

STRANGULATION FEMICIDE IN NORTH INDIA-AN AUTOPSY AND CIRCUMSTANTIAL BASED STUDY

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ABSTRACT

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Femicide and violence against women is a critical medico legal issue in our intellectual world since the time mortal. Strangulation is most dreaded form violence. So, we designed this retrospective observational analytical study to review the prevalence and other related factors in strangulation death of female victims. We included female corpses, brought between Jan 2007 to Dec 2016 at mortuary of King George Medical University, Lucknow, a tertiary care center of India. During this time period a total 1318 (2.95% of total autopsy) cases of asphyxia death were recorded against women. Autopsy and circumstantial-based findings of 1318 female corpses were reviewed to identify these N=245 (0.55% of total autopsy) female corpses of strangulation death. Roughly more than 50% cases belong to below 30 years of age while most common age group involved is 21-30 years. In 49 cases (77.55% cases were belonging to 0 to 30 years of age group), women were sexually assaulted before strangulating to death. Out of total 245 strangulation death, 47 (19.18%) female corpses were unidentified. A total of 29 cases are strangled by their intimate partner as a result of domestic violence. A total of 64% female corpses were belonging to urban areas. Strangulations by hand (palmer, elbow etc) were the most common method followed by material like clothes and rope, used by accused to strangle female victims. Fractures occurred in only 17.96 % of victims. This is an autopsy-based study, categorizing strangulation death of female on several parameters; showing younger age group is most commonly victimized.

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INTRODUCTION

The medico-legal or forensic autopsy is performed according to the instruction of the legal authority responsible for the investigations of sudden, suspicious, obscure, unnatural, litigious or criminal death. This legal authority may be a coroner, a medical examiner, a procurator fiscal, a magistrate, a judge or the police, and is a system that varies considerably from country to country (1). Strangulation is a most dreaded form of asphyxial death. It is that form of death which is caused either by exclusion of air from lungs, or oxygenated blood from the brain by means of a ligature round the neck or the constricting force being anything other than the weight of the body (2). In spite of the principle of gender equality is enshrined in the Indian constitution and all States has enacted various laws to check social discrimination & various forms of violence against women, data of National Crime Record bureau shows that the proportion of crime against women are continuously increasing (3). A systematic review of 23 articles based on 11 surveys in 9 countries (N=74,785, about two-thirds of whom were women) found that 3.0% to 9.7% of women

reported that they had at some time been strangled by an intimate partner. A total of 0.4% to 2.4% with 1.0% being typical reported that they had experienced it in the past year, and women were between 2 times and 14 times more likely to be strangled by an intimate partner than were men(4). According to a large U.S. case control study, prior strangulation is a substantial and unique predictor of attempted and completed homicide of women by a male intimate partner. The study showed that the odds of becoming an attempted homicide victim increased 7-fold and the odds of becoming a homicide victim increased 8-fold for women who had been strangled by their partner(5). Domestic violence against women is also a precipitating factor in strangulation cases. Brownridge DA and Barrett BJ also documented that the women who had been abused by an intimate partner reported higher rates of strangulation (6-7). Campbell JC et al suggested that strangulation is also a common finding in battering (8) and in his study, he reported that 50% or more battered female have been strangled. Strangulation is one of the common & dreaded form of interpersonal violence against women, yet an

inexperienced healthcare personal often misdiagnosed it into other form of asphyxial death in absence of any visible injury. Proper diagnosis of these cases remains a challenge for medicolegal body of any country as a wrong observation during autopsy may turn a case from homicide to suicide. In underdeveloped and developing country like India, where crime against women remains at their peak³, this retrospective observational analytical study will certainly give us clues to develop some preventive measures against this heinous crime against women.

MATERIAL & METHOD

The subjects of this study were from Lucknow and its surrounding districts of north zone. Lucknow, itself is the capital of Uttar Pradesh and a major metropolitan city and tertiary care center, which encompasses a large portion of the population of the region of northern India. Lucknow Province has a population of 4,588,455. According to the 2011 census, it roughly equals the nation of Georgia or the US state of Louisiana. Lucknow has a sex ratio of 906 females for every 1,000 males, and a literacy rate of 79.3 %. Over 33.8 % of the total population resides in rural areas leaving barely around 66.2 % composed of urbanites.⁹The present study was performed at the Department of Forensic Medicine and Toxicology, King George Medical University, India. Autopsy records of all these corpses were studied retrospectively over a period of 10 years from Jan2007

to Dec 2016. During this time period a total of 44645 autopsy cases were registered. During this time period 1318 cases of total asphyxial death were recorded against women. Autopsy and circumstantial-based findings of 1318 female corpses were reviewed to identify these 245 female corpses of strangulation death. These cases are reviewed on different parameters like age, residence, material used in strangulation, associated fractures, associated sexual assault and the strangulation by intimate partner. These parameters are taken from autopsy reports and the inquest papers of the investigating office. In undiagnosed cases, age was corroborated with anatomical features.

RESULT

A total of 44645 autopsy cases were registered from January 2007 to December 2016. During this time period 1318 cases (2.95% of total autopsy) of total asphyxial death were recorded against women, out of which in 245 cases (0.55% of total autopsy) of strangulation death were registered. Out of total 245 cases, only 9 (3.67%) cases found to be accidental while none was suicidal. The numbers of cases are increased from January 2007 to December 2016 are showing an increasing trend (fig 1). Roughly more than 50% cases belong to below 30 years of age while most common age group involved is 21-30 years followed by 11-20 years of age. The least cases were observed in greater than 70 years of age group (fig 2).

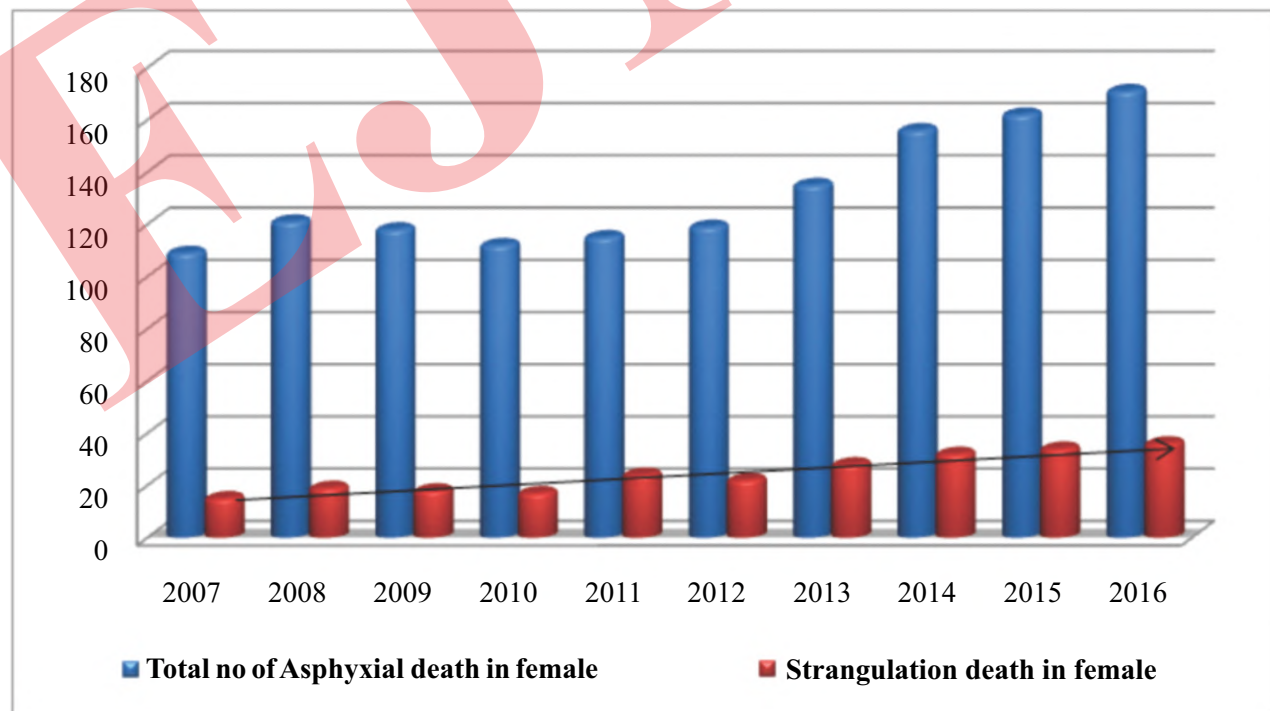


Fig 1: Year Wise Distribution Of Strangulation Cases In Female

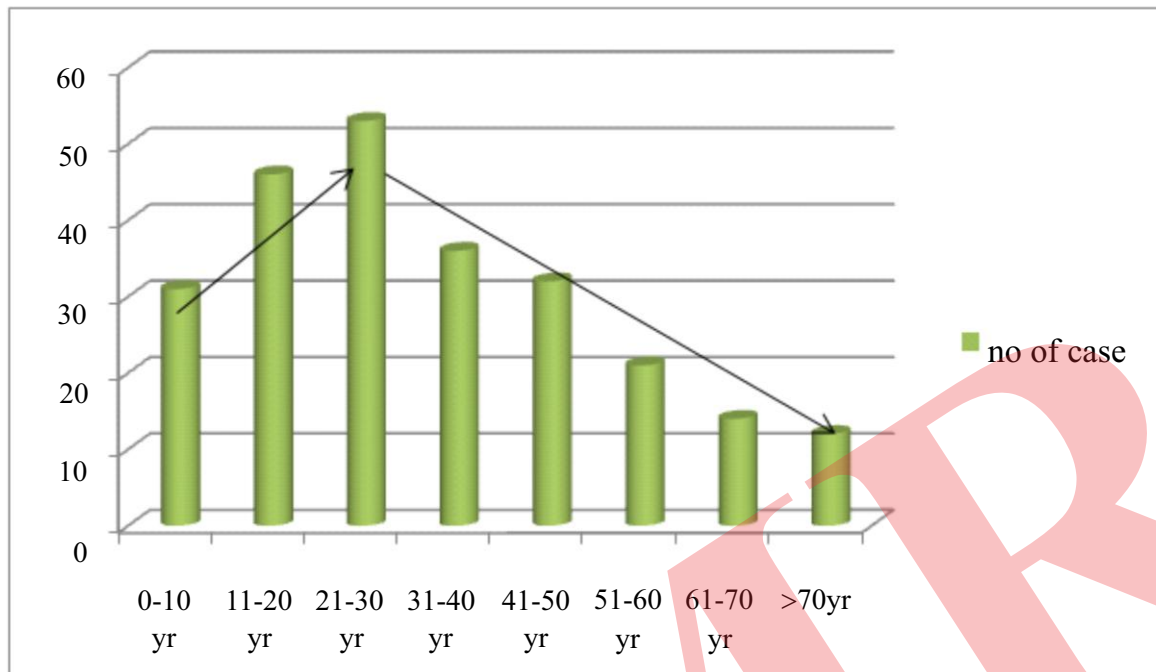


Fig 2: Age Wise Distribution Of Strangulation Cases

Identification & Distribution

Out of total 245 strangulation death, 47 (19.18%) corpses were unidentified while in 198 (80.81%) cases, name and address was known to us. In most of these unidentified cases, putrefactive changes are very advance in such extent that facial feature were masked (fig3). These identified 198 cases were further categorized to rural and urban distribution. Out of total 198 identified cases, 29 cases (12%) are strangled by their intimate partner as a result of domestic violence (fig 3). Seventy-one (roughly 36%) corpses were belong to rural area while 127 (roughly 64%) corpses were belonging to urban areas (fig 4).

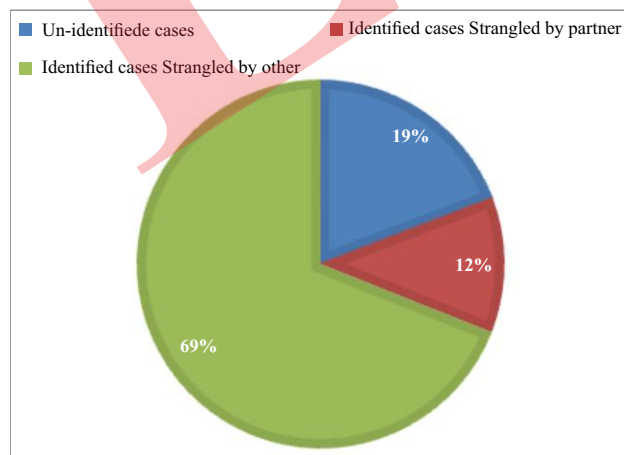


Fig 3: Proportion Of Un-identified And Proportion Of Cases Strangled By Their Partner

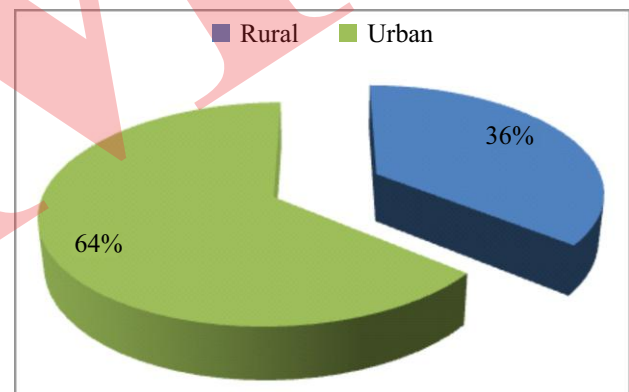


Fig 4: Geographical Presentation Of Identified Cases

Circumstances & Associated Sexual Assault

Although sexual assault was not a cause of death in any of the cases but in 49 cases (out of them 77.55% cases were belongs to 0 to 30 years of age group), women were sexually assaulted before strangulating to death (fig 5).

Ligature Material & Associated Fractures

Out of 245 cases, a majority of 54.7% cases belong to ligature strangulation (rope, wire and clothes) while in 6 (2.45%) cases we were unable to recover the material used to strangle the victim. Strangulations by hand (palmer, elbow etc) were the most common method followed by material like clothes and rope, used by accused to strangle female victims (fig 6). In our study where sample were only strangulation death

associated with female victim, Fractures occurred in only 17.96% of victims. Fracture of thyroid and other neck cartilages were most commonly fractured followed by hyoid bone. Jaw bone and nasal bone were

also found fractured in 4 and 3 cases respectively. In five cases other fracture like fracture of long and short were also found. There was only one case with fracture of both hyoid and thyroid fracture (fig7).

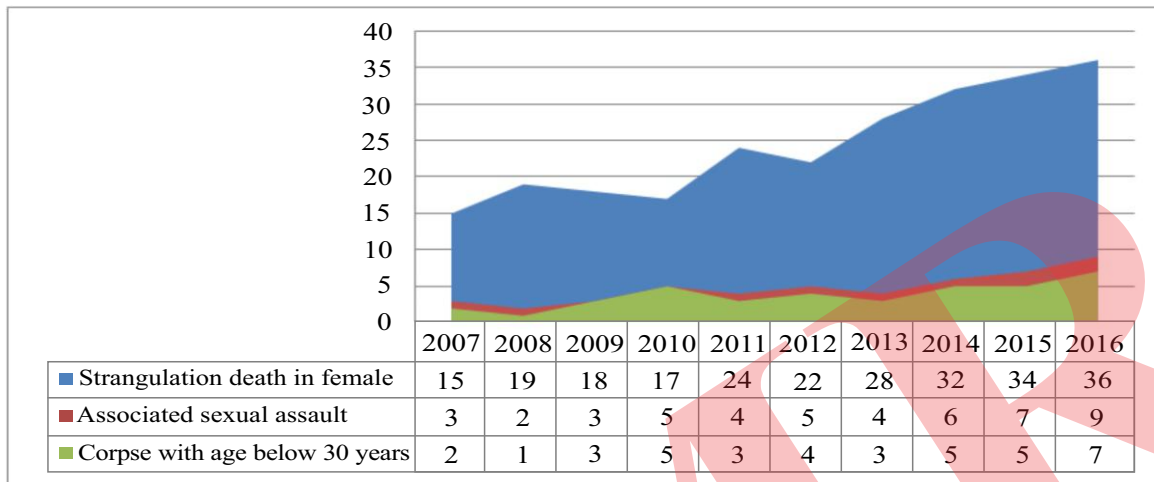


Fig 5: Associated Sexual Assault In Strangulation Cases

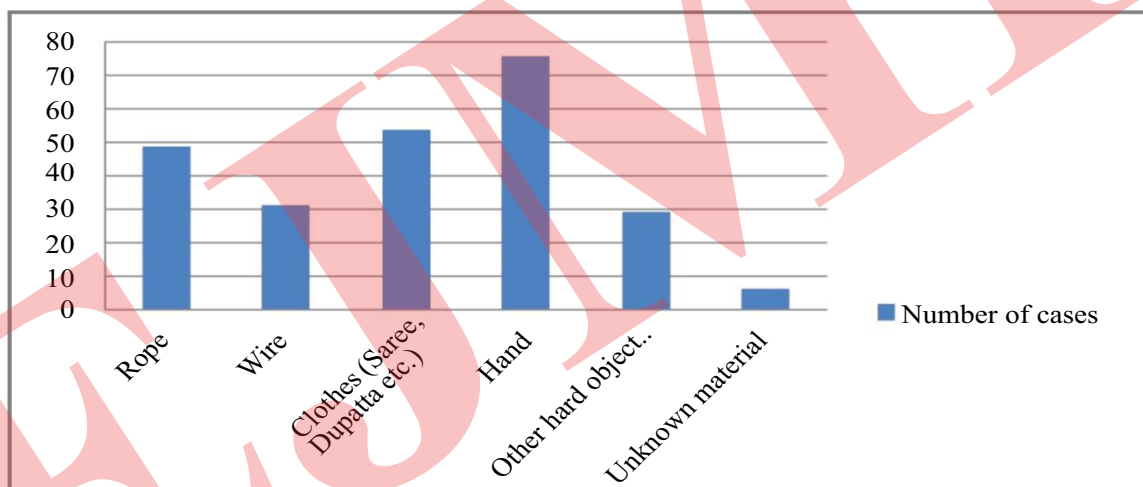


Fig 6: Material Used In Strangulation

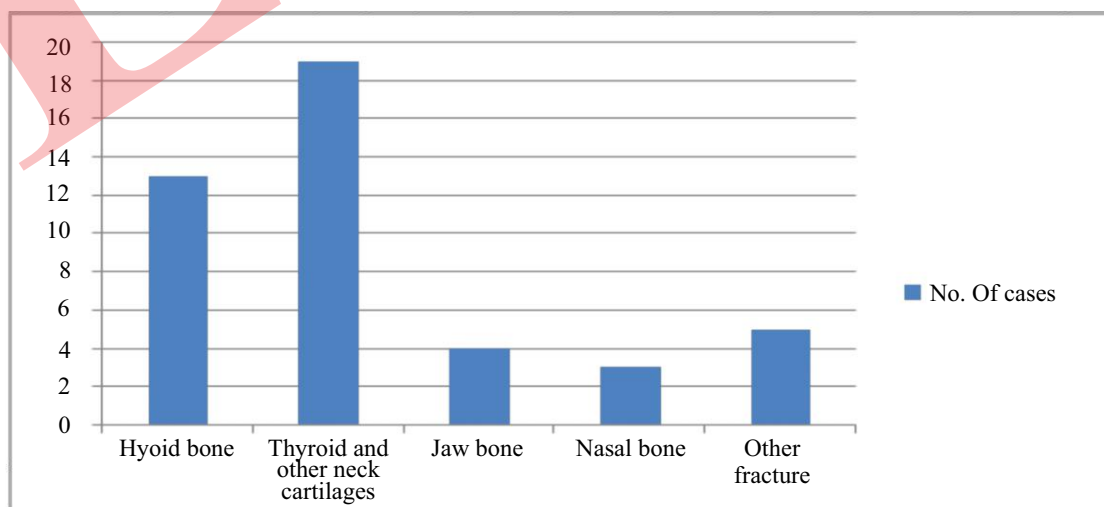


Fig 7: Fractures Associated In Strangulation

DISCUSSION

Violence against women is not confined to a specific culture, region or country, or to particular groups of women within a society. The roots of violence against women lie in historically unequal power relations between men and women, and persistent discrimination against women. In the South Asian Region, which is home to one fifth of the world's population and it is estimated that one third of South Asian women experience violence before their birth and throughout their lives (10). Out of all types of interpersonal violence, strangulation death is the most dreaded form. Similar to our study, other author also reported that the incidence of female death due to unnatural means is increasing continuously (11). Mangoli RN in his statistical review evaluated data from national crime record bureau, which reported a crime against women has seen 873 per cent rise since the last 40 years (12). The Bureau arrived at this statistic after comparing the data on number of cases registered in 1971 (2,487) with those in 2011 (24,206). Increased crime detection rate may a factor responsible for this. Besides increased literacy rate and social upliftment, role of media (both electronic and print) also play a pivotal role in increasing awareness among people towards crime so this lead to increased crime reporting rate in recent years. On the basis of autopsy and circumstantial findings, we found 96.32% cases belong to homicidal strangulation while only 3.67% cases belong to accidental strangulation. Contrast to a study of South Africa, where highest rates were reported in the over 60 and the 20 to 39 year old populations, maximally exposed age group in our study are 0 to 30 years of age (13). A study of Shanghai also reported a positive correlation between strangulation and childhood death (14). Finding of other author like Bohra N et al and Kalaiyarasi R corroborated the involvement of younger age group in femicide or crime against women (11,15). Indian society is a typical male-dominated society and in this society middle and older age women are mainly confined to home after marriage to bring up their children, but at the age of 10–29 years they are maximally exposed to society (16). Some other author also reported involvement of similar age group in their respective studies (17-18). It is estimated that, worldwide, one in five women will become a victim of rape or attempted rape in her lifetime (10). In our study we found 49 cases were sexually assaulted before strangulate them to death and most of these cases belong to 0 to 30 years of age group. Similar findings are also found in a study of India, where violent sexual activities like rape were mostly associated with asphyxial death (19). Other study also shows a

significant relationship between prevalence of strangulation and sexual assault (20). According to a latest report prepared by India's National Crime Records Bureau (NCRB), a crime has been recorded against women in every three minutes in India. Every 60 minutes, two women are raped in this country. In most of these sexual assault cases accused is known to victim and to hide his identity and heinous crime, he strangulate the victim to death. In India, according to a report published in National Crime Record Bureau, the number of un-identified corpses recovered in India and inquest conducted has increased from 33,656 in 2003 to 37,282 in 2007 and finally 37,838 in 2013 (21). The average number of female adults who continue to remain missing on a yearly average is 5,452 (22). In most cases people accused of such crimes kill the victim and then they are thrown over railway tracks or any other deserted place so that putrefactive changes are too advanced to hide the identity of the victim. This mutilation is intentional by the criminals to destroy all traces of identity for facilitate disposal of the body (19). A separate study demonstrated that as rurality increases, homicide rates decrease (23). Similarly we have reported higher cases of strangulation death of female in urban areas. Urban areas have large population density and a large scale migration from rural in search of work and food. Contrast to rural life, urban life lack solidarity and depends on the dynamic density. Many factors like population tension, migrant worker, crisis of food and living etc. lead to decrease traditional bond or community feelings in between society and ultimately give rise to crime. Like a study of turkey, where only ligature strangulation cases were considered, the most widely used ligature material were clothes in our study too (if we also considered only ligature strangulation) (24). But in our study hand is the most common material used to strangulate victims. Other studies where authors were only focused on fracture of neck region found fractures of variable frequency like 17% by Ma J et al and another study done by Demirci S et al demonstrated thyroid cartilage fracture in 7 (35%) cases, hyoid bone fracture in 3 cases (15%), fracture both of the thyroid cartilage and hyoid bone in 1 case (5%) (24-25). Possible reason for this variability is either small sample size or only ligature strangulation is taken into consideration. Hyoids bone and others neck cartilage fracture may not relate directly to the nature and magnitude of force applied to the neck. Many factors like age of the victim, nature of the material used to strangle, and other anatomic features like ossification play important role. In a postmortem study it was found that the hyoid was fused in older victims of strangulation (41 +/- 12 years) whereas the

unfused hyoids were found in the younger victims (28 +/- 10 years) (26). It is seen that in female, the hyoid and other laryngeal cartilages often remain uncalcified and unossified until old age. Thus, fractures are less often seen in females.² Nasal bone fractures are also found where accused tried smothering also. Some other injury like fractures of long bone is also found in our study due to associated violence before strangulation death.

CONCLUSION

This is an autopsy-based study categorizing strangulation death of female on several parameters; showing younger age group is most commonly victimized. Further the data like associated fractures and material used for strangulation will be helpful for corpse inspection in forensic settings while other parameters will sensitize the lawmakers of different countries in strategic planning of femicides prevention.

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