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Causes of Postpartum Depression among Sudanese Women from 2019 to 2021 in Taha Baasher Hospital

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ABSTRACT

Introduction: *Postpartum depression (PPD) is a major and common mental health problem complicating maternal status after delivery, mainly associated with maternal suffering and altering the mental status for both herself and her offspring. It is a complex condition results mainly from a mix of physical, emotional, and behavioral changes happens to women after giving birth. The interactions between chemical, social, and psychological variables factors especially in newly mothers experience are probably responsible for initiation and ranges of postpartum depression.*

Objectives: *To determine the causes of postpartum depression among Sudanese women and other associated factors.*

Methods: *This study will be conducted via Cohort – analytical study design based on retrospective database in the last 3 years from current day, will be conducted from Taha Baasher hospital medical records, a psychiatry department. The process started from October 2021. We used scientifically structured questionnaire as a tool to collect data from registered patient's data with approval from Alzaiem Alazhari University.*

Result: *Total of 79 cases have been studied in order to analyze the most prominent data they might have role in developing causes or risk factor of postpartum depression. The percentage of different parameters manly young age 62.5%, education of primary school 41.3%, with high percentage of positive family history of mental illness and previous history mental illness, 42.1% and 32.9% respectively. The majority of the cases have Moderate symptoms 53.8%, while 27.5% were Severe. The risk of patients was classified into homicidal 3.8% and suicidal were 7.7%. The final diagnosis of the cases was psychosis 76.5% and only 23.5% was depression. Treatment by drugs only was about 97.5%.*

Conclusion: *The majority of causes and risk factor for postpartum depression manly varied from having history of mental illness or similar condition in the family or in the cases themselves, also having young age, and the lack of proper education and occupations. History of victimization also plays a role.*

Keywords

Postpartum depression, Sudanese Women, Emotions, Mental health, Postpartum period.

Introduction

Postpartum depression (PPD) is a major and common mental health problem complicating maternal status after delivery, mainly associated with maternal suffering and altering the mental status of both herself and her offspring. A complex condition results mainly from a mix of physical, emotional, and behavioral changes that happens to women after giving birth. The interactions between chemical, social, and psychological variables factor especially in

new mothers' experience are probably responsible for the initiation and ranges of postpartum depression.

The first six months after delivery might represent the high-risk period for depression. Other major risk factors are associated with pre-diagnosed cases of major depression, young age, and other maternal variations. The diagnosis and severity of PPD are currently based on major symptoms and signs associated with the length of time between deliveries. Major symptoms including difficulty in sleeping, appetite changes, a general drop in energy and concentration, and frequent mood changes. It might progress to suicidal or homicidal thoughts. Three major degrees of depression, which are babe blues, postpartum depression, and postpartum psychosis can be differentiated by proper diagnosis. The management is conducted through medication and psychotherapy and counseling, but it varies according to the severity of the patients and the presenting symptoms. Proper management of the cases and early prevention of potential risks can reduce future complications for the mother and her family [1].

Postpartum depression rates in low-resource countries have reached levels between 4.9% and 59%. However, there is no existing statics on prevalence or significant risk factors for PPD. Consequently, no screening tests have been validated to screen for PPD. Maternal mental ill health is not recognized as an important determinant of maternal and child morbidity and mortality in Sudan as well as other low-income countries. There is a range of mental illnesses that women experience during pregnancy and after delivery, including antenatal and postnatal stress, anxiety, depression, and psychosis [2].

Pregnancy and birth are described to be one of the most life-changing experiences in a woman's life. As a society people are accustomed to viewing pregnancy as a time for new life and celebration. Though this stigma may be accurate for some cases there still lacks a full understanding of what occurs emotionally, physically, and mentally to mothers after the birth of their child, especially in developing counties like Sudan that might face greater risks of undergoing postpartum depression. Although there is evidence that explains Postpartum " baby blue " as a normal experience after birth. This remains a larger need for research and understanding postpartum depression [3].

Also, in the last 3 years in Sudan and due to politico-economic issues, the prevalence and risk of developing mental instabilities have been quite increased, and therefore difficulties in providing the daily requirements of life needs, and all other problems accompanied by the current status, this reflects on contributing to developing different mental and physiological illnesses.

Postpartum depression is a worldwide public health concern. Despite this, its prevalence is reported to be greater in developing counties than in developed ones. To strengthen maternal and child health, the current situation of postpartum depression should be understood. The ongoing situation in Sudan and other variables enhance its occurrence and prevalence. This study aims to determine the causes and risks of postpartum depression among Sudanese women that were concerned with cases in Taha Baasher hospital database, and identify the factors associated with it.

Literature Review

A study about postpartum depression pathophysiology, treatment, and emerging therapeutics was published in 2019, it enlists the history of mood or anxiety disorder as a strong risk factor for PPD, especially having active symptoms during pregnancy. Also discussed are the benefits and potential harms of treatment including during breastfeeding that might present [4].

A further study entitled postpartum depression: etiology treatment and consequences for maternal care was published in 2016, as a part of a special issue "parental care". Found that these disorders are associated with alters in specific hormones during pregnancy. The study covered clinical and preclinical findings highlighting putative neurological mechanisms underlying PPD and how they relate to maternal behaviors and this infant’s outcome [5].

A study was conducted in 2020 regarding postpartum depression in the Arab region, and it was via a systemic literature review of all peer-reviewed journal-published studies on PPD and its risk factors among Arab mothers until February 2016. 25 studies were included in the review. PPD rates were high in general but prevalence was close to the rates observed in other low and lower-middle-income counties. The most important risk factors were: low income, socioeconomic status, obstetric complications during pregnancy, unwanted pregnancy, ill infants, and low husband status [6].

Another study was a prevalence of postpartum depression regarding mode of delivery in 2020, conducted via a cross-sectional study to explore the prevalence of PPD as well as the relationship between delivery mode and PPD among postnatal women. 421 women with singleton gestation during their 3rd trimester without medical or psychological problems during pregnancy were included. The prevalence was found to be significantly higher in the emergency caesarian section group at the 8th and 16th postnatal weeks while normal vaginal delivery was low [7].

An additional study on the pathophysiological mechanism implicated in postpartum depression in January 2019, was a systemic review that integrates clinical and preclinical findings and highlights the diversity in the patients’ population, also both clinical and basic science research findings. The evidence supporting a role for neuroendocrine changes, neuroinflammation, neurotransmitter alterations, circuit dysfunction, and involvement of genetics and epigenetics in the pathophysiology of postpartum depression are discussed. This review was meant to serve as a comprehensive resource [8].

A 6th study was about the magnitude and associated factors of postpartum depression among women in Nekemte town – west Ethiopia 2019, a community-based study by cross-sectional study

was conducted on 295 postnatal women from May to June 2019 in Nekemte town. The participants were selected by a simple random sampling method and interviewed using structured questionnaires, 287 women participated in the study, and 20.0% had developed PPD. Unplanned pregnancy, being prim gravida, a history of previous depression, and domestic violence were associated with the cases. In conclusion, the magnitude of PPD was found moderate compared to other studies [9].

This study under the title how maternal pre and postnatal symptoms of depression and anxiety affect early mother-infant interaction was published in 2019 by examining whether maternal pregnancy-related anxiety, general anxiety, or depressive symptoms are associated with the low quality of mother-infant interaction. By controlling for background factors, general anxiety in 3rd pregnancy trimester was associated with higher maternal intrusiveness in EAS (emotional availability scale) [10].

This study about disturbed sleep and postpartum depression 2017 discussed the merging evidence implicating significant sleep disturbance characterized by insomnia symptoms and poor sleep quality with an adverse outcome such as increasing depressive symptomatology or the development of postpartum depression [11].

Postpartum depression: a case-control study in 2021 correlated PPD with anxiety, smoking, alcoholism, parity, type of birth, and gestational and maternal age to identify the possible risk factors that increase the probability of developing depressive episodes by interviewing 227 cases. The results evidenced a high percentage of puerperal with PPD related to maternal anxiety [12].

Physical activity and the occurrence of postnatal depression – a systemic review in 2019 as a study reviewed a total of 43 references showed that regular physical activity during pregnancy and puerperium reduce the risk of developing depression in the postnatal period [13].

A study about the prevalence of postpartum depression regarding the mode of delivery was in October 2020 conducting via cross-sectional methods by studying 412 women and was divided into 3 groups according to their delivery mode (normal vaginal, emergency, or elective caesarian section) was found that prevalence was higher in emergency caesarian section group at the 8th and 16th postnatal weeks [14].

Prevalence and incidence of postpartum depression among healthy mothers - a systemic review and meta-analysis were conducted in September 2018 to examine the prevalence in women with no history of prior depression and who gave birth to healthy full terms infants. A group of 58 articles was included (N=37.249 women) and the incidence was 12% while the overall prevalence of depression was 17% among healthy women [15].

Postpartum depression: The effects of a Video Intervention on Knowledge and Stigma was conducted in January 2016 to focus on awareness of mothers, mental illness stigma induces feelings of shame and guilt, reduces treatment-seeking behaviors, and ultimately contributes to a low PPD diagnosis rate. Results demonstrated that a mother's age, history of depression, and her infant's temperament impacted respondents' attribution of her symptoms to baby blues or PPD, and also influenced stigmatizing attitudes toward her PPD experience [16].

Another study was December 2016 postpartum depression PPD is common and affects women, infants, and families. Treatment depends on the severity of symptoms and the level of functional impairment and can include social support, psychological therapy, and pharmacotherapy (generally an SSRI as first-line treatment) [17].

Disturbed Sleep and Postpartum Depression in October 2017 This review discusses the relevant literature on how disturbed sleep during pregnancy as well as in postpartum may increase the risk for PPD [18]. A study in March 2018 revealed Paternal Postpartum Depression and Its Relationship with Maternal Postpartum Depression This cross-sectional study was performed on 205 couples who were selected using a random cluster sampling in seven health centers. Results: A total of 11.7% of the fathers had depression symptoms. Considering the significant frequency of depression in fathers and the role of maternal depression as well as the family's livelihood situation [19].

A study in October 2019, indicates that despite advances in diagnosis and treatment, remains underdiagnosed and misunderstood. Women do not always display signs of PPD and may not discuss mood changes with their primary care provider, identifying screening and treatment options for non-mental health providers was the purpose of this article [20].

Another study in December 2019, says PPD doesn't present in the same way in all cases, an estimated 50% of postpartum depression can be mild and transient, manifesting by weeping, sadness, irritability, and insomnia, 20% of women present a severe form of postpartum depression [21].

In May 2020, a study says the majority of women recover well with treatment. The causes of PPD are thought to be a combination of genetic, hormonal, and psychosocial ones so Treatment is essential as the consequences affect the entire family [22].

In September 2020, a study was conducted to discover women at risk can be identified before delivery based on psychiatric history, symptoms during pregnancy, and recent psychosocial stressors. Fortunately, there have been a variety of treatment studies using antidepressants, with no pharmacologic interactions. The most commonly used screening scale is Edinburgh Postnatal Depression Scale [23].

In January 2021 postpartum depression study was conducted to explore postpartum depression as a predictor of suicidal ideation and to find if perceived social support had a moderator effect in this

scenario among new mothers with hearing loss. The descriptive cross-sectional study was conducted from March to September 2018, perceived social support appeared to lower the probability of postpartum depression and suicidal ideation among mothers with hearing loss [24].

In April 2021 postpartum depression was discussed presenting current research findings on postpartum depression (PPD) in the adolescent female. PPD is defined and then the etiopathogenesis of PPD is reviewed [25].

A study was conducted in 2020 regarding the Association between perinatal anemia and postpartum depression among Japanese women it was via cohort study. In total, 1128 women were assessed. Postpartum anemia was significantly associated with increased PPD risk whereas anemia in the second and third trimesters was not. Similarly, a significant inverse association was observed between the quintiles of maternal hemoglobin levels in the puerperium and the PPD risk [26].

Another study was conducted in 2017 regarding Postpartum depression risk factors: A narrative review. The result of this study shows that the factors associated with postpartum depression can be classified into five domains of risk factors psychiatric, obstetric risk factors, biological and hormonal risk factors, social risk factors, and lifestyle risk factors [27].

Another study regarding the relationship between the model of delivery and postpartum depression.in Jul/Aug 2017 conducted via cross-sectional study. The study shows that postpartum depression after CS is more than vaginal delivery, which is recommended appropriate advice for choosing the type of delivery and the correct way, according to the mother and baby, and avoiding performing CSs [28]. Also, a study examined the effect of fear of childbirth, postpartum depression, and certain birth-related variables on postpartum PTSD in October 2018. This study is a cross-sectional study. 301 pregnant women who met the criteria for inclusion. As a result, Fear of childbirth and postpartum depression significantly and positively predicted the level of posttraumatic stress after childbirth. Fear of childbirth explains 3% of the total variance in posttraumatic stress while postpartum depression explains 47% of it [29].

In search of best practice for postpartum depression screening: is once enough. In 2016 via retrospective cohort study selected 256 women who delivered at Cooper University Hospital in Camden the study aimed to determine whether the early Edinburgh Postnatal Depression Scale (EPDS) score (done within 96 h after delivery) is predictive of the late EPDS score (done at outpatient postpartum visit) in conclusion low-risk women, there is a good correlation between early and late EPDS scores and so these women may not need to be rescreened [30].

A study was Prevalence and risk factors of postpartum depression in the Middle East. 06 August 2021 The studies were conducted in different countries of the Middle East, nine of the included studies were cross–sectional studies and six were cohort studies. The common risk factors reported were poor economic, pregnancy-associated complications, low education, unplanned pregnancy, homemaker, inadequate social support from family members, and feeding by formula [31].

Another study was conducted in 2021 regarding the Difference in Gender and Childbirth Costs and Their Association with Postpartum Depression. it was via cross-sectional study. 260 primiparous women were evaluated after delivery, and the prevalence of postpartum depression was 56.9%. There was a statistically significant relationship between postpartum depression and unwanted pregnancy, delivery method, weeks of pregnancy, social and economic costs of having a child, and gender [32].

The study was conducted to investigate the relationship between pre-pregnancy premenstrual syndrome (PMS) history with postpartum depression and mother–infant bonding.in 2021 it was via a cross-sectional study that included 322 mothers. Data were collected using the Premenstrual Syndrome Scale (PMSS), Edinburgh Postnatal Depression Scale (EPDS), and Brockington Postpartum Bonding Questionnaire (BPBQ).and in conclusion there were positive statistically significant correlations between PMSS total and subscale scores and EPDS scores and BPBQ. In addition, there were statistically significant positive correlations between EPDS score scores and BPBQ [33].

An additional study on Gene expression profile in peripheral blood mononuclear cells of postpartum depression patients conducted in 2018 found that PPD was positively correlated with multiple genes involved in energy metabolism, neurodegenerative diseases, and immune response, while negatively correlated with multiple genes in mismatch repair and cancer-related pathways. In conclusion, this study provides a comprehensive characterization of the PBMCs transcriptome in PPD and suggests that maternal stress may affect appetite regulation and nutrient response in the hypothalamus of offspring mice [34].

Another study regarding the Associations between postpartum depression and hypertensive disorders of pregnancy in 2018. Was a cross-sectional study conducted among postpartum women who attended a public maternity hospital in Brazil of 168 participants (42 with HDP and 126 normotensives), 40 (23.8%) women displayed depressive symptoms (25 normotensives and 15 with HDP).in Conclusion, Women diagnosed with HDP were more likely to have depressive symptoms than their normotensive counterparts [35].

Materials and Methods

This study had been conducted via Cohort – analytical study design based on a retrospective database in the last 3 years from the current day, had been conducted from Taha Baasher hospital medical records, a psychiatry department. The process started in October 2021. We used a scientifically structured questionnaire as

a tool to collect data from registered patient's data with approval from Alzaiem Alazhari university. This project aims to study married Sudanese women diagnosed with postpartum depression in the last 3 years from the start of the project's date. Those women who have been at risk of developing such conditions due to different predisposing circumstances. Taha Baashar psychiatric hospital is the main institution of psychiatric disorders in Sudan - Khartoum North – Bahri. It was first instituted in 1960 by Taha Ahmed Baasher, a professor and doctor of psychiatry medicine. The hospital is located north of Bahri Teaching hospital. The study included those married Sudanese women who had a delivery in the past 3 years from the research data, developed postpartum depression symptoms and signs, and were diagnosed at Taha Baasher hospital with postpartum depression and excluded those with an unclear medical history and Lack of essential data records. Independent variables were Age, duration of the marriage, number of pregnancies, and number of deliveries, socioeconomic status, and residence. Dependent variables were Awareness of the medical status, the prevalence of protective methods, and encouraging effective management steps. The sample size from medical data records was found to be a total of 79 registered cases from January 2019 to September 2021. Detailed as 2019 = 26 reported cases, 2020 = 26 reported cases, 2021 = 27 reported cases. (Note that from October to December 2021 there were no reported cases.) So that the study will be delivered as a covered cohort study for all registered cases. Sample size = population size = 79 cases. Covered sampling will be established and carried out through the data collection process due to the small number of reported cases in the hospital to provide more data that can be gained from the collection process. The data had been collected from Taha Baasher hospital database using a multi-stage formatted questionnaire by the members of the research group personally filing it from the available records taken from the hospital after taking consent from both Alzaiem Alazhari University and the hospital itself. The chosen number of questionnaire papers according to the sample size number had been filled through an online form by our group members to ease the data analysis work. Also, there had been an attempt to personally reach the registered patients through phone calls to properly filling the needed data if possible. The data had been analyzed using a specific data tool method. We've chosen IBM SPSS ver.23 Modeler as our tool. The IBM SPSS modeler is a predictive data analytical platform. Data collected from the total questionnaire numbers had been entered into the modeler one by one and then it had been processed and analyzed, the outcomes data had been studied and summarized as frequencies (n) and percentages (%) for categorical variables.

Results

According to several demographic characteristics, postpartum depression and psychosis were shown in (Table 1). The majority of the cases—about 50—were in the 20–30 age range, as seen in Figure (1)'s breakdown of postpartum depression and psychosis patients by age. The bulk of cases of postpartum depression and psychosis (approximately 26 cases) occurred in primary schools, as shown in Figure (2) (see below). According to occupation, Figure (3) depicts postpartum depression and psychosis, with housewives accounting for the majority of cases—64 in total. According to the length of the marriage, prior chronic diseases, and therapies, postpartum depression and psychosis were shown in (Table 2). Figure (4) depicts postpartum depression and psychosis according to the length of the marriage; there were 71 cases overall where the marriage lasted for years. The majority of the cases had a negative history of prior surgery (73 cases), and there were 76 instances without a history of chronic medication. Figure (5) illustrates postpartum depression and psychosis according to the history of surgery and chronic medication. According to parity, abortion, method of delivery, and infant's health, postpartum depression and psychosis were shown in (Table 3). Figure (6) illustrates postpartum and psychosis in relation to parity, abortion, delivery method, and infant's health. Figure (7) depicts postpartum depression and psychosis according to mode and complexity of delivery, with the majority having no history of abortion (59 cases), a normal delivery (60 cases), and 66 cases with no problems. According to the baby's health, Figure (8) depicts postpartum depression and psychosis in 70 instances of deliveries, the majority of which include healthy infants. According to prior experiences and family history of mental illness, postpartum depression and psychosis were shown in (Table 4). Figure (9) displays postpartum depression and psychosis according to previous and family histories of mental illness. According to the intensity of the symptoms, postpartum depression and psychosis are depicted in Figure (10), with the majority of patients (43 out of 79) having moderate symptoms. There were just 22 severe instances. Figure (11), which depicts postpartum depression and psychosis according to risk levels, indicates that in 69 out of 79 cases, there was little to no risk and that 6 cases involved suicidal thoughts. According to diagnosis, Figure (12) illustrates postpartum depression and psychosis: 62 out of 79 cases have psychosis as their underlying condition. There are just 19 people who are depressed, and infant blues are rare. Figure (13), which depicts postpartum depression and psychosis according to treatment, reveals that in 77 out of 100 instances, medication is used.

The relationship between the type of postpartum mental disturbance and demographic characteristics was demonstrated in (Table 5). According to the correlation between postpartum mental disease type and age groups, Figure (14) depicts postpartum depression and psychosis. (Table 6) demonstrates the relationship between the type of postpartum mental disease, the length of the marriage, and any prior chronic conditions and therapies. The relationship between the type of postpartum mental problem and parity, abortion, style of delivery, and the baby's health was demonstrated in (Table 7). (Table 8) illustrates the relationship between the type of postpartum mental disorder and prior and family experiences with mental illness. According to the association between postpartum mental disease type and personality, Figure (15) depicts postpartum depression and psychosis. The relationship between the kind of postpartum mental condition and the risk factor, the intensity of the symptoms, and the therapy was displayed in (Table 9). The relationship between the infant's present health and the diagnosis, level of risk, and intensity of symptoms was demonstrated in (Table 10).

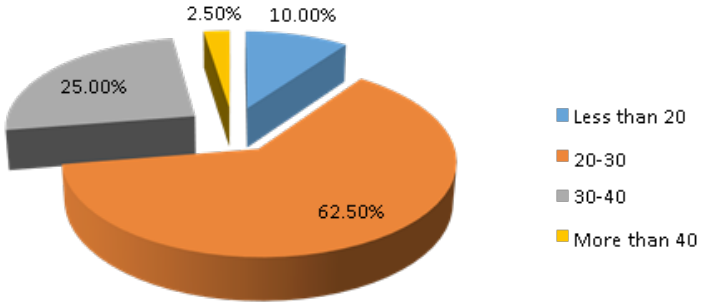

Figure 1: Shows Postpartum depression ad psychosis according to age; majority of thecases were from 20 – 30 years old about 50 cases.

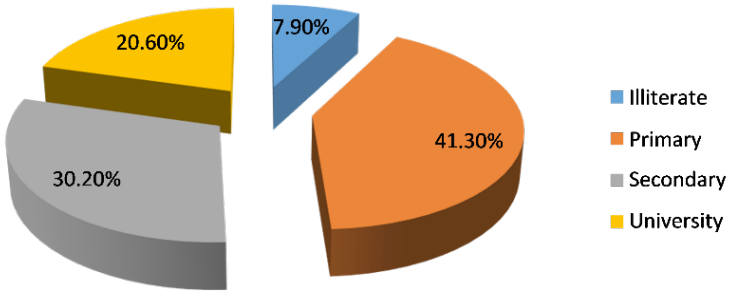

Figure 2: Shows Postpartum depression and psychosis according to education levels: majority went to primary schools about 26 cases.

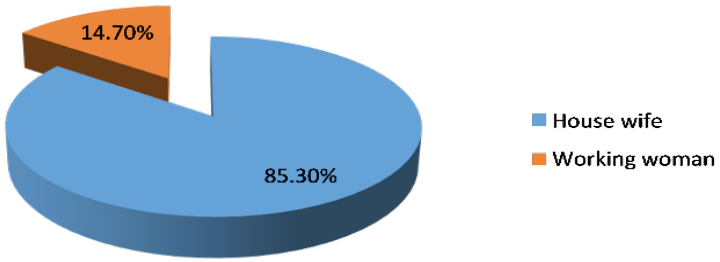

Figure 3: Shows Postpartum depression and psychosis according to occupation: housewives are mainly affected cases about 64.

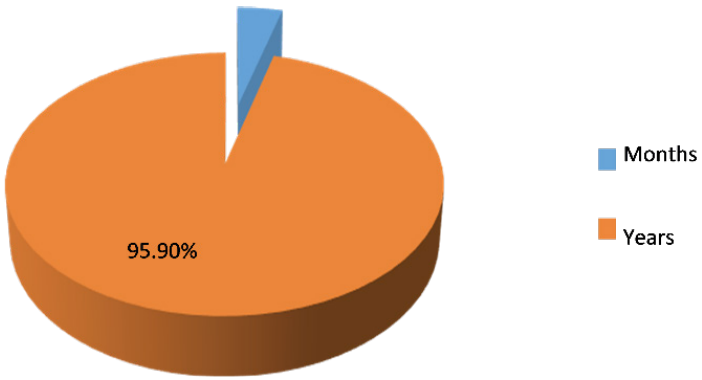

Figure 4: Shows Postpartum depression and psychosis according to duration of marriage: most marriages lasted for years, about 71 cases.

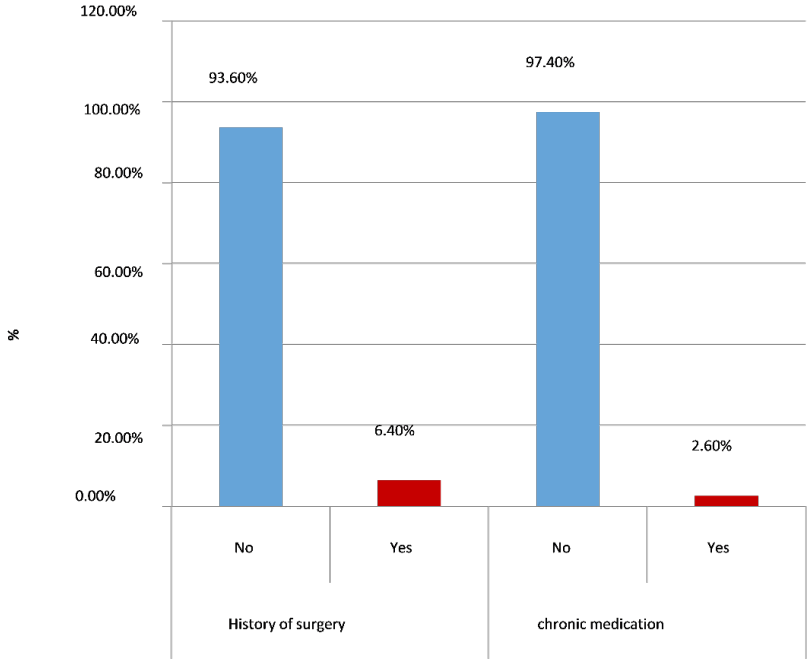

Figure 5: Shows Postpartum depression and psychosis according to history of surgery and chronic medication: the majority of the cases had negative history of previous surgery 73 cases, and without history of chronic medication 76 cases.

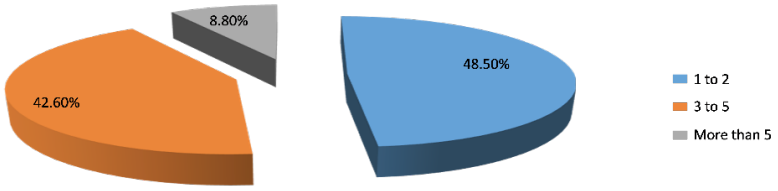

Figure 6: Shows Postpartum depression and psychosis according to parity, abortion, mode of delivery and medical condition of baby.

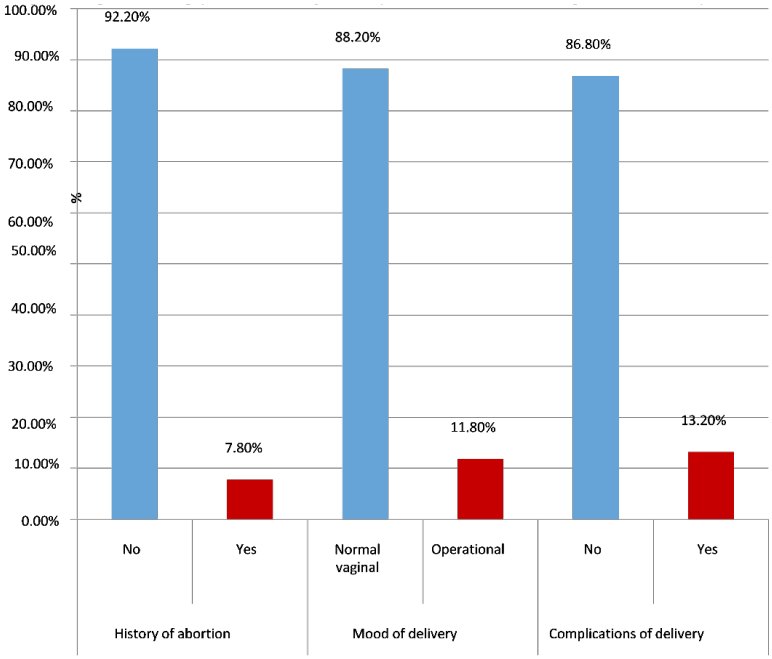

Figure 7: Shows Postpartum depression and psychosis according to history of abortion, mode and complication of delivery: majority had no abortion history 59 cases, with normal delivery 60 cases, without complications 66 cases.

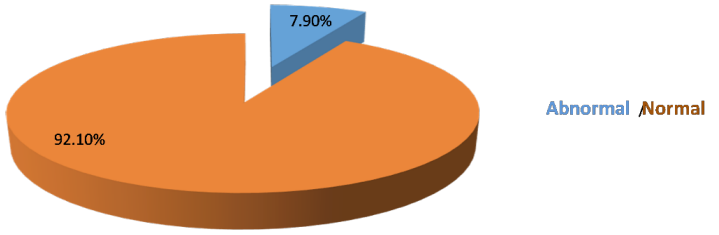

Figure 8: Shows Postpartum depression and psychosis according to medical condition of baby: most deliveries are with normal babies 70 cases.

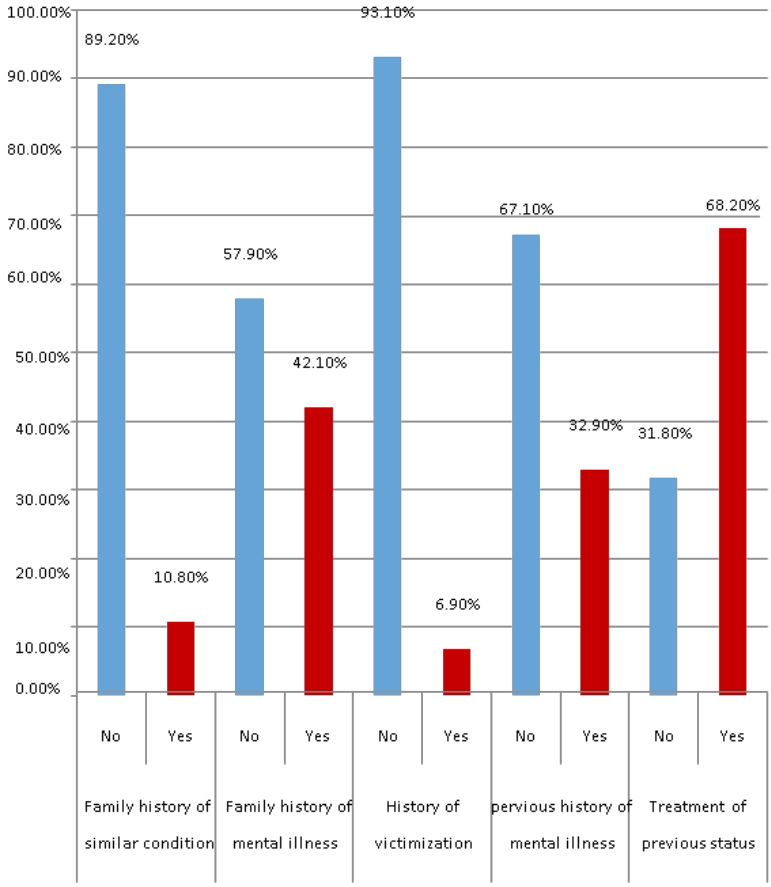

Figure 9: Shows Postpartum depression and psychosis according to past and family history of mental disorder.

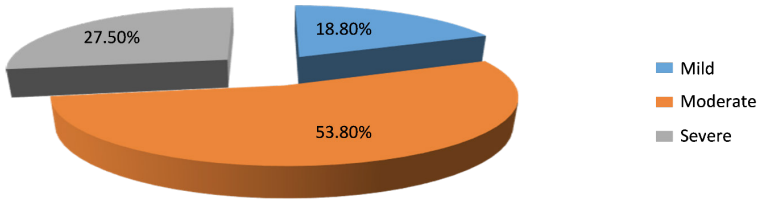

Figure 10: Shows Postpartum depression and psychosis according to severity of symptoms: most cases are moderate symptoms about 43 of the cases out of 79. Only 22 cases were severe.

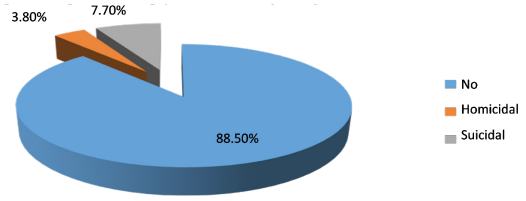

Figure 11: Shows Postpartum depression and psychosis according to degree of risk: mostly have no risk, about 69 cases out of 79, 3 were homicidal and 6 were suicidal.

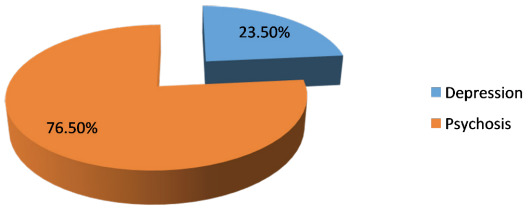

Figure 12: Shows Postpartum depression and psychosis according to diagnosis: most of the cases have psychosis about 62 cases out of 79. Only 19 have depression, with no prevalence of baby blues.

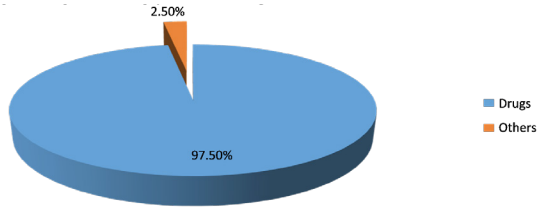

Figure 13: Shows Postpartum depression and psychosis according to treatment: most of the cases undergo pharmaceutical treatment about 77 of cases.

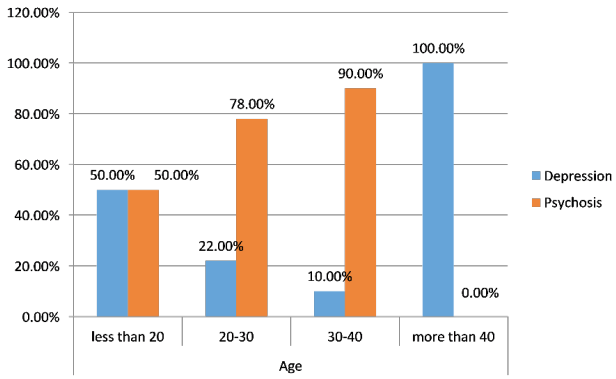

Figure 14: Shows Postpartum depression and psychosis according to Association between postpartum mental disorder type and age groups.

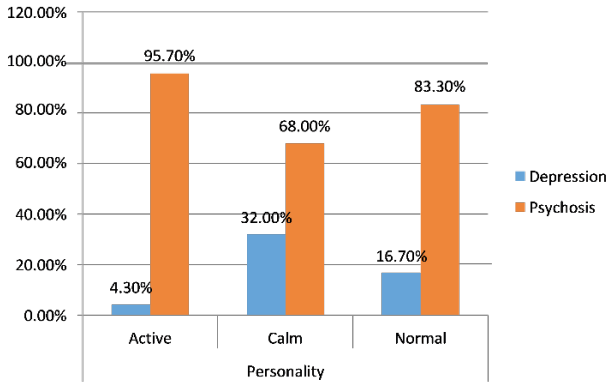

Figure 15: Shows Postpartum depression and psychosis according to Association between postpartum mental disorder type and personality.

Table 1: Postpartum depression and psychosis according to different demographic factors.

		Count	Column N %	P. value
Age	**less than 20**	8	10.0%	0.000
	20-30	50	62.5%	
	30-40	20	25.0%	
	more than 40	2	2.5%	
Residence	**Bahri**	25	31.6%	0.002
	Khartoum	14	17.7%	
	Omdurman	9	11.4%	
	Other	31	39.2%	
Educational level	**Illiterate**	5	7.9%	0.002
	Primary	26	41.3%	
	Secondary	19	30.2%	
	University	13	20.6%	
Occupation	**House wife**	64	85.3%	0.000
	Working woman	11	14.7%	

Table 2: Postpartum Depression and Psychosis According to Duration of Marriage and Previous Chronic Conditions and Treatments.

		Count	Column N %	P. value
Duration of marriage	**Months**	3	4.1%	0.000
	Years	71	95.9%	
Chronic condition	**NO**	73	98.6%	0.000
	OTHER	1	1.4%	
History of surgery	**No**	73	93.6%	0.000
	Yes	5	6.4%	
chronic medication	**No**	76	97.4%	0.000
	Yes	2	2.6%	

Table 3: Postpartum Depression and Psychosis According To Parity, Abortion, Mode of Delivery and Medical Condition of Baby.

		Count	Column N %	P. value
Menarche date (years)	**12-16**	16	100.0%	-
Parity	**1-2**	33	48.5%	0.000
	3-5	29	42.6%	
	More than 5	6	8.8%	
History of abortion	**No**	59	92.2%	0.000
	Yes	5	7.8%	
Mood of delivery	**Normal vaginal**	60	88.2%	0.000
	Operational	8	11.8%	
Complications of delivery	**No**	66	86.8%	0.000
	yes	10	13.2%	
Medical condition of current baby	**Abnormal**	6	7.9%	0.000
	Normal	70	92.1%	

Table 4: Postpartum Depression and Psychosis According To Past and Family History of Mental Disorder.

		Count	Column N %	P. value
Family history of similar condition	**No**	66	89.2%	0.000
	Yes	8	10.8%	
Family history of mental illness	**No**	44	57.9%	0.000
	Yes	32	42.1%	
Personality	**Active**	23	29.1%	0.000
	Calm	50	63.3%	
	Normal	6	7.6%	
History of victimization	**No**	67	93.1%	0.000
	Yes	5	6.9%	
pervious history of mental illness	**No**	51	67.1%	0.003
	Yes	25	32.9%	
if yes, the duration	**Months**	6	28.6%	0.156
	Weeks	4	19.0%	
	Years	11	52.4%	
Treatment of previous status	**No**	7	31.8%	0.000
	Yes	15	68.2%	

Table 5: Association between postpartum mental disorder type and demographic factors.

		Diagnosis				P. value
		Depression		Psychosis		
		Count	Row N %	Count	Row N %	
Age	less than 20	4	50.0%	4	50.0%	0.009
	20-30	11	22.0%	39	78.0%	
	30-40	2	10.0%	18	90.0%	
	more than 40	2	100.0%	0	0.0%	
Residence	Bahri	3	12.0%	22	88.0%	0.008
	Khartoum	8	57.1%	6	42.9%	
	Omdurman	3	33.3%	6	66.7%	
	other	5	16.1%	26	83.9%	
Educational level	Illiterate	0	0.0%	5	100.0%	0.105
	primary	3	11.5%	23	88.5%	
	secondary	7	36.8%	12	63.2%	
	university	2	15.4%	11	84.6%	
Occupation	house wife	16	25.0%	48	75.0%	0.244
	working woman	1	9.1%	10	90.9%	

Table 6: Association between postpartum mental disorder type and duration of marriage and previous chronic conditions and treatments.

		Diagnosis				P. value
		Depression		Psychosis		
		Count	Row N %	Count	Row N %	
Duration ofmarriage	months	1	33.3%	2	66.7%	0.710
	years	17	23.9%	54	76.1%	
Chronic condition	NO	16	21.9%	57	78.1%	0.597
	OTHER	0	0.0%	1	100.0%	
History ofsurgery	No	16	21.9%	57	78.1%	0.353
	Yes	2	40.0%	3	60.0%	
chronic medication	no	17	22.4%	59	77.6%	0.449
	yes	0	0.0%	2	100.0%	

Table 7: Association between postpartum mental disorder type and to parity, abortion, mode of delivery and medical condition of baby.

		Diagnosis				P. value
		Depression		Psychosis		
		Count	Row N %	Count	Row N %	
Menarche date	12-16	5	31.3%	11	68.8%	
Parity	1-2	8	24.2%	25	75.8%	0.917
	3-5	7	24.1%	22	75.9%	
	more than 5	1	16.7%	5	83.3%	
History of abortion	No	16	27.1%	43	72.9%	0.179
	Yes	0	0.0%	5	100.0%	
Mood of delivery	normal vaginal	14	23.3%	46	76.7%	0.385
	Operational	3	37.5%	5	62.5%	
Complications of delivery	No	17	25.8%	49	74.2%	0.275
	yes	1	10.0%	9	90.0%	
Medical condition of current baby	abnormal	0	0.0%	6	100.0%	0.141
	Normal	19	27.1%	51	72.9%	

Table 8: Association between postpartum mental disorder type and past and family history of mental disorder.

		Diagnosis				P. value
		Depression		Psychosis		
		Count	Row N %	Count	Row N %	
Family history of similar condition	No	15	22.7%	51	77.3%	0.507
	yes	1	12.5%	7	87.5%	
Family history of mental illness	No	13	29.5%	31	70.5%	0.159
	Yes	5	15.6%	27	84.4%	
Personality	active	1	4.3%	22	95.7%	0.030
	calm	16	32.0%	34	68.0%	
	normal	1	16.7%	5	83.3%	
History of victimization	No	17	25.4%	50	74.6%	0.197
	Yes	0	0.0%	5	100.0%	
pervious history of mental illness	No	13	25.5%	38	74.5%	0.351
	Yes	4	16.0%	21	84.0%	
if yes, the duration	months	1	16.7%	5	83.3%	0.724
	weeks	1	25.0%	3	75.0%	
	years	1	9.1%	10	90.9%	
Treatment of previous status	no	0	0.0%	7	100.0%	0.203
	yes	3	20.0%	12	80.0%	

Table 9: Association between postpartum mental disorder type and degree of risk, severity of symptoms and treatment.

		Diagnosis				P. value
		Depression		Psychosis		
		Count	Row N %	Count	Row N %	
Degree of her risk	Homicidal	0	0.0%	3	100.0%	0.534
	no	16	23.2%	53	76.8%	
	suicidal	2	33.3%	4	66.7%	
Severity of symptoms	mild	5	33.3%	10	66.7%	0.173
	moderate	11	25.6%	32	74.4%	
	severe	2	9.1%	20	90.9%	
Treatment	Drugs	18	22.8%	61	77.2%	0.370
	Others	1	50.0%	1	50.0%	

Table 10: Association between medical condition of current baby and diagnosis, degree of risk and severity of symptoms.

		Medical condition of current baby		P. value
		abnormal	Normal	
Diagnosis	Depression	0	19	0.141
		0.0%	100.0%	
	Psychosis	6	51	
		10.5%	89.5%	
Degree of her risk	no	6	58	0.632
		9.4%	90.6%	
	Homicidal	0	3	
		0.0%	100.0%	
	suicidal	0	6	
		0.0%	100.0%	
Severity of symptoms	mild	0	13	0.319
		0.0%	100.0%	
	moderate	3	38	
		7.3%	92.7%	
	severe	3	18	
		14.3%	85.7%	

Data was analyzed using the statistical package of social sciences (SPSS ver. 23). Descriptive analysis and chi square were performed for all demographic and risk factors. Association between demographic and risk factors and type of postpartum mental disorder was conducted using chi square. The test was considered significant; where the p. value was less than 0.05.

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Discussion

Postpartum depression in low-income countries in general has a wide base spread in the population, with a variety of causes and risk factors that might have played a major role in its development. According to the data analyzed previously, here are the major percentages of parameters that represents the possible causes and risk factors.

According to the age, 62.5% of the cases are aged between 20-30 years, the highest percentage indicates the prevalence in young women. Also, the majority of the cases had only primary school education 41.3% which reflects that lowers levels of education increase the risk. Housewives with longer years of marriage are dominant factors at 85.3%, and 95.9% respectively. Also, the parity number that is more than 2 children is about 48.5% to 42.6%. Only 7.8% of the cases have a history of abortion. Also, in the majority of the cases, 88.2% had a normal vaginal delivery without complications.

The most important factors are the history of mental illness of the patients themselves or their families, 42.1% of the cases have a Family history of mental illness of the same condition or other disorder. regarding the cases themselves 32.9% have a previous history of mental illness 52.4% of them were for years and 28.6% for months and 19% for weeks, with 31.8% of them haven't undergone treatment of previous status. Regarding the status of the current cases, 6.9% of them have a History of victimization either from their husbands or other family members. The majority of the cases have Moderate symptoms 53.8%, while 27.5% were Severe. The risk of patients was classified into homicidal at 3.8% and suicidal were 7.7%. The final diagnosis of the cases was psychosis 76.5% and only 23.5% was depression. Treatment by drugs only was about 97.5%.

There were other studies assessing postpartum depression in Sudan but no exact number of its prevalence was counted. Our study only targeted the cases in Taha Baashar hospital for the last 3 years.

Conclusion

The majority of causes and risk factors for postpartum depression mainly varied from having a history of mental illness or similar condition in the family or the cases themselves, also having young age, and the lack of proper education and occupations. History of victimization also plays a role. Recommendations were proper management of the previous conditions of mental illness, promote mental health awareness through social media with the assistance of the ministry of health organization, increase the acceptance of mental health counseling and therapy in the society with proper mental health education, support marriage counseling and provide a better environment for women by enhancing women education and occupation in the society. Limitations of the study were the data were only acquired from one hospital for the only last 3 years of the research data. With only applying the data found in hospital records, considering lacking few data and information.

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