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Original Research Article

Effect of antenatal group discussion on fear of childbirth among pregnant women in a Nigerian tertiary hospital

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ABSTRACT

Background: Antenatal group discussions (AGDs) are utilized in antenatal peer support. Its application in controlling fear of childbirth (FOC) has not been widely studied in Africa. We examined the effect of AGDs on FOC among pregnant women.
Methods: This experiment was done between in 2020 at a teaching hospital in Nigeria. We randomly assigned 218 consenting primigravid women into treatment (n = 111) and control groups (n = 107) and followed them from 31 to 38 weeks of gestation. The treatment group had one AGD session per week for 6 weeks, with each session lasting 120 minutes. The control group had no AGDs. The FOC Questionnaire was used for collecting data at 31 and 38 weeks of gestation. Inferential statistics were used for data analyses at a 5% significance level using SPSS 21.
Results: At 31 weeks of pregnancy, 80.2% and 72.9% of participants in the treatment and control groups had unhealthy FOC (range 5 - 9) with no significant difference between the groups (p = 0.204). At 38 weeks, FOC was significantly less in the treatment group compared to the control group (17.1% vs. 48.6%, p<0.001). The AGD reduced the likelihood of unhealthy FOC by 65.0% (RR: 0.35, 95%CI: 0.22 - 0.55).
Conclusions: Participation in AGDs reduced FOC among pregnant women, hence recommended. The current caesarean statistics may further reduce if pregnant women were encouraged to utilize AGDs.

Keywords: Fear, Hospital, Mastoid process, Pregnancy, Pregnant women, Prenatal care

INTRODUCTION

Childbirth remains an anticipated experience for most women.[1] The physiological, emotional, and personality adaptations that result from childbirth are profound.[2,3] Given that women are socially expected to undergo childbirth, some women become anxious about it.[4] In many cultures, women employ coping strategies such as seeking support from more experienced local women and midwives for antenatal care.[5]

Antenatal care (ANC) is a common method for preparing pregnant women for childbirth.[6] It was recommended by the World Health Organization to improve the health of pregnant women and their unborn child and is offered in two modalities namely individual and group ANC.[7] The individual ANC model comprises a first visit involving comprehensive history taking and health examination, followed by 13 one-on-one private consultations with the physician/midwife.[8] The group ANC model combines a minimum of six Antenatal Group Discussion (AGD) sessions, with all features of the individual ANC model.[7]

The aim of AGD is to facilitate the exchange of birth experiences and peer support within a group of 8-12 pregnant women of a similar gestational category is the aim of AGD.[7,8] The AGDs are designed and monitored by midwives to address concerns of birthing such as labor pain and fear of childbirth.[6]

Fear of childbirth (FOC) is the intense anxiety regarding childbirth that make women avoid labor despite wanting a baby.[1] Based on learned social expectations regarding birthing, women may experience certain levels of fear of the unknown. There is mounting evidence of the palpable impact of FOC on mothers' perinatal wellbeing.[9] Unresolved perinatal FOC has been documented as one of the strongest predispositions to adverse birth outcomes.[10] Having some concerns by pregnant women regarding a future birth is often expected by midwives. Nonetheless, severe FOC could be problematic before and during labor and hence should be minimized.[11] Based on this premise, some researchers consider AGD as a tool that could empower pregnant women towards gaining control over FOC.[2,3]

Midwives are faced with the task of minimizing FOC through non-pharmacological methods.[12] Since AGD is a WHO-recommended tool, its impact on FOC requires empirical evaluation in different cultures and contexts.[13] Literature search revealed a paucity of studies on the subject matter, hence a knowledge-gap.[14] This study examined the effect of AGD on FOC among pregnant women at the University of Port Harcourt Teaching Hospital in Nigeria.

METHODS

This experimental study contained one treatment group and one control group. This study was conducted in 2020 at the University of Port Harcourt Teaching Hospital (UPTH) in Nigeria. UPTH is a tertiary hospital located about 22 kilometers from the Port Harcourt International Airport and serves about 1700 pregnant women per year. It offers a wide range of antenatal services using the one-on-one private consultation model. Trained midwives also offer group antenatal health teaching (caregiver centred teaching). It is not common place in UPTH to employ patient-centred teaching where antenatal women with similar gestation are given the time to share their experiences using group discussion-styled sessions.

A target population of 268 pregnant women at 31 weeks of pregnancy was identified from hospital records. Inclusion criteria were singleton pregnancy documented in the obstetric case notes and interest to participate in the study. The exclusion criteria were a history of psychological disturbance, taking anxiolytic medications, and having less than six AGD sessions through the intervention period. Since the aforementioned could be colinear on fear of childbirth, they were excluded from the study.

A total sample size of 222 (111 for the intervention group and 111 for the comparison group) was calculated. The sample size was determined at 0.80 power and 0.95 confidence level, with a mean difference of at least 8.0 and a standard deviation of 23.5 in the treatment group and 16.5 in the control group based on a previous study.[6] The sample size formula used was: $n = ((Z_{1-\alpha/2}+Z_{1-\beta})^2 x(S_1^2 + S_2^2) \div d^2))$.[13] The values were substituted in the formula as $n = ((1.96+0.84)^2 (23.5^2 + 16.5^2) \div 8^2)$ and 101 minimum sample size in each group was determined. Considering a 10% potential dropout rate, the sample size per group was increased to 111.

Random assignment was used. The pregnant women demanding antenatal care from January to August 2020 were assessed for gestational age. Those at 31 weeks of pregnancy were randomly assigned to either the treatment (AGD) or the control group. The assignment of participants into groups was stopped as soon as the required sample size of 111 for each group was reached.

Participants in the treatment group were allowed to participate in a maximum of six AGD sessions per person.[7] The AGDs ran simultaneously with the consecutive sampling procedure. The AGD sessions were held weekly from January to December 2020 and it was ensured that each consecutively enrolled participant completed six AGD sessions. The AGDs were held every Saturday for 120 minutes and were designed to involve 8-12 participants.[7] The AGD sessions were held in an outdoor space within the hospital. Wearing of face masks and two meters of physical distancing was maintained between participants in compliance with COVID-19 prevention measures. We utilized an attendance list to ensure that participants attended not more than six AGDs. Participants in the control group did not participate in the AGDs.

Using a structured discussion guide, each AGD was moderated by one member of the research team who had been trained on Implementation of Antenatal Group Discussions at the Department of Public Health Midwifery of the African Centre of Excellence in Public Health and Toxicology Research, University of Port Harcourt, Nigeria (Date of Training: August 2019). The AGD program was conducted in the English language and written consent was obtained by the moderator. The moderator recorded notes of raised themes. The AGD always started with a short 1-minute introduction of the moderator.

The aim of the study was reviewed in 4 minutes. Participants' consents were reaffirmed in the following 5 minutes. The next 90 minutes centred on the sharing of thoughts on personal pregnancy-related experiences in the past week. Large illustration charts with leading questions on them were presented. The illustration charts for week 1 were about physical changes in the third trimester of pregnancy. Week 2, danger signs of pregnancy and key actions to take. Week 3, stages of

labour. Week 4, perineum muscle exercises. Week 5, positions for birthing. Week 6, non-pharmacological methods of pain reduction during labour (purse-lip breathing and sacral massage). The participants were allowed to take turns to share their experiences in their current and past pregnancies, examine possible cause and effect, discuss possible solutions and agree on appropriate actions to embark on. The following 5 minutes were used to summarize and reflect on raised themes. The moderator took the next 15 minutes to address identified misconceptions before ending the session. Fathers (male spouses) were not included at any stage in the meetings because it was not captured in the IRB approved protocol for this study.

The baseline and post-intervention FOC were assessed at 31 and 38 weeks of pregnancy using an adapted 9-item Fear of Childbirth Questionnaire (FCQ). It is a free questionnaire originally developed by Johnson and colleagues.[1] We adapted the instrument by converting the scale of measurement from the original 3-point scale (low, undecided, high) to a 2-point (yes/no) forced response scale. It had a minimum obtainable sum score of 0 and a maximum obtainable sum score of 9. Each item was scored as 0 for each Negative response and 1 for each positive response. A demographic form was used to extract data on age, marital status, educational level, parity status, and occupation. The instrument was submitted to five independent research experts who were requested to rate each questionnaire item as relevant (1) or not-relevant (0). Agreement between raters was calculated. The Item validity index was ≥ 0.80 for all items and the Content Validity Index was 0.92, so the instrument was considered valid.[16]

Data collection was done between March and December 2020. Responses were filled in by the participant. A total of 4 participants in the control group were lost to follow-up. A total of 218 questionnaires were completed at the two points of data collection by 111 treatment and 107 control participants. The person who collected data and the person who analysed the data were blinded to the group allocation of participants. Collected data were summarized with descriptive statistics. Fisher's exact test and Chi-square were used for the test of hypotheses at a 5% level of significance. Risk estimation was done using Relative Risk statistical tool at 95% confidence interval. Data analyses were done with SPSS version 21 software (IBM Chicago, IL USA).

RESULTS

All 218 filled instruments were found fit for data analysis (111 intervention group, and 107 comparison group). The treatment group was similar to the control group in terms of background demographic characteristics such as age, marital status, educational level, parity status, and occupation. The demographic characteristics of participants in the treatment and reference groups are shown in Table 1.

Table 1: Demographic characteristics of study participants n = 218.

Variable	Treatment group n = 111; n (%)	Control group n = 107; n (%)	χ^2	P value
Age				
20-29	56 (50.5)	57 (53.3)	1.10	0.578
30-39	53 (47.7)	46 (43.0)		
40-49	2 (1.8)	4 (3.7)		
Marital status				
Married	111 (100)	107 (100)	0.00	
Educational level				
Primary	5 (4.5)	4 (3.7)	1.49	0.475
Secondary	55 (49.5)	45 (42.1)		
Tertiary	51 (45.9)	58 (54.2)		
Parity status				
Primipara	51 (45.9)	49 (45.8)	<0.01†	0.982
Multipara	60 (54.1)	58 (54.2)		
Occupation				
Trading	23 (20.7)	18 (16.8)	0.83	0.842
Farming	8 (7.2)	7 (6.5)		
House wife	35 (31.5)	33 (30.8)		
Civil servant	45 (40.5)	49 (45.8)		

† = Fisher exact statistic, P value <0.05 = significant

Table 2: Fear-of-childbirth among pregnant women at 31 weeks gestation N = 218.

Items	Treatment Group n = 111 n (%)	Control Group n = 107 n (%)	Fisher	P value
Lack of confidence when talking about childbirth				
No (score 0)	19 (17.1)	29 (27.1)	3.17	0.075
Yes (score 1)	92 (82.9)	78 (72.9)		
Lack of happiness when talking about childbirth				
No (score 0)	34 (30.6)	39 (35.5)	0.83	0.363
Yes (score 1)	77 (69.4)	68 (64.5)		
Not relaxed when talking about childbirth				
No (score 0)	2 (1.8)	6 (5.6)	2.23	0.135
Yes (score 1)	109 (98.2)	101 (94.4)		
Afraid when talking about childbirth				

Continued.

Items	Treatment Group n = 111 n (%)	Control Group n = 107 n (%)	Fisher	P value
No (score 0)	20 (18.0)	25 (29.0)	0.95	0.330
Yes (score 1)	91 (82.0)	82 (71.0)		
Tense when talking about childbirth				
No (score 0)	25 (22.5)	36 (23.4)	3.35	0.067
Yes (score 1)	86 (77.5)	71 (76.6)		
Lost and lonely when talking about childbirth				
No (score 0)	36 (32.4)	44 (41.1)	1.77	0.183
Yes (score 1)	75 (67.6)	63 (58.9)		
Deserted when talking about childbirth				
No (score 0)	23 (20.7)	34 (31.8)	3.45	0.063
Yes (score 1)	88 (79.3)	73 (68.2)		
Abandoned when talking about childbirth				
No (score 0)	35 (31.5)	44 (41.1)	2.17	0.141
Yes (score 1)	76 (68.5)	63 (58.9)		
Lack of excitement when talking about childbirth				
No (score 0)	5 (4.5)	11 (10.3)	2.67	0.102
Yes (score 1)	106 (95.5)	96 (89.7)		
Summary				
Fear of childbirth based on Sum score				
0-4 (Low FOC)	22 (19.8)	29 (27.1)	1.61	0.204
5-9 (High FOC)	89 (80.2)	78 (72.9)		

P value <0.05 = significant

Table 3: Fear-of-childbirth among pregnant women at 38 weeks gestation N = 218.

Items	Treatment group n = 111 n (%)	Control group n = 107 n (%)	Fisher	P value	RR (95%CI)
Lack of confidence when talking about childbirth					
No (score 0)	86 (77.5)	64 (59.8)	7.92	0.005	
Yes (score 1)	25 (22.5)	43 (40.2)			
Lack of happiness when talking about childbirth					
No (score 0)	93 (83.8)	33 (30.8)	62.61	<0.001	
Yes (score 1)	18 (16.2)	74 (69.2)			
Not relaxed when talking about childbirth					
No (score 0)	101 (91.0)	46 (43.0)	57.16	<0.001	
Yes (score 1)	10 (9.0)	61 (57.0)			
Afraid when talking about childbirth					
No (score 0)	92 (82.9)	52 (48.6)	28.56	<0.001	
Yes (score 1)	19 (17.1)	55 (51.4)			
Tense when talking about childbirth					
No (score 0)	84 (75.7)	63 (58.9)	7.00	0.008	
Yes (score 1)	27 (24.3)	44 (41.1)			
Lost and lonely when talking about childbirth					
No (score 0)	90 (81.1)	42 (39.3)	39.91	<0.001	
Yes (score 1)	21 (18.9)	65 (60.7)			
Deserted when talking about childbirth					
No (score 0)	91 (82.0)	56 (52.3)	21.80	<0.001	
Yes (score 1)	20 (18.0)	51 (47.7)			
Abandoned when talking about childbirth					
No (score 0)	103 (92.8)	72 (67.3)	22.38	<0.001	
Yes (score 1)	8 (7.2)	35 (32.7)			
Lack of excitement when talking about childbirth					
No (score 0)	89 (80.2)	69 (64.5)	6.73	0.010	
Yes (score 1)	22 (19.8)	38 (35.5)			

Continued.

Items	Treatment group n = 111 n (%)	Control group n = 107 n (%)	Fisher	P value	RR (95%CI)
Summary					
Fear of childbirth based on Sum score					
0-4 (Low FOC)	92 (82.9)	55 (51.4)	24.59	<0.001	0.35 (0.22-0.55)
5-9 (High FOC)	19 (17.1)	52 (48.6)			

P value <0.05 = significant

Table 4: Association between parity and. fear-of-childbirth among pregnant women at 31 and 38 weeks gestation, N = 218.

Categories	Treatment group, n = 111				Control group, n = 107			
	Fear of child birth		Fisher	P value	Fear of child birth		Fisher	P value
At 31 weeks	Low	High			Low	High		
Parity			0.28	0.597			0.31	0.576
Primipara	9	42			12	37		
Multipara	13	47			17	41		
At 38 weeks								
Parity			1.91	0.167			0.21	0.645
Primipara	45	6			24	25		
Multipara	47	13			31	27		

P value <0.05 = significant

The FOC at baseline (31st week of pregnancy) revealed that 80.2% and 72.9% of treatment and reference participants had unhealthy levels of FOC (score range 5-9) with no significant difference between the groups (p = 0.204). The majority of the respondents agreed to "not feeling relaxed when talking about childbirth" (98.2% treatment, 94.4% control). The minority agreed to feeling "lost and lonely when talking about childbirth" (67.6% treatment, 58.9% control) as shown in Table 2.

The FOC after intervention (38 weeks of pregnancy) revealed that a significantly less number of treatment participants had unhealthy FOC compared with the reference group (17.1% vs. 48.6%, p = <0.001). In the treatment group, the majority of them agreed to feeling "tense when talking about childbirth (24.3%) while the minority reported a "feeling of abandonment when talking about childbirth". In the control group, the majority reported lack of happiness when talking about childbirth (69.2%) and the minority reported feeling abandoned when talking about childbirth (32.7%). Since there was no significant difference in age and parity status between the treatment and control groups, relative risk estimation revealed that the AGD intervention reduced the likelihood of unhealthy FOC by 65% (RR: 0.35, 95% CI: 0.22 - 0.55) as shown in Table 3.

The association between parity and FOC at 31 and 38 weeks of pregnancy revealed no significant associations (p = 0.597 and 0.167 respectively for treatment group and p = 0.576 and 0.645 respectively for control group) as shown in Table 4.

DISCUSSION

At 31 weeks of pregnancy, the majority of respondents agreed to "not feeling relaxed when talking about childbirth" when talking about childbirth in the treatment and control groups respectively. The results further showed that about eight out of 10 pregnant women in the treatment group, and seven out of ten in the control group had unhealthy FOC. The prevalence of FOC was not found to be significantly different between the treatment and reference groups. Perhaps, women who were aware of their anxiety were more likely to volunteer to participate in the treatment group. The high FOC prevalence is thought to be a result of experienced and expected uncertainties that may come with childbirth. The predisposing factors to FOC may however differ between first-time and non first-time mothers.[4] For first-time mothers, the FOC may have resulted from vicarious birth experiences told by family and friends.[17] For non first-time mothers, the FOC may be blamed on lack of social support and previous negative birth experience.[4] This result was similar to a study in Malawi that found unhealthy FOC in about six out of 10 pregnant women.[11] The similarity in findings could be explained by the design utilized in the study. Both this study and the study in Malawi utilized a single facility-based design. A single facility-based design captures only the FOC of pregnant women who attend hospital-based antenatal services but not those who utilize informal settings like doulas and traditional birth attendant services. This result also corroborates a study in Turkey which found unhealthy FOC in eight out of ten pregnant women.[4] The similarity in findings suggest that FOC is common among pregnant women.

At 38 weeks of pregnancy, participants in the treatment group had completed six AGD sessions and reference participants had none. Generally, there were lower anxiety levels between the pre and post intervention FOC measurements (80.2% vs. 17.1% in treatment group and 72.9% vs. 48.6% in control group). This study found a significant difference in FOC between the groups. Less than two out of ten pregnant women in the treatment group still had unhealthy FOC. In contrast, at least four out of 10 pregnant women in the reference group still had unhealthy FOC. This result would suggest that participation in AGDs for peer support further reduced the likelihood of having unhealthy FOC among pregnant women in the treatment group by about 65%. This finding support a study in Poland that found that first-time mothers who attended AGD classes scored significantly lower on FOC assessed using Delivery Fear Scale compared to those who did not (48.7 vs. 60, p = 0.030).[6] It may be possible that pregnant women who attended AGDs reflected on their misconceptions in comparison with actual shared experiences.[5] Not many studies have examined the impact of AGDs on FOC using high quality quantitative approaches.

This study revealed no significant association between parity and FOC at 31 and 38 weeks of pregnancy. This finding corroborates a study in Turkey that found no association between parity and FOC.[4] This finding however contradicts an Indian study which reported a significant association between parity and FOC. The dissimilarity in findings was expected as the Indian study differed in sampling strategy by utilizing the consecutive sampling method.[1] Additionally, this finding did not support a study in Portugal which found parity to be associated with FOC.[18] The discrepancy in findings could be linked to socio-cultural, peculiarities between the countries of study. Portugal is situated in Europe and is inhabited mostly by people of European descent and culture, whereas Nigeria is inhabited predominantly by people of African descent and culture. Culture could influence the support system available to pregnant women, therefore moderate to impact of parity on FOC.

At the time of this report, we do not know any study that examined the effect of AGD on FOC in an African setting. This contributes to the strength of this study. The major limitation of this study is that it did not control for parity status. Caution should hence be exercised when interpreting these findings with generalization to the study population.

CONCLUSION

The results of this study indicated a significantly less FOC in the treatment group compared to the control group after the AGD intervention. This study concluded that participation in AGDs significantly reduced the risk of FOC. The current caesarean statistics may further reduce if pregnant women were encouraged to utilize AGDs.

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