A Decade of neonaticides in the Greater Lisbon area: Contribitions from Forensic Psychology and Psychiatry

Catarina Klut Câmara[1], Olindina Graça[2], Tiago Costa[2], e Jorge Costa Santos[2,3]

[1]Hospital Prof. Dr. Fernando Fonseca

[2]Instituto Nacional de Medicina Legal e Ciências Forenses

[3]University of Lisbon

Author Note

Catarina Klut Câmara, Prof. Dr. Fernando Fonseca Hospital, Amadora, Portugal. Olindina Graça, Forensic Clinic and Pathology Service, South Branch of National Institute of Legal Medicine and Forensic Sciences, Lisbon, Portugal. Tiago Costa, Forensic Clinic and Pathology Service, South Branch of National Institute of Legal Medicine and Forensic Sciences, Lisbon, Portugal. Jorge Costa Santos, Forensic Clinic and Pathology Service, South Branch of National Institute of Legal Medicine and Forensic Sciences, Lisbon, Portugal; Associate Professor of the Faculty of Medicine, Lisbon University, Lisbon, Portugal; Researcher at CENCIFOR – Centre for Forensic Sciences, FCT, Lisboa, Portugal.

Corresponding Author: Catarina Klut Câmara, Hospital Prof. Dr. Fernando Fonseca, E.P.E, Amadora, Portugal. Fax: +351 214 345 566; Tel: +351 214 348 200: Email: catarinaklut@hotmail.com

Abstract

Neonaticide is the homicide of a child by a parent during the first 24 hours of life. The goal of this paper is to characterize cases of neonaticide that have occurred in the Great Lisbon area. The clinical files of all neonaticide cases that were studied at the Delegação do Sul, Instituto Nacional de Medicina Legal e Ciências Forenses (INMLCF, IP), between January, 1st 2001 and December 31st 2010 were reviewed and analyzed. Five cases of neonaticide were identified (2.96 per 100000 live births), perpetrated by five mothers with an average age of 25 years, whose main motivation was unwanted pregnancy. The pregnancies were concealed, no pre-natal care was obtained and delivery was unassisted and occurred at home. There were no cases of mental disorders that could justify, under a medico-legal point of view, a decision of not guilty by reason of insanity. Although rare, neonaticide cases affect societies and raise forensic questions. Due to its lower association with major psychopathology, low care-seeking behavior, opportunities for prevention are reduced. Therefore, the early detection of pregnancy in women of fertile age may provide a valuable chance to offer the required support.

Keywords: neonaticide, filicide, infanticide, denial of pregnancy, Forensic Psychology and Psychiatry

Introduction

The term neonaticide was introduced by Phillip Resnick in 1969 (Resnick, 1969) and is defined as the murder of a child within the first 24 hours after birth, by a parent, and is the most premature and common type of filicide. In that article, the author also described infanticide as a generic term for child murder, although this term has been narrowed down to the murder of a child during the first year of life (Sadoff, 1995; Spinelli, 2004).

Its rate is hard to determine and seems to vary according to the country and the utilized sources. Data from the United Kingdom suggest that neonaticides correspond to approximately 20 to 25% of all infanticides, while in the United States they correspond to 5%, with a rate of 2.1/100000 live births (De Bortoli, Coles, & Dolan, 2013). In France, Turz and Cook, report annual rates of .39/100000 and 2.1/100 000 live births, based on data from mortality and judicial sources, respectively (Tursz & Cook, 2011).

In his seminal paper, Resnick (Resnick, 1970) undertook a review of 131 cases of filicide and 37 cases of neonaticide that were published in the worldwide literature, from 1751 to 1968. He concluded that neonaticide can be differentiated from the remaining filicides, especially in relation to the presence of a mental illness in the perpetrator and motivation for the crime. Later studies seem to confirm the separation of this group of offenders, thereby strengthening the evidence that lends support to its distinction from the other types of filicide, regarding psychopathology, socio-demographic and family characteristics and also contextual variables, related to the circumstances of pregnancy and the crime.

Effectively, unlike other filicides, neonaticide is more frequently associated with aggressors of the female sex (Resnick, 1970), younger age (Ciani & Fontanesi, 2012), single

marital status (Putkonen, Weizmann-Henelius, Collander, Santtila, & Eronen, 2007) and with a low socioeconomic status (Ciani & Fontanesi, 2012; Friedman & Resnick, 2009). Although an increased frequency of primiparous women has already been reported (Amon et al., 2012; Ciani & Fontanesi, 2012; Resnick, 1970), this is not a consensual finding (Putkonen et al., 2007; Vellut, Cook, & Tursz, 2012). The experience of difficulties in communicating with the partner (Putkonen et al., 2007), in emotional expression (Vellut et al., 2012) and emotional neglect in the family of origin (Spinelli, 2001), as well as a history of childhood sexual abuse (Spinelli, 2001), were also identified in the studied samples. However, the presence of past criminal records was rare (Amon et al., 2012; Resnick, 1970; Spinelli, 2001), as well as the risk of recurrence, based on the existence of previous neonaticides (Ciani & Fontanesi, 2012; Resnick, 1970; Vellut et al., 2012).

General population studies show that, in the majority of cases, no major psychiatric disorder was found in relation to this crime (Friedman & Resnick, 2009). In the reviewed literature, the reported prevalence of psychotic disorders by the time of the crime, ranges from 11.1% (Amon et al., 2012) and 17% (Resnick, 1970) and affective disorders from 8% (Resnick, 1970) to 27.8% (Amon et al., 2012). Neonaticide is usually not associated with the suicide of the perpetrator (Ciani & Fontanesi, 2012; Resnick, 1970), unlike what has been described in some cases of filicide (Resnick, 1970). In a retrospective study, undertaken by Putkonen et al. (Putkonen, Collander, Weizmann-Henelius, & Eronen, 2007), it was reported that in the offenders that underwent a psychiatric evaluation, the main diagnosis were personality disorders (71%), followed by psychotic disorders in 29%. Immaturity (Resnick, 1970; Spinelli, 2001; Tursz & Cook, 2011; Vellut et al., 2012), dependency (Putkonen et al., 2007; Tursz & Cook, 2011; Vellut et al., 2012), passivity (Resnick, 1970) and low self esteem

(Tursz & Cook, 2011; Vellut et al., 2012) were the most commonly reported personality traits. Dissociative symptoms have also been described (Spinelli, 2001).

The pregnancy is not usually planned or desired (Resnick, 1970), is frequently concealed (Putkonen et al., 2007) and not subjected to any medical follow up (Vellut et al., 2012). Frequently, it was found that no contraceptive method was used by the women (Amon et al., 2012; Vellut et al., 2012).

Denial of pregnancy has been frequently described in association to the crime of neonaticide. According to the literature, this phenomenon seems to occur in approximately 1 in every 475 women at 20 weeks of pregnancy and persist until delivery in only 1 in 2500, pointing to its transient nature in the majority of cases (Jenkins, Millar, & Robins, 2011). It can be classified as psychotic (when it occurs in the context of a psychotic disorder) or non psychotic, The latter is the most common type and can subsequently be divided in affective (when the women is cognitively aware of the pregnancy but experiences it with detachment or emotional indifference), pervasive (when the entire gestation is kept away from conscience) or persistent (when the pregnancy is only discovered at a later stage, usually in the third trimester, and no pre-natal care is pursued) (Jenkins et al., 2011).

In neonaticide cases, preparation for delivery is rare (Amon et al., 2012; Putkonen et al., 2007; Resnick, 1970; Vellut et al., 2012), as well as any plans for the post natal period (Putkonen et al., 2007), namely the choice of a name for the child (Vellut et al., 2012). The delivery is usually unassisted (Amon et al., 2012; Spinelli, 2001) and occurs at home (Amon et al., 2012). In a study with 32 cases, nearly half of the women reported having thought of being a still birth (Putkonen et al., 2007).

Active homicide methods without invasive mechanic injuries seem to be the most common, particularly suffocation, strangulation, or drowning (Resnick, 1970), even though passive murder by negligence has also been reported as the most common (Putkonen et al., 2007). The use of high lethality, invasive methods is rare, occurring in 13.2% of cases (Ciani & Fontanesi, 2012). Frequently, there is an attempt to hide the body, after the crime is committed (Ciani & Fontanesi, 2012).

The motivation for the crime varies but unwanted pregnancy seems to be the most common reason (Krischer, Stone, Sevecke, & Steinmeyer, 2007; Resnick, 1970). Other reported motives include fear of abandonment or rejection by others (Amon et al., 2012), panic, feeling incapable of taking care of the child (Putkonen et al., 2007) and even illegitimate paternity (Resnick, 1970). In some cases the accused offender cannot provide a reason for the crime and feelings of guilt have also been reported (Putkonen et al., 2007).
On a national level, this subject has attracted some attention, namely in a recent literature review (Duarte, Fontes, Laureano, & Cólon, 2014), but original data are scarce, which is partly justified by its rarity in meridional countries (Spain, Italy, Greece, Portugal) (Almeida, 2004). This situation is reflected in the results of an original study, that aimed to characterize within-family murder cases, in the judicial Porto region, during a whole year (1990), where no infanticide cases could be identified (Almeida, 2004).

The aims of the present study were to retrospectively characterize all the neonaticide cases, under investigation at the South Delegation of the National Institute of Legal Medicine and Forensic Sciences (DS-INMLCF), which occurred in Lisbon, from January 1st 2001 and December 31st 2010, through the analysis of the forensic psychiatric and psychological reports

of the suspected offenders. Therefore, we intend to increase the body of knowledge on this subject on a national level.

Methods

All the homicide cases that were subjected to autopsy at the DS-INMLCF, in Lisbon, from January 1st 2001 and December 31st 2010, were reviewed through the Forensic Pathology Unit's database. In the 10-year period, 444 homicides were retrieved, 25 of which the victim was under 18 years old. The five cases that belonged to infants under a year of age were selected for analysis.

In four cases, the homicide took place during the first 24 hours of life, thereby fitting the definition of neonaticide. In the remaining case, the victim was 11 months old and, therefore, excluded from the analysis. A fifth case that occurred in the studied time-frame was identified in the files of the Forensic Clinical Unit (Forensic Psychiatry and Psychology Area) of the DS-INMLCF. It belonged to the evaluation of a mother accused of neonaticide that discarded the corpse so that it could not be retrieved or autopsied. The five neonaticide cases were then reviewed and analyzed, through the use of table designed to permit a more homogenous recollection of socio-demographic, clinical and contextual data from each file, based on the main literature findings in this area.

DS-INMLCF's catchment area includes Greater Lisbon (9 districts), and the following areas: Oeste, Lezíria do Tejo, Península de Setúbal, Alto Alentejo, Baixo Alentejo, Alentejo Central, Alentejo Litoral, Sotavento Algarvio, and Barlavento Algarvio.

Notwithstanding, the autopsies that are performed in DS-INMLCF, in Lisbon, are the victims of homicide that occur in the Lisboa, Loures, Amadora, Oeiras, and Sintra areas, with

a population of 1.212.918 inhabitants. During the studied time-frame 169097 live-births were recorded(“Instituto Nacional de Estatística”, 2014).

Results

Between 2001 and 2010, five cases of neonaticide were investigated at the DS-INMLCF, which accounted for 1.13% of all homicides (that were the subject of autopsy) during the same period, 20% of all child homicides (age<18) and correspond to 2.96/100000 live births. Three victims were female, one male and in the remaining was not able to determine.

The crimes were attributed to five mothers, all of Portuguese nationality, with an average age of 25 (*SD* = 8.09). Regarding marital status, one three women were single, one married and one widow, but the majority lived with the partner at the time of the crime, with only one young woman living with her parents. Regarding educational level, the median number of school years was 9 (*SD* = 5.32). Four women were professionally active and one was unemployed. All reported financial difficulties (Table 1).

Table 1

Socio-demographic characteristics of offenders

Case	Year	Age (years)	Educational Level	Professional Status	Marital Status	Family	Finantial Difficulties
A	2004	29	5th grade	Cleaning worker Former Prostitute	Single	Partner and 1 son	Yes

B	2006	25	9th grade	Temporary Employment	Married	Husband, 1 son an father in law	Yes
C	2007	24	University	Human Resourses Manager	Single	Partner	Yes
D	2008	24	12th grade	Paid Trainig (educational auxiliary)	Single	Father, Sister and Brother	Yes
E	2008	43	4th grade	Unemployed	Widow	Partner and 2 daughters	Yes

Two women were pimiparous but the remaining three had other children (*M* = 2). In one of these cases, only one of the four children was living with the mother (two were given for adoption and one was living with relatives. In two cases, the partner was the father of the child but in two other, doubts regarding illegitimate paternity existed. The fifth pregnancy resulted from a sporadic sexual relationship, without identification of the father.

In four cases, the main reported reason for the crime was unwanted pregnancy. Other motives were also referred, such as fear of the partner's and other family members' reactions, difficulties communicating with the partner and family, financial difficulties and an unstable

professional situation (Table 2). In one case, the mother stated total unawareness of the pregnancy until starting into labor, at which point she describes an automatic expulsion movement of a perceived foreign body that she was difficult to describe: "*Whatever it may be, it has to come out… How couldn't I see that that rough surface was a head?"* (sic).
Three women admitted to not using contraception and in two (of the three cases where this information was available), the pregnancy was confirmed by a pharmacy test. One woman described a feeling of surprise and disbelief when discovering she was pregnant, another woman a feeling of fear and a third one emotional numbness: "*In the first days I was apathetic (...) went on holydays with my mother",* she stated. In this sample, all women concealed their pregnancies and, in three cases, some form of denial was also present. In two cases, this denial seemed to be intermittent and in the third case it was continuous and pervasive with reported amenorrhea and absence of fetal movements. This woman stated having interpreted the symptoms of pregnancy and uterine contractions as other somatic complaints attributed to the gastro-intestinal and muscle-skeletal systems.

Two women attempted abortion through medication intake, during the pregnancy. None received any pre-natal care (although one consulted her general practitioner for other reasons) or made plans for the baby's birth, namely buy clothes or linen. Only one woman had thought of a name for the child and showed ambivalence between keeping it and giving it away for adoption. She stated having contacted Social Security in order to gather information about adoption proceedings.

In the four cases where this information was available, the delivery took place at home, unassisted. Three occurred in the bathroom and another just outside the house, and active homicide methods were used (Table 2). After having committed the crime, three

women describe fear and fatigued, two reported memory gaps and another a state of shock. In the case where the body could not be retrieved, the mother said that she avoided looking at the corpse because she didn't *"have the courage to do so"*. Four women denied any premeditation for the crime and in four cases there was an attempt to hide the corpse (Table 2).

Table 2

Characteristics of the crime

Case	Motive(s)	Methods	Behavior after the crime
A	Unwanted Pregnancy Financial difficulties Difficulty in communicating with the partner.	Asphyxiation by Drowning.	Placed the corpse in a plastic bag inside the closet and then in the garbage container. Went to the hospital for emergent health care, having confessed the crime.
B	Unwanted Pregnancy Fear of losing the husband and daughter.	Severe traumatic head lesions. Scathing trauma.	Information not available.
C	Unwanted Pregnancy Fear of the partner's reaction Financial difficulties.	Asphyxiation by Suffocation.	Suspected still birth. Placed the corpse in a plastic bag and hid it in the closet. Went to the hospital for emergent health care, having confessed the crime.

			The corpse was discovered by the partner.
D	Unwanted Pregnancy Fear of the father's reaction (wrath/abandonment). Fear of social criticism. Young age. Unstable employment status.	Asphyxiation by Strangulation.	Placed the corpse in a plastic bag inside the closet for a month (fear of being seen discarding it in the trash). Maintained regular daily activities Corpse found by the sister.
E	Unknown.	Decapitation.	Hid the head of the baby in a plastic bag and placed it inside a press. Washed the blood soaked towels. Went to the hospital for emergent health care. Continued to deny the crime.

Regarding psychopathology, on forensic psychiatric examination, one woman was diagnosed with a probable depressive episode at the time of the crime, that didn't receive any sort of medical or psychological help. Another was diagnosed with adjustment disorder, acute type, with altered behavior (DSM-IV-TR). In both situations, a suggestion of diminished guilt was made, due to the influence of affect and consciousness on judgment and reasoning, respectively. No woman was found to have a psychotic disorder, or any clinical picture that could justify, under a medico-legal point of view, a decision of not guilty by reason of insanity. There were no suicide attempts following the crime in the studied sample.

The results of the psychometric evaluations that were carried out in four women revealed frequent personality traits of immaturity, impulsivity and difficulties in interpersonal relationships. Two cases presented with a borderline personality structure. No trend in

cognitive functioning was found. In three cases, there is reference to altered states of consciousness that were taken into consideration by the experts in the report's conclusions (Table 3).

Table 3

Psychopathological characteristics of the offenders

Case	Evaluation	Psychiatric Diagnosis	Personality Features	Cognition	Other symptoms
A	Psychological (Article 160, C.P.P.)	No	Immature and frail personality. Anti-social, anxious, narcissistic, hysterical and impulsive personality traits. Borderline personality structure. Difficulties in interpersonal relationships that tend to be superficial. Insecure attachment.. Tendency towards projection of guilt and hostility.	IQ 81 – Normal/ Diminished Intelligence	-
B	Psychological (Article 160, C.P.P.)	No	Little ideo-afective diferentiation Limited capacity to empathize and connect with other on an emotional level. Tendency towards control by inhibition Emotional lability, poor impulse control, low threshold for acting out. Depressive background.	Superior visuo-perceptive organization; memory subtest 25th percentile; Lower/Medium general and abstract intelligence; Superior	Self-referred consciousness alterations

				General and practical intelligence, with planning ability.	
C	Psychological (Article, 160, C.P.P.)	No	Antisocial, anxious and impulsive traits. Borderline personality structure. Limited investment in interpersonal relationships, with difficulties in conflict management.	IO 113 - Normal - superior	
D	Psychiatric (Article 159, C.P.P.)	Adjustment disorder, acute type, with altered behavior (DSM-IV-TR)	Preserved ability to empathize and connect with others. Emotional immaturity	Not evaluated. Described as intelligent.	Clouding of consciousness
E	Psychiatric (Article 159, C.P.P.)	Depressive Episode	Characterized by passivity, introversion, dependency, pessimism, low self-esteem and self confidence. Immature defenses (denial, repression, somatization)	Lower limit of normality	Clouding of consciousness. Pain

Four women described frequent conflicts and communication difficulties with the people they lived with at the time of the crime (three with their partner/husband and one with

her father and sister). Only one referred personal history of sexual abuse and three admit to felling neglected or abandoned by, at least one of their parents, during childhood or adolescence. When confronted with the crime, four women express feelings of guilt and regret: “After what happened I feel like the worst person in the world”; *“I can’t bare all of this. I was the one that should have died”.*

Discussion

The five cases of neonaticide that were identified between 2001 and 2010 in the Greater Lisbon area, correspond to a prevalence of 2.96/100000 live births and to 20% of child homicides (defined as a homicide where the victim is under 18 years old) that were recorded in the same period. Most likely, this figure does not reflect reality as it is, and we have to admit the possibility that an undetermined number of such cases have not been discovered, or come to the attention of the authorities.

Tursz and Cook, report that in 27 cases of neonaticide, occurring in a five-year period in France, 18 offenders were identified and in the remaining nine cases, that correspond to newborn corpses found by the police, it was not possible to identify the crime agent (Tursz & Cook, 2011). In one of their cases, as in our sample, precisely the reverse situation occurred where it was not possible to recover the body. This was only identified by the need of emergent medical care by the mother. It is assumed, therefore, that some cases of neonaticide that occur at home, unattended, with hiding of the corpse and without the need for any health care, can end up never be identified. To these, the cases where the cause of death is undetermined by forensic autopsy there, must be added.

Regarding the characteristics of the offenders, there is an average age of 25, slightly below the national average for the first child birth date, of 28.9 years (Pordata). However, for

most evaluated women, this was not their first pregnancy, which points to an earlier onset of reproductive life. It was also observed that the majority was living with a partner, although the most frequent marital status was, effectively, being single.

The professional status and education are within the national average, with, nevertheless, a frequent reference to financial difficulties. Unwanted pregnancy, but also fears of other people's reactions were the main reasons for neonaticide reported by examined. It should be noted in this context that, in two cases, there was a suspicion of illegitimacy of pregnancy and in another case the pregnancy resulted from a sporadic relationship. In this small sample, difficulties in interpersonal communication are evident, which seem to pose a challenge to obtaining help from the close social network or primary health care structures, when faced with the news of an unexpected or unwanted pregnancy. Two women admit to having carried out an attempted abortion during pregnancy.

In most reported cases, there is no axis I psychopathology, as described in the literature (Friedman & Resnick, 2009) and no psychotic symptoms or delirious states that could justify, under a medico-legal point of view, a decision of not guilty by reason of insanity were observed . In one case, the presence of an affective disorder, beginning before childbirth, is admitted and in another the existence of an acute adjustment disorder is reported. These disturbances, through their impact on affect and consciousness, respectively, were susceptible to interfere with capacity to evaluate unlawfulness, or with the ability to behave in accordance with that assessment during the practice of the facts, justifying, perhaps, a partial reduction in the liability of the authors.

With regard to personality characteristics, it is observed that aspects such as immaturity, impulsiveness and difficulties in interpersonal relationships, were

overrepresented, appearing in four of the five women, as noted in previous studies, and two patients had a borderline personality structure.

It should be noted that no forensic evaluation reported danger or risk of relapse and none of the women had a background of previous neonaticides or criminal records in general. In the studied sample, all women concealed their pregnancy and non psychotic denial was described in three cases, two of which are contemplated by the definition of affective denial and one by pervasive denial. Although it is a controversial concept, non psychotic denial can be understood as a maladaptive coping mechanism, which makes it difficult to adapt to pregnancy, to create a bond with the developing fetus and to prepare for childbirth and motherhood, with disastrous consequences for the mother and the newborn.

This phenomenon seems to occur in spectrum, with varying degrees of intensity and in continuum with the concealment of pregnancy, therefore corresponding to a subjective experience, which is difficult to assess (Jenkins et al., 2011). These are factors that objectively hinder, not only the forensic evaluation for the purposes of determining the liability in relation to the crime of neonaticide, but also the adoption of appropriate preventive measures.

In cases of psychotic denial, though the pregnant women can interpret the physical symptoms in a delusional way, pregnancy does not tend be hidden from family members or close friends, which may signal the need for medical, psychiatric and social support.

In cases of non psychotic denial and concealment of pregnancy, the possibilities of intervention are lower, since these women usually do not seek any help. However, one study found that 38% of women in denial were observed by a physician, without having them being diagnosed pregnancy (Jenkins et al., 2011). It is therefore necessary to stress the importance of early diagnosis of pregnancy in women of childbearing age, even when the reason for

consultation seems to be nonspecific complaints (e.g., nausea, weight gain and abdominal symptoms). In the considered sample, no woman sought prenatal care, although one had consulted her family doctor for another reason. All the deliveries took place at home, without assistance, however most required immediate medical attention post-partum.

The active methods of minor violence are over-represented and in all cases there was an attempt, even if temporary, to conceal the corpse, findings that are consistent with the results of other studies devoted to the subject (Resnick, 1970).

The neonaticide crime is not expressly provided for in the Portuguese Penal Code (C.P.P.), being placed in the criminal frame of infanticide or homicide. The first, which is the body of the Article 136 provides that "the mother who kills her child during or shortly after birth and still standing on its disruptive influence, is punished with imprisonment from 1 to 5 years".

While verifying this assumption in women with evidence of major psychiatric disorders, particularly psychotic disorders (especially if there is known psychiatric history), does not place particular problems from a forensic psychiatry point of view, retrospective determination of mental health status of the defendant (concerning the time of practice of the facts), is usually very difficult in other cases, especially if there are no medical records of any transient psychopathological changes precipitated by birth (such as a delirious state or an acute reaction to stress), susceptible to influence capacity for discernment and critical judgment.

Despite the limitations of this study, namely the small sample size and the geographical area where it was obtained (part of the Greater Lisbon area), which make it impossible to generalize the results to the entire national territory, it is still a valuable original contribution in a field of recognized social, health and judicial impact.

Conclusions

Five neonaticide cases were identified during the 10-year period of study. Although the small sample size may limit the definition of a typical offender profile, the most frequently reported features in the studied cases were being a young woman, professionally active, with financial problems, living with her partner, experiencing communication difficulties with her close social network, whose pregnancy was unwanted and concealed, without prenatal medical care, and that had the birth at home without assistance.

The methods used in the consummation of the crime were all active (three asphyxiation and two with serious injuries, including one involving decapitation), with attempted concealment of the corpse. The existence of any mental disorder susceptible to condition a judgment of not guilty by reason of insanity of the authors, was not established, although there were cases of denial of pregnancy and other personal conditions compatible with diminished accountability. Among these conditions, personality traits of immaturity, impulsivity and interpersonal difficulties could be identified.

Despite the low association, reported in the literature, between neonaticide and major psychiatric disorders, these are indeed present in a minority of cases, so active research by health professionals who come into contact with pregnant women, is very important, promoting their timely treatment and preventive action. Not least in terms of prevention is

early diagnosis of pregnancy in women of childbearing age and the identification of any signs of distress. This can allow for the timely provision of the psychological and social support they may need to help deal with difficulties in adaptation to the parental role or to make an informed decision regarding the termination of pregnancy or its continuation, to stay with the child, or deliver it for adoption.

Although rare, cases of neonaticide generate understandable public alarm and raise delicate legal and medico-legal issues that are perpetuated by its rarity, which may limit the acquisition of skills in their management. One possibility to minimize this problem could be the concentration of these processes in specialized structures, aiming to increase experience and, ideally, the scientific production in this specific area. This approach calls for transdisciplinary action and a wide sharing of all collected information in each case. These measures are precisely dictated by the complexity of such cases.

References

Almeida, F. (2004). Homicídio na família. *Polícia E Justiça*, *III Série* (Número Especial Temático), 57-89.

Amon, S., Putkonen, H., Weizmann-Henelius, G., Almiron, M. P., Formann, A. K., Voracek, M., … Klier, C. M. (2012). Potential predictors in neonaticide: the impact of the circumstances of pregnancy. *Archives of Women's Mental Health*, *15*(3), 167-174. doi:10.1007/s00737-012-0268-0

Ciani, A., & Fontanesi, L. (2012). Mothers who kill their offspring: Testing evolutionary hypothesis in a 110-case Italian sample. *Child Abuse & Neglect*, *36*, 519-527.

De Bortoli, L., Coles, J., & Dolan, M. (2013). A Review of Maternal Neonaticide: A Need for Further Research Supporting Evidence-based Prevention in Australia. *Child Abuse Review*. doi:10.1002/car

Duarte, M., Fontes, H., Laureano, C., & Cólon, M. (2014). O Filicídio e a perspetiva da Psiquiatria Forense. *Psiquiatria, Psicologia & Justiça*, *6*.

Friedman, S., & Resnick, P. (2009). Neonaticide: Phenomenology and considerations for prevention. *International Journal of Law and Psychiatry*, *32*, 43-47.

Instituto Nacional de Estatística. (2014). Retrieved from http://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_indicadores&indOcorrCod=0001346&contexto=bd&selTab=tab2

Jenkins, A., Millar, S., & Robins, J. (2011). Denial of pregnancy: a literature review and discussion of ethical and legal issues. *Journal of the Royal Society of Medicine*, *104*(7), 286-291. doi:10.1258/jrsm.2011.100376

Krischer, M., Stone, M., Sevecke, K., & Steinmeyer, E. (2007). Motives for Maternal Filicide: Results from a Study with Female Forensic Patients. *International Journal of Law and Psychiatry*, *30*, 191-200.

Putkonen, H., Collander, J., Weizmann-Henelius, G., & Eronen, M. (2007). Legal outcomes of all suspected neonaticides in Finland 1980-2000. *International Journal of Law and Psychiatry*, *30*, 148-254.

Putkonen, H., Weizmann-Henelius, G., Collander, J., Santtila, P., & Eronen, M. (2007). Neonaticides may be more preventable and heterogeneous than previously thought - neonaticides in Finland 1980-2000. *Archives of Women's Mental Health*, *10*(1), 15-23. doi:10.1007/s00737-006-0161-9

Resnick, P. (1969). Child Murder by Parents: A Psychiatric Review of Filicide. *American Journal of Psychiatry*, *3*(126), 325-334.

Resnick, P. (1970). Murder od the Newborn: A Psychiatric Review of Neonaticide. *American Journal of Psychiatry*, *10*(126), 1414-1420.

Sadoff, R. (1995). Mothers who kill their children. *Psychiatric Annals*, *25*(10), 601-605.

Spinelli, M. (2001). A systematic investigation of 16 cases of neonaticide. *The American Journal of Psychiatry*, *158*(5), 811-813. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11329409

Spinelli, M. (2004). Reviews and Overviews Maternal Infanticide Associated With Mental Illness: Prevention and the Promise of Saved Lives, (September), 1548-1557.

Tursz, A., & Cook, J. (2011). A population-based survey of neonaticides using judicial data. *Archives of Disease in Childhood. Fetal and Neonatal Edition*, *96*(4), F259-263. doi:10.1136/adc.2010.192278

Vellut, N., Cook, J., & Tursz, A. (2012). Analysis of the relationship between neonaticide and denial of pregnancy using data from judicial files. *Child Abuse & Neglect*, *36*, 553-563.