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RESEARCH ARTICLE

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Postpartum depressive symptoms in women with female genital mutilation in Somalia

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ABSTRACT

Objectives: This study aimed to identify associated factors for postpartum depression (PPD) among women with female genital mutilation (FGM) in Somalia.

Methods: This was a cross-sectional study conducted between February and May 2021 in Somalia Mogadishu–Turkey Recep Tayyip Erdogan Training and Research Hospital, Mogadishu, Somalia. Mothers with any known chronic disease, or psychiatric disorders and who refused to participate were excluded from the study. The cutoff point for depression was defined as ≥ 13 points according to the Edinburgh Postnatal Depression Scale.

Results: Out of 446 postpartum mothers, 267 (59.9%) had increased depressive symptoms in the early postpartum period. PPD scale scores of mothers who were very poor were significantly higher depression scores than their counterparts ($p = .002$). Education level, place of residence, occupational status, number of children, type of FGM, and the presence of perineal tear did not differ significantly between depressed and non-depressed groups.

Conclusions: Women with FGM had increased depressive symptoms in the early postpartum period in Somalia. In addition, women who had lower income had higher PPD scores than their counterparts. Further studies are needed to develop a deeper understanding of the relationships between FGM and PPD and its causes.

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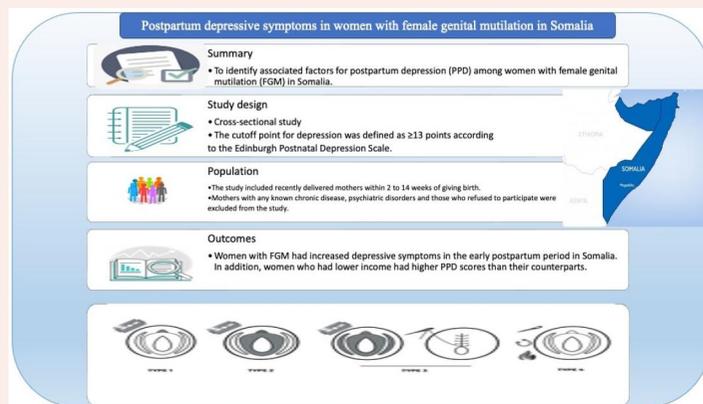
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Edinburgh Postnatal Depression Scale; FGM; Somalia

VISUAL ABSTRACT



Introduction

Postpartum depression (PPD) is a major public health concern, affecting both maternal and child health [1].

The prevalence of PPD varies between countries. Globally, the estimated prevalence of PPD ranges between 15% and 57% [2]. In low- and middle-income

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countries, the estimated prevalence of PPD is about 15%–28% [3–5]. Studies from South Africa showed the prevalence of PPD at 34.7% [6,7].

Over the past decades, there have been many research efforts to identify the risk factors for PPD. However, the exact causes of PPD have not yet been elucidated. Prior research found that PPD was associated with low socioeconomic status, unemployment, domestic violence, poor health care, lack of social support from partners, social isolation, intergenerational trauma, and interpersonal disputes [7,8]. Additional factors associated with PPD include some hormonal changes during the pregnancy and after childbirth, genetic factors, and birth-related trauma [9].

A population-based study indicated that the risk of PPD was more than 20 times higher for women with a depression history compared to those without [10]. Also, women who have undergone female genital mutilation (FGM) had high levels of posttraumatic stress disorder (PTSD), anxiety, and depression [9]. Given this related research, it is possible that women with FGM history may have increased rates of depression and anxiety, and therefore be at higher risk of PPD in the perinatal period [10].

FGM has no known health benefits and causes short- and long-term health consequences. A study investigating obstetric outcome of FGM involving 28,000 women in six African countries showed that FGM increased the risks of prolonged labor, postpartum hemorrhage, perineal trauma, and cesarean section [11]. Another study assessing the mental health status of women with FGM in 47 Senegalese women found that 30.4% of the women had PTSD, and 47.9% had other psychiatric syndromes, including memory problems [12]. Additionally, Reisela and Creighton conducted a literature review on long-term health consequences of FGM revealed that long-term health consequences that have been linked to FGM include infections, genital scarring, painful and prolonged menstrual cycles, urethral fistula and strictures, infertility, sexual function, PTSD, delay in the second stage of labor, infant resuscitation, stillbirth, increased rate of perineal tears and episiotomies [13]. There is a clear need for research into the long-term sequelae of FGM on pregnancy and physical and psychosexual health.

A comprehensive study by Chibber examining the obstetrical and psychological sequelae of FGM among 4800 pregnant women over a 4-year period found that FGM is associated with adverse materno-fetal outcome and psychiatric sequelae [14]. In contrast, a multicenter retrospective case-control study of 89 women in Australia who had migrated from Africa

where FGM is prevalent and had undergone FGM did not find a significant increase in the risk of antenatal depression among women with FGM [15]. Research to date, as documented here, provides information on mental health of pregnant women who had a history of FGM and migrated from Africa. To be the baseline for future research, to the best of our knowledge, this is the first comprehensive study to be reported from Somalia, where FGM is widespread, with 99% of women having been cut [16]. Therefore, the present research explores PPD and its associated factors among women with FGM in Somalia.

Methods

Study area and period

A facility-based cross-sectional study was conducted to evaluate the occurrence of and factors associated with PPD between February and May 2021 in Somalia Mogadishu–Turkey Recep Tayyip Erdogan Training and Research Hospital. The hospital is located in Mogadishu, the capital city of Somalia. It is the largest tertiary health facility providing referral-level and comprehensive health care to the population of Mogadishu and its catchment areas.

Study population

The study included recently delivered mothers within 2–14 weeks of giving birth. Mothers with any known chronic disease, or psychiatric disorders and those who refused to participate were excluded from the study. The study was in accordance with the tenets of the Declaration of Helsinki and was approved by the Ethics Committee of the hospital (Approval number: 09.09.2020-MSTH/4465).

Data collection

Data were collected by a trained Somalia female research assistant and supervised by the principal investigator. The principal investigator followed the data collection procedure plan. Face-to-face interviewer-administered method of data collection was employed using structured questionnaires. Verbal consent was obtained from all participants following the provision of the purpose, benefits, and possible risks of the study. Those who accepted to participate were guaranteed confidentiality and privacy.

Measurement

An interviewer-administered structured questionnaire consisting of two parts was used in the research. The first part contains items investigating sociodemographic, economic characteristics, and obstetrics history including age, education level, monthly income level, marital status, type of place of residence, type of FGM, weight, height, and perineal tear. The type of FGM is categorized according to the World Health Organization (WHO) classification system [17].

Edinburgh Postpartum Depression Scale (EPDS) has 10 items of questionnaires for the assessment of depressive symptoms during the postpartum period [18]. The EPDS is the self-reporting scale that measures the severity of depressive symptoms on a four-point (0–3) scale. Therefore, a total score ranges from 0 to 30 points, with a higher score indicating increased depressive symptoms. Most studies have used a cutoff point of 12 or 13 with high sensitivity and specificity to detect major depressive disorder in the postpartum period [19]. A cutoff point of 13 was used to determine the antenatal depression [12].

Dependent variable

Postpartum depression

Independent variables

Sociodemographic, economic factors, obstetric-related factors, type of FGM

Statistical analysis

Data were analyzed by the Statistical Package for Social Sciences (SPSS) version 25 for analysis. Descriptive statistics (median, range, frequency, percentage, mean \pm standard deviation) were used in the analysis of quantitative data. An independent sample *t*-test was used to compare quantitative data. One-way analysis of variance (ANOVA) was used to compare group variables, followed by Tukey's post-hoc test when indicated. Pearson correlation was used to assess associations between quantitative variables. The type I error rate was set at 0.05. A *p* value \leq .05 was considered to indicate statistical significance.

Results

Sociodemographic characteristics

Of the study population, 446 subjects completed and returned the questionnaire. The mean age of the women was 25.4 ± 5.5 years and the median age was 25 (15–40) years. The majority of women 419 (93.9%) were from urban settings, 356 (79.8%) were

Table 1. Sociodemographic characteristics of postpartum women in Mogadishu, Somalia, between February and May 2021 (*n* = 446).

Variables	Category	Mean \pm SD (median)
Age		25.4 \pm 5.5; 25 (15–40)
Variables	Category	<i>n</i> (%)
Educational status	No formal school	156 (35)
	Illiterate	8 (1.8)
	Primary (Grades 1–9)	145 (32.5)
	Secondary (Grades 10–12)	97 (21.7)
Type of place of residence	Tertiary (college/university)	40 (9)
	Rural	15 (3.4)
	Urban	419 (93.9)
Occupational status	IDP camp	12 (2.7)
	Daily laborer	33 (7.4)
	Governmental employee	16 (3.6)
	Housewife	356 (79.8)
	Private employee	13 (2.9)
Husband education	Student	28 (6.3)
	No formal school	113 (25.3)
	Illiterate	7 (1.6)
	Primary (Grades 1–9)	105 (23.5)
Husband occupation	Secondary (Grades 10–12)	138 (30.9)
	Tertiary (college/university)	83 (18.6)
	Unemployed	32 (7.2)
	Daily laborer	219 (49.1)
	Governmental employee	96 (21.5)
	Farmer/pastoralist	5 (1.1)
	Private employee	45 (10.1)
Monthly income	Merchant	49 (11)
	Very poor (<100 USD)	15 (3.4)
	Poor (100–300 USD)	175 (39.2)
	Middle (301–500 USD)	248 (55.6)
Number of children	High (501–1000 USD)	8 (1.8)
	<3	201 (45.1)
	\geq 3	245 (54.9)
FGM type	2	202 (45.3)
	3	236 (52.9)
	4	8 (1.8)
	Perineal tear	No
Yes		174 (39)

Values are presented as *n* (%). MUAC: middle upper arm circumference; IDP: internally displaced people; USD: United States dollar; FGM: female genital mutilation.

housewives, and 156 (35%) had attended no formal school. Regarding the husband's educational level and occupation, 113 (25.3%) had attended no formal school and 219 (49.1%) were daily laborers. Regarding the family monthly income from all sources, 248 (55.6%) of the participants belonged to middle socio-economic status (Table 1).

Obstetrics and clinical characteristics

Women were divided into two groups, one with the risk of depression, and the second group without the risk of depression. Accordingly, out of 446 postpartum mothers who participated in the study, 267 (59.9%) had developed PPD, and 179 (40.1%) did not develop PPD. Two hundred forty-five (54.9%) of the participants had three or fewer children. The percentages of women with FGM Types II, III, and IV were 45.3%, 52.9%, and 1.8%, respectively. Sixty-one percent of

Table 2. Comparison of postpartum depression scale scores by sociodemographic and economic characteristics in Mogadishu, Somalia, between February and May 2021 ($n = 446$).

Variables	Women with the risk of depression (%)	Women without the risk of depression (%)	p -value
Educational status			
No formal school	102 (65.4)	54 (34.6)	.128
Illiterate	2 (25)	6 (75)	
Primary (Grades 1–9)	86 (59.3)	59 (40.7)	
Secondary (Grades 10–12)	53 (54.6)	44 (45.4)	
Tertiary (college/university)	24 (60)	16 (40)	
Place of residence			
Rural	5 (33.3)	10 (66.7)	.061
Urban	253 (60.4)	166 (39.6)	
IDP	9 (75)	3 (25)	
Occupation			
Daily laborer	22 (66.7)	11 (33.3)	.685
Governmental employee	11 (68.8)	5 (31.3)	
Housewife	212 (59.6)	144 (40.4)	
Private employee	6 (46.2)	7 (53.8)	
Student	16 (57.1)	12 (42.9)	
Husband education			
No formal school	70 (61.9)	43 (38.1)	.060
Illiterate	2 (28.6)	5 (71.4)	
Primary (Grades 1–9)	70 (66.7)	35 (33.3)	
Secondary (Grades 10–12)	72 (52.2)	66 (47.8)	
Tertiary (college/university)	53 (63.9)	30 (36.1)	
Husband occupation			
Unemployed	15 (46.9)	17 (53.1)	.222
Daily laborer	133 (60.7)	86 (39.3)	
Governmental employee	53 (55.2)	43 (44.8)	
Farmer/pastoralist	2 (40)	3 (60)	
Private employee	32 (71.1)	13 (28.9)	
Merchant	32 (65.3)	17 (34.7)	
Monthly income			
Very poor (<100 USD)	6 (40)	9 (60)	.002*
Poor (100–300 USD)	121 (69.1)	54 (30.9)	
Middle (301–500 USD)	138 (55.6)	110 (44.4)	
High (501–1000 USD)	2 (25)	6 (75)	
Number of children			
<3	113 (56.2)	88 (43.8)	.155
≥3	154 (62.9)	91 (37.1)	
FGM type			
2	125 (61.9)	77 (38.1)	.621
3	138 (58.5)	98 (41.5)	
4	4 (50)	4 (50)	
Perineal tear			
No	154 (56.6)	118 (43.4)	.080
Yes	113 (64.9)	61 (35.1)	

IDP: internally displaced people; USD: United States dollar; FGM: female genital mutilation.

women had experienced a perineal tear in the current delivery (Table 1).

Women who belong to a very poor level of economic status had the highest depression scores than those of the other groups. Education level, place of residence, occupational status, number of children, type of FGM, and the presence of perineal tear did not differ significantly between depressed and non-depressed groups (Table 2).

Discussion

FGM is a traditional practice that negatively affects women's physical and mental health, and it is still widely practiced in Somalia [16]. Because of this procedure, girls and women deal with serious health problems such as pain, dyspareunia, infertility, anxiety,

and depression for the rest of their lives [9,20,21]. This study found that about 60% of mothers had increased depressive symptoms in the early postpartum period. Another important finding was that the PPD scale scores of mothers who were very poor were significantly higher depression scores than their counterparts.

PPD is associated with life stress events (socioeconomic factors), physical and emotional demands of childbearing, and changes in hormones after delivery [22]. Food insecurity [23], perinatal infections, poor rural living conditions, and violence against women are more common in low- and middle-income countries than in high-income countries [24,25]. Because of these stressful factors, PPD rates are much higher in low- and middle-income countries [26]. A systematic review of studies from 56 countries showed that the

prevalence of PPD at 17.7% [27]. Other systematic reviews and meta-analyses were conducted in India at 22% [28] and in Iran at 25.3% [29]. These results from both studies were significantly higher than those achieved by Pearlstein et al. in Denmark by 15% [30].

Exposure to childhood trauma appears to serve a role in the development of postpartum depressive symptoms [31]. Previous studies in this vein have explored the relationship between FGM, a traumatic childhood experience, and antenatal depression [22]. Our study only investigated the relationship between variables connected to women and PPD, not considering the role of that relationships with history of trauma in influencing the mothers' mental health. An important direction for future research would be to better understand the relation between childhood trauma such as FGM and PPD.

The results of the study did not show any differences in PPD scores between women living in rural areas and in urban areas or internally displaced people camps. Similarly, the study conducted in Eritrea found no significant differences in terms of PPD development between the urban and rural areas [32]. However, a study from North West Ethiopia reported that antenatal depression was seven times higher among women living in urban areas than those living in rural areas [33]. One of our findings was that mothers who were very poor had significantly higher depression scores than their counterparts. Consistent with our study findings, several studies reported that a decrease in income levels was inversely related to the rates of PPD [34–36].

FGM is a traditional practice rooted in the cultures and beliefs of the communities, and one of the reasons for practicing is to prevent premarital sexual intercourse and protect virginity [37]. Many studies are showing that the PPD rate is much higher in individuals with a history of depression and anxiety [10,38]. FGM itself has been shown to be a cause of anxiety and depression [39–41]. As seen in our study, approximately 60% of women had developed postnatal depression, and almost every woman who participated had FGM. In the present study, the PPD rate was higher than in studies conducted in many low-income countries (Ethiopia 22.4% [41], Southern India 12% [42], Sudan 9.2% [43], Zimbabwe 33% [44], Nigeria 10.7%–22.9% [45]) and this leads us to think that FGM is an important factor in the development of PPD.

Some methodological limitations should be taken into consideration when interpreting the findings. Firstly, the cross-sectional nature of the study renders it difficult to draw any clear conclusions regarding whether the depressive symptoms of the patients

started before birth or not. Another challenge of the current study is that patients may not provide answers that accurately reflect their true feelings and are therefore subject to the limitations of self-report bias [46]. A limitation of the present study is that PPD was assessed in the early postpartum period. An important direction for future research would be to extend this study to a longer period of time, for instance, 4–6 months of the child's life. Although our data are valuable in terms of capturing the psychological distress triggered by childhood trauma. Further studies regarding the relationship between childhood trauma and postpartum mental health would be worthwhile. It is necessary to underline that the number of women with FGM IV was lower compared to the number of women with FGM II and III. Further studies with larger samples are needed to confirm our findings. Notwithstanding these limitations, this study represents the first comprehensive examination of PPD in Somalia. Additionally, this paper provides valuable insights into the growing body of literature on PPD and its association with FGM types and guides both practitioners and policy-makers.

In conclusion, this study indicated that PPD is highly prevalent among women who have undergone FGM in Somalia. It was observed that women with FGM had increased depressive symptoms in the early postpartum period in Somalia. In addition, women who had lower income had higher PPD scores than their counterparts. Further studies are needed to develop a deeper understanding of the relationships between FGM and PPD and its causes.

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Ethical approval

Ethical approval for this study was provided by the Somalia Mogadishu–Turkey Recep Tayyip Erdogan Training and Research Hospital Ethics Committee (approval number: 09.09.2020-MSTH/4465). The database management is in accordance with privacy legislation and the presented study is in accordance with the ethical principle of the Declaration of Helsinki.

Author contributions

OO: participated in the study design, data collection, interpretation of findings, and drafting of the manuscript. EK: participated in study design, interpretation of findings, and

drafting of the manuscript. KNB: participated in the data analysis and the interpretation of findings. HHE: participated in the interpretation of findings and drafting of the manuscript. MMO: participated in the data collection and the interpretation of findings. All authors participated in the review of the final manuscript. All authors approved the manuscript.

Disclosure statement

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Data availability statement

The dataset used and/or analyzed in the study is available from the corresponding author upon reasonable request.

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