 20 items (Figure 1).

Reliability and Validity testing

Cronbach's alpha coefficient, which is a measure of internal consistency and reliability, was used to confirm reliability.

We used EFA and confirmatory factor analysis (CFA) to evaluate the reliability and the construct validity. CFA provides a theory-driven method for addressing construct validity and enables the researcher to evaluate the reliability (internal consistency, test-retest) of research instruments (Munro, 2005). Also, CFA can be used to specify the structure of the factor model

and directly test whether the hypothesized structure fits the obtained data (Munro, 2005).

Goodness of fit was confirmed using indicators of chi-square values, Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA).

Ethical considerations

This study was approved by the research ethics committee of the authors' institution. In addition, ethical approval and consent were obtained from each clinical setting.

The purpose of the study was explained both orally and in writing to the directors of the nursing department at each clinical setting and their cooperation to participate in the study was requested. The study objectives and methods were explained to the participating clinical nurses in writing, and they were informed that their anonymity would be guaranteed, that participation in study was voluntary and consent could be retracted at any time, and that returning the questionnaire implied consent.

RESULTS

Questionnaires were distributed to a total of 2570 nurses and 2095 questionnaires were returned (response rate 81.3%). Of these, 1855 contained complete responses to the 30 items on the recognition of female IPV patients, and these 1855 responses were taken as valid

responses (valid response rate 88.5%) and used in the analysis (Figure 1).

Participant demographics

Women accounted for the majority of respondents (86.3%); the most frequent age range was 30-39 years (31.3%), and the most frequent range of years of clinical experience was 10-19 years (27.7%) (Table 1).

Among the participants, 39.7% had experience in learning about IPV, and 26.3% had experience in directly responding to IPV patients (Table 1). The participants who had experience in learning about IPV (n = 737) gained knowledge through media (18.7%), nursing school lectures (18.1%), workshops and exhibitions (13.0%), nursing journals (4.3%), treatise (2.7%) and others (1.5%).

Item analysis

Table 2 shows the question items and item analysis. Looking at the correlations between mean scores on each of the 20 items and the total score of all items (item-total correlation) through item analysis, the lowest mean score was for “Q12: When chronic diseases such as diabetes and hypertension are not controlled, IPV remains hidden” at 2.63 [standard deviation (SD): 0.91], while the highest mean score was for “Q20: It is necessary to consult with specialists (doctors, nurses, medical social workers) when responding to a case of a female

IPV patient" at 4.50 (SD: 0.77). For item-total correlation, "Q12" had the lowest value at r = 0.34, while "Q1: It is necessary to elicit information from the patient herself to assess whether there is a risk to the life of a female IPV patient" had the highest value at r = 0.59, with a correlation coefficient of at least 0.3 on all 20 items, and significance level at $P < 0.01$ (Table 2).

EFA

EFA was performed for the 20 items (Table 3). For the number of factors, both the Kaiser-Guttman rule and Scree Plot showed validity up to the fourth factor. With a score of 0.824 on the KMO Measure of Sampling Adequacy and $P < 0.001$ on Bartlett's Test of Sphericity, validity for applying factor analysis was assured. The four factors were structured in a meaningful way, with five items for the first factor, three items for the second factor, seven items for the third factor, and five items for the fourth factor.

We labeled the four factors as follows. Factor 1, understanding of the victim's situation; Factor 2, violence that is difficult to detect; Factor 3, patient characteristics; and Factor 4, support and coordination. These four factors are further described below.

Factor 1: Understanding of the victim's situation

The items in this factor covered the idea that clinical nurses need to listen to and accept what victims say, providing reassurance and speaking with an attitude that says "You are not

to blame", in order to determine the risk to life and the situation of abuse faced by female IPV victims and their children, if present.

Factor 2: Violence that is difficult to detect

Violence toward female victims that is difficult to detect includes instances such as the perpetrator (husband/partner) putting down or shaming the woman in front of family and friends, forcing sexual activity without cooperating in contraception, or looking at the woman's cell phone (e-mail account) without permission.

Factor 3: Patient characteristics

Conditions often presented by female IPV victims were presented in this factor, including gynecologic disorders and obstetric abnormalities, gastrointestinal disorders (diarrhea, constipation), psychiatric disorders, such as depression and post-traumatic stress disorder, poor control of chronic conditions (diabetes, hypertension), and chronic pain with unclear cause. This also included asking the female patient about IPV and using this information in treatment planning. The issue of the perpetrator, the husband/partner of the female patient, being present during medical history questioning and examination was also included as a patient characteristic.

Factor 4: Support and coordination

Support that medical professionals can provide for female victims included introductions to support institutions, listening to complaints, recording the health damage situation

accurately (taking notes, photos), providing information about services that support institutions offer, checking on child abuse, and the need to respond in consultation with specialists (doctors, nurses, medical social workers).

The lowest value for scores on all 20 items was 1 and the highest value was 5, with the highest mean within this range being 4.3 for Factor 4 and the lowest being 3.2 for Factor 3 (Table 3).

The contribution ratio (after rotation) for each factor was 25.09% for Factor 1, 10.65% for Factor 2, 7.89% for Factor 3, and 6.36% for Factor 4. The total cumulative contribution ratio was 49.99%.

Examination of scale reliability and validity

Cronbach's alpha coefficient for the total score was 0.83. The coefficients for Factors 1, 2, 3, and 4 were 0.71, 0.73, 0.74, and 0.71, respectively (Table 3). All coefficients were greater than 0.7.

Pearson's correlation coefficients showing the correlation between factors are shown in Table 4. Correlation coefficients showed moderate correlations of 0.27-0.47 ($P < 0.01$).

CFA was carried out to examine validity and confirm the relationships (directionality) between the four factors obtained through EFA and the results are shown in Figure 2. When analysis of a model hypothesizing covariance between all factors was conducted, with

relevant items being influenced by each of the four factors, goodness of fit indicators were as follows: $\chi^2 = 1440.506$, $df = 164$, $P < 0.001$, GFI = 0.921, AGFI = 0.899, CFI = 0.872, and RMSEA = 0.065. These findings confirmed the goodness of fit for this model.

A path diagram of latent variables with factor loading on each item from each of the four factors showed values of 0.35 to 0.88. Correlation coefficients between factors were 0.31 to 0.56, with the link between Factor 1 (understanding of the victim's situation) and Factor 4 (support and coordination) being particularly high at 0.56.

DISCUSSION

Nursing recognition level

Regarding the level of recognition of IPV among clinical nurses in Japan, 30.8% of midwives and other staff ($n = 703$) did not have knowledge of IPV during pregnancy and more than 40% answered that they wanted to help patients but did not know how to do so (Kawahara & Nakatsuka, 2011). This indicates the level of recognition of IPV among clinical nurses and midwives in Japan is not high. The aim of this study was to develop the RS-FIPVP. Using this scale, the recognition level of IPV may be improved through educational intervention.

Structure of recognition

Cronbach's alpha coefficient is a measure of internal consistency reliability, with

coefficients higher than 0.7 indicating high reliability (Munro, 2005). The RS-FIPVP developed in the present study showed an overall Cronbach's alpha coefficient of 0.83, indicating reliability. Cronbach's alpha coefficient for each individual factor was more than 0.7; therefore, the RS-FIPVP was also found to be reliable.

Items on a scale should be moderately correlated with each other, and each should correlate with the total scale score (Streiner & Norman, 2008). In the present study, moderate correlations were seen between all items in the inter-item correlation and the score of each item was related to the total score. The internal consistency of the scale was thus confirmed.

Factor analysis is an essential tool in scale development (DeVellis, 2003). The factor structure for all items was confirmed, which indicated good indices of fitness for CFA. These procedures ensured the face and content validity of the RS-FIPVP. Four factors consisting of IPV recognition among clinical nurses were extracted in the factor analysis: Factor 1, "understanding of the victim's situation"; Factor 2, "violence that is difficult to detect"; Factor 3, "patient characteristics" and Factor 4, "support and coordination".

Complementary relationships were found between the four factors through CFA, which means that it can be supposed that raising understanding, especially in Factor 2, "violence that is difficult to detect" and Factor 3, "patient characteristics", could in turn raise understanding in Factor 1, "understanding of the victim's situation" and Factor 4, "support and coordination".

Factor 1: Understanding of the victim's situation

Factor 1, "understanding of the victim's situation", includes content recommended in the WHO clinical and policy guidelines (WHO, 2013b), and there is a need for clinical nurses and doctors dealing with patients at the initial stage to always keep in mind the items in Factor 1, and to respond to female IPV patients appropriately. The WHO (2013b) provided recommendations for responding to IPV and sexual violence against women, including "ensuring consultation is conducted in private", "asking about her history of violence, listening carefully, without pressuring her to talk" and "assessing her to increase safety for herself and her children, where needed". However, the present results showed there is a lack of recognition of IPV patients, as well as a lack of learning about and direct experiences with IPV patients among clinical nurses. This situation is similar to that reported in Japanese and international literature (Beynon et al., 2012; Kataoka et al., 2004; Natan & Rais, 2010).

Factor 2: Violence that is difficult to detect

Factor 2, "violence that is difficult to detect", comprises three items where the female patient faces significant barriers in explaining that she is a victim of abuse to clinical nurses. It is necessary for clinical nurses to include question items that are designed to understand the relationship with the partner when taking a medical history. In addition, it is important to have a screening in the clinical setting. Existing tools can be used for screening, but since high-quality indices are not available at present (Moracco & Cole, 2009; Rabin, Jennings,

Campbell, & Bair-Merritt, 2009), it would be desirable in the future to develop a scale of valid and useful questions that could be used without placing too much burden on medical professionals and patients.

Factor 3: Patient characteristics

Factor 3, "patient characteristics", is an important element for clinical nurses since it consists of health-related characteristics of female IPV patients and essential knowledge for providing appropriate nursing care to IPV patients. However, awareness of the items in Factor 3 among clinical nurses was low, and the mean scores were lower than for other factors. The reason for the low mean score in Factor 3 may be the lack of knowledge about IPV health-related issues and the characteristics of victims and perpetrators.

Physical health effects caused by chronic stress include gastrointestinal symptoms such as constipation and diarrhea, cardiovascular symptoms, and conditions such as hypertension and diabetes (Campbell, 2002; Coker, Smith, Bethea, King, & McKeown, 2000; Dillon, Hussain, Loxton, & Rahman, 2013; Kelly, 2010). Other physical health problems associated with IPV include chronic pain and frequent headaches, thought to be caused by recurrent injury or stress, or alterations in neurophysiology (Campbell, 2002; Coker et al., 2000; Dillon et al., 2013; Kelly, 2010).

The symptoms and conditions affecting the health of female IPV victims may arise directly from the effects of physical violence or indirectly from the effects of long-term stress

caused by violence. Blemner (2006) expressed that exposure to chronic stress results in potentiation of noradrenergic responsiveness to subsequent stressors and increased release of norepinephrine in the hippocampus and other brain regions.

Furthermore, being an IPV victim for over 5 years or suffering psychological IPV is linked to an increased risk for type 2 diabetes (Mason et al., 2013). Due to factors reducing treatment effectiveness (not attending regular appointments, not being able to obtain family support, etc.), patients who are IPV victims are likely to show poor control of chronic conditions (Miyaji, 2008), and thus, it is necessary to adopt individually tailored treatment plans for each female victim that involve interventions and coordination with other professionals.

Abuse during pregnancy may cause low birth weight (Fujita & Takada, 2008; McFarlane, Parker, & Soeken, 1996; Valladares, Ellsberg, Peña, Högberg, & Persson, 2002), miscarriage (Johri et al., 2011), and postnatal depression (Ludermir, Lewis, Valongueiro, Araújo, & Araya, 2010). In Japan, IPV was implicated in 5% of pregnancies (n = 279) (Kataoka, Yaju, Eto & Horiuchi, 2005). Violence that began before pregnancy or begins during pregnancy continues after birth (Macy, Martin, Kupper, Casanueva, & Guo, 2007; Webster, Sweett, & Stolz, 1994). There are many reports on the high risk for IPV in women during pregnancy, birth, and after birth. Previous studies on pregnancy and violence strongly recommend the need for assessment of violence toward women during pregnancy (Kataoka et al., 2005; McFarlane,

Parker, Soeken, & Bullock, 1992; Webster et al., 1994). All medical professionals should recognize the importance of establishing the relationship between the partner and the mother's and child's health management, and of protecting women's reproductive health rights.

With forced sex, the rate of condom use is low (Mittal, Senn, & Carey, 2014; Salam, Alim, & Noguchi, 2006), and thus problems with sexually transmitted diseases are particularly prevalent. A statistically significant link between IPV and female HIV transmission has been proven (Burgos-Soto et al., 2014; Li et al., 2014; Mathew, Smith, Marsh, & Houry, 2013; Shi, Kouyoumdjian, & Dushoff, 2013).

IPV is associated with a range of mental health issues including depression, post-traumatic stress disorder, anxiety, self-harm, and sleep disorders (Bonomi et al., 2009; Dillon et al., 2013; Kelly, 2010; Scholle, Rost, & Golding, 1998). In research on depressed women (n = 303), more than half (55.2%) reported experiencing physical abuse as adults (Scholle et al., 1998). IPV places great psychological stress on female victims, which leads to the appearance of physical symptoms, decline of physical function and a concomitant reduction in quality of life. In addition, it is necessary to ensure that consultation is conducted in private, with the female IPV patient alone (WHO, 2013b), because if a partner sits in on the medical examination of the women, she is not likely talk about IPV.

Clinical nurses should be aware of the characteristics of IPV, which has immediate effects on women's health that can be fatal or persist for a long time after the violence has stopped.

Factor 4: Support and coordination

Once abuse is identified in the clinical setting in female IPV victims, Factor 4, "support and coordination", involves the important role of responding in coordination with doctors, clinical nurses, and medical social workers, and linking as quickly as possible with support institutions such as domestic violence advice and support centers. Furthermore, based on the principle, "all violence is a crime", medical professionals also need to be aware that they have an important role in accurately recording through notes and photographs the state of abuse from a medical perspective, as this can be used as documentary evidence in trials and other legal proceedings. Given that diagnosis, treatment, and support for female IPV patients often need to be carried out urgently, it is important that this kind of support and coordination is integrated into normal everyday working practice. It is necessary to construct systems of coordination both within and outside the hospital with other support systems. In addition, in cases where child abuse is identified in pediatric or other departments, it should be borne in mind that there is a high risk that child abuse and IPV occur concurrently (Ross, 1996; Tajima, 2000; Walker, 1979), and clinical nurses need to check whether the mother of the abused child is a victim of IPV.

Practical use of measurement

We expect the RS-FIPVP to be useful for clinical nurses and researchers in measuring the recognition of IPV patients in clinical settings, in evaluating interventions and continuing

education for clinical nurses, and for research purposes. We also believe it will be useful for managers to improve and evaluate the IPV recognition of clinical nurses.

With the self-evaluation used in the RS-FIPVP, it is possible to review and gain a greater understanding of one's nursing IPV recognition level. Continuing nursing education is the key to expanding competency in the knowledge and skills needed to provide patient-centered care (Akamine, Uza, Shinjo, & Nakamori, 2013). Using the RS-FIPVP, the administrator of a clinical setting can also assess the IPV recognition level of clinical nurses before and after continuing educational interventions. The degree to which IPV recognition can be improved through the efforts of individual nurses alone is limited; thus, support from clinical settings is also needed. It may be necessary to develop an educational program using simulated patients (e.g., how to ask questions, what to prioritize when asking questions, attitude of the listener, and point of eye contact), as practical training for the implementation of proper care for IPV patients (Kataoka, Sakurai, Eto, & Horiuchi, 2010; Natan & Rais, 2010).

Study limitations

Participants were clinical nurses in a single region; therefore, the results obtained in the present study should be confirmed in another area. A future study should also confirm whether the RS-FIPVP is a useful tool for measuring IPV recognition in all medical professionals and of both sexes. The aim of this study was to develop a recognition scale for

female IPV patients, so its use in male patients still needs to be confirmed. To further investigate the reliability and validity of the scale for general adaptation, it will be necessary to increase the number of clinical settings and the amount of data collected.

CONCLUSION

The RS-FIPVP, a recognition scale for clinical nurses to measure and evaluate the recognition of female IPV patients, was developed. The study results suggest that this scale may be used to improve the recognition level of female IPV patients in nursing continuing education, and also to measure and evaluate educational interventions. Both the reliability and validity of the scale were verified; however, the scale must be further refined, tested, and evaluated.

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CONFLICT OF INTEREST

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication on this article.

AUTHOR CONTRIBUTION

M. I. and M. S. collected, analyzed, and interpreted the data and drafted the manuscript. M. U. conceived the study, participated in the design, supervised the conduct of the study, and helped to draft the manuscript. I. A. provided clinical experience and revised the manuscript.

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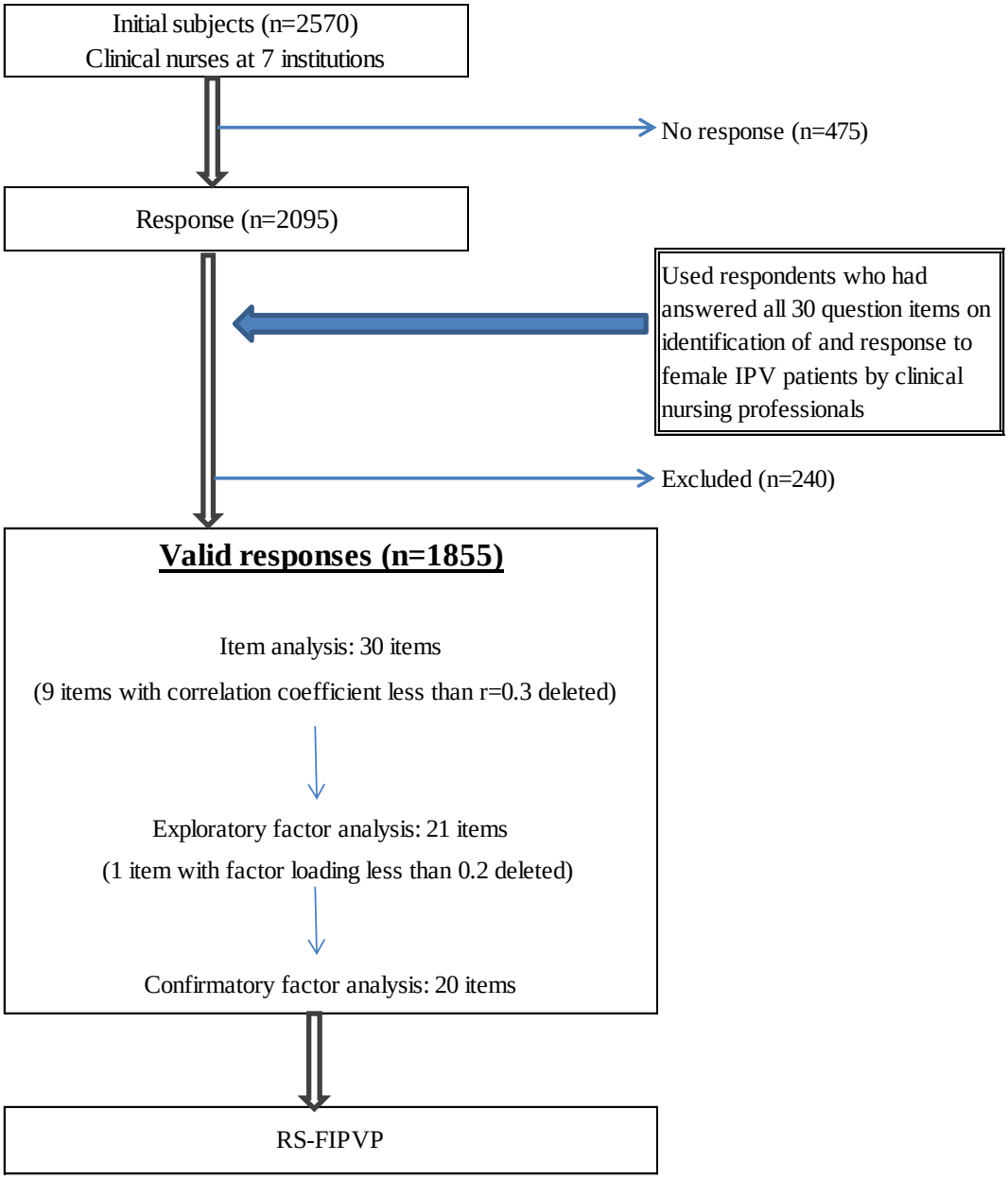

Figure 1. Flow chart of study participants and exploratory/confirmatory factor analysis. RS-FIPVP, Recognition Scale for Female intimate partner violence patients

Table 1. Participant characteristics (n = 1855)

Characteristic	N	(%)
Sex		
Female	1601	(86.3)
Male	236	(12.7)
Unknown	18	(1.0)
Age (years)		
≤29	504	(27.2)
30-39	580	(31.3)
40-49	440	(23.7)
50-59	261	(14.1)
≥60	11	(0.6)
Unknown	59	(3.2)
Clinical nursing experience (years)		
≤4	402	(21.7)
5-9	358	(19.3)
10-19	513	(27.7)
20-29	369	(19.9)
30-39	153	(8.2)
Unknown	60	(3.2)
Nursing Unit		
1) General ward	1152	(62.1)
Internal medicine	380	(20.5)
Surgery	368	(19.8)
Mixed	60	(3.2)
Pediatrics	120	(6.5)
Obstetrics & Gynecology	165	(8.9)
Psychiatry	44	(2.4)
Unknown	15	(0.8)
2) Outpatient (Dialysis and Radiation included)	190	(10.2)
3) Emergency room	94	(5.1)
4) Operating room	109	(5.9)
5) Intensive care unit	221	(11.9)
ICU	131	(7.1)
NICU	90	(4.9)
6) Other	62	(3.3)
7) Unknown	27	(1.5)
Experience in learning about IPV		
Yes	737	(39.7)
No	1107	(59.7)
Unknown	11	(0.6)
Experience in directly responding to female IPV patients		
Yes	487	(26.3)
No	1295	(69.8)
Cannot remember	51	(2.7)
Unknown	22	(1.2)

ICU, intensive care unit; IPV, intimate partner violence; NICU, neonatal intensive care unit.

Table 2. Question items and item analysis of the RS-FIPVP (n = 1855)

	Item	Mean (SD)	Item-total correlation
Q1	It is necessary to elicit information from the patient herself to assess whether there is a risk to the life of a female IPV patient.	4.16 (0.87)	0.59
Q2	It is necessary to elicit information from the patient herself to assess whether there is a risk to the life of a female IPV patient's children.	4.26 (0.86)	0.58
Q3	When a female patient opens up about her IPV experience, it is important to listen with an accepting and empathetic attitude.	4.34 (0.83)	0.50
Q4	If a female patient suspected of being a victim of IPV denies it, it is necessary to arrange a follow-up outpatient appointment and encourage her to make another visit.	3.98 (0.94)	0.52
Q5	Telling female patients who are victims of IPV that violence is not their fault will give them a sense of security.	3.29 (1.12)	0.45
Q6	Belittling and embarrassing one's wife or female partner in front of her family or friends constitutes an act of violence.	4.24 (0.86)	0.51
Q7	Coercing one's wife or female partner to engage in sexual activity without contraception constitutes an act of violence.	4.29 (0.89)	0.52
Q8	Looking up text messages and emails on one's wife's or female partner's cell phone without asking constitutes an act of violence.	3.58 (1.02)	0.41
Q9	Women who suffer IPV tend to have gynecological (sexually transmitted diseases) and obstetric (low birth weight infants) abnormalities.	3.17 (0.93)	0.54
Q10	Women who suffer IPV tend to have gastrointestinal symptoms (constipation, diarrhea).	3.09 (0.88)	0.48
Q11	Women who suffer IPV tend to have psychiatric illnesses such as depression and post-traumatic stress disorder.	3.66 (1.00)	0.55
Q12	When chronic diseases such as diabetes and hypertension are not controlled, IPV remains hidden.	2.63 (0.91)	0.34
Q13	IPV should be suspected when a female patient's husband (partner) accompanies her throughout an interview or examination, or answers questions on her behalf.	3.31 (0.95)	0.51
Q14	Women who suffer IPV tend to complain of chronic pain of unknown origin.	3.12 (0.93)	0.39
Q15	Asking a female patient whether she has suffered IPV is useful for determining the treatment strategy.	3.56 (0.93)	0.50
Q16	It is my duty to refer female patients who are victims of IPV to institutions that provide support.	4.22 (1.01)	0.52
Q17	Medical professionals should listen to the complaints of female patients who are victims of IPV and accurately record (both in writing and by taking photographs) damage to their health.	4.03 (1.12)	0.47
Q18	Medical professionals should provide information regarding the services available at institutions that provide support to female patients who are victims of IPV.	4.43 (0.78)	0.54
Q19	In cases of child abuse, medical professionals should check whether the child's mother has been a victim of IPV from her husband (partner).	4.24 (1.06)	0.44
Q20	It is necessary to consult with specialists (doctors, nurses, medical social workers) when responding to a case of a female IPV patient.	4.50 (0.77)	0.54

Item-total correlation: Correlation between each item and the total score of all 20 items. Values are Pearson's correlation coefficients with $P < 0.01$. IPV, intimate partner violence; RS-FIPVP, Recognition Scale for Female IPV patients; SD, standard deviation.

Table 3. Exploratory factor analysis of the RS-FIPVP (n = 1855)

Factor/item	Factor loading			
	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1: Understanding of the victim's situation (Mean=4.0, SD=0.6)				
Q1 It is necessary to elicit information from the patient herself to assess whether there is a risk to the life of a female IPV patient.	**0.92**	-0.06	-0.03	-0.04
Q2 It is necessary to elicit information from the patient herself to assess whether there is a risk to the life of a female IPV patient's children.	**0.89**	-0.03	-0.07	-0.01
Q3 When a female patient opens up about her IPV experience, it is important to listen with an accepting and empathetic attitude.	**0.31**	0.11	-0.02	0.20
Q4 If a female patient suspected of being a victim of IPV denies it, it is necessary to arrange a follow-up outpatient appointment and encourage her to make another visit.	**0.29**	0.09	0.10	0.15
Q5 Telling female patients who are victims of IPV that violence is not their fault will give them a sense of security.	**0.26**	0.08	0.18	-0.02
Factor 2: Violence that is difficult to detect (Mean=4.0, SD=0.7)				
Q6 Belittling and embarrassing one's wife or female partner in front of her family or friends constitutes an act of violence.	-0.06	**0.95**	-0.08	0.01
Q7 Coercing one's wife or female partner to engage in sexual activity without contraception constitutes an act of violence.	0.01	**0.74**	-0.03	0.04
Q8 Looking up text messages and emails on one's wife's or female partner's cell phone without asking constitutes an act of violence.	-0.01	**0.50**	0.07	-0.04
Factor 3: Patient characteristics (Mean=3.2, SD=0.6)				
Q9 Women who suffer IPV tend to have gynecological (sexually transmitted diseases) and obstetric (low birth weight infants) abnormalities.	-0.03	0.03	**0.80**	-0.30
Q10 Women who suffer IPV tend to have gastrointestinal symptoms (constipation, diarrhea).	-0.05	-0.05	**0.73**	0.00
Q11 Women who suffer IPV tend to have psychiatric illnesses such as depression and post-traumatic stress disorder.	0.07	0.10	**0.56**	0.02
Q12 When chronic diseases such as diabetes and hypertension are not controlled, IPV remains hidden.	-0.05	-0.03	**0.51**	-0.05
Q13 IPV should be suspected when a female patient's husband (partner) accompanies her throughout an interview or examination, or answers questions on her behalf.	0.04	0.16	**0.43**	0.00
Q14 Women who suffer IPV tend to complain of chronic pain of unknown origin.	0.01	-0.03	**0.38**	0.07
Q15 Asking a female patient whether she has suffered IPV is useful for determining the treatment strategy.	0.19	-0.01	**0.27**	0.15
Factor 4: Support and coordination (Mean=4.3, SD=0.7)				
Q16 It is my duty to refer female patients who are victims of IPV to institutions that provide support.	-0.09	-0.04	-0.03	**0.90**
Q17 Medical professionals should listen to the complaints of female patients who are victims of IPV and accurately record (both in writing and by taking photographs) damage to their health.	-0.06	-0.03	-0.03	**0.75**
Q18 Medical professionals should provide information regarding the services available at institutions that provide support to female patients who are victims of IPV.	0.18	0.08	0.03	**0.41**
Q19 In cases of child abuse, medical professionals should check whether the child's mother has been a victim of IPV from her husband (partner).	0.05	0.04	0.06	**0.36**
Q20 It is necessary to consult with specialists (doctors, nurses, medical social workers) when responding to a case of a female IPV patient.	0.20	0.13	0.06	**0.31**
Proportion of variance (%)	25.09	10.65	7.89	6.36
Cumulative proportion of variance (%)	25.09	35.75	43.64	49.99
Cronbach's alpha for subscales	0.71	0.73	0.74	0.71

Values in bold indicate the highest loading. Cronbach's alpha for the total score was 0.83. IPV, intimate partner violence; RS-FIPVP, Recognition Scale for Female IPV patients; SD, standard deviation.

Table 4. Correlation between the domain scores of the RS-FIPVP, and means and SD of each factor score (n = 1855)

					Score	
	Factor 1	Factor 2	Factor 3	Factor 4	Mean	SD
Factor 1: Understanding of victim's situation	1.00	-	-	-	20.0	3.17
Factor 2: Violence that is difficult to detect	0.33	1.00	-	-	12.1	2.24
Factor 3: Patient characteristics	0.38	0.31	1.00	-	22.5	4.09
Factor 4: Support and coordination	0.47	0.27	0.29	1.00	21.4	3.28

Values are Pearson's correlation coefficients with $P < 0.01$. IPV, intimate partner violence; RS-FIPVP, Recognition Scale for Female IPV patients; SD, standard deviation.

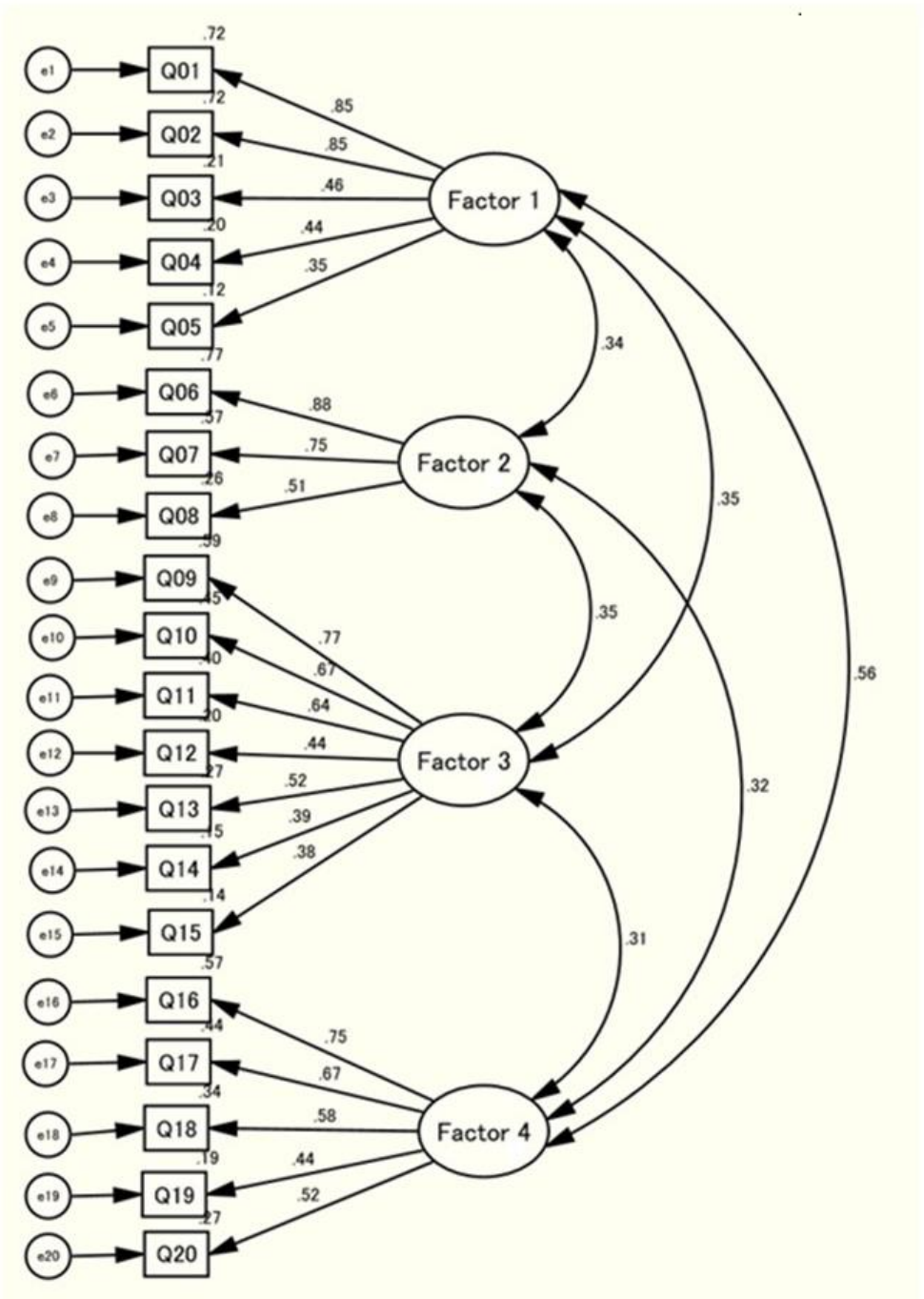

Figure 2. Confirmatory factor analysis of the Recognition Scale for Female Intimate Partner Violence Patients (RS-FIPVP). Factor 1: understanding of the victim's situation; Factor 2: violence that is difficult to detect; Factor 3: patient characteristics; and Factor 4: support and coordination. χ^2 (d.f.) = 1440.506 (164); goodness of fit index, 0.921, adjusted goodness of fit index, 0.899, and root mean square error of approximation, 0.065.

学位論文

Development of a clinical nurse recognition scale

for female intimate partner violence patients

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