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Characteristics of physical violence against pregnant women — analysis of medico-legal data and literature review

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Abstract

Pregnancy is a period which is especially sensitive to physical violence and its aftermath. Subjecting a pregnant woman to violence can have negative effects on both the mother as well as the child. In Poland, there are programs, such as the Blue Card, aimed at protection against violence, however the phenomenon is underestimated. Documentation covering forensic examinations carried out at the request of the police or privately at the Department of Forensic Medicine in Poznan in the years 2015–2020 was analyzed. Out of 7,689 cases, 22 were concluded to meet the criteria of violence against pregnant women. The cases were then further analyzed, consideration of the victim's age, professional status, relations with the perpetrator, form of physical violence, and medical assistance. The average age of the women at the time of the incident was 31.1 years. In 90.1% of the cases, the perpetrator was a known man, usually a current or former partner. The most common injuries were abrasions and bruises, while the most common locations of injuries were the head, neck, and arms. The most common forms of violence were grappling, kicking, and hitting with an open hand. Over 72% of the women sought medical attention after the incident. There is a need for educational

programs concerning the effects of violence during pregnancy and ways to help. Gynecologists and midwives play an especially important role, by having direct contact with the patient, thus being able to quickly identify victims of violence and take actions to secure safe environment for the woman and the child.
Keywords: pregnancy; physical violence; domestic violence; safety; prevalence

INTRODUCTION

Interpersonal violence is the use of one's advantage to harm another individual. Due to its form, it is divided into physical, mental, sexual, and economic [1]. Physical violence is a global phenomenon. Its particular subtypes are domestic violence (DV) and intimate partner violence (IPV) [2]. Conditions of unclear family and partnership relationships are also important factors influencing the possibility of domestic violence against pregnant women. This may include the abuse of alcohol or other psychoactive substances, addictions, previous history of violence, and low socioeconomic status, including poverty, or level of education [3]. Pregnant women are particularly sensitive to these forms of violence [4, 5]. Analyzes conducted around the world show that during their pregnancy, 1.2–66% of women experience violence (of various types) that is perpetrated by people they know and cohabit with, although there are also cases of violence committed by strangers [6–8]. Studies conducted in Poland have shown that almost 60% of women experience violence during pregnancy [9]. However, the data on those cases might be underestimated, due to victims' reluctance to report such violence, resulting from the fear of *e.g.* anger of their partner or abandonment. According to the report of the World Health Organization (WHO), the highest percentage of IPV during pregnancy is recorded in the countries of sub-Saharan Africa, South Asia, and Central America [10]. This phenomenon has a negative impact not only on the mother but also on the developing baby [6]. Among the most common complications in women experiencing physical violence during pregnancy are more frequent hospitalizations, intimate infections, vaginal bleeding, preterm birth, and low birth weight [11]. In addition, some maternal complications become more common, like postpartum depression and insufficient weight gain during pregnancy. In Poland, the basic protection tool is the Blue Card program, which provides multidisciplinary supervision of the endangered environment [12]. The key role, both in the Blue Card procedure and in the rapid response to an incident of violence, is played by the police [12]. After receiving and verifying a report, the police may refer the woman to a forensic examination. Such an examination is a special medical procedure to determine in detail the degree of injuries and to classify them according to the rules described

in the Penal Code [13]. Criminal law classifies crimes against health into three main categories, light, medium, and severe damage to one's health (Art. 157 §2, Art. 157 §1, Art. 156 respectively, Penal Code) [12, 14, 15]. Moreover, Polish law also protects the health of the developing fetus, which is specified in Article 157a of the Penal Code [15]. The provision mentions damage to the health of the unborn child (but does not specify its degree, so it applies to all such cases) and causing a life-threatening health disorder. Additional concepts are also exposure to the danger of death or serious damage to health and violation of personal inviolability (Art. 160, Art. 217 respectively, Penal Code) [14, 16]. Depending on the classification of the act, the severity of the punishment for the perpetrator also changes. Another important provision regarding crimes against pregnant women, especially by their immediate environment, including partners, is Article 207 of the Penal Code regarding maltreatment. It strictly concerns the use of physical or psychological violence against a person who has a permanent or temporary relationship with the perpetrator.

Objectives

The aim of the study was the case analysis of physical violence against pregnant women based on medico-legal data analysis with particular emphasis on socio-demographic factors, such as age or profession. Moreover, the analyzed material was compared with the data available in the literature on violence against pregnant women and its impact on the developing child.

MATERIAL AND METHODS

Anonymized medical documentation was analyzed, including descriptions of forensic examinations carried out at the Department of Forensic Medicine of the Poznan University of Medical Sciences in the years 2015–2020. The criterion for inclusion in the study was information concerning pregnancy, regardless of its duration. The exclusion criterion was the absence of pregnancy or unclear pregnancy status. Out of 7,689 tests carried out the period covered by the study, 22 cases of physical violence against pregnant women were found. In the next stage, the selected cases were assessed in terms of the victim's profile (age, occupation), perpetrator's profile (gender, relation to the victim), place of the event (Poznan or municipalities around it, a personal apartment or public space), characteristics of the incident (method used to inflict injuries, place and severity of injuries) qualifications (by Articles 156, 157, 217 of the Penal Code) and the received medical assistance (aid in the emergency department, hospitalization). During the forensic examination, the location and

type of injuries, as well as the matter of the case's qualification about the regulations are determined by the examining doctor. When it comes to the other data, like the way of inflicting injuries, the victim's occupation, the perpetrator's profile, and the medical assistance, the information was based on the examined person's testimony. The data obtained were analyzed using descriptive statistical methods. The study is a continuation of a project dedicated to researching and describing the phenomenon of violence in Poznań and neighboring municipalities in 2015–2020 [12].

The collected data was subjected to statistical analysis and the results were presented in a graphical form using MS Excel and R v. 4.0.2 programs.

RESULTS

Victim profile

The average age in the surveyed population of pregnant women who experienced physical violence was 31.3 years [standard deviation (SD) = 6.0; minimum = 19; maximum = 41]. The most common occupational group in the surveyed population was an office worker (4 people). Among the surveyed women, 5 were unemployed, and the professional status of 7 was not specified (Fig. 1).

Offender profile

The perpetrators were in 20 cases men (90.1%), in the remaining two cases the offender's gender was not specified. In 81.2% of the cases, the victim knew the perpetrator of violence. Often it was a former or current partner/husband (Fig. 2).

Characteristics of the incident

More incidents of violence against pregnant women were recorded in Poznan than in the surrounding areas. In addition, in 54.5% of the cases, acts of violence took place in the victim's place of residence (Fig. 3).

The most common type of injury found in the study population was a bruise, which occurred in 36.4% of the women. Second in terms of frequency of occurrence was skin abrasion (31.8%). A summary of all injuries found is presented in Figure 4. In addition, 31.8% of women reported more than one type of injury. No visible signs of violence were found in 7 subjects.

The areas of the body most exposed to injury were the arm (40.9%), head, and neck (36.4%), as well as the forearm with the hand (27.3%). In 40.9% of the subjects, injuries occurred in more than one location.

The most common ways of inflicting injuries were grappling and pushing (72.2%), kicking (36.4%), and striking with an open palm (27.3%). One case was classified as sexual violence. All the methods used to inflict injuries in the examined cases are presented in Figure 6. In 68.2% of the cases, the damage was dealt in more than one way.

Among the women included in the program, 72.7% sought medical help, in addition, two of them required hospitalization. Only 9% of injuries inflicted on pregnant women covered by the study were classified as resulting in health detriment lasting longer than 7 days in accordance with Article 157 PC, while 27.3% of incidents were classified as violations of personal integrity, under Article 217 PC. Other cases have been defined as resulting in a health detriment lasting no longer than 7 days, by Article 157 of the Penal Code. No fetal damage was noted in any of the cases, either in the physical examination or in the time around the event, confirmed by medical documentation.

Discussion

The analysis of data available from different countries shows that up to 28% of women experience physical violence during pregnancy [7, 8, 17–20]. Studies have shown that the most common forms of physical violence include grappling, kicking, punching, and slapping, which was also confirmed in this study population [17, 21]. In addition, the frequency and asperity of the violence show a relationship with the severity of its effects [22]. The more frequent and intense the acts of violence, the greater the likelihood of pregnancy complications [23]. However, the phenomenon of physical violence during pregnancy is significantly underestimated [24]. Of all pregnant women seeking help in ED, only 0.06% reported having been physically abused. The perpetrator is usually the victim's current partner or someone close to them, including family members, friends, and neighbors [6, 7]. The victims were usually young women, before the age of 35 [6, 17, 21]. Similar observations were made in the study population. In addition, incidents of violence were reported more commonly in lower-income or unemployed groups and urban areas [6, 7, 25]. Similar relations were also shown in the examined cases, where most incidents were recorded in groups with lower income, in Poznan, rather than in the surrounding areas [24]. The analogy between violence and lower wages is explained by the inability to escape from the offender, due to the lack of economic independence of the victim. In addition, studies show that a

higher proportion of violence against pregnant women occurs in less developed countries [7, 24]. One of the speculated explanations for the increased aggression from the partner, during pregnancy is the lowered interest in the partner, on the part of the woman, who begins to focus her attention on the child [7, 26]. Important factors, which increase the risk of violence during pregnancy are previous domestic violence and not living together [7, 24]. Another aspect is the physicians and healthcare professionals, who come into contact with pregnant patients, yet are unprepared or unwilling to screen the patients from physical violence. In the conducted research, only 5–15% of health professionals ask questions aimed at detecting violence, while collecting medical history [27, 28]. Among the most frequently provided reasons for omitting such inquiry were: difficulty in recognizing the victim, lack of appropriate guidelines, personal difficulty in taking up the sensitive topic, lack of awareness of the issue, lack of time, or presence of the partner during the visit [27]. Additionally, it was shown that physical violence is very often combined with sexual and psychological violence [21]. Studies conducted among women who were subjected to violence during pregnancy showed an almost two to three times increased risk of mental health problems, such as depression and post-traumatic stress disorder [6, 27, 29]. The direction of this relation requires more detailed research, it is not known whether depression is the result of violence or whether its earlier occurrence predisposes to exposure to violent situations [7]. The higher incidence of postpartum depression (PPD) in this group draws special attention due to the 28% increased risk of maternal suicide, as well as the risk of neglect and abuse by the mother towards the child [30]. In addition, risky sexual behavior and a tendency to use stimulants despite being pregnant [alcohol, cigarettes, psychoactive substances] were reported much more often than in populations where violence was not used [6, 24, 25]. Studies conducted among women reporting ED as a result of a battery showed a 9-fold increased risk of alcohol consumption and a 3-fold increased risk of drug use during pregnancy compared to the non-violent population [6]. Further research is required to clarify this correlation, whether stimulants are a way of coping with violence, or by influencing behavior they increase exposure to physical violence. Moreover, frequent risky sexual behavior further increases the danger of passing sexually transmitted diseases to the fetus [31]. Violence also affects the course of pregnancy and development in both direct and indirect ways [21, 32, 33]. In the direct mechanism, the injury may result in damage to the placenta, uterus, fetal membranes or directly to the fetus [34, 35]. Cases of death of a developing child during pregnancy as a result of physical violence have also been reported [17, 21, 23, 36]. Miscarriages and preterm births (PTB) were observed to be significantly more frequent in populations subjected to physical

violence [6, 21, 34, 37–39]. The risk of Miscarriages and preterm births is almost twice as high for women, who experience violence during their pregnancy [34]. Children whose mothers were subjected to physical violence during pregnancy were significantly more likely to end up in the intensive care unit [24, 40]. In addition, low birth weight (LBW) is almost twice as common [21, 22, 34]. A connection between violence in pregnancy and small-for-gestational-age (SGA) has also been demonstrated, although this relationship requires further research [34]. At the molecular level, stress in the mother caused by violence affects the child in a very complex way [22]. The chronic stress during pregnancy that accompanies victims of violence has been shown to cause premature activation of the maternal hypothalamic-pituitary-adrenal axis, resulting in increased release of cortisol by the placenta. As a result, the fetus releases prostaglandins, causing contractions of the uterus and ripening of the cervix [41]. A significant role is also played by the activation of the inflammatory response, in the mechanism, which causes the production of pro-inflammatory cytokines, which also leads to the production of prostaglandins by stimulating toll-like receptors [42]. Both mechanisms result in the premature onset of labor. In addition, the secretion of catecholamines and cortisol has a limiting effect on fetal development, which results in fetal growth restriction (FGR) and LBW [22]. Potentially inadequate prenatal care and poor nutrition play an important role in the pathomechanism of these disorders, which are noticed more often among pregnant patients, who experience IPV [22]. The impact of violence during pregnancy on the expression of genes in the child has also been described. Prenatal stress determines the process of DNA methylation, which translates into changes in gene expression and physiology of the child [43, 44]. For proper development in the prenatal period, a child requires specific amounts of nutrients that should be provided by the mother. Women subjected to violence during pregnancy, are prone to depressive disorders, therefore may neglect proper nutrition, which can result in deficiencies limiting the growth of the child [31]. The effects of stimulants on the developing body are also significant. An additional important element is the isolation of the mother and the neglect of proper medical control during pregnancy, which was observed in the population subjected to violence. Deterioration of maternal chronic disease control was also observed [22]. In addition, the long-term negative impact of violence inflicted during pregnancy on mother-child relations in the future and on the development of bonds between mother and child has been demonstrated [31]. This may result in a significant impact on the formation of the child's personality [31]. If the first episodes of violence took place during pregnancy, the child may be subconsciously associated with negative memories in the mother about the situation of violence, which translates into the relationship. In

addition, prenatal stress increases the risk of intellectual and concentration disorders in the child at subsequent stages of life [31].

CONCLUSIONS

Violence against pregnant women in Poland is an underestimated phenomenon. Victims are usually people in their 30s, usually unemployed or with unclear employment status. In most cases, the perpetrator is a man known by the victim at the time of committing the act. Social campaigns aimed at victims need to make them aware of their rights and tools to protect themselves from this type of violence. A relevant step forward is education about mechanisms of coping with difficult situations to prevent people from refraining to drinking alcohol or smoking cigarettes as a way of dealing with negative emotions. It is also important to introduce new prevention programs targeted specifically at women from risk groups. In this aspect, the education of gynecologists, midwives and other healthcare professionals who are in constant contact with pregnant women is particularly important. Moreover, it is imperative to develop standards of appropriate response in situations of potential violence against pregnant women. Identifying first signs of violence and providing professional intervention at the initial stages would curb the negative effects of long-term violence for both the mother and the child, thus giving time for professional assistance to take place. Based on the data obtained in the study, medical professionals in contact with pregnant women should pay attention to bruises and abrasions visible on the woman's body. They may be indicators of physical violence, especially when they are located on the head and upper limbs. Furthermore, an in-depth interview regarding sociodemographic conditions should be conducted. Since known perpetrators are most often women's partners, one should pay attention to who the potential victim lives with. It is also important to indicate possible preventive actions and, if there is a significant suspicion of violence, to initiate the Blue Card procedure. Patients should also be informed about their legal options for seeking help, e.g. through the police. Using the presented conclusions, law enforcement institutions should provide women with special protection during pregnancy and continue supervision also after delivery. It is essential to note that violence does not always have to be demonstrated in form of. recent injuries such as bruises or abrasions. Special protection should be extended to women who have already suffered violence, especially from a partner or immediate family, both during previous pregnancies and in the period preceding pregnancy. In these cases, special care over the course of pregnancy and psychological support are necessary. The presented data constitute one of the few reports describing violence against pregnant women in Poland from an

epidemiological perspective Moreover, there is a lack of data describing various physical forms of violence. Further research is needed to clarify the direction of the relationship between violence during pregnancy and substance use, as well as mental health issues.

Article information and declarations

Data availability statement

All data supporting reported results can be found in the archive of the Forensic Medicine Department of Poznan University of Medical Sciences.

Ethics statement

Approval of the bioethics committee is not required, since the study was conducted on pre-randomized forensic medical examination protocols.

Author contributions

Conceptualization — B.B., and S.R.; methodology, K.D.-K.; validation — B.B., S.R., K.D.-K.; formal analysis, D.S.; investigation — S.R., K.D.-K.; resources — P.H.Z.A; writing — original draft preparation — S.R., K.D.-K., D.S., A.B., P.H., Z.A..; writing — review and editing — S.R., D.S., K.D.-K., B.B.; visualization — D.S.; supervision — B.B., C.Ż.R.M; project administration — C.Ż.; funding acquisition — S.R., C.Ż, R.M..

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Conflict of interest

The authors declare no conflict of interest.

Supplementary material

None.

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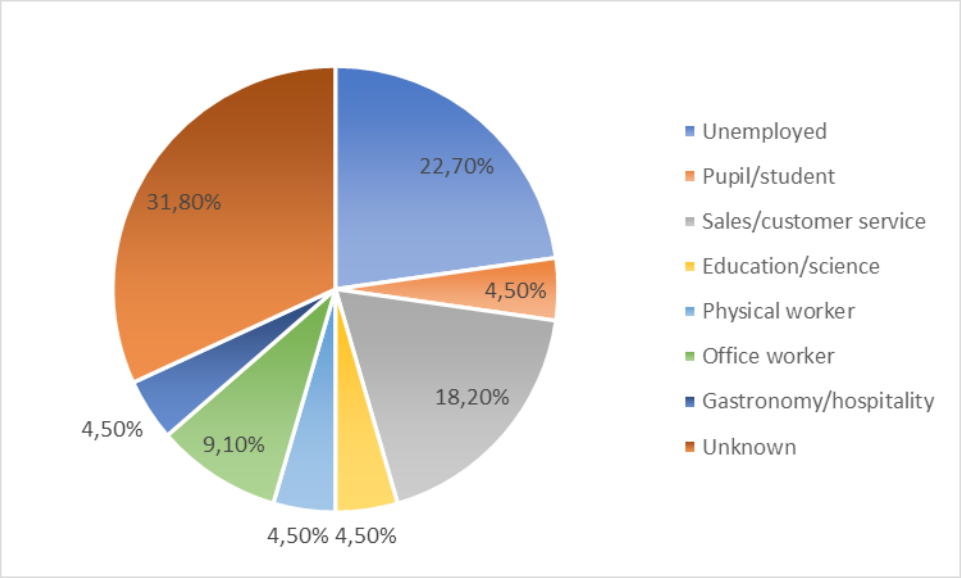

Figure 1. Professional status of the victims

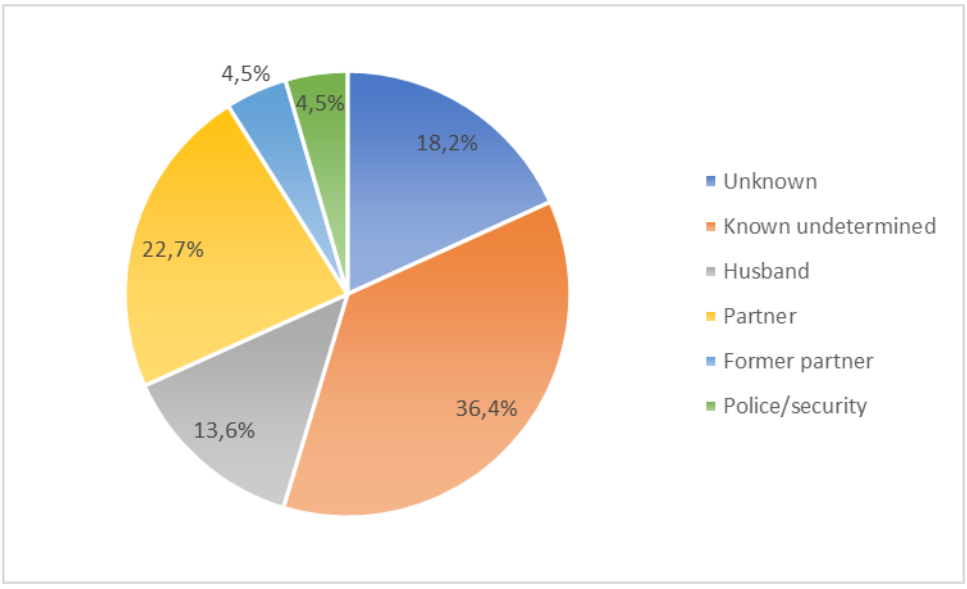

Figure 2. Relation between the victim and the offender

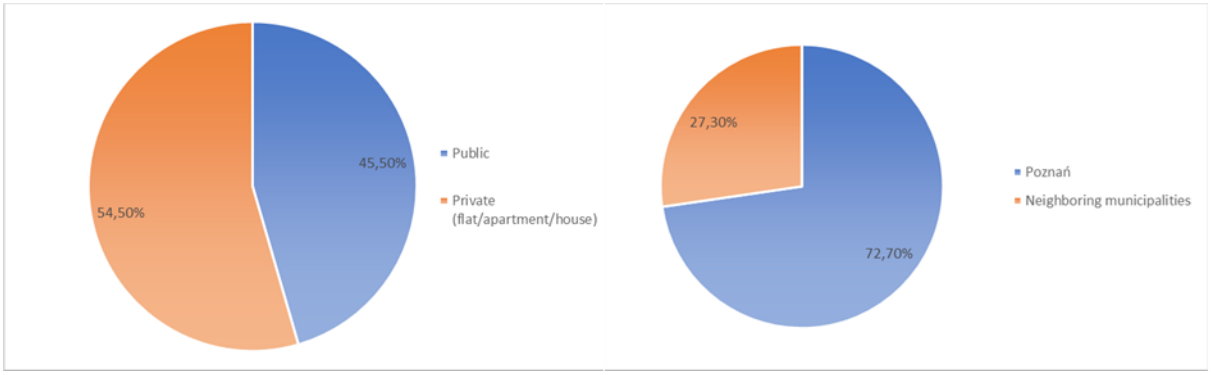

Figure 3. Location of the violence against pregnant women incidents

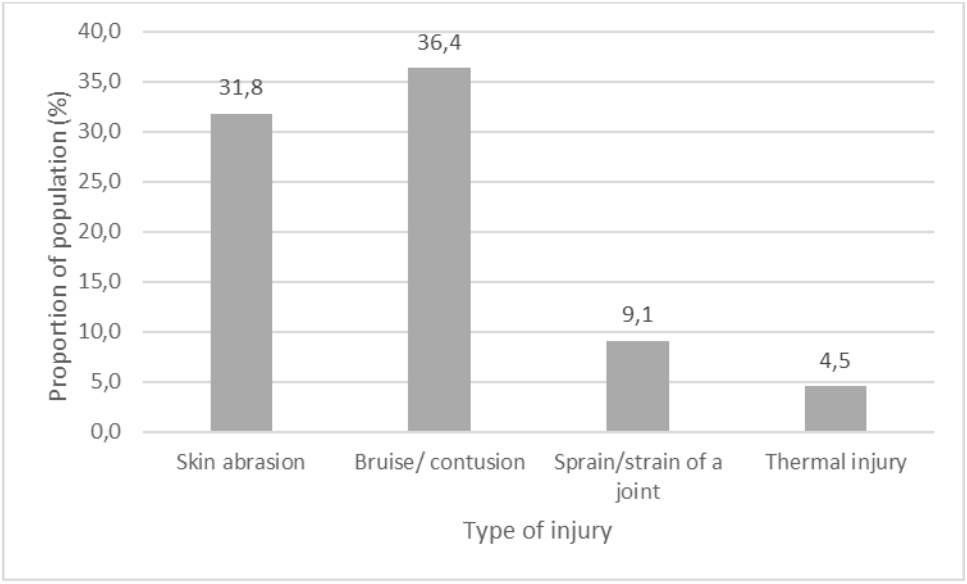

Figure 4. Frequency of occurrence of different types of injuries

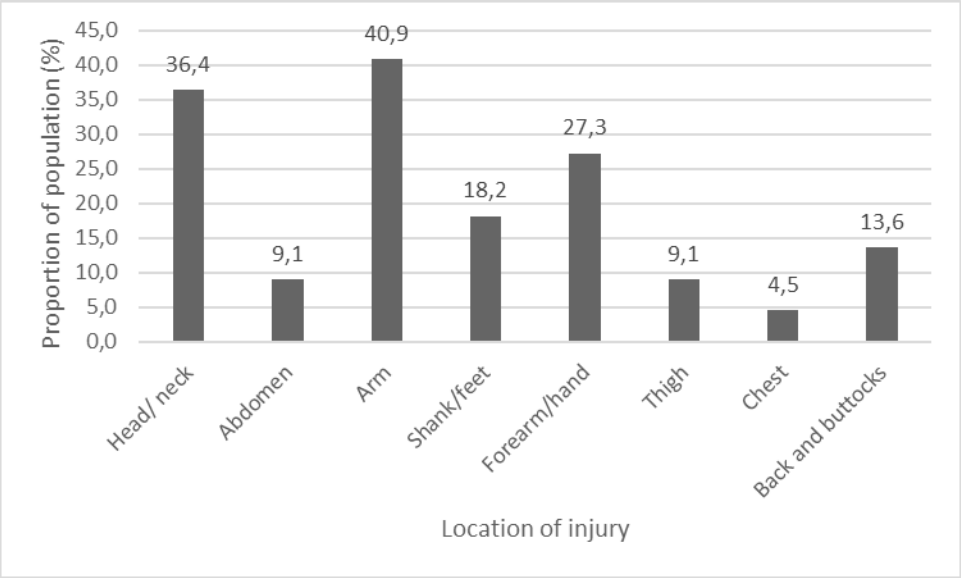

Figure 5. The most common locations of injuries

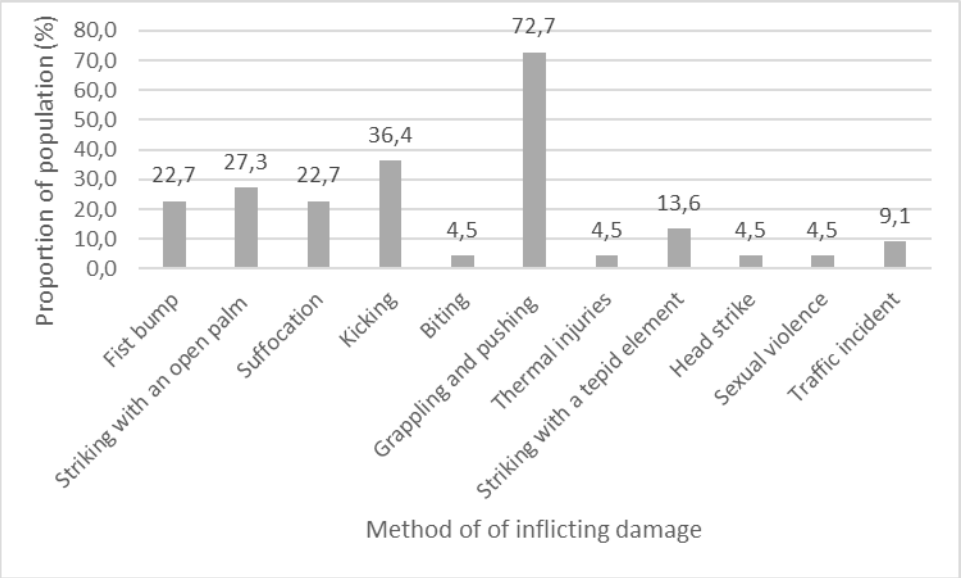

Figure 6. Most common methods of inflicting damage