ORIGINAL ARTICLE

Prevalence and Risk Factors of Intimate Partner Violence Among Nursing Personnel in Kelantan and Its Exposure to Their Children

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ABSTRACT

Introduction: Intimate partner violence (IPV) significantly impacts individuals across socio-economic backgrounds including healthcare professionals. Among nursing personnel, the prevalence of IPV can affect both victims and their children, particularly those who may witness or experience violence indirectly. This study aims to measure the prevalence of IPV among nursing personnel in Kelantan and its exposure to their children. This study also identifies risk factors contributing to IPV in this population. **Method:** This is a cross-sectional study using an online questionnaire that was conducted among 369 married nursing personnel across Kelantan. The integration of Woman Abuse Screening Tools (WAST) and WHO Multi-Country Questionnaire on Women's Health and Life Experiences version 10, assessing their sociodemographic background, partner's demographic and behaviours as well as experiences related to IPV. Simple and multiple logistic regression were used to find the significant associated risk factors to IPV in this population. **Result:** The finding revealed 10% of the nurses in Kelantan had experienced IPV in their current marriage and one-third of their children exposed to the IPV. Interestingly, IPV in this population is significantly associated with a jealous partner (p-value <0.001) and polygyny (p-value = 0.003). **Conclusion:** These findings highlight the need for proper interventions to address IPV and to support nursing personnel and their families.
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INTRODUCTION

Intimate Partner Violence (IPV) is a serious issue affecting women worldwide, including Malaysia. It includes physical, emotional, sexual, psychological, and financial abuse within relationships (1-4). IPV has severe consequences, causing both physical injuries and mental health problems such as depression, anxiety, and suicidal thoughts (3). In some cases, it can even lead to death (4).

According to the World Health Organization (WHO), nearly one in three women globally experience IPV in their lifetime (5). The highest cases are reported in Africa, the Eastern Mediterranean, and Southeast Asia (5). In 2022, 4.4% of Malaysian women of reproductive age (15 – 49 years) was reported experiencing IPV in the past one year (6). Additionally, 1 in 5 women experienced the act of controlling behaviour by their husband/partner (7). Moreover, Royal Malaysia Police recorded 7568 cases of domestic violence from 2020 to 2021(6). Unfortunately, the number might be underreported due to the nature of IPV being a sensitive topic to be discussed.

The impact of IPV is not just limited to women—it also affects their children. Around 1 billion children globally experience violence or neglect, and those exposed to IPV often suffer from emotional distress, anxiety, depression, and difficulties in school (8-10). They are also at higher risk for physical health issues, such as poor lung function, obesity, and nutritional deficiencies (11-12).

There is a common belief that IPV mostly happens in low-income or less-educated families, but research shows that it can affect anyone, including highly educated professionals like nurses (13-15). Nurses may be at higher risk due to factors such as long working hours, job stress, and workplace violence (16). Shockingly, reports from the Kelantan Nursing Association (KNA) reveal that many nurses experience economic abuse, where their partners force them to take out loans. Despite this, no official research has been conducted on the issue.

This study aims to measure the prevalence of IPV among nurses in Kelantan, examine its impact on their children, and identify the key risk factors. Understanding these issues is crucial for improving nurses' well-being and protecting their children. Raising awareness can also help nurses provide better support for IPV victims in their professional roles. Addressing IPV is essential for building a safer and healthier society.

MATERIALS AND METHODS

This cross-sectional study was conducted in May 2024, with data collected through an online questionnaire using Google Forms. Participation was voluntary, and all responses remained anonymous. Ethical approval was obtained from the Human Research Ethics Committee of the Medical School of HUSM under protocol code USM/JEPeM/KK/23100763.

The study utilized a non-probability convenience sampling method to ensure anonymity. It focused on female nurses in Kelantan who were married and had at least one child. However, nurses who were divorced, widowed, or single were excluded. The sample size was determined based on a previous study by Yut-Lin(17), which found that 5.6% of women experienced IPV. By using single proportion estimation (18), the required sample size was 252. However, considering additional risk factors such as education level (19), household income(20), and partner substance abuse (21), hypothesis testing of two proportions applied and the sample size was increased to 327 to improve reliability. Participants were recruited from government, university, and private hospitals in Kelantan. The principal investigator first sought permission from the Kelantan Nursing Association (KNA) chief matron, who facilitated the distribution of the questionnaire through KNA's unofficial WhatsApp group. The invitation was also shared with Hospital Pakar USM (HPUSM) nurses and private nurses through respective WhatsApp groups. Before answering the questionnaire, participants were required to complete an online consent form. To maintain anonymity, no personal identifiers such as phone numbers or email addresses were collected.

The research tool consisted of a structured questionnaire divided into six sections: demographics, behavioral factors, family well-being, IPV screening, effects of IPV on participants, and children's exposure to IPV. The IPV screening questions were adapted from the Woman Abuse Screening Tool (WAST) and the WHO Multi-Country Questionnaire on Women's Health and Life Experiences (2003). Some of the questions might trigger participants' emotion and traumatization toward IPV, thus WHO guideline for IPV questionnaire was adopted in which giving a choice for participants either to answer or not the question (22) and responses marked as "Refused to Answer" were recorded as missing data. Upon completing the survey, participants were provided with an informational leaflet on IPV and offered access to counseling services via email, either through the principal investigator or a KNA representative.

The WAST questionnaire, developed by Dr. Brown J.B. from the University of Western Ontario, Canada, included eight questions assessing emotional and physical abuse (23). Each response was rated on a scale from 1 (Never) to 3 (Often), with a total score ranging from 8 to 24. A score of 13 or higher indicated the presence of IPV, based on a previous Malaysian study by Yut-Lin and Othman(17,20). The WHO Multi-Country Questionnaire (2003) was also included to assess gender-based violence and health outcomes. It had been validated in Malaysia especially in Bahasa Malaysia, Tamil, and Chinese dialects, making it a reliable tool for ethnic comparisons in IPV research (6).

To ensure the validity of the study, the WAST questionnaire was translated into Malay. Two bilingual experts performed separate translations, which were then combined into a final version. A TESL-certified English expert conducted a back-translation to verify accuracy. The principal investigator then reviewed the questionnaire for clarity and cultural appropriateness. The final Malay version included 8 WAST questions along with 2 additional questions from WHO's questionnaire, covering controlling behavior and economic violence. A pilot study was conducted among nurses at Sultan Ahmad Shah Medical Centre (SASMEC@IIUM) in Kuantan, ensuring consistency with previous research.

To further validate the questionnaire, a Face Validity Index (FVI) and Content Validity Index (CVI) were conducted. In the FVI, 10 raters from SASMEC@IIUM's Nursing Society reviewed the questionnaire and rated its clarity on a scale of 1 to 4(24), with an overall score of 0.8, meeting the standard set by Lynn(25). For content validity, six experts from Paediatrics, Obstetrics & Gynaecology, Psychiatry, and Psychology evaluated the relevance of each question, achieving a CVI score of 1, indicating full agreement among experts (26).

A pilot study with 37 nurses from SASMEC@IIUM was conducted, and after applying exclusion criteria, 30 responses were analyzed. The Cronbach's alpha for internal consistency was 0.819, confirming the reliability of the questionnaire(27). Once validated, the final questionnaire was distributed to nurses across Kelantan. For data analysis, SPSS version 29 was used. Descriptive analysis was conducted to calculate mean, median, standard deviation (SD), interquartile range (IQR), frequencies, and percentages, helping to identify socio-demographic patterns and IPV prevalence. The Chi-Square test was employed to examine relationships between IPV, controlling behaviors, and economic violence, with a p-value <0.05 considered statistically significant. If assumptions for the Chi-Square test were violated, the Fisher-Freeman-Halton test was

applied instead. To analyze IPV risk factors, a binary logistic regression was conducted. Initially, a simple binary logistic regression was performed, followed by a multiple binary logistic regression for significant variables (p-value <0.05), using forward and backward regression methods to identify the best-fitting model.

RESULTS

A total of 387 participants accessed the online questionnaire, but two individuals did not provide consent. Of the 385 who consented, only 369 responses were included in the final analysis after excluding two participants who were not working in Kelantan and 14 who were not in a wedlock relationship within the past year.

Sociodemographic and Family General Well-being

The study included 369 female nursing personnel, with a mean age of 42.93 years (SD = 6.90). The vast majority (98.64%) were Muslim, while 1.36% were Buddhist. Geographically, most participants were based in Kota Bharu (33.06%), followed by Tanah Merah (10.84%), Pasir Mas (9.49%), and other districts, with Jeli and Machang having the lowest representation (4.61% each). In terms of education, the majority (78.86%) held a diploma, while 9.49% had a degree, 9.76% pursued post-basic education, and 1.90% held a master's degree. Most participants were employed in government sectors (76.15%), while 19.78% worked in universities or government-linked companies (GLCs), and 4.07% in the private sector. The majority held positions as staff nurses (68.56%), followed by community nurses (11.65%), matrons (15.72%), sisters (3.79%), and one dental nurse (0.27%) (Table I).

Regarding household income, most participants earned between RM 3000 and RM 6500 (88.89%), while 8.40% earned below RM 3000, and 2.71% earned above RM 6500. The median marriage duration was 18 years (IQR = 11), with a median of three children (IQR = 2). The median per capita income was RM 1250 (IQR = 750). Nearly all participants (97.56%) had access to health, safety, and welfare facilities, and 98.64% owned a transport vehicle. Overall, the participants were middle-aged, experienced nursing professionals with stable careers, predominantly working in government sectors, and financially within the middle-income range.

Partner's Demographics and Behaviours

The mean age of the participants' partners was 45.47 years (SD = 8.08). Regarding education, 49.86% had completed secondary education, 47.70% had higher education, and 1.9% had only primary education. The majority (78.32%) were employed, while 16.80% were retired, 3.52% were unemployed or job-hunting, and a small proportion (0.54%) were still studying. Most marriages (87.26%) were self-chosen, while 12.47% were family-chosen, and 0.27% were forced marriages.

Table I: Sociodemographic of Respondents, Family General Well-being and Partners Demographic and Behaviours.

Demographic Data	n	%
Age (years)	42.93 (6.90)*	
Religion		
Islam	364	98.64
Buddha	5	1.36
Area / District		
Kota Bharu	122	33.06
Tanah Merah	40	10.84
Pasir Mas	35	9.49
Tumpat	34	9.21
Kuala Krai	33	8.94
Bachok	29	7.86
Pasir Puteh	21	5.69
Gua Musang	21	5.69
Machang	17	4.61
Jeli	17	4.61
Educational Level		
Diploma	291	78.86
Degree	35	9.49
Master	7	1.90
Post Basic	36	9.76
Organisation		
Government	281	76.15
University/ GLC	73	19.78
Private	15	4.07
Work Position		
Staff Nurse	253	68.56
Community Nurse	43	11.65
Dental Nurse	1	0.27
Sister	14	3.79
Matron	58	15.72
Income Category		
< RM 3000	31	8.40
RM 3000 - RM 6500	328	88.89
> RM 6500	10	2.71
Family General Well-being		
Years of marriage (years)	18 (11)+	
Number of children	3 (2)+	
Income Per-capita (RM)	1250 (750)+	
Access to the facilities ^		
Yes	360	97.56
No	9	2.46
Own a transport		
Yes	364	98.64
No	5	1.36
Partner Age	45.47 (8.08)*	
Partner Education Level		
Primary Education	7	1.90
Secondary Education	184	49.86
High Education	176	47.70
Don't know/refused to answer	2	0.54

* mean (SD) + median (IQR)

CONTINUE

Table I: Sociodemographic of Respondents, Family General Well-being and Partners Demographic and Behaviours (continued)

Family General Well-being	n	%
Partner Working Status		
Employed	289	78.32
Unemployed/Job Hunting	13	3.52
Retired	62	16.8
Studying	2	0.54
Don't know or refused to answer	3	0.81
Type of marriage		
Self-chosen Partner	322	87.26
Family-chosen Partner	46	12.47
Force Marriage	1	0.27
Partner Behaviour		
Polygynous relationship		
Yes	16	4.34
No	353	95.66
Don't know or refused to answer	0	0.00
Partner involved in physical fight		
Yes	5	1.36
No	345	93.5
Don't know or refused to answer	19	5.15
Partner involved in alcohol		
Yes	5	1.36
No	362	98.10
Don't know or refused to answer	2	0.54
Partner involved in drug abused		
Yes	4	1.08
No	360	97.56
Don't know or refused to answer	5	1.36
Jealous partner		
Yes	79	21.41
No	262	71.00
Don't know or refused to answer	28	7.59
Partner with disability		
Physical disability	9	2.44
Mental disability	1	0.27
No disability	355	96.21
Refused to answer	4	1.08

The minority (4.34%) reported that their partner involved in polygynous relationship.

Regarding partner behaviors, 1.36% were involved in physical fights, 1.36% had issues with alcohol, and 1.08% reported drug abuse. Jealousy was a notable issue, affecting 21.41% of the partners. In terms of disabilities, 2.44% had a physical disability, while 0.27% had a mental disability.

Prevalence of Intimate Partner Violence (IPV)

The study found that 38 participants (10.30%) tested positive for IPV using the WAST scoring system, where scores of 13 and above indicated IPV. Additional screening included two variables—controlling behaviors and economic violence—which were analyzed using a chi-square test to examine their association with IPV (table II).

For controlling behaviors, 0.81% (n = 3) reported

Table II: Association Between Controlling Behaviour, Economic Violence, and IPV

Item		IPV Screening, n (%)			p-value
		Positive	Negative	Total	
Controlling Behaviour	Often	3 (0.81)	0 (0)	3 (0.81)	<0.001*
	Sometimes	9 (2.44)	17 (4.61)	26 (7.05)	
	Never	26 (7.05)	314 (85.09)	340 (92.14)	
Economic Violence	Often	2 (0.54)	0 (0)	2 (0.54)	<0.001*
	Sometimes	8 (2.17)	8 (2.17)	16 (4.34)	
	Never	28 (7.59)	323 (87.53)	351 (95.12)	

Fisher-Freeman-Halton Exact Test*

experiencing such behaviors frequently, and all tested positive for IPV. Similarly, for economic violence, 0.54% (n = 2) reported experiencing it frequently, and both tested positive for IPV. The p-value for both variables was <0.001, indicating a statistically significant association between controlling behavior, economic violence, and IPV. These findings suggest that controlling behavior and economic violence are critical factors in IPV and should be considered in future studies and intervention efforts.

Associated Factors Related to IPV Screening

A simple binary logistic regression analysis (table III) identified three key preliminary risk factors: partners who were unemployed/job-hunting ($p = 0.004$), polygynous relationship ($p < 0.001$), and jealous partners ($p < 0.001$). Further multiple binary logistic regression analysis refined the significant factors to polygynous relationship and jealous partners. The results indicated that involving in polygynous relationship increased the risk of IPV by 6.37 times ($p = 0.003$), while having a jealous partner increased the risk of IPV by 5.66 times ($p < 0.001$). This highlights that jealousy and polygamous relationships are strong predictors of IPV.

Proportion of IPV Exposure to Children

Among the 369 participants, 349 responses were analyzed to determine the prevalence of IPV exposure to children, as the remaining participants had no children. Notably, among the 35 participants who tested positive for IPV, almost one-third (11 participants) reported that their children had also been exposed to such violence, as shown in figure 1.

The study also examined the age distribution of children

Table III: Factors Associated with IPV using Simple and Multiple Logistic Regression

Variables	Crude OR (95% CI)	p-value	Adj OR (95% CI)	p-value
Year of marriage	0.98 (0.94 – 1.02)	0.35		
Number of children	1.15 (0.91 – 1.45)	0.258		
Income percapita	0.99 (0.99 – 1.00)	**0.047**	1.00 (0.99 – 1.00)	0.276
Partner Working Status				
Employed	Ref			
Unemployed/Job Hunting	5.83 (1.78 - 19.02)	**0.004**	3.02 (0.78 - 11.74)	0.100
Type of marriage				
Self-chosen partner	Ref			
Family-chosen partner	1.41 (0.55 – 3.59)	0.473		
Forced Marriage	1.52[10] (0)	1		
Polygynous relationship				
No	Ref			
Yes	8.08 (2.82 - 23.19)	**<0.001**	6.37 (1.88 – 21.61)	**0.003**
Partner involved in physical fight				
No	Ref			
Yes	1.8[10] (0)	0.999	0.076 (0)	1.000
Partner involved in alcohol				
No	Ref			
Yes	2.26 (0.246 – 20.806)	0.47	0 (0)	0.999
Partner involved in drug abused				
No	Ref			
Yes	1.6[10] (0)	0.999	8.23[7] (0)	1.000
Jealous partner				
No	Ref			
Yes	5.96 (2.90 - 12.27)	**<0.001**	5.66 (2.71 – 11.85)	**<0.001**
Partner with disability				
No disability	Ref			
Physical disability	1.11 (0.14 – 9.11)	0.92		
Mental disability	0	1		

Factors with P-value < 0.25 and clinically relevant were selected for multiple logistic regression.
Backward LR Multiple Logistic models was applied.

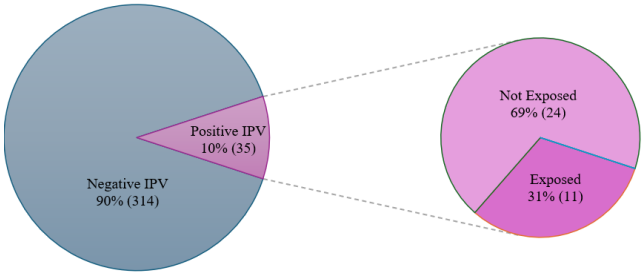

Figure 1: Proportion of IPV and Exposure to Their Children

exposed to IPV (Table IV). Among the 11 participants who reported IPV exposure, a total of 21 children were identified as exposed. School-aged children (6–12 years) and adolescents (12–18 years) were the most affected, with prevalence rates of 9.72% and 8.33%, respectively.

DISCUSSION

Table IV: IPV Exposure to Children Based on Children Age Categories

Positive IPV Yes		IPV Exposure to Children, n (%)		
		No	Total	
Age Categories	< 1 year	0 (0.00)	3 (4.17)	3 (4.17)
	1 to 3 years	2 (2.78)	6 (8.33)	8 (11.11)
	3 to 6 years	3 (4.17)	8 (11.11)	11 (15.28)
	6 to 12 years	7 (9.72)	16 (22.22)	23 (31.94)
	12 to 18 years	6 (8.33)	9 (12.50)	15 (20.83)
	> 18 years	3 (4.17)	9(12.50)	12 (16.67)
	Total	21 (29.17)	51 (70.83)	72 (100.00)

This study aimed to measure the prevalence of IPV among nursing personnel in Kelantan, identify its risk factors, and assess how it impacts their children. Alarmingly, 1 in 10 nurses screened positive for IPV, aligning with both global (26%) (5) and local (8%) (6) statistics. However, since this study only included legally married women, the true prevalence of IPV could be higher, as cases outside of marriage were not captured.

A key finding was that partner behaviors, particularly jealousy and polygyny, significantly increase IPV risk. A jealous partner was associated with a 5.66 times higher risk, while having polygynous relationship increased the risk by 6.37 times. This aligns with WHO's research, which links jealousy to controlling behaviors (5), and previous studies showing jealousy is a major trigger for IPV, including intimate partner rape/violence (IPRV) (28). Research also supports that IPV is rooted in dominance and control, making these findings critical for intervention efforts (28).

The issue of polygynous relationships as a risk factor for IPV is also significant. The prevalence of polygynous relationships varies by region, ranging from 6.3% to 66.7% worldwide (29). Research also suggests that co-wives often compete for attention, leading to conflict that can result into physical and emotional abuse (30-32). Over time, IPV may become normalized in these households, making it harder for victims to seek help (32-33). Encouraging peaceful conflict resolution among co-wives and raising awareness about IPV in polygamous relationships could be key in addressing this issue.

Despite being healthcare professionals, nurses are not

immune to IPV. In fact, IPV can severely impact their personal and professional lives (34). Victims may experience physical injuries, emotional distress, and psychological trauma, leading to poor job performance, absenteeism, and reduced productivity (34). If left unaddressed, IPV could ultimately affect patient care, as distressed nurses may struggle to provide the best treatment for others while silently suffering themselves (14).

A particularly concerning finding in this study was the exposure of children to IPV. Among nurses who screened positive for IPV, one in three reported that their children had also been affected. This is consistent with global research, where childhood exposure to IPV in low-income and middle-income countries is as high as 29%(35). However, in Malaysia, available data only captures domestic violence cases reported to the police, welfare department, or health ministry (7), making it difficult to understand the full scope of IPV-related child exposure.

This study found that school-aged children (6–18 years) were the most affected by IPV exposure, mirroring findings from a Malaysian 2014 survey, where 75% of children (aged 10–12) in Selangor had experienced at least one form of abuse (6). Emotional and behavioral issues, such as bedwetting, mood swings, and fear of their abusive father, were commonly reported (36,37) and research showed that children exposed to IPV may develop post-traumatic stress, anxiety, and depression, which can worsen into adulthood (38-40). These children need psychological support to help them cope and break the cycle of violence.

Unfortunately, many cases of IPV exposure among children go unreported due to fear, stigma, or difficulty recalling events (41,42). The most accurate way to measure child victimization is through self-reported questionnaires (43,44), but ethical and legal concerns make implementation challenging(45). Even with improved screening methods, it is likely that the real prevalence is higher than what was captured in this study.

Addressing IPV among nursing personnel and their children requires overcoming several barriers, including fear of professional consequences, social stigma, and lack of awareness about available support (46,47). Existing counseling programs and employee assistance services are often underutilized because victims fear judgment or retaliation (46,47). To create a safer environment, policies protecting nurses from IPV must be effectively enforced, and awareness campaigns must involve both victims and their partners(48). Studies show that involving men in IPV interventions leads to better outcomes, making educational programs for both genders essential in tackling this issue (49).
Cultural norms also complicate IPV reporting in Malaysia, as discussing relationship issues openly is often discouraged (2). Thus, it is highly suggested to introduce peer-based programs to teach healthy relationships, conflict resolution, and relationship skills and to engage peers, community leaders, and social media influencers to strengthen family-centered initiatives (50). Training healthcare providers to recognize IPV signs and offering accessible support services could significantly help victims. Additionally, public awareness campaigns and media outreach should be strengthened to educate the community and encourage victims to seek help without fear (48,50).

Limitations of the Study

This study used non-probability sampling, meaning the results cannot be generalized to all women in Kelantan. However, the anonymous nature of the survey allowed for a large number of responses to be collected quickly and without bias. Future studies could use probability sampling methods to ensure greater representativeness.
Another limitation is that the WAST questionnaire used to screen IPV did not include controlling behavior and economic abuse. To address this gap, two additional questions from the WHO questionnaire were included, but a validated 10-item questionnaire is needed for more accurate screening. Future research should focus on validating a new scoring system that incorporates these aspects to improve IPV detection and intervention.

CONCLUSION

This study highlights a critical issue: 1 in 10 nurses in Kelantan experience IPV, and their children are significantly affected. The strongest risk factors identified were jealous partners and polygamous relationships, both of which increase IPV risk substantially. If left unaddressed, IPV can have long-term consequences for both victims and their children, making early intervention crucial.

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