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Research Article

The Subjective Impact of Diabetes in Pregnancy: A Qualitative Study

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Abstract

Objectives: To explore the impact of diabetes in pregnancy in pregnant women.

Design: Descriptive qualitative design.

Setting: Harare Maternity Hospital.

Participants: A purposive sample of 28 pregnant women aged 18 - 45 years.

Data Collection and Analysis: Four focus group discussions (FGDs), each with 7 participants, were held at a central hospital in Zimbabwe. Inclusion criteria were women with a diagnosis of diabetes in pregnancy, age from 18 to 49 years, and ability to speak Shona or English. Approval was obtained from respective ethical review boards. FGDs which were audiotaped followed a semi-structured questionnaire while detailed notes were taken during the interviews. Thematic analysis was done manually. The stages of thematic analysis followed were data organization, familiarization, transcription, coding, developing a thematic framework, applying codes to the thematic framework and interrelating and reporting.

Results: Findings revealed that diabetes in pregnancy has a multifaceted impact in women. Themes identified were: impact on health, socio-economic issues, the psychological burden of diabetes in pregnancy and poor self-efficacy.

Conclusions: There is need for comprehensive collaborative care of women with diabetes in pregnancy in view of the multi-faceted nature of both the disease and its subjective impact on affected individuals.

Keywords: *Diabetes; Pregnancy; Diabetes In Pregnancy; Gestational Diabetes; Impact*

Introduction

Gestational diabetes mellitus (GDM) refers to hyperglycemia with blood glucose values above normal but below those indicative of diabetes, arising in pregnancy [1]. The prevalence of GDM in Africa ranges from 1% to 14% depending on genetics, environment, screening and prevalence of type II diabetes mellitus in the population under study [2]. Studies conducted in Zimbabwe have reported a prevalence of diabetes in pregnancy of 8.8% [3] and GDM 6.6% [4]. Hyperglycemia in pregnancy is associated with significant morbidity and mortality. Zimbabwe has a high maternal mortality ratio of 651 per 100000 and non-communicable diseases (NCD)s are significant contributors.

Diabetes mellitus is associated with a myriad of perinatal complications affecting both the mother and the unborn child [5]. While a lot of studies have been done on epidemiology and associated complications of diabetes in pregnancy, very little attention has been given to

the subjective impact of diabetes in pregnancy in affected women in Zimbabwe. Involving these women will enable formulation of relevant policies in the care of women with diabetes while making them active participants in their own care. This enables realistic mutual goal setting and treatment targets that are achievable [6]. Though epidemiological studies on diabetes in pregnancy have been done in Zimbabwe [3,4], no research has been done to explore the impact of diabetes in pregnancy in the affected women. The purpose of this study, therefore, was to explore the subjective impact of diabetes in pregnancy in affected women at a central hospital in Harare, Zimbabwe.

Materials and Methods

This study utilised a descriptive qualitative design. The study was conducted at Harare Maternity Hospital. Four focus group discussions (FGD)s, each comprising seven women were conducted. The number of FGDs was determined by saturation. However, the number of participants per FGD was predetermined. Maximum variation purposive sampling was employed whereby participants who had exhibited very low and those who had exhibited very high adherence to therapy were selected. Permission to conduct the study was granted by the Medical Research Council of Zimbabwe, Joint Research Ethics committee and authorities at Harare Maternity Hospital. All participants gave informed consent and also gave permission to be audiotaped. It was also stressed that information from FGDs could not be divulged elsewhere. Initial interviews for demographic data were done separately for each participant prior to the FGD. Interviews were held in a private room. A semi structured interview guide was used and it had sections addressing burden of diabetes in pregnancy, challenges and possible solutions to the problems of diabetes in pregnancy. Interviews were audiotaped while detail notes were being taken by the moderators. Trustworthiness was ensured by observing credibility, transferability, dependability and confirmability. Thematic analysis was manually done to the data [7,8] while descriptive statistics were used to analyse demographic data. Thematic analysis comprised data organisation, familiarisation, transcription, coding, developing a thematic framework, indexing, displaying and reporting (interrelating and description of themes).

Results

Demographic Data

Table 1 presents demographic data.

Variable	Frequency	Percentage
Age in Years		
19 - 25	4	14.3
26 - 30	4	14.3
31 - 35	13	46.4
36 - 40	7	25.0
Type of Diabetes		
Type I	12	42.9
Type II	10	35.7
GDM	6	21.4
Marital status		
Married	27	96.4
Single	1	3.6
Employment status		
Employed	2	7.1
Unemployed	22	78.6
Self-employed	4	14.3
Monthly income		
< USD$ 481	26	92.9
≥USD$ 481	2	7.1
Level of education		
Primary level	4	14.3
Ordinary level	23	82.1
Tertiary level	1	3.6

Table 1: *Demographic variables.*

Themes as they emerged from FGDs

Table 2 presents themes as they emerged from FGDs

Theme	Categories	Excerpts
Impact on health	Diabetes (polyuria, polydipsia, polyphagia) Exacerbation of pregnancy symptoms (Nausea, vomiting, swelling, headache, dizziness) Poor eyesight Comorbidities especially hypertension, candidiasis	Diabetes is a very difficult disease. It affects my body is so many ways that people wont understand. I keep vomiting at 7 months of pregnancy and my blood pressure has also gone up and they keep telling me that my sugar is up (Age 33, Participant 7, FGD 2, type II DM)
Socio-economic issues	Lack of finances (scans, numerous tests, medications esp insulin, glucometers and glucose testing strips, hospitalisation, recommended diet, transport) Lack of social support (lack of knowledge, in-laws, husbands, communities, consultation of faith healers and herbalists, attending functions, jeering when trying to exercise on the streets, unsafe communities) Stigma Separation of families (infidelity) Unsupportive health care system	I was diabetic before this pregnancy but managing my sugar has suddenly become more expensive with this pregnancy. So far I have had 2 scans and the doctors keep ordering more tests. I honestly do not have the money (Age 22, Participant 2, FGD 4, type I DM) I stay with in laws and they just do not understand me when I try to cook my own food. They accuse me of being stingy yet I will just be following the correct diet (Age 33, Participant 2, FGD 1, GDM)
Psychological burden of diabetes in pregnancy	Constant fear of adverse pregnancy outcomes (Loss of pregnancies, Loss of offspring, birth of infants with malformations) Pressure to have more kids after loss a pregnancy or child Fear of stigmatisation (accusations of witchcraft, infidelity, demons)	I live in constant fear. This is my 7th pregnancy but I don't have a child. I have never carried a child to term. It frightens me whenever I think about it (Age 29, Participant 5, FGD 2, type I DM) My in-laws accused me of being demon possessed because my mother in-law also has sugar but does not require so much attention like me. The other time they took me to a shrine for cleansing and I collapsed while at the shrine because my sugar had fallen too low (Age 19, Participant 1, FGD 1, type I DM)
Poor self-efficacy	Too much information to comprehend in a short space of time Self-monitoring of blood glucose unrealistic Adhering to a strict diet Adhering to a physical activity plan Self-injections	I just can't do this. I can't prick myself more than 3 times a day. I don't even have the money to buy glucose testing strips. They say you eat according to the level of your blood sugar and exercise accordingly as well. This is just too much for me alone at home (Age 31, Participant 6, FGD 3, type II DM)

Table 2: *Themes, categories and excerpts from the FGDs.*

Discussion

Demographic data

Four FGDs each comprising 7 women were conducted. Majority participants were married. This presents an opportunity for male engagement in the care of women with diabetes in pregnancy. Husbands are potentially an essential source of financial, emotional and social support for their wives with diabetes in pregnancy. Spouses may provide social support to affirm healthy behaviours and social control to modify health behaviours in their partners' diabetes management [9]. This is even more relevant in this study where, majority were unemployed meaning they depended on their husbands for support. Financial barriers in the management of diabetes in pregnancy have been widely reported in literature [10-12].

Impact of diabetes in pregnancy

Impact on health

Participants cited diabetes symptoms, namely, polyuria, polydipsia, polyphagia and affecting their health. These are common clinical features of diabetes mellitus [13]. This was compounded by exacerbation of pregnancy symptoms such as nausea, vomiting, swelling, headache, dizziness and poor eyesight. Comorbidities especially hypertension, candidiasis were also frequently mentioned. Hypertensive disorders of pregnancy increase the risk for future cardiovascular events [14] and the incidence of hypertension complicating pregnancy is 40% to 45% in women pre-gestational diabetes mellitus (PGDM) [15]. Type I diabetes is more often associated with preeclampsia, and type II diabetes is linked to chronic hypertension [16]. A number of studies have reported presence of such comorbidities in diabetes in pregnancy [17-19]. Uncontrolled blood sugar in pregnancy is a major risk factor for candidiasis [20]. It is very vital, therefore, to adopt a comprehensive and collaborative approach in the care of women with diabetes in pregnancy.

Socio-economic issues

Women in this study cited that diabetes in pregnancy had socio-economic impact on them. Socio-economic issues mentioned were lack of finances, lack of social support, stigma, separation of families (imposed by prolonged hospitalisation in cases of uncontrolled hyperglycaemia) and an unsupportive health care system. Diabetes in pregnancy poses a considerable financial burden [21,22]. Finances are required for transport and treatment, glucometers and testing-strips, medication, hospitalisation, specific screening tests, and other investigations such as obstetric ultrasound scans [21].

Social support is very important in the management of diabetes in pregnancy [23-26] because it gives a woman perception of being in safe hands [24]. However, there is lack of awareness of diabetes in pregnancy [24] resulting from lack of awareness among patients and their families. Lack of social support includes absence of husbands and this poses substantial challenges in settings where husbands approve women's ability to seek healthcare [26]. Some families do not see it important to spend extra money on healthy foods and treatment for a woman with diabetes [11].

Stigma arises from complications such as still births, birth defects and macrosomia [27]. Shoulder dystocia, rupture of the uterus and post-partum hemorrhage might also result in hysterectomy that is associated with stigma in African societies [27].

Psychological burden of diabetes in pregnancy

Participants frequently cited constant fear of adverse pregnancy outcomes such as loss of pregnancies, loss of offspring and birth of infants with malformations. This also exerted pressure on them to have more kids after loss of a pregnancy or child. This also came with fear of stigmatisation with accusations of witchcraft. Some women who developed candidiasis were accused of infidelity. In the African context, children born with birth defects are the mother's responsibility and women who have poor pregnancy outcomes generally have a desire for replacement children and this leads to high parity and even multiple sequalae of diabetic pregnancies [27]. Women with diabetes have fear, sadness, guilt and uncertainty following a diagnosis of diabetes and they struggle to understand the risks and implications of the diagnosis [28]. Generally, diabetes is associated with depression, stress and maladaptive coping behaviours. Fear of insulin and self-pricking in diabetes in pregnancy have been widely reported in literature [11,23,29-32]. Controlling diabetes in pregnancy is a major challenge to the patient and the risk of complications that pose a threat to the health of both the mother and the child may negatively impact the woman's mental health. Women with diabetes in pregnancy have negative experiences that include lack of voice in treatment decisions, inadequate information about insulin, and the impact it would have on their daily lives, difficulty achieving normoglycaemia on insulin and concerns about short and long term health effects of insulin on themselves and their babies [33]. Psychosocial care that is both collaborative and patient centered should be instituted in diabetes care [34].

Poor self-efficacy

Women diagnosed with diabetes in pregnancy are under immense pressure to comprehend too much information in a short space of time. Some participants in this study cited that the requirement for self-monitoring of blood glucose was unrealistic. Adhering to a strict

diet, physical activity and medications was very demanding and sometimes unachievable. Poor self-efficacy in diabetes often results from experiences with a complicated therapeutic regimen that is difficult to follow, complexity of storage of insulin, self-injection and self-monitoring of blood glucose on a daily basis [24,35]. Prandial insulin needs to be matched to carbohydrate intake, premeal blood glucose and anticipated activity [36]. Rapidly increasing insulin resistance with advancing pregnancy, the need for self-monitoring of blood glucose (SMBG) and weekly or biweekly increase in insulin dose to achieve glycaemic targets [37]can be overwhelming for the pregnant woman. Concerns about use of insulin have been reported in several studies [26,38,39]. Women in other studies have reported being overwhelmed by the quantity and complexity of unfamiliar nutrition recommendations [31,35]. Complex medication regimens, multiple medications, side effects, treatment failure and inconvenient scheduling of medication are associated with poor adherence [21,39,40]. The need to check blood glucose levels before self-injecting coupled with poor access to glucometers and glucose testing strips in resource limited settings further reduces adherence to therapy.

Conclusion

Tacking the subjective impact of diabetes in pregnancy will improve quality of care given to women with diabetes in pregnancy. Findings of this study were used to develop an Adherence Promotion Framework for women with diabetes in pregnancy [41]. It is hoped that these findings will effectively inform policy in delivering health care. Some solutions cited elsewhere are improving health education, fostering collaboration, subsidisation of cost of care and capacity building of health care professionals [42,43].

Limitations

This was a hospital based study which might have introduced response bias as participants might give acceptable responses to the researcher. However, strategies to ensure trustworthiness of findings namely, credibility, dependability, confirmability and transferability were observed.

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Conflict of Interest

The authors declare no conflict of interest.

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