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Contributions

Study design: CD, RBX, JS, LC; Data Collection: CD; Data Analysis: CD, RBX, JS, LC; Manuscript preparation: CD, RBX, JS, LC.

Conflict of interest

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ABSTRACT

Aim: To examine the association between sociodemographic, pregnancy related variables and psychological and verbal intimate partner abuse (PIPA), as well as determine which of these variables, are predictors of PIPA during pregnancy.

Background: Intimate partner violence is a significant health issue, with severe implications to both mother and foetus. However, much of the research to date focuses on the outcomes of physical abuse. This article addresses the dearth in literature by examining the association between sociodemographic, pregnancy related variables and PIPA during pregnancy.

Design: A survey research design was used.

Method: Three hundred postnatal women were recruited by convenience, non-proportional quota sampling technique. The WHO Violence Against Women Instrument was self-administered by participants. Association between categorical variables was assessed using Pearson's Chi-square, strength of association using Cramer's V and the phi coefficient, and identification of predictor variables for psychological and verbal abuse using Logistic regression.

Results: Four predictors were identified for psychological abuse namely i.e., low education level in women, an unplanned pregnancy, experiencing two or more pregnancy related health problems and living with an unemployed partner. Whilst unemployment in women, an unplanned pregnancy, fear of partner, and a low education level of partner, were identified as predictors of verbal abuse.

Conclusion: This study identified a number of variables which strongly predict PIPA during pregnancy; however, it extends the available literature by identifying a low standard of education in males, unemployment and fear of the intimate partner as significant predictors of PIPA.

Relevance to clinical practice: Health professionals should be aware of the predictors predisposing pregnant women to abuse. This would enable identification of pregnant women who are susceptible to PIPA, thus, enabling provision of adequate support. There is also a need to introduce routine screening for PIPA during the antenatal period, following extensive training to all professionals concerned.

WHAT DOES THIS PAPER CONTRIBUTE TO THE WIDER GLOBAL CLINICAL COMMUNITY?

1. This study identified fear of intimate partner, a low standard of education in men, and unemployment in both women and their partners as significant predictors of PIPA during the gestation period.
2. This paper highlights the importance of introducing routine screening for PIPA during pregnancy.
3. This study recognises the need to educate health professionals, amongst which midwives, nurses and obstetricians, regarding the predictors which predispose women to PIPA during the antenatal period.

KEYWORDS

Intimate partner violence; Women's health; Violence against women; Screening; Survey; Midwifery

INTRODUCTION

Intimate partner violence (IPV) is perpetrated by and is critical for both men and women. However, more often than not, victims are women and offenders are males (Kaur & Garg 2008). Violence can be described as "The intentional use of physical force or power, threatened or actual…which either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation." (World Health Organization [WHO] 2002, p.4). IPV can take the form of psychological, verbal, physical, financial, and sexual assault (Gul *et al.* 2013, Kaur & Garg 2008) and it is the most common form of violence against women. This paper focuses on psychological and verbal intimate partner abuse (PIPA) during pregnancy, inflicted by a man against his pregnant wife or partner.

BACKGROUND

Psychological and verbal intimate partner abuse (PIPA) during pregnancy, may be defined as the use of threats, jealousy, possessiveness, humiliation, constant destructive criticism, insults, belittling, ridiculing and instigating false accusations (American Medical Association [AMA] 1992), aimed to exert control over the victim using dominance (Kaur & Garg 2008), fear, and degradation (AMA 1992). More often than not, PIPA during pregnancy is placed under the umbrella term of IPV, and unlike physical and sexual abuse, it is rarely analysed as a construct on its own merit. Indeed, researchers namely report the prevalence rate of PIPA in combination to other forms of violence (Gomez-Beloz *et al.* 2009, Kashif *et al.* 2010).

In a systematic literature search, which guided this research, 11 studies were found to have investigated the prevalence of PIPA during the antenatal period, as a separate entity of violence. The rate of PIPA reported ranged between 6% and 43.2% (Das *et al.* 2013, Farid *et al.* 2008, Flach *et al.* 2011, Fonseca-Machado *et al.* 2015, Gentry & Bailey 2014, Johri *et al.* 2011, Kaye *et al.* 2006, Matseke *et al.* 2012, Sanchez *et al.* 2013, Tiwari *et al.* 2008, Valladares *et al.* 2005), and studies were mostly conducted in Asian (Das *et al.* 2013, Farid *et al.* 2008, Tiwari *et al.* 2008), African (Kaye *et al.* 2006, Matseke *et al.* 2012), and South American countries (Fonseca-Machado *et al.* 2015, Sanchez *et al.* 2013). Various researchers (Farid *et al.* 2008, García-Moreno *et al.* 2005) have highlighted the difficulty in developing a standard definition of PIPA and consequently the challenge to analyse studies carried out among culturally diverse populations. In fact, whilst in certain countries PIPA against women is condemned, in others, such as in China, India and Nigeria "A man has a right to "correct" or discipline female behaviour" (WHO 2009, p. 5).

However, there are other methodological discrepancies between studies which might influence the reported prevalence rate of PIPA. For instance in a longitudinal study in the UK (Flach *et al.* 2011) the prevalence of PIPA during pregnancy was reported to be 6% (n = 817) whilst in a study in India (Das *et al.* 2013), 8% (n = 167) of participants reported experiencing PIPA during pregnancy and the first few months postpartum. Nevertheless, the low rates reported in both studies should be interpreted with caution, since ethical principles which are considered paramount in abuse related research (Ellsberg & Heise 2005, WHO 2001), were not contemplated by the researchers. Das *et al.* (2013) commented that privacy during data collection was difficult to ensure in the densely slum homes, while Flach *et al.* (2011) used postal questionnaires for their study. In both instances women's safety could have been threatened by the presence of the perpetrator at home, leading to possible reluctance in abuse disclosure. Similar shortcomings were identified in other studies (Johri *et*

al. 2011, Sanchez *et al.* 2013). Furthermore, other methodological limitations identified in research on PIPA include: the use of self-designed, non-validated instruments (Flach *et al.* 2011), the use of tools such as the Abuse Assessment Screen (AAS) (McFarlane *et al.* 1992), in which abuse is measured by a broad double-barreled question, rather than through action-based examples of abuse (Kaye *et al.* 2006) and the timing of data collection in which studies (Flach *et al.* 2011, Gentry & Bailey 2014, Matseke *et al.* 2012, Tiwari *et al.* 2008) that collected data on PIPA during the second trimester of the pregnancy would not detect cases of women exposed to PIPA at a later stage of pregnancy. This would then result in an underestimation of abuse. Abuse, however, is caused by a complex interaction of multiple personal and societal factors which influence a person's susceptibility to perpetrate or experience violence (Bronfenbrenner 1994).

Factors predisposing pregnant women to PIPA

Research studies have identified a number of sociodemographic influences which are associated with PIPA during pregnancy. Johri *et al.* (2011) noted that pregnant women who were older than 35 years had a statistically higher risk of exposure to PIPA during pregnancy, while Valladares *et al.* (2005) reported that PIPA was more common among younger women. These findings contrast with those reported in Gentry and Bailey's (2014) study where the relationship between maternal age and PIPA during pregnancy was not statistically significant. However, poor education and low socio-economic status were found to predispose pregnant women to PIPA (Gentry & Bailey 2014). Conversely, in a cross-sectional community-based study in Nicaragua (Valladares *et al.* 2005), education in women was not significantly related to PIPA during the antenatal period; which the authors stated could be attributed to the widespread poverty among the study population Additionally pregnant women who reported abusing from psychoactive substances (Gentry & Bailey 2014, Johri *et al.* 2011) and participants who claimed that their pregnancy was unplanned (Johri *et*

al. 2011, Valladares *et al.* 2005) were also more predisposed to PIPA in the antenatal period. Furthermore, PIPA during pregnancy has been adversely linked to long-lasting negative health consequences on victims (Black 2011). Apart from cumulative stress exposure (Crofford 2007), women subjected to abuse during pregnancy are more likely to experience miscarriages, pre-term labour and to give birth to a low birth weight infant (The United Nations Department of Public Information 2009). However, there is a dearth of literature regarding the relationship between such pregnancy-related complications and PIPA during pregnancy, as researchers tend to focus mainly on the effects of physical and sexual abuse on maternal health and pregnancy outcomes (Das *et al.* 2013, Fsadni *et al.* 2011, Janssen *et al.* 2003) since certain complications are more evident amongst battered victims and sexually assaulted pregnant women, rather than in women exposed to PIPA. Nonetheless, Gentry and Bailey (2014) found a significant association between exposure of threats during pregnancy and low birth weight, but not in relation to preterm birth. Johri *et al.*'s (2011) cross sectional study did not find an association between PIPA in pregnancy and miscarriage; however, in a case-control study (Sanchez *et al.* 2013) a higher prevalence of PIPA was identified among women who gave birth to a preterm infant (n = 171, 35.7%) when compared to those who delivered a term neonate (n = 145, 30.2%).

Hence, as demonstrated, it is challenging to draw conclusions from the available literature on the sociodemographic and pregnancy related variables which are associated with PIPA in pregnant women. Consequently, the present study aims to examine the association between sociodemographic, pregnancy related variables and PIPA, as well as determine which of these variables, are predictors of PIPA during pregnancy. Furthermore, the current study targets limitations identified in the available literature by utilising a well validated research tool and enabling participants to complete the questionnaires in a setting where no coercion from the partner can be experienced.

MATERIALS AND METHODS

Design and participants

The research aims of this study were addressed using a survey research design which was carried out in Malta, Europe, at the obstetric wards of the main state hospital. The findings presented here form part of a larger study. A convenience, non-proportional quota sampling technique was used until a sample of 300 postnatal women was recruited during their 48 hour postpartum hospital stay. The sample size was calculated based on 3,501 deliveries which occurred to women of Maltese nationality in 2013 (Department of Health Information and Research [DHIR] 2014), to ensure that a confidence interval of 95% and a margin of error of 5 to 6% were retained. Eligible participants were Maltese women aged 18 years or older, who were literate in the Maltese or English language, and had given birth in the previous 48 hours. Women were excluded from participation if they had experienced a perinatal death or their babies were critically ill, if they were emotionally distressed or if women were presently under psychiatric treatment.

Instrument

The study used the latest version (version 11.4) of the WHO Violence Against Women Instrument as developed for use in the WHO Multi-country Study on Women's Health and Domestic Violence Against Women (Ellsberg & Heise 2005). The term psychological abuse in this study is defined as the domineering actions exerted by a perpetrator with the intention of exerting control over the victim's actions and behaviour by means of restricting contact with family and friends, the use of false accusations, jealousy, the continuous suspicion of unfaithfulness and the use of financial control. Furthermore, in this research, verbal abuse refers to the infliction of insults, humiliation, belittlement, intimidation and threats, on purpose.

Permission to use, translate and to focus the tool on the pregnancy period was obtained. The original WHO tool was developed by the core WHO multi-country study research team and was pre-tested by all the country teams that participated in the WHO study (García-Moreno *et al.* 2005). Psychometric property testing indicated that this tool provided a reliable and valid measure for abuse against women, as it was found to have good internal consistency (García-Moreno *et al.* 2005, Jansen 2012). The questionnaire was tested and validated in several countries worldwide (García-Moreno *et al.* 2005) and the translated version was also assessed for face and content validity. The instrument was also used in a nationwide research on the prevalence of domestic violence against women (Fsadni *et al.* 2011). Following the WHO (2014) translation protocol, the instrument was translated into the Maltese language and tested for stability using a test-retest, which was performed on two different occasions, 14 days apart (Polit & Beck 2014) among 18 mothers. The responses of both tests were compared using the Kappa test. This test could not be performed on a number of questions since there was no variation in the responses provided in the pre and post-tests, indicating complete compliance. Kappa for the other questions' results ranged between 0.92-0.97 suggesting a very high stability test-retest result.

The questionnaire used in this study was divided into 3 sections and consisted of 21 questions. Section 1 comprised eight questions related to mothers' obstetric history. The purpose of the second section was to identify women, who have experienced PIPA during their last pregnancy. In order to minimize under-reporting, capturing true rates of abuse and obtaining specificity of PIPA during pregnancy, mothers were asked whether or not they have experienced specific acts of psychological and verbal abuse (Centers for Disease Control and Prevention 2013, García-Moreno *et al.* 2005, WHO 2001). All questions in this section were taken from section seven of the WHO tool. Questions were slightly modified to reflect acts of violence experienced by women during the pregnancy period and instead of referring to any

other husband/partner they had in the past, participants were asked whether the violent actions were carried out by their current partner. To obtain the frequency of abuse, participants were given the option to answer questions by choosing one of the following options "No", "Yes, once", "Yes, a few times (2-5)" and "Yes, many times (6 and more)". Similar to the WHO study (García-Moreno *et al.* 2005) women were considered to have never experienced PIPA during pregnancy if they answered "No" or "Never" to all the questions in section two. Consequently, these participants were referred to as "Not abused" in the present study. Moreover, any woman who indicated that she was abused to any degree were referred to as "Abused" in this study. The last section contained demographic questions concerning age, educational level, employment status, and the use of illicit drugs, which participants were asked to answer about themselves and their partners.

Data collection and analysis

Data was collected between October 2014 and January 2015, until the required sample size was reached. Women who met the eligibility criteria were approached by the charge midwife of the ward (to eliminate selection bias) and were informed of the purpose of the research, both verbally and in writing. Women, who showed interest in participating, were given the tool in either the Maltese or English language. Upon completion of the questionnaire, participants were asked to place the tool in the envelope provided and to post it in the designated box, located at the charge midwife's office.

The data collected was inputted manually and analysed using the International Business Machines Corporation (IBM) Statistical Package for Social Sciences (SPSS) statistics Version 22. The Pearson's Chi-square test was used to assess the association between two categorical variables, while the Cramer's V index and the phi coefficient were used to quantify the strength of the association between the variables. Logistic regressions were

computed to relate psychological and verbal abuse respectively (categorical dependent variable) to a number of predictors (causes of psychological/verbal abuse). The model identifies the significant predictors and ranks them by their contribution. A .05 level of significance was applied in all statistical tests and models.

Ethical considerations

This study was approved by the Maltese University Research Ethics Committee. Institutional permissions were also obtained from all respective authorities. This survey adhered to the WHO ethical guidelines for the conduct of violence against women research (Ellsberg & Heise 2005). An information letter was provided to all potential participants, containing information on the nature and purpose of the study. Confidentiality, voluntariness, and the right to withdraw at any time from the study were ascertained. The contact details of a psychologist and the Emergency helpline number were provided in a debriefing letter given to all participants. A list of educational sources about abuse was also included; nevertheless, women were encouraged to destroy the material if it poses a risk to them. Women were invited to participate in the study in the privacy of their hospital room, during non-visiting hours, while being unaccompanied by their partner or any other person.

RESULTS

Demographic characteristics of women and their partners

In total, 380 mothers were invited to participate in the study; of these, 300 completed and handed in the questionnaire, yielding a response rate of 78.9%. The age range of female participants was between 18 to 43 years with an average age of 30.66 years. The mean age of women's partners was of 33.37 years.

Tables 1 and 2 present the socio-demographic details of female and male participants respectively by psychological and verbal abuse. Most of the partners (n = 267, 94%) were in gainful employment, in comparison to 67% (n = 187) of the female participants. Tertiary education was completed by 65.9% of females (n = 191) and 52.1% (n = 148) of male partners respectively. With regards to psychoactive substances, the vast majority of female participants stated that they had never misused illicit drugs (n = 275, 94.8%). Similar responses were reported for women's partners (n = 267, 92.4%).

Health during pregnancy

Table 3 presents data for the association between pregnancy related variables and psychological and verbal abuse during pregnancy. For 208 women (69.3%) pregnancy was planned; however, there were 85 (27.7%) mothers who claimed that they had not planned to get pregnant. In total, 122 women (40.7%) claimed to have experienced one or more pregnancy related health problems, with more than half (n = 70, 57.4%) suffering from two or more of one of the following problems. Nervousness (n = 36, 12%) and tiredness (n = 35, 11.7%) were the most common pregnancy related health problems experienced during pregnancy. Injuries such as burns and fractures (n = 5, 1.7%) as well as premature pre-labour rupture of membranes (n = 3, 1%) were also reported, but were experienced by a smaller number of women. There were also 30 (10%) women who identified other pregnancy related health problems, including: back pain (n = 5, 1.6%), sciatic pain (n = 3, 1%), chest infections (n = 2, 0.6%), vomiting (n = 7, 2.3%), nausea (n = 8, 2.7%), pruritus (n = 3, 1%), hypothyroidism (n = 1, 0.3%) and deranged liver blood tests (n = 1, 0.3%). Thirty (10%) female participants expressed fear of their partner at some point throughout their pregnancy.

Association between demographic and pregnancy related variables with psychological abuse

In this study, 15% (n = 45) of women experienced one or more acts of psychological abuse during pregnancy. Chi-square analyses revealed significant associations between psychological abuse and women's age ($\chi 2$ (2, N = 293) = 7.489, p = 0.024, Cramer's V = 0.160), women's employment ($\chi 2$ (2, N = 279) = 7.584, p = 0.023, Phi = 0.161), partner's employment ($\chi 2$ (3, N = 284) = 12.208, p = 0.007, Phi = 0.204), women's education ($\chi 2$ (2, N = 290) = 16.280, p = 0.000, Cramer's V = 0.237), partner's education ($\chi 2$ (2, N = 284) = 6.887, p = 0.032, Cramer's V = 0.156), illicit drug use by women ($\chi 2$ (2, N = 290) = 7.753, p = 0.021, Cramer's V = 0.164), illicit drug use by partners ($\chi 2$ (2, N = 289) = 8.726, p = 0.013, Cramer's V = 0.174), planned pregnancy ($\chi 2$ (2, N = 291) = 14.219, p = 0.001, Phi = 0.219), whether pregnancy related health problems were experienced ($\chi 2$ (1, N = 291) = 5.614, p = 0.018, Phi = 0.139), number of pregnancy related health problems experienced ($\chi 2$ (2, N = 297) = 5.977, p = 0.05, Cramer's V = 0.142) and fear of partner ($\chi 2$ (1, N = 295) = 3.634, p = 0.05, Phi = 0.11).

Association between demographic and pregnancy related variables with verbal abuse

Thirty six females (12%) experienced verbal abuse during pregnancy. Significant associations were identified between verbal abuse and: partner's age ($\chi 2$ (2, N = 291) = 10.486, p = 0.005, Cramer's V = 0.190), women's employment ($\chi 2$ (2, N = 279) = 16.821, p = 0.000, Phi = 0.240), partner's employment ($\chi 2$ (3, N = 284) = 14.290, p = 0.003, Phi = 0.220), partner's education ($\chi 2$ (2, N = 284) = 7.931, p = 0.019, Cramer's V = 0.167), illicit drug use by women ($\chi 2$ (2, N = 290) = 11.227, p = 0.004, Cramer's V = 0.197), illicit drug use by men ($\chi 2$ (2, N = 289) = 19.677, p≤.001, Cramer's V = 0.261), whether pregnancy was planned or not ($\chi 2$ (2, N = 291) = 15.997, p≤.001, Phi = 0.232) and fear of partner ($\chi 2$ (1, N = 295) = 25.282, p≤.001, Phi = -0.293).

Interpretation of crosstabs results

From the Pearson's Chi-square analysis it was demonstrated that women aged 25 years or younger were more susceptible to psychological abuse during pregnancy, when compared to older participants. Similarly, males who were 25 years or less or older than 35 years, were found more likely to perpetrate verbal abuse against their partners. Employment status for both women and their partners was found to be significantly associated with PIPA during pregnancy. Results implied that, unemployed men were more likely to inflict both forms of violence against women. The same association was noted where unemployed women were more likely to experience verbal and psychological abuse than employed women.

Women who reported experiencing psychological violence during gestation were more likely to have completed 6 formal years of education or less. Whilst, males who have been violent against their pregnant partners were more likely to have completed up to secondary education (i.e., 7-12 years of formal education), suggesting that tertiary education in their partners may have safeguarded women against PIPA during pregnancy. Verbal abuse was also noted to be more frequently experienced by pregnant women whose partners had only attended primary education ($\geq$ 6 years). Women who were either psychologically or verbally abused by their partner during the gestation period were noted to have a significantly higher tendency to use illicit drugs on an occasional basis or to have used such substances in the past. The same relationship was also observed for males. Moreover, participants who had an unplanned pregnancy, who experienced 2 or more pregnancy related health problems and who claimed that they feared their partner at some point during pregnancy were significantly more likely to have experienced PIPA during the antenatal period.

Variables not significantly associated with PIPA during pregnancy

No statistical significance was observed between verbal abuse and women's age ($\chi 2$ (2, N = 293) = 2.388, p = 0.303, Cramer's V = 0.090), women's education ($\chi 2$ (2, N = 290) = 0.968, p = 0.616, Cramer's V = 0.058), pregnancy related health problems experienced ($\chi 2$ (1, N = 291) = 0.520, p = 0.471, Phi = 0.042), number of pregnancy related health problems ($\chi 2$ (2, N = 297) = 2.573, p = 0.276, Cramer's V = 0.093), miscarriage ($\chi 2$ (1, N = 296) = 0.750, p = 0.386, Phi = -0.050), premature birth ($\chi 2$ (2, N = 291) = 0.014, p = 0.993, Cramer's V = 0.007), and low birth weight ($\chi 2$ (2, N = 291) = 2.928, p = 0.231, Cramer's V = 0.100). Additionally, partner's age ($\chi 2$ (2, N = 291) = 4.142, p = 0.126, Cramer's V = 0.119), miscarriage ($\chi 2$ (1, N = 296) = 0.162, p = 0.688, Phi = -0.023), premature birth ($\chi 2$ (2, N = 291) = 3.533, p = 0.171, Cramer's V = 0.110), and low birth weight ($\chi 2$ (2, N = 291) = 4.539, p = 0.103, Cramer's V = 0.125) were not statistically significant in regards to psychological abuse.

Predictors of PIPA in pregnant women

When analysed collectively the logistic regression model presented in Table 4 identifies four significant predictors of psychological abuse during pregnancy. The education of women is the best predictor since it has the lowest p-value (0.006). This is followed by employment of partner (p = 0.017), planned/unplanned pregnancy (p = 0.023) and number of pregnancy related health problems experienced (p = 0.048). Women with primary level (≥ 6 years) of education, who had an unplanned pregnancy, who experienced two or more pregnancy related health problems and are living with an unemployed partner, are more likely to be abused psychologically than women with a high level of education, who had a planned pregnancy, who had not experienced any pregnancy related health problems and are living with an employed partner.

The logistic regression model presented in Table 5 identifies four significant predictors of verbal abuse during pregnancy. Fear of partner ($p < 0.001$) and employment of women ($p < 0.001$) are the best predictors, followed by planned/unplanned pregnancy ($p = 0.011$) and partner education ($p = 0.027$). Unemployed women who had an unplanned pregnancy and who fear their partner with a primary level of education are more likely to be abused verbally than employed women, who had a planned pregnancy, who had no fear of their partner and who have a partner with good level of education.

DISCUSSION

The purpose of this study was to examine the association between sociodemographic, pregnancy related variables and psychological and verbal intimate partner abuse (PIPA), as well as determine which of these variables, are predictors of PIPA during pregnancy. In this study, 15.2% (n = 45) and 12.1% (n = 36) of participants claimed to have experienced psychological abuse and verbal abuse respectively. The frequency rate obtained in this study is similar to that obtained by Fonseca-Machado *et al.* (2015) (n = 60, 16.8%) for psychological abuse, possibly because both studies made use of the same validated WHO instrument. Furthermore the frequency of psychological and verbal abuse during pregnancy reported in the current study were considerably lower than the rates reported by Farid *et al.* (2008) in Pakistan (n = 216, 43.2%) for both psychologyical and verbal abuse. One issue worth discussing is the role that cultural influences and traditional practices play in the perpetration of PIPA during pregnancy. Douki *et al.* (2003) stated that in Arab and Islamic countries, abuse against women is considered justifiable in case of 'wives' misbehaviour'. Hassan (1995) argues that societal beliefs encouraging abuse against women are deeply engrained among Pakistani society; indeed, men consider women as their personal property and consequently they dominate every aspect of their lives, including their decisions and behaviours. Contrarily research conducted in Malta found that Maltese women appeared to be

intolerant of patriarchal relations among couples (Fsadni *et al.* 2011, Savona-Ventura *et al.* 2001).

The findings of the present study corroborate those obtained by Valladares *et al.* (2005) in that the likelihood of exposure to psychological abuse ($p = 0.024$) increases with decreasing maternal age. Conversely these results differ from those reported by Johri *et al.* (2011). Karakurt and Silver (2013) commented that, as a result of complex social, economic and cultural influences, younger women are often ruled by their hearts rather than their heads, as they attach greater importance to emotional connectedness within relationships, causing them to become blind to their partner's abusive behaviour. This is further exacerbated by their immaturity and lack of knowledge concerning the parameters which signify healthy relationships (Karakurt & Silver 2013). Moreover, as Janssen *et al.* (2003) pointed out, older women, unlike younger ones, are more likely to be independent due to economic stability and educational advancement. Additionally, their increased logical ability, stronger social support network, higher self-esteem and greater knowledge as to what constitutes violence, further minimises their chances of being subjected to abuse (Karakurt & Silver 2013). Similarly, in the present study, perpetrators of verbal abuse were more likely to have been younger than 25 years ($p = 0.005$), possibly because at that age, men may not be fully prepared to become a father. At the same time, men older than 35 years were also observed to be more verbally abusive against their partners during pregnancy in this present study; however, the same relationship was not observed for psychological abuse ($p = 0.126$). Further research is required to understand the role that age in males play in the perpetration of PIPA during pregnancy.

In this study, it was observed that the lower the educational status, the more susceptible women were to PIPA during the perinatal period ($p = 0.006$). Moreover, low education standard among women was identified as a significant predictor of psychological abuse during pregnancy. In fact, it has been stated (United Nations Women 2015) that disruption in educational opportunities for women create a climate which further encourages victimisation of violence against women. Conversely, in a study (Johri *et al.* 2011) on a sample of 1,897 pregnant women from Guatemala it was demonstrated that having no education appeared to be protective for verbal abuse. It is possible that in a country such as Guatemala, where it is the norm for males to be better educated than females (UNICEF 2013), woman's enrolment in education may be perceived by males as a threat to their masculine dominance in their relationship, which could perhaps lead to verbal abuse during pregnancy. Furthermore, the present study identified a low standard of education in men as a significant predictor ($p = 0.027$) of verbal abuse during the antenatal period. Thus findings suggest that men with a low standard of education were significantly more likely to perpetrate verbal abuse on their pregnant partner. García-Moreno *et al.* (2005) affirmed that men with low standard of education may perceive the exertion of power and control over their female partners as being their duty and a means of fulfilling their role as men. Further to this, poorly educated women may lack awareness of their rights against abuse, and consequently may be more likely to accept their partners' abusive behaviours, confirming the findings of the present study that tertiary level of education in both women and their partners may protect pregnant women from PIPA. Nonetheless there is the need for further research to strengthen this finding.

Unemployment in both pregnant women and their partners was identified as a significant predictor of PIPA during pregnancy. Results indicate that unemployed men ($p = 0.017$) are significantly more likely to perpetrate psychological abuse on their pregnant partners and

when the latter were unemployed their risk of exposure to verbal abuse during pregnancy was highly significant (p <. 001). The present study identified unemployment in males as a predictor of verbal abuse and unemployment in females as a predictor for psychological abuse respectively. This may arise in a scenario where males are socially expected to gain an economic stand for the family, which is indirectly intertwined with the notion of masculinity (George 2006). Hence, failure to fulfil this norm might cause frustration and feelings of inadequacy among males, which may as a result, increase the likelihood of perpetrating abuse against their partner (Krishnan *et al.* 2010).

This study identified unplanned pregnancy as a strong significant predictor of psychological (p = 0.023) and verbal intimate partner abuse (p = 0.011) during pregnancy. This result is in agreement with other research studies (Johri *et al.* 2011, Valladares *et al.* 2005) since women whose pregnancy was unplanned were significantly more likely to have experienced PIPA during the antenatal period. It has been suggested that in order to exert their domineering supremacy, perpetrators may limit women's use of fertility measures (Pallitto *et al.* 2005) and use reproductive coercion to impregnate their partner and maintain control over the victim, regardless of women's desire for pregnancy (American College of Obstetricians and Gynecologists 2013) leading to unintended pregnancies (Pallitto *et al.* 2005). Moreover unplanned pregnancies do not only inflict economic difficulties on the family, but also restrict women's economic productivity, leading to either further increase or the commencement of abuse during pregnancy (Kashif *et al.* 2010). Nevertheless, further research is necessary to further understand the association between PIPA and unplanned pregnancy (Tiwari *et al.* 2008).

Consistent with Johri *et al.*'s (2011) study, this current research demonstrated that occasional or past use of illicit drugs by women is associated with psychological ($p = 0.021$) and verbal ($p = 0.004$) intimate partner abuse during pregnancy. Similarly, perpetrators of psychological ($p = 0.013$) and verbal ($p \leq .001$) abuse were statistically more likely to abuse from illicit drugs. The use of such chemicals interfere with the normal functioning of the brain by disrupting one's judgement abilities and rational thinking, and disorganizes the person's capacity to communicate effectively and distinguish reality from fantasy (National Institute on Drug Abuse [NIDA] 2015). This was perceived to be part and parcel of the causal pathway leading to the perpetration or victimisation of abuse (Ellsberg & Heise 2005) and family disintegration (NIDA 2010). Moreover, it has been suggested that women often end up abusing of substances as a means of self-medication in order to anesthetize themselves from the emotional suffering of abuse (Substance Abuse and Mental Health Services Administration 2012). Nevertheless, the dearth of research in this regard, warrants the need to conduct in-depth qualitative studies to analyse whether the exposure of PIPA during pregnancy, is in actual fact promoting illicit drug use among victims and perpetrators, rather than the other way round.

The current study identified fear of the intimate partner as a strong predictor of verbal abuse during pregnancy ($p <. 001$). Similarly, the experience of two or more pregnancy related health problems was identified as a significant predictor of psychological abuse during the gestation period ($p = 0.048$). Certainly, women may find it very challenging to disclose their abusive relationship due to fear of retaliatory violence. Sharing their abusive experience may be even more difficult throughout pregnancy, during which women are highly protective of their child. Nonetheless, victims may use other ways and means to forewarn professionals that they are in danger. Wokoma and Lindowm (2015) stated that one of the factors which

may indicate abuse is being repeatedly admitted to hospital, especially when women present to hospital complaining of vague symptoms or minor injuries. Moreover, repeat admissions may also be used as a survival mechanism whereby women keep themselves and their pregnancy safeguarded under professional observation, away from their abusive partner. This signifies the important role that health care professionals play in identifying pregnant women who might be experiencing abuse by looking beyond the physical symptoms that women present with on admission, and taking into account several other factors, which may be indicative of PIPA during pregnancy.

The association between low birth weight in infants and PIPA was not identified in this study. This result differs from that identified by Gentry and Bailey (2014) who reported that exposure of threats by an intimate partner during pregnancy was significant associated with low birth weight in infants. This discordance in the results obtained may be attributed to recruitment of study participants in Gentry and Bailey's (2014) study from a smoking intervention programme despite the well-known fact that cigarette smoking increases the risk of delivering a low birth weight infant (Chamberlain *et al.* 2013). Indeed, when compared to that observed in this current research (n = 16, 5.4%), the percentage of low birth weight infants was considerably higher in Gentry and Bailey's (2014) research (n = 69, 14.2%).

Consistent with other research studies (Gentry & Bailey 2014, Johri *et al.* 2011) premature birth and a history of miscarriage were not related to PIPA during pregnancy in the present study. These findings are in contrast to a case-control study (Sanchez *et al.* 2013) which described a 1.6 fold increased risk of giving birth prematurely when pregnant women were exposed to PIPA. The conflicting results could be described by the low percentage of preterm birth observed in this current research (n = 25, 8.5%), which also correspond to the national statistics (DHIR 2014), (n = 282, 6.7%). This could be a reflection of the highly medicalised

care that pregnant women receive in Malta, since mothers who manifest any signs suggestive of foetal compromise are immediately provided with medical interventions, aiming to prevent premature labour amongst other complications. Moreover, the low rate of premature births could also be explained by the exclusion criteria set up for this study which excluded women who had poor pregnancy outcomes or a critically ill neonate.

STRENGHTS AND LIMITATIONS

This study should be interpreted in light of several limitations. Primarily, the results cannot be generalized to pregnant women, since participants were not randomly selected. There might have been mothers who feared disclosing their experience of abuse; hence, resulting in report bias and underestimation of abuse. Recall bias could have also led to miscalculation of PIPA, since mothers had to recall their partner's behaviour since the first trimester of pregnancy. Nevertheless, this study has addressed several limitations identified in previous research. The large sample size as well as the relatively high response rate (n = 300, 78.9%) obtained, strengthen the study's findings. The questionnaire used in this study was previously tested and validated in several countries worldwide (García-Moreno *et al.* 2005). Moreover, the translated version was assessed for face and content validity and tested for reliability. Additionally, due to the possibility of arousing negative emotions, all participants, were given a debriefing letter and offered psychological assistance by a qualified family therapist. Additionally this was the first local research which has specifically looked at PIPA during pregnancy. The findings obtained in this study continue to signify the need to consider PIPA during pregnancy as a major violation of women's rights.

RELEVANCE TO CLINICAL PRACTICE

The findings of the current study bring forward several recommendations for the clinical area. Primarily, it is critical to ensure that maternity care providers, who are directly involved in the care of pregnant women, mainly, midwives, nurses and obstetricians, are well versed about the complexity of PIPA, as well as the personal and pregnancy related factors which may predispose women to PIPA during pregnancy. By increasing awareness about PIPA and its relation to pregnancy, professionals will be better equipped to identify women who might be experiencing abuse, provide empathic care to victims and refer women to the appropriate support sources. Considering that maternal morbidity was significantly associated with PIPA during pregnancy; this present study identifies the need to introduce routine screening for PIPA during the antenatal period following extensive training to all professionals concerned, regarding the ethical principles behind abuse enquiry. Finally, since this study examined PIPA throughout the whole pregnancy period until childbirth, this research questions whether the frequency and severity of abuse is increased during the postnatal period and whether it impacts negatively on the health of neonates. Consequently, this study suggests further research in this regard, and recommends health practitioners providing postnatal care to be more attentive for signs of PIPA, especially if predisposing factors of abuse have already been identified during pregnancy.

CONCLUSION

In this research, 15% (n = 45) and 12% (n = 36) of women were found to have experienced psychological and verbal abuse during pregnancy respectively. Unemployment, low educational status, unplanned pregnancy, fear of partner, and pregnancy related health problems emerged as strong predictors of PIPA during pregnancy. However, the limited research available makes it challenging to unfold the complex interaction between these predictors and their relationship to PIPA during pregnancy. Perhaps in depth research on this

aspect and its influence on maternal health and pregnancy outcomes, may help broaden health care professionals' understanding of PIPA to be able to provide the necessary support to victims and respond to their needs. By addressing some of the limitations identified in previous research, the results of this study seem to group findings from other studies, implying that the tool has looked at the construct of PIPA during pregnancy holistically.

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Table 1 Socio-demographic characteristics for Female participants and PIPA during pregnancy

Variables	Psychological abuse						Verbal abuse					
	Abused		Not abused		Total		Abused		Not abused		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Age												
≤ 25 years	13	28.9	32	71.1	45	100	7	15.6	38	84.4	45	100
26 - 35 years	25	13	168	87	193	100	19	9.8	174	90.2	193	100
≥ 36 years	7	12.7	48	87.3	55	100	9	16.4	46	83.6	55	100
Employment status												
Employed	20	10.7	167	89.3	187	100	13	7	174	93	187	100
Unemployed	21	22.8	71	77.2	92	100	22	23.9	70	76.1	92	100
Education												
Primary	6	60	4	40	10	100	2	20	8	80	10	100
Secondary	13	14.6	76	85.4	89	100	12	13.5	77	86.5	89	100
Tertiary	25	13.1	166	86.9	191	100	21	11	170	89	191	100
Drug abuse												
Occasionally	1	100	0	0	1	100	1	100	0	0	1	100
In the past, not now	4	28.6	10	71.4	14	100	4	28.6	10	71.4	14	100
Not at all	39	14.2	236	85.8	275	100	30	10.9	245	89.1	275	100

N.B. Not all questions on the tool provided were answered by study participants
(Primary education refers to the first 6 years of formal education; Secondary education refers to 7-12 years of formal education)

Table 2 Socio-demographic characteristics for Male Partners by PIPA for pregnant women

Variables	Psychological abuse						Verbal abuse					
	Abused		Not abused		Total		Abused		Not abused		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Age												
≤ 25 years	5	31.3	11	68.8	16	100	4	25	12	75	16	100
26 - 35 years	23	12.8	156	87.2	179	100	13	7.3	166	92.7	179	100
≥ 36 years	16	16.7	80	83.3	96	100	18	18.8	78	81.3	96	100
Employment status												
Employed	35	13.1	232	86.9	267	100	28	10.5	239	89.5	267	100
Unemployed	7	41.2	10	58.8	17	100	7	41.2	10	58.8	17	100
Education												
Primary	9	26.5	25	73.5	34	100	9	26.5	25	73.5	34	100
Secondary	18	17.6	84	82.4	102	100	9	8.8	93	91.2	102	100
Tertiary	15	10.1	133	89.9	148	100	16	10.8	132	89.2	148	100
Drug abuse												
Occasionally	2	66.7	1	33.3	3	100	1	33.3	2	66.7	3	100
In the past, not now	5	26.3	14	73.7	19	100	8	42.1	11	57.9	19	100
Not at all	36	13.5	231	86.5	267	100	25	9.4	242	90.6	267	100

N.B. Some participants did not reply to the questions on the tool provided

Table 3 Pregnancy related variables and PIPA during pregnancy

Variables	Psychological abuse						Verbal abuse					
	Abused		Not abused		Total		Abused		Not abused		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Pregnancy												
Planned	22	10.6	186	89.4	208	100	15	7.2	193	92.8	208	100
Unplanned	20	24.1	63	75.9	83	100	20	24.1	63	75.9	83	100
Pregnancy related health problems												
Experienced problems	16	23.2	53	76.8	69	100	10	14.5	59	85.5	69	100
Did not experience problems	26	11.7	196	88.3	222	100	25	11.3	197	88.7	222	100
Number of pregnancy related health problems												
No problems	22	12.6	153	87.4	175	100	17	9.7	158	90.3	175	100
1 problem	6	11.5	46	88.5	52	100	9	17.3	43	82.7	52	100
2 or more problems	17	24.3	53	75.7	70	100	10	14.3	60	85.7	70	100
Afraid of partner												
Never experienced fear	36	13.6	229	86.4	265	100	23	8.7	242	91.3	265	100
Experienced fear	8	26.7	22	73.3	30	100	12	40	18	60	30	100

N.B. Some participants did not reply

Table 4: Logistic regression analysis for caseness in psychological abuse

Likelihood Ratio Tests

Effect	Model Fitting Criteria: -2 Log Likelihood of Reduced Model	Likelihood Ratio Tests: Chi-Square	df	p-value
Employment status of Partner	65.351	5.646	1	0.017
Education of Women	70.098	10.393	2	0.006
Number of pregnancy related health problems experienced	65.798	6.092	2	0.048
Whether pregnancy is planned or not	64.880	5.174	1	0.023

Table 5: Logistic regression analysis for caseness in verbal abuse

Likelihood Ratio Tests

Effect	Model Fitting Criteria: -2 Log Likelihood of Reduced Model	Likelihood Ratio Tests: Chi-Square	df	p-value
Partner Education	59.095	7.229	2	.027
Fear of Partner	70.207	18.340	1	<.001
Employment status of Pregnant Woman	64.726	12.860	1	<.001
Whether pregnancy is planned or not	58.403	6.537	1	.011