



SEINÄJOEN AMMATTIKORKEAKOULU  
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# **Substance Abuse Mothers and the Risk Effect on Breast-feeding Babies**

Literature review

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## **Thesis abstract**

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There are some mothers who still use or abuse drugs and alcohol after birth and during breastfeeding period without knowing the effects it may cause to the infant. During the first year of a baby's life, the infant's initial and greatest option for defence against infectious disease is human milk. The trends of substance misuse among women of reproductive age have not altered much in the last 10 years. Meanwhile, however, a growing number of infants displaying the negative impacts of their mothers' drug use have come to the attention of doctors, nurses, social assistance organizations, and public health officials.

The aim of this thesis is to help prevent alcohol and drug use in mothers and to eliminate or reduce the harmful effect to the babies. The purpose is to describe the use of alcohol and drugs by the breastfeeding mother and the effect of the use on the breastfed baby.

The research methodology used in this thesis is literature review. The material used in this thesis was collected from Pubmed/Medline, CINAHL, SeAmk Finna and Google search engine. Most of the material publication date range between 2012 and 2023. The results were analysed using content analysis method. A number of 20 articles were used in analysing the results and 60 articles used in total for the thesis.

It was found out, according to findings, that psychological, mental, cultural, socio-economic factors are the causes that lead mothers to use substances while breastfeeding. Harmful effects on infants were categorized in neurological, physical and health effects. All these and others are what leads to substance abuse in a breastfeeding mother.

Based on the results, it can be concluded that the causes of substance abuse in mothers while breastfeeding are psychological, mental, socio-economic, and cultural causes. Harmful effects of substance abuse on the baby can be linked to neurological, physical and health effects.

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## Terms and Abbreviations

<b>ABB</b>	<b>Meaning</b>
SU	Substance abuse
SUD	Substance abuse disorder
HIV	Human Immune Virus
PCP	Phencycline
PND	Post-natal depression
NICUs	Neonatal Intensive Care Units
PTSD	Post Traumatic Stress Disorder

## 1 Introduction

Problems related to drug usage during pregnancy have been worse during the past few years (Chasnoff, 2012, p.206). No professional organization has stepped forward to act as an advocate for this population of substance abusers even though cocaine has become the drug of choice for millions of people in the world, including pregnant and breastfeeding women. Meanwhile, however, a growing number of infants displaying the negative impacts of their mothers' drug use have come to the attention of doctors, nurses, social assistance organizations, and public health officials. Although issues surrounding substance addiction during pregnancy have drawn more attention in medical literature since the early 1970s, there has recently been a very significant rise in the quantity of publications published in this area. Although trends of alcohol, marijuana, heroin, and other drug misuse among women of reproductive age have not altered much in the last 10 years, cocaine use in this generation has been on the rise.

For the infant's healthy growth, maternal nutrition is strongly advised (Riordan & Wambach, 2010, p.163). For the first six to twelve months of life, breast milk is the best source of baby nourishment since it benefits both mothers and babies in the short and long term. In addition to other advantages, breastfeeding shields new-borns from a range of diseases, such as severe otitis media, gastroenteritis, and respiratory tract infections.

Mothers may be tempted to use drugs or indulge in substance use again after nine long months of being pregnant and abstaining from alcohol and drugs (Boyd et al., 2022). While coping with the strain of caring for a new-born, mood-stabilizing drugs, the occasional drink, or a soothing marijuana may appear like enticing outlets to indulge in.

This topic was chosen because motherhood is not just bringing a child into this world, but it also comes with all the responsibilities of a mother, that it needs to make the future of that child's life to be better or worse. Nurses should act as advocates on behalf of these babies to help and guide their parents to make the right choices, so their choices do not harm the baby or child as they grow up and to also help create a safe environment for them to live in.

Furthermore, mothers consuming drugs and alcohol while breastfeeding and the risks on babies- topic is that there are mothers somewhere who still use or abuse drugs and

alcohol after birth and during breastfeeding period without knowing the effects it may cause to the infant. Babies are innocent and they should not have to pay for their mother's mistakes and actions. Some mothers do know that consuming drugs or alcohol while breastfeeding is wrong for the infant, but they are not sure why. That is why it is very important to educate and do more research about the topic so that we can decrease the risks it has on babies, and it hopefully saves some babies' lives. Another reason for this topic is that, as nurses, our job is not only to take care of patients but also represent or act as nurses' advocates for the babies and children who find themselves in a situations of substance abuse mother.

The aim is to help prevent alcohol and drug use in mothers and to eliminate or reduce the harmful effect to the babies. The purpose is to describe the use of alcohol and drugs by the breastfeeding mother and the effect of the use on the breastfed baby.

## 2 Substance abuse in breastfeeding mothers

Alcohol and illegal drugs are two examples of psychoactive chemicals that can be used in a bad or dangerous way (Substance Abuse, 2023). The detrimental effects on people's health that illicit drug usage have on society are one of its most significant effects. Additionally, drug use costs individuals, families, and society a great deal of money.

Motherhood has a practically limitless range of meanings (Diranian, 2017). A mother serves as a friend, enforcer, and guardian. A mother is a selfless, compassionate person who must sacrifice many of her needs and wants in attempt to reach those of her children. A mother puts a lot of effort into ensuring that her child has the information, skills, and capacities to succeed as a competent adult. The most difficult and fulfilling job a woman will ever have is being a mother.

The term "breastfeeding" refers to the process of a mother feeding her new-born breast milk (Riordan & Wambach 2010, p.51). Breastfeeding is also described to when a woman is asked to breastfeed another woman's baby, or when breast milk has been expressed and given to the infant. Breastfeeding has several important benefits, mostly for new-borns but also for women breastfeeding. Breastfeeding is the practice of feeding a child breast milk from the mother.

Illicit drugs are substances that can be ingested by individuals, and once taken, it changes certain bodily functions (Riordan & Wambach 2010, p. 187). Some diseases can be diagnosed, prevented from occurring, or treated using illicit drugs. Some illicit drugs help the body recover from infections by eradicating microorganisms, others help put an end to headaches. Drug usage technically only refers to when a person has ingested a substance and it has gone through the four steps of processing: administration, distribution, metabolism, and elimination. However, the notion of problematic drug use stems from the belief that using drugs might have unfavourable or undesirable effects.

The dried leaves of the tobacco plant are used to make tobacco (Healey, 2021). Nearly 4000 different chemical substances, including nicotine, tar, carbon monoxide, acetone, ammonia, and hydrogen cyanide, are found in tobacco smoke. Of these substances, 43 have been shown to be carcinogenic (cause cancer). Using of cigarettes, pipes, and



cigars, tobacco is consumed. It can be purchased in blocks to be chewed or in the shape of a fine powder to be inhaled as snuff.

The toxin is tobacco. Adults can be fatally injured by ingesting even a modest amount of pure nicotine (Healey, 2021). As an extremely addictive drug that affects both the body's physical and mental health, nicotine is the stimulant component in smoke from cigarettes that leads to dependency. Serotonin is a neurotransmitter that plays a significant role in modulating the desire to use drugs. Studies have revealed that nicotine raises serotonin levels in the human brain that controls pleasure.

Alcohol is a substance with harmful and addictive potential. Alcohol has similar effects on your body as other drugs do. It might also be hazardous (Australian Government Department of Health and Aged Care, 2019).

Human milk has qualities of protecting infants from many different diseases, mostly infectious diseases, during the first year of life. Because of its nutritional benefits, it is strongly recommended for all the infants to be breastfed exclusively at least six months after birth (Cochi et al., 1986; Ford et al., 1993; Goldman, 1993; Goldman et al., 1994; Pisacane et al., 1992 p.163). Alongside protecting infants from infectious diseases, human milk benefits include perfect nutrition for infants, enhancing neurocognitive development and strengthening immune function. It has been studied that human milk reduces infectious diseases such as upper respiratory infections, otitis media, sudden infant death syndrome and necrotizing enterocolitis.

Even though the number of mothers who are choosing to breastfeed their child is rising day by day, women who quit breastfeeding because of drugs and other medications that are prescribed by their healthcare professional is also getting high (Riordan & Wambach, 2010, p.163). Usually, clinicians might recommend quitting breastfeeding when a mother is using drugs because they are unsure of safety of the drugs.

## **2.1 Breastfeeding rates among SUD-affected women**

Breastfeeding rates are lower in Substance Abuse Disorder (SUD)-affected women. According to a 2011 study, only 50% of mothers in the general community breastfed compared to 14% of mothers who used illegal drugs or were using opioid maintenance

therapy. In a different 2019 study, women getting prenatal medication-assisted therapy had a high rate of breastfeeding. 87% of moms taking buprenorphine and 81% of mothers on methadone intended to breastfeed their unborn children (Bartholomew & Lee, 2019). At hospital release, 31% of moms using buprenorphine and 19.6% of mothers receiving methadone were exclusively nursing. For mothers with SUD, how nursing contraindications are seen is crucial. In a cohort of 393 low-income inner-city women from 2003, 48% had never started breastfeeding, and 16% had a known contraindication to doing so. Of those with a contraindication to breastfeeding who never started, 42% claimed "not wanting to pass unsafe stuff" as their justification. 75% of those who had contraindications used cocaine, 28% had HIV, 5% abused PCP (phencyclidine), and 3% used heroin or methadone.

Administration route, absorption rate, half-life, peak serum concentration, dissociation constant, volume of distribution, molecular size, degree of ionization, pH of plasma and milk, solubility of drugs in water and lipids, and greater binding to plasma protein than milk protein are all factors that affect the passage of psychotropic medications through breast milk (Gentile, 2004). It is expected that the milk expelled during the second half of a feeding will include more maternal medicine than the first half (fore-milk) due to the increased lipid content of hind milk (the milk ejected during the second half of a feeding) (Burt, 2001).

Despite this, 2.8% of pregnant women across the world reported using a serotonin reuptake inhibitor (SRI) in the three months preceding conception and during gestation. With four million pregnancies ending in live births each year, more than 90,000 women will be exposed to an SRI (Dorothy, 2008).

Clinical depression, for example, affects 10-15% of pregnant women, whereas postpartum depression affects 10-22% of women (Kim, 2006). Women who have a psychiatric diagnosis of recurrent periods of depression or past postpartum depression are more likely to get depressed (Misri, 2000). It is additionally becoming increasingly clear that several women diagnosed with postnatal depression were also depressed during the perinatal period. To lower the occurrence of post-natal depression (PND), it is critical to diagnose and treat depressive symptoms in the prenatal period (Louise, 2006).

Regarding physical and mental health, pregnancy is a time of considerable upheaval. Pregnancy and puerperium frequently increase the risk of developing or exacerbating

mental diseases, in part because it is accompanied by a role change from femininity to motherhood.

Clinical depression, for example, affects 10-15% of pregnant women, whereas postpartum depression affects 10-22% of women (Kim, 2006). Women who have a psychiatric diagnosis of recurrent periods of depression or past postpartum depression are more likely to get depressed (Misri, 2000). It is additionally becoming increasingly clear that several women diagnosed with postnatal depression were also depressed during the perinatal period. To lower the occurrence of post-natal depression (PND), it is critical to diagnose and treat depressive symptoms in the prenatal period (Louise, 2006).

## **2.2 Healthcare role during breastfeeding stage**

For their best health and development, babies should be breastfed for the first six months of their lives before switching to other meals (Tan et al., 2006, p.216). Breastfeeding has many benefits for mothers and babies, some of the benefits are that it reduces the prevalence and severity of infectious diseases, diarrhoea, respiratory infections, necrotizing enterocolitis, otitis media, and urinary tract infections. reduces the risk of late-onset sepsis in premature babies. Infants who were exclusively breastfed and had a family history of allergies had a considerably decreased risk of atopic illness. Premenopausal breast cancer was less common in women who had previously breastfed. The protective effect grew stronger with greater breastfeeding duration. The incidence of ovarian cancer was reduced by 20%, and postpartum weight loss is more rapid.

During the antenatal period, breastfeeding education should start as a component of prenatal care (Riordan & Wambach, 2010). The advice of the doctor regarding breastfeeding frequently has a favourable effect on the woman's choice to breastfeed. To ascertain whether there is a structural issue or cause for concern, a breast examination should be conducted. Reassure the mother and refer her to a breastfeeding specialist for more guidance if the mother's nipples seem inverted or non-protractile.

A medical professional or governmental authority cannot morally restrict or outlaw lactation because it is a natural biological process. Regardless of her lifestyle choices, a mother will be able to breastfeed her child unless she is physically separated from her. The advice "You cannot breastfeed if you have used drugs" is less congruent with a therapeutic

partnership, autonomy, and beneficence than "You should not use certain drugs while breastfeeding" (and explain why).

Breastfeeding counselling is carried out by medical professionals, such as those who work in maternity clinics, hospitals, neonatal intensive care units, child health clinics, paediatric wards, and polyclinics. The "10 Steps to Successful Breastfeeding" program from the WHO details the care procedures that support breastfeeding (WHO, 1998).

Breastfeeding promotion, which encompasses a variety of methods, can be thought of as existing on a continuum (Riordan & Wambach, 2010, p.65). In communities where breastfeeding is accepted as the norm, "promotion" takes the form of supposing that the mother and child would breastfeed. To ensure that breastfeeding is successfully established, this presumption is paired with social arrangements, such as special foods for the mother or reduced responsibilities, particularly in the initial weeks after delivery. On the other hand, in countries where artificial feeding is the norm, promotion frequently takes the form of advice to breastfeed, which is given occasionally by government representatives and frequently by medical staff or other elite members of the public.

### **2.3 Nursing interventions**

The effect of stigmatization, discrimination and fear of punishment present a barrier to wanted care (Recto et al., 2020). Afraid of being identified as substance-users. Follow-up visits by paediatricians are recommended for children exposed to drugs during pregnancy. Regarding to the child's development, special attention is paid to early interaction and the prevention of child abuse as a collaboration between health care and social services, the family's worries and resources can be mapped, and ways can be planned to support sobriety and parenting.

Table 1. explains how health care providers can support mothers with Substance Use (SU) and substance use disorder (SUD) and guidelines on limited substance use in breastfeeding mothers on when and how to breastfeed.

Table 1. How providers can support breastfeeding in mothers with SU and SUD. (2019, September 13). Substance uses in the breastfeeding woman. Academy OB/GYN.

<ul style="list-style-type: none"> <li>❖ Identify your own intrinsic biases about SU and SUD and work to reduce or eliminate them.</li> <li>❖ Treat patients with SU and SUD with respect and dignity and try to establish a therapeutic alliance. <ul style="list-style-type: none"> <li>Familiarize yourself with local resources for treatment of SUD.</li> </ul> </li> <li>❖ Avoid mixed messages by staff and use of pejorative terms like “drug seeker, addict, and crack baby” and don’t condone use by others. Say something if you hear it. <ul style="list-style-type: none"> <li>Use motivational interviewing instead of only giving advice.</li> </ul> </li> <li>❖ Apply validated substance use screening questionnaires equally to all pregnant and lactating women regardless of age, race, ethnicity, or socioeconomic status and follow-up with non-judgmental rapid intervention.</li> <li>❖ Routine drug testing of biologic samples is not required. If you do send a sample, obtain informed consent (preferably written) including benefits and consequences.</li> <li>❖ Use evidence-based recommendations and individualized recommendations for breastfeeding. Assess harm reduction ability.</li> <li>❖ Discourage separation of parents from children solely based on SUD, either suspected or confirmed.</li> <li>❖ Formular or donor milk should not be default for every substance-exposed neonate or when breastfeeding does not initially go well. Individualize, support, and build self-esteem.</li> <li>❖ Use trauma-informed care. Create a comfortable and safe environment. Ask permission before talking about SUD, exposing, or touching.</li> </ul>
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**Guidelines for breastfeeding with substance use and substance use disorder. Academy OB/GYN.**

<b>Substance</b>	<b>Breastfeeding recommendation</b>
<b>Methadone</b>	<p><b>Yes</b></p> <p>Once neonatal abstinence syndrome resolve, feed before dose or discard milk for 2-4 hours after dose.</p>
<b>Buprenorphine</b>	<p><b>Yes</b></p>
<b>Other prescription opiates</b>	<p><b>Short-term use: Yes</b></p> <p><b>Long-term use: No</b> until transition to medication-assisted treatment or monitoring by pain specialist.</p> <p><b>Codeine use: No</b></p>
<b>Heroin</b>	<p><b>Short-term use: Yes</b>, but wait or discard milk for 24-48 hours after use (may be impractical)</p> <p><b>Frequent use: No</b></p>
<b>Marijuana</b>	<p><b>Yes</b>, but support cessation and no smoke exposure to infant.</p>

<b>Methamphetamine</b>	<p><b>Occasional use: Yes</b>, but wait or discard milk for 48-100 hours after use (impractical)</p> <p><b>Frequent use: No</b></p>
<b>Cocaine</b>	<p><b>Occasional use: Yes</b> but wait or discard milk for 24 hours after use (may be impractical).</p> <p><b>Frequent use: No</b></p>
<b>Benzodiazepines</b>	<p><b>Occasional use: Yes</b> but wait or discard milk for 6-8 hours after use.</p> <p><b>Frequent or high dose use: No</b></p>
<b>Alcohol</b>	<p><b>Occasional use: Yes</b> but wait or discard for 90-120 minutes or 2 hours per drink.</p> <p><b>Frequent use: No</b></p>
<b>Tobacco</b>	<p><b>Yes</b>, but support cessation, nicotine replacement, and avoid smoke exposure to infant.</p>

## 2.4 Effects of substance abuse on breastmilk production

During the first year of life, the infant's initial and greatest option for defence against infectious disease is human milk. The proper nutrition of the new-born improved neurocognitive growth, higher immunological function, and a considerable decline in infectious diseases such upper respiratory infections, otitis media, sudden infant death syndrome, and necrotizing enterocolitis are among the key advantages (Riordan & Wambach, 2010, p.163).

A thorough clinical examination must be performed to assess the pharmacological side effects to which the infants have been exposed. Additionally, studies show that the risk is very non-existent and that the drug cannot harm a breastfed child if it has not been absorbed by the mother and has not produced detectable plasma levels. It is difficult to predict whether a mother who abuses drugs when she is pregnant would continue to do so during breast-feeding (Riordan & Wambach, 2010, p.166). The rate of milk production may be impacted by certain treatments or medications. Breast milk is essential for an infant's growth and development, thus even minor variations in the amount of milk produced can have a significant impact and result in difficulties. Depending on the medication, dosage, and amount used, a woman may utilize medicines that temporarily or permanently cease or suppress milk production. Many medications often enter human milk through passive diffusion, which involves moving from locations of high concentration to those of low concentration (Riordan & Wambach, 2010, p.167).

It is vital to encourage moms not to continue using certain medications while breastfeeding since the hazards to a new-born are quite high (Riordan & Wambach, 2010, p.173). Some drugs are very dangerous to the breastfeeding infant. It is very difficult for a mother who uses drugs while she is pregnant to weigh the benefits and drawbacks of drug use, as well as any potential impacts on the unborn child. Every healthcare professional has a duty to assess the likelihood that a pregnant drug user will continue taking drugs after giving birth.

Majority of medications used illicitly during pregnancy are typically psychotropics, which enter the brain directly and frequently transfer into breast milk. Most frequently used medications are safe and pose minimal dangers to infants when breastfed (Riordan & Wambach, 2010, p.187). Most breastfeeding women take a few, common medicines, usually just for short periods of time. Because the dosage and concentration of the drug are low and it is not used every day, it is uncommon in this scenario for the drugs to produce side effects on the infants. Depending on the condition and diseases of the mother, healthcare professionals may prescribe medications to nursing mothers.

The pituitary chemicals prolactin and oxytocin regulate breastfeeding (Haastrup et al., 2013). Oxytocin induces the smooth muscle cells surrounding the mammary tissue to contract, which results in the ejection of the milk that has been stored in the breast. Prolactin stimulates the production of breast milk. Alcohol has been shown to block oxytocin and the



milk ejection reflex in a dose-dependent manner, which may help to explain why milk supply is down. Alcohol's ability to suppress oxytocin, however, is significantly interindividual variable. In figure 1 and table 2 shows some information regarding substance use (alcohol) and breastfeeding from various organizations.

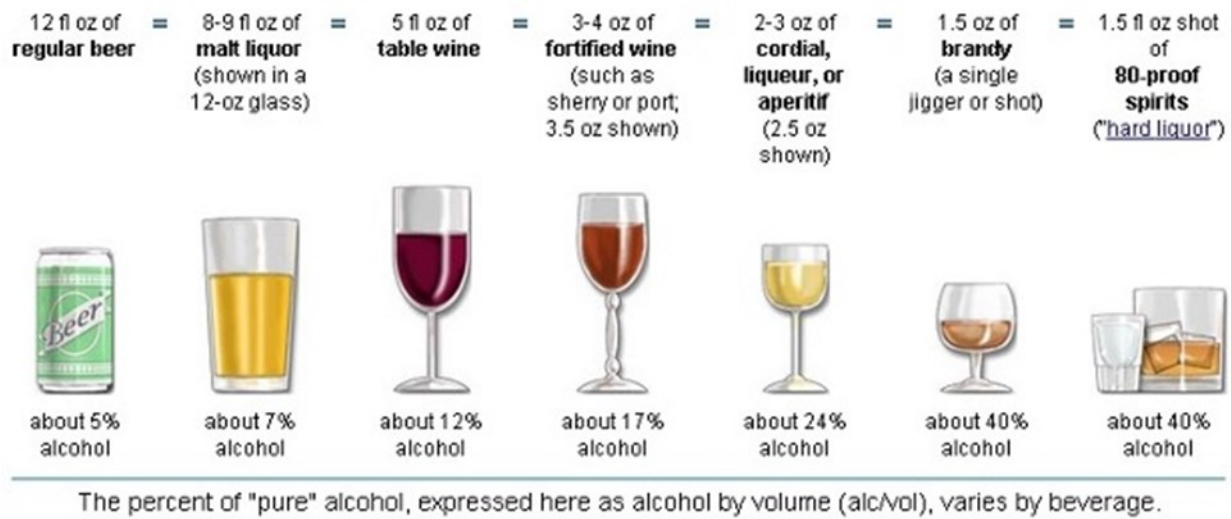


Figure 1. Alcohol& breastfeeding: What's your time-to-zero

Table 2. Statements from organizations regarding breastfeeding and substance use. (2019, September 13). Substance uses in the breastfeeding woman. Academy OB/GYN.

American academy of pediatrics 2012	<p>Maternal substance abuse is not a categorical contraindication to breastfeeding.</p> <p>Street drugs such as PCP (phencyclidine), cocaine, and cannabis can be detected in human milk and their use by breastfeeding mothers is of concern, particularly regarding the infant's long-term neurobehavioral development and thus are contraindicated.</p>
American academy of pediatrics 2018	<p>Although this (the 2012 recommendation) has been interpreted by some professional organizations to indicate that in the parent using marijuana, the choice to breastfeed is "contraindicated", this was not the intent of that statement.</p> <p>It is suggested instead that the mother be encouraged to breastfeed while, at the same time, it is strongly encouraged that she abstains completely from using marijuana as well as other drugs, alcohol, and tobacco.</p>
Centers for disease control	<p>Mothers should not breastfeed or feed expressed milk to their infants if they are using an illicit street drug, such as PCP or cocaine. (Exception: Narcotic-dependent mothers who are enrolled in a supervised medication assisted treatment program and have a negative screening for HIV infection and other illicit drugs can breastfeed)</p>
American college of obstetricians and Gynecologists 2018	<p>A woman with current or history of substance use disorder should not be summarily excluded from or criminalized for nursing her infant. For women in well-supervised medication-assisted treatment programs, breastfeeding is encouraged.</p> <p>Obstetrician-gynecologist must have accurate information about the potential dangers of illicit substances and high concentration of alcohol through breastmilk so they can accurately advice patients about benefits and harms of breastfeeding.</p>

### **3 Aim and purpose of the thesis**

The aim of the thesis is to help prevent alcohol and drug use in mothers and to eliminate or reduce the harmful effect to the babies.

The purpose of this thesis is to describe the use of alcohol and drugs by the breastfeeding mother and the effect of the use on the breastfed baby.

Research questions:

1. What causes a mother to use alcohol and drugs while breastfeeding?
2. What are the harmful effects of substance abuse on the baby?

## **4 Data collection method and analysis**

### **4.1 Qualitative research method**

Qualitative method is a process to better comprehend ideas, opinions, or experiences, qualitative research entails gathering and evaluating non-numerical data (such as text, video, or audio). It can be utilized to discover intricate details about a subject or to develop alternative investigative ideas (Bhandari, 2020).

The goal of qualitative research, a methodological approach in scientific inquiry, is to comprehend an object's qualities, traits, and meanings in its entirety (Laadullinen Tutkimus — Jyväskylän Yliopiston Koppa, n.d.)

The main goal of qualitative research is to comprehend a study question from a humanistic or idealistic perspective. Although the quantitative technique is more trustworthy because it is based on numerical data and can be replicated by other researchers, it is less flexible. The qualitative technique is used to comprehend people's attitudes, interactions, behaviours, and beliefs. It produces data that is not numerical. Researchers from several disciplines are paying more attention to the integration of qualitative research into intervention studies (Pathak et al, 2013).

### **4.2 Literature review**

The results of various pieces of research on a chosen topic are summarized with a critical analysis in a literature review (Baker, 2016). The analysis of the data should be part of that report, along with any gaps in the body of knowledge that should be identified (Neill, 2017). A thorough review should give the reader a concise, unbiased, and logical summary of the most recent research on a certain topic rather than requiring them to read numerous studies on it (Coughlan & Cronin, 2021, p.2).

Simply put, a literature review identifies parallels and discrepancies in previously published pertinent material while offering a critical perspective on interest. It's vital to keep in mind that a literature review is a bigger process that involves identifying the topic of interest,

gathering, critically evaluating, and summarizing the literature. A literature search can help you find material that is relevant to your review topic (Coughlan & Cronin, 2021, p. 2).

The broad description of a literature review is that it is a process and a research methodology that looks at previous research. With the aid of "research about research," we gather the findings of studies that serve as the foundation for brand-new research findings. Rules of the game and meticulous explanations are needed for this (Salminen, 2011)

A literature review is essentially a component of any scientific study; thus, it is not in any way unique or unusual in this context. A literature review is a critical, succinct analysis of prior research and literature pertinent to the research subject, followed by a synthesis based on the researcher's own objectives. The purpose of the literature review is to aid the reader in comprehending the research's subject matter and, on the other hand, to demonstrate how the research is situated, or positioned within the field of its field. In other words, the reader is made aware of the significance of the new study provided and how it complements earlier research with the literature review (Kirjallisuuskatsaus Opinnäytetyön Muotona, 2021).

### **4.3 Data collection**

Thesis implementation: search, selection, and analysis of the data. SeAmk Finna, library books, Cinahl, PubMed, Google Scholar, and google books were used as search engines. Breastfeeding baby or child, drugs, alcohol, and mothers were the keywords used to find data. The articles that were used were full-text accessible with 10 years or less time frame. We were able to obtain the latest data on our subject within these constraints. The target group of this thesis is breastfeeding mothers and babies. The data collection process was carried out in stages as seen in figure 2 below.

CINAHL ultimate (articles, journals, etc.) year 2012-2022

Textbooks- year 2012

MedlinePlus (articles, journals) year 2012-2022

PubMed- year 2012-2022

Language: English

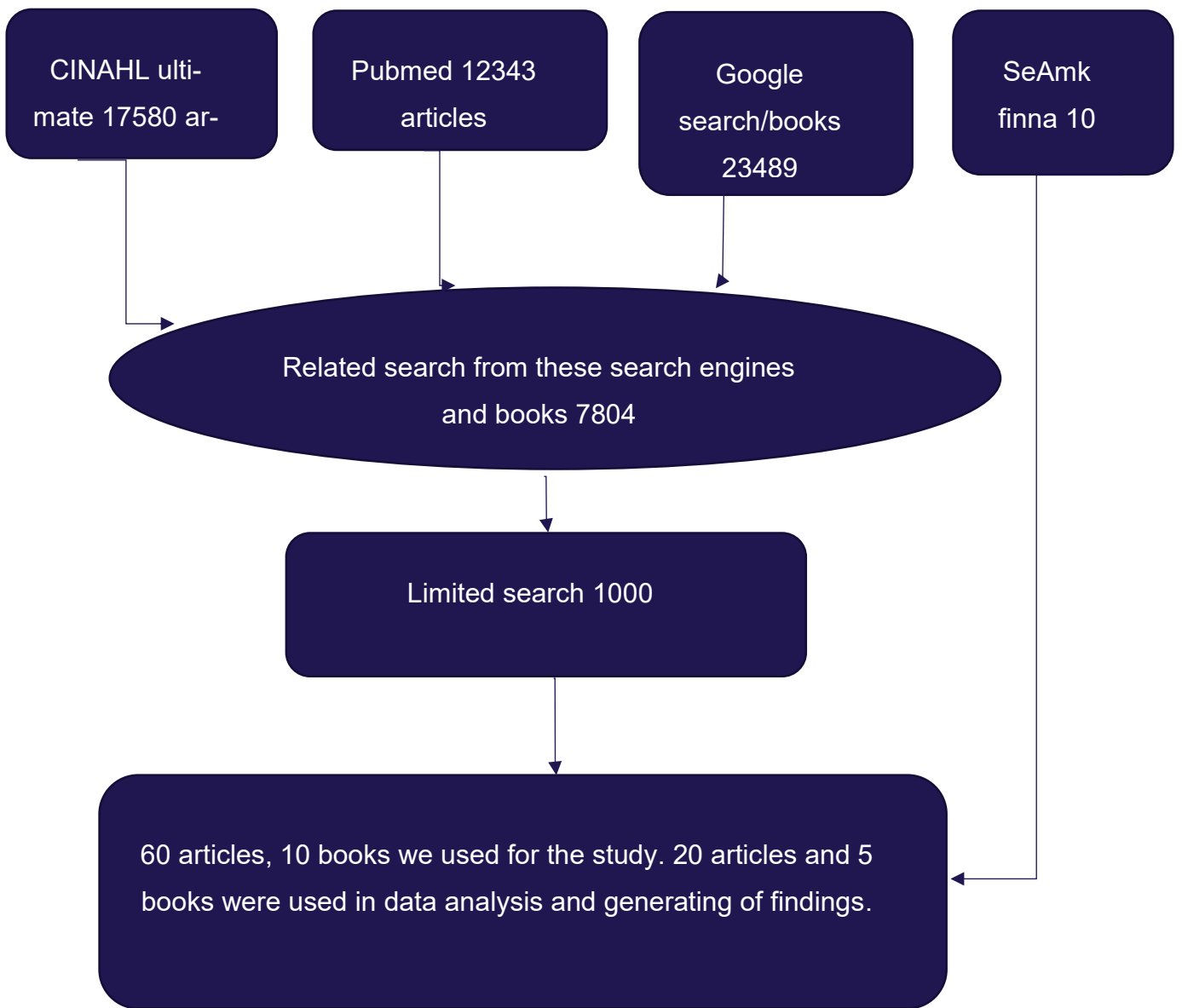


Figure 2. Flow chart of methodology

### Key search words

- Breastfeeding
- Substance abuse, addiction
- Reasons or causes.
- Substance abuse while breastfeeding
- Drugs and breastfeeding
- Alcohol and breastfeeding
- Effects of substance abuse while breastfeeding on infant

### Key concept

Mother, breastfeeding baby or child, alcohol, and drug abuse

I. substance abuse, mother, and risk effect on breastfeeding baby

III. substance abuse, mother, breastfeeding baby, or child. (cinahl)

IV. substance- related disorder, breastfeeding, mother-child relations. (MeSH/FinMeSH)

V. substance abuse during breastfeeding and risk on baby. (Boolean logic)

### Synonyms

Mother: child-bearer, woman, madam, mummy, maternal.

Breastfeeding baby: nursing, suckling, lactating, nurturing.

Alcohol: booze, drink, ethanol, liquor, spirit.

Drugs: dope, narcotic, abused substance, hard drug, addictive drugs.

#### 4.4 Content analysis

A research technique is used to identify the existence of specific words, topics, or concepts in each set of qualitative data (i.e., text). Researchers can quantify and examine the occurrence, significance, and connections of such specific words, themes, or concepts using content analysis. For instance, academics can assess the language used in a news story to look for partiality or bias. The meanings contained in the texts, the author(s), the audience, and even the culture and time surrounding the text can all be inferred by researchers. (Columbia Public Health, 2019).'

A content analysis focuses on the issues, topics, and themes that the source material conveys, such as what is discussed in the interviewees' conversations, what is covered in the media text, what is depicted in the image, etc (Vuori, 2018).

According to the researcher's coding, which involves identifying and naming the content pieces included in the source material, qualitative content analysis is based on researcher coding. When coding is material-focused, the researcher approaches the source material with the goal of finding sections that reveal information about the subject of interest to them (Vuori, 2018)

The aim of content analysis, according to Tuomi & Sarajärvi (2018), is to produce a linguistic and understandable description of the phenomenon under investigation. The content provides a perspective on this topic. The content is organized in the analysis in a clear, succinct manner so that the information it provides is not lost. For them, this entails a steady shift away from the material's physical representations and toward ever-more-abstract ideas. One may ultimately arrive at an interpretation in which a single common conceptual statement serves to describe the complete body of work.



First, data was identified and collected from articles, websites, books, which had answers to our research questions. All the collected data was analysed, categorized into upper and subcategory. The included studies were thoroughly read before they were incorporated into the research assessment. The outcomes pertinent to the topic of study problem were documented after each thesis author had independently viewed every article. Initially phrases that addressed the thesis's inquiry were taken from every investigation finding section.

After categorizing, reductions were done from the original text. Reduction is the process of condensing significant expressions without altering their core value. Each reduction was kept apart from the others and subcategories were created in accordance with the variables that connect them. This process took time and required multiple trials. The upper category emerged after the subcategory, although both were further developed before taking on their ultimate forms. The information could be structured and categorized with the aid of categorization and the result of the review could be summarised with the help of a review conducted within the categories.

## 5 Findings

Thesis findings are categorized in two upper categories which are: causes of substance abuse in breastfeeding mothers and harmful effects of alcohol and drug use on baby. The upper categories consists of seven subcategories which are psychological, mental, socio-economic and cultural causes and neurological, physical and health effects ( table 3.)

Table 3. Substance abuse while breastfeeding causes harmful effects on the baby.

Upper category	Subcategory
Causes of substance abuse in breastfeeding mothers	❖ Psychological causes
	❖ Mental causes
	❖ Socio-economic causes
	❖ Cultural causes
Harmful effects of alcohol and drug use on the baby	❖ Neurological effects
	❖ Physical effects
	❖ Health effects

### 5.1 Causes of substance abuse in breastfeeding mothers

The causes of substance abuse in mothers include psychological, mental, socio-economic causes and cultural causes.

Psychological causes include maternal stress (1), self-medication by prolonged users (2,3), PTSD, anxiety, chronic pain, depression (2,3), uncertain medical advice (2,3), ignorant consequences (2,3), justification of emotions (2,3).

Mental causes include lower self-perceived mental state (4).

Socio-economical causes include college qualified, better earnings, born in Australia or English-speaking nation, better personal-social development (5), significantly younger, unmarried, poorer knowledge, lower income levels (6), advice of a close relative (7), higher academic achievement, level of economic development, shifting gender roles, social acceptability, alcohol marketing (8), intuitive judgement, individual or peer perceptions, healthcare professionals' recommendations, unintended or unexpected gestation, alcohol dependence, ignorance child exposure (9).

Cultural causes include belief in benefits of hard liquor, consumption as a cultural or traditional ritual, boosts breast milk production, ambiguous medical advice, individual's spirits, special occasions, Individual beliefs, knowledge/advice, culture, and personal circumstances influence (9).

## 5.2 Harmful effects of alcohol and drug use on the baby

There are neurological, physical and health harmful effects of alcohol and drug use while breastfeeding on the baby.

**Neurological effects:** Neurological harmful effects of drugs and alcohol on baby includes becoming extremely agitated and tremble. vomiting and diarrhea (18). tremors, exhibit poor feeding habits, delayed motor development (16), long-term consequences on the development of the central nervous system (14,16), negative impact on the maturation of the central nervous system (12). Alcohol influences on baby's sleep patterns, motor growth, and early learning (12,15), damages on baby's nervous system (18), negative impacts on a baby's interaction, growth, and development as well as milk production (15), THC (tetrahydrocannabinol) has impact on person's mood, thinking, and behavior (18, 20), baby may have decreased muscle tone, increased sleepiness, poor sucking, and delayed weight gain (12,17,20).

**Physical effects:** agitation, irregular sleep patterns, poor academics development (11,13), convulsions and poor sucking, bad parenting, child abuse, inadequate care, short-term breastfeeding, and neglect (10,17), legal repercussions, potential street drugs usage (14), inadequate milk for baby (12,20).

**Health effects:** feeding issues, colic, sudden infant death syndrome (SIDS) (20), a decrease in iodine supply, liver, and lung damage, drop in glucose tolerance, no or less prolactin (11), profuse sweating, snoring, pain insensitivity, weak pulse (17), damage to the nervous system and life-threatening effects on the circulatory system (19), drowsiness, respiratory depression, withdrawal symptoms, even death after taking methadone contaminated breastmilk (14,18), induce excessive sedation, fluid retention, and hormone abnormalities in breast-fed infants (14).

## 6 Ethics and reliability

A set of rules that direct your study designs and procedures are known as ethical considerations in research (Bhandari, 2021). When gathering data from people, scientists and researchers must always abide by a set of ethical principles. Understanding real-world occurrences, researching efficient therapies, examining habits, and enhancing lives in other ways are frequently the objectives of human research. There are important ethical considerations in both what you chose to research and how you conduct that research.

In the past, both qualitative and quantitative investigations have utilized the phrases dependability and validity (Kyngäs et al., 2020). However, when qualitative methods gained popularity, academics started debating which standards should be used to judge trustworthiness. Qualitative research's credibility is determined by factors like the findings' caliber, authenticity, and truthfulness.

Throughout the whole thesis process, we abide by the law, recommendations, and instructions by SeAmk. In theoretical background international and internal researchers were used. Books, articles, websites, and others that are based on our research topic and question. Information was collected from recent publications, mainly between the years 2012-2023. Theoretical background was made easy and understandable for the readers. Both study authors agreed solidly on which articles to include and exclusive in the study.

Every source that was used in this study is referenced according to SeAmk instructions both in the text and in bibliography list along with author's names, publication year and pages if it is mentioned. throughout the thesis process there was communication and guidance with the supervisor teachers.

Data is the most important component of reliability. It must be appropriate and contain subjects or materials that are pertinent to the study's subject. Although data saturation is the most crucial indicator of sampling adequacy since it offers the ideal sample size, purposive sampling may be effective for creating an acceptable sample. Data saturation guarantees that the obtained information can be categorized into concepts and themes, proving that the analysis is comprehensive (Kyngäs et al., 2020).

## 7 Discussion

The aim of this study was to help prevent alcohol and drug use in mothers and to eliminate or reduce the harmful effect to the babies. The purpose of this thesis was to describe the use of alcohol and drugs by the breastfeeding mother and the effect of the use on the breastfed baby. The two research questions were: What causes a mother to use alcohol and drugs while breastfeeding? What are the harmful effects of substance abuse on the baby?

Based on the material collected for literature review, upper categories that consist of the research questions were formed and, based on that, subcategories were formed as well, which were used to answer the research questions. The results indicate that the causes of substance abuse in mothers while breastfeeding are psychological, mental, socio-economic, and cultural causes. Harmful effects of substance abuse on the baby can be linked to neurological, physical and health effects. The set aim and purpose of this thesis were well fulfilled.

Alcohol usage during pregnancy and breastfeeding is influenced by personal circumstances, cultural norms, and individual views (Popova et al. 2022, p.81).

In infants up to 12 months of age, moderate consumption while nursing is not associated with reduced breastfeeding period or negative consequences (Wilson et al. 2017, p. 667-676).

Whereas most medical professionals stated that using weed while pregnant or nursing is unsafe, many failed to discuss this or seek to prevent usage, indicating a lost chance to gain knowledge (Young-Wolff et al., 2020).

## 8 Conclusion and recommendations

Based on the findings of this study, it can be concluded that substance abuse while breastfeeding has many adverse effects on the infant, which includes neurological, physical and health effects. Furthermore, there are different reasons that cause mothers to use substances during breastfeeding period, such as psychological, mental, socio-economic and cultural causes.

After all the search on this topic, it is realized that the health promotion on substance use during breastfeeding should be improved and every new mother and even pregnant women should get adequate information about substance abuse while breastfeeding and its harmful effects on the baby. The reason for this research is, as a mother with the nursing career, the research shows that not much attention is being paid to substance abuse during breastfeeding. Therefore, it would be a good thing to recommend and suggest that all health organizations advertise on substance use to help mothers or parents realize the harm they might be causing their unborn babies, during breastfeeding and as they grow. Furthermore, healthcare workers should minimize the reasons that cause mothers to use substances while breastfeeding by providing safe place for mothers to talk about it and help to reduce or eliminate those reasons as much as and as soon as possible from early stages when substance use is recognized by a health professional.

For example, people confuse how they use substance, how much they think they are using it and how much it is acceptable or can hurt their baby. Therefore, to help them understand or prove to them the harm it is or might cause their babies, the advert using a diagram showing the chemical level and quantity in all substances and the effect of how each substance use can harm them and the baby.

There is much research on the adverse effects of substance abuse while breastfeeding. On the contrary, there is very little research on the reasons for substance abuse in breastfeeding mothers to use substances. This revisited thesis research about the causes and effects of substance abusing in breastfeeding mothers can be used to educate mothers in Finland and other countries.

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Literature review used articles.

Number	Author, year	Articles name	Aim and purpose
1	Laborde, N. D., & Mair, C., 2011	Alcohol Use Patterns Among Postpartum Women	studies to address a mother's drinking once she is breastfeeding.
2	Garner, C. D., Kendall-Tackett, K., Young, C., Baker, T., & Hale, T. W., 2022	Mode of Cannabis Use and Factors Related to Frequency of Cannabis Use Among Breast-feeding Mothers: Results from an Online Survey	Strategies needed to address maternal mental and physical health, which may be key to reducing cannabis use among breastfeeding mothers.
3	Kendall-Tackett, K., 2020	Cannabis and Breast-feeding: What We Know and What We Should Do. Clinical Lactation.	Help to identify women who are most likely to use cannabis after birth or during breastfeeding.
4	Lange, S., Quere, M., Shield, K.,	Alcohol use and self-perceived mental	To estimate the prevalence of alcohol

	Rehm, J., & Popova, S., 2016	health status among pregnant and breastfeeding women in Canada: a secondary data analysis. BJOG: an international journal of obstetrics and gynaecology.	consumption during pregnancy and while breastfeeding.
5	Wilson, J., Tay, R. Y., McCormack, C., Allsop, S., Najman, J., Burns, L., Olsson, C. A., Elliott, E., Jacobs, S., Matlack, R. P., & Hutchinson, D., 2017	Alcohol consumption by breastfeeding mothers: Frequency, correlates, and infant outcomes. Drug and alcohol review.	To examine the frequency, correlations, and outcomes of alcohol use during lactation.
6	Coy, K. C., Haight, S. C., Anstey, E., Grant, A. M., Ruffo, N., & Ko, J. Y., 2021	Postpartum Marijuana Use, Perceptions of Safety, and Breastfeeding Initiation and Duration.	To describe characteristics of women who used marijuana postpartum; (2) to evaluate the relationship between postpartum marijuana use and breastfeeding behaviors; and 3) to assess, among women who used marijuana postpartum, how safety perceptions



			are associated with breastfeeding behaviors.
7	Wurst, U., Ackermann, B., Kiess, W., Thome, U., & Gebauer, C., 2022.	“Alcohol intoxication by proxy on a NICU” - a case report. BMC Pediatrics,	to emphasize that intensive communication and building a confident relationship with the parents of patients is essential to the work on (Neonatal Intensive Care Units) NICUs
8	Dumas, A., Toutain, S., & Simmat-Durand, L., 2017	Alcohol Use During Pregnancy or Breastfeeding: A National Survey in France. Journal of Women’s Health,	Study the characteristics of women engaging in risky behaviors such as daily consumption or repeated binge drinking.
9	Popova, S., Dozet, D., Akhand Laboni, S., Brower, K., & Temple, V., 2021.	Why do women consume alcohol during pregnancy or while breastfeeding?	Understanding the context of reasons for alcohol use in breastfeeding is crucial for implementing prenatal health education and preventing FASD and other adverse maternal and child health outcomes.

10	Philip O Anderson, june 2018	Alcohol use during breastfeeding	The purpose was to educate people especially mothers on adverse effects of using alcohol during breastfeeding.
11	Roslyn C Giglia, Colin W Binns, Helman S Alfonso, Jane A Scott, Wendy H Oddy. 2008.	The effect of alcohol intake on breastfeeding duration in Australian women	The aim is to investigate the relationships between alcohol consumption and breastfeeding initiation and duration.
12	Haastrup Majja Bruun, Pottegård Anton, Damkier Per. 2013.	Alcohol and Breastfeeding	The aim is to find out influence of alcohol on breastfeeding, the pharmacokinetics of alcohol in lactating women and nursing infants and the effects of alcohol intake on nursing infants.
13	National Institute of Child Health and Human Development. 2022	Drugs and Lactation Database: Alcohol	The purpose was to produce evidence-based information about effects of alcohol use during breastfeeding.

14	Bethesda: National institute of child health and human development	Drugs and Lactation Database: Cannabis	Study the evidence-based information about effects of cannabis use during breastfeeding.
15.	Imetyksen tuki. 2021	Alkoholi ja imetys	Aim was to bring awareness of effects using alcohol while lactation might have on infant.
16.	Sustainable Association, written by Kellie. 2018	How substance abuse affects breastfeeding	Aim was to educate mothers and people in general on how substance abusing affects breastfeeding period.
17	Brown, R.A. , Dakkak, H., Seabrook, J.A. 2017	Is Breast Best? Examining the effects of alcohol and cannabis use during lactation.	The aim of this article was to bring awareness on how alcohol and cannabis affects lactation and the baby.

18	Hartney Elizabeth. 2020	Dangers of Drug Use When Breastfeeding	Purpose was to research on what are the dangers of using or abusing drugs during breastfeeding pe- riod.
19	HUS- website	Päihteet	The purpose was to bring evidence- based infor- mation about the side ef- fects of drugs on the breastfeeding baby.
20	Parenting in Ottawa	Alcohol, Cannabis, To- bacco and NRT while breastfeeding	The aim was to describe the effects of abusing dif- ferent substances during breastfeeding.

