



Management of Labor and Psychiatric postpartum Diseases Using Potential Anti-obesity and Antidiabetic Plants in Cameroon

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Abstract

Globally more than 550 women die per year from childbirth-related causes. Around 9% of women suffer from postpartum post-traumatic stress disorder after childbirth. Postpartum bipolar disorder is humor episodes such as mania, hypomania or depression, which start throughout pregnancy or in few weeks after child bearing. Fifty percent (50%) worldwide estimation of motherly deaths arise in sub-Saharan Africa region alone. Depression is a devastating temperament and mental sickness touching around 13% of postpartum mothers worldwide. The occurrence of 25%-60% of depression is typical of low- and middle-income countries. A combined prevalence of 14.4% of teenage deliveries was revealed in Cameroon where there is unsatisfactory information on the risk factors of motherly mortality and mother care after childbirth. In hinterland local therapists especially in Bororo and Pygmies communities, have developed indigenous strategies in the treatment of certain cases of abnormal labor and psychiatric postpartum sicknesses. Accordingly this study aimed to identify principally amongst anti-obesity and antidiabetic plants used in Cameroon, those with efficient effect on labor and psychiatric mother care after delivery. To achieve this objective the search strategy was performed to identification these plants using the following research engines in Google, Google Scholar and PubMed:

- 1) Properties oxytocic of a given diabetic or anti-obesity plant name
- 2) A given diabetic or anti-obesity plant name with capacity to control labor

3) Anti-psychiatric postpartum disease properties of a given diabetic or anti-obesity plant name. Twenty plants used in the treatment of difficult labor and psychiatric postpartum treatment in Cameroon were recorded. Only *Daturastramonium* and *Amblygonocarpusandongensis* were respectively poisonous and slightly toxic. *Mucunapruriens*, *Peperomiapellucida*, *Momordicacharantia* and *Xylopiiaaethiopica* are more effective. Nevertheless, preventive measures such as selection of safe herbal medications, avoid psychiatric postpartum diseases symptoms, adequate dosages and their stabilization, duration of treatment, good sanitary herbal medicines preparation, and conservation, must be determined and rigorously respected.

Keywords: Psychiatric postpartum diseases, Labor plants, antidiabetic activity, herbal medicines, Cameroon

Introduction

Definition

Some important words need to be defined to empower our leaders to understand more.

Precursors: Simple organic molecule participating in the synthesis of large molecules.

Noradrenaline: Precursor neurotransmitter of adrenaline, secreted by the adrenal medulla.

Dopamine: Precursor neurotransmitter of norepinephrine, and essential for normal brain activity.

Postpartum: Period extending from childbirth to the return of first reappearance menstruation of menstruations).

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Psychiatric disorder: Psychiatric disorder is a mental disease which significantly interrupts the thinking, moods, and / or behavior and dramatically upsurges the risk of debility, pain, death, or loss of freedom.

Post-Traumatic Stress Disorder: Post-traumatic stress disorder is a nervousness sickness caused by very stressful, terrifying, or tormenting events.

Postpartum Bipolar Disorder: Postpartum bipolar disorder is considered as fluctuation of tremendously high and tremendously low moods, the main difference being that the onset occurs within days or weeks after childbirth.

Mania: A mental sickness manifested by periods of excessive enjoyment or euphoria, delusions and hyperactivity. Many people with mania think that everything is fine.

Hypomania: A mild form of mania marked by elation and hyperactivity.

Depression: Feelings of discouragement and severe low spirits.

Postpartum Obsessive-Compulsive Disorder: Is a type of postpartum anxiety disorder characterized by invasive feelings and behaviors that are in answer to perceived hazard to the baby. These feelings and behaviors are continuous and monotonous, and they can extremely interrupt quotidian life.

Paranoia: Mental state characterized by illusions of persecution, unwarranted jealousy, or exaggerated complacency, generally fitted into an organized system. It is sometime a chronic personality disorder, drug abuse, or a serious illness such as schizophrenia in which the person loses touch with reality.

Hallucinations: Perception of the non-existent objects or events and sensory experiences that are not produced by the stimulus of the sensual anxious.

Serotonin: Neurotransmitter involved in the transmission of nerve impulses. Serotonin can trigger the discharge of substances in the blood vessels of the brain which in turn cause migraine pain.

Warfarin: Warfarin is a hydrosoluble constituent with anti-coagulant properties. It used as a mice and rats poison and in the control of thrombosis.

Premature birth: Premature birth is any birth that occurs at a minimum of three weeks early.

Syndrome: A group of symptoms that regularly happen together, or a condition considered by a set of related warning signs.

Postpartum psychosis: postpartum psychosis is a rare condition which obviously develops within the first week after delivery

Significant risks of delivery

Obesity and overweight are globally becoming widespread. These conditions are a risk factor for problematic labor and delivery. Therefore psychiatric postpartum diseases are especially significant amongst young obese women, because maternal obesity ($BMI \geq 30 \text{ kg/m}^2$) and maternal overweight (BMI between 25 and 29.9 kg/m^2) confer an increased risk of early labor and difficult delivery.¹ The use of anti-obesity or particularly gestational anti diabetic plants to control difficult labor and hazardous delivery during the antepartum (care of the mother and fetus before delivery), the intrapartum (care of the mother and fetus during the labor) and postpartum (care of the mother for six weeks after childbirth) periods may be more adequate for pregnant diabetic women. Such treatments might justify the control of gestational obesity and diabetes which are dangerous for fetus and women during pregnancy and after childbirth.

According to a Stanford and Packard study, obesity before pregnancy is linked to early premature births. For a new study on nearly one million births in California, pregnant women with obesity are at increased risk of giving birth before 28 weeks of gestation.² Premature birth is a concept depending to gestational age.² Premature births touch one in nine pregnancies or more than a half-million United States' babies per year and might lead to permanent health complications, such as:³

1. Cerebral palsy
2. Developmental delays
3. Impaired vision
4. Impaired hearing

For women in the first pregnancy, obesity was related with a significant upsurge in risk of delivery before 28 weeks. This risk was highest at the earliest gestational ages and also at the highest levels of obesity. For instance, non-Hispanic, white first-time mothers in the most obese category were six times more expected than normal-weight women to deliver a baby between 20 and 23 weeks.³ Unlike numerous causes of premature birth, maternal overweight and obesity are hypothetically avoidable causes of the principal source of neonatal mortality and morbidity and childhood morbidity.⁴ According to Tebeu et al. the follow many causes of childbirth-related deaths were revealed in Cameroon, in women aged 18 to 41 years, distributed as follow:

1. Postpartum hemorrhage (25%)
2. Hazardous abortion (25%)
3. Ectopic pregnancy (12, 5%)
4. Gestational hypertension (8.3%)
5. Malaria (8.3%)

6. Anemia (8.3%)
7. Heart disease (4.2%)
8. Pneumonia (4.2%)
9. Placenta Previa (4.2%)

Lack of gynecological care was a risk factor for motherly death (OR=78.33; CI: (8.66-1802.51)). Most of these causes of motherly death were avoidable.⁵ Nadège Djoda Adama *et al.* and Gladys Ghogomu *et al.* revealed a prevalence of 61.8% and 23.4% of postpartum depression among participants respectively in Limbe District Hospital and Yaounde University Hospital Center in Cameroon.^{6,7} The socio-demographic factors of postpartum depression found by these authors are:

10. Absence of happiness in the married rapport
11. Financial problems
12. Conflicts with the partner (s)
13. Baby melancholy
14. Problems with the baby's sleep
15. Unsatisfactory support or assistance for care of baby
16. Unemployment
17. Undesirable pregnancy the only obstetric factor

Therefore postpartum depression is common and associated to specific risk factors in the localities.^{6,7} The work of Tsi Njim *et al.* involving a total of 99 women revealed that the combined prevalence of teenage deliveries in Cameroon was 14.4% and that of teenage early deliveries was 2.8%, while that of late deliveries in adolescents was 12.5%. The prevalence of teenage deliveries in urban areas-13.1% was similar to that in semi-urban areas - 14.1. Adolescents were more likely than adults (>19 years) to have low birth weight babies (OR: 1.8; 95% CI: 1.6, 2.1); babies born asphyxiated.⁸ The work of Maryam Ghaedrahmati *et al.* detected the risk factors for postpartum depression in the area of economic and social factors, obstetric history and biological factors, lifestyle and history of mental illness.⁹ In hinterland communities especially Fulani or Bororo and Pygmies, local therapists succeeded sometimes to manage certain cases of abnormal labor and postpartum mother illnesses. The objective of this work is to determine amongst antidiabetic and anti-obesity plants using in Cameroon those efficacious for early laborin pregnant women and mother care after delivery.

Material and methods

Inclusion criteria for plants

Plants included in this work were used in Cameroon in the treatment of gestational diabetes and/or in the control of postpartum diseases.

Search strategy

The search strategy included the identification of these plants by the following research engines in Google, Google Scholar and PubMed:

1. Properties oxytocic of a given diabetic or anti-obesity plant name
2. A given diabetic or anti-obesity plant name with capacity to control early labor
3. Anti-Postpartum disease properties of a given diabetic or anti-obesity plant name

Justification of research strategy

The works of Milad Azami *et al.* showed that diabetes mellitus significantly increased the risk of postpartum depression; therefore it can be a risk factor for this postpartum disease.¹⁰ Women diagnosed with diabetes mellitus have a raised risk of developing postpartum depression.¹¹ According to the Massachusetts General Hospital (MGH) Center for Women's Mental Health obesity might place mothers at elevated risk of postpartum depression. The risk of screening positive on the Postnatal Depression Screen 8 weeks after delivery increased dramatically for women with a pregnancy body mass index (BMI) greater than 35. It also noted that women at the extremes of body mass index and those with greater weight gain during pregnancy were at increased risk for postpartum depression.¹² Consequently, the use of these research engines to identify plants controlling postpartum diseases or early labor for obese pregnant women with gestational diabetes mellitus seems to be justified. One hundred women were interviewed per category of psychiatric postpartum diseases and the five categories recorded are: Postpartum depression, Anxiety during pregnancy & postpartum, postpartum obsessive-compulsive disorder (another form of anxiety), Post-traumatic stress disorder and postpartum psychosis. These diseases have respectively 8, 6, 5, 5 and 7 symptoms. Each of the pregnant women interviewed outlined the symptoms of one category of psychiatric postpartum illnesses with which she is at risk. The plants authentication was done from the Project of the World Flora Online Consortium and at National herbarium of Cameroon.

Statistical Analysis

The different significance between the numbers of women who know or suffer from psychiatric postpartum diseases symptoms was determined with the help of chi-square which has a probability value $p > 0.05$.

Results

Labor plants

Momordicacharantia L. The aqueous extract of the dried seeds of *Momordicacharantia* 10% (1mL) showed a like neseffect with

oxytocin, in regard to amplitude, frequency of contraction and uterine activity. Flavonoids and saponins are responsible for this observed effect.¹³

Ethnopharmacological mode of preparation and administration: Infuse 300g of the dry seeds powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Piper guineense (Schum & Thonn) (Piperaceae). Several parts of this plant such as roots, seeds, stem bark and leaves are commonly taken by women in south-eastern Nigeria after childbirth to expel the remains into the uterus by uterine contraction and to improve the flow of breast milk.¹⁴

Ethnopharmacological mode of preparation and administration: Infuse 300g of the roots, seeds, stem bark, or leaves powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Antidiabetic plants with anti-psychiatric postpartum diseases

Mucunapuriens (L.) DC (Fabaceae) *Mucunapuriens* contains L-dopa which is a biochemical precursor of numerous neurotransmitters. Dopamine is one of these neurotransmitters. Accumulative dopamine levels can increase brain activity and livelihood memory. For this reason *Mucunapuriens* is well known as a popular anti-aging species. The antioxidant activity of *Mucunapuriens* also controls inflammation. This outcome suggests the protective effects for neurons.¹⁵

Ethnopharmacological mode of preparation and administration: Infuse 300g of seeds powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Panax ginseng C.A. Meyer (Araliaceae) Ginseng is widely used for its suspected physical and mental activities. It is generally well tolerated; but its use needs vigilance because it has been involved as a cause of reduced reaction to warfarin.¹⁵

Ethnopharmacological mode of preparation and administration: Infuse 300g of root powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Rauvolfia vomitoria Afzel. (Apocynaceae) *Rauvolfia vomitoria* for Madness has been part of the mainstream medical control for psychiatric disorders for at least 3000 years. Nevertheless, the duration of use would not be translated into effectiveness or safety. Somewhat, herbal products can be loomed like other medications, where the opportunity of doing harm (through side effects, drug exchanges, or superfluous expenditure) is appreciated, and the chance to do well is addressed with healthy skepticism.¹⁶ This herbal drug lessened loco motor behavior. Beta-carboline alkaloid and alstonine have been isolated from the root.¹⁷

Ethnopharmacological mode of preparation and administration: Decoction of 300g root bark powder in 3 liters of water for 15 min. Drink 250ml three times daily for a week.

Allium cepa L. (Liliaceae) *Allium cepa* (Onion) paste inhibited dopaminergic neurotransmission and possibly blocks dopamine D2 receptor. The onion bulb contains Phenolic acid, flavonoids, anthocyanin, sterols, vitamins, pectin and peptides.¹⁷

Ethnopharmacological mode of preparation and administration: Infuse 300g of bulb powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Antidiabetic medicinal plants with active compound antipsychotic:

Peperomia pellucida L. (Piperaceae)

This herb contains numerous phytochemicals. Some of them have antipsychotic activities.

Phytochemicals: Saponin, alkaloids, sterols, tannins, reducing sugars, carotenoids and triterpenes are the major secondary metabolites reported to be present in *P. Pellucid*.^{18,19} Its essential oil contains predominantly monoterpenoid alcohols, sesquiterpenes, aromatic and aliphatic aldehydes.²⁰ Dillapiol, dillapiol, pellucidatin, peperochromen-A, peperomin A, phenylpropanoids, myristicin, germacrene, carotol, pygmaein, piolet, trans-3-pinanone, methylethylidene propanedinitrile, linalool, limonene, apiolet, phytol, b-caryophyllene, and linalyl acetate are also found in this herb.²⁰

Potential mechanisms of action: Alkaloids have the affinity for dopamine and serotonin receptors. Flavonoids absorb the inhibitors which block the transporters of dopamine, norepinephrine and serotonin.¹⁷ Sheikh et al. reported the hypoglycemic activity of ethanolic extract of *P. pellucid* in alloxan-induced diabetic mice.²¹ Their study discovered that 250mg/kg and 500mg/kg meaningfully depressed glucose levels in diabetic mice in a dose-dependent manner, when compared to metformin. The study revealed that the extract regenerated β -cells of the pancreas, thus repairing insulin secretion and afterward control of diabetics due to the presence of alkaloid, saponin, and flavonoid in the extract. In another study the anti-diabetic effect of *Ppellucida* supplemented diet in alloxan-induced diabetic rats was also demonstrated.²¹ This study discovered that 10% and 20% w/w supplement displayed higher effect than the standard drug (glibenclamide 600mg/kg). They proposed that *P. pellucida* might have insulin-mimetic action by closing Na^+/K^+ -ATP channels and depolarizing membrane, therefore stimulating the influx of Ca^{+2} .¹⁴

Ethnopharmacological mode of preparation and administration: Infuse 300g of leafy stem powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Ocimum gratissimum L. (Lamiaceae)

Phytochemicals: Phytochemical screening showed that *O. gratissimum* leaf contained alkaloids, glycosides, flavonoids, steroid glucosides, polyphenols, saponin, steroids, tannins, and terpenoids.¹⁴

Potential mechanisms of action:

Alkaloids, cardiac glycosides, cyanogenetic glycosides, flavonoids, saponins, steroids and tannins may inhibit stereotype behavior and spontaneous motor activity.¹⁷ L-chicoric acid, eugenyl-b-d-glucopyranoside, linoleic acid, l-caffaric acid and vicenin-2 are the compounds responsible for the antidiabetic potential of *O. gratissimum*. This plant has been reported to possess antimicrobial, antidiabetic, hypolipidemic, hepatoprotective, anti-diarrhoeal, anti-inflammatory, antihypertensive, antioxidant, and immunostimulatory potential.¹⁴ *Oguanobi et al. and Okoduwa et al.* showed the anti diabetic effect of aqueous extract of *O. gratissimum* respectively in streptozotocin-induced type 2 diabetic neonatal Wistar rats, in a dose-dependent manner and in rats using diet-fed streptozotocin-model inducing type 2 diabetes.^{22,23} These authors used n-hexane, chloroform, ethyl acetate, n-butanol, and water to fractionate the extract. Their studies in each fraction revealed that the n-butanol fraction had the highest anti diabetic activity. A dose of 250mg/kg of n-butanol fraction of *Ocimum gratissimum* exhibited a higher hypoglycemic outcome than 500mg/kg metformin.¹⁴

Ethnopharmacological mode of preparation and administration: Infuse 300g of leaf powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Xylopiyaethiopica Dunal (Annonaceae)

Phytochemicals: Phytochemical analysis revealed the presence of alkaloids, flavonoids, glycosides, terpenoids, fats, and oil. Furthermore the main compounds in the essential oil were b-pinene-pinene, a-phellandrene, Z c-bisabolene and a-pinene, a-thujene, cis-b-ocimene, c-terpinene, oleanolic acid, kaurenoic, and xylopic acids.

Potential mechanisms of action: Alkaloids, flavonoids, triterpenoid and glycosides are reported to attenuate locomotive activity in rats.¹⁷ Also, 10mg/kg kaurenoic and 20mg/kg xylopic acids showed hypoglycemic activity; their investigation demonstrated that 20mg/kg kaurenoic was safe and exhibited better glucose-lowering effect than to 5mg/kg glibenclamide (the reference drug).²⁴ *Papita et al.*, reported the capability of ethanolic extract of *X. aethiopica* to standardize glucose concentration in streptozotocin-induced Sprague-Dawley male rats.²⁴ They reported that *X. aethiopica* competed favorably with metformin, the reference drug. *Okpashi et al.* stated the anti diabetic potential of 250mg/kg of chloroform extract of *X. aethiopica* fruit.²⁵ Their study revealed that extracts did not only regulate blood glucose when compared to glibenclamide but also prevented hyperlipidemia.¹⁴

Ethnopharmacological mode of preparation and administration: Infuse 300g of fruits powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Plants with postpartum psychosis properties

Datura stramonium L. (Solanaceae).

Potential mechanisms of action: The seeds and leaves in decoction of *D. stramonium* are used to sedate psychotic patients.¹⁷ The leaves and seeds of this plant contain alkaloids, tannins, saponins and cardiac glycosides.²⁶

Ethnopharmacological mode of preparation and administration: Infuse 300g of leaf and seeds powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Piper guineense Schum & Thonn (Piperaceae).

Potential mechanisms of action: The decoction of the leaf significantly reduce the loco motor activity and depression in mice. The fruits contain β -Sesquiphellandrene, limonene, and linalool.²⁷

Ethnopharmacological mode of preparation and administration: Infuse 300g of leaf powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Afelzia africana Smith associated with *Lophira alata* Banks ex. Gaertn.f. (Ochnaceae).

Potential mechanisms of action: *Afelzia africana* stem bark and *Lophira alata* stem bark was powdered. The mixture was infused in water for 2h and given to experimental rats. The extract reduced the psychotic behavior characterized by anorexia and nerviness in rats. The stem bark contains alkaloids, tannins, saponins, flavonoids, triterpenoid, phytosterols and glycosides.¹⁷

Ethnopharmacological mode of preparation and administration: Infuse 300g of stem bark powder of each plant in 6 liters of water for 3 hours. Drink 250ml three times daily for a week.

Lonchocarpus cyanescens (Schumach and Thonn.) Benth. (Fabaceae)

Potential mechanisms of action: The extract inhibited stereotype behavior and spontaneous motor activity.¹⁷ The leaves contain alkaloids, anthraquinones, cardiac glycosides, cyanogenetic glycosides, flavonoids, saponins, steroids and tannins.¹⁷

Ethnopharmacological mode of preparation and administration: Infuse 300g of leaf powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Arachis hypogaea L. (Fabaceae)

Potential mechanisms of action: The aqueous extract of the leaves of this plant taken orally has sedative effect and contains Linalool.¹⁷

Ethnopharmacological mode of preparation and administration: Infuse 300g of leaf powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Amblygonocarpus andongensis (Welw. ex Oliv.) Exell & Torre (Fabaceae).

Potential mechanisms of action: The aqueous extract of the stem bark of this species is taken orally. The extract reduced the psychotic behavior characterized by anorexia and nervousness in rats. The extract exhibited momentous effect on Dopamine receptor D₁ by inhibiting grooming and ascending behaviors in rats. Alkaloids, saponin, flavonoid, and tannin are found in this plant.¹⁷

Ethnopharmacological mode of preparation and administration: Decoction of 300g of stem bark powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Securinegavivosa (Roxb ex. Willd) Baill. (Euphorbiaceae)

Potential mechanisms of action: The extract exhibited significant effect on Dopamine receptor 1 by inhibiting grooming and climbing behaviors in rats.¹⁷

Ethnopharmacological mode of preparation and administration: Infuse 300g of leaf or root powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Spondias mombin L. (Anacardiaceae)

Potential mechanisms of action: The aqueous extract prolonged the sleeping time and decreased the stereotyped behavior. The following ingredients are found in this species: tannins, anthraquinones, flavonoids, glycosides, phenols, saponins, phlobatannins and alkaloids.¹⁷ Ethnopharmacological.

Mode of preparation and administration: Infuse 300g of leaf powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Plants with Postpartum Obsessive-Compulsive Disorder properties

Centella asiatica (L.) Urb.

Potential mechanisms of action: The ethanolic extract of *Centella asiatica* may meaningfully exhibit anti compulsive behavior comparable to that of fluoxetine in clinical use.²⁸

Ethnopharmacological mode of preparation and administration: Infuse 300g of leaf powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Withania somnifera (L.) Dun.

Sixty (60) women with anxiety received 250mg of *Withania somnifera* or placebo for 60 days.²⁹

Potential mechanisms of action: Those taking the herb showed a momentous reduction in some measures of anxiety but not others.²⁹

Ethnopharmacological mode of preparation and administration: Decoction of 300g of leaf powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Passiflora incarnata L.

Potential mechanisms of action: might be effective in the treatment of restlessness, nervousness, and anxiety. The anti-anxiety properties of *P. incarnata* are comparable to those of Benzodiazepines.³⁰ Recent studies demonstrated that the consumption of low doses of *Passiflora incarnata* in tea helps healthy adults to get better sleep.³¹

Ethnopharmacological mode of preparation and administration: Infuse 300g of leaf powder in 3 liters of water for 3 hours. Drink 250ml three times daily for a week.

Classification of psychiatric postpartum diseases in function of their symptoms

Based on the results of interview and the work of Maryam Ghaedrahmati *et al*⁹ recorded symptoms of psychiatric postpartum diseases in Cameroon were classified according to their symptoms Table 1.

Symptoms of postpartum depression

The Figure 1 shows a different significance between the following group of symptoms: Sensation of anger or irritation, Appetite and sleep disruption, Feelings of blameworthiness, disgrace or hopelessness, Thoughts of harming the baby or yourself and this other group of symptoms: Lack of interest for the baby, Crying and sadness, Loss of interest, joy or pleasure in things usually pleased, Thoughts of abortion; 2x2 compared ($p < 0,005$). Crying and sadness and Thoughts of abortion are the most represented symptoms of postpartum depression which injury most women.

Symptoms of anxiety during pregnancy & Postpartum

The Figure 2 presents a different significance between the following group of symptoms: Contesting thoughts, Incapability to sit immobile and Tenacious worry and this further group of symptoms: Feeling that something awesome is going to occur, Physical symptoms like dizziness, hot flashes, and nausea, Insomnia and troubles of appetite; 2x2 compared ($p < 0,005$). Crying and sadness and Thoughts of abortion are the most represented symptoms of postpartum depression. Insomnia and troubles of appetite are the most represented symptoms of anxiety during pregnancy & Postpartum for women in the society.

Table 1: Symptoms of psychiatric postpartum diseases observed in Cameroon.

Postpartum diseases	Symptoms	Postpartum diseases	Symptoms
Postpartum depression	Sensation of anger or irritation [12]	Post-Traumatic Stress Disorder	Nightmares, or unpleasant remembrances [40]
	Lack of interest for the baby [65]		Unpleasant re-experiencing of a past traumatic event like difficult childbirth, violence against women [73]
	Appetite and sleep disruption [12]		Thoughts and feelings evasive [15]
	Crying and sadness [90]		Persistent increased stimulation such as irritability, difficulty sleeping, hypervigilance) [4]
	Feelings of blameworthiness, disgrace or hopelessness [27]		
	Loss of interest, joy or pleasure in things usually pleased [52]		
	Thoughts of abortion [76]		
	Thoughts of harming the baby or yourself [37]		Anxiety and panic attacks [72]
Anxiety During Pregnancy & Postpartum	Tenacious worry [40]	Postpartum Psychosis	Misunderstandings or strange beliefs [21]
	Feeling that something awesome is going to occur [52]		Hallucinations [42]
	Contesting thoughts [7]		Sensation of very irritated [62]
	Insomnia and troubles of appetite [72]		Diminished need for or inability to sleep [74]
	Incapability to sit immobile [12]		Excessive distrust of real or imagined threats (Paranoia) and dishonesty[62]
	Physical symptoms like dizziness, hot flashes, and nausea [54]		Difficulty of collaboration [63]
Postpartum Obsessive-Compulsive Disorder (other form of anxiety)	Baby blues symptoms (move from side to side, feeling overwhelmed, feelings of melancholy) [77]		Confusion and disorientation [62]
	Persistent obsessions, or intrusive thoughts [25]		
	Desire to commit suicide [11]		
	Fear of being left alone with the infant [72]		
	Hypervigilance in protecting the new-born [22]		

BN: The numbers in brackets represent the number of interviewees who know or suffer from a symptom.

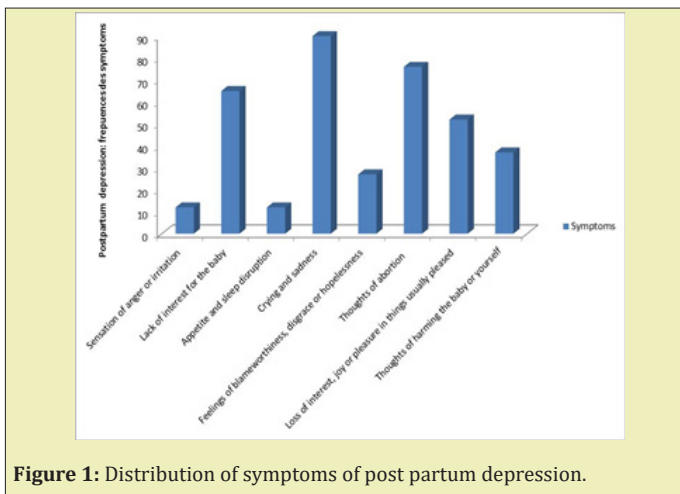


Figure 1: Distribution of symptoms of post partum depression.

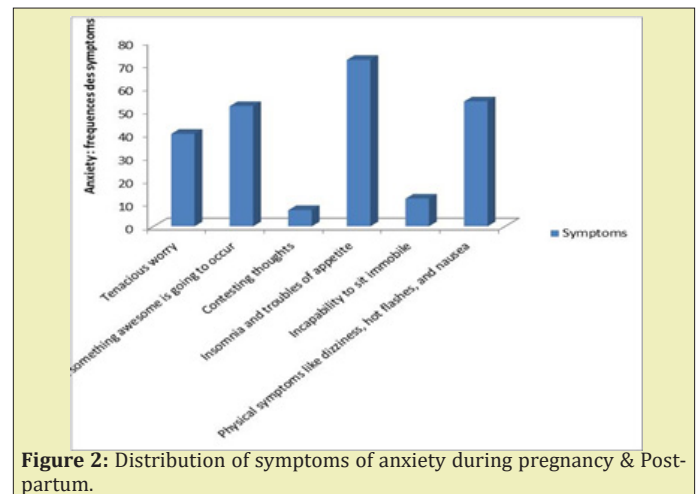


Figure 2: Distribution of symptoms of anxiety during pregnancy & Postpartum.

Symptoms of postpartum obsessive-compulsive disorder (a form of anxiety)

The Figure 3 reveals that it exists a different significance between the following group of symptoms: Desire to commit suicide, Hypervigilance in protecting the new-born, Persistent obsessions or intrusive thoughts and this further group of symptoms: Fear of being left alone with the infant, Baby blues symptoms (move from side to side, feeling overwhelmed, feelings of melancholy); 2x2 compared ($p < 0,005$). These two more frequent symptoms of postpartum obsessive-compulsive disorder are the most damaging for women.

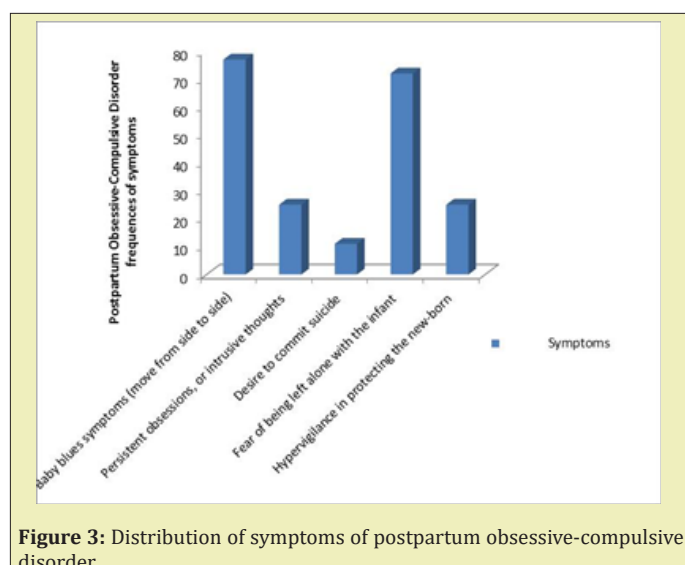


Figure 3: Distribution of symptoms of postpartum obsessive-compulsive disorder.

Symptoms of postpartum traumatic stress disorder

The Figure 4 divulges a different significance between the following group of symptoms: Persistent increased stimulation such as irritability, difficulty sleeping, hypervigilance, Thoughts and feelings evasive, Nightmares, or unpleasant remembrances and this auxiliary group of symptoms: Anxiety and panic attacks, Unpleasant re-experiencing of a past traumatic event like difficult childbirth, violence against women; 2x2 compared ($p < 0,005$). These two more recurrent symptoms of postpartum traumatic stress disorder are the most distressing for women.

Symptoms of postpartum psychosis

The Figure 5 reveals that it exists a different significance between the following group of symptoms: Excessive distrust of real or imagined threats (Paranoia) and dishonesty, Misunderstandings or strange beliefs, Hallucinations and this auxiliary group of symptoms: Sensation of very irritated, Confusion and disorientation, Difficulty of collaboration, Diminished need for or inability to sleep; 2x2 compared ($p < 0,005$). These four more repeated symptoms of postpartum psychosis are the most harmful for women in the society.

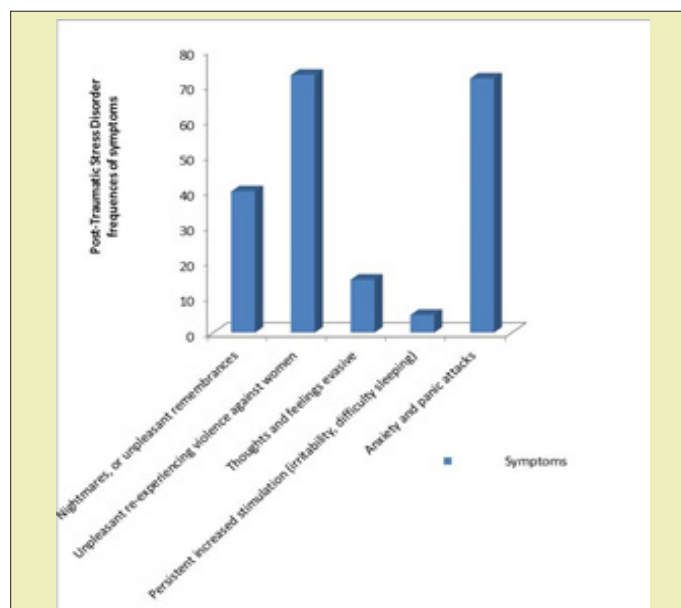


Figure 4: Distribution of symptoms of post partum traumatic stress disorder.

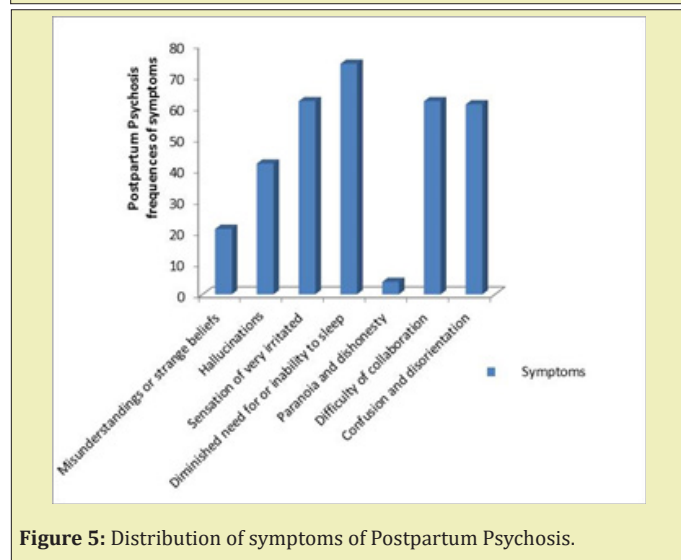


Figure 5: Distribution of symptoms of Postpartum Psychosis.

Discussion

All plants recorded contain the active components in their different useful parts. Today, medicinal plants are frequently used in alternative and complementary medicine and have continued to acquire widespread promotion worldwide. In fact more than 80% of the entire Cameroon people make use of one form of African medicine in the prevention, diagnosis and cure of many sicknesses. Manifold countries in Africa have incorporated herbal treatment within their national healthcare system. Psychosis is considered as a neuropsychiatric disorder. According to WHO, 13–49% of individual worldwide has being affected by psychosis at a particular period of their life spans³² A total of 20 medicinal plants, used in the management of labor and psychiatric postpartum diseases in Cameroon, was mentioned in the treatment of patients with psychosis,³³

despite the numerous antagonistic effects including restlessness, sexual dysfunction, tardive dyskinesia (persistent tongue, mouth and jaw movement), malicious syndrome etc. attributed to various chemical constituents.³⁴ Unusually, it is praiseworthy of reference that out of numerous medicinal plants with stated antipsychotic effect worldwide,³⁴ very limited number of them including *Ginkgo biloba* L. (Ginkgoaceae), *Hypericum perforatum* L. (Hypericaceae), *Melissa officinalis* L. (Lamiaceae), *Piper methysticum* G. Forst (Piperaceae), *Valeriana officinalis* L. (Valerianaceae) have been industrialized as agents with transferred use for phytotherapy and were operated as medicine against prominent psychiatric illnesses in table.³⁵ In Cameroon these plants are now cultivated and used in the form of herbal formulations like in some African countries for the management of neurological diseases.^{36,37} Meanwhile, despite their wide use and predilection over orthodox antipsychotic drugs with unpredictable opposing effects,³⁸ patients with obsession have preferred herbal remedy for the management of psychosis.³⁹ The respective list of 15 selected medicinal plants generally used in psychosis cure was the most prominently implicated herbal medicines in Cameroon. But some plants may be toxic and must be used prudently.

Recorded plants potentially anti-obesity

Some recorded plants possessed can control obesity. For example *Xylopiiaethiopia* fruit extract prevented hyperlipidemia, which is a complication that is characteristics of diabetes.¹⁴ *Peperomia pellucida* has shown the improvement of dyslipidemia.¹⁷ Five hundred (500)mg/kg aqueous leaves extract of *Ocimumgratissimum* revealed the hypolipidemia effect and ability of the plant extract to regenerate pancreatic b-cells.¹⁴ *Momordicacharantia* L in. (bitter melon) via its phytochemicals including curbitane triterpenoids (Mormodicoside S, and karavilosede XI) can be capable to activate AMPK activity, weight loss and metabolic regulator.⁴⁰ By oral route of administration, *Mucunapruriens* seeds methanolic and ethanolic extract fractions showed the anti diabetic activity and a significant decrease of the weight associated with diabetes.⁴¹

Recorded plants potentially used against gestational diabetes

Momordicacharantia, *Ocimumgratissimum* and *Spondiamobina* are three recorded suspected anti diabetic plants listed among gestational antidiabetic species sold in Cotonou market for the control of pregnant diabetic women.⁴²

Toxicity

Researches on toxicology and hematological appraisal of *Piper guineense*, revealed no toxic effects on the liver of albino rats. These researches expected that the vitamins, minerals, and phytochemicals found in this plant were responsible for the observed hemato-

poietic activity.¹⁴ The acute toxicity of *Ocimumgratissimum* revealed that the extract is safe at 250mg/kg, which was the least operative dosage; mortality and signs of toxicity were not skilled even at a tremendously elevated dosage of 5000mg/kg mortality.¹⁴ It was demonstrated that the extract of *Xylopiiaethiopia* was not toxic based on biochemical parameters explored and that it presented better glucose lowery activity when associated with *Psidium guajavaleave* extract.¹⁴ *Daturastramonium* is a plant with both poisonous and healing assets and has been revealed to have prodigious pharmacological potential with great usefulness and use in folk medication. *Amblygonocarpusandongensis* (Welw. ex Oliv.) Exell & Torre possesses a somewhat toxicity and has reducing effects on weight.¹⁷ Although *Mucunapruriens* has insufficient side effects and is moderately well tolerated, it can sometimes prove gastrointestinal troubles, nausea, insomnia and attacks of dyskinesia. The plant prevents the secretion of prolactin, so it is contraindicated during pregnancy and lactation and in children less than 18 years of age.⁴¹ The acute toxicity of *Mucunapruriens* fruits methanolic and ethanolic extract was relatively safe at stumpy doses, whereas some adverse reactions were detected at higher doses such as 8-32mg/kg body weight. On the other hand, there was no death.⁴³

Conclusion

At the end of this work there are current indications that confirm the therapeutic effects of some plants such as *Mucunapruriens*, commonly anti diabetic and/or anti-obesity in the management of difficult labor and/or psychiatric postpartum diseases which cause manifold symptoms in women in Cameroon. This recommends that some herbal medicines can be potential drug candidates for the handling of these diseases. Further clinical investigation should be on the standardization of herbal extracts. The additional research is required to understand the phytochemicals' mechanisms involved in the regulation of labor and psychiatric disorders. Clinical trials and safety in these herbal drugs will be conducted as further research. Other articles will be wrote on the possible herbal management of non-psychiatric postpartum disorders such as postpartum hemorrhage, complications of unsafe abortion, ectopic pregnancy, pregnancy-induced hypertension and placenta praevia, malaria, anemia, pneumonia, and heart disease in Cameroon.

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Conflicts of Interest

Author declares that there is no conflict of interest.

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