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REVIEW ARTICLE

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**PREGNANCY AND NATAL AT
THE NAPZA USER**

Suhartono Hermanus, Noviyani Sugiarto

¹Departement Obsgyn FK. UNCEN
²RSUD Jayapura

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**Correspondence to Author:*

Hermanus Suhartono

Departement Obsgyn FK. UNCEN

RSUD Jayapura

E-mail:

hermanusuhartono@yahoo.co.id

INTRODUCTION

NAPZA user was specific problem at pregnant mom. It's prevalence was lower than the population of un-pregnant women, but it caused problem for the pregnancy and natal. According to SAMHSA data in 2011, it was reported that there were 17,6% pregnant women smoked during the pregnancy (or about one of six pregnant women), 9,4% drank the alcohol, 2,6 % drunk caused by alcohol, 0,4% drinkers, and about 5% used drug. Generally, at the women of Kaukasian race, the most used of substance were cigarette. The using of those substances were mostly in the first three semesters.¹

According to the data from National Narcotic Board (BNN) of Republic Indonesia 2011, it was known that the prevalence number of abuse the drug/narcotic and forbidden drug (marijuana, heroin, hashish, cocaine, ecstasy, and shabu) had reached 2,2% from the population total of Indonesia citizens at the age of 10-60 years old or about 3,8-4,3 million people. That number was getting increase for 0,21% compare with in 2008 (1,99%) or about 3,3 juta people.²

This prevalence was lower at the women than men for the same age. At the age of 20-29 years old, it found that the prevalence data was 1,8% at women and 7,2% at men, and group of 30-39 years old, 0,3% at the women compared with 3,2% at men.²

The prevalence of smokers in Indonesia at women was lower, at around 4,5%, although in some last year, the cigarette company tried to target the Indonesian women in branding and advertising the cigarette.³ And so the prevalence of alcohol users at the women (data in 2004) 0,34%, was lower than men 1,95%.⁴

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There was no data of NAPZA using at the pregnant women in Indonesia. This showed that the attention toward NAPZA using at the pregnant women in Indonesia was very less, no screening tools, while the prevention and handling program of NAPZA using at the pregnancy hadn't been socialized toward then health staffs. These conditions caused the obstacles in managing the NAPZA users at the pregnant population.

The NAPZA using at the pregnant women could be a circle phantom for the baby. Beside risked for pregnant mom, the using of those substances also had side effect to the fetus, caused the growth of fetus was impeded, premature partus, and any other obstetric complications. The effect occurred at the baby for long term was very serious, that were handicapped or congenital disorder, and could be long term effect in influencing children's intelligence and attitude at the future time.

The Process of Someone Used NAPZA

The using of forbidden substances, commonly, began since early age or adolescent. The knowledge about that process made us could understand how was the appropriate prevention and therapy for each patient. The risk factor that someone used NAPZA such as genetic factor, beginning brain growth (brain growth at the prefrontal cortex, *fear process*, *reward cue process*), and environment factor serta (experiencing violence or stress at early age), miss-educate from parents, *peer group* influence and environment culture factor.⁵

Two main *pathways* of substance abuse, consisted from external and internal problems. **Externalization problems** consisted of settled impulsive-aggressive behavior, genetic tendency to be aggressive, individual factor (temperamental, lack of ability in taking the decision (execution), attention deficit/hyperactive, substance abuse at the early age, bullying behavior or the victim of bullying), parents' factor (experienced violence at the child age, parents were users, parents with psychopathology such as depression and antisocial, and peer groups were users), and the tendency of impulsive-aggressive caused by brain's neurobiology or neuro-chemical mainly related with dopamine and serotonin compound in the brain.⁵

Internalization problems consisted of worried and mood trouble, genetic-environment factor that caused tendency of depression or worried, individual factor (temperamental, lack of close relationship with parents at the early age, lack of socialization at the early age, victim of bullying, less of self confidence, stress post psychological trauma, the parents were also users or had psychopathology such as depression and worried),

peer group was user, neurobiological and neuro-chemical factor that caused the tendency of depression-worried. At someone with those risk factors, some of them did coping strategy (adaptation mechanism) which was wrong (stayed away). Women had higher score at internalization pathway, while men had higher score at externalization pathway. Women also had tendency of three times experienced with depression at the adolescent phase than men. Those factors either single or combination (had more than one risk factors) caused the users someone used the forbidden substance NAPZA.⁵

Definition

Napza was stander from narcotic, psychotropic, and addictive substances. Narcotic was substance or drug came from either plant or non plant, synthetic or semi synthetic that could cause the awareness decreasing or changing, lost of painful, and could cause dependency (Law No. 35 Year 2009), some of them were papaverin, raw opium, ripe opium, opium medicine, morphine, cocaine, ekgonin, ganja plant, dammar ganja, and salt and derivative of morphine dan cocain.⁶

Psychotropic was substance or drug, natural and synthetic no narcotic, functioned as psychoactive through selective influence at the central nerve formation (brain) that caused the changing at mental and behavior activities (Laws No. 5 Year 1997). The substance that included psychotropic such as sedation (BK pill), rohypnol, magadon, valium, mandrax, amphetamine, fensiklidin, metakualon, metifenidat, fenobarbital, flunitrazepam, ecstasy, shabu-shabu, and LSD (*Lycergic Syntetic Diethylamide*).⁷

Other dangerous **Addictive materials** were natural or synthetic materials that could be used as the substitution of morphine or cocaine that could disturb the central nerve system, such as alcohol that contained of ethyl-ethanol, inhalen/*sniffing* (solvent material) that resulted similar effect such as glue, adhesive, acetone, and ether. Other addictive materials which was not included in laws was nicotine.⁶

Based on the DSM-IV criteria, **substance dependence** was substance using pattern, that caused significant clinical disturb, manifested ≥ 3 , these following symptoms, that occurred anytime during 12 months, such as: (1) tolerance, (2) *withdrawal*, (3) substance was used in big number or longer term, (4) settled willing or wasted efforts to reduce the substance using, (5) need of long term in order to use the substance, or recovered from it's effect, and (6) decreasing of social activities, work, recreation to use the substance, although they had knowledge about the danger of those substances.⁸

Substance abuse as the definition of *substance dependence*, was only manifested ≥ 1 of the following symptoms, such as: (1) repeatedly using, so that got failure in doing the works at office, school, or home, (2) repeatedly using in the situation that physically dangerous, (3) law problems related with the repeated substance using, (4) social or interpersonal problems that was settled or repeated caused by the effect of substance eksaserbasi. While **tolerance** marked with the needs to increase number of substance in order to reach the willing effect or there was effect decreasing in using the same substance.⁸

Effect of NAPZA for Pregnant Mom and Fetus

NAPZA had effect for pregnant mom and fetus. NAPZA could be teratogenik. Teratogen was substance that had danger potential for fetus if it experienced in the pregnancy, depended on the genotype, time of experienced, and type of teratogen that effected specifically at the cell.⁹ Following was discussed about the effect of each NAPZA toward pregnant moms and fetus.

Opioid

Opioid dependence could be occurred because the repeated using of analgesick opioid or heroin. Heroin worked rapidly and very addictive. Heroin could be used by injected, sucked, (as cigarette), or inhaled through the nose. Heroin users needed multiple dosages per day in order to keep the drug effect. Opioid that commonly prescribed such as yang lazim codeine, fentanil, morphine, opium or heroin, methadone, oksikodon, meperidin, hidromorfon, hidrokodon, propoxifen, and buprenorfin. Onset and intensity of it's euphoria was varied. Opioid injection brought cellulites risk, abscess in the injection point, sepsis, endocarditic, osteomyelitis, and the spreading of hepatitis B, hepatitis C, and HIV infection.¹⁰

Opioid tied opioid receptor in the brain and produced pleasant sensation. Opioid addiction related with behavior in finding the drug, physical dependence, and tolerance of needing the higher dosage. When the physical dependence at opioid occurred, the *withdrawal* symptom would occur if the dosage was stopped. With short term opioid, such as heroin, *withdrawal* symptom could occur after 4-6 hours of using, reached the peak until 72 hours, and commonly reduced during 1 week.

Long term Opioid such as metadon, the *withdrawal* symptom commonly experienced between 24-36 hours after using, and adhered until some weeks. Obsessive thinking and desire to consume the drug was adhered during some years, could cause relapse.

Although *withdrawal* heroin was not fatal for healthy adult, the fetus death was risk for the users of pregnant moms because there was occurred syndrome *abstinence opioid acute*.¹⁰

The effect of Opioid toward Pregnancy and Pregnancy Output

There was relationship between the using codeine at first semester with congenital heart disorder, it was found at three of four studies of control case observational. The previous study didn't show the increasing of natal effect after getting experience of oksikodon, propoxyphene, and meperidine prenatal.¹⁰ One study of retrospective observed the increasing of natal effect at women with opioid experience during one month before or during the first three semesters.¹¹ However, there was methodology problem at that study so that it's causality hadn't been clear. The occurrence of natal effect was very rare. Although there wasn't study about methadone or buprenorfin, the increasing of physical defect risk less related with opioid therapy during the pregnancy, better than the risk that related with opioid addiction at pregnant women.¹⁰

During the pregnancy, the chronic using of heroin that wasn't treated, related with the increasing risk of fetus growth was impeded, solusio placenta, fetus death, preterm natal, and excretion of mekoneum intrauterus.¹² This effect was related with the condition of repeated *withdrawal* opioid at fetus, and *withdrawal* effect at placenta. As the additional, live style of an opioid user, as prostitution that increased the sexual infected disease, robbing, violence, and addiction added the risk of bad output at pregnancy.¹⁰

The data of long term output toward the opioid experience in utero was very least. Most of the study didn't find the significant difference at the children until the age of 5 years old. The prevention that focused at the quality increasing of house environment might be useful.¹⁰

Neonatal Abstinence Syndrome (NAS)

The using or therapy of methadone or buprenorfin at pregnancy could cause *neonatal abstinence syndrome* (NAS) at the baby that contaminated, that signed with the hyperactivities of central and autonomy nerve systems.¹² The symptoms of baby with *neonatal abstinence syndrome*, as follow at the central nerve system (tremor, *high pitched crying*, easy to be angry, hypertonic, hyper-reflect, increasing of *startle* and *rooting* reflects, difficulties in eating because of the poor sucking and swallowing coordination, and stiff), at the gastrointestinal system

(regurgitation, projectile vomit, and diarrhea), at the respiratory system (over nose secretion, chest retraction, cyanosis intermittent), and autonomic nervous system (sweaty, sneeze, over yawning).¹⁴

At the baby which born from the mom who was contaminated methadone substance, the *withdrawal* symptom could be started anytime in 2 weeks of early life. But commonly occurred in 72 hours after natal and could be going on some days until weeks.¹² The baby which contaminated buprenorphin that evolved *abstinence syndrome* generally experienced the symptoms in 12-48 hours after natal and the peak occurred 72-96 hours and the symptoms was lost in 7 days.¹³

NAS was serious medical condition. If it wasn't treated, NAS could cause death because lost of much liquid, fever, stiff, unstable respiration, and food aspiration. However, by the medical knowledge recently, there was no baby which died caused by NAS because the treatment was good. Some scoring equipments of NAS weight degree had been developed. The routine prophylaxis therapy at neonates which contaminated with opioid was not needed.¹⁴

According to Weiner dan Finnegan,¹⁵ early NAS therapy was supportive. This Weiner and Finnegan technique was warming, covering, giving foot anytime then baby willing, changing body position periodically, skin treatment, reducing environment stimulus, skin contact, soft treatment, and pharmacology. Pharmacotherapy that was recommended such as opioid (morphine, methadone, buprenorphin, Phenobarbital, and clonidine). When the baby was clinically stable in the treatment (abstinence score had been reduced), so the daily dosage could be reduced 10% per day. After the medicine stopping, the neonates was still monitored in the hospital in order to observe the abstinence symptom during at least 2 days.¹⁴

Cocaine

Cocaine and its metabolite through placenta, in the amniotic fluid, and had characteristic of neurotoxin, disturbed dopamine, norepinephrine, serotonin, and caused the vascular disturbance. Cocaine that was used during the pregnancy related with any side effects. Cocaine could cause abortion in 38% early pregnancy, mostly because the increasing of norepinephrine at mom's plasma, where there occurred uterus contractility, vasoconstriction of placenta blood vessel, and reduced the blood flow into the fetus.¹⁶

Placental abruption occurred in 15% of cocaine users during pregnancy, was the primary reason where the *stillbirth* incidents was 8% higher than general population. Placental abruption was caused by vasospasm

(vasoconstriction of blood vessel) and hypoxia (decreasing of oxygen transfer into the tissue) at the bottom of placenta.¹⁶

Cocaine stimulated uterus contractility, increased the risk of PPROM, and preterm partus in 17-29% pregnancy. IUGR (fetus' growth was hampered) and BBLR could be found in 22-34% fetus which contaminated cocaine in-utero. The vasoconstriction of blood vessel caused hypo perfusion intermittent (decreasing of circulation of tissue blood vessel) uterus and placenta. Cocaine caused loss of appetite, the mom and baby were lack of nutrition. There was no significant increasing of cocaine contaminating with congenital physical defect.¹⁶

Cocaine in the pregnant mom could cause hypertension, hyperthermia, (increasing of body temperature), abdomen painful, tachycardia, arrhythmia, infarct myocardium, respiration failure, stroke, and stiff. Other side effect at the pregnancy such as migraine, asphyxia, pneumonitis (*crack lung*) marked with fever, lungs infiltration, and leukocytosis.¹⁷

Long term effect of in-utero cocaine contamination at children toward the cognitive development was the decreasing of MDI score (*Major Depression Inventory*) although the study didn't remove the confusing factor such as BBLR, social economy, and mom's education pattern. At the motorist development, it was found the decreasing of PDI score (*Psychomotor Development Index*). While at the language development, it was decreasing of language ability (didn't remove the possibility of genetic and environment conditions).¹⁸

Study of LaGasse that reviewed 42 studies, stated that contamination of cocaine in-utero in children of 13 years old caused unique effect, such as at the behavior problems (women who contaminated cocaine were tended more aggressive, men who contaminated cocaine and alcohol were tended to have criminal behavior, and the increasing of cigarette using at the age of 10,5 year old), attention problems (ADHD), decreasing of language and cognitive ability, (effect at IQ and academic achievement).¹⁹

Amphetamine

Amphetamine was stimulant of central nervous system with ability of increasing the focus and alertness. Amphetamine also increased the neurotransmitter release, such as norepinephrine, serotonin, and dopamine. As cocaine, women would feel euphoria and addiction effect from amphetamine at the follicular phase of menstruation cycle.¹⁴

It was stated that Amphetamine hampered the prolactin release so that reduce the ASI production. Amphetamine contamination at the ASI was 2.8-7.5 times higher than that was found in mom's plasma. Baby which sucked was experienced with irritabilities and agitating. Amphetamine was also related with the increasing of prenatal mortality, reducing the born weight, height, and head circle, and *abstinence* symptom that was as same as NAS.²⁰

Methamphetamine

Methamphetamine was drug that more potent than amphetamine. This substance was the only one illegal drug that contained in the illegal drug list, that is pseudoephedrine. Long term using of methamphetamine caused addiction, worried, confusing, lost of memory, reducing the weight, tooth damage, depression, and tendency to the criminal behavior

Long term using could cause symptoms of psychotic, paranoid, delusion, and visual and auditory hallucinations- and these symptoms could stand some month or years after someone stopping the treatment. Reflection study at the brain showed that long term using of methamphetamine experienced the change of weight structure and function at the brain area that related with emotion and memory. ¹⁴

The condition that related with the using of methamphetamine at the pregnancy such as increasing of blood pressure and heartbeat frequency, exhaustion, self hygienic and bad tooth, mental sick such as psychosis and depression, and reducing of cognitive abilities (such as memory, decision making, reason giving, and verbal abilities). The using of methamphetamine at pregnant women could reduce appetite that caused poor nutrition.²¹

Study of Good et.al.²² stated that women who used methamphetamine during pregnancy, was tied related significantly with premature partus, Apgar with low score, and termination by *section caesaria*. Other study stated that there was two times risk of born with low weight at the using of methamphetamine.²²

Marijuana

Three products from cannabis are marijuana, hashish, and hash oil. Pharmacology active compound, delta-9-tetrahydrocannabinol (THC) influenced the brain neuro-chemical through the same way such as alcohol, influenced the memory, by hampered thinking, and reflex. The long term effect of marijuana such as reducing the motivation, danger effect for brain, heart, lungs, and reproduction systems. People who consumed

marijuana could increase the risk of head and neck cancer.¹⁴

The using of marijuana with high dosage would reduce the fertility of men and women. At women, there was proven that cannabis disturb the menstruation cycle. At men, cannabis could reduce the sperm quality and testosterone degree.¹⁴

Some studies mentioned that marijuana was teratogen. THC passed placenta from mom to fetus and could be found in the baby's body until 1 month using of single dosage. The working studies mentioned that marijuana caused the disturbance of fetus growth, premature partus, tuba pregnancy, abortion, dead natal, and BBLR.¹⁴

There was inconsistent relationship between marijuana prenatal contaminations with malformation congenital. The using of marijuana at the pregnancy could reduce memory, verbal, perception, and understanding of verbal and visual (*verbal, visual reasoning*) at the age of 3-4 years old, disturbance of understanding toward abstract and visual, less ability in doing the duties, reducing of execution function, less of reading ability, decreasing of achievement at the age of 9-10 years old, increasing of initiation risk and daily using of cigarette or cannabis at the age of 16-21 years old. At the study of brain reflection at the age of 18-22 years old, there were negative effect at the neuron circuit, execution function, included inhibition response, and visuospatial.²³

Cigarette

Cigarette contained tar, nicotine, and monoxide carbon (CO). Tar contained substances of (timbal, cyanide, cadmium) that was danger for fetus. Hypoxia intra-uterin caused by monoxide carbon and decreasing of uterus blood flow, were major mechanism of fetus growth disturbance at the pregnant women who smoked. Nicotine could pass the placenta to fetus, had effect for the fetus' central nerve system. The *withdrawal* symptom of nicotine at mom such as '*craving*' tobacco, irritability, frustration, angry, anxiousness, concentration difficulty, *restlessness* (difficult to take rest), reducing of heartbeat frequency, increasing of appetite and weight, depression, sleep disturbance, and sedation. Nicotine could reduce fertility at the women.¹⁴

Study of Gooding et.al. mentioned that the weight decreased 150-200 mg for each pack of cigarette sipped during pregnant, increasing the risk of placenta previa, solusio placenta, infarct placenta caused by vasoconstriction of blood vessel, disturbance of oxygen transferring to the fetus because of the high CO content

at mom.²⁴ Other risk was increasing of spontant abortion, ectopic pregnancy, and PPRM.¹⁴

Bad effect that occurred at the baby which contaminated with cigarette in-utero such as hypertonic, increasing of hospital treatment, and death under the age of 5 years old, the most caused of lungs disease such as bronchiolitis and pneumonia, NAS, *sudden infant death syndrome* (SIDS), ADHD, and behavior problems of externalization and internalization. Toward the bad effect, *patch* nicotine was better than cigarette.²⁵

Alcohol

Generally, women were easier experiencing addiction with alcohol than men. Alcohol was depressant for central nerve system. Over using could cause sedasi, ataksia, and respiration depression.¹⁴

Alcohol had characteristic of teratogen. Bad effect of alcohol had been proved at the animal and human. Neurobehavioral effect was found more danger than cocaine and other drugs at prenatal. Teratogenic effect of alcohol contamination toward fetus, such as direct effect the alcohol to the cell, hypoxia (oxygenation was not adequate in the blood) because the disturbance of placenta blood vessel, effect of cell migration in the brain, and effect toward apoptosis (natural process of cell death programming).¹⁴

Fetal Alcohol Spectrum (FAS) Disorder

FAS diagnoses needed 3 criteria: (1) face anomaly, (2) growth deficiency, and dan (3) SSP dysfunction. FAS was permanent born effect caused by the using of alcohol during the pregnancy, was main cause of mental retardation. Evey year, 40.000 fetus born with FASD (more often that combination of *muscular dystrophy*, fibrosis cystic, syndrome down, dan spine bifida).²⁶

Fetal alcohol spectrum (FAS), divided into the most serious spectrum to the most simple; FAS, FAS partial, *Fetal Alcohol Effects* (FAE), *alcohol-related birth defects*, *alcohol related neuro-developmental disorder* (ARND), ensefalopati, and neurobehavioral disturbance related to alcohol. This disturbance spectrum called as *Fetal Alcohol Spectrum Disorder* (FASD).¹⁴

The sign of FASD such as face anomaly (low eyelid fold, horizontal middle face, short nose, *indistinct philtrum*, thin up lip, epycantus fold, low ears, and micrognatia), growth deficiency (under percentile 10), disturbance of SSP (microsefali, decreasing of corpus callosum size, hyperactivities, attention deficit, study disturbance, problem with memory, language, and decision making, major motorist problem, stiff, and mental retardation).²⁶

Effect of alcohol contamination was also depended at the time contamination. At the first trimester, abnormalities morphology mayor, at the second trimester there was risk increasing of spontaneous abortion, and at third trimester there was occurred the decreasing of fetus growth.²⁶

Clinical implication of FASD such as bad decision (easy to be the victim), lack of attention (not focus), inability in arithmetic (couldn't hold money), memory problem (didn't learn from the experience), difficulties in making abstract (didn't understand the effect), time and place disorientation, tolerance toward low stressor (easy to be angry). FAS was significantly clinically related with the disturbance of general intellectual with IQ 40-110 (average 70).²⁶ Clinical symptoms of FASD at the age of 0-5 years old such as obstacle of significant growth with complex medical history, behavior disturbance with development obstacle, torturing and obeying history, attention problem started with sleep problem continued with behavior problem so that needed therapies of physical, occupancy, and speaking.²⁶

Prenatal alcohol contamination was related with criminal behavior, but most of the studies didn't control the environment factor. Prenatal alcohol caused primary disabilities (brain damage caused behavior disturbance that caused secondary disabilities (problem with law, stopped from schooling).²⁶

In 2005, US Surgeon General stated that pregnant women or would be pregnant must stop consuming alcohol in order to eliminate the possibility of uttering the baby with *Fetal Alcohol Spectrum Disorders* (FASD). While CDC stated that there was no safe measurement level at the pregnancy.²⁷

Psychosocial Problem of Pregnant Women of NAPZA User

As doctor, it was important to know a women reason experienced with addiction toward the using of those NAPZA drugs. Some things that could be happened were psychosocial problem and violence history. Both could cause someone had difficulties to come to the health service that could help them from those problems.¹⁴

It was estimated that two third of women with NAPZA also had mental or psychiatric problems such as worried, depression, *post-traumatic stress disorder* (PTSD), and panic. Evan et.al.²⁸ stated that pregnancy could cause exacerbation from any working psychiatric disturbance.

NAPZA was related with depression and worried problem. Retrospective study toward 276

pregnant women found 42% depression diagnoses and 42% worried problem. Study of Benningfield et.al.²⁹ mentioned that at the pregnant women who used opioid, 60% experienced with one or more psychiatric diagnose, 48,6% mood problem, 40% worried problem, 32% depression, and 16% PTSD. Depression at pregnant women could increase pre-eclampsia, BBLR, addition of low weight, post-partus depression, put of death, and decreasing of mom's attention toward her child. Therefore, it was needed screening of psychiatric problem at pregnant women who experienced with addiction problem. Untreated psychiatric problem could cause many negative impact for the mom and baby.

A study mention that 83% NAPZA users came from parents. Study of Cormier et.al.³⁰ stated that NAPZA users of women 85,7% had ever become violence victims, some of them 56,1% suffered with physical violence at present, 45,4% sexual violence at present, 56,1% physical violence at the child, and 56,3% sexual violence at the child.

NAPZA Users Screening at Pregnancy

T-ACE	
T	How many drinks does not it take to make you feel high (tolerance)
A	Have people annoyed you by criticizing your drinking?
C	Have you felt you ought to cut down on your drinking?
E	Have you ever had a drink first thing in the morning to steady your nerves or get rid of hangover? (eye-opener)
Scoring : T: 2 points if > 3 drinks; A,C,E: 1 point for each yes answer.	
A total of 2 or more points indicates patients is likely to have an alcohol problem.	
TWEAK	
T	Tolerance
W	Have friends or relatives complained about your drinking? (worried)
E	Eye –opener
A	Has a friend or family member ever told you about things you said or did while you were drinking that you could not remember (amnesia or black-out)
K	Cut-down
Scoring: T:2 points if > 3 drinks; W,E A,K:1 point for each yes answer	
A totalod score of 3 more points indicated patients is at-risk drinking	

Figure 1. T-ACE and TWEAK for the Problem of Alcohol using.³¹

It would be better for all pregnant women to take screening toward the using of drugs, alcohol,

cigarette, and NAPZA. If needed, the urine testing for medicine test toxicology done at mom and the baby. The screening that was used to detect the NAPZA using at pregnancy, such as T-ACE that used as screening tool for alcohol dependency (Figure 1). If a woman was known using the substance, it needed a careful assessment whether there was dependency on that substance or not (Figure 2).³¹

<p>Complete drug history: name of drug, amount, frequency, duration, route(s), last use, Injection drug use, sharing needles/paraphernalia, withdrawal symptoms.</p> <p>Stage of changewith respect to substance use</p> <ul style="list-style-type: none"> • Consequences of druguse: medical, social, personal • Previous treatment programs, mutual aid group (e.g., AA) <p>Medical history: HIV, Hepatitis B and C, STIs</p> <ul style="list-style-type: none"> • Chronic medical condition (e.g., chronic pain), medications <p>Psychiatric history: eating disorders, sexual/physical abuse, mood and anxiety disorder.</p> <p>Obstetrical history: cycle regularity, LMP, past obstetrical outcomes and Complication.</p> <p>Social history: family situation (partner and number children), custody status, Housing situation, legal status (current charges and courts dates), finances, nutrition, Child protection agency involvement, child safety concern.</p> <p>FIFE: feelings, impression/ideas, functioning, expectations about pregnancy and drug use</p>

Figure 2. Assessment for NAPZA Dependency .¹³

Technique of Pregnancy and Partus at the NAPZA Users

NAPZA dependency was a complex clinical condition. This still became the challenge for a health system. NAPZA dependency was same with common chronically disease where it could get relapse anytime. There was obstacle for a woman of NAPZA user to visit the health service because she was worried of NAPZA user stigma and law problem. Therefore, some techniques approaches must be observed at a pregnant woman of NAPZA user.

Comprehensive Service

A health service centre in Philadelphia made programs, included: (1) whole service (outpatient, inpatient, and home visit), (2) helped metadondi therapy and nursing of opioid addiction patient, (3) neonatus nursing with *withdrawal* symptom, (4) long term drug using, (5) family based nursing, (6) whole counseling, (7) counseling of sexual and physical violence, (8)

service for children (*day care*, playing therapy, parents training), (9) concrete service (transportation, home, food), (10) training (work and education equal with SMA), (11) advocating service (legality, children protection), (12) *aftercare* (continued nursing).

Program that was done in certain place enable a woman of NAPZA user to get appropriate therapy. That program needed professionals from any disciplines, included doctor (addiction specialist, psychiatry, and obstetric), pharmacy, nurses, social worker, psychologist, counselor of addiction and specialist of children growth.³² In Indonesia, whole program that specialized for pregnant women had been running optimally.

Study showed that multidiscipline therapy at pregnant woman could reduce the using of NAPZA, increase the consistency of joining the therapy program, increase antenatal education, repair mom's nutrition, increase self confidence, reduce morbidity and mortality of mom and fetus, reduce the risk of preterm partus, increase the weight of baby born, and create good environment atmosphere for fetus growth.³²

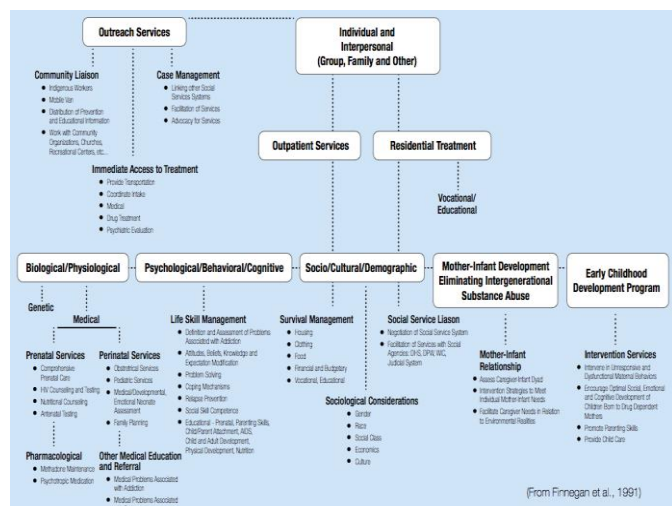


Figure 3. Schema of Drug Addiction Therapy³²

Pelayanan Antenatal dan Peran Spesialis Obstetri dan Ginekologi

There were some recommendations from Society of Obstetricians and Gynaecologists of Canada (SOGC) in 20122 for the pregnant women of substance users, such as: (1) all women were screened the alcohol, tobacco, and other forbidden drug, (2) if there was indication of substance indication, urine screening was method chosen, (3) health staffs must know the regulation of examining the substance at the baby, (4) health staffs should do flexible approach and used support from family/community available, (5) women must be counseled about the risk of using the substance at the

period of pra-conception, ante partum, and postpartum, (6) first intervention of pregnant woman who smoked was stopping the cigarette using, therapy of nicotine substitution could be thought if the counseling failure, (7) opioid detoxification only done at certain woman because the big risk of relapse, (8) women must get information that neonates that contaminated with heroin, other opioid, methadone/buprenorfin sduring the pregnancy, must be observed carefully for the indication and *withdrawal* symptoms and the hospital must prepare service for techniques of that condition, (9) antenatal service for intrapartum anesthesia could be offered, (10) ASI of women who joined the methadone therapy was not contraindicated.³¹

Techniques of antenatal must include nutrition and surveillance counseling of Hampered Fetus Growth (PJT). Nutrition counseling included balance diet, recommendation of calorie, and increasing appropriate weight. Giving of supplementation such as vitamine C, folat acid, and addition of 60-120 mg zing was suggested. Iron defiance anemia was problem at pregnant women of NAPZA users. Evaluation of fetus growth must be done, included measurement of fundus height, USG periodically, *non-stress test*, *contraction test*, *biophysical profile*.^{33,34}

Partus and Anesthesia

The women of NAPZA users mostly chose regional anesthesia. Regional anesthesia was safe for the patients with alcohol dependency as long as there was no neuropathic or problem of blood coagulation. Regional and general anesthesia could have complication at the cocaine users. This anesthesia was contraindicated at the patients with thrombocytopenia that inducted by cocaine. Propofol was effective used for anesthesia at the mom of cocaine users.

General anesthesia was not recommended by with reasons: (1) at the smoker, because it influenced respiration and liver enzyme (anesthesia medicine metabolism), (2) at the alcohol intoxication, it caused by the increasing of flank acidity and decreasing of ability in increasing the flank acid, (3) at the marijuana users, it could increase sedation effect and disturbed the respiration function.³⁵

Women with opioid therapy needed higher dosage in order to achieve appropriate anesthesia content. Regional anesthesia could be given if needed in the partus. Agonis-antagonis of narcotic medicine, such as butorphanol, nalbuphine, and pentazocine must be avoided because they could cause *withdrawal* symptoms. It must be better that Buprenorfin wasn't given to the patients of methadone

A study showed a woman of buprenorfin user needed the increasing of opioid dosage of 47% at the caesarean operation than commonly women. No steroid anti-inflammation agent such as ketorolac was very effective in controlling painful of post-partum and post-SC. Daily dosage of methadone buprenorfin must be kept during the partus. Dividing the daily dosage of or methadone into three or four dosages could reduce painful, although additional analgesic would be needed.³⁵

Helped Medicine Therapy

Since 1970, care therapy with methadone had become standard of heroin addiction therapy during the pregnancy. Recently, therapy had been used for non-heroin opioid addiction. Rational opioid therapy during pregnancy could prevent opioid complication and *withdrawal* symptom, increase the consistence of antenatal nursing, and decrease the criminal behavior. It needed to be noted that methadone had many pharmacokinetic interactions with any medicines included antiretroviral agent.³⁶

The dosage of methadone antenatal must be observed continually and determined during the pregnancy in order to prevent *withdrawal* symptoms (*Skaw*, stomach cramps, sickening, insomnia, irritability, and worried). Pharmacokinetic change at the third trimester might need dosage adjustment. Some women experienced fast metabolism so that difficult to control *withdrawal* symptom in 24 hours at single daily dosage so that it could be used divided dosage.

Not all women needed the increasing of dosage during the pregnancy and the dosage adjustment must be done based on the clinical consideration by specialist. The dosage of methadone commonly started from 10-30mg/day. If a woman started the methadone treatment at the pregnancy time, the dosage must be titration until that woman didn't get the symptom at the safe dosage. Inadequate dosage of methadone caused at the minor *withdrawal* symptom until middle that could cause stress at the fetus dan increase the reusing of forbidden drug (relapse). Pregnant women were suggested to do methadone therapy in the licensed outpatient program.³⁶

Other medicine that could be used was buprenorfin. Buprenorfin worked at similar receptor such as heroin and morphine. The goodness of buprenorfin than methadone such as lower risk of over dosage, medicine interaction was less, cpould be done in outpatient program without any daily visitation, and decreasing of *neonatal abstinence syndrome* (NAS) incident. The weaknesses of this medicine than methadone such as risk of liver dysfunction, lack of the

data about long term effect for the fetus uttered, *dropout* caused by nursing dissatisfaction, early dosage determination that was more difficult with the possibility risk of *withdrawal*.³⁷

Until this time, the data about buprenorfin using pregnancy was still limited. *Multicenter* centre study in 2010 compared the effect of neonatal buprenorfin and methadone at pregnant women of opioid users. That research result showed that women with buprenorfin, 89% less needed morphine in NAS therapy, 43% shorter it's nursing time, and 58% less time needed in NAS therapy. However, not all patients could be effectively with buprenorfin therapy.³⁸

Women, who before getting pregnant, did therapy of buprenorfin combined with nalokson, it was suggested to continue with same dosage in the form of single agent (only buprenorfin). Previous recommendation suggested that buprenorfin using only done at the women who rejected the using of methadone or methadone therapy in their area. This time, patients could choose the agent of opioid therapy after getting education about benefit and disadvantage of each medicine. A pregnant woman of NAPZA user could choose buprenorfin therapy if she decided to use buprenorfin than methadone therapy. If a woman had got methadone therapy before her pregnancy, it would be better to not change it with buprenorfin because it's high risk of *withdrawal*.

Some women wanted to stop the helped opioid therapy and choose to be detoxification (condition of helped *withdrawal*). *Withdrawal* condition at NAPZA user during pregnancy should be avoided because this *withdrawal* symptom, physically and emotionally could increase stress at mom and fetus. The effect of *withdrawal* at mom and baby were decreasing of gestation age and increasing of low weight of natal. The fetus death at natal had been ever reported. Relapse was often occurred following the *witdrawal*, that was about 41-96%. If methadone therapy wasn't available or if a woman rejected to join the program of methadone or buprenofin therapy, the condition of helped withdrawal could be done at second trimester, and in supervision of addiction specialist.³⁹

Sucking Mom

According to SOGC, ASI giving was contraindicated at the active NAPZA users and at the mom with HIV positive, while the methadone therapy didn't become contradiction.³¹ The methadone content at the mom's plasma compared with at the ASI was 1.2 : 0.05. Buprenorfin was detected inside the ASI, through mother's milk with ratio of plasma degree to the ASI

1.0. Buprenorfin was not well absorbed in the mouth, baby only exposed 10-20% of buprenorfin total at ASI.¹⁴

Based on the recommendation of American Congress of Obstetricians and Gynecologists (ACOG), although the methadone and buprenorfin degree that found in the mother's milk was depended on mom using, sucking was only recommended for patients with HIV negative, didn't use additional drug, and didn't have other contraindication. The psychology benefit of sucking was very important, mainly at the case of NAPZA using at the pregnancy.⁴⁰

CONCLUSION

The using of NAPZA at pregnancy, partus, and giving suck caused numbers of unique challenge of health and social. Pregnancy itself also caused a woman came to the health facility so that was the proper time for a woman to experience with the change of behavior included in the term of substance using. It was very important for the health staffs to know the best rule for those women based on the prove and study conducted.

Because the NAPZA effect at the pregnancy could be long term for the fetus inside, so the early identification and screening tools were also needed to be developed in order to increase the output of mom and her fetus that got NAPZA. Contraception counseling also must be done at each reproductive woman in order to prevent unwanted pregnancy. Opioid therapy that was helped could be choose method compared with the *withdrawal* condition that was helped. Collaboration of all health staffs was much needed in order to prevent relapse, antenatal caring and optimal partus, wholly counseling, monitoring the neonates condition of new born, and the baby's growth in the future.

Until recently, Indonesia hadn't run a comprehensive program in order to handle NAPZA using at the pregnancy and partus. We Kita mengharapkan tenaga kesehatan dan pemerintah dapat bekerja sama dalam membentuk suatu program yang komprehensif untuk menghadapi situasi tersebut.

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