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Risk Factors Associated with Depression and Anxiety among Perinatal Teenage Girls Accessing Maternal Child Health Services in Nairobi County, Kenya

Lunar Odawa^{1*}, Stella Nyagwencha¹, Michael Kihara & Darius Nyamai²

¹ United States International University – Africa, P. O. Box 49773-00100, Nairobi, Kenya.

² Nairobi City County Government, P. O. Box 45844 – 00100, Nairobi, Kenya.

*Author for Correspondence ORCID ID: <https://orcid.org/0000-0001-6668-2225>; Email: lunar.odawa@gmail.com

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*Perinatal Teenage Girls,
Pregnancy,
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The prevalence of depression and anxiety symptoms is higher in teenage perinatal girls compared to adult mothers. The aim of this study was to investigate the risk factors for depression and anxiety symptoms in perinatal teenage girls across a sectional study with a sample of 175 perinatal adolescent girls selected by purposive sampling. Beck's Depression Inventory II (BDI-II) and Beck's Anxiety Inventory (BAI) were utilized, and Uni-ANOVA and T-test analyses were conducted. Statistical Package for Social Sciences SPSS (SPSS®) Version 28 software was used during data analysis. 70.9% of the participants had depression symptoms (BDI-II score range 14-63), while 33.7% had anxiety symptoms (BAI score range 8-63). Pregnant teenage girls had significantly higher depression scores compared to the postnatal girls at $p = 0.002$ and also higher anxiety levels in comparison to their postnatal counterparts ($p = 0.005$). The pregnant girls who had never given birth had higher anxiety scores compared to those who had previously given birth ($p = 0.011$). Participants with a history of sexual abuse had significantly higher depression and anxiety scores as compared to those who had not ($p = 0.002$). Underlying medical conditions indicated a higher risk for perinatal anxiety, while employment of a caregiver was a protective factor. The symptoms of depression and anxiety are relatively higher during pregnancy among perinatal teenage girls compared to those in the postnatal period. Factors associated with these two disorders are history of sexual abuse, underlying medical condition, first-time pregnancy and unemployment of the caregiver. The study recommends that the government through the Ministry of Health needs to mobilize comprehensive psycho-social support for perinatal girls to enable them to effectively cope with the challenges occasioned by early motherhood and prevent complications resulting from severe levels of anxiety and depression. There is a need for sensitization of stakeholders and community

members about the challenges that perinatal teenage mothers go through and provide psychosocial support in adolescent-friendly facilities.

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INTRODUCTION

The prevalence of depression and anxiety symptoms is higher in teenage perinatal girls compared to adult mothers [1,2]. Studies have established a significantly elevated prevalence of teenage perinatal depression to the levels of 43% [3] and anxiety at 13.6 % [2]. In a study conducted in Nairobi, Kenya, 32.9% of pregnant teenage girls aged 15 – 18 had depression, and some of the predictors were identified as the absence of social support and having experienced a stressful life event, among other factors [4]. A variety of challenges, including exposure to stigma and violence perpetuated verbally and physically, predispose perinatal teenage girls to anxiety and depression disorders [5]. Additionally, they commonly experience inadequate healthcare access, lack of emotional support, and social discrimination, and these factors contribute to the risk of developing mental health disorders such as depression and anxiety [4]. Loneliness, sexual violence, poverty, financial distress and homelessness cause high stress levels and consequent risk of developing anxiety and

depressive symptoms [6]. One study also found that depressive symptoms in teenage pregnant girls are associated with factors like being in school while pregnant, intimate partner violence and use of substances in the family [3]. Adolescent pregnancy and motherhood are linked to stigma, discrimination, gender inequities and derailment of educational aspirations [7], which result in an increased risk of suffering from depression and anxiety disorders.

Several studies have identified other risk factors for perinatal depression during pregnancy, including less education [8], lower socio-economic status [9], unintended pregnancy [10], intimate partner violence [11,12] and lack of social support [4]. Hodgkinson and colleagues [7] further highlighted that mental health problems occurring in teenage mothers are often due to the transition to motherhood and parenting demands of financial responsibilities and commitment. The symptoms of depression and anxiety arise during the transition period to motherhood and are associated with feelings of loss and frustration [13]. A variety of other risk factors, like the history of mental illness

and psychological factors resulting from stressful life events and conflicts with partners are likely to contribute to perinatal mental disorders [14,15]. Perinatal teenage girls experience low self-esteem, financial difficulties, lacking of moral and material support and stigmatization from the health care workers when seeking services and are at an increased risk of developing symptoms of anxiety [16].

Diagnosis of HIV during the perinatal period is also associated with depression [4]. In a study that focused on depression and underlying health conditions, researchers examined mental health in the context of adolescent pregnancy and Human Immunodeficiency Virus (HIV) [17]. The study identified that depressive symptomatology was extremely high in the range of 92.9% for pregnant adolescents with HIV. These findings underpin the strong association between depression and physical underlying health conditions.

The current study investigated the risk factors associated with depression and anxiety in the context of teenage perinatal girls attending the Maternal Child Health clinic in selected Nairobi healthcare facilities. The findings will contribute to the existing literature on the evidence of risk factors for these common mental health disorders, especially in the context of stressors in the urban teenage girl population. The findings will present an opportunity for stakeholders to have a deeper understanding of the specific issues that predispose teenage perinatal girls to perinatal depression and anxiety. This could form a basis for mitigation and development of multilevel prevention approaches from different stakeholders.

METHODS

This was a cross-sectional study that employed a quantitative method. A non-probability purposive sampling technique was used to select the eligible participants in four public Maternal Child Health (MCH) facilities in Nairobi County. The facilities were Lang'ata Health Centre, Pumwani Maternity

Hospital, Mama Lucy Kibaki Hospital and Kangemi Health Centre. These facilities are in the vicinity of multicultural, multi-ethnic informal settlements of Nairobi and are highly representative of the urban adolescent population. The sample size was 175 perinatal teenage girls between the age of 10-19 who were either pregnant or had given birth in the past year. The sample size was derived using Fisher's formula with a precision/absolute error of 5%, type 1 error of 5% and assuming the prevalence of comorbid depression and anxiety to be 50% because of lack of prior studies in this population subset. Applying a finite population correction of 320 (Total number of participants in teenage mothers rescue centres) we aimed to recruit 175 respondents.

Research Instruments

A researcher-formulated questionnaire was used to collect demographic information, including age, highest level of education, pregnancy status, gestational age, parity, marital status, source of income, substance use, history of sexual abuse, source of support and socio-economic information about parent/guardian/spouse.

Beck's Depression Inventory-II (BDI-II), which is a self-administered 21-question tool with a total cumulative score of sixty-three (63) and the lowest score of zero (0), was utilized. The cut-off point for Presence of symptoms of depression was a score of 14-63. The Beck Anxiety Inventory (BAI), a self-reporting tool with a total of 21 questions, was used to assess the severity of anxiety symptoms. A score of 8 – 63 was suggestive of anxiety symptoms.

Cleaning of the data was conducted to clear the duplicates and clean the misspelled words. Descriptive statistics was used to establish the prevalence and factors associated with depression and anxiety symptoms. Statistical Package for Social Sciences SPSS (SPSS®) Version 28 software was utilized during the analysis process. Before engaging in the work, the researcher had secured ethical clearance from the United States

International University-Africa (USIU-Africa) Institutional Review Board (IRB), the National Council for Science, Technology and Innovation (NACOSTI) and the Nairobi County Health Department.

RESULTS

Table 1 indicates that the majority of the study participants were single young girls who lived with

their parents (60%), while the majority had given birth previously (65.8%). A significant 81.7 % of the respondents had attained secondary school education, and only 33.7% were still continuing with education during the period of conducting the research. 10.9% of the respondents had an underlying health condition, 5.7% of the respondents had a history of sexual abuse and 2.9% were using a substance.

Table 1: Socio-demographic Characteristics of the Respondents

Variable	Category	Freq. (N=175)	%
Facility	Kangemi MCH	35	20.0
	Langata MCH	34	19.4
	Mama Lucy Kibaki Hospital	55	31.4
	Pumwani	51	29.1
Age	15	2	1.1
	16	8	4.6
	17	30	17.1
	18	60	34.3
	19	75	42.9
Persons Living with	Alone	15	8.6
	Spouse/ Husband	28	16.0
	Parents/ Guardian	105	60.0
	Other Family Members	27	15.4
Marital Status	Single/ Separated	132	79.5
	Married/ Living Together	34	20.5
	Refused	9	
Currently Pregnant	Yes	72	41.1
	No	103	58.9
Gestational Age (N=72)	First Trimester	19	26.4
	Second Trimester	32	44.4
	Third Trimester	21	29.2
Ever Given Birth	Yes	115	65.7
	No	60	34.3
Number of Children	0	60	34.3
	1	106	60.6
	2	8	4.6
	3	1	0.6
Highest Level of Education	None	4	2.3
	Primary	28	16.0
	Secondary	143	81.7
Currently in School	No	116	66.3
	Yes	59	33.7
Religion	None	7	4.0
	Christian	140	80.0
	Muslim	28	16.0
Any Underlying Health Condition	No	156	89.1
	Yes	19	10.9
Substance use	No	170	97.1
	Yes	5	2.9
Parents Alive	Yes	163	93.1
	No	12	6.9

Variable	Category	Freq. (N=175)	%
Marital status of the parents	Married	73	46.8
	Separated	76	48.7
	Divorced	7	4.5
	Refused/ NA/ DK	19	
Source of income of the parents	Employed	30	19.0
	Self-employed	80	50.6
	Jobless	48	30.4
	Refused/ NA/ DK	17	
Current Support	Parent	100	57.1
	Father of the child	48	27.4
	Friends	5	2.9
	Other	22	12.6
	No	128	73.1
History of Sexual Abuse	Yes	10	5.7
	No	165	94.3

The prevalence of symptoms of depression and anxiety in this study population was 70.9% and 33.7%, respectively, based on the scores of BDI-II and BAI thresholds.

Table 2: Prevalence of Depression and Anxiety

Scores	Category	Frequency	Percentage
14-63 (BDI Score)	Depressive symptoms	124	70.9
8-63 (BAI Score)	Anxiety symptoms	59	33.7

Table 3 presents the socio-demographic and other factors associated with depression (Uni -ANOVA and T-test analysis). Participants who were pregnant had significantly higher depression scores as compared to those who were not pregnant ($p = 0.002$). Those who had ever given birth had significantly higher depression scores as compared

to those who had not ($p = 0.029$). Participants who had a history of sexual abuse had significantly higher depression scores as compared to those who had not ($p = 0.029$). Participants who had their parents as their main source of support had higher depression levels ($p = 0.036$) than those who were supported by other people.

Table 3: Risk Factors Associated with Depression

Variable	Category	N	Mean	SD	p-value
Facility ^a	Kangemi	35	25.2	9.3	0.057
	Langata	34	22.4	13.9	
	Mama Lucy	55	20.7	11.3	
	Pumwani	51	18.2	12.5	
Persons Living with ^a	Alone	15	27.9	12.9	0.058
	Spouse/ Husband	28	20.5	12.2	
	Parents/ Guardian	105	19.8	11.5	
	Other Family Members	27	23.8	12.4	
Marital Status ^b	Single/ Separated	132	21.7	12.0	0.434
	Married	34	19.9	11.3	
Currently Pregnant ^b	No	103	18.9	11.7	0.002
	Yes	72	24.5	11.7	
Ever Given Birth ^b	No	60	23.9	11.3	0.029
	Yes	115	19.8	12.1	
Highest Level of Education ^a	None	4	14.5	16.6	0.240
	Primary	28	18.8	11.3	
	Secondary	143	21.9	12.0	
Currently in School ^b	No	116	20.8	12.6	0.525

Variable	Category	N	Mean	SD	p-value
Religion ^a	Yes	59	22.0	10.8	0.296
	None	7	17.1	12.1	
	Christian	140	21.9	11.6	
	Muslim	28	18.8	13.9	
Any Underlying Health Condition ^b	No	156	20.8	11.7	0.175
	Yes	19	24.7	14.1	
Number of Siblings ^a	0-3	84	20.2	11.9	0.246
	4-5	71	21.3	12.2	
	7+	20	25.2	11.4	
Parents Alive ^b	yes	163	21.0	12.2	0.377
	No	12	24.2	9.3	
Marital status of the parents ^a	Married	73	20.4	12.2	0.965
	Separated	76	20.9	12.1	
	Divorced	7	20.1	9.8	
Parents have Income from Employment ^b	Yes	110	19.3	11.9	0.005
	No	65	24.5	11.6	
Education Level of the Mother ^a	Primary	75	22.3	10.9	0.531
	Secondary	41	20.1	10.5	
	Tertiary	6	19.5	15.8	
Education Level of the Father ^a	Primary	35	23.3	11.6	0.808
	Secondary	51	21.8	10.5	
	Tertiary	9	23.2	9.0	
Current Support ^a	Parent	100	20.9	12.0	0.036
	Father of the child	48	18.8	11.4	
	Friends	5	31.6	12.7	
	Other	22	25.4	11.4	
Ever used Contraceptives ^b	yes	47	22.2	12.0	0.521
	no	128	20.9	12.0	
History of Sexual Abuse ^b	No	165	20.5	11.8	0.002
	Yes	10	32.6	10.1	

Note: ^a-Uni-Anova; ⁱindependent Samples t-test

Table 4 presents the risk factors associated with anxiety symptoms. Participants who were pregnant had significantly higher anxiety scores as compared to those who were not pregnant ($p = 0.005$). Respondents who had never given birth had significantly higher anxiety scores as compared to those who had ($p = 0.011$). Participants who had underlying medical conditions had significantly higher anxiety scores as compared to those who had

no underlying medical condition ($p = 0.031$). Participants who had parents who were either employed or self-employed had significantly lower anxiety scores as compared to those whose parents were jobless ($p = 0.016$). Participants who had a history of sexual abuse had significantly higher anxiety scores as compared to those who had not ($p = 0.002$).

Table 4: Risk Factors Associated with Anxiety

Variable	Category	N	Mean	SD	p-value
Facility ^a	Kangemi	35	20.4	10.2	0.245
	Langata	34	16.8	12.5	
	Mama Lucy	55	18.0	12.9	
	Pumwani	51	15.4	10.2	
Persons Living with ^a	Alone	15	21.0	12.2	0.555
	Spouse/ Husband	28	18.4	11.4	

Variable	Category	N	Mean	SD	p-value
Marital Status ^b	Parents/ Guardian	105	17.1	11.2	0.337
	Other Family Members	27	16.0	13.4	
	Single/ Separated	132	18.0	11.6	
	Married/ Living Together	34	15.9	11.7	
Currently Pregnant ^b	No	103	15.4	10.8	0.005
	Yes	72	20.4	12.2	
Ever Given Birth ^b	No	60	20.5	12.0	0.011
	Yes	115	15.9	11.1	
Highest Level of Education ^a	None	4	8.0	9.8	0.133
	Primary	28	20.0	13.5	
	Secondary	143	17.2	11.2	
Currently in School ^b	No	116	17.1	12.0	0.537
	Yes	59	18.2	10.9	
Religion ^a	None	7	17.9	10.6	0.631
	Christian	140	17.8	11.7	
	Muslim	28	15.5	11.6	
Any Underlying Health Condition ^b	No	156	16.8	11.4	0.031
	Yes	19	22.9	12.5	
Number of Siblings ^a	0-3	84	16.6	12.2	0.632
	4-5	71	18.2	11.6	
	7+	20	18.7	9.3	
Parents Alive ^b	yes	163	17.3	11.4	0.500
	No	12	19.7	14.2	
Marital status of the parents ^a	Married	73	16.9	11.3	0.951
	Separated	76	17.1	11.5	
	Divorced	7	15.7	13.4	
Parents have Income from Employment ^b	Yes	110	15.9	10.2	0.016
	No	65	20.2	13.3	
Education Level of the Mother ^a	Primary	75	18.4	10.9	0.206
	Secondary	41	15.7	10.6	
	Tertiary	6	23.5	16.6	
Education Level of the Father ^a	Primary	35	19.2	11.7	0.334
	Secondary	51	16.4	11.0	
	Tertiary	9	21.2	6.9	
Current Support ^a	Parent	100	17.1	11.4	0.106
	Father of the child	48	16.6	11.8	
	Friends	5	29.8	13.2	
	Other	22	18.3	11.1	
Ever used Contraceptives ^b	yes	47	18.7	12.8	0.390
	no	128	17.0	11.2	
History of Sexual Abuse ^b	No	165	16.8	11.1	0.002
	Yes	10	28.3	14.9	

Note: ^aUni-Anova; ⁱndependent Samples t-test

DISCUSSION

This study identified a variety of risk factors that are associated with the high prevalence of teenage

perinatal symptoms of depression and anxiety. The symptoms of depression and anxiety were significantly higher in pregnant teenage girls compared to the postnatal participants. This finding

concur with previous literature, which established that depressive symptoms are more common during pregnancy than after childbirth [5,18–20]. Further, unwanted pregnancy increases the risk of depressive symptoms [21].

This study established that teenage girls who had a previous history of delivery were less likely to suffer from anxiety symptoms compared to first-time perinatal teenage girls. A previous study also concluded that anxiety was more likely to be experienced during the first time pregnancy compared to subsequent pregnancies [22]. That study suggested providing more information and support during the first pregnancy to reduce the risk of anxiety symptoms. In contrast to the findings about anxiety symptoms, this current study identified that the risk of depression symptoms was elevated in teenage girls who had previously given birth. This corroborates evidence from a previous study that found that depression symptoms were more likely to occur in teenage girls with a previous history of pregnancy and lower age than those who had never been pregnant [23]. Teenage perinatal girls whose parents were employed had fewer anxiety symptoms compared to the girls whose parents were jobless. This could probably be associated with the financial support provided by the parents who are earning a living from employment. Evidently, family support plays an important role in addressing depression and anxiety symptoms in perinatal teenage girls [24,25]. Support from the family, especially the parents, is a proactive factor against depression and anxiety symptoms. The amount of social support available within the home environment potentially protects mothers from developing depression [26]. Therefore, risk factors such as poor support, stressful life events and conflicts with partners can make perinatal teenage adolescent girls more susceptible to depression and anxiety [15].

The findings of this study also identified that underlying medical conditions increased the risk of anxiety symptoms. This is in concurrence with

different studies that have documented a strong relationship between depression and underlying physical conditions [17,27]. Teenage girls are exposed to multiple risk factors for depression as their adverse life circumstances commonly include poverty, lack of family structure, low level of education that predispose them to HIV and AIDS and elevated risk of depression [4,28,29]. It is, therefore, imperative for mental health specialists to assess for physical conditions and work closely with other health care providers to provide holistic care.

A history of sexual abuse was associated with an increased risk of depression and anxiety symptoms, as is evidently documented in previous studies [30–32]. Teenage mothers are more prone to many challenging circumstances, including sexual and physical abuse and consequently, the symptoms of depression in this population are likely to be elevated than in older mothers [33].

CONCLUSION

The high prevalence of depression and anxiety symptoms in perinatal teenage girls is a concern that should be effectively addressed at the community and health facility levels. Therefore, it is imperative to identify the risk factors and develop robust preventive mechanisms. The factors associated with symptoms of anxiety and depression were history of sexual abuse, underlying medical condition, first-time pregnancy and unemployment of the caregiver. The risk of depression and anxiety symptoms is higher during pregnancy than post-delivery, and therefore, more focus should be directed to antenatal teenage girls.

Conflict of Interest

The authors have declared no conflict of interest

REFERENCE

- [1] Piyasil V. Anxiety and depression in teenage mothers: a comparative study. *J Med Assoc Thai.* = Chotmaihet Thangphaet. 1998;81(2):125–9.

- [2] Peter PJ, de Mola CL, de Matos MB, Coelho FM, Pinheiro KA, da Silva RA, et al. Association between perceived social support and anxiety in pregnant adolescents. *Brazilian J Psychiatry*. 2016;39:21–7.
- [3] Tele A, Kathono J, Mwaniga S, Nyongesa V, Yator O, Gachuno O, et al. Prevalence and risk factors associated with depression in pregnant adolescents in Nairobi, Kenya. *J Affect Disord Reports*. 2022;10:100424.
- [4] Osok J, Kigamwa P, Stoep A Vander, Huang KY, Kumar M. Depression and its psychosocial risk factors in pregnant Kenyan adolescents: a cross-sectional study in a community health Centre of Nairobi. *BMC Psychiatry*. 2018 Dec;18(1):136.
- [5] Govender D, Naidoo S, Taylor M. Antenatal and postpartum depression: prevalence and associated risk factors among adolescents in KwaZulu-Natal, South Africa. *Depress Res Treat*. 2020;2020.
- [6] Kumar M, Huang KY, Othieno C, Wamalwa D, Madeghe B, Osok J, et al. Adolescent pregnancy and challenges in Kenyan context: perspectives from multiple community stakeholders. *Glob Soc Welf*. 2018;5(1):11–27.
- [7] Hodgkinson S, Beers L, Southammakosane C, Lewin A. Addressing the mental health needs of pregnant and parenting adolescents. Vol. 133, *Pediatrics*. Am Acad Pediatrics; 2014. p. 114–22.
- [8] Ferri CP, Mitsuhiro SS, Barros MCM, Chalem E, Guinsburg R, Patel V, et al. The impact of maternal experience of violence and common mental disorders on neonatal outcomes: a survey of adolescent mothers in Sao Paulo, Brazil. *BMC Public Health*. 2007;7(1):209.
- [9] Leigh B, Milgrom J. Risk factors for antenatal depression, postnatal depression and parenting stress. *BMC Psychiatry*. 2008;8(1):24.
- [10] Bunevicius R, Kusminskas L, Bunevicius A, Nadisauskiene RJ, Jureniene K, Pop VJM. Psychosocial risk factors for depression during pregnancy. *Acta Obstet Gynecol Scand*. 2009;88(5):599–605.
- [11] Lindhorst T, Oxford M. The long-term effects of intimate partner violence on adolescent mothers' depressive symptoms. *Soc Sci Med*. 2008 Mar;66(6):1322–33.
- [12] Valentine JM, Rodriguez MA, Lapeyrouse LM, Zhang M. Recent intimate partner violence as a prenatal predictor of maternal depression in the first year postpartum among Latinas. *Arch Womens Ment Health*. 2010/11/04. 2011 Apr;14(2):135–43.
- [13] Hight N, Stevenson AL, Purtell C, Coe S. Qualitative insights into women's personal experiences of perinatal depression and anxiety. *Women and Birth*. 2014;27(3):179–84.
- [14] Biaggi A, Conroy S, Pawlby S, Pariante CM. Identifying the women at risk of antenatal anxiety and depression: a systematic review. *J Affect Disord*. 2016;191:62–77.
- [15] O'Hara MW, Wisner KL. Perinatal mental illness: definition, description and aetiology. *Best Pract Res Clin Obstet Gynaecol*. 2014;28(1):3–12.
- [16] Kaye DK. Negotiating the transition from adolescence to motherhood: Coping with prenatal and parenting stress in teenage mothers in Mulago hospital, Uganda. *BMC Public Health*. 2008;8(1):1–6.
- [17] Roberts KJ, Smith C, Cluver L, Toska E, Sherr L. Understanding mental health in the context of adolescent pregnancy and HIV in sub-Saharan Africa: a systematic review identifying a critical evidence gap. *AIDS Behav*. 2021;25(7):2094–107.
- [18] Evans J, Heron J, Francomb H, Oke S, Golding J. Cohort study of depressed mood

- during pregnancy and after childbirth. *Bmj*. 2001;323(7307):257–60.
- [19] Elrassas H, Taha GR, Soliman AEDM, Madbole SAEK, Mahmoud DAM. Prevalence and related factors of perinatal depression in Egyptian mothers. *Middle East Curr Psychiatry*. 2022;29(1):35.
- [20] Atif M, Halaki M, Raynes-Greenow C, Chow C. Perinatal depression in Pakistan: A systematic review and meta-analysis. *Birth*. 2021;48(2):149–63.
- [21] Dibaba Y, Fantahun M, Hindin MJ. The association of unwanted pregnancy and social support with depressive symptoms in pregnancy: evidence from rural Southwestern Ethiopia. *BMC Pregnancy Childbirth*. 2013;13(1):1–8.
- [22] Nakamura Y, Okada T, Morikawa M, Yamauchi A, Sato M, Ando M, et al. Perinatal depression and anxiety of primipara are higher than that of multipara in Japanese women. *Sci Rep*. 2020;10(1):17060.
- [23] Salazar-Pousada D, Arroyo D, Hidalgo L, Pérez-Lopez FR, Chedraui P. Depressive symptoms and resilience among pregnant adolescents: a case-control study. *Obstet Gynecol Int*. 2010;2010.
- [24] Bunting L, McAuley C. Research review: Teenage pregnancy and motherhood: The contribution of support. *Child Fam Soc Work*. 2004;9(2):207–15.
- [25] Ayamolowo SJ, Olajubu AO, Akintola FE. Perceived social support and depression among pregnant and child-rearing teenagers in Ile-Ife, Southwest Nigeria. *Afr J Midwifery Womens Health*. 2019;13(4):1–9.
- [26] Jones D, Letourneau N, Leger LD. Predictors of infant care competence among mothers with postpartum depression. *Clin Med Insights*. 2019;13:1179558119834910.
- [27] MacHale S. Managing depression in physical illness. *Adv Psychiatr Treat*. 2002;8(4):297–305.
- [28] van Heyningen T, Honikman S, Myer L, Onah MN, Field S, Tomlinson M. Prevalence and predictors of anxiety disorders amongst low-income pregnant women in urban South Africa: a cross-sectional study. *Arch Womens Ment Health*. 2017;20(6):765–75.
- [29] Mukangabire P, Moreland P, Kanazayire C, Rutayisire R, Nkurunziza A, Musengimana D, et al. Prevalence and Factors Related to Depression among Adolescents Living with HIV/AIDS, in Gasabo District, Rwanda. *Rwanda J Med Heal Sci*. 2021;4(1):37–52.
- [30] Chen LP, Murad MH, Paras ML, Colbenson KM, Sattler AL, Goranson EN, et al. Sexual abuse and lifetime diagnosis of psychiatric disorders: systematic review and meta-analysis. In: *Mayo Clinic proceedings*. Elsevier; 2010. p. 618–29.
- [31] Wosu AC, Gelaye B, Williams MA. History of childhood sexual abuse and risk of prenatal and postpartum depression or depressive symptoms: an epidemiologic review. *Arch Womens Ment Health*. 2015;18:659–71.
- [32] Belete H, Misgan E, Mihret MS. The effect of early childhood sexual abuse on mental health among postpartum women visiting public health facilities in Bahir Dar City, Ethiopia: Multicenter study. *Int J Womens Health*. 2020;1271–81.
- [33] Easterbrooks M, Kotake C, Raskin M, Bumgarner E. Patterns of depression among adolescent mothers: Resilience related to father support and home visiting program. *Am J Orthopsychiatry*. 2016;86(1):61.