

Original Article

Determinants and Relationship between Prenatal Perceived Maternal Family Social Support and pre-term birth in a Tertiary Hospital in Southern Nigeria

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ABSTRACT

Background: Perceived social support is essential during pregnancy. The delivery of healthy term babies is the joy of every mother. Sometimes, premature deliveries with their immediate and long-time complications do occur despite adequate antenatal care given to pregnant women.

Objectives: To evaluate the determinants and relationship between prenatal perceived maternal family social support and pre-term delivery in a tertiary hospital in southern Nigeria

Methodology: A systematic sampling of 200 newly delivered women at Federal Medical Centre, Asaba, Nigeria was carried out after ethical approval was obtained. The study group consisted of 100 cases versus 100 control groups. Multi-dimensional Scale of Perceived Social Support (MSPSS) questionnaire was administered to each of the participants. The gestational age (weeks) at birth was retrieved from the respondents' case files. The results were analyzed using the statistical package for social sciences (SPSS) software version 17. P-values ≤ 0.05 was considered statistically significant.

Results: There was a high mean MSPSS score among the study group (28.48±6.24). Good perceived maternal social support had direct relationship with term delivery. The place of residence and family type/cycle were found to be predictors of good maternal family social support.

Conclusions: A good perceived maternal social support is necessary for normal term delivery. Medical doctors attending to pregnant women should evaluate the maternal social support in order to prevent pre-term deliveries and their associated consequences.

Keywords: Maternal. Social. Support. Predictors. Birth. Weight.

INTRODUCTION

Social support is a network of families, friends, neighbours and community members that is

available in times of need to give psychological, physical and financial help.¹This simply means that it is a network of people who are available to

provide social support to the health care recipients. Social support helps patients cope with situations. It makes them feel better about themselves by raising one's sense of self-esteem. Social support also helps a person to have a sense of belonging to a group and also improves their ability or competence to perform certain needed task or functions. Krause² in his work noted that most people turn to social support in an effort to contain stressful events in life, stressing that support network is an indication of social integration and the more one is integrated, the more one can cope with effects of stressful life events.

Social support is a significant mediator for psychosocial stress.² The positive effects of social support on health outcome is well established.³ This is because of its strong positive impact on many aspects of physiology and behaviour.⁴ Social support is essential for proper cognitive, affective and behavioural development.⁵ Studies have suggested that good social support accelerates and improves patients' recovery from different diseases with an inflammatory component.^{6,7} Its positive impact during pregnancy could not be over emphasized.⁸ The sources of support could help an individual cope with varying life challenges.

In this 21st century, about 10 million children die globally each year.⁹ Preterm birth is the leading cause of newborn death. Most of those that survive are hardly spared with severe and varying levels of complications. Babies born before 37 weeks are vulnerable to increased risk for death. Preterm birth increases the cost of hospitalization and are more prone to short and long term complications such as breathing difficulty, brain damage, diabetes mellitus and asthma.¹⁰ There is an overwhelming foetal and neonatal wastage especially in the developing countries where poverty and ignorance are lethal combinations which power the increase in foeto-maternal morbidity and mortality. There should be a paradigm shift especially in antenatal

monitoring especially now that the health indices in most third world countries are not encouraging. Unreported evidence emanating from the centre where the present study was done showed that most of the women with pre-term deliveries admitted to poor social support from husbands, friends and other relatives. However, there were no evidence based data relating poor family/social support with pre-term deliveries and poor pregnancy outcome, hence, the need for this study.

The aim of this study was to assess the determinants and relationship between perceived maternal family social support and pre-term birth in a tertiary hospital in southern Nigeria with a view to recommending the findings to be incorporated into the routine antenatal care in the study location

METHODOLOGY

STUDY AREA.

Federal Medical Centre, Asaba is a tertiary hospital established in the year 1998. It is situated in the capital city of Delta state, Nigeria. Delta state has a population of about 4.1 million.¹¹ It is inhabited by people from all the states and tribes of Nigeria. The hospital is a 273- bedded institution which cater for primary, secondary and tertiary care in all specialties of medicine. It has an average of 2000 deliveries per year and a yearly patients' attendance of about 130,000. It is a centre for postgraduate training in Family Medicine, Paediatrics, Internal Medicine, Surgery and Obstetrics and Gynaecology. It is a referral centre to all the hospitals in the state and the neighbouring states.

STUDY DESIGN: This is a hospital based case control retrospective study.

DURATION OF STUDY: The study was conducted between the months of September and December, 2016

DATA COLLECTION INSTRUMENT

The Multidimensional Scale of Perceived Social Support (MSPSS) is a scale devised in America in

1988 by Zimet et al.¹² For the purpose of this study the Ugandan version adapted by Janet et al was used.¹³ This version comprises of a 5- point Likert as against a 7- point likert scale of the original version. This is to enable an easy understanding of the components by the respondents whom English is not their native language.

SAMPLE POPULATION

This consisted of selected mothers and their babies who met the inclusion criteria. The respondents were mothers who were delivered per vagina or by elective caesarean section of a term baby (37 completed weeks) and were rooming-in with their babies at the Post Natal Ward (PNW). On the other hand, the control group consisted of mothers whose babies were preterm and were admitted in the Special Care Baby Unit (SCBU) of the hospital.

INCLUSION AND EXCLUSION CRITERIA

The study population consisted of post natal women who gave informed consent to participate in the study and had vaginal or elective caesarean section delivery. Patients above the age of 19, singleton pregnancy and mothers that did not have documented evidence of medical or obstetrics complications were also included in the study. Nevertheless, single mothers, mothers ≥ 45 years, un-booked respondents and those with twin deliveries were excluded from the study.

SAMPLE SIZE ESTIMATION

The sample size determination formula for comparison of groups when studying population less than 10,000 was used.¹⁴ With an attrition of 10%, a sample size of 200 participants was calculated; one hundred (100) for the study group and another one hundred (100) for the control group.

SAMPLING METHOD

Systematic sampling method was used in the recruitment of subjects. A sampling fraction of 1:5 was used for the control group whereas a fraction of 1:2 was used for the cases. Respondents in the control group were mothers less than 45 years of

age admitted in the Post Natal Ward who were delivered of singleton term babies. However, the cases were mothers who were delivered of pre-term singleton babies. The mothers were matched by parity. Parity was classified into: 1, 2-4 and ≥ 5 (that is, primipara, multipara and grand multiparity). While the mothers were interviewed, their baby's gestational age was recorded from the delivery note. The gestational age (weeks) was determined by the calculation from the mothers' recall of their last menstrual period (LMP) or findings from their first trimester ultrasonography dating.

In order to recruit 100 respondents within the study period of three months, the first subject was chosen by a simple random sampling using the balloting method. This was done by assigning numbers 1-5 to the mothers who were delivered of term babies. Then one out of the five papers was blindly picked. The first selected subject represented the index subject for the study. Thereafter, every fifth subject was chosen. Any subject who did not meet the inclusion criteria was dropped and the next subject was selected until the desired sample size was reached. For the cases, similar method was adopted using a sampling fraction of 1:2 until the required sample size was obtained.

DATA ANALYSIS

The data obtained were edited and Statistical Package for Social Sciences (SPSS) version 17 was used in the analysis of data. Data were presented in tables and figures. Mean, median and standard deviation of different variables were calculated. Bivariate analysis was done using chi-square and t-test to test association between qualitative and quantitative variables respectively. P-value < 0.05 was considered statistically significant. Multivariate analysis was done using logistic regression analysis to ascertain predictors of outcome variable, as well as predictors of maternal family social support.

ETHICAL CONSIDERATION

Approval to conduct this study was sought and obtained from the Ethics and Review Committee of Federal Medical Centre, Asaba, Nigeria. Informed consent was also obtained from the respondents who participated in the study. Anonymity was assured as names were not required at any stage.

RESULT

Most of the mothers recruited into this study belonged to the age group of 25-29years with no significant difference in their age distribution.

Furthermore, majority of the subjects were educated. Respondents that attained tertiary education consisted of the majority when the educational distribution of the study population was considered. The respondents were mostly civil servants and almost all were Christians (98%). Emerging family (couple within the first ten years of marriage) was the predominant family type/cycle with a statistical difference in their distribution. Most of the subjects were urban habitants and majority were multiparous and earned between 50,001 to 100,000 Naira per month.

Table: 1 shows the socio-demographic distribution of the subjects.

Characteristic	Control n=100 (%)	Study n=100 (%)	X ²	p-value
Age(years)				
20-24	15 (15.0)	16 (16.0)		
25-29	36 (36.0)	31 (31.0)	3.42	0.49
30-34	33 (33.0)	27 (27.0)		
35-39	15 (15.0)	24 (24.0)		
40-44	1 (1.0)	2 (2.0)		
Educational status				
Nil formal education	0 (0.0)	3 (3.0)		
Primary	3(3.0)	7(7.0)		
Secondary	32 (32.0)	59 (59.0)	23.82	0.00
Tertiary	65 (65.0)	31 (31.0)		
Occupation				
Housewife	12 (12.0)	24 (24.0)		
C/Servant	42 (42.0)	37 (37.0)		
Self employed	36 (36.0)	34 (34.0)	6.30	0.18
Student	9 (9.0)	4 (4.0)		
Others	1(1.0)	1(1.0)		
Religion				
Christianity	100 (100.0)	98 (98.0)		
Islam	0 (0.0)	2 (2.0)		
Family type(Evelyn Duvall's)				
Emerging	88 (88.0)	86 (86.0)	0.18	0.67
Crystallizing	12 (12.0)	14 (14.0)		
Place of Residence				
Village (Rural)	33 (33.0)	49 (49.0)	5.29	0.02
Town (Urban)	67 (67.0)	51 (51.0)		
Income (Naira)				
Nil	23(23.0)	29 (29.0)		
≤4,500	2(2.0)	0(0.0)		
4,501-50,000	40 (40.0)	43 (43.0)	2.32	0.51
50,001-100,000	14 (14.0)	15 (15.0)		
>100,000	21 (21.0)	13 (13.0)		
Parity				
1	28 (28.0)	28 (28.0)		
2-4	50 (50.0)	52 (52.0)	0.13	0.94
>=5	22 (22.0)	20 (20.0)		

Table 2: shows the comparison of the mean MSPSS scores between the study and control groups.

All the mean scores in the individual items in the control group were greater than those of the study group. Similarly, all the mean scores in all the

subscales and total MSPSS in the control group were greater than those in the study group. However, there was a statistically significant difference in the mean score of all the individual items, subscales and total MSPSS score.

Table 2: Comparison of mean MSPSS scores between the study and control groups.

Item	Study Mean±SD	Control Mean±SD	t-test	p-value
Special person around when I am in need	2.87±1.0	3.75±0.86	6.67	0.00
Special person around whom I can share my joys and sorrows	2.84±1.0	3.74±0.88	6.73	0.00
My family really tries to help me	2.70±1.0	3.62±1.02	6.40	0.00
I get emotional help and support I need from my family	2.64±0.95	3.59±0.94	7.10	0.00
I have a special person who is a real source of comfort to me	2.61±0.98	3.66±0.88	7.96	0.00
My friends really try to help me	1.95±0.95	2.97±1.26	6.48	0.00
I can count on my friends when things go wrong	1.80±0.87	2.98±1.26	7.71	0.00
I can talk about my problems with my family	2.52±0.89	3.44±0.91	7.20	0.00
I have friends with whom I can share my joys and sorrows	1.78±0.81	3.10±1.31	8.55	0.00
There is a special person in my life who cares about my feelings	2.64±0.88	3.71±0.88	8.59	0.00
My family is willing to help me make decisions	2.37±0.86	3.43±1.02	7.95	0.00
I can talk about my problems with friends	1.76±0.85	2.87±1.25	7.32	0.00
MSPSS (Family)	10.23±2.79	14.08±3.11	9.22	0.00
MSPSS (Friends)	7.29±2.84	11.92±4.66	8.48	0.00
MSPSS (Significant Others)	10.96±3.26	14.86±2.87	8.98	0.00
MSPSS total	28.48±6.24	40.86±8.33	11.89	0.00

MSPSS= Multidimensional Scale of Perceived Social Support. t= Students t-test SD= Standard deviation. P= p-value.

Table: 3 below shows the pattern of perceived social support when the study and control groups were added together. There were 92(46%),

132(66%) and 76(38%) who had poor perceived social support in the subscales of family, friends and significant orders respectively.

Table 3: Pattern of social support among all the respondents (study and control)

Subscale	n =200	%
MSPSS (Family)		
Poor	92	46
Good	108	54
MSPSS (Friends)		
Poor	132	66
Good	68	34
MSPSS(Significant Others)		
Poor	76	38
Good	124	62

n= total number of respondents (case and control)

%=percentage distribution

Table 4: shows the bivariate analysis of the relationship between maternal family social support and gestational age.

The table depicted that about 138 of the pregnancies were carried to term as against 62 pregnancies that ended in preterm deliveries.

Table 4: Showing bivariate analysis of the relationship between maternal family social support and gestation age.

Family social support	Gestational age		No	X ²	P
	Term	Preterm			
Poor	45	47	92	32.14	0.00
Good	93	15	108		
Total	138	62	200		

X² = Chi square. P = p value No = total number of participants.

Table 5: shows the predictors/determinants of perceived maternal social support in the study group (which are family types (p<0.05,OR=4.44) and place of residence (p<0.05, OR=4.46))

Table 5: Predictors/determinants of perceived maternal family social support for participants in the study group.

Predictor	p-value	O.R
Family Type	0.01	4.44
Residence	0.00	4.46
Parity	0.07	0.42
Educational Status	0.30	1.66
Average Income	0.40	0.82
Age	0.43	1.28
Occupation	0.33	0.73

OR=Odd ratio

DISCUSSION

SOCIODEMOGRAPHIC FACTORS

The study found that majority of the respondents (33.5%) were between the age group of 25-29 years. Similar age predominance was reported in some related studies that assessed maternal social support in obstetric settings.^{15,16} On the other hand, a younger age group was reported in a descriptive study to access the family social support and its effect on pregnancy outcome in relation to maternal and neonatal health.¹⁷ An older age group predominated in a population based study on social support and its predictors for women of reproduction age.¹⁸ The difference in the age variation might be explained by the fact that different sampling methods were used in the various studies. The present study adopted the

Furthermore, 108 of the respondents had good social support whereas 92 of them had poor social support. However, the relationship between maternal family support and gestational age was statistically significant (x²=32.14, P=0.00).

systematic sampling method while the two other studies cited above employed the non probability sampling methods (convenience and purposive) in patients' recruitment. Secondly, the exclusion criteria in the present study might have made some age groups non-inclusive as subjects below the age of 19 years were excluded from the index study.

It was also observed that most of the respondents were educated. This is in tandem with findings noted from similar studies done in Nigeria and other parts of the world.^{17,18} This observation might be explained by the fact that the present study was conducted in an urban settlement where the inhabitants were predominantly civil servants who required a certain level of educational attainment to be employed. One study deliberately excluded respondents who could neither read nor write.¹² The net effect of this intervention was an exponential increase in the proportion of educated respondents that were recruited into the study.

Maternal employment increases social interactions and improves financial resources which are essential for good social support. This study reported that a greater percentage of the study population was employed. Similar observations had emerged from studies carried out by other researchers.^{17,19} This finding is not surprising considering the fact that the study area (Asaba) is an urban centre with numerous offices and institutions. It is also located in proximity to Onitsha which is considered as one of the biggest

commercial hubs in Nigeria with many companies and industries. More so, some of the respondents were noted to be staff of the institution where the study was conducted.

The religion and marital status of the respondents showed two prominent findings: all the respondents were married and almost all of them (98%) were Christians. The fact that single mothers were excluded from this study and the mere reason that the study was done in a Christian dominated part of Nigeria could have accounted for this observation.

PERCEIVED MATERNAL FAMILY SOCIAL SUPPORT

The perceived maternal family social support was relatively high among the study population. The high mean of perceived social support reported in this study was comparable to that recorded by Rambod and Raffi on patients undergoing haemodialysis in Iran.²⁰ The high mean value is also similar to the outcome of the study by Hovey and Magana on immigrant farmers in Mexico.²¹ However, the value is lower than the mean of perceived social support observed by Dallas, Lopez, Jones and Xia on paraprofessional educators in Nebraska, United States of America.²² The different results of the mean scores could be due to the influence of a wide range of socio-demographic factors, social networks, integration patterns, personality characteristics and social involvements which have been observed to play reasonable roles in the perception about social support.

Maternal family social support has been reported to be an important factor in obstetrics and foetal well-being.²³ The current study recorded similar findings. However, other studies went further to establish that husbands/spouses of women were the most frequent support groups available to her during the period of pregnancy.^{4,16,19} The reason could be attributed to strong family ties noted in the study population which reflected in most of the women living with their partners who

provided them with both emotional and social support at all times.

DETERMINANTS/PREDICTORS OF GOOD FAMILY SOCIAL SUPPORT

This study found that family type/cycle and place of residence were the predictors of good social support among the subjects. This could be explained by the fact that the stage of reproduction in women usually coincides with the emerging family cycle. More so, the present study was conducted in an urban settlement which might have provided an opportunity for more women resident in the urban areas to be recruited more than their rural counterparts. More studies need to be done to compare the pattern of social support among women belonging to different family cycle. Such studies would also evaluate urban and rural differences in relation to maternal social support.

PERCEIVED MATERNAL FAMILY SOCIAL SUPPORT AND GESTATIONAL AGE

The result of this study showed that respondents with low perceived maternal family social support were more likely to have been delivered of preterm babies ($X^2=32.14$, $p<0.05$). Similar findings have been reported by other independent studies.^{17,24} On the other hand, some authors maintained that low perceived social support had no effect on foetal outcome.²⁵ The reason for the inconsistencies could be due to the different methodological approaches adopted by the researchers; some authors analyzed the findings from women at different stages of gestation whereas the stress buffering model of social support posits that good social support during third trimester or close to term (when complications are more apparent) had more positive effect on foetal outcome than at any other gestational stage.

LIMITATIONS

Recall bias was a major limitation as some respondents might not have adequately remembered the nature of social support available to them during pregnancy. Also the events during labour and delivery could have an effect on their responses during the interview.

CONCLUSION

In summary, a high perceived family social support which was anchored on the participants' the place of residence and the family type/cycle was recorded among the respondents. It further showed that women with good perceived social support had more term deliveries. In view of these observations, the import of incorporating routing assessment of a woman's psychosocial well-being with emphasis on perceived family social support is very apt.

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