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Prevalence of Violence Against Women and Children in Laghouat Forensic Unit

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We dedicate this work:

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Your Beloved Daughters

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Abbreviations List

- **ACEs:** Adverse Childhood Experiences
- **ARF:** Acute Rheumatic Fever
- **CDC:** Centers for Disease Control and Prevention (USA)
- **CEDAW:** Convention on the Elimination of All Forms of Discrimination against Women
- **CI :** Confidence Interval
- **CPSS-5:** Child PTSD Symptom Scale for DSM-5
- **EPH :** Établissement Public Hospitalier (Public Hospital Establishment)
- **FGM :** Female Genital Mutilation
- **HIV/AIDS:** Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
- **HBV :** Hepatitis B Virus
- **HCV:** Hepatitis C Virus
- **ICT :** Information and Communication Technology
- **ILO :** International Labour Organization
- **IPV :** Intimate Partner Violence
- **ISPCAN:** International Society for the Prevention of Child Abuse and Neglect
- **LMICs:** Low- and Middle-Income Countries
- **MENA:** Middle East and North Africa
- **OR :** Odds Ratio
- **PCL-5:** PTSD Checklist for DSM-5
- **PTSD :** Post-Traumatic Stress Disorder
- **SBS :** Shaken Baby Syndrome
- **SD :** Standard Deviation
- **SEM :** Social Ecological Model
- **SES:** Socioeconomic Status
- **STIs:** Sexually Transmitted Infections
- **TIW:** Total Incapacity for Work
- **TPHA-VDRL:** Treponema Pallidum Hemagglutination Assay / Venereal Disease Research Laboratory test (for syphilis)
- **UN :** United Nations
- **UNCRC:** United Nations Convention on the Rights of the Child
- **UNDP :** United Nations Development Programme
- **UNESCO:** United Nations Educational, Scientific and Cultural Organization
- **UNFPA:** United Nations Population Fund
- **UNICEF:** United Nations Children's Fund
- **VAW :** Violence Against Women
- **VAC :** Violence Against Children
- **VAWC:** Violence Against Women and Children
- **VIF :** Variance Inflation Factor
- **WHO :** World Health Organization

I. INTRODUCTION

Violence has always been a part of human life. This ancient feature is confirmed by archaeological evidence showing the existence of interpersonal and group conflict dating back to our earliest ancestors (1). It has been, and continues to be, a major cause of death and various injuries.

While research shows a significant decline in certain forms of violence, particularly homicide, due to the civilizing process(2,3), violence against women and children remains largely underestimated, often obscured by patriarchal norms. (4). However, this invisibility began to be forcefully challenged in the latter half of the 20th century, thanks to social movements—particularly feminist advocacy—demanding recognition of domestic and sexual violence(5), along with pivotal medical developments such as the identification of "battered-child syndrome"(6). During this time, the actual magnitude of violence against women and children (VAWC) came to light. Simultaneously, studies began documenting its severe health implications, most notably proven by the ACE (Adverse Childhood Experiences) study, which connected childhood adversity with adult health outcomes (7). This expanding collection of scientific data prompted the 49th World Health Assembly in 1996 to proclaim violence a serious public health issue that required immediate attention.

This declaration was followed by the WHO's 2002 report, which established the foundations for addressing this problem. The World Health Organization (WHO) defines violence as "the intentional use of physical force or power—whether threatened or actual—against oneself, others, or a community, resulting in or having a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation."(8) This definition is based on intentionality, regardless of the consequences, and excludes unintentional injuries. It encompasses physical, sexual, and psychological abuse, as well as neglect and self-harm, while omitting incidents like traffic injuries. (8)Violence can be classified into three main categories based on the perpetrator: self-directed violence, which includes suicide and self-harm; interpersonal violence, divided into family and intimate partner violence occurring in domestic settings and community violence involving unrelated individuals in public spaces; and collective violence, which encompasses social, economic, and political forms. (4,8)

In today's world, no one is entirely immune to violence, making it a global challenge that requires continuous efforts to prevent and address. However, violence becomes even more alarming when it targets vulnerable populations, particularly women and children, who remain at higher risk due to their susceptibility. (9) Studies indicate that one in three women worldwide experiences violence at least once in their lifetime, including intimate partner physical violence or non-partner sexual violence(10), This poses a serious threat to women's equality, safety, and basic liberties(11), undermining their physical, economic and psychological well-being, often leading to mental health disorders, and various medical issues, including chronic diseases and gynecological complications(12). In contrast, an estimated one billion children aged 2 to 17 are victims of violence, meaning nearly one in two children is affected each

year. (13) This demonstrates the widespread occurrence of violence and its profound impact on children's health, ranging from mental illnesses to injuries, disabilities, and high-risk behaviors such as alcohol and drug abuse(14).

This major global public health issue impacts societies worldwide regardless of age, social class, education, income, religion, ethnicity, or culture. (11) the situation in the Middle East and North Africa (MENA) region presents unique challenges as women face a higher risk due to limited educational, economic, and social opportunities, reinforced by patriarchal values that confine them to domestic roles(11), Reports indicate that the lifetime prevalence of domestic violence varies significantly, ranging from 89.3% in Turkey to 35% in Lebanon, with physical violence being the most dominant form.(11) Furthermore, over 106 million children aged 2 to 14 in MENA—more than 80%—are subjected to violent discipline at home, including 87 million who face physical punishment. Nearly 12 million adolescents aged 13 to 15 (around 50%) experience bullying at school, yet only one in four caregivers consider physical punishment necessary(15). Despite increasing awareness globally, the phenomenon continues to be underreported and insufficiently addressed, especially in regions where traditional norms, social stigma, and limited institutional reporting systems prevail(16).

II. RESEARCH PROBLEM:

In recent years, violence against women and children (VAWC) has become a prominent issue in Algeria, leading to important policy changes. Notably, amendments to the Penal Code under Law No. 15-19 of 2015 made various types of violence against women, including domestic violence, illegal(17). Likewise, Law No. 15-12, enacted on July 15, 2015, established a thorough framework designed to protect children's rights and welfare. (18) These legislative initiatives demonstrate Algeria's commitment to aligning with international agreements and efforts to address violence against women and children.

However, VAWC remains a significantly under-explored and overlooked issue in southern Algeria, especially in Laghouat. Established patriarchal norms and strict gender roles contribute to considerable underreporting (19), leading to a lack of data specific to the region, which limits the recognition of the issue. This, in turn, makes it difficult to accurately assess the prevalence of violence and to create effective, focused interventions. Victims also face fear of shame, social isolation, or revenge, which reinforces a culture of silence around abuse. (20) In addition, Inadequate access to specialized services—such as psychosocial support, legal aid, and safe shelters—further constrains the ability of survivors to seek help.

In this context, doctors play an important role as first responders. They are typically the initial professionals to deal with victims and can help in detecting signs of abuse, delivering medical and psychological treatment, documenting injuries for legal purposes, and referring patients to appropriate protective and social services. (21) Their active intervention is central to breaking the silence cycle and making care accessible. (21) It is therefore important that physicians do not normalize such incidents

when they encounter them, but are completely vigilant to the severity of violence against children and women as a serious public health issue demanding active and compassionate intervention.

This study aims to provide a descriptive analysis of cases presented to the forensic medicine department at Hmida Ben Adjila Hospital in Laghouat, highlighting the extent of the problem and the characteristics of both victims and perpetrators.

The primary research question guiding this study is:

"What is the prevalence and profile of violence against women and children based on cases consulting the forensic medicine department at Hmida Ben Adjila Hospital in Laghouat?"

To support this investigation, the study aims to explore the following secondary research questions:

1. What are the common sociodemographic characteristics of the victims and perpetrators of the assault?
2. What are the circumstances surrounding the assault?
3. What are the medical and psychological consequences of the violence, with an emphasis on post-traumatic stress disorder (PTSD)?

III. OBJECTIVES

1. Principal Objective

To determine the prevalence of women and children victims of interpersonal violence among cases consulting the forensic medicine department at Hmida Ben Adjila Hospital in Laghouat, during a four-month period.

2. Secondary Objectives

- **To identify the sociodemographic characteristics** of both victims and perpetrators of the assault.
- **To analyze the circumstances of the reported violence**.
- **To assess the medical and psychological consequences of violence**, with a particular focus on **post-traumatic stress disorder (PTSD) symptoms**.

IV. LITERATURE REVIEW

1 Epidemiological Data

Globally, violence against women (VAW) is a prevalent issue, experienced by an estimated one in three women at some point in their life time, with 27% of ever-partnered women aged 15-49 years having experienced intimate partner violence (IPV) by 2018(22,23) .Non-partner sexual violence also impacts millions, with a total of 6% of women worldwide reported experiencing it in their lifetime (24), and the magnitude of VAW is not equal across countries (25). The MENA region also carries a heavy burden; the WHO Eastern Mediterranean Region, encompassing many MENA countries, shows a lifetime IPV prevalence rate of approximately 31% among women aged between 15-49 years, higher than global prevalence. Regional studies indicate high prevalence of all forms of VAW in MENA, including physical, sexual, and psychological (22). In Algeria, although national data are limited, a significant national survey conducted in 2005 by the Institut National de Santé Publique (INSP), which included 9,033 female victims of violence, revealed alarming trends. The survey found that violence against women was most commonly perpetrated within the family environment, with 64.9% of assaults occurring at home and close to 50% of married or formerly married women reporting their spouse or ex-spouse as the perpetrator. Furthermore, one in ten women living with a husband or partner reported being subjected “often” or “daily” to physical abuse—such as beatings, confinement, or expulsion from the home—within the 12 months prior to the survey. Another 31.4% of women reported being regularly exposed to threats of physical or emotional violence during the same period(26). These findings highlight the traditionally hidden nature of VAW and widespread underreporting on grounds of social stigma as well as other barriers, meaning existing localized studies or reported case statistics do not provide a complete national picture, hindering precise quantification of VAW's overall extent across Algeria.

Violence against children (VAC) is a public health issue, affecting enormous numbers, with the WHO estimating 40 million children under 15 victims annually in 2014, and nearly three out of four aged 2-4 being subjected to regular caregiver abuse by 2020 (14). Lifetime prevalence among children (up to 19) is estimated to be 11.4% for sexual harassment, 8.7% for contact sexual violence, and 6.1% for forced sexual intercourse (27). Physical domestic violence in childhood is also common, with approximately 17.3% victims and 16.5% witnesses globally (28), but official data massively underestimates the true prevalence (29). The rate of exposure to domestic household violence in West Asia and Africa is very high with the pooled estimated prevalence being 42.8% victims and 38.3% witnesses (28). Regional rates can exceed global averages, with significant scale within specific countries: 76.2% of young people exposed to violence by age 18 in Tunisia (30), child maltreatment at 42% in Saudi Arabia (31), child physical abuse at 43.591% in Iran (32), and in Jordan, 74.6% children aged 8-17 years reported exposure

to physical violence and 73.9% caregivers used violent discipline (33). School bullying is similarly a serious regional problem, with more than 50% rates among 13-15-year-old teenagers in some countries(34). VAC similarly remains a significant problem in Algeria; a study found 30% physical and 25% emotional domestic violence prevalence among children aged 6-18 (35). Algeria has high rates of school bullying in teenagers. As a country in the broader MENA region, Algerian children are likely exposed to high rates of violent discipline within the home (28,34).

2 Violence Against Women

2.1 Definition of violence against women (VAW)

A widely accepted definition comes from the United Nations Declaration on the Elimination of Violence against Women (1993), which states that VAW is:

"Any act of gender-based violence that results in, or is likely to result in, physical, sexual, or psychological harm or suffering to women, including threats of such acts, coercion, or arbitrary deprivation of liberty, whether occurring in public or private life".(36)

The World Health Organization emphasizes that violence against women is a violation of human rights, a significant public health issue, and a barrier to gender equality. It can occur in various settings, such as within intimate relationships, workplaces, and during armed conflicts. .(36)

2.2 Intimate partner violence (IPV)

The World Health Organization (WHO) defines IPV as any abusive behavior that results in physical, sexual, or psychological harm to individuals in a close (intimate) relationship, whether it is a current or past marriage, domestic partnership, or romantic relationship (dating). It includes physical aggression, psychological abuse, controlling behaviors, and sexual coercion. IPV is the most widespread form of violence against women, affecting millions worldwide and impacting their well-being, safety, and independence(37).

The Centers for Disease Control and Prevention (CDC) in the United States offers a similar definition, describing intimate partner violence as physical, sexual, and/or emotional violence, abuse, or threats used by people in close contact, including existing or ex-husbands or extramarital partners(38).

An intimate partner is a broad term that can encompass a spouse, cohabiting partner, boyfriend, lover, ex-partner, or the father of a woman's child. The definition varies across cultures and studies, including both formal relationships like marriage and informal ones such as dating or cohabitation (12,39,40).

2.3 Forms of violence

Violence is a highly complex phenomenon that comes in multiple forms and contexts profoundly affecting women's dignity and overall well-being. These forms of violence include physical, sexual, psychological/emotional, economic, and social abuse. It is necessary to be aware of all these various manifestations for identification and resolution of the issue.

2.3.1 Physical Violence

Physical violence is one of the most frequently recognized forms of violence against women, often resulting in visible injuries and severe health consequences. It is also most commonly associated with other types of abuse(41). Physical violence, in the context of violence against women, refers to any intentional actions involving the use of physical force that results, or is intended to result, in physical injury (41,42).This may range from less severe acts such as slapping, pushing, shoving, hitting (with a fist or object), kicking, dragging, or beating, to more severe forms including choking, burning intentionally, and the use or threat of weapons like firearms or knives. Any physical contact that is meant to cause injury or exert control, whether or not visible harm occurs, constitutes physical violence (23,43).

2.3.2 Sexual violence :

Sexual violence is a serious violation of a woman's basic rights and autonomy, resulting in severe physical and psychological consequences. The World Health Organization (WHO) defines sexual violence as:

"Any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic or otherwise directed against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to home and work" (44).

This definition encompasses a broad range of abusive behaviors. Specific acts include unwanted touching, sexual harassment, intimidation, and forced marriage, trafficking for sexual exploitation, sexual abuse, sexual assault, and rape. Rape, a particularly severe manifestation of sexual violence, is specifically defined as "physically forced or otherwise coerced penetration—even if slight— of the vulva or anus, using a penis, other body parts or an object; the attempt to do so is known as attempted rape"(8).

2.3.3 Psychological and Emotional Violence

Violence against women is not limited to physical or sexual acts; women can also experience significant non-physical forms of violence, like psychological and emotional abuse that can be equally devastating and require careful consideration(12,38). These forms are particularly insidious due to their often hidden nature and the difficulty in recognizing and documenting their effects compared to visible physical injuries. Psychological violence involves behaviors intended to undermine a victim's sense of reality, logic, and reasoning, leading them to doubt their mental stability (38). This can be seen through nonverbal threats (e.g., shaking fingers, aggressive gestures), verbal threats (e.g., screaming, cursing, explicit threats of harm), manipulative "mind games," and controlling the victim's autonomy by isolating them from support groups like friends, family, school, or work (45). Emotional violence targets a victim's self-esteem and sense of self-worth through actions or words that attempt to diminish their value, often in the form of constant criticism, name-calling, insults, and public humiliation (38).

2.3.4 Economic Violence

Economic violence is a form of control that undermines a woman's financial independence and security by restricting her access to resources and opportunities. This abuse has a tendency to make an individual financially dependent, thereby reinforcing the perpetrator's power (42). Economic violence typically comes in three general forms: economic control, employment sabotage, and economic exploitation. Economic control involves the perpetrator restricting the victim's access to financial resources and preventing them from making their own financial decisions, thus creating a state of dependency. Employment sabotage involves behaviors intended to prevent the victim from working, finding employment, or advancing in their work career by threatening, intimidating, or unduly dominating their time and activities. Economic exploitation is when the perpetrator intentionally sabotages the victim's economy by stealing from them, misusing their credit without their consent, refusing to contribute to indispensable household expenses, forcing them to work without compensation, or assuming control of their finances (12).

2.3.5 Social Violence

Social violence involves restraint of a woman's ability to interact with her social network, e.g., family, friends, and service providers, or limiting her from social interaction and participation in social activities (46). This form of violence is designed to isolate the victim through threat, use of force, or manipulation, reducing her support systems and making her more dependent to the perpetrator(38).

These various forms of violence against women—physical, sexual, psychological, economic, and social—often occur together and collectively inflict profound harm; their manifestation is shaped by a complex interplay of factors operating at individual, relational, community, and societal levels, addressed in the next section on risk factors.

2.4 Understanding Factors Influencing Violence Against Women

To better understand the factors involved in violence against women (VAW), we rely on a structured approach called the Social Ecological Model (SEM).

2.4.1 The Social Ecological Model (SEM)

The Social Ecological Model is one of the most commonly used frameworks that provides a theoretical foundation for analyzing how individuals interact with their environment and how these interactions shape both the risk and protective factors for violence. By examining these factors across four interconnected levels—individual, relationship, community, and societal—the model helps to understand the complex interplay between these factors and explain the complex dynamics that contribute to both the perpetration and prevention of violence. Understanding these multi-level factors is essential for developing effective prevention and intervention strategies. According to the WHO (2010) framework, these four levels of influence are (47) :

Individual level (Innermost Circle): This level encompasses an individual's biological and personal history (either related to victims or perpetrators).

Relationship Level (Second Circle) includes interactions with intimate partners, family members, and close friends, as well as factors relating to marriage and conflict within the family

The community level (Third Circle): relates to settings such as schools, workplaces, neighborhoods, and local institutions

Societal Level (Outermost Circle): risk factors relating to the cultural norms, socioeconomic inequality, laws, and policies(47).

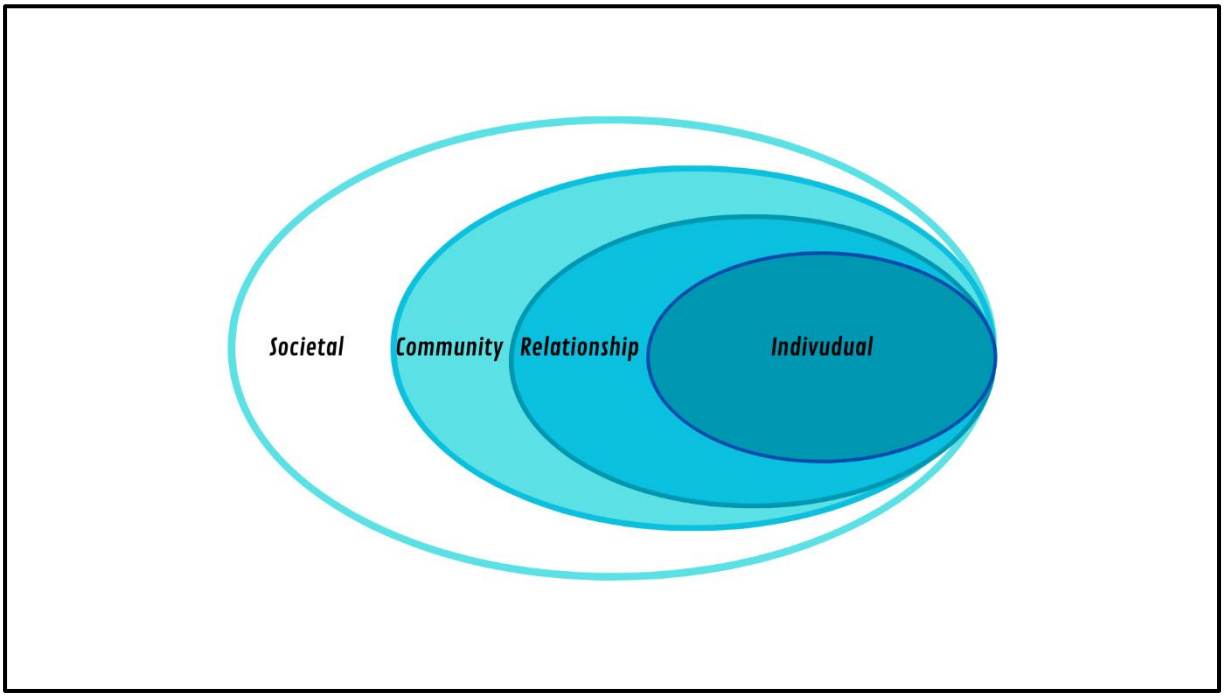

Figure 1. The Social-Ecological Model of Violence Prevention.

Note. Adapted from Krug EG et al., eds. World report on violence and health. Geneva, World Health Organization, 2002.(8)

2.4.2 Risk Factors for Violence Against Women (Organized by SEM)

Applying the SEM framework to violence against women reveals specific risk factors associated with each level of influence:

A. Individual Level Factors

For Victims: The risk of violence against women is influenced by a combination of socio-demographic factors, including personal history, social conditions, and economic circumstances. Most studies report that younger age, marital status, marrying at a young age, the number of children, and lower socioeconomic status increase vulnerability to violence (11,47). Additionally, A history of experiencing or witnessing violence in childhood can normalize violent patterns and heighten the risk of future victimization (47,48). Education is another critical factor, as women with lower levels of education are more likely to face violence, as highlighted by studies such as the Violence Against Women in Turkey (SEM) (49,48).

For Perpetrators: Perpetrators of violence often share common individual risk factors that contribute to their actions. Research shows that individuals who were abused or witnessed violence during childhood are more likely to become perpetrators themselves, repeating these patterns in adulthood and perpetuating cycles of abuse(48). Substance use, whether alcohol, drugs, or tobacco, is another significant factor, as it can impair judgment and increase aggression(47,48). Economic instability, including poverty and unemployment, further heightens the risk, as financial stress and insecurity can contribute to violent behaviors(47). Additionally, a history of psychiatric conditions and mental disorders has been linked to a higher likelihood of perpetrating violence, especially in the absence of proper diagnosis and treatment (47)

B. Relationship Level Factors

Male dominance within the family is a major factor in violence against women, as men often control decision-making, limiting women's autonomy and reinforcing power imbalances (47,50). This unequal dynamic can create tension in relationships, leading to marital conflict, where jealousy, separation, divorce, and poor communication skills can further increase the risk of violence (47,50,51). Economic control also plays a key role, as abusers often control income, wealth, and property, making women financially dependent and unable to leave abusive situations (51). The lack of financial independence, combined with social isolation and limited family support, leaves women with few options for seeking help or escaping violence(52).

C. Community Level Factors

Communities characterized by widespread poverty, high male unemployment, and limited job opportunities, can create socioeconomic stress that exacerbates the risk of violence within homes (47,53).living in areas with high-crime rates may also increase IPV victimization, as violence in this environment can make abusive behavior seem more accepted or normalized (53,54). Harmful Social

and cultural norms play a major role as well; for example, treating domestic violence as a private matter discourages victims from seeking help. Gender discrimination and victim-blaming within the community can further isolate women and make it harder to escape abuse due to fear of judgment or lack of support (36,53,55,56). Women in rural areas often face additional community-level challenges, including geographical isolation and limited access to support systems or services, making it more difficult to leave abusive relationships (51).

D. Societal Level Factors

Several societal factors contribute to the acceptance of violence against women (VAW). In some cultures, violence is seen as a legitimate way to resolve conflicts, reinforcing its use in relationships and families(47). Rigid traditional gender roles and expectations for men and women often lead to harmful attitudes, such as justifying wife-beating or restrictions on women's independence(47,53). A weak legal system, characterized by the absence or poor enforcement of laws against VAW, allows abuse to persist without adequate consequences. discriminatory laws related to marriage, divorce, child custody, and property ownership further limit women's rights and ability to escape abusive situations(53). Additionally, Limited access to education and employment opportunities increases women's economic dependence on their partners, making them more vulnerable to violence. Without financial independence or alternative resources, many women find it difficult to escape abusive relationships, perpetuating cycles of victimization (53).

2.4.3 Protective Factors against Violence Against Women (Organized by SEM)

A. Individual Level Protective Factors

For victims, significant protective elements include being older (57), growing up in a nonviolent environment(49,53), and a higher level of education (52), which empowers women and enhances their access to resources. Additional protective characteristics encompass resilience, confidence, good physical health, and the absence of alcohol misuse or experiences of childhood trauma or abuse(49,58,59).

For perpetrators, a higher educational level in men is associated with a reduced likelihood of violence (54).

B. Relationship Level Protective Factors

These factors consist of high-quality relationships(58), more balanced power dynamics, proficient relationship skills, and elevated satisfaction levels(49,59,60). Consensual marriages and the absence of partners with multiple relationships also provide protection (49). Strong social support from family and networks acts as a crucial factor(49,58,59). Ultimately, relationships founded on gender equality, nonviolence, and the empowerment of women encourage healthier and more respectful partnerships(56).

C. Community Level Protective Factors

Community-level protective factors include aspects of the local environment that reduce the risk of VAW. Crucially, these involve the presence and accessibility of local support services such as domestic violence shelters, counseling services, legal aid, and healthcare facilities(49,58,60). Strong community social networks and cohesion provide vital informal support, where neighbors look out for one another(49,58). Community norms that explicitly condemn violence and support gender equality are also protective. Safe neighborhoods and economic stability, and opportunity within the community also reduce vulnerability and risk (49,60)

D. Societal Level Protective Factors

Societal-level protective factors are broader structural, cultural, and policy elements that reduce the overall incidence of VAW. Laws and policies that support gender equality (e.g., in marriage, divorce, inheritance), improve women's access to formal employment and economic resources, and effectively prohibit and address violence against women are fundamental protective factors (53). Societal norms and cultural values that strongly condemn violence against women and promote gender equality at a fundamental level create a less permissive environment for abuse. Equitable access to quality education for women at the societal level empowers women and serves as a protective factor (51).

2.5 Consequences of Violence against Women

Violence against women inflicts a wide range of severe consequences, extending into every aspect of victims' lives. These consequences can be immediate or long-lasting, affecting physical health, psychological well-being, sexual and reproductive health, economic and social stability.

2.5.1 Physical Consequences

Violence against women can have either short-term or long-term effects on physical health. In the short-term, victims end up with injuries ranging from minor (cuts, bruises, abrasions, soft tissue injuries and muscle aches) to serious (sprains, dislocations, burns and eye or ear injuries) and even severe (deep wounds, fractures, internal trauma and traumatic brain injury). Research has shown that among the most frequent sites of injury in VAW victims are the head, face, chest, and abdomen (61). Violence in the extreme has the capability to cause permanent disability or even death (37,62). Apart from acute trauma, survivors are also more likely to experience somatization, leading to chronic physical symptoms like headaches and chronic pain (63,64). Addressing these physical consequences requires urgent medical care, including instant treatment of injuries and access to social services to ensure their safety and recovery (65).

2.5.2 Psychological and Mental Health Consequences

Violence against women (VAW) and Intimate partner violence (IPV) are significant public health concern that can have severe psychological and mental health consequences. Exposure to abuse is a major risk factor for developing mental health disorders. Women who have experienced VAW and IPV are twice as likely to suffer from conditions such as depression, anxiety, sleep and eating disorders (9,37). A particularly prevalent and severe consequence is Post-Traumatic Stress Disorder (PTSD), with a high rate of diagnosis among survivors of violence (66). These experiences also increase the risk for alcohol, tobacco, and drug use disorders, in addition to serious outcomes like suicidal thoughts and attempts (9,37). A psychological and emotional abuse specifically targets a women's self-worth and mental stability ,often resulting in low self-esteem, difficulty in concentrating, social isolation, and challenges in performing daily tasks or taking care for oneself and one's family (11). Dealing with these impacts requires comprehensive psychological support and mental health services (65).

2.5.3 Sexual and Reproductive Health Consequences

Violence against women, especially sexual violence and IPV, has a significant impact on the sexual and reproductive health of women and their physical well-being. Victims of such violence are at a higher risk of gynecological disorders and sexually transmitted infections (STIs), including HIV infection (37).It can also contribute to unwanted pregnancies and unsafe abortions, compromising their health (9). Additionally, exposure to violence during pregnancy is associated with various obstetric outcomes such as increased risk of miscarriage, premature birth, low birth weight, preeclampsia, and fetal or neonatal mortality with potentially serious implications for both mother and the baby (67).

2.5.4 Long-Term and Chronic Health Consequences

The chronic stress and physical injuries resulting from violence have the potential to lead to a range of chronic and long-lasting health problems. Abused women are significantly more likely than other women to report a range of chronic illnesses, for example, chronic pain syndromes such as chronic pelvic pain, back pain, abdominal pain and persistent headaches or migraines, as well as memory loss(68). Violence can also increase the risk of cardiovascular diseases, including hypertension and stroke; respiratory conditions like asthma, and may lead to chronic gastrointestinal disorders, such as irritable bowel syndrome (23,63). In addition, research indicates that prolonged or severe exposure to stress can affect the endocrine and immune systems in a way that the body becomes vulnerable to cancer and viral infections, and contributing to metabolic disorders such as diabetes and obesity, as well as autoimmune diseases like arthritis and dermatological disorders (23,69). These findings highlight the tremendous impact of violence on the health of a woman's overall health.

2.5.5 Economic and Social Consequences

Violence against women and IPV has severe economic and social consequences, impacting victims, their families, and society in general. Studies have shown that one of the most considerable outcomes of economic abuse is that it creates financial dependence on the perpetrator, and it is one of the significant barriers preventing women from leaving the abusive relationships and escaping violence(12,38). Economic abuse and particularly employment sabotage can undermine a victim's ability to secure and maintain stable job, often leading to difficulties with focusing and executing job tasks effectively(38). This type of violence has serious public health implications, as it undermines women's autonomy and threatens her financial security, contributing to mental health disorders such as anxiety, depression and low self-esteem(12,38). Financial stress and poverty can also result in both psychological and physical health problems, including an increased risk of cardiovascular disease and overall poor health.(12)

3 Violence Against Children

3.1 Definitions

Defining child abuse or maltreatment has always been challenging due to the wide variability of social, cultural, and ethnic norms. Violence against children refers to any act of harm targeting individuals under the age of 18, whether the abuse is committed by parents, caregivers, peers, or strangers.(14) it is defined by the WHO Consultation on Child Abuse Prevention as "all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power"(70). This definition includes both deliberate actions (known as acts of commission), such as physical assault, sexual abuse, psychological aggression, and exploitation, *as well as* neglect, resulting from acts of omission where a child's essential physical and emotional needs are not adequately met.(71) It also includes any form of physical or mental violence, injury, abuse, or exploitation, including sexual abuse, that occurs while the child is under the care of a parent, legal guardian, or any other responsible individual.(72)

On the other hand, Algerian law defines a child in danger through a general framework that encompasses all situations that may cause harm to children, including abuse.

Children are considered to be at risk when their health, morality, education, or safety is in danger or likely to be compromised. Risk is also present when a child's living conditions, behavior, or surroundings expose them to potential harm or jeopardize their future development, whether physically, psychologically, or educationally. Situations that constitute such maltreatment include:

- Exposure to acts of torture,
- Physical abuse or harm,
- Unlawful confinement or deprivation of liberty,
- Denial or restriction of food and basic needs,
- Any act of brutality that may disrupt the child's emotional or psychological stability,
- Sexual exploitation in any form,
- Harmful economic exploitation that affects the child's health, access to education, or moral development.(18)

3.2 Types of Interpersonal Violence based on Perpetrator-Child Relationship

In order to enhance the understanding of the various types of interpersonal violence against children, a classification was applied based on the nature of the relationship between the child and the perpetrator.

3.2.1 Family and Caregiver Maltreatment:

It is generally perpetrated by Parents whether biological, step, or adoptive, guardians, siblings, and other relatives living within or closely connected to the household. Younger children, given their dependence on adult caregivers and minimal social engagement beyond the home, are especially susceptible to

victimization by primary caregivers and other family members.(73,74) It is the *most* common context for child maltreatment globally.(14)

This category encompasses the following types:

A. Physical Abuse:

it is defined as intentional acts by a caregiver that cause, or could potentially cause, physical harm to a child.(71) It may occur through acts such as hitting, kicking, shaking, beating, biting, burning, strangulation, poisoning, or suffocation. The WHO classifies the consequences of violence into categories including homicide and non-fatal injuries.(73)

Homicide mostly perpetrated by a close family member, typically through violent actions that result in head injuries, internal trauma, suffocation, or shaking baby syndrome (SBS)(73). Although it is commonly known that children aged 15 to 17 years followed by infants have have the highest rates of homicide victimization,(73) recent studies suggest a decreasing trend in this age group and a shift toward increased vulnerability among children starting from the age of six.(75)

In addition to fatal outcomes, many children are subjected to non-fatal physical violence, which can result in serious physical injuries, long-term disability, or psychological trauma even if no visible injuries are present.(73) Corporal punishment is one of the most common and widely accepted non-fatal forms,(14) it is generally defined as the use of physical force intended to cause pain or discomfort, regardless of the degree of force applied.(76) It is often described as the use of such force by an adult to correct or control a child's inappropriate behavior, with the intention of causing pain but not injury.(77,78)

B. Sexual Abuse:

It refers to the involvement of a child in sexual activities they cannot understand or consent to. This includes genital or anal contact, exposure to exhibitionism, voyeurism, or sexually explicit material, involvement in the production of pornography, and facilitating the child’s sexual exploitation by others.(79,80)

C. Emotional/Psychological Abuse:

Acts or omissions causing harm to emotional development, including the failure to provide a supportive and nurturing environment. It also involves physical and verbal behaviors like threats, humiliation, isolation, and restricting the child's freedom of movement.(71) It also includes the exposure to intimate partner violence (IPV); globally, one in four children under the age of five lives with a mother who has experienced intimate partner violence(73), which has significant effects on child health and development.

D. Neglect:

it is defined by the consultation on abuse prevention as “the failure to provide for the development of the child in all spheres: health, education, emotional development, nutrition, shelter, and safe living conditions, in the context of resources reasonably available to the family or caretakers and causes or has a high probability of causing harm to the child’s health or physical, mental, spiritual, moral or social development. This includes the failure to properly supervise and protect children from harm as much as is feasible”(70). There is different types of neglect:

- physical neglect refers to the failure to meet a child’s basic physical needs, such as clothes, medical care, and self-hygiene(81).
- Emotional neglect is the ongoing failure of a caregiver to fulfill his child’ basic emotional needs(81).
- educational neglect involves the failure to provide appropriate schooling, including allowing excessive absences or ignoring the child’s school requirements(81).

3.2.2 Acquaintances and Trusted Adults (Non-Family)

Adults in positions of trust outside the immediate family also pose a significant risk. Teachers and institutional caregivers are often implicated in physical and emotional violence within schools and care settings However, the true extent of the problem is difficult to determine due to underreporting, often driven by children's fear (82) furthermore, sexual abuse is perpetrated by individuals known to the child in the community, such as neighbors, teachers, coaches, and religious leaders.(73)

These adults exploit established trust and access, often engaging in sexual abuse, physical violence, or emotional abuse. The complexity of these relationships and the power imbalance complicate disclosure and intervention.

3.2.3 Peer Violence and Bullying

Peer violence encompasses harmful interactions between young people. Peer victimization, a key aspect of this, refers to the experience of being targeted by harmful behaviors, broadly termed peer aggression. These aggressive acts are perpetrated by other children or adolescents, typically of similar age or slightly older. Peer aggression itself includes a wide spectrum of actions, ranging from isolated incidents to recurring behaviors, and may or may not involve an imbalance of power between those involved (83).

Peer aggression manifests in several distinct forms, which can occur independently or concurrently:

- Physical Aggression : the most common type of peers aggression, it involves actions intended to cause physical harm to others, such as hitting, biting, or kicking.(84)
- Verbal Aggression : involves using spoken words, such as screaming or name-calling, to intentionally harm another person.(84)

- Relational Aggression (or Social Aggression): This type is a form of non-physical aggression that aims to damage a peer's relationships or social standing within a group. It can be direct involving behaviors such as deliberate exclusion, or indirect such as spreading malicious gossip or rumors.(85)

Distinct from general peer aggression, bullying is defined by its deliberate, repeated nature and the presence of a distinct power imbalance between the aggressor and the victim(19).This behavior can manifest verbally, physically, or even sexually, creating a serious problem with negative outcomes for both bullies and victims.(86)

with the development of information and communication technology ICT, and the increasing exposure of children to these technologies, a new concept of bullying has emerged “cyber bullying”. While sharing the core elements of traditional bullying, it has distinct features including the fact that .bullies can remain anonymous, the abuse can reach a larger audience and the victim may find it hard to disconnect from the abuse.(86)

3.2.4 Individuals’ unknown to the child (strangers)

Individuals who are unfamiliar to the child contribute a smaller portion of child maltreatment than those who are known, such as parents or caregivers, with the majority of abuse occurring at the hands of biological parents (approximately 80.8%) and nearly 6.8% being committed by strangers (87,88). Violence by unidentified individuals usually takes place in public or semi-public spaces through opportunistic or predatory actions, which, despite being greatly feared by society, are less common than abuse by familiar individuals (87,88). The types of violence typically associated with anonymous offenders include predatory sexual assault, physical violence or robbery occurring in neighborhoods, and rare but extremely serious instances of abduction or kidnapping, sometimes accompanied by sexual assault and severe injury to the child (87).

3.3 Risk factors of violence against children

3.3.1 Individual Child Factors

Certain characteristics of the child can increase their vulnerability to violence, although these factors often interact with risks at other ecological levels.

Age: A child's stage of development is a central predictor of vulnerability. Infants and young children aged 0–4 years are particularly vulnerable to fatal physical abuse, neglect, and omissions due to their physical vulnerability and complete dependence on adults(73,89). Non-fatal physical abuse rates peak at different ages across countries; for example, 3-6 years in China and 6-12 years in the United States (73). Sexual abuse prevalence, in contrast, tends to rise after puberty, with adolescents being at the highest risk (73). However, some studies indicate that younger age can be a risk for emotional abuse in specific contexts (90), while older age can be a risk for both physical and emotional abuse. (90,91)

Sex (Gender): A child's gender can have a wide influence on their risk profile. Girls are more likely to be at risk of infanticide, sexual abuse, educational and nutritional deprivation, and forced prostitution in most societies (73). Sexual abuse rates are reported to be 1.5–3 times higher among girls than boys(73). Conversely, male children appear to be at greater risk of harsh physical punishment in many countries (73,90).

Disabilities and Special Characteristics: Children with physical, sensory, intellectual, or mental health disabilities are at a heightened risk of all forms of violence (73). This increased vulnerability can stem from cultural prejudices, the higher emotional and economic demands placed on families, or because these characteristics may hinder parent-child attachment or make a child perceived as more "difficult" to care for (73,89). Additional characteristics like being unwanted, premature, low birth weight, multiple birth, or having a chronic illness or severe behavioral problems can also increase the risk of maltreatment (73,89).

Child's Mental Health and Behavior: Children's psychopathology, such as externalizing symptoms (e.g., aggression, attention difficulties) and PTSD symptoms, are known risk factors for exposure to parental violence (89,92). It's important to recognize the potential bidirectionality here, since child behavior problems could also be an outcome of abuse (89).

Previous Victimization: Having experienced one form of abuse (e.g., emotional abuse before age 13) substantially increases the likelihood of experiencing other forms (e.g., physical violence), and vice versa (90). This polyvictimization, where children experience various forms of violence from multiple perpetrators, indicates generalized vulnerability(91).

3.3.2 Family and Peer Contexts

The microsystem, involving the child's immediate relationships and environments (family, school, peers), exerts a potent influence.

A. Family Environment and Caregiver Characteristics

The intergenerational transmission of abuse process demonstrates that individuals who were abused or maltreated during their childhood are more prone to inflict violence on their children (73,89,92). Additionally, the absence of social support from the family during childhood has been associated with a higher risk of identical outcomes for them (89). However, this link is complex, and its importance may sometimes be overestimated compared to other acute stressors(73).

Parental Mental Health and Psychopathology: Parental mental illness, including PTSD, depression, anxiety, low self-esteem, and poor impulse control, is a significant risk factor (73,89,92,93). Maternal psychosocial dysfunction and dysphoria, including unhappiness, emotional distress, feelings of isolation, feelings of inadequacy in parental roles, and a tendency to anger or upset, are specifically highlighted (89,92).

Parental Alcohol and Drug Abuse: Parental alcohol and drug abuse is consistently linked with an increased risk of child violence (73,89,92). The father's alcohol use is often cited among risk factors (89).

Parent Competencies, Attitudes, and Behavior: Dangerous parenting behavior, including the use of severe discipline techniques, verbal aggression, and shouting, considerably increases the risk for child maltreatment, another risk that is imposed when parents attribute negative intentions to their child's behavior, hold unrealistic developmental expectations, or possess beliefs supportive of violence (73,89). It is imperative to recognize that negative family relationships and poor parent-child interaction, marked by less support, affection, play, and responsiveness and more control or hostility, are key risk factors (73,89,93). Similarly, the absence of family care or proper communication regarding significant matters contributes to these risks (90). Additionally, high maternal reactivity with impulsivity and high negative affect is a proximal risk factor (89). These parenting risks are often intertwined with family demography and structure; for instance, young parental age and single parenthood, especially maternal single parenthood, increase vulnerability (73,89), and not living with a biological father has emerged as a risk factor for violence against girls in several low- and middle-income countries (LMICs) (91), just as paternal orphanhood was a risk for emotional abuse of boys in Zimbabwe (90). Also, household overcrowding (73,93), family size, family instability as a result of frequent family structure changes (73), and adult illness in the home (90) can also raise risk, although the impact of the number of extra children or adults in the household has shown mixed associations across countries (91).

Intimate Partner Violence (IPV): IPV in the household is strongly and consistently related to child abuse. Exposure to IPV by children represents a form of emotional violence and substantially increases the risk of direct victimization among children (73,94).

Family Stress and Social Isolation: Excessive family stress (unemployment, financial problems, poor health, refugee family acculturation stress) and social isolation are strong predictors (73,89,92,93). Lack of support from wider family members may exacerbate issues (73).

B. Peer Relationships

Although the family is primary, peer relationships do start to play a role as children become older.

Deviant Peer Affiliation: This is a risk factor for various negative outcomes, including later dating violence victimization, suggesting a broader pattern of vulnerability linked to peer context (94).

Peer Victimization and Sexual Harassment: Experiencing victimization or sexual harassment by peers is a risk factor for subsequent dating violence victimization. Peer sexual harassment was a stronger risk for girls (94).

Lack of Supportive Peers: not having supportive or prosocial friends (i.e., friends who are kind, helpful, and positive influences) can be harmful — it increases the risk of becoming a victim of domestic

violence (DV) later in life. On the other hand, having supportive/prosocial peers acts as a protective factor, meaning it reduces the risk of experiencing domestic violence in the future.(94)

3.3.3 Community and Extended Social Environment

The exosystem includes social structures with indirect effects on the child via impacts on the family and other microsystems.

A. Socioeconomic Status (SES) and Poverty:

Low SES at the household level (73,89,90,92) and poverty at the community level (73,89) are always relevant risk factors. These are often present with higher parental stress and lower resources.

B. Community Characteristics

Low Social Capital: More child abuse resulted in less cohesive, less trustful, and less solidaristic communities (73). Community trust and community safety were especially related to emotional abuse (90).

Neighborhood Disadvantage: Living in communities with high unemployment, concentrated poverty, and overcrowded neighborhoods increases risk (73,89).

Availability of Social Networks and Support: Lack of access to social support within the community is a risk factor, while dense networks are protective (73).

C. School Context

While school is a microsystem, factors like school non-attendance are indicative of broader family or neighborhood problems that facilitate home-based vulnerability(90,91). Lack of caring teachers can also be a risk factor for emotional abuse (90).

D. Emergency Situations and Displacement:

Pre-migration trauma, flight, and post-migration situations (e.g., precarious living in camps, acculturation stress, loss of livelihood) are significant risk factors in refugee families (73,92,93).

3.3.4 Societal and Cultural Influences

The macrosystem encompasses larger cultural values, beliefs, legislation, and societal structure.

Cultural Norms and Beliefs: Patriarchal Attitudes and Gender Disparity: Societies with a deeply ingrained patriarchal mindset, where the status of women and children is low, suffer more from VAC (73,93). It encompasses male dominance norms, consent, and blaming girls for violence against them.

Acceptance of Corporal Punishment/Violence: Societal norms permitting corporal punishment or violence as a disciplinary means contribute to higher rates of abuse (73).

Authoritarian Parenting Norms: Cultures emphasizing unquestioning obedience of children to adults tend to raise vulnerability(73).

Belief in Family Privacy ("Sanctity of the Family"): This serves to keep authorities, neighbors, and community members from intervening where suspected abuse exists (73).

Legal and Policy Mechanisms (73)**:**

Weak Child Protection Legislation: Insufficient legal mechanisms, or legislation permitting some parent violence to "correct" children, are among the determinants of VAC.

Poor Welfare Systems: Insufficient economic and social protection mechanisms (e.g., parental leave, childcare, unemployment, healthcare policies) heighten family stress and increase violence rates.

Economic Inequality: Higher economic income inequality in societies has been linked to higher levels of violence overall, which can impact children.

Social Exclusion and Discrimination: Minority ethnic groups will usually experience a mix of the risk factors that come with social exclusion, such as poverty, housing issues, and unemployment, thus becoming more exposed to violence.

3.3.5 Interaction of Factors and Polyvictimization

It is important to point out that the risk factors interact with each other. The ecological model points out their dynamic interplay. For instance, parental stress (microsystem) could be exacerbated by economic recessions, unemployment (macrosystem) and lack of community support (exosystem) and thus increase the likelihood of abusive behavior.

Besides, children are often exposed to multiple forms of violence in combination or sequentially, described as polyvictimization (91). Exposure to one form of violence makes others more vulnerable (90), showing increased generalized risk among some children who are exposed to interrelated risk factors. This highlights the need for interventions toward cumulative exposure to violence as opposed to isolated occurrences.

3.4 Consequences of Violence Directed Against Children

3.4.1 Psychological and Emotional Scars

Arguably, the most documented consequences are the psychological and emotional harm. Children who have been exposed to violence are at significantly higher risk for a variety of mental health outcomes. Studies routinely report higher rates of depression, anxiety disorders, and Post-Traumatic Stress Disorder (PTSD) in maltreated children (71,73,95,96). A study showed that even young children (3-5 years) exposed to maltreatment for the past six months had a higher number of psychiatric diagnoses, an effect that was consistent at two-year follow-up. This immediate impact highlights the early embedding of psychological distress (97).

Sadness, anger, feelings of powerlessness, fear, shame, guilt, and insecurity are common emotional responses. Maltreatment totally undermines a child's self-esteem so they feel worthless or like a "grey

mouse"(71,95,98). It can be demonstrated by not being able to enjoy life, or feeling and genuinely showing love (98).

Critically, exposure to violence is also a central risk factor for suicide ideation and attempts. A study conducted on 2012 found a median four times higher suicide ideation and attempt risk in children who were sexually or physically abused (96). Elevated risk is observed across age groups, from middle school to adulthood (71,73,96). Another research also registered attempts at suicide among adult survivors of childhood violence(98). Other negative coping methods, such as self-injury and dissociation (a method of escaping traumatic overload), are also discussed (95,96).

3.4.2 Behavioral Manifestations and Risk-Taking

The psychological harm of violence typically manifests in observable behavioral problems. Aggression is the most frequently referred impact, directed against siblings, parents, peers, or later romantic partners (71,73,95,99). Others may become withdrawn or introverted (95). In young maltreated children, higher internalizing and externalizing symptom scores were sustained over two years (97).

Exposure to violence is linked to an increased likelihood of engaging in delinquent, violent, and other risk-taking behaviors (71,73,96). This includes a higher propensity for substance abuse (alcohol and drugs) and early smoking initiation (71,96). Furthermore, maltreated children, particularly those who have experienced sexual abuse, are more likely to engage in high-risk sexual behaviors, such as having more sexual partners or experiencing unintended or early pregnancies (73,96). Eating disorders and sleep disturbances are also noted (71,96).

3.4.3 Cognitive, Developmental, and Educational Impairments

Violence profoundly impacts a child's cognitive development and educational trajectory. Maltreated children often exhibit impaired cognitive functioning, including difficulties with memory, attention, concentration, and processing new information (87,88,91). Significant and stable impairments in cognitive (IQ), verbal (IQ), and motor development are also demonstrated in young children immediately following maltreatment.(97)

These cognitive and developmental deficits directly translate to academic difficulties. A study conducted in 2024 highlighted a significant link between family violence and a decline in academic results, lower test scores, and failure to pass(99). Poor school performance, lack of motivation, increased school absenteeism, suspensions, and expulsions are common (71,73,99). Violence at school, including corporal punishment and bullying, further exacerbates these educational impacts, leading to fear of teachers and school dropout (73). Developmental delays in physical, mental, and language domains are also significant concerns (71,95,99).

3.4.4 Physical Health Consequences: Immediate and Long-Term

The physical toll of child abuse and neglect is severe and can manifest both immediately and as chronic conditions later in life. Injuries inflicted by caregivers can take many forms, with some patterns of abuse leading to recognized medical syndromes.

Immediate physical injuries can include:(71)

- Bruises, welts, lacerations, abrasions, burns, and scalds. Because force applied to the body passes through the skin, patterns of injury to the skin can provide clear signs of abuse.
- Skeletal injuries, including multiple fractures at different stages of healing, fractures of bones very rarely broken under normal circumstances, and characteristic fractures of the ribs and long bones.
- Injuries to internal organs (abdominal/thoracic injuries).
- Ocular damage.

Serious damage or death in abused children is most often the consequence of head injury or injury to internal organs, with head trauma being the most common cause of death in young children, particularly those in the first two years of life. Two particularly devastating manifestations of such abuse are Shaken Infant Syndrome and Battered Child Syndrome. (71)

- **Shaken Infant Syndrome:** Shaking is a prevalent and extremely dangerous form of abuse seen in very young children, with the majority of shaken children being less than 9 months old. Perpetrators are often male, potentially due to greater average strength leading to the application of more severe force. Very rapid shaking of an infant can result in intracranial hemorrhages, retinal hemorrhages, and small "chip" fractures at the major joints of the child's extremities. These injuries can also occur from a combination of shaking and the head hitting a surface. The outcomes are severe: evidence suggests that about one-third of severely shaken infants die, and the majority of survivors suffer long-term consequences such as mental retardation, cerebral palsy, or blindness.(71)
- **Battered Child Syndrome:** This term describes a pattern of severe, repeated, and devastating injury to a child's skin, skeletal system, or nervous system. It includes children presenting with multiple fractures of different ages, head trauma, and severe visceral trauma, all with evidence of repeated infliction. While the cases are tragic, this specific pattern is fortunately rare.(71)

Beyond these specific syndromes, young maltreated children also present with a greater number of general medical symptoms, including cardiovascular, respiratory, abdominal, and neurological issues, which can remain stable over time. (97)

The long-term physical health consequences are equally alarming. Childhood abuse is linked to an increased risk of developing major adult illnesses, such as ischemic heart disease, cancer, chronic lung disease, liver disease, irritable bowel syndrome, and fibromyalgia(71,73).The adoption of behavioral

risk factors like smoking and substance abuse in response to trauma is thought to be a mediating factor for many of these long-term illnesses. (71)

3.4.5 Sexual and Reproductive Health Effects

Sexual violence, the most heinous form of violence, has definite and adverse sexual and reproductive health effects. Such as: Reproductive health disorders, probably leading to infertility in the long term, Sexual dysfunction, risked sexual behaviors that could lead to sexually transmitted infections (STDs), such as HIV/AIDS, premature and unwanted pregnancy, alongside with genital injury and repeated chronic urinary tract infection, which can also be physical indicators of sexual abuse. (71,73)

3.4.6 Social and Relational Deficits

Childhood aggression profoundly impairs a child's ability to form healthy social relationships. Children may develop poor social skills, social isolation, and social adaptation problems.(73,95,99) Trust towards others, particularly caregivers, can be shattered, resulting in fear, suspicion, and emotional isolation.(98,99)

A severe long-term consequence is that it carries a higher risk of involvement in Intimate Partner Violence (IPV), or any type of violence, both as perpetrator and victim(73,96). Children who are physically abused or exposed to domestic violence at home had double the increased risk of IPV in adulthood, while sexually abused children had a triple increased risk(96). This highlights the intergenerational transmission of violence. Damaged parental relationships and the replication of toxic family patterns are also frequently observed(99).

3.4.7 Polyvictimization consequences

Polyvictimization, or exposure of children to several types of maltreatment, is a very important concept. The children who undergo polyvictimization are likely to have more serious outcomes due to an additive, dose-response process: the more maltreatment types, the poorer the outcomes, especially for mental health (96).

3.4.8 Societal and Economic Burdens

Other than the individual pain, child abuse results in a high economic cost to society. These include:

Direct costs: Health care for victims, treatment of mental illness, social welfare services (investigation, foster care), and criminal justice system expenditures (apprehending and prosecuting the perpetrators) (71,73).

Indirect costs: Disabled or impaired work performance among survivors leading to lost productivity, impaired quality of life, and early death (71,73). Also contributing to this burden are absenteeism and low productivity in the education and employment sectors (73).

4 Legal Frameworks for Safeguarding Vulnerable Groups

4.1 Legal Frameworks of Child Protection

4.1.1 *International Efforts:*

The UN Convention on the Rights of the Child (UNCRC, 1989) is the international child protection model that also establishes a definition of child abuse and mandates state parties to ensure the safety and legal protection of children; its Optional Protocols also have specific focuses on sexual exploitation, child trafficking, and child pornography (100). There are certain other significant international instruments, such as ILO Convention No. 182 (Worst Forms of Child Labour, 1999), prohibiting hazardous labor harmful to children, and relevant Hague Conventions dealing with international child abduction and adoption in order to prevent exploitation (101). Though not an immediate enforcer, UNESCO plays a significant role by promoting education as a tool to combat abuse, for safe learning environments, and school violence policies, including corporal punishment and bullying, based on UNCRC principles and SDG 4 (Quality Education) (100,102).UNESCO is engaged in media literacy and collaborates with governments to shield children from internet exploitation (102).

4.1.2 *National Legal Structures (General):*

National legislation typically includes criminal codes that criminalize physical, sexual, and emotional abuse and penalize them (103). Child Protection Acts typically create child welfare agencies, intervention procedures, and mandatory reporting law requiring professionals to report suspected abuse (100,103). Family and custody laws attempt to protect children in custody disputes and provide removal from abusive homes, while cyber protection law includes exploitation through the internet and cyberbullying (101,103).

4.1.3 *Child Protection in Algeria:*

Law No. 15-12 of Child Protection (2015) is Algeria's flagship law, whose goal is to safeguard the rights of children and keep them safe from victimization by abuse, exploitation, and neglect. It creates child protection units, specialist judges, obligatory reporting requirements, and child-oriented legal procedures that comply with the UNCRC Optional Protocol (18). Penal Code reforms, like Article 333 bis 1, penalize child pornography (104). However, there are still serious gaps: Article 336 has no specific definition for rape, and prosecutions of child sexual abuse become more complicated (104). Although the government did penalize corporal punishment at schools,(105) it remains lawful to this day in the home, and institutional facilities, and does not meet full child protection standards (101).

4.2 Legal Frameworks Regarding Violence Against Women (VAW)

The international response to VAW is based on the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW, 1979), under which states are obligated to secure women's safety from violence and discrimination (106).

4.2.1 International and Regional Initiatives:

The UN Declaration on the Elimination of Violence Against Women (1993) places VAW under the categorization of abuse of human rights (106), and the Beijing Declaration and Platform for Action (1995) demands criminalization of such abuse. UN Security Council Resolutions (e.g., 1325, 1820) outlaw sexual violence in conflict (102), and ILO Convention No. 190 (2019) targets violence at work (101). Regional measures reinforce these protections: Africa's Maputo Protocol (2003) outlaws VAW, including female genital mutilation (FGM) (107); Europe's Istanbul Convention (2011) is a legally binding treaty outlawing domestic violence and rape; and the Americas' Convention of Belém do Pará (1994) affirms women's right to be free from violence (106). While some MENA countries have initiated reforms, gaps often remain (108).

4.2.2 National Legal Approaches (General):

Several nations have enacted targeted legislation against VAW, including domestic violence statute (criminalizing spouse abuse, granting restraining orders), sexual harassment law, rape law (hopefully criminalizing marital rape and victim-oriented justice), honor killings statute, and anti-FGM law (106). However, legal loopholes persist in some countries, such as non-recognition of marital rape or laws allowing offenders to avoid prosecution by marrying the victim (109).

4.2.3 VAW Legislation in Algeria :

Algeria also addressed VAW via Penal Code Amendments (2015), which criminalize domestic violence (up to 20 years in prison, or life in case the victim is murdered), economic violence, and sexual harassment (17). However, their efficacy is undermined by significant limitations. Marital rape is not directly criminalized, and an essential protection gap remains (17). A "forgiveness clause" exists that releases perpetrators from liability based on being forgiven by the victim, who can be induced to be an accomplice to her impunity (17). Moreover, recent Penal Code legislation can impose less severe punishments on what are termed "honor crimes," offering insufficient protection for women found to have damaged family honor (19).

4.3 Overarching Challenges in Implementation

Despite such laws in Algeria and globally for women and children, weak enforcement, entrenched cultural barriers and social stigma to reporting, and victim unavailability to access justice and support services (e.g., shelters, counseling) critically undermine the protection of these vulnerable groups. (14,19) Breaking the systemic obstacles, by not only legal reform but also by social transformation and strong victim support mechanisms, is needed to translate legal will into tangible safety and justice (101)

5 The Role of Healthcare Providers in the Care of Victims of Violence

Violence against women is a serious public health problem with important medical, psychological, and legal consequences. Medical providers are often the first point of contact for survivors, offering the best opportunity to establish care, support, and protection. This guide provides best practices for reception, evaluation, forensic documentation, management, and psycho-social counseling of victims of violence against women with an emphasis on an empathetic, confidential, and survivor-centered process.(110)

5.1 Reception and Listening: Establishing Trust

The nature of the first contact with a healthcare professional plays a critical role in regaining a survivor's trust and placing her on the path to healing. It is essential to offer a safe, supportive, and confidential environment that allows the survivor to disclose without fear of stigma or disbelief. Principles are: (110)

- Immediate, prioritized reception with short waiting times.
- Transparency of confidentiality assurance and control over all medical decisions.
- Sensitive approach and empathetic communication.
- Describing each step in the examination procedure respectfully.
- Informed consent for all procedures.
- Lowering the level of anxiety with the provision of accompaniment by a trained psychosocial support worker or a familiar individual.

5.2 Assessing the Situation and Severity

Those who survive telling the tale underestimate their injuries or their experience of violence, sometimes due to psychological trauma ("psychic blindness"). The physician must thus thoroughly assess both somatic and psychological consequences. Parameters to be assessed are: (110)

- Type, frequency, and setting of violence.
- Evidence of physical or sexual assault.
- Risk factors engaged: youth, pregnancy, presence of children, aggressor's alcohol use.
- Immediate danger to life that requires protective action.

5.3 Medical and Forensic Management

5.3.1 Clinical Examination

Conducted respectfully and professionally, the clinical examination includes:

- General and specific examination for injury (documented with body maps and photos).
- Examination of anus and genitals only with permission.
- Collection and preservation of forensic samples (i.e., clothing, hair, bodily fluids) (110).

*5.3.2 **Forensic Sampling***

A. Semen Collection

When sexual penetration is in the last 72 hours, swabs are to be collected from all potential locations before vaginal or rectal examinations. Samples are preserved in sterile conditions to facilitate ethical profiling(110).

B. Other Forensic Samples

Foreign hair collection, under-nail dirt (from defensive wounds). Samples must be processed under strict contamination control (gloves, masks, sterile technique) (110).

C. Bacteriological Samples

Local swabs are taken before any antiseptic use if infection signs are present. Alongside with Serologic testing for syphilis (TPHA-VDRL), HIV, Hepatitis B, and C at the baseline and repeated at 1, 3, and 6 months(110).

D. Pregnancy Screening

β-HCG dose for pregnancy confirmation is crucial in vaginal penetration cases(110).

E. Chemical Submission

If chemical submission (drug-facilitated attack) is suspected, blood and urine samples must be obtained urgently within five days, or hair analysis may be conducted later on(110).

*5.3.3 **Therapeutic Management***

A. Injuries Treatment (111)

Local wound treatment, suturing, and complex trauma care as appropriate.

F. Prevention of Pregnancy (111)

Emergency contraception (e.g., Ulipristal acetate 30 mg) must be administered within 120 hours following assault if no effective contraception was in use, with appropriate information and explanation to victims about efficacy, timing, and potential side effects.

G. Prevention of Bacterial Infections (111)

Screening for *Neisseria gonorrhoeae* and *Chlamydia trachomatis* can be performed using pharyngeal, vaginal, and rectal swabs. Vaginal secretions can also be examined using a wet mount microscopy technique to detect *Trichomonas vaginalis*. In settings where laboratory diagnostics are unavailable, healthcare providers should rely on syndromic management based on clinical signs and symptoms.

H. Prevention of Viral Infections (111)

- HBV vaccination and/or prophylaxis when necessary.
- HIV post-exposure prophylaxis according to specialist.

5.3.4 Drafting the Medical Certificate

A medical certificate of preliminary findings must be issued in a logical order. It can be employed as legal evidence and must be written with utmost severity.

Contents are**:** (111)

- Doctor's name and credentials.
- Circumstances of the examination (spontaneous or requested appearance).
- Victim's identity (or "declaring to be named…" if unsure).
- Victim's complaint and statement.
- Objective clinical findings (general and pelvic examination).
- Complementary examinations and preventive interventions taken.
- Declaration of temporary disability for work when required.
- Date and handwriting of the doctor.

Certificates are given directly to the competent authority (if under requisition) or to the survivor (and to legal guardians for minors) (111).

5.3.5 Psychotherapeutic Support

Psychological follow-up is required to determine the survivor's capacity to integrate trauma and rebuild her life(111).

Various psychotherapeutic techniques may be indicated based on the psychological makeup, style of coping, and history of the individual(111).

5.3.6 Legal Reporting

Recent legal frameworks in both Algeria and Morocco have evolved regarding medical confidentiality, particularly in situations involving harm to vulnerable individuals.

In Algeria, the new 2018 health law allows physicians to be exempted from medical secrecy in specific cases where vulnerable persons are in danger(112).

Similarly, in Morocco, while Article 446 of the Penal Code already compels physicians by law to report violence against women (contingent on the survivor's consent), new statutory provisions under Law 103-13 further empower doctors by allowing them to testify, either in writing or verbally, if necessary in such situations.(111).

Consent is always the first consideration, except where obligatory reporting in a state of imminent harm applies(111).

5.3.7 Orientation and Referral

Proper orientation is a critical component of care. Survivors must be referred to legal, social, and psychological services.

Physicians ought to:

- Provide guidance for reporting at a police station, if so, preferred by the survivor.
- Provide victim support agency and social service contact information.
- Coordinate access to judicial support when required.

Guidance and empathetic advice greatly increase survivors' chances of leaving behind violence and starting a new life(111).

5.3.8 Screening for Violence

Although overt injuries typically suggest violence, survivors also come with more vague complaints of chronic pain, gastrointestinal illness, gynecologic symptoms, or psychiatric distress. Systematic evaluation, especially on regular visits, is both required and underutilized. The American and Canadian models favor active questioning — an approach still not widely used elsewhere(111).

V. MATERIALS AND METHODS

1. Type of study:

This study is a cross-sectional prospective study that includes women and children who are victims of violence and seek consultation at the forensic medicine department of Hmida Benadjila Hospital in Laghouat.

1.1 Study period

The study will be conducted over a four-month period, from **November 1st, 2024, to February 28th, 2025**

5.1 Study site

This research was conducted within the Wilaya of Laghouat, situated in the southern region of Algeria, characterized by its geographical position and climatic features typical of the area. Administratively, the Wilaya of Laghouat encompasses 10 districts and 24 municipalities, the majority of which (83.3%) are classified as rural. The province covers an area of 25,052 km² and, according to recent estimates, has a population of approximately 603,878 inhabitants. For context regarding the broader population demographics, a 2025 projection for the Wilaya indicated a total population of 511,264, with 258,316 males (approximately 50.5%) and 252,948 females (approximately 49.5%), and a median age of 30 years. Specific age cohort data available indicates approximately 53,824 children aged 5-9 years (27,469 boys, 26,354 girls), 50,231 children aged 10-14 years (25,634 boys, 24,596 girls), and 41,770 adolescents aged 14-19 years (21,300 boys, 20,470 girls) residing in the Wilaya. The Wilaya of Laghouat is bordered by the Wilaya of Djelfa to the north and east, the Wilaya of Ghardaïa to the south, and the Wilayas of Tiaret and El Bayadh to the west.

Data collection for this study was undertaken at the **Forensic Medicine Department of the Public Hospital Establishment (EPH) Hmida Ben Adjila in Laghouat**. This department serves both local and regional medico-legal needs. It is structured into three distinct units:

1. **Medico-Judicial Consultation Unit:** Handles examinations and consultations for individuals involved in legal proceedings, often following assaults or other forms of violence.
2. **Thanatology Unit:** Deals with matters related to death investigations.
3. **Bodily Harm Expertise Unit:** Focuses on the assessment and evaluation of physical injuries and damages.

During the study period, the department was staffed by a team comprising one Professor, one senior lecturer, four public service assistants, two clinical psychologists, and two medical secretaries. The inclusion of clinical psychologists within the department is particularly relevant to this study's focus on the psychological consequences of violence

5.2 Study population

Women and children who are victims of interpersonal violence consulting at the forensic medicine department of Hmida Benadjila Hospital in Laghouat, Algeria.

Total number

5.2.1 Inclusion criteria

Women aged 18 to 65 years, and Children under 18 years old who are victims of interpersonal violence consulting during the defined study period

- Victims that seeks consultation at the forensic medicine department of Hamida Benadjila hospital,Laghouat.
- Informed and clear consent from the women consultant or from the parents or legal gradians in case of children.

5.2.2 Non-inclusion criteria

This study does not include:

- male victims older then 18 years old due to the focus on female and children
- victims of unintentional injuries.
- Elderly women over the age of 65 years.
- Cases reported or managed outside the defined study period.
- Cases consulting at the emergency department or other hospital services without being assessed by the forensic medicine department of Laghouat.

5.2.3 Exclusion criteria

This study excludes:

- Absence of informed consent from the women consultant or from the parents or legal guardians in case of children.
- Incomplete medical records that are necessary for proper analysis.

5.2.4 Data collection

Data were prospectively collected from female and children of interpersonal violence presenting at the forensic medicine department of Laghouat for medico-legal evaluation during the study period, in order to obtain a medical certificate for voluntary injuries.

Upon arrival to the medico-Legal unit, individuals identified as potential study population whether a woman or a child accompanied by a parent or legal guardian, who had been referred for medico-legal examination following an incident of interpersonal violence.

A medical assessment of the victim is performed by a trained forensic personnel in a private, secure consultation room including physical examination, psychological screening (where applicable) and documentation of injuries and clinical findings according to medico legal standards. In order to elaborate a certificate of voluntary injuries and fixation of total incapacity of work.

Before any data were recorded, we provided a clear explanation of the study's purpose, procedure and voluntary nature, and assurance of confidentiality. Clear informed oral consent was obtained from each woman. For child victims, informed consent was obtained from a parent or legal guardian.

Data for this study were collected via physician-administered interviews, guided by a structured, multi-section Data Collection Form specifically designed for this research. During these interviews, attending physicians posed questions and recorded victim responses, utilizing either a traditional printed paper version of the form or an equivalent online digital version that allowed for direct data entry. Crucially**,** the content, question wording, and response options were identical across both formats to ensure standardized data elicitation and recording. The form employed a combination of closed-ended (e.g., multiple-choice, yes/no) and open-ended questions, enabling the systematic recording of both quantitative and qualitative data relevant to the study objectives.

The form systematically captured information across several key domains:

1. **Victim Identification and Consent:** Basic demographics and confirmation of informed consent.
2. **Victim Information and Background:** Detailed socio-demographics (age, gender, marital status, profession, education, living conditions), personal history (medical, psychiatric, substance use, criminal records, childhood violence). A dedicated sub-section within this domain gathered details specific to child victims (e.g., primary caregiver, parental factors, school performance).
3. **Incident Details:** Specifics of the assault including perpetrator relationship, characteristics of the event (place, time, recurrence, objects used), types of injuries, associated violence forms, and consultation details (e.g., reason for consultation, Total Incapacity to Work).
4. **Perpetrator Information and Background:** Demographics, profession, marital status, and history (psychiatric, substance use, criminal records) of the alleged perpetrator.
5. **Systematic Assessment:** Incorporation of the Post-Traumatic Stress Disorder Checklist (PCL-5) and child post traumatic symptom scale (CPSS-5). These validated instruments were included to facilitate an early screening for acute post-traumatic stress symptoms, enabling the assessment of their prevalence and severity shortly after the reported violent incident.

PCL-5:

Post-Traumatic Stress Disorder (PTSD) symptoms were assessed using the PTSD Checklist for DSM-5 (PCL-5). The PCL-5 is a 20-item self-report measure designed to assess the presence and severity of PTSD symptoms corresponding to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition criteria. Participants were asked to rate how bothered they had been by each symptom in the past month on a 5-point Likert scale, ranging from 0 ("Not at all") to 4 ("Extremely")(113).

Total symptom severity scores were calculated by summing responses to all 20 items, with possible scores ranging from 0 to 80. Higher scores indicate greater PTSD symptom severity. For the purpose of this study, and consistent with psychometric work on the PCL-5, a cut-point score of **≥31** was used to identify individuals with clinically significant PTSD symptoms or a provisional PTSD diagnosis(113).

The PCL-5 is utilized for quantifying and monitoring symptoms, screening for PTSD, and assisting in provisional diagnosis, though it is not intended as a stand-alone diagnostic tool(113). The items assess symptoms across the four DSM-5 PTSD symptom clusters: intrusive memories, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity(114).

CPSS-5:

The Child PTSD Symptom Scale for DSM-5 (CPSS-5) was used to assess post-traumatic stress symptoms among the child participants in this study.

The CPSS-5 is a validated self-report instrument consisting of 20 items that correspond to the DSM-5 diagnostic criteria for PTSD, covering the symptom clusters of intrusion, avoidance, negative alterations in cognition and mood, and alterations in arousal and reactivity. Each item is rated on a 5-point Likert scale ranging from 0 (not at all) to 4 (6 or more times a week/almost always), with higher scores indicating greater symptom severity. (115)

Total symptom severity scores were calculated by summing responses to all 20 items, with possible scores ranging from 0 to 80.(115) A cut-off score of ≥31 was used in this study to identify children with clinically significant PTSD symptoms or a provisional PTSD diagnosis, consistent with validation studies by Foa et al. (2018), which demonstrated that this threshold provided optimal sensitivity and specificity for detecting PTSD in trauma-exposed youth.(116)

5.3 Data Analysis

IBM SPSS Statistics Version 26 was used to conduct data analysis from this study. The alpha level for all statistical tests was set at $\alpha = 0.05$, and trends were reported for p-values ranging from >0.05 to ≤ 0.10. Analyses were conducted separately for adult women victims and child/adolescent victims due to differences in development and use of different assessment instruments for PTSD symptomatology (PCL-5 in adults and CPSS in children/adolescents).

5.3.1 Descriptive Statistics and Prevalence Calculation

Descriptive statistics like means, standard deviations (SD), frequencies, and percentages were calculated to describe the socio-demographic profile of victims, perpetrators, and salient aspects of the violent episodes. Simple proportions were calculated for prevalence rates of interpersonal violence among women consultants in total and in the female sub-sample, as well as of childhood interpersonal violence in all the consultants.

5.3.2 Bivariate Analyses

To explore initial associations between various factors and high PTSD/CPSS likelihood, bivariate analyses were performed.

• For categorical factors, Chi-square tests (χ^2) or Fisher's Exact Tests (when expected cell sizes were < 5) were used to assess differences in proportions of victims by high versus low PTSD/CPSS likelihood between groups (e.g., living status, assailant gender, location of assault).

• For continuous variables (e.g., aggressor's median age, children's), independent samples t-tests were employed to compare the high and low PTSD/CPSS probability groups' means of the two groups.

These bivariate tests were used to screen for potential predictors on entry into subsequent multivariate models.

5.3.3 Multivariate Analyses :

- Multivariate Logistic Regression (in Adult Women):

In order to estimate independent predictors of high likelihood of PTSD (dichotomous outcome by PCL-5 scores) in adult women, a multivariate logistic model was constructed. Predictor variables were selected on the basis of theoretical relevance and bivariate test outcomes. Variable entry was performed using the "Enter" method. Model fit was assessed by the Omnibus Test of Model Coefficients and the Hosmer-Lemeshow goodness-of-fit test. Nagelkerke R^2 was utilized to calculate the proportion of variation in PTSD probability explained by the model. Odds Ratios (OR) and their associated 95% Confidence Intervals (CI) were calculated to determine strength and direction of association for each predictor.

- Multivariate Logistic Regression (for Children/Adolescents - Attempted):

An attempt was made to construct a corresponding multivariate logistic regression model to predict high PTSD/CPSS probability (a binary response derived from CPSS scores) for the child/adolescent sample. This failed because quasi-complete separation issues continued due to sparsely category variables (e.g., Verbal Violence, Economic Violence), leading to unstable estimation of models.

- Multivariate Linear Regression (for Adult Women and for Children/Adolescents):

To identify factors independently associated with PTSD symptom severity (continuous total PCL-5 score in women, CPSS total score in children/adolescents), separate multivariate linear regression models were constructed for each of the two age groups. Predictors were selected according to theoretical assumptions and results of bivariate analyses."Enter" method was employed for entering predictors.

The overall model significance of every linear regression model was examined by employing the F-statistic from the ANOVA table. Adjusted R^2 was used to quantify the proportion of variance in symptom severity scores explained by the predictors. The unstandardized regression coefficients (B), their standard errors (S.E.), the standardized coefficients (Beta), the t-statistics, p-values, and 95% Confidence Intervals for B were examined for all predictors to examine its individual contribution to the model. Tolerance and Variance Inflation Factor (VIF) values collinearity diagnostics were scrutinized to ensure there was no unwanted multicollinearity among predictors.

VI. RESULTS

1 Descriptive Results

The primary objective of this study is to assess the **prevalence** and characteristics of women and children victims of violence who seek assistance at the forensic medicine department of Hmida Ben Adjila Laghouat. It also aims to identify the sociodemographic features of these victims, highlight the circumstances surrounding the assault, and examine the medical and psychological effects, with a focus on PTSD.

Over the four-month study period, we examined 596 patients, including 131 women and 91 child victims of interpersonal violence.

1.1 Prevalence of Interpersonal Violence Among Women Consultants

The prevalence of Interpersonal Violence among women consultants was examined from two perspectives:

- Among all consultants surveyed (N = 596), 131 were women who had experienced interpersonal violence. This represents a prevalence of 22.0% (131/596).
- Among the sub-sample of women consultants (n = 146), 131 reported being victims of interpersonal violence. This indicates a prevalence of 89.7% (131/146) within this specific group.

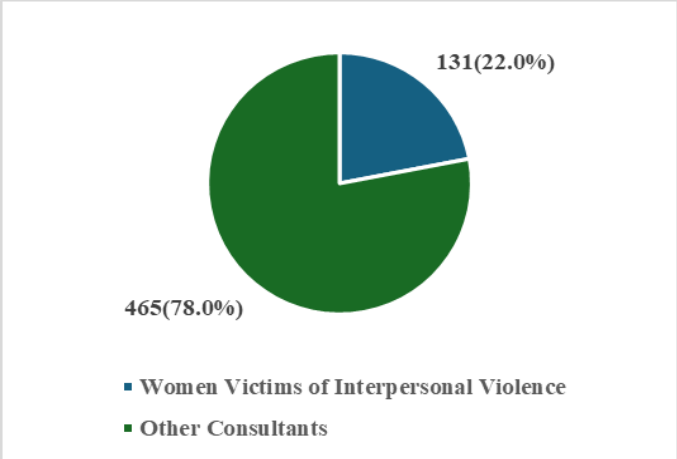

Figure 3: Proportion of Women Victims of Interpersonal Violence Among All Consultants (N=596)

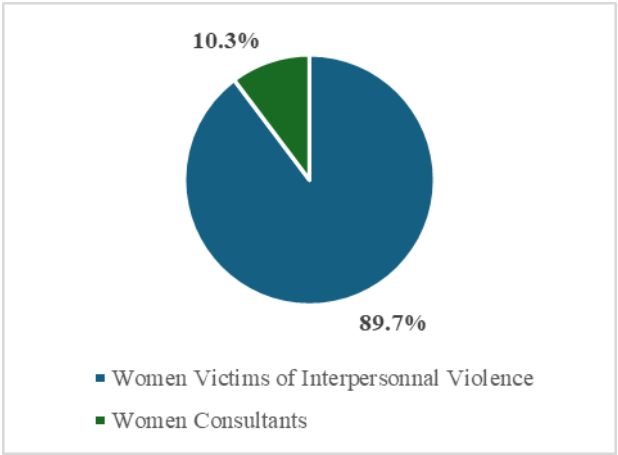

Figure 2: Proportion of Interpersonal Violence Victims Among Women Consultants (N=146)

1.2 Prevalence of Interpersonal Violence Among Child Consultants

The prevalence of Interpersonal Violence among child consultants was also assessed:

- Among all consultants surveyed (N = 596), 91 children reported experiencing interpersonal violence. This corresponds to a prevalence of 15.3% (91/596).

- A total of 108 child consultants reported experiencing *any* form of violence.

  Among these individuals (n = 108), 91 specifically identified the violence as interpersonal violence. This signifies that 84.3% (91/108) of child consultants who were victims of any violence experienced Interpersonal Violence.

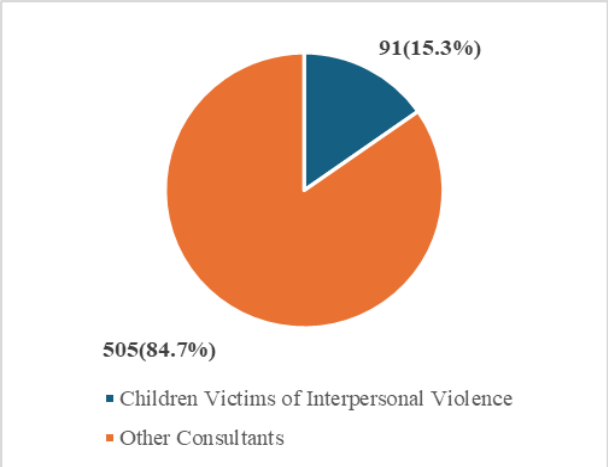

Figure 5: Distribution of child victims of interpersonal violence among all consultants (n = 596)

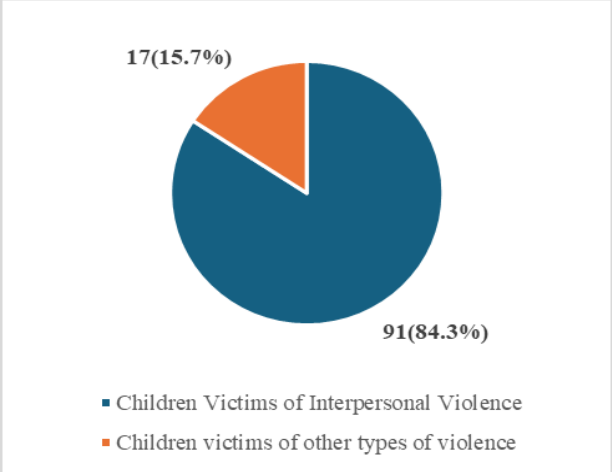

Figure 4: Distribution of children victims of interpersonal violene among all child victims (n = 108)

We excluded 25 women and 10 children due to a lack of consent, resulting in a final sample size of 190 patients.

We employed various tests and methods to analyze our results accurately, including descriptive statistics, frequency analysis, potential t-tests, chi-square tests, and correlation analyses.

1.3 Overall Sample Presentation:

In total, the study comprised 190 participants. The sample was split into two categories: 84 participants were children, accounting for 44.2% of the overall sample, while 106 participants were women, making up the remaining 55.8%.

Table 1 General Sample Presentation

Participant Group	Frequency (N)	Percent (%)
Children	**84**	**44.2**
Women	**106**	**55.8**
Total Sample	**190**	**100.0**

1.4 Socio-Demographic and Background Characteristics of Women Participants

A total of 106 adult women victims of violence participated in this study. Their socio-demographic, medical, and background characteristics are summarized in **Table 2.**

Table 2 Socio-Demographic and Background Characteristics of Women Victim Participants (N=106)

Characteristic	Category/Statistic	N (%) or Mean (SD)
Demographics		
Age (Years)	Mean (SD)	35.05 (9.70)
Age Group (Years)		
	18-29	39 (36.8%)
	30-45	57 (53.8%)
	46-64	10 (9.4%)
Socio-Economic & Educational Profile		
Educational Level		
	Illiterate	8 (7.5%)
	Primary School	2 (1.9%)
	Middle School	14 (13.2%)
	High School	19 (17.9%)
	University	63 (59.4%)
Profession		
	Employed	35 (33.0%)
	Housewife	40 (37.7%)
	Student	9 (8.5%)
	Unemployed	22 (20.8%)
Residence Type		
	Urban	98 (92.5%)
	Rural	8 (7.5%)
Living Standards		
	Precarious	10 (9.4%)
	Average	84 (79.2%)
	Good	12 (11.3%)
Marital & Family Situation		
Marital status		
	Married	71 (67.0%)
	Single	22 (20.8%)
	Divorced	11 (10.4%)
	Widowed	2 (1.9%)
Age at Marriage (Years) (N=83)	Mean (SD)	25.43 (4.97)
Number of Marriages (N=83)	Mean (SD)	1.18 (0.45)
Relationship Duration (Yrs) (N=74)	Mean (SD)	8.46 (6.55)
Living Situation		
	Family Home (Parental)	33 (31.1%)
	Marital Home	58 (54.7%)
	Spouse's Family Home	15 (14.2%)
Household Size (Persons)	Mean (SD)	4.20 (2.14)
Number of Children (N=83)	Mean (SD)	2.28 (1.52)
Health & Prior Violence Exposure		
Medical History (Any)	Present	29 (27.4%)
Substance Use (Any)	Present	11 (10.4%)
Childhood Violence Exposure		
	Witnessed	40 (37.7%)
	Experienced	29 (27.4%)
	Absent	37 (34.9%)

The mean age of participants was 35.05 years (SD = 9.70), ranging from 23.50 to 55.00 years. The majority belonged to the 30-45 years age group (53.8%, N=57), followed by those aged 18-29 years (36.8%, N=39). This age distribution is illustrated in **Figure 6**.

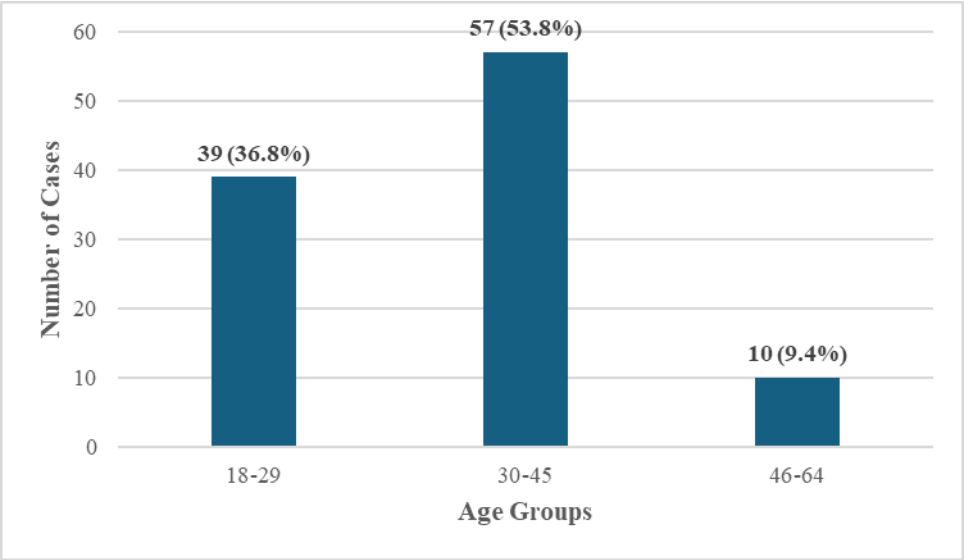

Figure 6: Age Distribution of Adult Women Victims

In terms of education, most women (59.4%, N=63) had attained university-level education, while 17.9% (N=19) had completed high school. Smaller proportions reported lower educational levels, including 7.5% (N=8) who were illiterate. **Figure 7** provides a graphical representation of educational attainment.

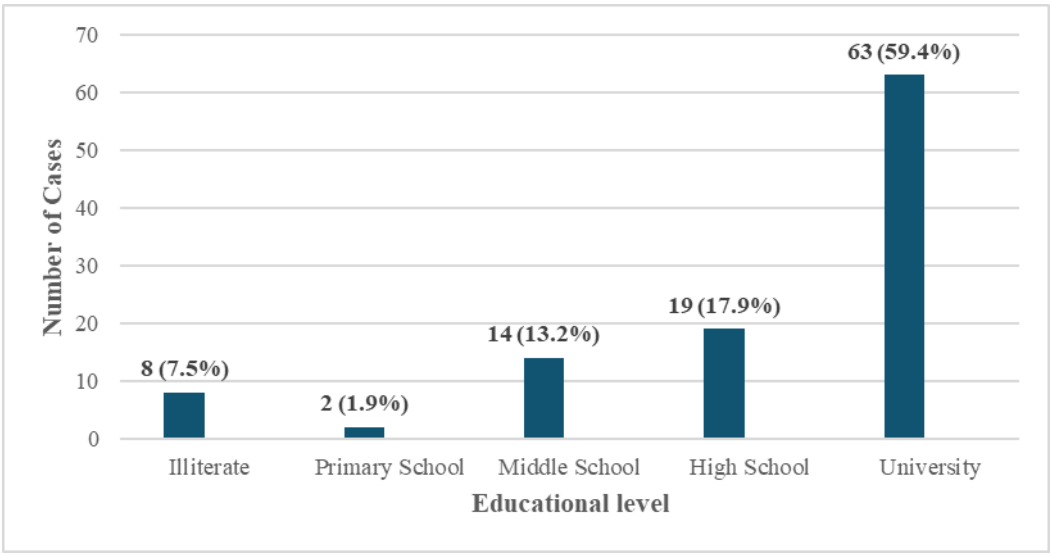

Figure 7: Educational Level of Adult Women Victims

Marital status showed that the majority were married (67.0%, N=71). Among those with available data (N=83), the mean age at first marriage was 25.43 years (SD = 4.97), with an average of 1.18 marriages (SD = 0.45). For women currently in a relationship (N=74), the mean relationship duration was 8.46 years (SD = 6.55).

Regarding occupation, the largest group identified as housewives (37.7%, N=40), followed by employed women (33.0%, N=35) and unemployed women (20.8%, N=22).

Most lived in urban areas (92.5%, N=98). In terms of living standards, 79.2% (N=84) reported average conditions, while 9.4% (N=10) described their situation as precarious.

Their living arrangements varied: 54.7% (N=58) resided in their marital home, 31.1% (N=33) with their parental family, and 14.2% (N=15) with their spouse's family. This distribution is depicted in **Figure 8**. The average household size was 4.20 persons (SD = 2.14). Among women with children (N=83), the mean number of children was 2.28 (SD = 1.52).

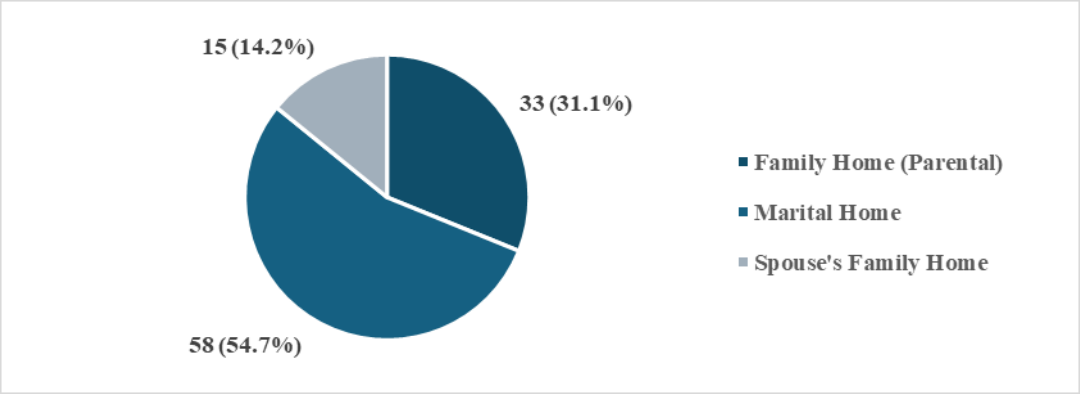

Figure 8: Living Situation of Adult Women Victims

Regarding health conditions, the Case Summary indicates that 27.4% (n=29) of the 106 adult interviewees reported having at least one pre-existing medical condition, while the remaining 72.6% (n=77) reported none of the conditions listed. Of the 29 with a condition, the most frequent were hypertension (reported by 34.5% of this group, n=10), diabetes (20.7%, n=6), and cardiopathy (13.8%, n=4). Other conditions like hypothyroidism, goiter, and gastric ulcer were observed by fewer numbers in this subgroup. Substance use as self-reported was less common, in 10.4% (n=11) of the adult sample, as noted in the Case Summary; the overwhelming majority (89.6%, n=95) didn't use any substance.

Tobacco was the most common in the subgroup of 11 users reporting substance use, reported by 90.9% of users (n=10), followed by alcohol (36.4%, n=4). Chewing tobacco, other drug use, electronic cigarettes, and hookah were each reported by smaller percentages of substance users.

Exposure to childhood violence was also notable: 37.7% (N=40) reported witnessing it, 27.4% (N=29) experienced it directly, while 34.9% (N=37) reported no such exposure.

1.5 Socio-demographic, medical and family characteristics of children

Table 3 below provides a detailed overview of the socio-demographic, medical, and family background characteristics for the child victim sample.

Table 3 Socio-Demographic and Background Characteristics of Child Victim Participants (N=84)

CHARACTERISTIC	CATEGORY/STATISTIC	N (%) OR MEAN (SD)
Demographics		
Age (Years)	Mean (SD)	11.77 (3.49)
	Range (Min-Max)	5.50 - 14.50
Age Group (Years)		
	3 to 8	15 (17.9%)
	9 to 11	21 (25.0%)
	12 to 17	48 (57.1%)
Gender		
	Boy	53 (63.1%)
	Girl	31 (36.9%)
Socio-economic & educational profile		
Educational Level		
	Kindergarten	6 (7.1%)
	Primary School	18 (21.4%)
	Middle School	40 (47.6%)
	High School	19 (22.6%)
	University	1 (1.2%)
Residence		
	Urban	83 (98.8%)
	Rural	1 (1.2%)
School Performance		
	Poor	9 (10.7%)
	Average	58 (69.0%)
	Above Average	9 (10.7%)
	Excellent	8 (9.5%)
Living Standards (Participant's)		
	Precarious	8 (9.5%)
	Average	61 (72.6%)
	Good	15 (17.9%)
Family environment		
Household Size (Persons)	Mean (SD)	4.63 (1.43)
	Range (Min-Max)	1 - 8
Main Caregiver		
	Biological parents	81 (96.4%)
	Grandparents	3 (3.6%)
Recent Family Changes		
	No Recent Change	69 (82.1%)
	Parental Divorce	11 (13.1%)
	Remarriage of parent	3 (3.6%)
	Death of a Parent	1 (1.2%)
Unwanted Pregnancy (Child was)	Yes	6 (7.1%)
Single Parenthood Status		
	Both Parents Present	64 (76.2%)
	Single Parent due to Death	3 (3.6%)
	Single Parent due to Divorce	17 (20.2%)
Step-Parents Present		
	None	72 (85.7%)
	Stepfather	2 (2.4%)
	Stepmother	10 (11.9%)

Parents' characteristics (of child victim)		
Parents' Highest Education Level		
	Illiterate	4 (4.8%)
	Primary School	3 (3.6%)
	Middle School	19 (22.6%)
	High School	23 (27.4%)
	University	35 (41.7%)
Mother's Age at Marriage (Years)	Mean (SD)	24.80 (4.50)
Father's Age at Marriage (Years)	Mean (SD)	29.70 (4.00)
Mother's Profession		
	Employed (Any)	27 (32.1%)
	Housewife	57 (67.9%)
Father's Profession		
	Employed (Any)	69 (82.1%)
	Retired	2 (2.4%)
	Unemployed	13 (15.5%)
Health & risk factors (child & family)		
Child's Medical History (Any)	Present	12 (14.3%)
Child's Surgical History (Any)	Present	8 (9.5%)
Child's Drug Abuse (Any)	Present	8 (9.5%)
Parental Substance Abuse (Any)	Present	24 (28.6%)
Domestic Violence History (Witnessed/Experienced by Child)	Present	26 (31.0%)

The mean age of the child participants was 11.77 years (SD = 3.49), with individual ages ranging from 5.50 to 14.50 years. The distribution across defined age categories showed that the largest group was 12 to 17 years old (N=48, 57.1%), followed by 9 to 11 years (N=21, 25.0%), and 3 to 8 years (N=15, 17.9%). **Figure 9** visually illustrates this age group distribution for child victims.

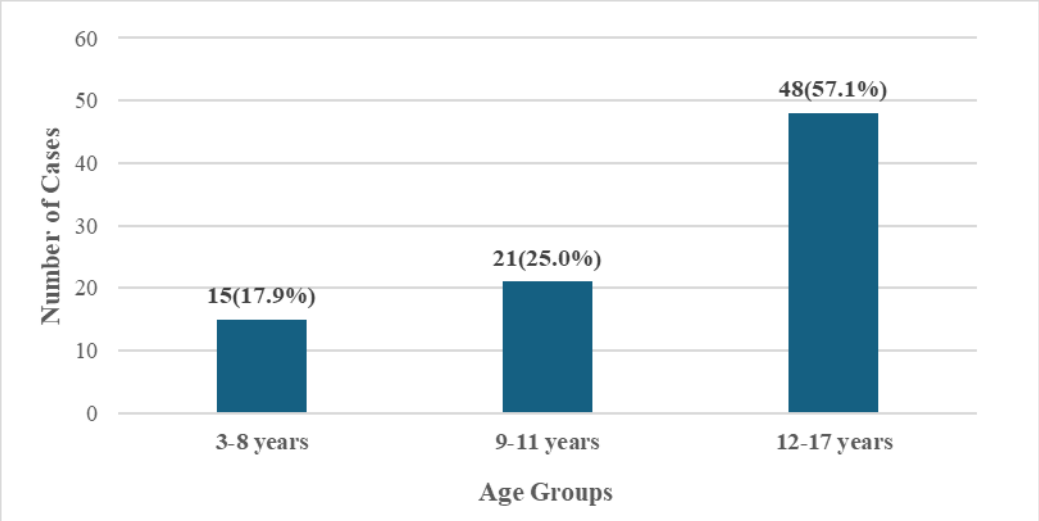

Figure 9 Age Group distribution for child victims (N=84)

The sample comprised a higher proportion of boys (63.1%, N=53) compared to girls (36.9%, N=31). **Figure 10** illustrates those proportions.

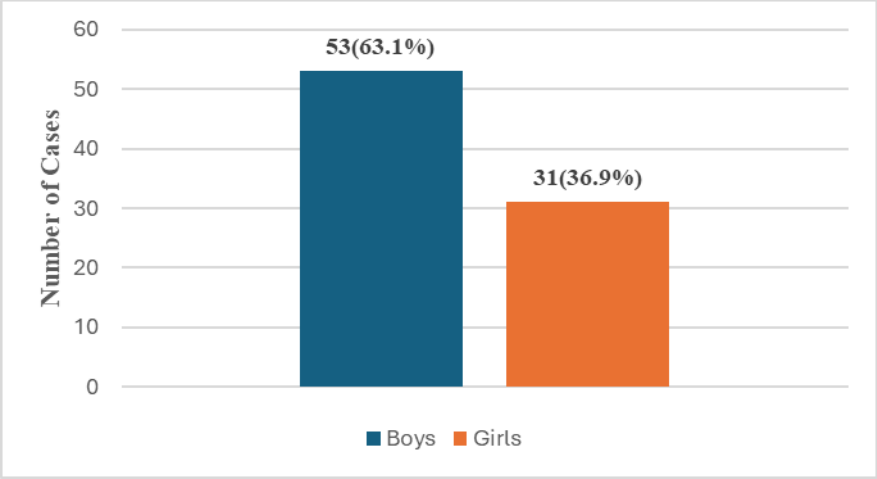

Figure 10: Gender Distribution of Child Victims (N=84)

Most children were enrolled in middle school (47.6%) or high school (22.6%). The sample was predominantly urban (98.8%). School performance was reported as "Average" for the largest group (69.0%), and the majority experienced "Average" living standards (72.6%). The mean household size was 4.63 persons (SD = 1.43).

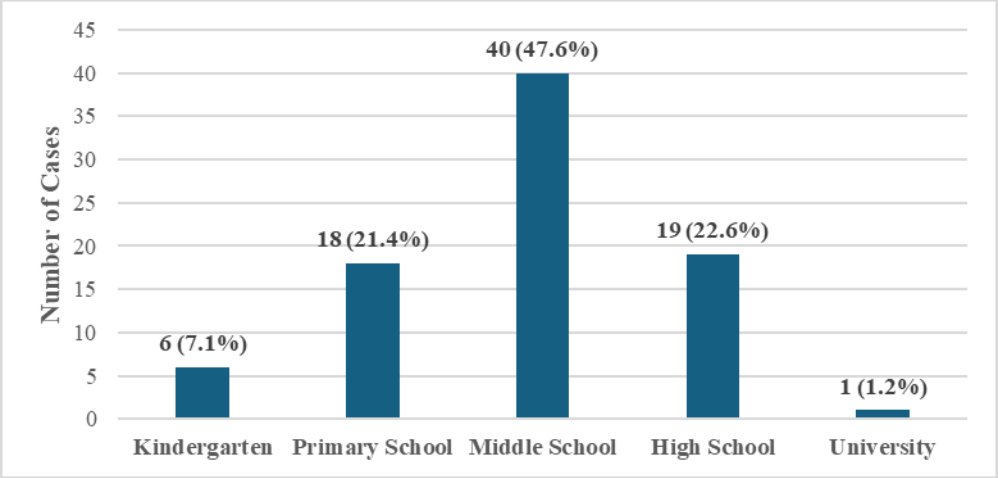

Figure 11: Educational level distribution among child victims (N=84)

Regarding health history, 14.3% (N=12) of children had a reported medical condition. Among these 12 children, the most common conditions were Diabetes (N=2, 16.7% of those with history) and Epilepsy (N=2, 16.7%). Other reported conditions, each affecting one child (8.3% of those with history), included Cardiopathy, Hypothyroidism, Asthma, Myopia, Strabismus, Obesity, Acute Rheumatic Fever (ARF), Autism, Allergic rhinitis, and Hemophilia. Surgical history was present for 8 children (9.5%). Participant drug abuse was reported for 8 children (9.5%). Of these 8 children, the primary substance was Tobacco (N=6, 75.0% of users), followed by other unspecified substance abuse (N=3, 37.5%), and Chewing tobacco (N=1, 12.5%).

In terms of family environment, most children (82.1%) had not experienced a recent major family change, though parental divorce was reported for 11 children (13.1%), remarriage of a parent for 3 (3.6%), and the death of a parent for 1 (1.2%). A small percentage (7.1%, N=6) were reported as being an unwanted pregnancy. Single parenthood was a reality for 23.8% of the children, primarily due to divorce (17 children, 20.2%) or the death of a parent (3 children, 3.6%). Step-parents were present in the lives of 12 children (14.3%), with stepmothers (N=10, 11.9%) being more common than stepfathers (N=2, 2.4%). The vast majority (96.4%) were cared for by their biological parents, with a small number (N=3, 3.6%) cared for by grandparents.

Parental education levels varied significantly within the sample, as detailed in Table 3. The largest proportion of parents had attained a university education (41.7%, N=35), followed by high school (27.4%, N=23) and middle school (22.6%, N=19). Smaller proportions had primary schooling (3.6%, N=3) or were reported as illiterate (4.8%, N=4).

The mean age of mothers at marriage was 24.80 years (SD = 4.50), and for fathers, it was 29.70 years (SD = 4.00). Most mothers were housewives (67.9%), while a combined 32.1% were employed. Most fathers were employed (82.1%), with a small percentage retired (2.4%) or unemployed (15.5%).

Parental substance abuse was reported for 28.6% (N=24) of the child participants' families. Among these cases of parental substance abuse, Tobacco was the most commonly reported substance (N=20, 83.3% of parents with abuse), followed by Alcohol (N=5, 20.8%), Chewing Tobacco (N=3, 12.5%), and other substance abuse (N=1, 4.2%). **Figures 12-13** present the overall prevalence of reported parental substance abuse and the types of substances used among those parents. Finally, 26 children (31.0%) had a history of exposure to domestic violence.

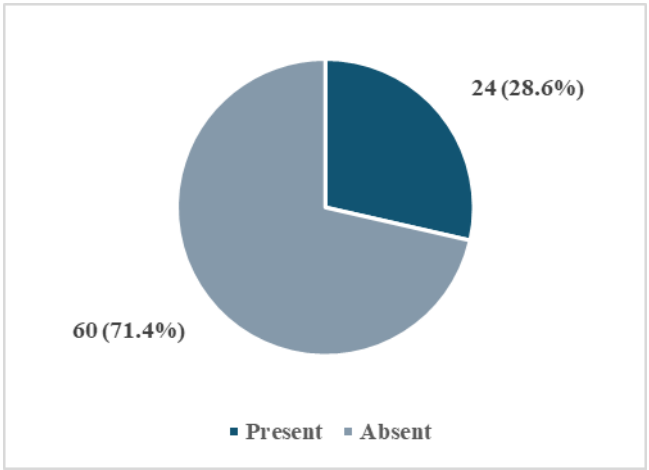

Figure 13 Prevalence of Any Reported Parental Substance Abuse (N=84)

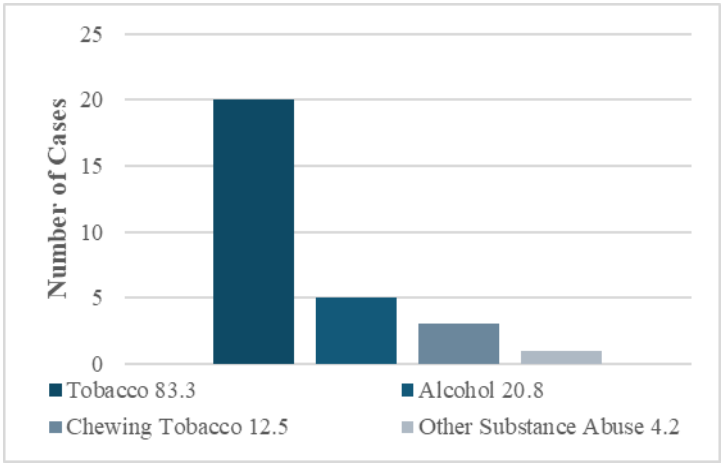

Figure 12 Types of Substances Reported for Parents with Substance Abuse (N=24; Multiple responses possible)

1.6 Perpetrator's characteristics and background

The characteristics of the perpetrators varied between the child and adult women victim groups, as detailed in Table 4.

Table 4: Perpetrator Characteristics by Victim Group

Characteristic	Category/Detail	Perpetrators of Children N (%)	Perpetrators of Women N (%)
Identity/Relationship			
	Peers	17 (20.2%)	---
	School personnel	8 (9.5%)	---
	Intimate Partner	---	68 (64.2%)
	Unknown	29 (34.5%)	8 (7.5%)
	Family members	15 (17.9%)	18 (17.0%)
	Other known adults	15 (17.9%)	12 (11.3%)
Demographics			
Gender of Perpetrator			
	Female	12 (14.3%)	13 (12.3%)
	Male	72 (85.7%)	93 (87.7%)
Age			
	3-17	16 (20.3%)	---
	18-29	24 (30.4%)	26 (24.5%)
	30-45	25 (31.6%)	50 (47.2%)
	46-64	14 (17.7%)	26 (24.5%)
	65-74	---	3 (2.8%)
	Unknown	---	1 (0.9%)
Marital Status of Perpetrator			
	Single	54 (66.7%)	23 (23.2%)
	Married	23 (28.4%)	68 (68.7%)
	Divorced	3 (3.7%)	6 (6.1%)
	Non-marital relationship	1 (1.2%)	2 (2.0%)
Socio-Economic Profile			
Employment Status			
	Employed (Any)	32 (38.1%)	72 (68.6%)
	Student	22 (26.2%)	8 (7.5%)
	Unemployed	22 (26.2%)	29 (27.4%)
	Retired	4 (4.8%)	4 (3.8%)
	Unknown	4 (4.8%)	3 (2.8%)
Residence Type of Perpetrator			
	Urban	79 (97.5%)	94 (90.4%)
	Rural	2 (2.5%)	10 (9.6%)
Living Standards			
	Precarious	6 (7.8%)	9 (8.7%)
	Average	56 (72.7%)	79 (76.7%)
	Good	15 (19.5%)	15 (14.6%)
History of Childhood Violence		**N=19**	**N=73**
	Yes	18 (94.7%)	50 (68.5%)
	No	1 (5.3%)	23 (31.5%
Perpetrator Substance Use			
Tobacco		44 (57.9%)	68 (66.7%)

Alcohol		18 (23.7%)	47 (46.1%)
Chewing Tobacco		4 (5.3%)	38 (37.3%)
Drug Abuse		17 (22.4%)	39 (38.2%)
Hookah		3 (3.9%)	14 (13.7%)
Electronic Cigarette		2 (2.6%)	8 (7.8%)
Perpetrator Criminal Record			
	Present	5(6%)	21(19.8%)
	Absent	65(77.4%)	78(73.6%)
	Unknown	14(16.7%)	7(6.6%)

For **child victims**, the most commonly identified perpetrators were "Unknown" individuals (34.5%), followed by "Peers" (20.2%), "Family members" (17.9%), and "Other known adults" (17.9%). "School personnel" accounted for 9.5% of perpetrators. **Figure 14** illustrates this distribution.

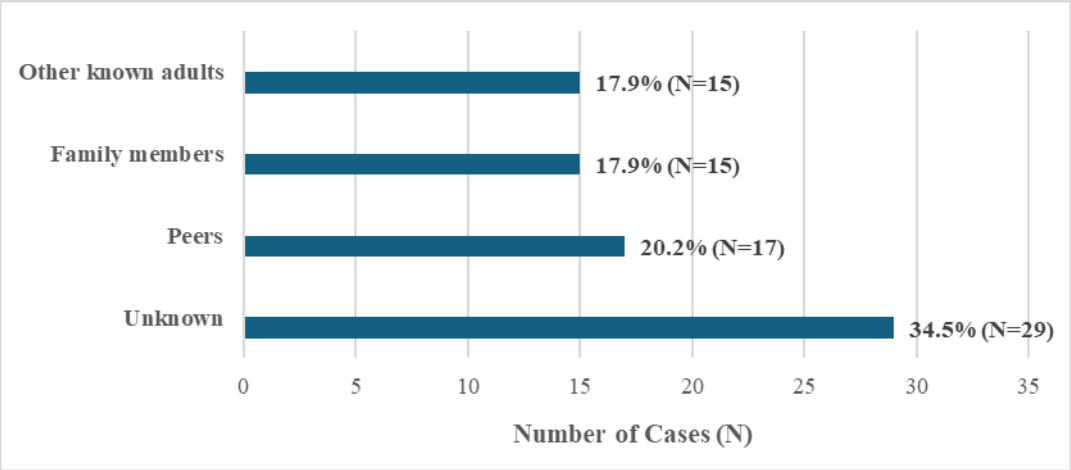

Figure 14: Perpetrator Relationship to Child Victims

The overwhelming majority of offenders against children were male (85.7%). Most offenders were aged between 18-29 years (30.4%) or 30-45 years (31.6%).

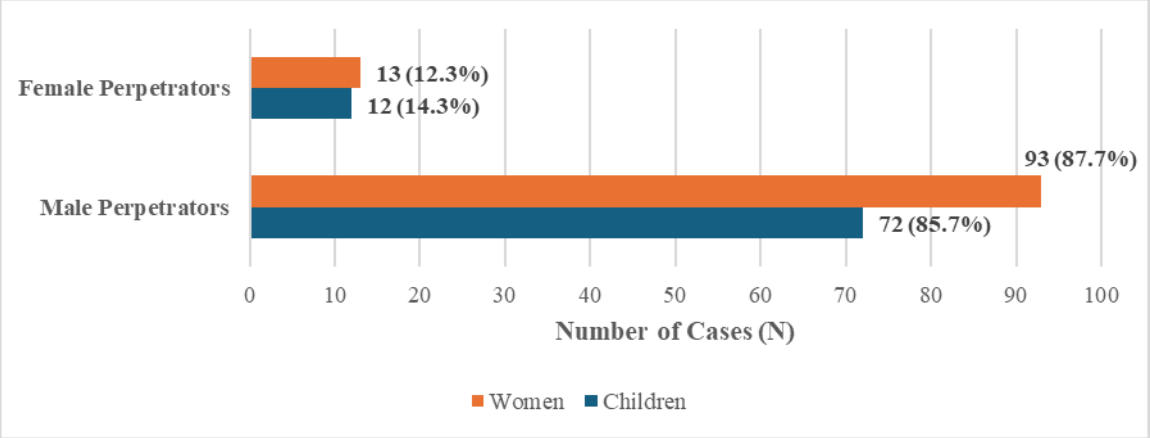

Figure 15: Gender of Perpetrators Against Women Victims and Child Victims

A significant number of offenders were identified as single (66.7%). Employment status varied, with "Employed (Any)" accounting for 38.1%, while both "Student" and "Unemployed" groups constituted 26.2% each. Nearly all offenders (97.5%) lived in urban areas. Regarding previous criminal backgrounds, 77.4% of child victim offenders reportedly had no history of prior offenses, 6.0% had a

known criminal record, and for 16.7%, this data was unavailable. Among the child victim offenders where substance use was noted, tobacco use was used in (57.9%), with alcohol (23.7%) and other substance abuse (34.2%) also frequently observed. For adult female victims, the main perpetrators were "Intimate Partners" (64.2%). Other categories of perpetrators included "Other Known Person" (11.3%) and "Family Members" (17.0%). **Figure 16** illustrates a visual representation of this data. Similarly to child victims, the majority of perpetrators against women were male (87.7%). **Figure 15** shows a comparison of the gender distribution of perpetrators across both victim categories.

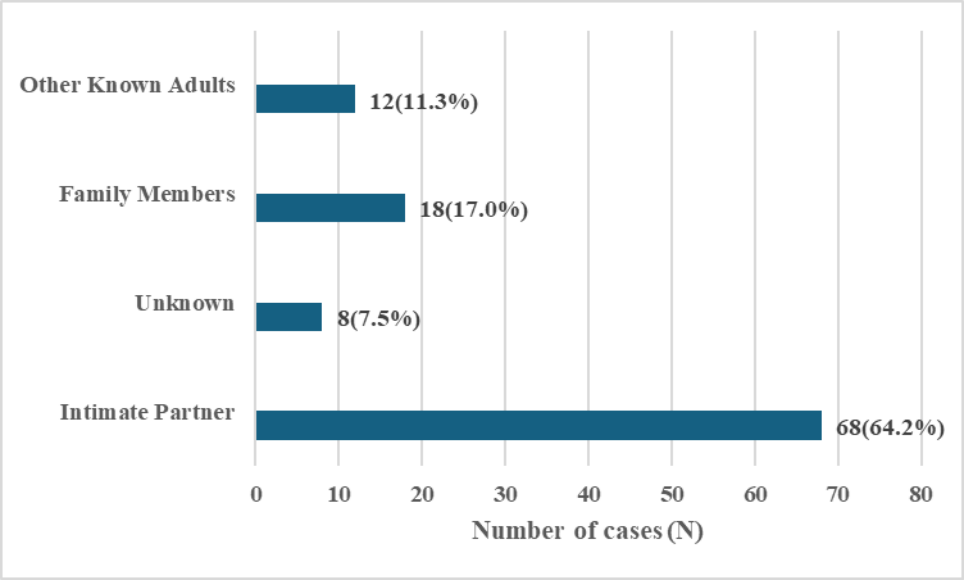

Figure 16: Perpetrator Relationship to Adult Women Victims

Perpetrators of adult women were most often in the 30-45 age group (47.2%). The majority of perpetrators were married (68.7%). "Employed (Any)" was the most common professional status (68.6%). Most perpetrators (90.4%) resided in urban areas. A criminal record was reported as "Present" for 19.8% of perpetrators against women, "Absent" for 73.6%, and "Unknown" for 6.6%. For perpetrators of adult women, tobacco (66.7%) and alcohol (46.1%) were the most commonly reported substances used, followed by other substance use (59.7%) and chewing tobacco (37.3%). For perpetrators of adult women for whom data was available (N=73), a majority (68.5%) had themselves experienced childhood violence.

1.7 Incident Characteristics by Victim Group

To understand the context and nature of the violent experiences, **Table 5** summarizes key characteristics of the incidents as reported by both child and women victims.

These characteristics encompass the setting of the assault, its recurrence, methods employed, resultant injuries, co-occurring forms of violence, and subsequent actions taken by the victim.

Table 5: Characteristics of Interpersonal Violence Incidents Experienced by Child (N=84) and Women (N=106) Victims

CHARACTERISTIC	CATEGORY/DETAIL	CHILDREN (N=84) N (%)	WOMEN (N=106) N (%)
LOCATION & TIMING			
Location of Assault			
	Home	17 (20.2%)	82 (77.4%)
	Public place	54 (64.3%)	19 (17.9%)
	School	13 (15.5%)	---
	University Campus/Dorm	---	3 (2.8%)
	Workplace	---	2 (1.9%)
Occurrence of Assault			
	First time	46 (54.8%)	31 (29.2%)
	More than once	38 (45.2%)	75 (70.8%)
Time of Assault			
	Morning	17 (20.2%)	25 (23.6%)
	Afternoon	32 (38.1%)	23 (21.7%)
	Evening	27 (32.1%)	34 (32.1%)
	Night	8 (9.5%)	24 (22.6%)
METHODS & CONSEQUENCES			
Object Used in Assault			
	Body Parts	65 (77.4%)	81 (76.4%)
	Blunt Force Objects	21 (25.0%)	31 (29.2%)
	Sharp Force Objects	3 (3.6%)	5 (4.7%)
Injury Types (Any Reported, MR)			
	Contusion	59 (70.2%)	80 (75.5%)
	Abrasions	24 (28.6%)	29 (27.4%)
	Hematoma	9 (10.7%)	25 (23.6%)
	(Other types detailed in the appendix B)		
Injury Location (Any Reported, MR)			
	Head and Neck	48 (57.1%)	84 (79.2%)
	Upper Limbs	33 (39.3%)	38 (35.8%)
	Trunk	21 (25.0%)	26 (24.5%)
	(Other locations detailed in the appendix B)		
ASSOCIATED FORMS OF VIOLENCE (MR)			
Verbal Violence	Present	75 (89.3%)	102 (96.2%)
Economic Violence	Present	4 (4.8%)	20 (18.9%)
Neglect (Children)	Present	6 (7.1%)	---
POST-INCIDENT			
Consultation Approach			
	Spontaneous	69 (82.1%)	105 (99.1%)
	Upon requisition	15 (17.9%)	1 (0.9%)
Reason for Consultation			
	Judicial follow-up	60 (71.4%)	76 (71.7%)
	Threat	23 (27.4%)	29 (27.4%)
	Unknown	1 (1.2%)	1 (0.9%)
Reported Violence Type for Consultation			
	Physical violence	70 (83.3%)	105 (99.1%)

	Sexual violence	14 (16.7%)	1 (0.9%)
Total Incapacity to Work (TIW)			
	< 15 days	77 (91.7%)	103 (97.2%)
	>= 15 days	7 (8.3%)	3 (2.8%)
Time Interval Assault-Consultation (Days)	Mean (SD)	3.02 (3.97)	2.24 (1.51)
PTSD/CPSS Symptom Score	Mean (SD)	28.69 (18.26) (CPSS)	33.14 (16.97) (PCL-5)
Probable PTSD/CPSS Status			
	Low probability	45 (53.6%)	46 (43.4%)
	High probability	39 (46.4%)	60 (56.6%)

- **Location and Timing of Assaults:**

A notable difference was observed in the primary location of assaults. For child victims, the majority of incidents occurred in public places (64.3%), followed by the home (20.2%) and school (15.5%). In contrast, for women victims, the home was overwhelmingly the most common location for assault (77.4%), with a smaller proportion occurring in public places (17.9%). **Figure 17** illustrates the different assault locations for both women and children.

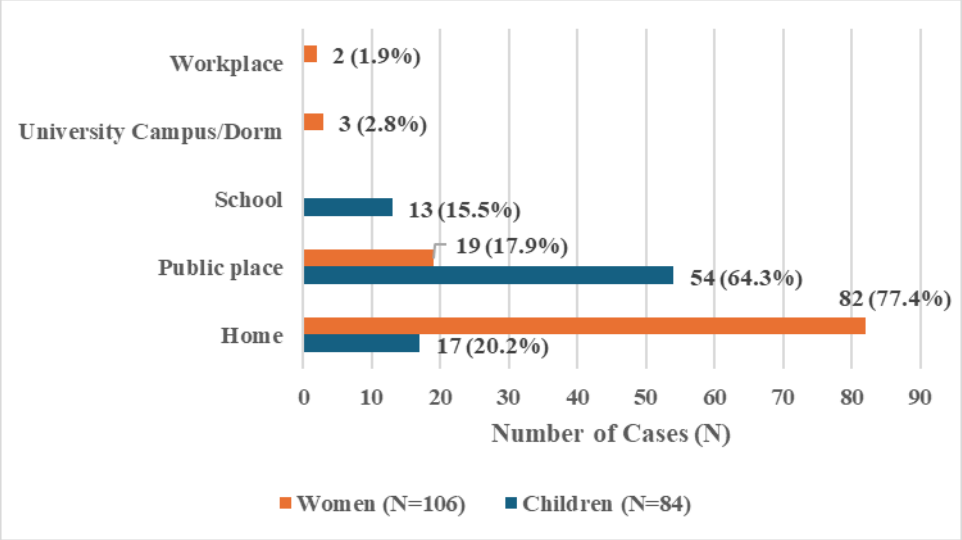

Figure 17: Distribution of Assault Locations for Child and Women Victims

Regarding the timing, assaults were distributed throughout the day for both groups. For children, afternoons (38.1%) and evenings (32.1%) were common. For women, evenings (32.1%) also featured prominently, with a higher proportion of assaults occurring at night (22.6%) compared to children (9.5%).

Regarding the primary type of violence for which medico-legal consultation was sought, distinct patterns emerged between child and adult women victims. Physical violence was the predominant reason for consultation across both groups. Specifically, 83.3% (n=70) of child victims presented for evaluation

related to physical violence, while an overwhelming 99.1% (n=105) of adult women victims sought consultation for physical violence. **Figure 18**

Consultation specifically for sexual violence was notably more frequent among child victims, with 16.7% (n=14) of children presenting for this reason. In contrast, only a very small proportion of adult women victims, 0.9% (n=1), explicitly sought consultation for sexual violence as the primary reported type.

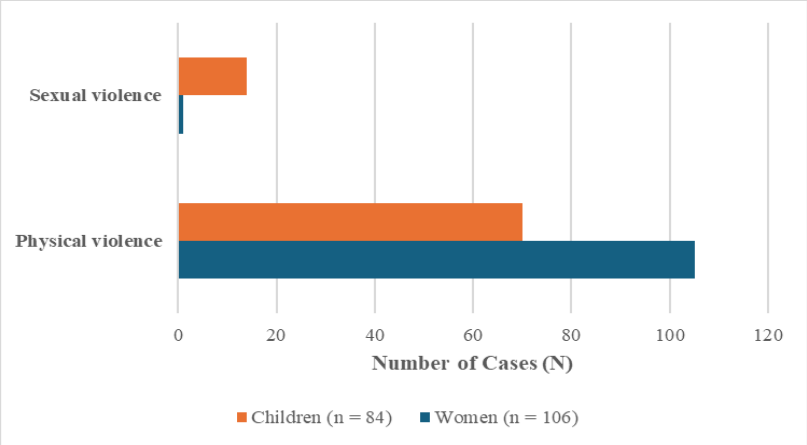

Figure 18: Distribution of the Primary Reported Type of Violence among Women and Children

- **Occurrence of Violence:**

A significant proportion of victims in both groups experienced recurrent violence. However, women victims reported a higher rate of experiencing violence more than once (70.8%) compared to child victims (45.2%). **Figure 19** highlights the frequency of assault for both women and children.

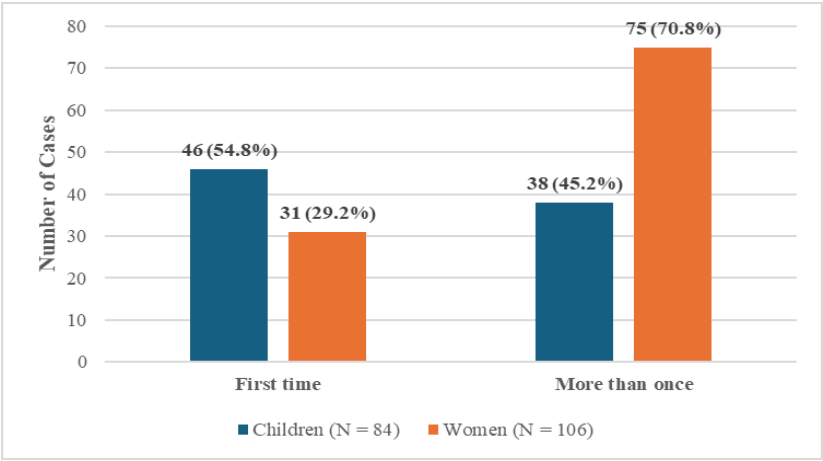

Figure 19: Frequency of Assault Occurrence for Child and Women Victims.

- **Methods Used and Physical Consequences:**

In terms of methods, the perpetrator's body parts were the most commonly reported object used in assaults for both children (77.4%) and women (76.4%). Blunt force objects were also utilized in approximately a quarter of incidents for both groups (25.0% for children, 29.2% for women). Sharp

force objects were less common but present in a small percentage of cases for both children (3.6%) and women (4.7%).

The most frequently reported physical injury for both groups was contusion (70.2% for children, 75.5% for women), followed by abrasions (28.6% for children, 27.4% for women). Hematomas were reported by 10.7% of children and 23.6% of women. Injuries to the head and neck were the most common injury location for both children (57.1%) and women (79.2%). This was followed by Upper Limbs: children (39.3%); women (35.8%), and then trunk injuries: children (25.0%); women (24.5%). (see Appendix B for full details).

- **Associated Forms of Violence:**

Verbal violence was almost universally present, accompanying the primary assault in 89.3% of child cases and 96.2% of women cases. Economic violence was reported more frequently in incidents involving women (18.9%) than children (4.8%). Neglect was an associated factor in 7.1% of child cases.

- **Post-Incident Actions and PTSD Overview:**

Most victims in both groups (82.1% of children, 99.1% of women) sought consultation spontaneously. Judicial follow-up was the primary reason for consultation for a large proportion of both children (71.4%) and women (71.7%). The Total Incapacity to Work (ITT) was less than 15 days for most victims (91.7% of children, 97.2% of women). The mean time interval between the assault and consultation was approximately 3 days for children and 2.2 days for women.

Descriptively, the mean Child PTSD Symptom Scale (CPSS) score for children was 28.69 (SD=18.26), while the mean PTSD Checklist (PCL-5) score for women was 33.14 (SD=16.97). Based on the respective scale cutoffs, a higher proportion of women (56.6%) screened positive for probable PTSD compared to children (46.4%) screening positive for probable PTSD based on the CPSS.

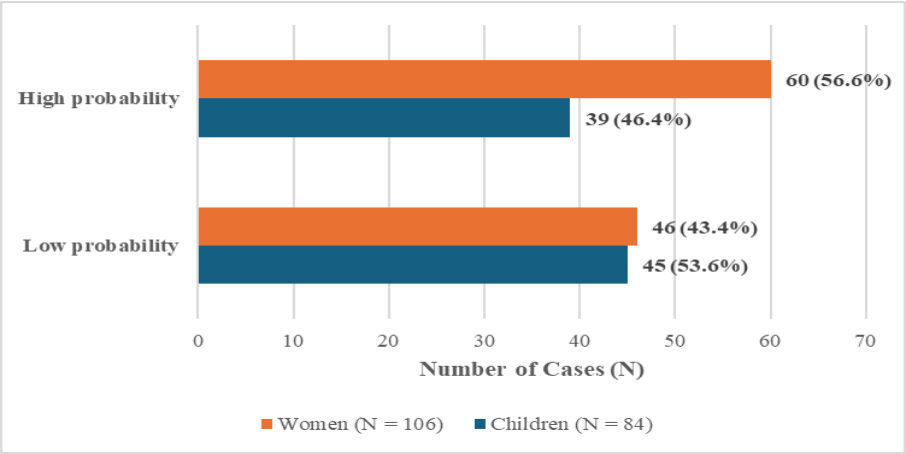

Figure 20: Probable PTSD Status by Victim Group

2 Analytical Results

2.1 Factors Associated with PTSD Probability in Women Victims

2.1.1 Bivariate Associations with High PTSD Probability for women

For women victims, factors related to their demographic and living situation, perpetrator characteristics, and specific incident details demonstrated significant associations with PTSD probability, using bivariate tests Chi 2, Fisher's Exact Test for categorical variables or t-test for continuous variables as summarized in **Table 6.**

Table 6: Bivariate Associations with High PTSD Probability Women Victims

Characteristic Domain	**Variable / Category/ Statistic**	**High PTSD Prob. N (%)**	**Low PTSD Prob. N (%)**	**P-Value**
Victim Demographics & Situation				
Living Situation	Marital Home	40 (69.0%)	18 (31.0%)	**.001**
	Family Home (Parental)	10 (30.3%)	23 (69.7%)	
Marital Status	Married	48 (68.6%)	22 (31.4%)	**.001**
Perpetrator				
Aggressor Gender	Male	58 (62.4%)	35 (37.6%)	**.002**
Perpetrator Relationship	Intimate Partner (Marital/Non-Marital)	47 (66%)	21 (34%)	**.001**
Median Aggressor Age	Mean for High PTSD : 41.78 (12.16)			**.016*** (t-test)
	Mean for Low PTSD : 35.96 (11.87)			
Aggressor Age Group (Trend)	*Older Categories*	*19 (73.1%)*	*7 (26.9%)*	*.069*
Incident Characteristics				
Location of Assault	Home	54 (65.9%)	28 (34.1%)	**.001**
	Public Place	5 (26.3%)	14 (73.7%)	
Economic Violence	Present	16 (80.0%)	4 (20.0%)	**.024**
Injury - Trunk Injury	Present	22 (84.6%)	4 (15.4%)	**.001**
Object Used - Body Parts	Present	19 (76.0%)	6 (24.0%)	**.037**
No. of Children (Trend)	*Mean for High PTSD: 2.48 (1.63)*			*.068 (t-test)*
	Mean for Low PTSD: 1.90 (1.21)			

For women victims (Table 6), specific **demographic and situational factors** were linked to PTSD probability. Women living in their marital home (69.0% high PTSD prob.) or whose spouses lived in the family home had a significantly higher likelihood of PTSD compared to those living in their parental family home (30.3% high PTSD prob.) (p=.001). Married women also showed a higher probability of PTSD (68.6%) compared to single or divorced women (overall p=.001).

Perpetrator characteristics also played a crucial role. Assaults by male aggressors (62.4% high PTSD prob. vs. 15.4% if female, p=.002) and by an intimate partner (marital or non-marital) (p=.001) were significantly associated with increased PTSD probability. Furthermore, women who developed high PTSD had significantly older aggressors (mean median age 41.78 years) compared to those with low PTSD (mean median age 35.96 years, p=.016).

Regarding **incident characteristics**, assaults occurring at home (65.9% high PTSD prob.) were significantly linked to higher PTSD probability, while those in public places were linked to lower probability (p=.001). The presence of economic violence (80.0% high PTSD prob., p=.024), sustaining a trunk injury (84.6% high PTSD prob., p=.001), and the body parts in the assault (76.0% high PTSD prob., p=.037) was significantly associated with a higher probability of PTSD. A trend suggested that women with more children might have a higher likelihood of PTSD (p=.068).

2.1.2 Multivariate Logistic Regression Predicting High PTSD Probability for Women

To identify independent predictors of high PTSD probability among adult women (N=106), a multivariate logistic regression model was fitted. The overall model containing nine predictor variables (location of assault, aggressor gender, presence of trunk injury, economic violence, verbal violence, median age of aggressor, violence occurrence, victim's education level, and median age of victim) was statistically significant, $\chi^2(9) = 36.527$, $p < .001$. The model demonstrated a moderate level of explanatory power, accounting for approximately 41.3% of the variance in PTSD probability (Nagelkerke $R^2 = .413$), **and showed good fit to the data (Hosmer-Lemeshow test: $\chi^2(7) = 5.030$, $p = .656$).** The model converged successfully, indicating reliable parameter estimates

The specific predictors and their association with high PTSD probability are detailed in **Table 7**

Table 7: Multivariate Logistic Regression Predictors of High PTSD Probability in Adult Women Victims (N=105)

Predictor Variable	p-value	Odds Ratio (Exp(B))	95% CI for Exp(B)
Location: Home (vs. Public Place Ref)	**.020**	**6.883**	**[1.363, 34.755]**
Aggressor Gender: Male (vs. Female Ref)	**.020**	**14.467**	**[1.519, 137.815]**
Trunk Injury: Present (vs. Absent Ref)	**.001**	**15.835**	**[2.905, 86.322]**
Economic Violence **:** Present (vs. Absent Ref)	.075	3.569	[0.878, 14.497]
Victim Education: Low (vs. High Ref)	.111	7.276	[0.635, 83.313]
Verbal Violence **:** Present (vs. Absent Ref)	.241	0.143	[0.006, 3.691]
Median Age of Aggressor (Continuous)	.292	1.025	[0.979, 1.074]
Violence Occurrence : Recurrent (vs. First time Ref)	.649	0.750	[0.217, 2.591]
Median Age of Victim (Continuous)	.247	0.962	[0.901, 1.027]

Three factors emerged as statistically significant predictors:

Location of Assault: Incidents occurring at **Home** were associated with significantly higher odds of high PTSD probability compared to those occurring in a **Public Place** (OR = 6.88, 95% CI [1.36, 34.76], p = .020).

Aggressor Gender: Having a **Male aggressor** significantly increased the odds of high PTSD probability by more than 14 times compared to having a Female aggressor (OR = 14.47, 95% CI [1.52, 137.82], p = .020).

Trunk Injury: The **presence of a trunk injury** was a very strong predictor, associated with over 15 times higher odds of high PTSD probability compared to the absence of a trunk injury (OR = 15.84, 95% CI [2.91, 86.32], p = .001).

Additionally, two variables showed notable trends, although they did not reach conventional statistical significance ($p < .05$): The **presence of Economic Violence** showed a trend towards increasing the odds of high PTSD probability (OR = 3.57, 95% CI [0.88, 14.50], p = .075).

While victims with a **Low educational level** showed a trend towards higher odds of high PTSD probability compared to those with a High educational level (OR = 7.28, 95% CI [0.64, 83.31], p = .111).

Other variables included in the model—verbal violence during the incident, median age of the aggressor, whether the violence was recurrent or a first-time event, and the median age of the victim—were not found to be statistically significant predictors of high PTSD probability in this adult sample after adjusting for other factors. It is important to note that the "Verbal Violence" predictor had a very small reference group (N=4 for "Absent"), which may have affected the stability of its estimate.

These findings suggest that for adult women, the context of the assault (at home), the gender of the aggressor (male), and the specific physical injury of a trunk trauma are key factors significantly elevating the probability of high PTSD.

2.1.3 Predictors of PTSD Symptom Severity in Adult Women

To further investigate the factors associated with the severity of post-traumatic stress symptoms in the women's sample, a multivariate linear regression analysis was conducted. The PCL-5 total score was used as the continuous dependent variable, representing PTSD symptom severity. Several predictor variables, identified from the literature review and preliminary analyses, were included in the model. These predictors encompassed demographic characteristics (number of children, living situation), characteristics of the traumatic event (assault location, violence occurrence, aggressor relationship type, presence of trunk injury), and individual history factors (history of childhood violence).

The overall multivariate linear regression model was statistically significant, $F(10, 72) = 3.634$, $p = .001$, and accounted for approximately 24.3% of the variance in PCL-5 total scores (Adjusted $R^2 = .243$). Collinearity diagnostics indicated that multicollinearity was not a significant concern for this model, with all Tolerance values above .40 and Variance Inflation Factor (VIF) values below 2.5.

Table 8: Multiple Linear Regression Analysis Predicting PTSD Symptoms severity in Women Victims (N=83)

Predictor Variable	B	Sig. (p-value)	95% CI for B
Number of Children	**2.944**	**.006**	**[0.861, 5.028]**
Living Situation: Family home (vs. Marital Home Ref)	**-15.547**	**.012**	**[-27.643, -3.452]**
Living Situation: Spouse's family (vs. Marital Home Ref)	-2.655	.519	[-10.824, 5.515]
Trunk Injury: Present (vs. Absent Ref)	6.875	.057	[-0.203, 13.953]
Aggressor : Acquaintance (vs. Family Member Ref)	-17.409	.076	[-36.655, 1.838]
Child Violence History: Present (vs. Absent Ref)	4.541	.210	[-2.620, 11.702]
Aggressor: Intimate Partner (vs. Family Member Ref)	-3.388	.543	[-14.445, 7.670]
Aggressor: Unknown (vs. Family Member Ref)	-8.248	.384	[-27.031, 10.535]
Assault Location **:** Public place (vs. Home Ref)	-1.674	.779	[-13.541, 10.193]
Violence Occurrence **:** First time (vs. Recurrent Ref)	0.189	.967	[-8.883, 9.260]

Examination of the individual predictors (Table 8) revealed that two factors were significantly associated with PCL-5 total scores. A higher **number of children** was significantly associated with higher PCL-5 total scores; for each additional child, PCL-5 scores were predicted to increase by approximately 2.94 points ($B = 2.944$, 95% CI [0.861, 5.028], $p = .006$). Secondly, **living situation** was a significant predictor; compared to living in a Marital Home (reference category), individuals living in a **Family Home** had significantly lower predicted PCL-5 total scores, with an average decrease of approximately 15.55 points ($B = -15.547$, 95% CI [-27.643, -3.452], $p = .012$).

Two other variables demonstrated trends towards statistical significance. The **presence of a trunk injury** (compared to its absence) showed a trend towards being associated with higher PCL-5 total scores, with a predicted average increase of approximately 6.88 points ($B = 6.875$, 95% CI [-0.203, 13.953], $p = .057$). Additionally, when the aggressor was an **Acquaintance** (compared to a Family

Member as the reference category), there was a trend towards lower PCL-5 total scores, with a predicted average decrease of approximately 17.41 points (B = -17.409, 95% CI [-36.655, 1.838], p = .076). However, this latter finding regarding aggressor type should be interpreted with considerable caution, as descriptive statistics indicated that the "Acquaintance" aggressor category comprised a very small number of cases (N=1), potentially leading to an unstable coefficient estimate.

Other variables included in the model—history of childhood violence (present vs. absent), aggressor being an intimate partner or unknown (vs. family member as reference), living with spouse's family (vs. marital home as reference), assault location (public place vs. home as reference), and whether the violence was a first-time event (vs. recurrent as reference)—were not found to be statistically significant predictors of PCL-5 total scores in this multivariate model.

In summary, for the adult sample, having more children and living in a marital home (as opposed to a family home) were significantly associated with higher PCL-5 total scores. There were also trends suggesting that the presence of a trunk injury may increase symptom severity. The finding regarding an acquaintance as an aggressor, while trending, is limited by a very small subgroup size.

2.2 Factors Associated with PTSD/CPSS Probability in Child Victims

2.2.1 Bivariate Analysis

Several factors related to the child's family environment, perpetrator characteristics, and incident specifics were found to be significantly associated with the probability of developing PTSD/CPSS, or showed notable trends. These findings are summarized in **Table 9**

Table 9: Key Factors Associated with PTSD/CPSS Probability in Child Victims (N=84)

Characteristic Domain	Variable / Category	High PTSD/CPSS Prob. N (%)	Low PTSD/CPSS Prob. N (%)	P-Value
FAMILY ENVIRONMENT				
Parental Substance Abuse (Any)	Present	17 (70.8%)	7 (29.2%)	**.007**
	Absent	22 (36.7%)	38 (63.3%)	
Parental Tobacco Use	Present	14 (70.0%)	6 (30.0%)	**.021**
	Absent	25 (39.1%)	39 (60.9%)	
Mother's Age at Marriage	(Overall Categorical Test)	(Varied distribution)	(Varied distribution)	**.013**
Recent Family Changes	Parental Divorce	9 (81.8%)	2 (18.2%)	**.007**
PERPETRATOR				
Perpetrator Type	Family Member	10 (66.7%)	5 (33.3%)	**.021**
	School Personnel	0 (0.0%)	8 (100.0%)	
INCIDENT CHARACTERISTICS				
Location of Assault	Home	11 (64.7%)	6 (35.3%)	**.024**
	School	2 (15.4%)	11 (84.6%)	
Verbal Violence	Present	39 (52.0%)	36 (48.0%)	**.003**
Economic Violence	Present	4 (100.0%)	0 (0.0%)	**.043**
Injury - Hematoma (Trend)	Present	7 (77.8%)	2 (22.2%)	.075
Time of Assault (Trend)	Evening/Night	20 (57.1%)	15 (42.9%)	.069 (Linear)
Sharp Force Objects (Trend)	Present (N=3)	3 (100.0%)	0 (0.0%)	.096
Neglect (Trend)	Present (N=6)	5 (83.3%)	1 (16.7%)	.092

For child victims (Table 9), several factors were significantly associated with a higher probability of PTSD/CPSS. Within the **family environment**, any parental substance abuse (70.8% high PTSD/CPSS prob. vs. 36.7% if absent, p=.007), specifically parental tobacco use (70.0% vs. 39.1%, p=.021), and recent parental divorce (81.8% vs. other changes/no change, p=.007) were notable risk factors. Mother's age at marriage also showed a significant complex association with child PTSD/CPSS probability (p=.013), though not a simple linear one.

Regarding **perpetrator characteristics**, the type of perpetrator was significantly linked to PTSD/CPSS probability (p=.021). Victimization by a family member was associated with a higher probability of PTSD/CPSS (66.7%), whereas incidents involving school personnel were associated with a significantly lower probability (0.0%).

Several **incident characteristics** were also significant. Assaults occurring at home were linked to a higher PTSD/CPSS probability (64.7%), while those at school were linked to a lower probability (15.4%) (overall p=.024). The presence of verbal violence (52.0% high PTSD/CPSS prob. vs. 0% if absent, p=.003) and economic violence (100% high PTSD/CPSS prob. if present, N=4, p=.043) were strongly associated with increased PTSD/CPSS probability. Trends suggested that the presence of hematomas (p=.075), assaults occurring in the evening/night (p=.069), the use of sharp force objects

(p=.096, small N), and neglect (p=.092, small N) might also be associated with a higher likelihood of PTSD/CPSS in children.

2.2.2 Multivariate Logistic Regression (PTSD Probability)

Attempts to build a multivariate logistic regression model were **unsuccessful due to persistent quasi-complete separation** caused by variables like Verbal Violence, Economic Violence. Standard logistic regression could not provide stable estimates

2.2.3 Predictors of PTSD Symptom Severity in Child and Adolescent Victims

To identify factors associated with the severity of post-traumatic stress symptoms (CPSS total score) among child and adolescent victims (N=84), a multivariate linear regression analysis was conducted. The model included predictors such as victim's age, presence of verbal violence, sexual violence, assault location, recent family changes, parental substance abuse, and whether the aggressor was a family member.

The overall model fit, individual predictor contributions, and collinearity statistics are presented in **Table 10.**

Table 10: Multivariate Linear Regression Predicting CPSS Total Score in Child and Adolescent Victims

Predictor Variable	B	Sig. (p-value)	95% CI for B
Verbal Violence: Present (vs. Absent Ref)	**19.207**	**.001**	**[7.803, 30.611]**
Sexual Violence: Present (vs. Absent Ref)	**10.237**	**.027**	**[1.223, 19.251]**
Location: Public place (vs. School Ref)	**10.061**	**.050**	**[-0.001, 20.122]**
Location: Home (vs. School Ref)	14.707	.074	[-1.476, 30.890]
Parental Substance Abuse: Present (vs. Absent Ref)	7.123	.126	[-2.040, 16.286]
Victim's Age (Years, Continuous)	0.734	.194	[-0.381, 1.849]
Recent Family Change: Present (vs. Absent Ref)	3.580	.481	[-6.488, 13.648]
Aggressor: Family Member Present (vs. Non-Family Member Ref)	2.697	.703	[-11.321, 16.715]

The multivariate linear regression model for child and adolescent victims (N=84) was statistically significant, $F(8, 75) = 5.417$, $p < .001$. This model accounted for approximately 29.9% of the variance in PCL-5/CPSS total scores (Adjusted $R^2 = .299$). Collinearity diagnostics indicated that multicollinearity was not a significant concern for this model (all Tolerance values > .26, all Variance Inflation Factor [VIF] values < 3.9).

Analysis of the individual predictors' contributions to CPSS total scores is detailed in Table 10. Three predictors emerged as statistically significant ($p \leq .05$):

- **Verbal Violence:** The presence of verbal violence during the traumatic incident was significantly associated with higher CPSS scores. On average, victims who experienced verbal violence had scores approximately 19.21 points higher than those who did not, controlling for other factors in the model (B = 19.207, 95% CI [7.803, 30.611], p = .001).
- **Sexual Violence:** The occurrence of sexual violence was also a significant predictor. Victims who experienced sexual violence had CPSS scores that were, on average, 10.24 points higher than those who did not experience sexual violence, after accounting for other variables (B = 10.237, 95% CI [1.223, 19.251], p = .027).
- **Location of Assault (Public place vs. School):** Compared to assaults occurring at **School** (reference category), incidents taking place in a **Public Place** were significantly associated with higher CPSS scores, with a predicted increase of approximately 10.06 points (B = 10.061, 95% CI [-0.001, 20.122], p = .050).

A trend towards statistical significance ($p < .10$) was observed for assaults occurring at **Home** when compared to School (reference category). These incidents were associated with a predicted increase of approximately 14.71 points in PCL-5/CPSS scores (B = 14.707, 95% CI [-1.476, 30.890], p = .074).

In this multivariate model, the victim's age, the presence of recent family changes, parental substance abuse, and whether the aggressor was a family member (compared to a non-family member) were not found to be statistically significant independent predictors of CPSS total scores.

In summary, for child and adolescent victims in this sample, the experiences of verbal violence and sexual violence during the traumatic event were key factors significantly associated with greater PTSD symptom severity. The location of the assault also played an important role, with incidents occurring in public places (and trending for those at home) being linked to higher symptom scores compared to those occurring at school.

VII. DISCUSSION

1 Discussion of Descriptive Findings

1.1 Prevalence of Interpersonal Violence: A Critical Indicator of Vulnerability

The high prevalence of interpersonal violence highlighted in our study—22.0% of all female consultations and 15.3% of child consultations — emphasizes the seriousness of the issue in our setting. When focusing only on individuals who were confirmed victims of violence, 89.7% of women and 84.3% of children reported experiencing interpersonal violence.

These statistics are notably high and emphasize the reality that violence, especially within domestic and community settings, constitutes a major public health concern.

Compared to global data, our findings results align with estimates provided by the World Health Organization, which states that Approximately one-third (30%) of women who have ever been in a partnership have experienced physical and/or sexual violence by an intimate partner, while around 6-7.2% of women aged 15 and older have faced sexual violence by a non-partner, with significant regional variations influenced by stigma and underreporting. In regions such as the Eastern Mediterranean and sub-Saharan Africa, this percentage increases to around 37%, indicating that women in these areas face even greater risks (37). Similarly, research from Jordan shows that 25.9% of women who have ever been married reported experiencing domestic violence, with the prevalence increasing to 37.8% among those aged 40–44, indicating cumulative exposure over time(117). Therefore, our finding of 89.7% of women consulting for interpersonal violence indicates that our study population is particularly vulnerable, probably due to the nature of medico-legal consultations, which often tend to involve more severe or legally relevant cases.

Regarding children, the 84.3% prevalence of interpersonal violence in our sample is also aligned with regional patterns, though it falls on the higher end of the spectrum. For instance, in Jordan, 74.6% of children between the ages of 8 and 17 reported physical violence, and 73.9% of their caregivers admitted to using violence as a form of punishment(33). In Algeria, existing data indicate that 30% of children have experienced physical abuse and 25% emotional abuse. Globally, the World Health Organization estimates that three out of four children aged 2 to 4 are regularly subjected to physical or psychological violence by caregivers(73). Our findings are therefore consistent with both regional norms and global prevalence, reinforcing the pervasive nature of violence against children.

An additional dimension worth noting is peer violence and bullying, which are increasingly recognized as significant contributors to child victimization. In Algeria, studies have reported widespread bullying, particularly in school settings, with over 50% of students aged 13 to 15 exposed to verbal or physical harassment. Throughout the MENA region, violence in schools —ranging from psychological bullying to physical aggression—is a growing concern, exacerbated by insufficient school supervision and the

normalization of harsh disciplinary methods(15). On a global scale, UNESCO states that 32% of students aged 12 to 18 have been bullied by their peers, leading to considerable effects on their mental health, academic performance, and social development(118).

In light of these comparisons, our results not only confirm the global and regional patterns of prevalent interpersonal violence but also highlight the severity and visibility of cases that reach medico-legal services, possibly indicating more serious injuries, a higher threshold for reporting, or reduced social tolerance for violence. These data collectively underscore the immediate necessity for multidimensional prevention strategies, including school-based interventions, and family support programs, to address interpersonal violence in all its forms.

1.2 Sociodemographic Profile of Victims:

The analysis of the sociodemographic profiles of the victims in our study, women and children, reveals both expected and surprising patterns. These findings not only reflect individual vulnerabilities but also highlight broader societal structures that perpetuate violence across different age groups.

1.2.1 Adult Female Victims: Age, Education, Marital Status and Employment Status

Our study confirms that the majority of the victims were adult women, particularly those in their young to middle adulthood. Precisely, 53.8% of the women were aged 30-45 years, and 36.8% were aged 18-29 years. This age range corresponds to key stages of adult life that involve marriage, motherhood, and domestic responsibilities —contexts in which vulnerability to violence may be increased. These findings are consistent with several studies done across the MENA region, including Tunisia (79% under 40), Algeria (mean age 35 years ±12), Jordan (53.8% between 25 –39), and Morocco (43,5% between 31-40) which consistently show that women in this life phase are disproportionately affected by violence(110,117,119,120).

Unlike many regional studies reporting low levels of education among female victims, our data revealed that 59.4% of the females had attained a university-level education. While studies from Tunisia and Turkey report primary education or no education as common among victims(119,121); our findings suggest a different pattern, aligning more closely with another study in Laghouat (34 % of victims had university- level of education)(112). This could be accounted by greater access to higher education in Laghouat or by the higher likelihood of educated women seeking medico-legal help or reporting abuse. It highlights clearly that education could be empowering but not necessarily a guarantee against abuse, especially in societies where gender-based violence is normalized.

In terms of marital status, two-thirds (67.0%) of the women victims were married. This closely aligns with national and regional data, e.g., Algeria (63%), Morocco (89%), and prior study done in Laghouat (89.2%), all of which demonstrate that intimate partner violence is often rooted in the institution of marriage(110,112,120). The persistence of violence within marital settings can be attributed to the cohabitation dynamic, emotional dependency, as well as power imbalance between the couple.

Another important sociodemographic factor is employment status. In our study, 37.7% of the women were housewives, a proportion significantly lower than reported in Tunisia (69%) and Algeria (65%) (119,120). While these studies show a dominant role of homemakers among female victims, our data indicates a higher proportion of women being employed (33.0%, combining relevant categories). This suggests a potential divergence from traditional gender roles within our specific study area, possibly linked to increased levels of education and employment opportunities in Laghouat. However, this finding also suggests that working women are not immune to domestic violence. Employment, in fact, may not be a simple protective factor for all women, as attaining financial independence can sometimes be seen as a challenge to a partner's authority or traditional male roles, potentially intensifying violence or control. This means women who work may still be exposed to violence in both public and private spheres. This confirms the necessity of fighting gender-based violence across all sectors of society, regardless of economic participation.

These findings outline a victim profile that, even encompassing educated and often socially well-integrated women remains shaped by structural gender inequalities particularly within domestic sphere.

1.2.2 Child Victims: Key Sociodemographic Profile

The most surprising finding of our study is the unexpected predominance of male victims among children, with boys representing 63.1% of reported cases. This overall male predominance in our child sample is reinforced by several studies from the region: Tunisia (with two studies, one in Sfax and the other in Sousse) reported male predominance at 64.4% and 56%, respectively, Egypt (59.7%), and Yemen (57.5%).(122–125)

There are several potential reasons for this trend in the region. Boys often have more freedom of movement and tend to spend more time in public spaces, potentially increasing their risk of exposure to various forms of violence. Additionally, cultural norms in certain contexts may lead to less supervision or fewer protective measures for boys compared to girls. Parenting practices and societal expectations can influence the level of oversight boys receive, potentially making them more vulnerable. Furthermore reporting dynamics may also differ based on the type of violence experienced and prevailing social attitudes, possibly resulting in underreporting of female victimization due to stigma or fear of repercussions, or to an apparent overrepresentation of male victims in reported cases.

What makes this finding even more noteworthy is that this male predominance was also observed in cases of sexual violence in our study, where 8 out of 14 victims being boys and 6 being girls. This observation is particularly striking given global statistics indicating that girls are generally more affected by sexual violence(73). Moreover, our findings differ from other studies in the region; for instance, a study in Tunisia about sexual violence in minors found that girls constituted the majority of victims (64.2%), while boys represented only (35.8%)(126). Similarly, a study carried out in Algiers noted a similar trend, with a sex ratio (M/F) of 0.36(127). This contrast emphasizes the necessity of considering

local sociocultural dynamics and reporting practices when interpreting victimization patterns in different contexts.

The age group most affected in our study was between 12 to 17 years (57.1%). this is in agreement with previous findings from Tunisia (Sfax) (124), where the median age of victims was 14 years, reflecting increased vulnerability during adolescence —a period marked by rising independence, peer pressure, and higher exposure to unsupervised environments. This vulnerability is further evidenced by the finding that the majority (64.3%) of child assaults occurred in public spaces, suggesting that insufficient supervision and risks inherent in public spaces are major factors contributing to violence against children outside home and school settings.

All of the children included in our study were enrolled in school, with almost half attending middle school (47.6%). While School attendance overall is most frequently associated with protection and positive development, our findings shows that school settings can also become environments where violence occurs. Notably, 15.5% of child assaults were reported as having occurred at school. These findings imply that while schools aim to educate and safeguard children, they may also serve as settings for peer aggression, abuse by adults within the institution, or risks encountered in the school environment itself. This is supported by regional data: in Sfax (Tunisia), most child victims were students (84.6%), while in Sousse, a significant proportion of child victims, particularly those who were victims of neglect, were school drop-outs, highlighting the potential bidirectional link between school engagement, vulnerability, and violence(123,124).

Substance Use among Children: In our study, 9.5% of child victims indicated that they had engaged in some type of substance abuse. Among them, tobacco use was the most prevalent (75.0%), followed by other substances at 37.5% and chewing tobacco at 12.5%. These results are consistent with broader patterns observed in the Maghreb countries, where substance use—including smoking, alcohol consumption, and drug abuse—has been reported among youth victims of violence with prevalence ranging from 5% to 38%.(30)

It is crucial to take into account that the 9.5% prevalence might be an underestimation of the true extent of substance abuse among these child victims. The presence of parents or caregivers during consultations could significantly inhibit children from openly disclosing their substance use. Children might fear disapproval, punishment, or further repercussions if they reveal such information in front of their primary caregivers, leading to a potential reporting bias in clinical settings.

Ultimately, Substance abuse among these vulnerable children may serve both as a coping mechanism as well as an indicator of deeper psychological distress related to their victimization. This highlights the complex interplay between child victimization and behavioral responses, underscoring the need for comprehensive screening and support.

Family Structure and Recent Changes: In our study, the majority of the children (82.1%) had not undergone any significant family changes recently. However, some participants had encountered major disruptions such as parental divorce (13.1%), remarriage of a parent (3.6%), or the death of a parent (1.2%). Although these figures may seem relatively low, research across the Maghreb countries indicates that family instability—especially parental conflict or separation—is frequently associated with increased vulnerability to violence. For example, parental conflict was present in 35% to 45% of victims' histories(30).

Parental substance use was identified in 28.6% of cases, with tobacco being the most frequently reported substance (83.3%), followed by alcohol (20.8%). This percentage is significantly higher compared to Tunisia (6.6%) and Yemen (14.1%), indicating a worrying trend within our sample (123,125). The presence of parental substance abuse has been consistently linked to increased risk of violence, particularly sexual abuse, as shown in the Maghreb region study where it was associated with up to 11% of such cases(30).

History of Domestic Violence: A considerable percentage of children (31.0%) reported witnessing or experiencing domestic violence. This aligns with data from Tunisia (28%) and Yemen (25.1%), indicating that exposure to domestic violence remains a consistent and cross-cultural risk factor for victimization among children(123,125). These results highlight the repetitive cycle of violence within households, where children not only suffer directly but are also exposed to harmful relational patterns.

1.2.3 Other General Profile and Background Factors for victims

Socioeconomic status: our study uncovered a complex picture regarding the relationship between socioeconomic status and violence. A significant majority of the women and children surveyed came from families with average living standards (over 70%). However, a notably high percentage of victims—17.9% of children and 11.3% of women—reported high living standards, which exceeds typical findings in existing literature. While regional studies often highlight a strong correlation between violence and low socioeconomic status, our results indicate that abuse can affect individuals across all income levels. This challenges the common assumption that violence is limited to underprivileged families, suggesting that underlying issues such as power imbalances and gender inequality are pervasive regardless of economic circumstances. Nevertheless, poverty remains a crucial risk factor, particularly in cases of child neglect and sexual abuse, as indicated by data from Maghreb countries and a study conducted on women in Jordan, which shows that 40.3% of victims come from a low socioeconomic background(30,117). This is due to the fact that poverty can heighten stress, limit access to essential resources, and reduce a victim's options for safety and escape.

Place of Residence: urban residence was predominant in our study for both women (92.5%) and children (98.8%), surpassing urban residency rates reported in Tunisia (53% for women) and Egypt (24.3% for children)(119,122). This may reflect the sampling setting and the accessibility of forensic

medical services in urban areas like Laghouat. Urban dwellers are more likely to report violence and access support systems, while rural victims may encounter barriers such as stigma, lack of awareness, and reduced access to services.

Living Arrangements: most women lived in their marital homes (54.7%), which is consistent with their predominantly married status. The average household size (4.2 for women, 4.63 for children) is consistent with norms observed in Turkey(121). In comparison, for children an Egyptian study reported larger households, with 35.6% of participants living in households comprising eight or more individuals, while in Saudi Arabia, the majority of children lived in nuclear families, though some were part of extended family settings(31,122).

Family structure and the living environment are important contextual factors in understanding violence, as crowded or unstable home conditions can contribute to stress, reduced parental attention, and increase the likelihood of violence, particularly towards children.

Ultimately, our study reinforces the idea that susceptibility to violence in both women and children is influenced by various elements, including gender, age, education, family dynamics, and their surrounding environment. Understanding these distinct yet sometimes overlapping vulnerability locations is crucial to reduce the rates of violence and create safer environments for everyone, especially for women and children.

1.3 Characteristics of Perpetrators of Violence Against Women and Children

Our study provides valuable insights regarding the profiles of women and children perpetrators of violence, highlighting both overlapping and distinct patterns. These findings accord with the broader regional and international literature and serve to accentuate the gendered, multifactorial nature of interpersonal violence.

- **Gender of the Perpetrator**

Across both women's and children's cases, the overwhelming majority of perpetrators were male: 87.7% in women's cases and 85.7% in children's cases —underscoring the deeply gendered nature of violence. This pattern is consistent with findings from Tunisia, Algeria, and broader Maghreb contexts, where men are consistently identified as the primary perpetrators of both physical and sexual violence(30,119,120). This male predominance supports the conclusion that interpersonal violence—particularly intimate partner and child abuse— is deeply rooted in patriarchal norms, where masculinity is often associated with control and aggression. These results underscore the need for gender-sensitive prevention strategies and intervention focused on male populations.

- **Nature of the Victim–Perpetrator Relationship**

A key difference emerged in the nature of the relationship between victims and perpetrators. For women, the perpetrator was most often an intimate partner (64.2%), followed by family members (17.0%),

confirming that intimate partner violence (IPV) remains the dominant form of gender-based violence. This trend was similarly observed in Tunisia (70%), Morocco (81.1%), and Turkey (89.2%), illustrating a widespread regional pattern(110,119,121). These figures reflect how deep-rooted patriarchal norms contribute to intimate partner violence in the domestic sphere.

Factors such as women's economic and social dependency, gender inequality, and normalization of male dominance, can contribute to the persistence and recurrence of such violence and create barriers that reduce women's ability to seek help or escape abuse.

In contrast, data from Algeria showed a lower proportion of spousal perpetrators (38%), but importantly, the majority of aggressors was familiar to the victim and resided in her immediate surroundings(120). This suggests that while intimate partner violence (IPV) may be less frequently reported or categorized in some cases, violence against women predominantly occurs within familiar and proximal social networks. Such findings underscore the necessity for interventions that focus not only on partners but also the wider network of trusted individuals, addressing violence as a systemic concern deeply rooted in women's daily environments. The overall pattern reinforces the significance of community-based prevention, early detection mechanisms, and the strengthening of support systems for victims within their social and familial contexts.

Conversely, violence against children was more frequently perpetrated by non-familial or peripheral figures. In our study, the majority of aggressors were unknown people (34.5%), followed by peers (20.2%), family members (17.9%), other known adults (17.9%), and school personnel in 9.5% of cases. These findings contrast with those from two Tunisian regional studies: in Sousse, where parents were the most frequent perpetrators of aggression in nearly 70% of the cases, while in Sfax, neighbors and family members were the main aggressors (123,124).

This pattern, especially the high percentage of perpetrators being unknown individuals (34.5%), suggests significant risks outside the immediate family, often in public spaces, reflecting broader community safety issues. This is consistent with our previous discussion about boys' higher mobility and exposure to public spaces. Likewise, the significant proportion of violence among peers (20.2%) emphasizes the prevalence of bullying, peer-to-peer aggression, and potentially gang-related activities, particularly among school-aged children. These findings underscore that harmful social interactions within children’s own age groups—at school or in the community—are key sources of risk.

The involvement of "other known adults" (17.9%) further emphasizes a broad network of potential aggressors beyond the immediate household, where trust placed in community figures can sometimes be violated. Of particular concern, the involvement of school personnel in nearly 10% of cases is specially alarming, indicating a serious breach of trust within institutions meant to protect children. These cases often include corporal punishment, emotional abuse, or even sexual misconduct, underlining the need for strict safeguarding policies.

While our study indicates a lower proportion of family member perpetrators (17.9%) compared to the Tunisian data, this should not be interpreted as a lower occurrence of familial violence. Rather, it may reflect underreporting due to social stigma, fear of family breakdown, or efforts to keep abuse hidden within the private sphere. In contrast, non-familial violence may be more visible, easier to disclose, and more frequently reported in medico-legal settings. Overall, the predominance of non-familial aggressors in our findings supports an ecological model of child vulnerability, where risks are present not only within the family but also among peer groups, schools, and the broader community—highlighting the need for comprehensive, multi-level prevention and protection strategies.

This variation highlights multiple risk environments, while women face violence mainly within the intimate or familial circle; children are exposed to a broader and more diffuse network of potential aggressors.

- **Age and Marital Status of the Perpetrators**

In both victim groups, the majority of perpetrators were young to middle-aged adults, particularly those aged between 30 and 45 years. Among women's cases, 47.2% of aggressors belonged to this age group, with similar age trends reported in Tunisia, Morocco, and Algeria(110,119,120). Child abusers were similarly concentrated in the 30–45 (31.6%) and 18–29 (30.4%) age ranges. This age distribution corresponds with periods of active social roles including (spouses, family members, teachers, neighbors, or older peers), who have greater proximity and access to victims both in familial or community settings.

Marital status showed notable differences between perpetrators of violence against children and those against women. In our sample, 68.7% of perpetrators of violence against women were married, highlighting the intimate partner context in which such abuse often occurs. This suggests that the institution of marriage can, in some cases, become a setting for coercion and control. The normalization of domestic violence within marital relationships, combined with limited support options, may contribute to the persistence of abuse and reduce the likelihood that women will seek help.

In contrast, 66.7% of perpetrators of violence against children were single. This may be a reflection of lower level of adult responsibility, weaker social and familial integration, or fewer social restraints. It may also relate to different forms of contact with children, such as peers, neighbors, or community figures, who may operate outside the traditional frameworks of supervision and accountability.

- **Socioeconomic Status and Urban Residence**

An overwhelming majority of abusers in both groups resided in urban areas—90.4% for female abusers and 97.5% for child abusers. This may indicate greater reporting and awareness in urban settings as urban populations tend to have better access to legal, medical, and social support services, but also the increased anonymity and social complexity that can allow abuse to go unreported

Socioeconomic profiles were broadly similar, with most perpetrators reported to have an average living standard (76.7% for women's cases and 72.7% for children's). This counters the stereotype that violence is a consequence of poverty, emphasizing that abuse occurs across all sections of society.

- **Substance Use and Risk of Violence**

Substance use was a prominent characteristic among perpetrators in both victim groups. Among those who abused women, 82.4% used at least one substance—tobacco (66.7%), alcohol (46.1%), or psychoactive drugs (38.2%). Child abusers reported tobacco use (57.9%), whereas alcohol and other substances were present in 23.7% and 34.2% of the cases, respectively. These findings exceed those reported in regional studies, such as the Tunisian study on violence against women where alcohol use was identified in 29.6% of cases(119), and studies on child abuse involving parental perpetrators, which found much lower rates of alcohol use—6.6% in Tunisia and 14.1% in Yemen(123,125). This suggests an extremely strong association between substance abuse and violence in our context.

Such findings suggest that substance use among perpetrators drives violence through impaired judgment, lowered inhibition, and increased impulsivity—especially in already stressful domestic or social environments.

- **History of Childhood Victimization and Criminal Background**

A significant proportion (68.5%) of the perpetrators of violence against women had experienced violence during childhood, supporting the theory of intergenerational transmission of violence. Early exposure to trauma may legitimize aggressive behavior or lead to maladaptive coping mechanisms, especially if compounded by substance use or mental health issues. In addition, 19.8% of these aggressors had a known criminal record, higher than the (5%) recorded in Tunisia but lower than 37.8% observed in Laghouat, where 21.7% had been incarcerated(112,119).

Although comparable data were lacking for perpetrators of child abuse, the shared characteristics such as young adult age, male gender and substance use suggests shared psychosocial risk profiles, often shaped by prior trauma or unresolved behavioral disorders.

Our findings portray a composite image of the "typical" perpetrator: male, middle-aged, urban-dwelling, with an average socioeconomic background and a high likelihood of substance use and past victimization.

1.4 Forms of Violence and Resulting Injuries

Understanding the various forms of violence and the physical injuries they cause is important for effective identification, clinical response, and legal intervention. This section examines the most common forms of violence reported by victims in our study and the characteristics of the resulting physical injuries, incorporating medico-legal considerations and aligning with regional reports.

- **Forms of Violence:**

Violence against women and children manifests in many forms, often co-occurring. In our study, Physical violence was highly predominant, reported by 99.1% of women surveyed. This aligns strongly with regional patterns in Morocco (94.87%) and Algeria (89%)(26,110), and supports the view that physical form is a primary mode of expression for perpetrators, particularly spouses, often serving as the entry point for victims into systems(121). For children, physical violence was also the most reported direct abuse (83.3%), consistent with global and regional trends (Tunisia Sfax 93.6%, Yemen 75.7%, Saudi Arabia 51.1%)(31,124,125).

Verbal violence was also extremely prevalent in our study, reported by 96.2% of women and present in 89.3% of child cases. This High frequency, consistent with findings in Turkey (emotional 67.7%, verbal 74.3%) and Yemen research results (emotional 79.2%)(121,125), emphasizes that the non-physical forms of abuse are common and can have significant psychological impacts, although they may be under prioritized compared to physical harm.

Sexual violence presented a notable pattern: reported by 16.7% of children, but only 0.9% of women in our study. sexual violence appeared more frequent in children in our reported cases, but this low figure for women, consistent with some regional data (Tunisia 1%, Jordan 0.9%, Morocco 0.80%)(110,117,119), is highly suggestive of significant underreporting in women due to stigma, fear, and cultural taboos. While prevalence rates for childhood sexual abuse vary regionally (Jordan 27.3%, Yemen 35.2%, Saudi Arabia 29.6%)(31,33,125), our finding for children is within this range and points to the critical, often hidden, nature of this form of abuse in both groups.

Other documented forms for children included neglect (7.1%) and economic violence (4.8%). For women, economic violence was reported in 18.9% of cases, comparable to Turkey (18.5%) and Tunisia (8%)(119,121). These findings highlight that violence is often polymorphic, with frequent co-occurrence of multiple forms (physical, verbal, economic, psychological), as seen in our data and regional studies (Laghouat study, Jordan, Yemen, Tunisia)(112,117,123,125), amplifying the trauma and necessitating comprehensive assessment.

- **Physical Injuries: Characteristics and Medico-Legal Significance**

These forms of violence, particularly physical and sexual assault frequently result in physical injuries, the characteristics of which carry significant medico-legal importance.

Injury Types: Soft tissue injuries were most common in both groups. For women, Contusions were the most prevalent (75.5%), along with abrasions (27.49%) and hematoma (23.6%), consistent with Morocco and Tunisia(110,119). Fractures and dislocations were rare (1.9%), potentially reflecting repetitive rather than single severe physical assaults. For children, contusions were also the most common (70.2%), followed by abrasions (28.6%) and hematomas (10.7%), aligning with Tunisian data

(Sfax: Contusions 53%, abrasions 47%; and Sousse: Contusions were the most common)(123,124). However, our study noted higher rates of fractures (8.3%) and dislocations (2.4%) in children compared to the study of Sfax (fractures 5.3%), indicating severe physical abuse had occurred(124). Specific injuries were also observed, including sexual injury (11.9%) for children and less frequent bites and burn similar to the study of Sousse(123). The presence of these severe or specific injuries, along with common soft tissue trauma, necessitates thorough medical examination.

Injury Locations: The distribution of injuries provides further insight and medico-legal clues. For women, head and neck injuries were most frequent (79.2%), consistent with Tunisian and Moroccan data on craniofacial trauma, suggesting targeted areas in domestic violence(110,119). Injuries to upper limbs (35.8%) were also common. For children, head and neck was also most affected (57.1%), consistent with Sfax (cephalic region 53.4%), followed by upper limbs (39.3%)(124). Crucially, injuries to the external genitalia were noted in 13.1% of child cases and 1.9% of women's cases, strongly indicative of sexual abuse and highlighting specific sites of severe trauma that require meticulous documentation. The recurrent involvement of visible areas like the head, face, and limbs may also influence reporting rates due to higher visibility.

- **Severity of Injuries (Total Incapacity for Work - TIW):**

The severity of physical injuries, typically evaluated by Total Incapacity for Work (TIW), serves as a legal-medical assessment. In our study, a significant portion of victims in both categories had relatively short TIW: 97.2% of female victims and 91.7% of child victims had a TIW of less than 15 days. Although a minority of these were above this rate (2.8% of women and 8.3% of children), these statistics are consistent with regional findings (mean TIW of 7 days in Algeria 2021 and 7.17 days in Tunisia for women cases) and indicate that the majority of physical injuries documented were of low to moderate severity according to this specific legal criterion(119,120).

However, it is important to emphasize the medico-legal aspect here: low TIW scores do not necessarily reflect the overall severity of the abuse. Physical assessments may not fully capture the impact of repeated violence, non-physical forms of abuse (verbal, psychological, economic), or the severe psychological trauma (such as PTSD) experienced by victims. Therefore, while TIW is a required medico-legal measure of physical incapacity, low TIW s must not diminish the importance of the violence itself or the necessity for comprehensive psychosocial support and legal intervention based on all forms of abuse and all consequences, whether visible or not.

The detailed documentation of injury types (e.g., sexual injury, fractures) and locations (e.g., external genitalia, head/neck) provides crucial evidence regardless of the estimated TIW.

1.5 Consultation Context for Women and Children Victims of Violence

The context in which victims of violence—women or children—are seeking medical care is significant in the medico-legal process. It not only reflects the sensitivity of health systems but also social attitudes towards violence, reporting, and institutions.

- **Delay in Consultation Among Children: Hidden Abuse and Vulnerability**

While the median time to consultation after our sample children were assaulted was reasonably short (mean = 3.02 days, SD = 3.97), there were children whose consultations were significantly delayed, up to 30 days, This pattern is broadly consistent with findings from Tunisian study in Sfax**,** where the average delay was two days and most consultations (69.9%) occurred within 1 to 7 days, including 20.2% within the first 24 hours. However, as in our context the Tunisian study also reported rare cases where the consultation occurred more than two months after the event, underscoring similar vulnerabilities in both settings(124). Delays are of particular concern in the context of child abuse because physical evidence may fade, and psychological harm increases over time.

There are a variety of reasons why such delays occur. Children are naturally under the control of adults for access to care, and in certain cases, the very same adults are themselves perpetrators of abuse against children or threatened by legal action. Fear, emotional coercion, and dissimulation on grounds of family interests also lead to silence and delay. This acknowledges the invisibility of child abuse and the need for proactive detection measures within schools, health services, and in community institutions.

- **Spontaneous Consultation Among Women:**

Compared to children, our study revealed that women spontaneously consulted in the majority of cases (99.1%)—a finding that speaks volumes about greater awareness, independence, and recourse to medico-legal relief. This significant proportion may reflect the fact that women are increasingly likely to report getting protection, sue, or both, especially where continued co-residence with the perpetrator exposes them to immediate danger.

Compared to Algerian regional statistics (in which only 41% were spontaneous consultations)(26), this proactive behavior reflects a positive shift in women's attitudes toward asking for help. It may also reflect greater access to treatment or a more facilitating social and legal environment that enables women to access caregivers without needing to wait for institution-based referral.

Spontaneous consultation by women is more often than not a sign of resistance, protection-seeking, or seeking justice. It must be met with responsive and supportive services.

- **Motivation for Consultation: A Shared Medico-Legal Priority**

Women and children primarily consulted for legal reasons—71.7% of women and 71.4% of children cited judicial follow-up as the main reason. A high percentage also consulted due to perceived threat.

This concordance highlights the medico-legal role of forensic evaluation as a dependable gateway to legal protection.

In both groups, the requirement for documentation and court involvement attests to the need for strong, well-trained forensic services capable of delivering prompt, accurate, and legally sufficient medical reports. It also attests to a growing societal reliance on formal accountability mechanisms.

The medico-legal function of the consultation must be discerned and consolidated as a key element of the violence response system—for minors and adults alike.

1.6 Circumstances Surrounding the Assault

- **The location of assault**

The data regarding the location of assaults reveals that the home was the predominant site of violence (77.4%) for women victims in our study. This observation is highly aligned with several regional studies like Tunisia (67% of assaults also occurred at home), Algeria (73%), Morocco (77.08%), Laghouat study (65.7%), establishing the home as the most dangerous vulnerability location for women, fundamentally connected to intimate partner violence in marital relationships(26,110,112,119). Other settings such as public areas (17.9%), universities (2.8%), and workplaces (1.9%) were reported less often.

Interpreting these collective results illustrates how susceptibility to violence is shaped both by societal structures and by specific environmental contexts and cultural norms. For women, the overwhelming majority of assaults occurred in the home (77.4%), a finding remarkably consistent across regional studies. This then makes the primary and most dangerous vulnerability site for women. This is a pattern, strongly linked to the high percentage of married female victims, best understood within the framework of patriarchal structures, where unequal power dynamics within relationships make the home a typical site of intimate partner violence.

For child victims, our data indicates a different hierarchy of vulnerability sites. While the home remains a place of violence for a notable proportion (20.2%), public places were the most frequent site of assault (64.3%), highlighting public environments, like the street, as major vulnerability sites among children. Furthermore, school was also reported as the location of assault for a significant 15.5% of child victims, directly supporting its identification as a specific environmental risk setting.

These results underscore how spaces commonly considered safe — home, school and street—can instead become sites of risk and violence.

- **Frequency of Assault: A Pattern of Recurrence and Systemic Challenges**

The findings of our study on the frequency of assault among women and children reveal a concerning pattern of reoccurring violence, highlighting the chronic nature of abuse for many victims seeking forensic medical care.

In the case of women, more than half of the sample in the survey (70.8%) had been assaulted more than once, indicating that for a significant proportion, violence is not an isolated incident but an ongoing part of their lives indicating a cycle of abuse. On the other hand, a significant 29.2% reported first-time assaults. This observation is closely aligned with regional data, like those from Tunisia, where an alarming 90% of women have experienced repeated severe violence, emphasizing the chronic nature of abuse in the broader regional context(119). Comparatively, some Algerian statistics show that 23% of victims reporting being subjected to violence for the first time and therefore a high rate of recurrence for the remaining 77% (26). Likewise, repeated violence is also quite prevalent in Turkey as well, where 14.6% considered it a "rare" occurrence, 25.9% reported it occurring “always”, and 59.6% “sometimes”(121). These comparisons underscore that repeat victimization is a prevalent issue for women, suggesting common challenges in detection, intervention, and breaking the cycle of violence.

Similarly, our findings for children reveal a concerning trend of repeated victimization. Although 54.8% of child victims encountered a first-time assault, a significant 45.2% had experienced recurrent violence. The relatively high prevalence of repeated assaults among children highlights a concerning trend of chronic violence, which raises critical questions regarding current protective mechanisms. This suggests possible gaps in the detection, reporting, or timely intervention following an initial incident of violence, which may allow the abuse to reoccur.

The prevalence of recurrent abuse towards both women and children acts as a significant "red flag" indicating the likelihood of serious, lasting psychological and physical harm. It also reflects broader systemic failure to adequately protect vulnerable individuals after an initial incident. This underscores the crucial necessity of establishing proactive measures after the first reported case. Such strategies should comprise immediate and ongoing follow-up care, comprehensive risk assessments, and strong collaboration among healthcare providers, social services, and the legal sectors to guarantee timely and effective interventions that breaks the cycle of violence and offer continuous support to victims.

- **Objects and Means Used:**

The analysis of the methods and objects employed during assaults reveals distinct patterns for women and children.

For women, body parts (fists, feet, and hands) were the primary objects in 76.4% of the cases, recording an immense level of direct physical violence. Blunt objects were used in 29.2% of assaults, while sharp weapons, i.e., knives, were rare 4.7%. These findings point towards a predominance of physical violence through direct application of the perpetrator's body over weapons usage in the majority of gender-based assault cases that are reported in our department. This is consistent with Tunisian results where (78%) of assaults involved hands, which largely aligns with our study's findings. However, the Tunisian statistics also noted 22% use of sharp weapons, a significantly higher figure than our documented 4.7% (119). Another pattern was noted in yet another study in Laghouat, where blunt objects were the most

frequently used means (37.8%), followed by body parts (29.6%), and both combined (28.8%), with minimal use of sharp objects (0.9%)(112). These variations suggest regional differences in patterns of assault, which may reflect various social contexts, perpetrator behaviors, or reporting mechanisms.

For children, Body parts were also evoked in 77.4% of cases, again pointing to predominantly direct physical violence, often impulsive or unarmed. Blunt force objects were involved in 25%, and sharp objects were notably less common (3.6%). This contrasts with a Tunisian study, where blunt objects were used in a significantly higher proportion of cases (94.8%), with sharp weapons involved in 2.4% of assaults(124). The greater utilization of body parts in child victims may be a reflection of unplanned or situational aggression, perhaps by peers or close adults in their lives. Conversely, the higher frequency of blunt objects utilized in the Tunisian context might suggest an extreme character of abuse in the cases reported.

Crucially, assaults involving only body parts may not produce significant visible injuries, complicating medical documentation and early detection. Therefore, clinicians and social workers must remain vigilant for non-physical indicators of abuse, even in the absence of obvious signs of physical trauma, to improve identification, reporting, and intervention strategies.

2 Discussion of Analytical Findings: Predictors of Early Post-Traumatic Symptoms

The analytical component of this research aimed to discover the most relevant factors related to the probability and severity of early post-traumatic symptoms (reflecting acute psychological distress given the immediate post-event assessment) among women and children presenting in the forensic medicine department. By finding significant risk markers, these analyses move beyond description to provide insight into actionable predictors of acute psychological distress in the immediate aftermath of violence.

2.1 Acute Post-Traumatic Symptoms in Women: Key Predictors

The multivariate logistic regression model for our group of adult women victims, which examined various forms of interpersonal violence (Table 7), highlighted key independent predictors of a high likelihood of significant early post-trauma symptoms, while adjusting for the broader associations indicated by the bivariate analyses (Table 6) and aligning with established international research on the consequences of violence against women.

2.1.1 Home: Location of Assault as a Critical Risk Factor

Incidents occurring at home were significantly connected to nearly seven times greater odds of a high likelihood of early PTSD compared to incidents in public locations. This aligns with the "betrayal trauma" theory (128), which posits that abuse occurring in places that are expected to be safe, often perpetrated by trusted individuals, is more psychologically damaging due to a significant violation of safety and trust (128,129). The home, commonly the scene of Intimate Partner Violence (IPV)—as indicated by our descriptive data showing that 77.4% of assaults against women took place at home—

can turn into a constant source of threat, thereby intensifying the trauma experienced which is consistent with worldwide common findings(130).

Further, our linear regression (Table 8) showed that women living in a marital home had higher PCL-5 symptom severity compared to those living in a parental family home. This points towards the potential of protective advantage of supportive alternative residential environments, in contrast to the possible ongoing stress or lack of support in an abusive marital home, a model substantiated by social support literature as a buffer for PTSD (131).

2.1.2 Impact of Aggressor Gender (Male)

Male aggressor greatly increased the odds of high early PTSD probability by over 14 times compared to female aggressor. This highly confirms the involvement of gendered power dynamics and the greater perceived or actual physical risk typically associated with male offenders with violence against women (132). and those male aggressions are observed mainly in the intimate relationship suggesting repeated action of violence which elevate the risk of PTSD symptoms(133).

2.1.3 Trunk Injury as an Indicator of Serious Trauma

Incidence of a trunk injury was a highly significant independent predictor with over 15 times higher chances of high early PTSD probability. International evidence is consistent with the fact that both injury severity and location, especially of the trunk, are strongly linked with elevated PTSD risk (131).

2.1.4 Impact of Economic Violence and Maternal Responsibilities

Economic violence tends to increase the likelihood of high PTSD probability and was found to be bivariate significant (Table 6). This type of abuse, aimed at fostering control and dependence, can greatly intensify psychological distress, as economic violence on its own is known as a risk factor of increased PTSD symptoms (134); Furthermore, having more children was associated with more severe PCL-5 symptoms (Table 8). This connection may relate to heightened caregiver stress, economic difficulties, and an escalated concern for children's safety in a context of violence, all of which can worsen post-traumatic stress (135).

2.1.5 Influence of Pre-existing Vulnerabilities

The high levels of early post-traumatic symptoms observed in the women in our study (with an average PCL-5 score of 33.14 and 56.6% exhibiting significant early post-traumatic stress based on our descriptive results) may also be exacerbated by existing vulnerabilities. Our descriptive analysis showed (see Table 2) that a substantial portion of the women had faced childhood violence (37.7% had witnessed it, and 27.4% had experienced it). Such previous trauma can diminish psychological resilience and heighten the chances of adverse reactions to later trauma, potentially leading to more intense acute responses(131).

2.2 Acute Post-Traumatic Symptoms in Children: Key Predictors

Victims In our study of children, the average score on the Child PTSD Symptom Scale (CPSS) was 28.69 (SD=18.26), with 46.4% showing a high chance of experiencing notable early post-traumatic symptoms; several significant factors were identified.

2.2.1 Family Environment and Type of Perpetrator (Affecting Probability)

Bivariate analyses (Table 9) revealed that disordered, neglectful, or conflict-filled family settings—such as the presence of parental substance abuse (70.8% high chance if present, p=.007) and recent parental divorce (81.8% high chance if present, p=.007)—were strongly associated with a higher likelihood of acute distress in children. Being abused by a family member (66.7% high chance, p=.021 overall) was also linked to an increased likelihood, probably due to the significant breach of trust involved in such situations(136).

2.2.2 Characteristics of the Incident (Affecting Probability)

Incidents that occurred at home (64.7% high chance vs. 15.4% at school, p=.024 in general), instances of verbal violence (52.0% high chance if present vs. 0% if absent, p=.003), and the occurrence of economic violence (100% high chance if present, p=.043) all showed strong correlations with a heightened probability of higher PTSD/CPSS scores (Table 9). These findings suggest that violence within the household, or involving significant emotional harm or neglect, creates a particularly harmful environment for the immediate psychological health of children.

2.2.3 Indicators of Symptom Severity

The multivariate linear model examining total CPSS scores in children (Table 10) explained approximately 29.9% of the variation. Three significant independent predictors were identified as influencing the severity of symptoms:

- Verbal Abuse:

There was a notably large increase in CPSS scores, indicating the severe psychological harm caused by non-physical types of abuse (136).

- Sexual Violence:

This factor was also found to be a significant predictor (B = 10.237, p = .027), which corresponds with the extensive body of research highlighting the significant effects of childhood sexual abuse from either familial or extra familial persons (137).

- Location of Assault (Public Place compared to School):

Incidents occurring in public places resulted in elevated CPSS scores (B = 10.061, p = .050), likely attributable to aspects such as increased unpredictability, absence of immediate support, or differing dynamics between perpetrators in contrast to school environments. It seems that while complex family

backgrounds may elevate the overall risk (likelihood) of severe distress in children, the specific characteristics of the traumatic incident (e.g., sexual or verbal assault) have a more substantial impact on the severity (intensity) of immediate symptoms.

2.3 Integration of Analytical Insights: Common and Distinct Pathways to Acute Distress

The analytical findings reveal both commonalities and differences in acute post-traumatic distress experienced by women and children. In both demographics, the type and location of violence (such as the nature of injuries for women and instances of sexual or verbal abuse for children, as well as where the assault took place) were significant, showing that the objective aspects of traumatic events are critical triggers for immediate psychological responses. However, there were key distinctions. For women, incidents involving intimate relationships and domestic environments (like violence from male partners within the home and the presence of children) were especially prevalent, emphasizing the pervasive effects of intimate partner violence dynamics on their acute distress.

In contrast, for children, the specific characteristics of the incident were most important in predicting the severity of symptoms, while broader family environment factors (such as parental substance abuse and divorce) significantly contributed to influencing the baseline likelihood of experiencing high levels of distress, indicating that a dysfunctional caregiving environment heightens children's vulnerability to severe acute reactions when violence happens. These insights, placed within an international research context, reinforce the notion that not all forms of violence or circumstances equally lead to early post-traumatic symptoms, and that the vulnerabilities pertinent for intervention vary between adult women and children. It is crucial to carefully customize targeted screening and intervention methods based on these subtle differences.

VIII. LIMITATIONS OF THE STUDY

Although this research offers valuable insights into the context of interpersonal violence and its immediate psychological effects in Laghouat, several limitations must be considered when interpreting the findings:

Cross-Sectional Design and Acute Timing of Assessment: The study's cross-sectional nature and the early assessment of post-traumatic symptoms following the violent incident prohibit making causal inferences or determining the chronic trajectory of PTSD. The results reflect immediate stress reactions and the possibility of prominent early symptoms, rather than confirmed chronic PTSD.

Sample Representativeness and Generalizability: The participants in this study were sourced from a single forensic medicine department in Laghouat. Victims seeking assistance from this particular service cannot be compared to those not accessing medico-legal services or victims from other areas of Algeria or different cultural contexts. Consequently, the results may not be applicable to all victims of interpersonal violence.

Sample Size: Although significant findings were reported, the sample sizes (N=106 females, N=84 children) are moderate. This limits statistical power in identifying smaller effect sizes in multivariate analyses, particularly for subgroup assessments, resulting in broader confidence intervals for some estimations.

Quasi-Complete Separation (Child Logistic Regression): The inability to establish a stable multivariate logistic regression model to predict high probabilities of PTSD/CPSS in children due to quasi-complete separation restricted the examination of the independent effects of multiple predictors simultaneously for this outcome. However, bivariate results revealed some noteworthy insights.

Reliance on Self-Report Incidence: Information regarding violence exposure, perpetrator characteristics, and psychological distress was primarily gathered through victim self-reports (or caregiver reports for select child data). This may be vulnerable to recall bias, social desirability bias (e.g., underreporting of substance use or other sensitive information), or the victim's emotional state during assessment.

Information on Perpetrators: Data regarding perpetrators were derived from victims and could therefore be influenced by biases or incomplete information, especially concerning the perpetrators' own backgrounds or substance use.

IX. RECOMMENDATIONS

The results of this research, which outline the prevalence, characteristics, and immediate psychological effects of interpersonal violence against women and children accessed at the forensic medicine department in Laghouat, lead to various practical recommendations in the realms of clinical practice, policy, and public health:

1 For Clinical Practice and Service Provision (Forensic Medicine & Healthcare):

- **Integrate Systematic Screening for Acute Post-Traumatic Stress:**

Given the high incidence of notable early post-traumatic symptoms (56.6% in females, 46.4% in children), systematic screening using established assessment tools like the PCL-5 and CPSS-5 should become a standard protocol in the forensic medicine department and other initial healthcare settings for all recognized victims of interpersonal violence.

- **Adopt Trauma-Informed Care Protocols:**

Forensic and medical personnel must receive ongoing training in trauma-informed care principles to ensure that their interactions with victims are safe, empowering, and sensitive to their needs. This includes creating secure, private consultation spaces and honoring the autonomy of victims.

- **Enhance Referral Pathways for Psychological Support:**

Establish clear, accessible, and immediate referral routes from the forensic department to specialized psychological and psychiatric services for victims with significant distress or identified risk factors (e.g., women assaulted by male partners in domestic settings; children experiencing verbal/sexual violence or coming from highly disadvantaged family situations).

For Women: Focus particularly on those women who have experienced violence from intimate partners, especially in home environments. This involves addressing safety planning, offering economic empowerment services (considering the impact of economic abuse), and providing support for mothers (acknowledging the link between children and the severity of symptoms).

For Children: Interventions should tackle not only the trauma itself but also aim to improve the adverse family dynamics. Treatment for non-offending caregivers, intervention for parental substance abuse, and addressing the severe repercussions of verbal and sexual abuse are vital. Develop specific strategies within schools and communities to address peer violence, bullying, and risks in public spaces.

- **Comprehensive Assessment Beyond Physical Trauma**:

Recognize that the extent of physical trauma (i.e., TIW) is just one determinant of psychological damage. Holistic evaluations must include psychological screenings and an understanding of the types and contexts of all forms of violence experienced (including verbal and economic).

- **Tackle Underreporting of Sexual Violence:**

Healthcare professionals should receive sensitive training to inquire about sexual violence, particularly with adult women, given the potential for underreporting driven by stigma.

- **Address Substance Use Contextually:**

Integrate screening for substance use among older child victims, understanding its potential role as a coping mechanism or co-occurring issue. For perpetrators, advocate for and support pathways to substance abuse treatment, potentially through court mandates or community programs, given the high prevalence of substance use among perpetrators identified in your study.

- **Improve Management of Recurrent Violence Cases:**

Develop specific, robust protocols for victims presenting with a history of recurrent violence. The high recurrence rates, especially among women, indicate that initial interventions are often insufficient or that systemic challenges hinder long-term safety.

2 For Policy and Legal Systems:

- **Enhance Legal Protection and Enforcement:**

Regularly review and close gaps in legislation concerning violence against women and children to ensure effective enforcement and to eliminate loopholes (e.g., regarding marital rape or "forgiveness clauses" as applicable). Strengthen the role of forensic departments in providing solid evidence for legal proceedings.

- **Child Protective Services:**

Augment and improve child protective services with an emphasis on early intervention in high-risk families dealing with parental substance abuse, domestic violence, and serious conflicts. Establish clear policies for schools regarding the identification and reporting of child abuse and peer violence. Ensure school staff are trained to recognize those signs and follow clear, confidential reporting protocols.

- **Support for Forensic Medicine Departments:**

Acknowledge and adequately fund forensic medicine departments for their crucial role in documenting incidents of violence, providing expert testimony, and connecting victims to support mechanisms.

3 Perspectives for Future Research

- **Conduct longitudinal Studies:**

Implement prospective longitudinal studies involving groups of women and child victims during the acute post-traumatic phase over extended periods. This aims to identify the progression of early post-traumatic symptoms and the percentage of individuals who develop chronic PTSD compared to those who recover naturally. Identify factors that predict long-term chronicity, resilience, and functional limitations, and evaluate the long-term effects of any early interventions or support services.

Beyond PTSD, longitudinal studies could explore a wider array of long-term consequences, including other mental health disorders (depression, anxiety, substance use disorders), physical health outcomes, social functioning, and economic impacts, providing a more holistic understanding of the enduring effects of interpersonal violence.

- **Multi-Site and Comparative Studies:**

Broaden the research to multiple forensic sites across various wilayas (provinces) in Algeria, encompassing both urban and rural environments. This would: Increase the validity of the findings and facilitate comparative analysis of varying regional prevalence, risk factors, and utilization of services.

- **Larger Scale Quantitative Studies:**

Future quantitative studies should aim for **larger sample sizes** to increase statistical power, enabling the detection of more subtle effects and facilitating more robust subgroup analyses (e.g., by type of violence, specific perpetrator relationships, or less common victim characteristics). This would also lead to more precise estimates (narrower confidence intervals) in multivariate models.

X. CONCLUSION

This research offers a comprehensive descriptive and analytical overview of interpersonal violence experienced by women and children presenting at the forensic medicine department in Laghouat, Algeria. It reveals the prevalence of such violence within this service-seeking group and highlights the considerable immediate psychological distress experienced by victims, with over half of the women and nearly half of the children displaying significant early post-traumatic symptoms.

Key findings from the analysis identified strong predictors of these immediate reactions. For women, violence perpetrated by males, domestic attacks, and trunk injuries were recognized as significant independent predictors of a heightened risk for marked early post-traumatic symptoms. Additionally, more children and those living in the marital home (as opposed to a parental family residence) exhibited greater symptom severity. For children, while adverse family conditions (such as parental substance dependence and divorce) greatly increased the likelihood of severe acute distress, direct experiences of verbal and sexual assault, along with public attacks, were the most effective indicators of symptom intensity.

These unique yet occasionally overlapping routes to acute distress emphasize the intricate relationship between victim traits, perpetrator behavior, details of the incident, and wider environmental factors. The research highlights the essential function of forensic medicine departments not only in legal documentation but also as critical venues for the early detection of victims who are at significant risk for severe psychological effects. The findings emphasize the pressing necessity for trauma-informed, multi-faceted responses that include early screening for acute distress, specialized psychological support, enhanced legal protections, and comprehensive public health prevention initiatives. By grasping the particular vulnerabilities and predictive elements revealed in this study, services can be more effectively customized to cater to the immediate requirements of victims and perhaps lessen the long-term impacts of violence in this largely unexplored area. Additional longitudinal studies are crucial for monitoring symptom progression and improving intervention strategies.

XI. APPENDIX

Appendix A1: Data form collection

A. Victim Identification

1. **Case Number:** _____
2. **Gender:** ☐ Male ☐ Female
3. **Age:**
   - If Child (under 18 years): _____ years _____ months
   - If Adult (18-60 years): _____ years
4. **Birthplace:** _____
5. **Current Address:** _____

B. Consent

1. **Informed Consent Obtained:** ☐ Yes ☐ No *(For children, consent obtained from legal guardian)*

C. Victim Information and Background

C1. General Information

1. **Marital Status:**
   ☐ Single ☐ Married ☐ Divorced ☐ Widowed ☐ Non-marital relationship
   ☐ Other (Specify): _____
   If Married:
   7.1. Age at first marriage: _____ years
   7.2. Number of times married: _____
   7.3. Duration of current marital relationship: _____ (years/months)
   7.4. Number of children: _____
2. **Profession:**
   ☐ Unemployed ☐ Housewife ☐ Student ☐ Retired
   ☐ Employed (Specify type)
   ☐ Day laborer
   ☐ Full-time employment
   ☐ Part-time employment
   ☐ Self-employed
   ☐ Other: _____
3. **Educational Level:**
   ☐ Illiterate ☐ Preschool ☐ Primary School ☐ Middle School ☐ High School ☐ University/Higher Education
4. **Residence Type:** ☐ Urban ☐ Rural
5. **Living Standards :** ☐ Precarious ☐ Average ☐ Good ☐ Wealthy
6. **Current Living Situation:**
   ☐ Own Household / Marital Home ☐ Parental Family Home ☐ Spouse's Family Home ☐ Foster Care (for children) ☐ Other (Specify): _____
   - Number of individuals currently in the household: _____

C2. Victim's Personal Background

1. **Medical History:**
   - Acute illnesses (Specify): _____
   - Chronic illnesses (Specify): _____
   - Disabilities: ☐ Yes ☐ No
     - If Yes, Specify: ☐ Mental ☐ Physical Detail: _____
   - Surgical History: ☐ Absent ☐ Present (Specify): _____
2. **Psychiatric History:**

☐ Absent
☐ Present (Specify diagnosis) _____

3. **Substance Use (Current or Past Problematic Use):**
   ☐ Alcohol ☐ Tobacco (Cigarettes) ☐ Chewing Tobacco ☐ Waterpipe (Hookah) ☐ E-cigarette ☐ Other Illicit Substances (Specify if known): _____
4. **Criminal Records (Victim):**
   ☐ Absent
   ☐ Present
5. **Exposure to Violence During Own Childhood (Victim's experience):**
   ☐ Experienced ☐ Witnessed ☐ Neither

C3. Specific Information for Child Victims (To be completed by caregiver/child as appropriate)

1. **Primary Caregiver:**
   ☐ Biological Parent(s) ☐ Step-Parent(s) ☐ Grandparent(s) ☐ Other
2. **Parents' Profession :** Father : _____ Mother : _____
3. **Parents' Age at Marriage (if known):**
   - Mother : _____ years
   - Father : _____ years
4. **Was the child an unintended pregnancy?** ☐ Yes ☐ No ☐ Unknown/Not disclosed
5. **Child's School Performance (if school-aged):**
   ☐ Poor ☐ Average ☐ Above Average ☐ Excellent
6. **Does the child have step-parents currently in the household?**
   ☐ Yes (Specify: ☐ Stepmother ☐ Stepfather ☐ Both) ☐ No
7. **Single Parenthood Context (Child's current primary household):**
   ☐ Single Parent due to Divorce/Separation ☐ Single Parent due to Death of a parent ☐ Other (Specify): _____
8. **History of Domestic Violence Witnessed/Experienced by Child in Household:**
   ☐ Yes ☐ No known exposure in household ☐ Unknown/Not disclosed
9. **Parental Substance Abuse (Known problematic use by any primary caregiver):**
   ☐ Yes (Specify substance if known): _____ ☐ No
10. **Parental Mental Health Problems (Known diagnosed condition in any primary caregiver):**
    ☐ Yes (Specify if known): _____ ☐ No ☐ Unknown/Not disclosed
11. **Recent Major Family Changes (e.g., past year):**
    ☐ Yes (Specify: e.g., parental separation/divorce, death of family member, remarriage, new sibling, major move): _____
    ☐ No
12. **Highest Educational Level of Parents/Primary Caregivers:**
    ☐ Illiterate ☐ Primary ☐ Middle ☐ High School ☐ University

D. Information about the Incident

1. **Relationship between the Victim and the Perpetrator:**
2. **Place of the Assault:**
   ☐ Victim's Home / Marital Home ☐ Public Place ☐ Workplace
   ☐ Perpetrator's Home ☐ School / University Campus ☐ Other (Specify): _____
3. **Time of the Assault (Approximate):** _____
4. **Date of the Incident:** _____ / _____ / _____ (DD/MM/YYYY)
5. **Occurrence of the Assault (by this perpetrator against this victim):**
   ☐ First time ☐ Recurrent (Specify frequency if possible,): _____
6. **Object(s) Used in the Assault:**
   ☐ Body Parts (e.g., fists, feet, teeth) ☐ Blunt Object(s) ☐ Sharp Object(s)
   ☐ Weapon ☐ Other (Specify): _____
7. **Types of Injuries Sustained (Multiple selections possible):**

☐ No visible injury ☐ Abrasion(s) / Scrape(s) ☐ Laceration(s) ☐ Fracture(s) ☐ Burn(s) ☐ Contusion(s) / Bruise(s) (Ecchymosis) ☐ Hematoma(s) ☐ Dislocation(s) ☐ Bite Mark(s) ☐ Internal Injuries ☐ Sexual Injury (Genital/Anal Trauma): ☐ Other (Specify): _____

8. **Were other forms of violence associated with the primary incident?**
   ☐ Yes ☐ No
   If Yes, specify (Multiple selections possible):
   ☐ Psychological/Emotional Abuse (e.g., threats, humiliation, intimidation)
   ☐ Verbal Abuse (e.g., yelling, insults, degrading language)
   ☐ Economic Abuse (e.g., withholding money, preventing work)
   ☐ Sexual Violence (if not the primary reported type but occurred)
   ☐ Neglect (especially for children)
9. **Was any emergency medical treatment received prior to this consultation?**
   ☐ Yes (Specify where/what): _____☐ No
10. **Consultation Approach:**
    ☐ Spontaneous ☐ Judicial Requisition / Police Referral
11. **Primary Reason for Consultation:**
    ☐ Judicial Follow-up ☐ Threat ☐ Unknown
12. **Total Incapacity to Work (TIW/ITT) Determined:**
    ☐ < 15 days ☐ ≥ 15 days ☐ No TIW determined / Not applicable
13. **Time Interval Between Assault and This Consultation:** _____

E. Perpetrator's Information (As reported by victim/caregiver)

1. **Age (Approximate or Category):**
   ☐ <18 (Minor) ☐ 18 to 29 ☐ 30 to 45 ☐ 46 to 64 ☐ 65 to 74 ☐ >75 ☐ Unknown
2. **Gender:**
   ☐ Male ☐ Female
3. **Profession:**
   ☐ Unemployed ☐ Student ☐ Housewife ☐ Retired ☐ Employed ☐ Unknown
4. **Living Standards (Perceived by victim):**
   ☐ Precarious ☐ Average ☐ Good ☐ Wealthy ☐ Unknown
5. **Residence Type:** ☐ Urban ☐ Rural ☐ Unknown
6. **Marital Status:**
   ☐ Single ☐ Married ☐ Divorced ☐ Widowed ☐ In a non-marital relationship ☐ Other (Specify): _____ ☐ Unknown

F. Perpetrator's Background (As reported by victim/caregiver, if known)

1. **Psychiatric History (Known):**
   ☐ Absent ☐ Present ☐ Unknown
2. **Substance Use (Known problematic use):**
   ☐ Alcohol ☐ Tobacco (Cigarettes) ☐ Chewing Tobacco ☐ Waterpipe (Hookah) ☐ E-cigarette ☐ Other Illicit Substances ☐ Unknown
3. **Criminal Records (Known):**
   ☐ Absent / None known ☐ Present ☐ Unknown

G. Systematic Psychological Screening Scales

1. **Post-Traumatic Stress Disorder Checklist for DSM-5 (PCL-5)** administered (for adult women).
   - Total Score: _____
2. **Child PTSD Symptom Scale for DSM-5 (CPSS-5)** administered (for children).
   - Total Score: _____

Appendix A2: PCL5

PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH
UNIVERSITY OF AMMAR TELIDJI LAGHOUAT

Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5)

Number of the case: .....

In the past month, how much were you bothered by:

	Question	Not at all	Little bit	Moderately	A lot	Extremely
1	Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
2	Repeated, disturbing dreams of the stressful experience?	0	1	2	3	4
3	Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?	0	1	2	3	4
4	Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
5	Having strong physical reactions when something reminded you of the stressful experience (e.g., heart pounding, trouble breathing, sweating)?	0	1	2	3	4
6	Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4
7	Avoiding external reminders of the stressful experience (e.g., people, places, conversations, activities, objects, or situations)?	0	1	2	3	4
8	Trouble remembering important parts of the stressful experience?	0	1	2	3	4
9	Having strong negative beliefs about yourself, other people, or the world (e.g., having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?	0	1	2	3	4
10	Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
11	Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4

12	Loss of interest in activities that you used to enjoy?	0	1	2	3	4
13	Feeling distant or cut off from other people?	0	1	2	3	4
14	Trouble experiencing positive feelings (e.g., being unable to feel happiness or have loving feelings for people close to you)?	0	1	2	3	4
15	Irritable behavior, angry outbursts, or acting aggressively?	0	1	2	3	4
16	Taking too many risks or doing things that could cause you harm?	0	1	2	3	4
17	Being "super-alert" or watchful or on guard?	0	1	2	3	4
18	Feeling jumpy or easily startled?	0	1	2	3	4
19	Having difficulty concentrating ?	0	1	2	3	4
20	Trouble falling or staying asleep?	0	1	2	3	4

UNIVERSITY OF LAGHOUAT

Appendix A3: CPSS-5

PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

UNIVERSITY OF AMMAR TELIDJI LAGHOUAT

Child PTSD Symptom Scale – Version V (CPSS–V)

Name or ID _____

Most upsetting event (describe) : _____

0= Not at all	1= Once a week or less / a little	2= 2 to 3 times a week / somewhat	3= 4 to 5 times a week / a lot	4= 6 or more times a week / almost always

	Question					
1	Having upsetting thoughts or pictures about it that came into your head when you didn't want them to	0	1	2	3	4
2	Having bad dreams or nightmares	0	1	2	3	4
3	Acting or feeling as if it was happening again (seeing or hearing something and feeling as if you are there again)	0	1	2	3	4
4	Feeling upset when you remember what happened (e.g., feeling scared, angry, sad, guilty, confused)	0	1	2	3	4
5	Having feelings in your body when you remember what happened (e.g., sweating, heart beating fast, stomach or head hurting)	0	1	2	3	4
6	Trying not to think about it or have feelings about it	0	1	2	3	4
7	Trying to stay away from anything that reminds you of what	0	1	2	3	4

	happened (e.g., people, places, or conversations)					
8	Not being able to remember an important part of what happened	0	1	2	3	4
9	Bad thoughts about yourself, others, or the world (e.g., "I can't do anything right", "The world is a scary place.")	0	1	2	3	4
10	Thinking what happened was your fault (e.g., "I should have known better", "I deserved it.")	0	1	2	3	4
11	Having strong bad feelings (like fear, anger, guilt, or shame)	0	1	2	3	4
12	Having much less interest in doing things you used to do	0	1	2	3	4
13	Not feeling close to friends or family or not wanting to be around them	0	1	2	3	4
14	Trouble having good feelings (like happiness or love) or trouble having any feelings at all	0	1	2	3	4
15	Getting angry easily (e.g., yelling, hitting others, throwing things)	0	1	2	3	4
16	Doing things that might hurt yourself (e.g., taking drugs, drinking, running away, cutting)	0	1	2	3	4
17	Being very careful or on the lookout for danger (e.g., checking who is around you)	0	1	2	3	4
18	Being jumpy or easily scared (e.g., someone walking up behind you, loud noise)	0	1	2	3	4
19	Having trouble paying attention (e.g., losing track of a story, forgetting what you read)	0	1	2	3	4
20	Having trouble falling or staying asleep	0	1	2	3	4

Appendix B: Detailed Injury Characteristics by Victim Group

Table B1: Frequency and Percentage of Reported Injury Types by Victim Group

Injury Type	Child Victims (N=84)	Adult Women Victims (N=106)
	n (%)	n (%)
Contusion	59 (70.2%)	80 (75.5%)
Abrasions	24 (28.6%)	29 (27.9%)
Hematoma	9 (10.7%)	25 (24.0%)
Sexual Injuries	10 (11.9%)	1 (1.0%)
Fractures	7 (8.3%)	2 (1.9%)
Simple Wound	4 (4.8%)	12 (11.5%)
Contused Wound	3 (3.6%)	10 (9.6%)
Edema	3 (3.6%)	6 (5.8%)
Bites	2 (2.4%)	5 (4.8%)
Dislocation	2 (2.4%)	0 (0.0%)
Burns	1 (1.2%)	0 (0.0%)

*Note **:** Multiple responses allowed.*

Table B2: Frequency and Percentage of Reported Injury Locations by Victim Group

Injury Location	Child Victims (N=84)	Adult Women Victims (N=106)
	n (%)	n (%)
Head and Neck	48 (57.1%)	84 (79.2%)
Upper Limbs	33 (39.3%)	38 (35.8%)
Trunk	21 (25.0%)	26 (24.5%)
Lower Limbs	13 (15.5%)	13 (12.3%)
External Genitalia	11 (13.1%)	2 (1.9%)
Back	2 (2.4%)	5 (4.7%)

Note: Multiple responses allowed.

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XIII. ABSTRACT

English Abstract

Title: Understanding Violence Against Women and Children in Laghouat, Algeria: Prevalence, Profiles, and Predictors of Acute Post-Traumatic Symptoms among Consultants of the Forensic Medicine Department, Hmida Benadjila Hospital.

Background: Violence against women and children (VAWC) is a significant public health issue with severe consequences. This study aimed to determine the prevalence and profile of VAWC and identify predictors of acute post-traumatic symptoms among victims consulting the Forensic Medicine Department of Hmida Benadjila Hospital in Laghouat, Southern Algeria, an under-researched region.

Methods: A cross-sectional prospective study was conducted over a four-month period. Data were collected from 106 women and 84 child victims of interpersonal violence using a structured questionnaire, including socio-demographics, incident characteristics, perpetrator details, and the PTSD Checklist for DSM-5 (PCL-5) for women or Child PTSD Symptom Scale (CPSS-5) for children to assess early post-traumatic symptoms. Descriptive statistics, bivariate analyses, and multivariate logistic/linear regression models were employed.

Results: A high prevalence of interpersonal violence was observed, with 22.0% of all female consultations and 15.3% of child consultations related to VAWC. Among confirmed victims, 89.7% of women and 84.3% of children had experienced interpersonal violence. Significant acute post-traumatic symptoms were present in 56.6% of women (mean PCL-5=33.14) and 46.4% of children (mean CPSS=28.69). For women, multivariate logistic regression (Nagelkerke R^2=.413) identified assault at home (OR=6.88), male aggressor (OR=14.47), and trunk injury (OR=15.84) as significant predictors of high early PTSD probability. Higher number of children and living in the marital home predicted greater PCL-5 symptom severity. For children, bivariate analyses highlighted parental substance abuse, divorce, and intrafamilial violence as risk factors for high symptom probability. Multivariate linear regression (Adjusted R^2=.299) showed verbal violence, sexual violence, and assault in a public place significantly predicted CPSS symptom severity.

Conclusion: Interpersonal violence presents a substantial burden with significant acute psychological sequelae among women and children consulting forensic services in Laghouat. Specific incident characteristics, perpetrator details, and victim circumstances are strong predictors of early post-traumatic distress. These findings underscore the urgent need for targeted screening, trauma-informed interventions, and robust support systems within medico-legal and healthcare settings in the region.

Résumé

Titre : Prévalence de la Violence envers les Femmes et les Enfants au sein de l'Unité Médico-Légale de Laghouat

Contexte : La violence envers les femmes et les enfants (VEFE) est un problème majeur de santé publique aux conséquences graves. Cette étude visait à déterminer la prévalence et le profil de la VEFE et à identifier les prédicteurs des symptômes post-traumatiques aigus chez les victimes consultant le Service de Médecine Légale de l'Hôpital Hmida Benadjila à Laghouat, Sud de l'Algérie, une région sous-étudiée.

Méthodes : Une étude prospective transversale a été menée sur une période de quatre mois. Les données ont été collectées auprès de 106 femmes et 84 enfants victimes de violence interpersonnelle à l'aide d'un questionnaire structuré, incluant les données sociodémographiques, les caractéristiques de l'incident, les détails sur l'agresseur, et la PTSD Checklist for DSM-5 (PCL-5) pour les femmes ou la Child PTSD Symptom Scale (CPSS-5) pour les enfants afin d'évaluer les symptômes post-traumatiques précoces. Des statistiques descriptives, des analyses bivariées et des modèles de régression logistique/linéaire multivariée ont été utilisés.

Résultats : Une prévalence élevée de violence interpersonnelle a été observée, avec 22,0 % de toutes les consultations féminines et 15,3 % des consultations pédiatriques liées à la VEFE. Parmi les victimes confirmées, 89,7 % des femmes et 84,3 % des enfants avaient subi des violences interpersonnelles. Des symptômes post-traumatiques aigus significatifs étaient présents chez 56,6 % des femmes (score PCL-5 moyen=33,14) et 46,4 % des enfants (score CPSS moyen=28,69). Chez les femmes, la régression logistique multivariée (Nagelkerke R^2=0,413) a identifié l'agression à domicile (OR=6,88), un agresseur masculin (OR=14,47) et une blessure au tronc (OR=15,84) comme prédicteurs significatifs d'une probabilité élevée de SPT précoce. Un nombre plus élevé d'enfants et le fait de vivre au domicile conjugal prédisaient une plus grande sévérité des symptômes PCL-5. Chez les enfants, les analyses bivariées ont mis en évidence la toxicomanie parentale, le divorce et la violence intrafamiliale comme facteurs de risque d'une probabilité élevée de symptômes. La régression linéaire multivariée (R^2 ajusté=0,299) a montré que la violence verbale, la violence sexuelle et l'agression dans un lieu public prédisaient significativement la sévérité des symptômes CPSS.

Conclusion : La violence interpersonnelle représente un fardeau considérable avec des séquelles psychologiques aiguës significatives chez les femmes et les enfants consultant les services de médecine légale à Laghouat. Les caractéristiques spécifiques de l'incident, les détails de l'agresseur et la situation de la victime sont de forts prédicteurs de la détresse post-traumatique précoce. Ces résultats soulignent le besoin urgent d'un dépistage ciblé, d'interventions tenant compte des traumatismes et de systèmes de soutien robustes au sein des contextes médico-légaux et sanitaires de la région.

الملخص

العنوان :انتشار العنف ضد النساء والأطفال في وحدة الطب الشرعي بالأغواط

خلفية :يُعد العنف ضد النساء والأطفال قضية صحية عامة خطيرة ذات عواقب وخيمة. هدفت هذه الدراسة إلى تحديد مدى انتشار وملامح العنف ضد النساء والأطفال وتحديد المؤشرات التنبؤية لأعراض ما بعد الصدمة الحادة بين الضحايا المراجعين لقسم الطب الشرعي بمستشفى حميدة بن عجيلة بالأغواط، جنوب الجزائر، وهي منطقة لم تحظَ بالبحث الكافي.

الطرق :أُجريت دراسة مقطعية مستقبلية على مدى أربعة أشهر. تم جمع البيانات من 106 امرأة و 84 طفلاً من ضحايا العنف بين الأشخاص باستخدام استبيان منظم، يشمل الخصائص الاجتماعية والديموغرافية، خصائص الحادث، تفاصيل عن الجاني، وقائمة اضطراب ما بعد الصدمة وفقًا للدليل التشخيصي والإحصائي الخامس (PCL-5) للنساء أو مقياس أعراض اضطراب ما بعد الصدمة لدى الأطفال (CPSS-5) لتقييم أعراض ما بعد الصدمة المبكرة. تم استخدام الإحصاءات الوصفية، التحليلات ثنائية المتغير، ونماذج الانحدار اللوجستي/الخطي المتعدد المتغيرات.

النتائج :لوحظ انتشار مرتفع للعنف بين الأشخاص، حيث ارتبط 22.0% من إجمالي استشارات النساء و 15.3% من استشارات الأطفال بالعنف ضد النساء والأطفال. بين الضحايا المؤكدين، تعرض 89.7% من النساء و 84.3% من الأطفال للعنف بين الأشخاص. وُجدت أعراض حادة وهامة لاضطراب ما بعد الصدمة لدى 56.6% من النساء) متوسط (PCL-5 = 33.14 و 46.4% من الأطفال) متوسط CPSS = 28.69).بالنسبة للنساء، حدد تحليل الانحدار اللوجستي المتعدد المتغيرات (Nagelkerke R^2 = .413) أن الاعتداء في المنزل(OR=6.88) ، وكون المعتدي ذكرًا(OR=14.47) ، وإصابة الجذع (OR=15.84) كمؤشرات تنبؤية هامة لاحتمالية عالية للإصابة بأعراض اضطراب ما بعد الصدمة المبكر. كما أن العدد الأكبر من الأطفال والعيش في منزل الزوجية تنبأ بشدة أكبر لأعراض PCL-5.بالنسبة للأطفال، أبرزت التحليلات ثنائية المتغير أن تعاطي الأهل للمخدرات، والطلاق، والعنف داخل الأسرة كعوامل خطر لاحتمالية عالية للأعراض. وأظهر تحليل الانحدار الخطي المتعدد المتغيرات (R^2 المعدل = .299 (أن العنف اللفظي، والعنف الجنسي، والاعتداء في مكان عام تنبأت بشكل كبير بشدة أعراض.CPSS

الخلاصة :يمثل العنف بين الأشخاص عبئًا كبيرًا مع عواقب نفسية حادة وهامة بين النساء والأطفال الذين يراجعون خدمات الطب الشرعي في الأغواط. تُعد خصائص الحادث المحددة، وتفاصيل الجاني، وظروف الضحية مؤشرات تنبؤية قوية للضيق النفسي الحاد بعد الصدمة. تؤكد هذه النتائج على الحاجة الملحة للفحص المستهدف، والتدخلات التي تراعي الصدمات، وأنظمة الدعم القوية داخل الأطر الطبية الشرعية والرعاية الصحية في المنطقة