



The Awareness, Attitude, Practice and Perceptions of Benefits and Barriers to Prenatal Exercises among Pregnant Women in Kano, Nigeria

Rajah, Amina Suleiman¹, Bayero, Umar Bilkisu², Hussein, Zainab Muhammad³, Lawal, Auwal Khadija³, Tashi, Tijjani Faiza⁴, Tukuntawa, Abdulaziz Sulaiman⁵ & Rabi, Abdullahi Fatima¹

¹College of Nursing and Midwifery, Kano.

²Department of Nursing Sciences, Bayero University, Kano.

³Central Bank of Nigeria.

⁴Waziri Shehu Gidado Hospital, Kano.

⁵National Orthopedic Hospital, Dala, Kano.

Corresponding Author: Rajah Amina Suleiman,
Corresponding Email: aminasuleimanrajah@yahoo.com

Abstract

Pregnancy is a stressful phenomenon experienced by women during which the body experiences dramatic anatomical, physiological and psychological changes. The study examined the awareness, attitude, practice, perceived benefits and barriers to prenatal exercises among pregnant women at Murtala Muhammad Specialist Hospital (MMSH), Kano. The study was a descriptive survey in which 400 consenting pregnant women attending antenatal clinic at MMSH were recruited using a systematic random sampling technique. A structured interviewer-administered questionnaire was utilized to elicit responses and the data obtained was analyzed using descriptive statistics of mean, standard deviation and frequency distribution, while linear regression analysis was used to test the influence of awareness on the practice of prenatal exercise. Results show that the respondents have a mean age of 26.86 ± 5.4 years, which range from 17 – 47 years. More than half of the respondents (61.5%) were aware of prenatal exercises, with almost half of them (43.5%) reporting that a nurse/midwife prescribed prenatal exercise. The attitude of all the respondents (100%) was positive towards prenatal exercises, paradoxically but only 40% practised it. Breathing (36.5%) and stretching exercises (27.5%) were the most commonly practised, and stationary cycling (7%) and swimming (0%) were scarcely practised. Majority agreed that prenatal exercise is beneficial to them. It was concluded that, although all the respondents expressed a positive attitude towards prenatal exercises, actual practice was ironically low. The study, therefore, recommends that a culturally acceptable and appropriate educational package on prenatal exercises should be designed for pregnant women.

Keywords: *Antenatal, Obstetrics, Pregnancy, Prenatal exercise, Nigeria*

Introduction

Pregnancy is a stressful phenomenon experienced by women, accompanied by

physical, psychological and physiological changes. These changes could be exaggerated as a result of reduced physical activity and

predispose them to several chronic diseases which can lead to morbidity and mortality (Mbada, Adebayo, Awotidebe, Faremi, Oginni, Ogundele & Emechete, 2015).

According to the World Health Organization (2010), physical inactivity is the fourth leading risk factor for early mortality worldwide. Prenatal exercise has been scientifically known to promote the circulation of blood to both the pregnant woman and the vital organs of the fetus; and it also improves muscle tone, thus enhancing safe and normal delivery (Viellas *et al.*, 2014). The American College of Obstetrics and Gynecology (ACOG) recommends low-impact, moderate-intensity and regular exercises for pregnant women irrespective of their physical fitness level for approximately at least ≥ 20 –30 minutes/day of exercise on most days/week (ACOG, 2015). However, studies have shown that pregnant women are yet to attain this recommendation. Rather, studies have reported a decrease physical activity in early pregnancy, late pregnancy and during the postpartum period has been reported (Evenson, Savitz, & Huston, 2004; Mbada *et al.*, 2015).

In Brazil, the Ministry of Health stipulates that in addition to consultation and prenatal care, breathing and relaxation techniques should be taught for better control of labour and general well-being (Viellas *et al.*, 2014). Different exercise programmes are available for pregnant women such as stretching, swimming, brisk walking, dancing, jogging, cycling and walking (Makinde, Adeyemo, & Ogundele, 2014).

Prenatal exercises provide many health benefits to pregnant women and their fetuses and also prevents many pregnancy-related complications including, gestational diabetes mellitus, bladder and bowel problems, back pain, fatigue, weakness of the muscles of the abdomen, obesity and varicose veins (World Health Organization, 2010). It also helps pregnant women to experience shorter labour and reduces complications associated with childbirth (Kisner, Colby, & Borstad, 2017;

Zavorsky & Longo, 2011). These antenatal exercises may include aerobic and strength training exercises. Aerobic includes a wide range of activities such as walking, jogging, swimming, stationary cycling, and the use of the treadmill. Beneficial strength training activities pregnant women could adopt include weight lifting, pilates, yoga and resistance training (Zavorsky & Longo, 2011).

Lack of exercise participation during pregnancy and postpartum period have been implicated on a gamut of factors which are not mutually exclusive. Few among these factors are the myth that exercise is too rigorous and unsafe for pregnant women (Irehovbude, Okonigene, Ikhioya, & Okonigene, 2018), fear that it will result in abortion or some form of morbidity to the fetus (Irehovbude *et al.*, 2018), lack of support from the family (Mbada *et al.*, 2014), inaccessibility to exercise facilities, beliefs and attitudes of women with respect to exercise in pregnancy (Ribeiro & Milanez, 2011), level of knowledge (Evenson *et al.*, 2004), level of education (Ribeiro & Milanez, 2011), race/ethnicity (Mbada *et al.*, 2014) and lack of time (Treuth, M., Butte, N., Puyau, 2005). Previous studies have reported a positive attitude and practice of physical exercise among pregnant women from the developed countries (Kristine & Peter, 2011; Sujindra, Bupathy, Suganya, & Praveena, 2015; Treuth, Butte & Puyau, 2005); paradoxically, the Nigerian culture seems to play a prohibiting role in physical exercise participation during pregnancy and immediate postpartum by ensuring that women are confined during these periods (Mbada *et al.*, 2015). This is especially true for Kano, where the concept of prenatal exercise, its benefits, types and modes of practice are largely unknown among pregnant women (Iliyasu, Galadanci, Abubakar, Isah, & Aliyu, 2012). This centre of commerce of northern Nigeria with over 9 million inhabitants has a distinct culture characterized by 'Purdah' (seclusion), 'Kunya' (shyness or modesty, low priority accorded to the education of the girl child, early marriage, high parity and low status of women (Iliyasu

et al., 2012; Yunusa, Bello, Rajah, Usman, & Abdurashid, 2016).

Therefore, the present study principally aimed to find out the awareness, attitude, practice, perceived benefits and barriers to prenatal exercises by pregnant women attending antenatal clinic at MMSH, Kano. We envisage that the findings from this study could inform reforms in the practice of physical exercise during pregnancy at this centre and in similar settings.

Hypothesis

H₀: There is no significant relationship between awareness and practice of prenatal exercise among pregnant women attending antenatal clinic at MMSH.

Methods and Materials

Study Setting

The study was conducted at MMSH, Kano, which was the first hospital to be founded in Kano city, one of the oldest and largest hospitals in northern Nigeria and is located in the centre of Kano Municipal Local Government. It was established in 1926 with 16 beds, which has now been expanded to 500 beds in different departments and care units, including 150 maternity care beds. The hospital was chosen because it is one of the largest health centres with many pregnant women that could be recruited in the survey.

Study Population

The study comprised of pregnant women attending the antenatal clinic.

Study Design, Sample Size and Sampling Technique

A cross-sectional descriptive survey was used for the study. Hypothesis testing method was used to determine the sample size (Lwanga, Lemeshow & World Health Organization, 1991). Anticipated population proportion (50%) was obtained from a previous study by Akhtar, Hussain, Majeed, & Afzal (2018) and based on the assumptions of 95% confidence and relative precision of 0.10. The table in appendix 1 shows that for $P = 0.50$ and $\epsilon =$

0.10, a sample size of 384 would be needed. The calculated minimum sample size was inflated to 400 to account for anticipated subject non-response.

A systematic random sampling technique was used to recruit consenting pregnant women as they arrived at the antenatal clinic. This sampling method was chosen to reduce the potential for human bias, provide a sample that is highly representative of the population and allow for generalization of the data obtained. The sampling interval (5) was determined using the expected patient turnover, which was estimated at 2172 patients based on an average of previous records for two weeks. The first respondent was selected randomly using a random number table. Subsequent respondents were obtained by adding the sampling interval (5) to the previous patient's serial number. The data collection was carried out within a period of 2 weeks.

Inclusion and Exclusion Criteria

Inclusion Criteria: Only pregnant women within the reproductive age (15 – 49 years) who are attending antenatal clinic at MMSH were included in the study.

2.2.2 Exclusion Criteria: This comprises of all women that are outside the reproductive age (15-49 years) and women that do not wish to participate in the study.

Ethical Consideration

Ethical approval with reference number MOH/Off/797/T.I/2025 was granted by the Health Research Ethics Committee, Ministry of Health, Kano State. Informed consent was obtained from the respondents after the research procedure was explained to them, in order to gain voluntary participation. Confidentiality was guaranteed by storing data in a safe place and only the researcher will have access to the data. A consent note with the explanation of the research purpose, method of responses and assurance of the beneficence, freedom from exploitation and anonymity was attached with the questionnaire.

Data Instrument/Data collection

The instrument for the study was an adapted questionnaire from a previous study by Mbada *et al.*, (2015) and was validated by expert reviews in a pilot study. Informed consent was obtained from prospective respondents prior to the commencement of the interviews. A structured interviewer-administered questionnaire was used. The questionnaire consists of four sections (A, B, C and D). Section A assessed the demographic data of the respondents. Section B assessed information on awareness and attitude of pregnant women towards prenatal exercise. Section C assessed information on the practice of different forms of prenatal exercises. Section D assessed the perceived benefits and barriers to antenatal exercises. Section D of the instrument contains 25 items with a five-point Likert scale of Strongly Agree (5 points), Agree (4 points), Neutral (3 points) Disagree (2 points) and Strongly Disagree (1 point). The mean and standard deviation of each item in section D was computed. A criterion mean (\bar{x}) of 2.50 obtained from a previous study was used (Ogodo, Ilo, & Afoke, 2016) and any mean below the criterion means was adjudged as positive perception of benefits and barriers of prenatal exercise. The criterion was interpreted as ≤ 2.49 (Positive), 2.50-2.99 (Neutral), ≥ 3.00 (Negative).

The researchers administered the questionnaires, which were retrieved immediately from the pregnant women on completion. This method ensured a 100 percent return rate of the questionnaire.

Validity and Reliability of Research Instrument

The adapted instrument was evaluated by five (5) experts (three lecturers of maternal and child health nursing as well as two clinicians in the area of obstetrics and gynaecology) in the area of study gave a face and content validity of 80%. A pilot study was conducted using 40 '10%' of the sample size, to test the reliability of the instrument. The internal consistency reliability test revealed a Cronbach's alpha value of 0.70. The pilot study provided an estimate of the period required to complete a questionnaire.

Data Analysis

The data collected from this study were analyzed using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics of mean, standard deviation, frequency distribution were used to summarize data. Linear regression analysis was used to test the influence of awareness on the practice of prenatal exercise. Statistical significance was set at $p < .05$.

Results

A 100% response rate was achieved in this study, as the questionnaires were self-administered and retrieved immediately. The age of pregnant women ranged from 17 to 47 years, with a mean age of 26.86 ± 5.4 years. The socio-demographic characteristics of respondents are presented in Table 1. An overwhelming majority of the respondents were Muslims (96.8%) from the Hausa/Fulani culture (94.8), while more than half had secondary education (56%), with 1-3 children and were in their second trimester (65.8%) and about half were housewives (47.5%).

Table 1: Socio-demographic Characteristics of Research Participants

Variable	Frequency	Percentage (%)
Level of Education		
Primary	28	7.0
Secondary	224	56.0
Tertiary	78	19.5
Islamic	70	17.5
Marital Status		
Married	400	100
Single	0	0
Parity		
None	58	14.5
1-3	202	50.5
4-6	112	28.0
7-9	28	7.0
Duration of Pregnancy		
0-3months	39	9.8
4-6months	263	65.8
7-9months	98	24.5
Religion		
Islam	387	96.8
Christianity	13	3.3
Culture		
Hausa/Fulani	379	94.8
Yoruba	8	2.0
Igbo	7	1.8
Others	6	1.5
Occupation		
House wife	190	47.5
Civil servant	106	26.5
Self employed	104	26.0

N=400

Awareness, attitude and prescribers of prenatal exercise are presented in Table 2. More than half of the respondents (61.5%) were aware of prenatal exercises and almost half (43.5%) reported that a nurse/midwife prescribed the prenatal exercise. The attitude of all respondents (100%) was positive towards antenatal exercise, paradoxically, only 40% of the respondents actually practised prenatal exercise.

Table 2: Awareness, Attitude and Prescribers of Prenatal Exercise

Variable	Frequency	Percentage (%)
Awareness		
Yes	246	61.5
No	154	38.5
Prescriber		
Midwife/Nurse	174	43.5
Doctor	72	18.0
Peers	0	0
Others	0	0
none	154	38.5
Attitude		
Positive	400	100.0
Negative	0	0.0

N=400

The types of exercise practised by respondents are presented in Table 3. Breathing (36.5%) and stretching exercises (27.5%) were the most common type of prenatal exercise

practised by the respondents. On the other hand, stationary cycling (7%) and swimming (0%) were scarcely practised by the respondents.

Table 3: Practice and Types of Antenatal Exercise Practiced

Variable	Frequency	Percentage (%)
Practice		
Yes	160	40.0
No	240	60.0
Stretching		
Yes	110	27.5
No	290	72.5
Swimming		
Yes	0	0
No	400	100
Brisk walking		
Yes	70	17.5
No	330	82.5
Jogging		
Yes	90	22.5
No	310	77.5
Stationary Cycling		
Yes	28	7.0
No	372	93.0
Yoga/Meditation		
Yes	56	14.0
No	344	86.0
Breathing Exercise		
Yes	146	36.5
No	254	63.5
Pelvic floor exercises		
Yes	56	14.0
No	344	86.0
Squats		
Yes	70	17.5
No	330	82.5

N=400

Findings from the study showed that most of the respondents believed that prenatal exercise makes them feel good (1.27), prevents excess weight gain (1.66), decreases stress (1.57), increase uterine contractions (1.70), prevents back pain (1.48), prevent gestational diabetes

(1.31), promotes normal delivery (1.60), prevents pre-eclampsia (1.41) and increases stamina (1.40). This indicates that majority of the respondents agreed that prenatal exercise is beneficial to the pregnant woman.

Table 4: Perceived Benefits of Prenatal Exercise

Variable	Mean	Standard Deviation
Prenatal exercise makes me feel good	1.27	0.948
Prenatal exercise prevents excess weight gain	1.66	1.043
Decrease stress and tension	1.57	1.304
Increases rate of uterine contraction during labour	1.70	1.230
Shortens the period of labour	2.68	1.335
Increases pelvic capacity making labour easy	1.74	1.211
Prevents tiredness	2.50	1.106
Prevents swelling of legs in pregnancy	1.79	1.318
Prevents back pain	1.48	1.011
Lowers the rate of caesarean section	3.60	1.101
Prevents gestational diabetes	1.31	0.992
Promotes normal delivery of the baby	1.60	1.193
Prevents premature labour	2.38	1.015
Prevents Preeclampsia	1.41	1.102
Increases stamina	1.40	1.197
Prevents insomnia	1.94	1.342

Criteria: ≤ 2.49 (Positive); 2.50-2.99 (Neutral); ≥ 3.00 (Negative). N=400

Findings from the study indicated that majority of the respondents agreed that lack of access to facilities (1.81), been fatigued after

exercise (2.41) and lack of family support (2.29) were the major barriers to prenatal exercise among pregnant women.

Table 5: Perceived Barriers to Practice of Prenatal Exercise

Variable	Mean	Standard Deviation
I am too busy	2.50	1.409
Lack of access to facilities	1.81	1.260
Exercise makes me fatigued	2.41	1.337
Exercise will harm the baby	3.98	1.794
Time-consuming	2.59	1.469
Lack of family support	2.29	1.400
Ignorance	3.00	1.202
Religious reasons	2.78	1.631
Cultural reasons	2.49	1.541

Criteria: ≤ 2.49 (Positive); 2.50-2.99 (Neutral); ≥ 3.00 (Negative). N=400

Findings from the linear regression analysis revealed that there was a strong positive linear influence of awareness on the practice of prenatal exercise which was confirmed with a Pearson's correlation coefficient of $\beta = 0.646$. Simple linear regression showed a significant influence of awareness on the practice of

prenatal exercise, as seen with $B = 0.650$ and p - the value of 0.00. Therefore, the Null hypothesis is rejected. The R^2 value was 0.417, so 41.7% of the variation in the practice of prenatal exercise can be explained by the model containing only awareness of prenatal exercise.

Discussion

This study assessed awareness, attitude, practice and perceived benefits and barriers to prenatal exercise among pregnant women in Kano. Findings from the study revealed that a

Reasonable proportion of the respondents are young adults, which may be due to the fact that early adulthood is the active age of childbearing. This is similar to findings of studies conducted in Osun, Nigeria and India, where the mean age of the respondents are

28.9± 4.63 years and 25 ± 4.51 years respectively (Mbada *et al.*, 2015; Sujindra *et al.*, 2015).

All the respondents were married which is in line with the cultural norm of women in Kano state where pregnancy out of wedlock is considered as deviance and women within their early adult age are expected to be married. A majority of the women are Muslims (96.8%) from the Hausa/Fulani tribe (94.8%) and had only secondary school education (56%). This is in contrast to studies conducted by Mbada *et al.*, (2015) and Sujindra *et al.*, (2015), where 76% were Christians and 81% were Hindus respectively. Furthermore, more than half of the women in this study had 1-3 pregnancies and commenced antenatal care within 4-6 months of pregnancy. This finding is in line with earlier findings of late antenatal care commencement among Nigerian (Adekanle & Isawumi, 2008; Ebeigbe & Igberase, 2005; Ndidi & Oseremen, 2011; Okunlola, Owonikoko, Fawole, & Adekunle, 2015) and other pregnant women from sub-Saharan Africa countries (Kiwuwa & Mufubenga, 2008; Mrisho *et al.*, 2009), but in variance with the study conducted by Mbada *et al.* (2015) which showed early commencement (1-3months) of antenatal care. Therefore, it is believed that the findings of this study may have been influenced by the religion, culture, occupation and level of education of the respondents.

The findings of the present study revealed that more than half of the respondents (61.5%) were aware of prenatal exercises during pregnancy. This finding on awareness is higher than that obtained in similar studies which revealed less than 50% (Sujindra *et al.*, 2015) and 27.3% (Wijesiriwardana & Gunawardana, 2016). This could be due to the positive influence of education, an increase in the attendance of antenatal care and persistent recommendation of prenatal exercises by obstetric caregivers. A question for future research is to clarify the factors that resulted in an upward trend in awareness of prenatal

exercise and to determine if it is related to increased knowledge over time or if there are other factors at play.

All the respondents expressed a positive attitude towards prenatal exercise. This finding is in cohesion with recent studies that have reported a positive paradigm shift in attitudes toward exercise during pregnancy over the past two decades with increasing numbers of pregnant women participating in prenatal exercises (ACOG, 2015; Barakat, Pelaez, Montejo, 2011; Mbada *et al.*, 2014). This positive paradigm shift could be aligned to improved knowledge of the safety of exercise for both the mother and fetus during pregnancy and recommendations by midwives and obstetricians.

This study found breathing and stretching exercises as the predominant physical exercise practised during pregnancy. This could be because these exercises are simple, do not require cumbersome and expensive equipment, does not require the women to go to the gym, the women would not have to set aside specific time for these exercises, as they can be practised doing house chores and culturally, these exercises can be practised in the bedroom and does not require special clothing. This finding corroborates that of previous studies which have found aerobic and stretching exercises as simple, easy to do and adequate in pregnancy (Kasawara *et al.*, 2013; Mbada *et al.*, 2015; Robledo, Sandoval, Mosquera, Escobar & Ramírez, 2012). Although, swimming and stationary cycling are ideal prenatal exercises in literature, they were practiced by very few among the women in this study. This could be because of the educational level, culture and the environment of the respondents. Also, non-availability of swimming pools in Kano, non-affordability of stationary bicycle, cultural prevalence of hydrophobia and superstitions that makes swimming a taboo for pregnant and nursing women could be the reasons for the low practice of these prenatal exercises. This finding is in tandem with the study conducted by Mbada *et al.*, (2015).

This study revealed a high perception of the benefits of prenatal exercise among pregnant women in Kano. This high perception could be due to positive influence of education, improved knowledge of the safety of exercise for both the mother and fetus during pregnancy, an increase in the attendance of antenatal care and persistent recommendation of prenatal exercises by obstetric caregivers. This finding is in tandem with the result of ACOG (2015) and Ogodo, Ilo & Afoke (2016) which opined that positive perception and actual practice of prenatal exercise may be associated with reduced rates of preeclampsia, gestational diabetes, weight gain, labour and birth and all other issues that can lead to significant maternal and fetal death.

The barriers to exercise among pregnant women in this study included lack of access to facilities, lack of family support and cultural factors. These inter-personal barriers were more highly perceived among the respondents than intrapersonal barriers such as lack of time; feeling fatigued and fear of harming the baby. This could be associated with the culture, religion and the conservative environment of Kano, which does not provide a favourable setting for the provision of these exercise facilities. This finding is in contrast with findings of Irehovbude *et al.*, (2018) and Evenson *et al.*, (2004) which reported that intrapersonal barriers are a major inhibitor of exercise practice among pregnant women.

An interesting finding was that there was a positive influence of awareness on the practice of prenatal exercise. This is similar to the results obtained by Mbada *et al.* (2015) and Ogodo *et al.* (2016). In view of this finding, given that more than half of the pregnant women in the setting were aware of prenatal exercise, it is imperative that the government, working with other stakeholders, including community and traditional leaders at all levels; ensure education and sensitization of pregnant women towards prenatal exercise and also providing access to exercise facilities.

Conclusion

Pregnant women in Kano, Nigeria have high awareness levels and positive attitude towards prenatal exercises but the actual practice of prenatal exercises among the women is low. Awareness is a significantly determinant of exercise participation during pregnancy. The perceived benefits of prenatal exercise among pregnant women are increase wellness, prevention of gestational diabetes, increase stamina and prevention of preeclampsia. The predominant exercise types in pregnancy were breathing exercises and stretching.

Recommendation

The study recommends designing a culturally acceptable and appropriate educational package on prenatal exercises which will be taught to the pregnant women during antenatal classes. Increased social support should be given to pregnant women by identifying myths and misconceptions in the society which would objectively encourage a change in attitude towards prenatal exercise. Thus, employers, parents, relatives and spouses of pregnant women should likewise be engaged through adequate and appropriate health education. Obstetric caregivers should provide accurate, adequate and relevant information on prenatal exercises to the pregnant women.

Strengths and Limitations of the Study

The strength of our study was that sample size was large enough for generalization of the results. Also, data was primarily collected by the researchers themselves, and refusal rate was negligible.

It is worth mentioning the limitation related to this study been that practice of prenatal exercise was not directly observed rather subjectively asked. Future research should focus on direct observation of prenatal exercise and gaining more insight using qualitative research design to allow the pregnant women express their beliefs and attitude towards prenatal exercises.

Conflict of Interests

The authors declare that they have no conflict of interests regarding the publication of this paper.

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Appendix 1

Table 2. Estimating a population proportion with specified relative precision

$$n = z_{1-\alpha/2}^2(1-P)/\epsilon^2 P$$

(a) Confidence level 95%

P	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
0.01	729904	345744	217691	153664	115248	89637	71344	57624	46953	38416	31431	25611	20686	16464	12805	9604	6779	4268	2022
0.02	182476	86436	54423	38416	28812	22409	17836	14406	11738	9604	7858	6403	5171	4116	3201	2401	1695	1067	505
0.03	81100	38416	24188	17074	12805	9960	7927	6403	5217	4268	3492	2846	2298	1829	1423	1067	753	474	225
0.04	45619	21609	13606	9604	7203	5602	4459	3602	2935	2401	1964	1601	1293	1029	800	600	424	267	126
0.05	29196	13830	8708	6147	4610	3585	2854	2305	1878	1537	1257	1024	827	659	512	384	271	171	81
0.06	20275	9604	6047	4268	3201	2490	1982	1601	1304	1067	873	711	575	457	356	267	188	119	56
0.07	14896	7056	4443	3136	2352	1829	1456	1176	958	784	641	523	422	336	261	196	138	87	41
0.08	11405	5402	3401	2401	1801	1401	1115	900	734	600	491	400	323	257	200	150	106	67	32
0.09	9011	4268	2688	1897	1423	1107	881	711	580	474	388	316	255	203	158	119	84	53	25
0.10	7299	3457	2177	1537	1152	896	713	576	470	384	314	256	207	165	128	96	68	43	20
0.15	3244	1537	968	683	512	398	317	256	209	171	140	114	92	73	57	43	30	19	9
0.20	1825	864	544	384	288	224	178	144	117	96	79	64	52	41	32	24	17	11	5
0.25	1168	553	348	246	184	143	114	92	75	61	50	41	33	26	20	15	11	7	*
0.30	811	384	242	171	128	100	79	64	52	43	35	28	23	18	14	11	8	5	*
0.35	596	282	178	125	94	73	58	47	38	31	26	21	17	13	10	8	6	*	*
0.40	456	216	136	96	72	56	45	36	29	24	20	16	13	10	8	6	*	*	*
0.50	292	138	87	61	46	36	29	23	19	15	13	10	8	7	5	*	*	*	*

* Sample size less than 5.

Source:
 (Lwanga *et al.*,1991)