



## Awareness of Rhesus Incompatibility and its Preventive Measures among Intending Couples Attending Marriage Counselling Class at Orthodox Churches in Nsukka Metropolis of Enugu State

J. I. Ofubebe

Department of Human Kinetics and Health Education, University of Nigeria Nsukka  
08034464646; Justina.ofubebe@unn.edu.ng

Ogechi N. Nwagwu

Department of Human Kinetics and Health Education, University of Nigeria Nsukka  
08060250432; ogechi\_12@yahoo.com

### Abstract

*The study examined the awareness of rhesus incompatibility and its preventive measures among intending couples attending marriage counseling class at orthodox churches in Nsukka metropolis, Enugu State. Four research questions and one null hypothesis guided the study. The study adopted descriptive survey research design. The population of the study was 57 intending couples attending marriage counseling class at three purposively selected orthodox churches. A valid and reliable questionnaire was used for data collection. Percentages were used to answer the research questions and chi-square statistic was used to test the null hypothesis at 0.05 level of significance. Results of the study, among others indicated that high (65.1%) proportion of intending couples are aware of rhesus incompatibility and average (55.2%) proportion are aware of preventive measures of rhesus incompatibility. Male and female intending couples showed no difference in their level of awareness of rhesus incompatibility ( $p=0.534 > 0.05$ ). Based on the findings of the study, it was recommended; among others that marriage counseling committee in various churches should include rhesus incompatibility counseling as an integral part of the marriage counseling class. They should also encourage couples who are rhesus negative to adopt preventive measures and seek specialized health care.*

**Key words:** Rhesus incompatibility, Awareness, Preventive Measures, Intending couple.

### Introduction

Rhesus (Rh) incompatibility contributes to neonatal morbidity and mortality in the world due to non-immunization, and false Rhesus typing in rare cases (Holburn and Prior, 2006). It is estimated that there is an incidence of 10.6 cases per 10,000 deliveries of hemolytic disease of newborn due to rhesus incompatibility worldwide (Chavez, Mulinare and Edmonds, 2011). According to Kio, Agbede, and Oroniyi (2016), the reproductive risk of Rh negative women in Africa is three times that of non-African women and this shows that it is a problem. In Nigeria, the incidence of rhesus disease appears to be high. According to Sola (2011) statistics available in Nigeria show that rhesus disease contribute to the incidence of 144 Nigeria women who die daily from pregnancy and childbirth complication. It has also been found to be the major cause of high infant maternal mortality rate. According to Sola (2011), many children had died due to the rhesus incompatibility from their parents who were ignorant of their status.

Rh incompatibility, also known as Rh disease is a condition that occurs when a woman with Rh-negative blood type is exposed to Rh-positive blood cells, leading to the development of Rh antibodies. Rh-incompatibility is the most frequent blood group incompatibilities in the clinical practice which can cause fetal anemia, hydrops, and even death (Lazer, Nagy, Ban, Beke, & Papp 2011). Race and Sanger (2005) reported that when an Rh negative mother is exposed to the Rh positive red cells (usually as transplacental haemorrhage), the client develops allo-anti-D which cross the placenta and results in the destruction of fetal red cells. The condition is known as hemolytic disease of new born. According to Sola (2011), hemolytic disease of newborn used to be the major cause of fetal loss and death among new babies. Obinna (2017) noted that needless deaths of children from rhesus incompatibility have been link with witch craft, abiku, or ogbaje due to poor awareness. Kio, Agbede, and Oroniyi (2016), reported that the clinical manifestations of Rh hemolytic disease range from asymptomatic mild anemia to hydrops fetalis or stillbirth associated with severe anemia and jaundice.

Hemolytic disease of newborn was a significant cause of fetal mortality and morbidity until the introduction of amniocentesis, intrauterine transfusion, and exchange transfusion in the management of severely allo-immunised women and their fetuses. (Kio, Agbede, and Oroniyi 2016). During the past 40 years, rhesus

alloimmunization has gone from being one of the major causes of perinatal mortality to an almost eradicated disease, this related to unraveling of the pathophysiology, the development of the reliable diagnostic tools, a very effective prophylaxis programme, and for the availability of treatment by intrauterine blood transfusion (Crowther and, Middleton 2009). Anti-D given within 72 hours after birth, reduce the risk of Rh-D alloimmunization in rhesus negative women who have given birth to rhesus-positive infant (Nasif 2005). Sola (2011) noted that anti D injection was introduced in 1977 to prevent sensitization, and has reduced the number of cases of rhesus disease by 90 per cent. Awareness of rhesus incompatibility and its preventive measure will go a long way to reduce the infant and maternal mortality.

Awareness has been variously defined. According to Chalmers (1997), awareness is a state wherein a subject is aware of some information when that information is directly available to bring to bear in the direction of a wide range of [behavioral processes](#). Awareness is the ability to directly know and [perceive](#), to feel, or to be cognizant of events. In the context of this study, awareness refers to a state of being aware of rhesus incompatibility and its preventive measures among intending couples attending marriage counseling class

Prevention is a wide range of activities put in place to limit or protect individual from acquiring a disease or being harmed. Jerry (2006) defined prevention as a wide range of activities known as intervention aimed at reducing risk or threats to health. Association of faculty of Medicine of Canada [AFMC] (2013) stated that prevention consist of actions to minimize future hazards to health and hence inhibit the establishment factors known to increase the risk of disease. These definitions show that the goal of prevention is to reduce risk factors and enhance protective factors. Therefore preventive measures as used in this study refer to plans of actions designed to hinder, impede, avert, obstruct and to stop the occurrence of rhesus incompatibility. Sola (2011) noted that knowing ones rhesus status and including it into the routine screening for all pregnant women would reduce death in infants and mothers.

Despite the prevention and treatment of rhesus incompatibly awareness about blood groups and Rh incompatibility and its complications during pregnancy and after child birth is still very low (Kio, Agbede, and Oroniyi 2016). Sola (2011) stated that although there are measures to ensure that a rhesus negative woman was able to deliver life babies, most Nigeria women are ignorant of their rhesus status.

Some factors such as age and level of education have been indicated to influence the awareness of rhesus incompatibility. Ali, Hadi, and Wisam (2014) conducted a study to determine the prevalence of Rh incompatibility and to evaluate the knowledge and behavior of couples attending premarital test toward incompatibility in Baghdad. The results indicated among others that level of academic achievement for rhesus incompatibility test was found to respond more in educated couples than illiterate, good proportion of study group are aware that there is treatment for incompatibility with male slightly higher than female.

In the same vein, Kio, Agbede, and Oroniyi (2016) conducted a study to investigated awareness and practice of expectant mothers about maternal-fetal blood incompatibility at Olabisi Onabanjo University Teaching Hospital in Ogun state. The results indicated among others that the awareness of maternal-fetal blood incompatibility of the expectant mothers was low, age of the pregnant women, income and knowledge level as well as number of previous births were significant variables influencing uptake of maternal-fetal blood incompatibility test.

The Location of the study was Nsukka metropolis of Enugu State. Nsukka is one of the seventeen LGA of Enugu State. Nsukka has 20 political wards which comprises many communities and villages with various cultural and religious beliefs and values. Orthodox churches in Nsukka metropolis organize formal counseling classes for intending couples where they are counseled on issues like genotype, sex, successful marriage among others.

### **Statement of the problem**

In the past, some couples suffer from miscarriages and continuous deaths of children without a known cause. Most often it was alleged to be as a result of witch craft or the woman is possessed by “ogbaje spirit”. The condition often results to divorce or separation. Recent studies have revealed that most of those cases could be as a result of rhesus incompatibility.

Ideally, intending couples should know their blood group and rhesus status before marriage. They should be aware of some health issues that could affect their offspring and cause strain on their marriage. They should have adequate information of some health matters for successful parenting.

Unfortunately, couples go into marriage without any form of knowledge about their blood group including Rhesus incompatibility resulting to marital crises. They are often ignorant of the consequences of blood incompatibility. Orthodox churches in Nsukka metropolis organize formal counseling classes for intending couples



where they are counseled on issues like genotype, sex, successful marriage among others. From all indication it appeared that little or no attention is been paid to rhesus incompatibility.

Regrettably, following the recent interventions on rhesus incompatibility and enlightenment program, intending couples attending marriage counseling class seems not to be aware of rhesus incompatibility. Available literature has proved that most couples are ignorant of their rhesus status. Most of the available studies were conducted outside Nsukka metropolis of Enugu State. There is no published study on awareness of rhesus incompatibility and its preventive measures so far conducted in Nsukka metropolis of Enugu State. Therefore, this study was proposed to determine the awareness of rhesus incompatibility and its preventive measures among intending couples attending marriage counseling class at orthodox churches in Nsukka metropolis of Enugu State. The findings of the study may be of immense benefit to health professional, marriage counselors, governmental and non-governmental health agencies, health institutions and ministry of health.

### **Purpose of the study**

The purpose of the study was to determine the awareness of rhesus incompatibility and its preventive measure among intending couple attending marriage counseling class at orthodox churches in Nsukka metropolis of Enugu State. Specifically the study seeks to determine;

1. level of awareness of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches in Nsukka Metropolis;
2. level of awareness of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches in Nsukka Metropolis base on gender;
3. level of awareness of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches Nsukka Metropolis base level of education;
4. level of awareness of preventive measures of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches in Nsukka Metropolis.

### **Research questions**

1. What is the level of awareness of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches in Nsukka Metropolis?
2. What is level of awareness of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches in Nsukka Metropolis base on gender?
3. What is the level of awareness of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches Nsukka Metropolis base level of education?
4. What is the level of awareness of preventive measures of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches in Nsukka Metropolis?

### **Hypotheses**

1. There is no statically significant difference in the level of awareness of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches in Nsukka Metropolis based on gender.

### **Methods**

The study adopted descriptive research design. This design according to Nworgu (2006), describes characteristics of a population or phenomenon being studied by gathering information directly from them as they exist in their natural setting, and determines the relationship between specific events. The population of the study consisted of 57 couples attending marriage counseling class at three purposively selected orthodox churches in Nsukka Metropolis. The entire population was used for the study. This is because the size is small and manageable and this goes in line with Nwana (1990) which states that when the population of the study is relatively small or manageable the population should be used.

Instrument for data collection was the researcher designed questionnaire known as rhesus incompatibility questionnaire-RIQ. The face validity of RIQ was establish by giving the instrument, the purpose of the study with specific objectives and research questions to experts in the Department of Human Kinetics and Health Education, University of Nigeria Nsukka. Their advice and suggestion were used in modifying the instrument that was used for data collection.

With the approval of the Parish Priest of the churches, the researcher administered copies of the instrument to the respondents in their respective churches during their weekly classes. The completed copies of

the RIQ were collected on the spot and used for data analysis. The Statistic Package for Social Sciences (SPSS) was employed, using frequency and percentages to answer the research questions. Awareness was measured following the Ashur (1977) measurement scale. According to Ashur, proportion or score less than 40 percent of correct response should be taken as indicator of low level of awareness, 40 – 59 percent is considered average and 60 – 80 per cent is considered high, while over 80 per cent is regarded as very high level of knowledge. Chi-square statistics was utilized to test the null hypotheses at 0.05 level of significance. The null hypotheses were rejected when the p- value was less than the significant difference of 0.05, but were accepted when the p- value was greater than the significant difference of 0.05

## Results

The findings of the study are presented in tables and figures according to data answering research questions, and data testing the hypothesis

### Research question one

What is the level of awareness of rhesus incompatibility among intending couple attending marriage counseling class at orthodox churches in Nsukka Metropolis? Data answering the above research question are contained in Table 1

**Table 1: Level of Awareness of Rhesus Incompatibility among Intending Couple Attending Marriage Counseling Class (n=57)**

S/N	Awareness statement on rhesus incompatibility	f	%	Decision
1.	I have heard about rhesus incompatibility.	53	93.0	Very High
2.	I know my rhesus status.	41	71.9	High
3.	I know my spouse rhesus status	35	61.4	High
4.	I am aware that rhesus incompatibility occurs when a woman with Rh-negative blood type is exposed to Rh-positive blood cells, leading to the development of Rh antibodies.	32	56.1	Average
5.	I know about the consequence of rhesus incompatibility on fetus/newborn.	32	56.1	Average
6.	I am aware that rhesus incompatibility can occur when a rhesus negative women marries a rhesus positive man.	35	61.4	High
7.	I am aware that rhesus incompatibility cannot occur when a rhesus negative man marries a rhesus positive woman.	32	56.1	Average
<b>Overall Percentage</b>			<b>65.1</b>	<b>High</b>

**Key: 0- 39 low, 40 – 59 average, 60 – 80 high, over 80 very high.**

Data in Table 1 show that intending couple reported high (65.1%) level of awareness of rhesus incompatibility. The table also shows that very high proportion (93.0) of intending couple reported that they have heard about rhesus incompatibility while high proportion (71.9) know their rhesus status and that of their spouse (61.4), rhesus incompatibility can occur when a rhesus negative women marries a rhesus positive man was also reported high awareness level (61.4). The table further shows that intending couples reported average awareness in the following areas, rhesus incompatibility occurs when a woman with Rh-negative blood type is exposed to Rh-positive blood cells leading to the development of Rh antibodies (56.1); consequence of rhesus incompatibility on fetus/newborn (56.1); rhesus incompatibility cannot occur when a rhesus negative man marries a rhesus positive woman (56.1).

### Research question two

What is the level of awareness of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches in Nsukka Metropolis based on gender? Data answering the above research question are contained in Table 2



**Table 2: Level of Awareness of Rhesus Incompatibility among Intending Couples Attending Marriage Counseling Class Based on Gender (n=57)**

Awareness statement on rhesus incompatibility	Male (n=29)			Female (n=28)		
	f	%	D	f	%	D
1. I have heard about rhesus incompatibility	.26	49.1	A	29	50.9	A
2. I know my rhesus status.	17	41.5	A	24	58.5	A
3. I know my spouse rhesus status	17	48.6	A	18	51.4	A
4. I am aware that rhesus incompatibility occurs when a woman with Rh-negative blood type is exposed to Rh-positive blood cells, leading to the development of Rh antibodies.	16	50.0	A	16	50.0	A
5. I know about the consequence of rhesus incompatibility on fetus/newborn.	17	53.1	A	15	46.9	A
6. I am aware that rhesus incompatibility can occur when a rhesus negative women marries a rhesus positive man.	17	48.6	A	18	51.4	A
7. I am aware that rhesus incompatibility cannot occur when a rhesus negative man marries a rhesus positive woman.	15	46.9	A	17	53.1	A
<b>Overall Percentage</b>		<b>48.2</b>	<b>A</b>		<b>51.7</b>	<b>A</b>

**Key: 0- 39 low (L), 40 – 59 average (A), 60 – 80 high (H), over 80 very high (VH).**

Data in Table 2 show that overall percentage of responses affirmed that average proportion of both male (48.2%) and female (51.7%) intending couples are aware of Rhesus incompatibility

### Research question three

What is the level of awareness of rhesus incompatibility among intending couple attending marriage counseling class at orthodox churches in Nsukka Metropolis based on level of education? Data answering the above research question are contained in Table 3

**Table 3: Level of Awareness of Rhesus Incompatibility among Intending Couple Attending Marriage on Counseling Class Based on Level of Education (n=57)**

Awareness statement on rhesus incompatibility	Primary (n=6)			Secondary (n=13)			Tertiary (n=38)		
	f	%	D	f	%	D	f	%	D
1. I have heard about rhesus incompatibility	.4	7.5	L	11	20.8	L	38	71.7	H
2. I know my rhesus status.	4	9.8	L	7	17.1	L	30	73.2	H
3. I know my spouse rhesus status	3	8.6	L	6	17.1	L	26	74.3	H
4. I am aware that rhesus incompatibility occurs when a woman with Rh-negative blood type is exposed to Rh-positive blood cells, leading to the development of Rh antibodies.	2	6.2	L	5	15.6	L	25	78.1	H
5. I know about the consequence of rhesus incompatibility on fetus/newborn.	2	6.2	L	4	12.5	L	26	81.2	VH
6. I am aware that rhesus incompatibility can occur when a rhesus negative women marries a rhesus positive man.	2	5.7	L	7	20.0	L	26	74.3	H
7. I am aware that rhesus incompatibility cannot occur when a rhesus negative man marries a rhesus positive woman.	3	9.4	L	5	15.6	L	24	75.0	H
<b>Overall Percentage</b>		<b>7.6</b>	<b>L</b>		<b>16.9</b>	<b>L</b>		<b>75.4</b>	<b>H</b>

**Key: 0- 39 low (L), 40 – 59 average (A), 60 – 80 high (H), over 80 very high (VH).**



Data in Table 3 show that intending couple with tertiary education reported high level of awareness of rhesus incompatibility (75.4%) while intending couple with secondary (16.9%) and primary (7.6%) education reported low level of awareness.

#### Research question four

What is the level of awareness of preventive measures of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches in Nsukka Metropolis? Data answering the above research question are contained in Table 4

**Table 4: Level of Awareness of Preventive Measures among Intending Couple Attending Marriage Counseling Class (n=57)**

S/N	Awareness Statement on Preventive Measure	f	%	Decision
1.	I know what precaution should be taken if mothers blood is negative	35	61.4	High
2.	I am aware that a rhesus incompatibility is generally prevented by treating the mother during pregnancy or soon after delivery with intramuscular injection of anti-RHD immunoglobulin	32	56.1	Average
3.	I know rhesus incompatibility can be prevented when a rhesus negative women marries a rhesus negative man	29	50.9	Average
4.	I am aware rhesus incompatibility can be prevented when a rhesus negative man marries a rhesus positive women	25	43.9	Average
5.	I am aware Rhesus incompatibility can be prevented by determining rhesus status of the woman prior to marriage	36	63.2	High
<b>Overall percentage</b>			<b>55.2</b>	<b>Average</b>

**Key: 0- 39 low, 40 – 59 average, 60 – 80 high, over 80 very high.**

Data in Table 4 show that average proportion (55.2%) of intending couples are aware of the preventive measures for rhesus incompatibility. The table also shows that high proportion (64.4%) of intending couple reported that they are aware of what precaution should be taken if mothers blood is negative and also aware that rhesus incompatibility can be prevented by determining rhesus status of the woman prior to marriage(62.2%), while intending couples reported average awareness in the following areas; rhesus incompatibility is generally prevented by treating the mother during pregnancy or soon after delivery with intramuscular injection of anti-RHD immunoglobulin (56.1%); rhesus incompatibility can be prevented when a rhesus negative women marries a rhesus negative man (50.9%); rhesus incompatibility can be prevented when a rhesus negative man marries a rhesus positive women (43.9)

#### Hypothesis one

There is no statically significant difference in the level of awareness of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches in Nsukka Metropolis based on gender. Data testing this hypothesis are contained in Table 5

**Table 5: Summary of Chi-square ( $\chi^2$ ) Analysis of no significant difference in the level of awareness of rhesus incompatibility among intending couples attending marriage counseling class based on gender**

S/N	Knowledge statement on rhesus incompatibility	n	$\chi^2$ value	P-value	Df	Decision
1.	I have heard about rhesus incompatibility.	57	1.002	.317**	1	Accepted
2.	I know my rhesus status.	57	5.179	.023**	1	Accepted
3.	I know my spouse rhesus status.	57	.193	.661**	1	Accepted
4.	I am aware that rhesus incompatibility occurs when a woman with Rh-negative blood type is exposed to Rh-positive blood					



	cells, leading to the development of Rh antibodies.	57	.022	.881**	1	Accepted
5.	I know about the consequence of rhesus incompatibility on fetus/newborn.	57	.148	.701**	1	Accepted
6.	I am aware that rhesus incompatibility can occur when a rhesus negative women marries a rhesus positive man.	57	.193	.661**	1	Accepted
7.	I am aware that rhesus incompatibility cannot occur when a rhesus negative man marries a rhesus positive woman.	57	.468	.494**	1	Accepted
	<b>Cluster P-Value</b>			<b>0.534**</b>		<b>Accepted</b>

**Key: \*\*=not significant, 0.05=significant level**

Data in Table 5 show the cluster p-value for hypothesis of no significant difference in the level of awareness of rhesus incompatibility among intending couples attending marriage counseling class based on gender ( $P=0.534 > \text{Sig}=0.05$ ). Since the p-value was greater than the significant level, the null hypothesis of no significant difference was therefore accepted. This indicates that male and female intending couples do not differ significantly in their level of awareness of rhesus incompatibility.

### Discussion of findings

The finding of the study in Table 1 show that intending couple reported high level of awareness of rhesus incompatibility. The table also shows that very high proportion (93.0%) of intending couple reported that they have heard about rhesus incompatibility while high proportion (71.9%) know their rhesus status and that of their spouse (61.4%), rhesus incompatibility can occur when a rhesus negative women marries a rhesus positive man was also reported high awareness (61.4%). The table further shows that intending couples reported average awareness in the following areas, rhesus incompatibility occurs when a woman with Rh-negative blood type is exposed to Rh-positive blood cells leading to the development of Rh antibodies (56.1%); consequence of rhesus incompatibility on fetus/newborn (56.1%) and rhesus incompatibility cannot occur when a rhesus negative man marries a rhesus positive woman (56.1%). These findings were expected and therefore were not surprising because intending couple should be aware of their blood group, genotype and rhesus status before marriage. Moreover, marriage counseling class provide avenue for blood test and marital advice as marriage cannot be approved without necessary blood test. This avenue must have availed the intending couple the opportunity to become aware of rhesus incompatibility.

The finding on level of awareness of rhesus incompatibility were in line with the assertion of Ali, Hadi, and Wisam (2014) who asserted that couples knew about rhesus incompatibility and the nature of the tests performed as explained to them. The finding may be useful to marriage counseling committee in various churches in evaluating marriage counseling program and then institute strategies for improvement and consider including rhesus incompatibility counseling as an integral part of the marriage course. The finding may help federal ministry of health to appropriately and compulsorily make rhesus incompatibility awareness as a part of ante-natal care.

The finding of the study in Table 2 shows that average proportion of both male (48.2%) and female (51.7%) intending couples are aware of rhesus incompatibility. The summary of chi-square analysis in Table 5 indicated that male and female intending couples did not differ significantly in their level of awareness of rhesus incompatibility ( $P=0.534 > \text{Sig}=0.05$ ). The finding of the study were expected and therefore not surprising because both the male and the female couples attend the marriage counseling class together this may have counted for no difference in their level of awareness. However the finding does not collaborate with Ali, Hadi, and Wisam (2014) finding that good proportion of his study group knew about incompatibility with male slightly higher than female. The finding may help marriage counselors to create more awareness on rhesus incompatibility.

The finding of the study in Table 3 show that intending couple with tertiary education reported high level of awareness of rhesus incompatibility (75.4%) while intending couple with secondary (16.9%) and primary (7.6%) education reported low level of awareness. The findings were expected and therefore not surprising because it is expected that high education should relate to increase access to information and knowledge. It is expected that those who are educated should be more aware of rhesus incompatibility than their uneducated counterpart. However the finding collaborated with the finding of Ali, Hadi, and Wisam (2014) who asserted that level of academic achievement was found to influence knowledge of rhesus incompatibility.



The finding of the study in Table 4 shows that average proportion of intending couples are aware of preventive measures for rhesus incompatibility. The table also shows that high proportion (64.4%) of intending couples reported that they are aware of precaution that should be taken if mother's blood is negative and also aware that Rhesus incompatibility can be prevented by determining rhesus status of the woman prior to marriage (62.2%). The finding was expected and therefore not surprising because the finding were in line with the assertion of Ali, Hadi, and Wisam (2014) who asserted that good proportion of couple in his study group knew that there is treatment for incompatibility. This finding may help ministry of health to make preventions and treatment available and affordable in the various health care facilities across the country.

### **Implication for Protection against Hemolytic disease of Newborn, Miscarriage, Pregnancy Complications and Infant Mortality**

The results of this study are indication that there is need for increase in awareness of rhesus incompatibility in Nigeria. Awareness of rhesus incompatibility and its preventive measures has a strong impact on the decrease cases of infant mortality, miscarriages and pregnancy complications. However, couples who are not aware of blood grouping, genotype and rhesus incompatibility have a high risk of infant mortality, hemolytic disease of newborn, miscarriages and other pregnancy complication as a result of incompatibility. According to Sola (2011) many children had died due to the rhesus incompatibility from their parents who were ignorant of their status. Awareness of rhesus incompatibility provides avenue for couples to take the necessary preventive measures and seek specialized care during pregnancy. Preventive measure of rhesus incompatibility is necessary to protect a rhesus negative mother against allo-immunization. Literature revealed that once allo-immunized, maternal Rh immunoglobulin G (IgG) antibodies persist for life and may cross freely from the placenta to the fetal circulation, where they form antigen-antibody complexes with Rh-positive fetal erythrocytes and eventually are destroyed, resulting in a fetal alloimmune-induced hemolytic anemia.

### **Conclusions**

The findings have shown that high proportion of intending couple attending marriage counseling class at orthodox churches in Nsukka Metropolis are aware of rhesus incompatibility while average proportion are aware of the preventive measures of rhesus incompatibility. Male and female intending couples show no difference in their level of awareness of rhesus incompatibility. The null hypothesis of no difference on gender was accepted. These findings have shown that intending couples are more aware of rhesus incompatibility and less of its preventive measure. Gender has no influence on the awareness of rhesus incompatibility among intending couples attending marriage counseling class at orthodox churches in Nsukka Metropolis of Enugu State

### **Recommendations**

Based on the findings, discussions and conclusions, the following recommendations were made

1. Marriage counseling committee in various churches should include rhesus incompatibility counseling as an integral part of the marriage counseling class. They should also encourage couples who are rhesus negative to adopt preventive measures and seek specialized health care.
2. Health care providers should integrate teachings on rhesus incompatibility in antenatal care services so as to increase awareness.
3. Federal ministry of health should make immune-globulin injection available and affordable in various health care facilities to meet the needs of rhesus negative mothers.

### **References**

- Agbo, P. O. (2003). *Safe motherhood and family for development countries*. Lagos: Heinemann
- Ali, H. H., Hadi., & Wisam, S. S. (2014). Incompatibility: Prevalence, knowledge and attitude for premarital test couples. *Kuja Journal for Nursing Science*. 5 (3),
- Ashur, S. S. (1977). An evaluation plan for the development of updating of nutrition curriculum at upper elementary and preparatory levels in Jordan. *IVES/UNESCO International conference in Nutrition Education Oxford 207 (2)*, 67-74
- Association of Faculty of Medicine Canada (2013). *Prevention intervention and treatment of addiction*. Retrieved from <https://afmc/search/node/prevention>.
- Chalmers, David (1997). *The Conscious Mind: In Search of a Fundamental Theory*. Oxford: Oxford University Press.





- Chavez, G.F., Mulinare, J. & Edmonds, L. D. (2011). Epidemiology of Rh hemolytic disease of the newborn in the United State. *JAMA* (265), 32- 40
- Crowther C, & Middleton P. (2009) Anti-D administration after child birth for Rhesus alloimmunization. *Cochrai database of systemic reviews 2008 Issue 1*doi: 10. 1002/14651858.CD000021.
- Fikree, F., Karim M., Midhet F. & Berendes H. (1993). Causes of reproductive age mortality in low socioeconomic settlements of Karachi, *Journal of Medical Association* (43), 208-215.
- Henry (1994). *The Rise and fall of strategic planning*. Toronto: Planners free press.
- Holburn, A.M. & Prior, D. (2006). The UK national external quality assessment scheme in blood group serology. ABO and D grouping and antibody screening. *Clin Lab Haematol* 2 (8), 243-56.
- Horby, A.S. (2010). *Oxford advanced learners dictionary. (8<sup>th</sup>ed)*. New york: Oxford University Press
- Jerry, D. (2006). *Prevention and early intervention*. Toronto: Institute for work and Health
- Kio, J.O., Agbede C.O. & Oroniyi, F. A. (2016). Assessing expectant mothers' knowledge and practices regarding maternal-fetal blood incompatibility: Evidence from Ogun State, Nigeria. *Greener Journal of Epidemiology and Public Health*, 4(2), 013-019 <http://doi.org/10.15580/GJEPH.2016.2.100216152>
- Lazer, L., Nagy, B., Ban, R., Beke A. & Papp Z. (2011). Non invasive detection of fetal Rh using real-time PCR method. *Oru Hetil*, 148(11), 497-500.
- Nasif, R. (2005). The incidence of blood groups in Lebanese. *Lebanon Medical Journal*, 11(6), 346-349.
- Nworgu, B.G. (2006). *Educational research: Basic issues and methodology (2<sup>nd</sup>ed.)*. Nsukka, Enugu: University Trust Publisher.
- Obinna, C. (2017, 16). 34m Nigeria affected, as ignorance fuels Rhesus incompatibility. *Vanguard*, Retrieved from <https://www.Vanguard.com/2017/05/34m-nigeria-women-affected-ignorance-fuels-rhesus-incompatibility/>
- Race, R. R. & Sanger, R. (2005). *Blood Groups in Man*. Blackwell: Scientific Publication.
- Sola, O. (2011, 14). Rhesus incompatibility: Why children die at birth. *Vanguard*, Retrieved from <https://www.vanguardngr.com/2011/01/rhesus-incomptibility-why-children-die-at-birth/>