

Crack Use by Children of Mothers Who Use Drug: A Systematic Review

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Abstract

Objective: To review the published scientific knowledge about the use of crack by children of mothers who use crack. **Methods:** Systematic review carried out in the databases of the VHL Portal, SciELO, Science Direct, CAPES Periódicos Portal and Google Academic to find articles coming from the references of those already included. The studies were evaluated using recognized methodological tools. **Results:** It was found as a direct risk factor for the use of crack by children of dependent family and social influence. In addition, other risk factors were also considered such as prenatal exposure and heritability of addictions. However, protective factors were also addressed, such as information availability, protective family structure, social disapproval of drug use, family interest in the child and adolescent's life, and socio-educational activities. **Conclusion:** There was no substantial relationship between the use of crack during pregnancy by mothers using crack and the future use of their children. However, it was found that postnatal exposure, through family and social influence, is the main risk factor for drug use and abuse, specifically crack, especially if there is intimate coexistence with a familiar user.

Keywords: Crack Cocaine; Mothers; Child; Drug Users; Epidemiology

Introduction

Crack is a rock formed from the mixture of the basic paste of cocaine with sodium bicarbonate being used worldwide as a potent stimulator of the Central Nervous System. This drug appeared in Brazil in the late 1980s and because of its stimulating and pleasurable effects, combined with the low costs of illegal commercialization, its consumption spread throughout the Brazilian territory. In 1999, the Brazilian Institute of Geography and Statistics (IBGE) estimated 1.2 million Brazilians using this drug¹. However, in the recent study released by the Oswaldo Cruz Foundation (Fiocruz), the number of regular users of crack cocaine and or similar forms of smoked cocaine (merla, base paste and oxy) in the Brazilian capitals totaled 370 thousand people, representing 35% of all illicit drug users. This survey also shows that the majority of these users are young adults with an average age of 30 years, and also highlights that 14% of this crack user population are minors².

Of this population of crack users there is the subgroup of women who use this drug (crack) who continue to consume during pregnancy. According to Fiocruz's research published this year (2013), of the women who participated in the referral study, about 10% of them reported being pregnant at the time of the interview². This fact is still corroborated by the World Health Organization (WHO), affirming that the number of users of the drug is increasing year after year, including pregnant women, thus having a significant impact on public health.

It is known that the use of the drug during pregnancy can trigger miscarriages, prematurity, decreased fetal growth and other perinatal changes. In addition, those babies who are born alive may present with mental retardation or other behavioral disorders³.

According to Fliglie⁴, children of people with chemical dependence are at increased risk for the development of psychiatric disorders and for the consumption of psychoactive substances. However, this study does not compare the use of drugs during pregnancy with a greater risk of future dependence in the offspring of these pregnant women. Studies have shown that there is a strong association between family history of drug use and drug abuse both in adolescence and in adulthood⁵.

Lam⁶ and Rudolph⁷ corroborate this association by stating that the family environment directly influences the likelihood that child daughters of drug users will also become future users. Thus, children living with parents who use illicit substances constitute a high risk group and become drug addicts⁶. Concern with children of drug addicts is notoriously occupying more attention in the health area, and investing in this population means working with elective prevention because it is directed at a particular risk group⁵.

However there is a shortage in the scientific literature regarding the relationship between illicit substance use by mothers and the increased likelihood of children becoming users of these substances, especially crack. The objective of

this study is to review the published scientific knowledge about the use of crack by children of mothers who use crack.

Methodology

A systematic review of the scientific literature on the effects of crack use during gestation, especially on the future use of this drug by children of dependent mothers, was carried out.

According to the PICOT model, we searched for studies whose studied population were mothers who used crack at any stage during the pregnancy-puerperal cycles; and whose children have become users in the future, comparing themselves with children who did not become users under the same conditions. The descriptors MeSH and DeCS and related terms used in the construction of the search strategies are described in Table 1.

Table 1. Mesh and DeCS descriptors and correlated terms

Descriptors MeSH	Descriptors DeCs	Related terms
Crack cocaine	Crack; cocaine; cocaína; crack cocaine	Cocaine
Mothers	Mothers; madres; mães	Pregnant women
Child	Child; nino; crianças	Children
Drug users	Drug users; consumidores de drogas; Usuarios de drogas	
	Cocaine-related disorders; transtornos relacionados con Cocaína; transtornos relacionados ao uso de cocaína	
	Epidemiology; epidemiologia; epidemiologia	
Gravidity	Pregnant women; mujeres embarazadas; gestantes	

We searched for studies published in the VHL Portal, SciELO, Science Direct, CAPES Periódicos Portal, Google academic and in the references of included studies. There were no language restrictions and the limits were used: studies indexed until September 2013, human and empirical studies. The search strategies used in each researched database and retrieved articles are described in Table 2.

It was also searched for documents not published in scientific journals, but which are included in the IDSUS and IBGE portals.

The following inclusion criteria were used: empirical studies of all types published since the beginning of availability of

each database searched until September 2013, whose focus of the article is the use of crack in pregnant women, puerperal or infants and their children. The exclusion criteria used were: articles focusing on neonatal abstinence syndrome; use of crack in pregnancy and other congenital formations; pregnant women dependent on crack and other drugs; use of drugs other than crack by daughters of crack-dependent mothers; issues not directly or indirectly related to crack.

The inclusion and exclusion criteria were applied in pairs, and there was no discrepancy between them. The total of articles surveyed, included and excluded are shown in Figure 1.

Table 2. Search strategies and databases searched

Search strategy	CAPES Periodical	SciELO	BVS
• Crack cocaine AND children of substance users AND NOT heroin AND NOT African americans AND NOT HIV AND NOT Substance abuse treatment AND NOT juvenile drug abuse	325	-	-
• Crack cocaine AND children of substance users AND NOT juvenile drug abuse	197	-	-
• Crack AND children		5	
• (crack cocaine) and children AND LIMIT-TO (topics, "cocaine, drug abuse, cocaine exposure, pre natal, child, woman")	418	-	-
• crack AND mothers	-	-	44
• crack AND children	-	-	7
• (crack cocaine) AND children	-	-	302
• (crack OR crack cocaine OR cocaína) AND (gravidez OR grávida OR gestante OR pregnancy OR pregnant OR embarazo OR embarazada) AND (criança OR child* OR nino OR neonato OR newborn) AND (dependencia OR dependence) AND mj:("Transtornos Relacionados ao Uso de Substâncias" OR "Efeitos Tardios da Exposição Pré-Natal" OR "Transtornos Relacionados ao Uso de Cocaína" OR "Resultado da Gravidez" OR "Deficiências do Desenvolvimento" OR "Drogas Ilícitas") AND (usuario OR usuarios OR users)	-	-	71

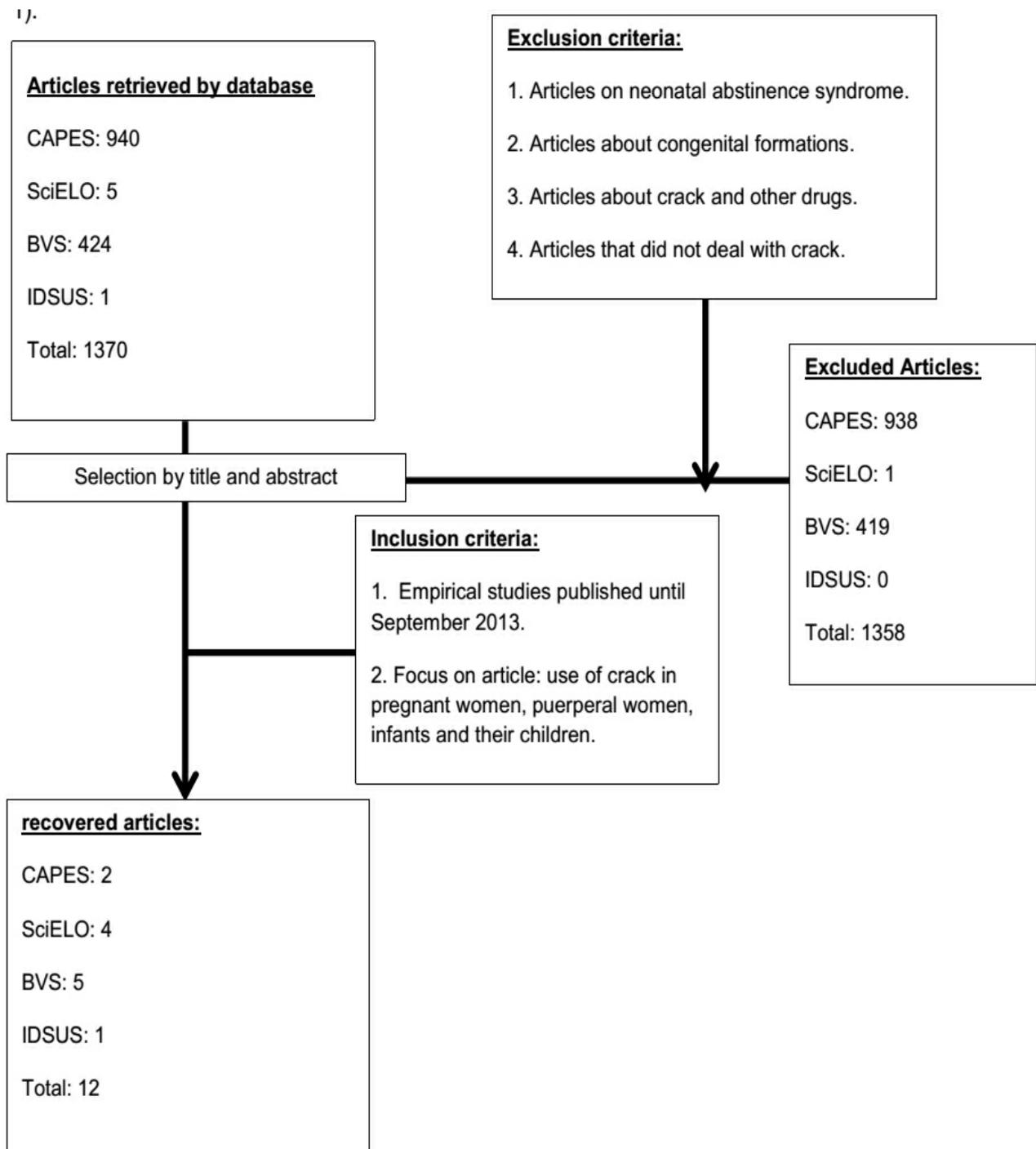
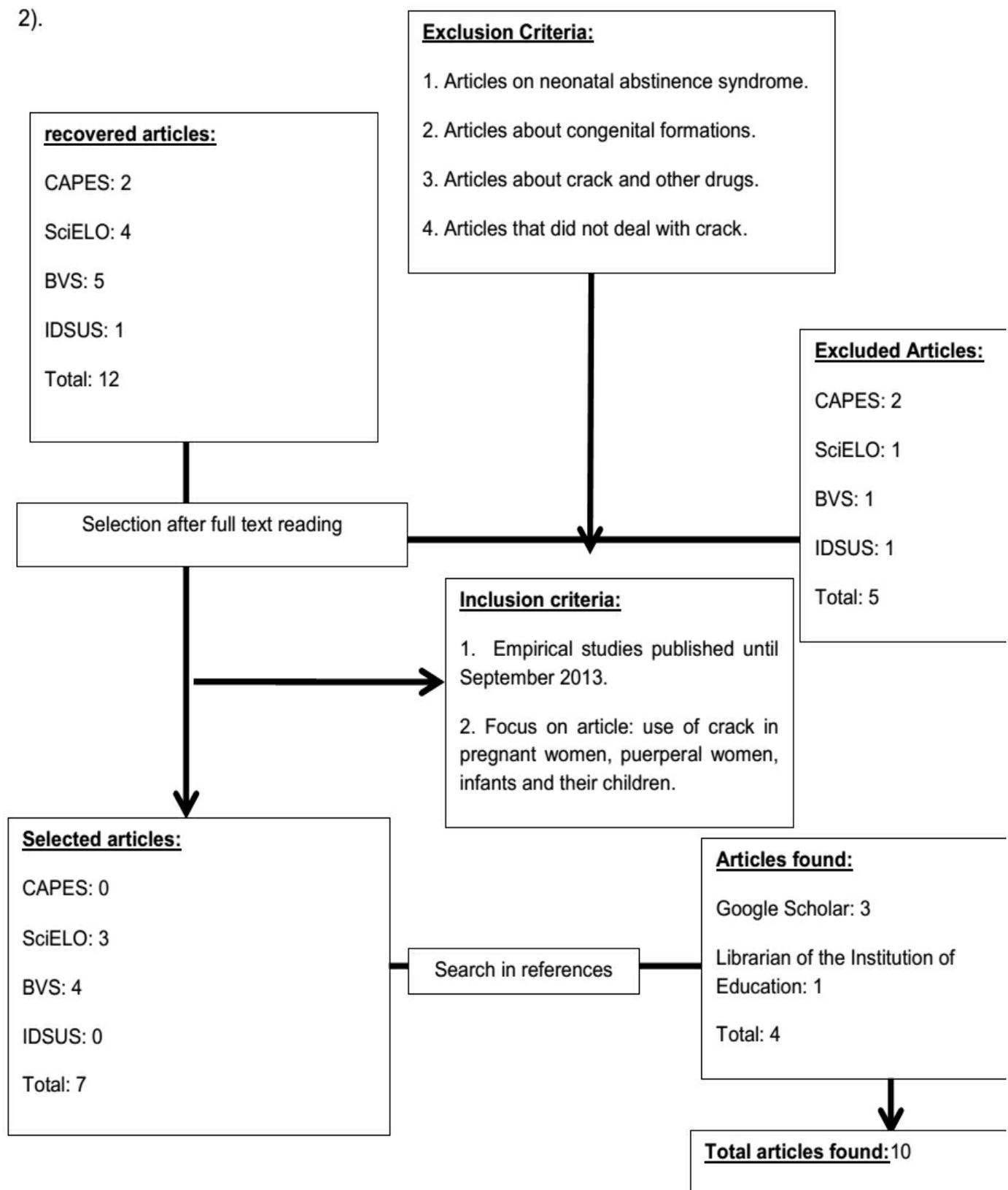
Figure 1A. Flowchart with the absolute number of articles included and excluded from the study (Part 2).

Figure 1B. Flowchart with the absolute number of articles included and excluded from the study (Part 2).

Results

A total of 1370 articles were retrieved, 10 of which included inclusion criteria (Figure 1). A wide variety of types of study, interventions and outcome were observed. Of the 10 studies included, 2 were of the qualitative type, 1 of the descriptive

qualitative type, 2 of the systematic review type, 2 of the transverse type, 1 of the prospective cohort type, and 1 of the qualitative longitudinal type. Of these articles, 4 were published in English and 6 in Portuguese. Being that, 4 were developed in the USA and 6 in Brazil. It was observed that in general, semi-structured interviews were conducted with

populations of crack users-adolescents and young adults and their families. We did not obtain studies with elderly crack users who are mothers of crack users. The characteristic of each article can be better observed in table 3.

The studies by Swadi⁸, Fliglie⁴, Oliveira⁹, Rudolph⁷, Santos¹⁰ and Selegim⁵, published respectively in the journals *Drug and Alcohol Dependence*, *Journal of Clinical Psychiatry*, *Electronic Journal of Mental Health and Alcohol and Drugs*, *Drug and Alcohol Dependence*, *IV Research Journal in Psychology of the UNISC - Santa Cruz do Sul University* and *Acta Paulista de Enfermagem*, investigated the factors that influence the use of crack and that are present in the family environment. They conclude that the presence of an implicit culture of drug use and the existence of more than one relative who used drugs is associated with the development of social and psychiatric disorders and the high probability of using drugs and, more specifically, the use in their environments in the adult phase, also increasing their dependence.

On the other hand, the articles by Swadi⁸, Zila¹¹, Lam⁶, Oliveira⁹ published respectively in the journals *Revista de Saúde Pública*, *Drug and Alcohol Dependence*, *Journal of Pediatric Psychology* and *Electronic Journal of Mental Health and Alcohol and Drugs* also reinforce the correlation

between the family environment and the use of crack, both as a risk factor and as a protective factor. They concluded that the protective factors are the availability of information, protective family structure, social disapproval of drug use, family interest in the child and adolescent's life and socio-educational activities (sports activities, vocational courses, encouragement of creative potential).

The Delaney-Black study¹² published in the journal *Neurotoxicology and Teratology* found that both prenatal exposure and postnatal exposure to cocaine (use of the drug by parents or caregivers) were solely related to cocaine use by adolescents and was also found indirect relationship between drug use and exposure to the drug in the community. Finally, the article by Marques¹³ published in the *Journal of the Brazilian Medical Association*, notes that there is a family transmission of cocaine dependence and moderate to high heritability for most addictions.

In almost all articles, it is observed that the family and the family environment around the individual are considered as one of the main forms of influence for the consumption or not of crack and other drugs, either directly or indirectly (Graph 1). In some studies there is evidence that the relationship with the mother, specifically, can be considered as both protective and risk factors.

Graph 1. Absolute number of articles found relating risk factors for drug use among children and young adults.

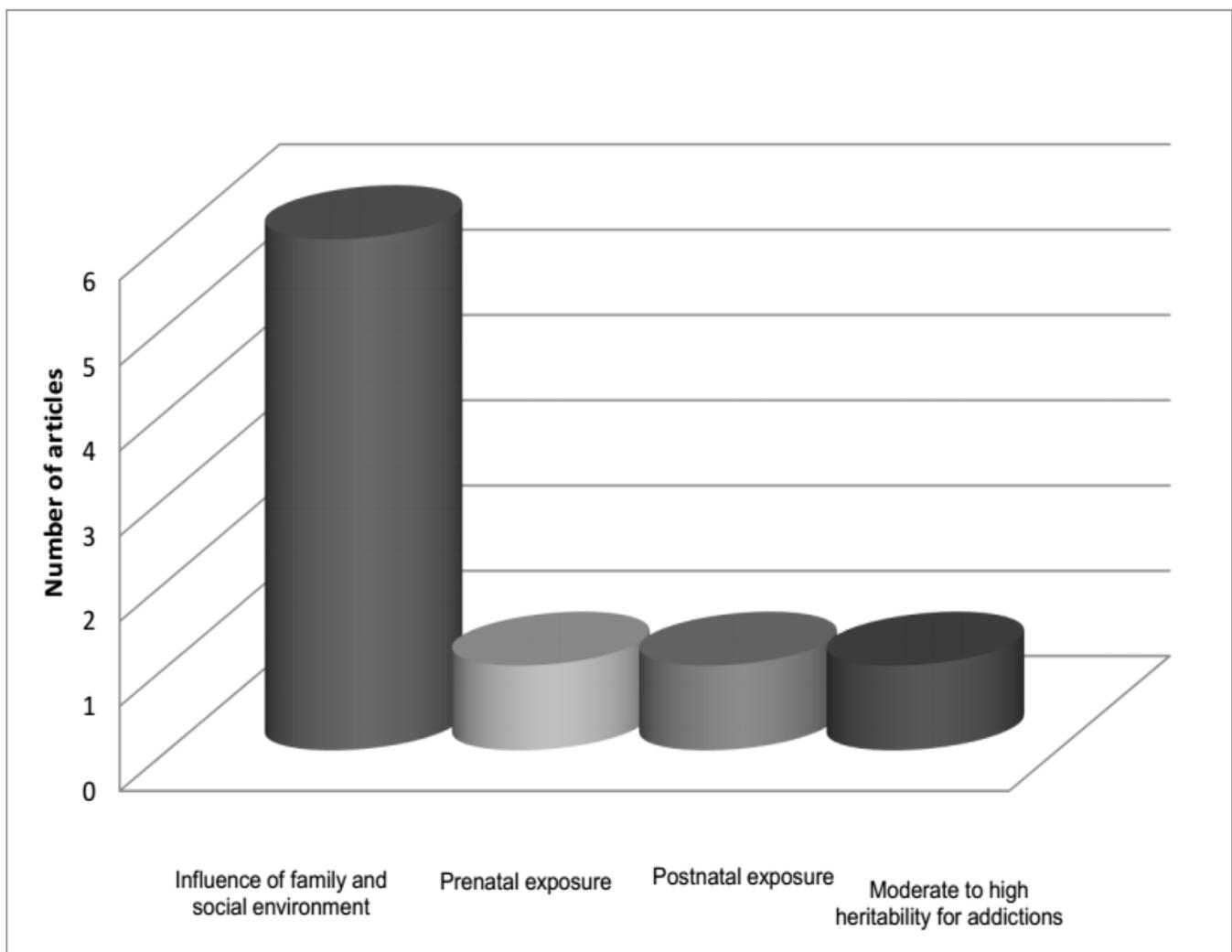


Table 3. Characteristics of included articles

Article (Country or Country State and year of publication)	Participants	Local	Type and methodological quality of the studies	Objectives	Results
Influence of the family environment on crack users consumption (Paraná-Brasil, 2013) ⁵	15 families of crack users (seven mothers, five siblings, two parents and an aunt) undergoing treatment at a specialized service through a semi-structured interview	Data collection performed at a specialized service unit in the city of Maringá.	Qualitative Research Checklist (7/10 CASP Qualitative Research Checklist)	To analyze the influence of the family environment on the consumption of crack in habitual or dependent users	Parental support deficiency, overprotection of children, the presence of an implicit culture of drug use, the existence of conflicts and violence, misinformation and lack of knowledge about drug use have influenced the use of crack among family members. dependents of this drug.
The association between parental risk behaviors during childhood and having high risk networks in adulthood (Nova Iorque-EUA, 2011) ⁷	650 young drug users with mean age of 33 years	Data collection in street interventions in the city of New York (USA)	Longitudinal (Qualitative-Interviews) (9/10 CASP Qualitative Research Checklist)	To assess the association between drug use by a parent, parent or primary caregiver during childhood and to have a greater chance of using drugs in adulthood	Twenty-two percent of the participants used injectable drugs, 49% were black, and during infancy 26% of mothers, 32% of parents, and 13% of first caregivers used drugs. Having a family member who used drugs was associated with a high probability of using drugs (CI = 95%) and specifically the use and smoking of crack in their environments in adulthood.
Individual risk factors for adolescent substance use, (Emirados Árabes Unidos, 1999) ⁸	Adolescents (target population)	Not applicable	Systematic review (2/11 AMSTAR)	Identify risk factors and establish prevention strategy for drug use in adolescents	The use of illicit substances by parents clearly influences their children's risk behavior, especially in choosing a risk behavior group as a model of friendship. Several factors may influence the onset of drug use, such as the genetic load inherited from the parents, the lack and or the excessive control exerted by the parents, as well as the influence of the social groups and also the environment where the adolescents are inserted.

Abuse and addiction: crack (Brazil, 2012) ¹³	Not applicable	Not applicable	Systematic review (4/11 AMSTAR)	Update on the specificities in early detection and crack user approach	The family is one of the main areas capable of influencing the vulnerability of the individual to initiate and achieve problematic patterns of consumption, both directly (genetics and exposure to consumption within the family environment) and indirect (violence, abuse and continuous stress) very fragile family ties. On the other hand, positive family relationships are always protective and structuring, reducing the individual's vulnerability to drug use, often even preventing dependence on a particular substance.
Sons of dependents with bio-psychosocial risk factors: Do they need a special look? (São Paulo-Brazil, 2004) ⁴	63 relatives of drug addicts, 54 children and 45 adolescents	Data collection at the Selective Prevention Service in the outskirts of São Paulo	Transversal (9/11 Cross Sectional Appraisal Tool)	To investigate the profile of children, adolescents and family members in a service of selective prevention for children of dependents and to discuss alternatives of intervention and treatment for this population	In most families, the father is the chemical dependent (67%), having as the substance of choice the alcohol (75%). It was found that in 59% of spouses who were not chemically dependent, risk of mental health disorders. In children, shyness and feelings of inferiority, depression, family conflict, lack of affection and a good level of energy were observed, which is indicative of emotional and mental imbalance. In adolescents, a higher index of problems was observed in the following areas of DUSI: psychiatric disorders, sociability, family system and leisure, recreation.
Children of African-American Mothers who use crack cocaine: parenting influences on youth substance use (Carolina do Norte-EUA, 2007) ⁶		Mothers were recruited on the streets, in homes where crack users live, and at crack cocaine use in North Carolina.	Transversal (8/10 Cross Sectional Appraisal Tool)	To examine the relationships between mothers who use crack and their children; and evaluate the effects of this relationship in the early onset of substance abuse	Relationships between the early age, the family conflict and the disapproval of drug use with the use of drugs by children were found. Age vs. family relationships

					have an influence on conflict and disapproval. Increased family conflict may increase the child's risk of using the drug early, while maternal disapproval over drug use may protect against early use.
Reasons for non-use of illicit drugs among at-risk youth (Brazil, 2005) ¹¹	62 girls of both sexes between the ages of 16 and 24, of low social class, 32 of whom never used illicit drugs and 30 subjects made heavy use	Young people were recruited using the snowball technique, where the first interviewees indicate others, who in turn indicate others and so on, there were no participants classified as the place of residence (neighborhood), school, friends and community religious	Qualitative (9/10 CASP Qualitative Research Checklist)	To identify, among adolescents with low purchasing power, the reasons that would prevent them from experimenting and the consequent use of psychotropic drugs, even when submitted to constant supply	Among non-users, the availability of information and protective family structure were observed as reasons for the withdrawal of young drug users. Complete information on the consequences of drug use and the affective bonds between parents and children, guaranteed by feelings such as complicity and respect, appear to be important for drug denial. The importance of these factors as reasons for the removal of young people from drugs is emphasized when their absence is reported and criticized among drug users.
Prenatal and postnatal cocaine exposure predict teen cocaine use (Michigan-EUA, 2011) ¹²	African-American adolescents initially identified by a prospective pregnancy study.	Adolescents recruited by a previous study conducted by the university / maternity center of the inner city of Detroit, subsequently interviewed as well as their mothers.	Coorte prospectivo (10/12 CASP Cohort Study Checklist)	To evaluate the relationship between prenatal exposure to cocaine and cocaine use among adolescents	Pre- and postnatal exposure to cocaine (use of the drug by parents or caregivers) was solely related to cocaine use by adolescents at the age of 14 years. The use of this drug was also directly related to exposure to violence in the community and to the negative image of the caregiver, and indirectly related to adolescents' exposure to the drug in the community.
Risk factors for crack cocaine use in adolescence (Rio Grande do Sul-Brazil, 2011) ¹⁰	Incomplete adolescents up to the age of 21, crack users attending health services in Santa Cruz do Sul (Brazil)	9 interviews taken from a municipal survey, titled "The reality of crack in Santa Cruz do Sul" in 2010	Quantitative (7/12 McMaster Quantitative review)	Investigating risk factors for teenage crack cocaine use	The users interviewed in this research are men, single, with low schooling and mostly reside with their mother and siblings. The first contacts with the drugs occurred,

					motivated by the curiosity, in the beginning of the adolescence, usually with cigarette and alcohol. Among the relatives of the users, the siblings use the largest number of different drugs, followed by the mother and the father. The following were highlighted in the family environment of the interviewees: fights, vices and sadness. The use of crack was associated with negative changes in the life of these subjects.
The importance of the family in the prevention of drug use among children and adolescents: maternal role (Rio de Janeiro-Brazil, 2008) ⁹	22 mothers (older than 18 years) from a community located in the city of Rio de Janeiro	Interviews conducted in the year 2006 with the mothers when they were going to get their children in the daycare center of the community	Descriptive Qualitative (7/10 CASP Qualitative Research Checklist)	To describe the risk factors and protective factors for the use and abuse of drugs referred by the family	The mothers reported as risk factors the means, the influence of peers and the use of drugs by the family. As protective factors the dialogue, structured family and social and educational activities.

Discussion

Chemical dependence, especially of substances with high addiction, such as crack, tends to destabilize the family of the user of this drug. In addition, with the growth of the use of this substance in Brazil, it is important to verify the factors that predispose individuals to become addicted to this drug, as well as the reasons for not using it. The heterogeneity of the interventions, types of studies and their outcomes made it difficult to group and compare the findings of the included studies; however, it can be seen that the family and social environment is a protective and risk factor for the onset of drug use, or crack.

According to the recent qualitative study and high methodological quality, poor family ties can both stimulate the onset of dependence and the maintenance of the use of crack⁵. In addition, this study states that lack of information and lack of knowledge about drug use were also factors that influenced family members of dependents to start using. Corroborating this finding, a recent longitudinal study of high methodological quality, demonstrates the association between the existence of more than one familiar drug user with a high probability of children also using drugs (CI = 95%) and, more specifically, the uses crack smoke in their environments in adulthood. In this environment favorable to the future consumption of crack cocaine, 26% of mothers used crack cocaine during the childhood of this probable user of crack⁷.

Affirming the above findings, a descriptive qualitative study of high methodological quality was conducted, mainly based

on mothers' opinions on the risk factors and protective factors for drug use that surround their children. It was concluded with the study that mothers are aware that family and social influence is the main factor that may lead their children to use drugs. Furthermore, they affirm that dialogue, a structured family and social and educational activities can act as protective factors for the use and abuse of drugs by young people⁹.

This maternal influence on the use of crack by their children is confirmed by recent cross-sectional research of high methodological quality that demonstrates how the influence on the child's behavior is significantly and more strongly imposed by the mothers than by the parents⁶. Therefore, the mother is a crack user, can negatively affect the behavior of the children, increasing the risk of these children becoming users of crack when young and adults. In addition, the study also concluded that increased family conflict can substantially increase a young person's risk of becoming a drug user; in contrast, the mother's disapproval can specifically act as a protective factor for drug use⁶. As well as concluding an old systematic review of low methodological quality, in which there is the affirmation that there is influence of the environment, including family and friends, in the early use of drugs⁸.

It was also concluded in a recent cross-sectional study of high methodological quality that there is a greater probability that the child and young person becomes a drug user when there is family consumption. However, in this study it was found that the father would be the chemical dependent (67%), and 59% of the mothers or spouses were

not dependent⁴. Another study that corroborates this idea, in which a qualitative research of medium methodological quality was carried out, in which it was concluded that the influence of the familiar environment was predominant in relation to the other factors predisposing to the use of crack by the interviewees, being that in most cases, at least one family member used some type of drug, and it was found that negative changes in the subject's life are closely related to the use of crack¹⁰.

In the qualitative study with high methodological quality, we did not only investigate the risk factors, but also the factors that protect the use of crack, addressing this aspect with greater relevance. The risk factors were those mentioned above. Regarding the protective factors for the early use of the drug, it was concluded that they could be: good family relationship, disapproval of the social environment to the drug, family interest in the life of the child and or adolescent besides the accomplishment of socio-educational activities in the environment in which these young people were inserted¹¹. Other studies also analyzed the protective factors for the early use of drug and crack, the final conclusion of which agrees with the one that was presented in the previously analyzed study^{6,8,9}.

In addition to the risk factors and protectors already mentioned that were unanimous in most studies, a recent systematic review of low methodological quality, reported the existence of heritability directly, that is, there is a genetic influence to crack abuse and dependence¹³. Finally, a relationship between prenatal exposure and cocaine use by adolescents was found in a retrospective cohort study of high methodological quality, in addition to the prenatal relationship there is evidence of the postnatal exposure that is intimately related with the influence of the familiar and social environment mentioned in most of the articles analyzed. In this case there is an emphasis on the contact aspect in the community¹².

Limitations

This systematic review presents as main limitations the number of databases used; some facts have been reported by third parties; and the fact that some studies required participants to retrieve old memories from the childhood phase. The first occurred because of the time limitation for the execution of the search, which meant that there were only three databases. Possibly the inclusion of other bases like PsycINFO could have enriched the recovery of relevant articles. The second one, is related to the existence of memory bias in the studies that depended on reports of children and or caregivers regarding the use of crack during pregnancy and puerperium. The third one was due to the possibility that the old memories of the childhood phase were distorted. However, this would not change the type of drug that was used in the research.

Conclusion

The analysis of the present study, based on the systematic review through the articles selected above, aimed to evaluate the effects of crack use before, during and after gestation and its implication in the development of drug dependence in the future. In addition, it proposed to identify which factors influenced the use of crack by children of

dependent mothers and what factors were classified as protectors for this use.

With this, it was verified that the heritability of vices and prenatal exposure may influence the future use of this drug by children of users, however, many studies were not found to corroborate this assertion. The postnatal exposure, whether made by family or friends, can influence the future use of this drug, since there is a greater probability that children who live with family members who use drugs will become drug users in the future.

It is concluded, therefore, that children of chemical dependents represent a group at risk for the future use of drugs, more specifically crack. But that the relationship of use during gestation is not clear. Thus, it increases the importance and the need for a specialized preventive service directed at children, adolescents, young people and relatives of chemical dependents, mainly in crack use and abuse.

References

1. Zero hour. Number of crack users in the country exceeds 1 million, says expert. 2010. [Accessed on 02 Oct 2013]. Available in: <http://zerohora.clicrbs.com.br/rs/geral/noticia/2010/05/numero-de-usuarios-de-crack-no-pais-ultrapassa-1-milhao-diz-especialista-2894303.html>
2. Oswaldo Cruz Foundation. Increased research on crack in the world shows the profile of consumption in Brazil. 2013. [access on 28 Sep 2013]. Available in: <http://portal.fiocruz.br/pt-br/content/maior-pesquisa-sobre-crack-j%C3%A1-feita-no-mundo-mostra-o-perfil-do-consumo-no-brasil>
3. Gasparin M, Silveira JL, Garcez LW, Levy BS. Oral and global motor behavior of newborns of mothers using crack and / or cocaine. *Revista Brasileira de Fonoaudiologia*. 2012 Dec ; 17 (4): 459-463 Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1516-80342012000400016&lng=en&nrm=iso
4. Figlie N, Fontes A, Moraes E, Payá R. Children of dependents with bio-psychosocial risk factors: need a special look ?. *Journal of Clinical Psychiatry*. 2004; n. 31 (2): 53-62.
5. Selegim MR, Magda LFO. Influence of the family environment on the consumption of crack in users. *Acta Paulista de Enfermagem*. 2013 jun ; 26 (3): 263-8 Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-21002013000300010&lng=en&nrm=iso
6. Lam WKK, Cance JD, Eke AN, Fishbein DH, Hawkins SR, Williams JC. Children of African-American Mothers Who Use Crack Cocaine: Parenting Influences on Youth Substance Use. *Journal of Pediatric Psychology*. 2007 mai; 32(8): 877-887 7.
7. Rudolph AE, Jones KC, Latkin C, Crawford ND, Fuller CM. The association between parental risk behaviors during childhood and having high risk networks in adulthood. *Drug Alcohol Dependence*. 2011 nov; 118(2-3): 437-443.
8. Swadi H. Individual risk factors for adolescent substance use. *Drug and Alcohol Dependence*. 1999; 55: 209-224.
9. Oliveira EB, Bittencourt LB, Carmo AC. The importance of the family in the prevention of drug use among children and adolescents: maternal role. *Electronic Journal Mental Health and Drugs*. 2008; 4 (2).

10. Santos EMAL, Silva JC, Linhares EG, Zacharias DG. Risk factors for crack cocaine use in adolescence. IV Conference on Research in Psychology. 2011.
11. ZILA Sanchez ZM, Oliveira LG, Nappo SA. Reasons for non-use of illicit drugs among young people at risk. *Journal of Public Health*. 2005; 39 (4): 599-605.
12. Delaney-Black V, Chiodo LM, Hannigan JG, Greenwald MK, Janisse J, Patterson G, Huestis MA, Partridge RT, Ager J, Sokol RJ. Prenatal and postnatal cocaine exposure predict teen cocaine use. *Neurotoxicology and Teratology*. 2011; 33: 110-119.
13. Marques ACPR, Ribeiro M, Laranjeira RR, Andrada NC. Abuse and addiction: crack. *Rev. Assoc. Med. Bras.*; 58 (2). Available from: http://www.scielo.br/scielo.php?pid=S0104-42302012000200008&script=sci_arttext.
14. Critical Appraisal Skills Programme: Making Sense of Evidence [Internet]. Oxford(UK).1993 [citado em out/2013]. Disponível em: <http://www.casp-uk.net>.
15. Shea BJ, Hamel C, Wells GA, Bouter LM, Kristjansson E, Grimshaw J, Henry DA, Boers M. AMSTAR is a reliable and valid measurement tool to assess the methodological quality of systematic reviews. *J Clin Epidemiol*. 2009 Oct; 62(10): 1013-20.
16. Critical Appraisal Tools. [Internet] Canada: McMaster University. 1998. [quoted in Oct / 2013]. Available in: <http://www.srs-mcmaster.ca/Portals/20/pdf/epb/quanreview.pdf>.
17. Niccols A, Milligan K, Smith A, Sword W, Thabane L, Henderson J. Integrated programs for mothers with substance abuse issues and their children: A systematic review of studies reporting on child outcomes. *Child Abuse & Neglect*. 2012 abr; 36: 308-322.