Chapter Three

Methodology

Methodology

3.1 Study Design:

a cross-sectional study design.

3.2 Study Area & Setting :

study area: River Nile State

study sitting :community base/PHC.

3.3 Study Population :

inclusion criteria : Any child under 5 years old.

Exclusion criteria: Any child complain of sever disease or participate in another study.

3.4 Study Sample Size:

$$n = \frac{z^2 \times p \times q\%}{d^2}$$

N= *number of subject*

Z = 1,96

P = prevalence of malnutrition

Q =1-p

D = degree/per since = 0,05

$$n = \frac{(1.96)^2 \times 0.5 \times (1 - 0.5)}{(0.05)^2} = 384$$

3.5 Sample Technique :

we select four localities Randomly from each locality we will select from community base randomly.

3.6 Data Collection :

Data was collected through prepared questionnaire to collect risk factor of malnutrition also collect data through MUAC Examination.

3.7 Data Management :

Data was managed by Excel program ,we will going to consider p.value (0,05) and less significant result ,also calculation confidence inter value 95%.

3.8 Ethical Consideration :

This proposal approves from Elshaikh Abdallah Elbadri university/ health collage. The inform consent will be obtain from parent after taken approval from parent household.

Chapter Four

Results

Results

4.1 Results

Table **4.1.1** Show that distribution of participation in matter of personal data .
{N =384}

Variable	Description	Sample size	Percent
Gender	Male	196	51%
	Female	188	49%
	Total	384	100%
Age	Month ---- Year	100	26%
	Year --- 2years	112	29.2%
	Moe than 2 years	172	44.8%
	Total	384	100%
Residence	Shendi	146	38%
	Atbara	142	37%
	Solaa	43	11.2%
	Albobera	53	13.8%
	Total	384	1005

The study showed that 51% of common participate were male.

The age of participant classified according to mathematic equation from 1 month to 1 year, the number 100 that percent 26% , from 1 year to 2 years , the number 112 that percent 29.2% , more than 2 years, the number 172 that percent 44.8% , the common age group among participant more than 2 years.

جامعة الشيخ عبد الله البدري
عمادة المكتبات
مكتبة الكلية الصحية
Reg.No 57
Class.No

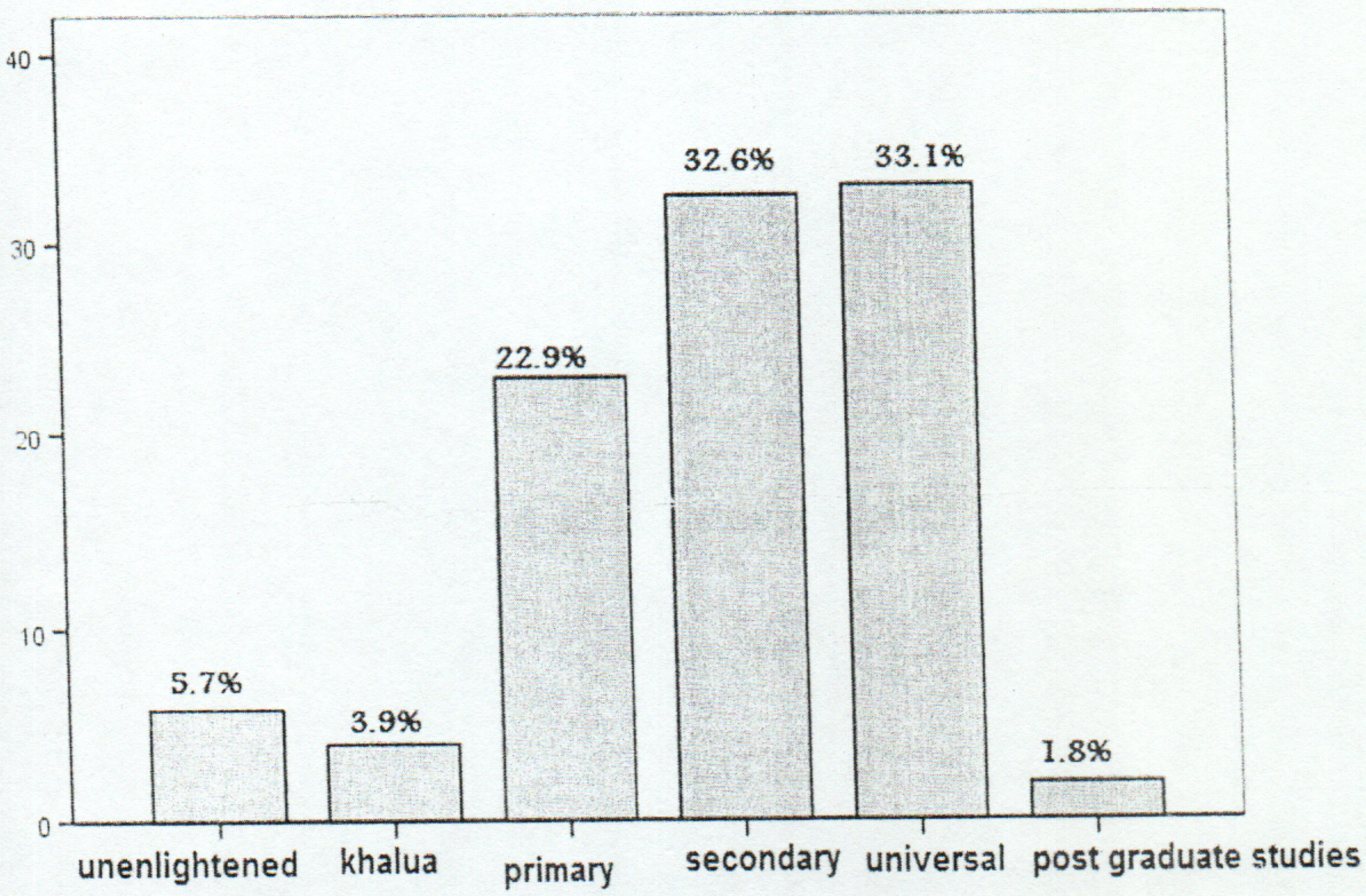


Figure 4.1.1 distribution of study group in relation to level of education of mothers

Table 4.1.2 Distribution of study group in relation to age of mother during pregnancy

Variable	Age	Sample size	Percent
Age of mother during pregnancy	Less than 20 years	41	10.7 %
	21--25	106	27.6%
	26--30	123	32%
	31--35	85	22.1%
	More than 35	29	7.6%
	Total	384	100%

Age of mother during pregnancy less than 20 years , the number 41 that percent 10.7% , from 21-25years the number 106 that percent 27.6% , from 26-30 years the number 123 that percent 32%, from 31-35years the number 85 that percent 7.6%, more than 35years the number 29 that percent 7.6%.the common age of mother from 26-30 years .

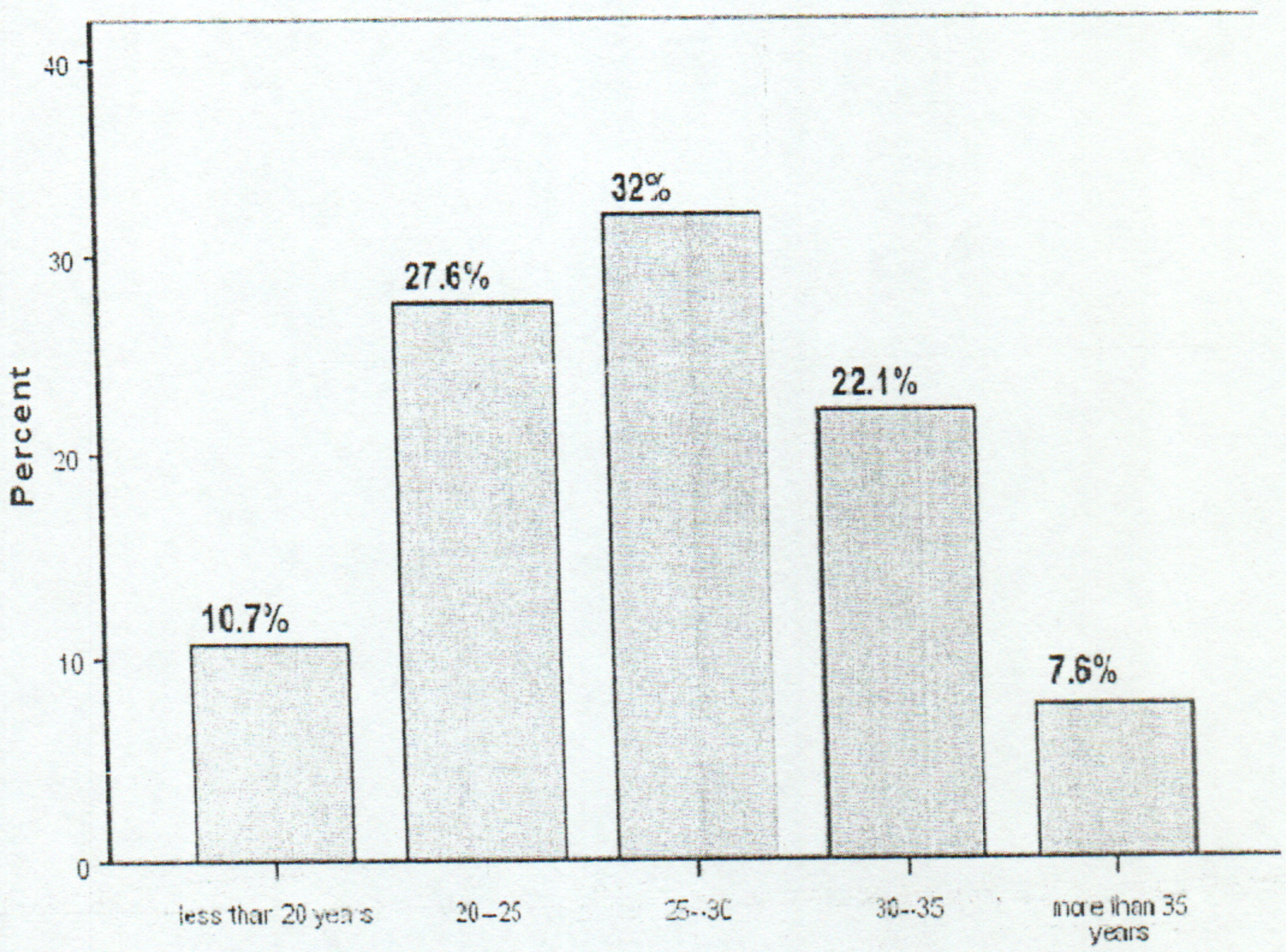


Figure 4.1.2 Distribution of study group in relation to age of mother during pregnancy

Table 4.1.3 Distribution study group in relation to MUAC measurement

Variable	MUAC	Sample size	Percent
Gender	Normal	334	87%
	Less than normal	27	7%
	Malnutrition	23	6%
	Total	384	100%

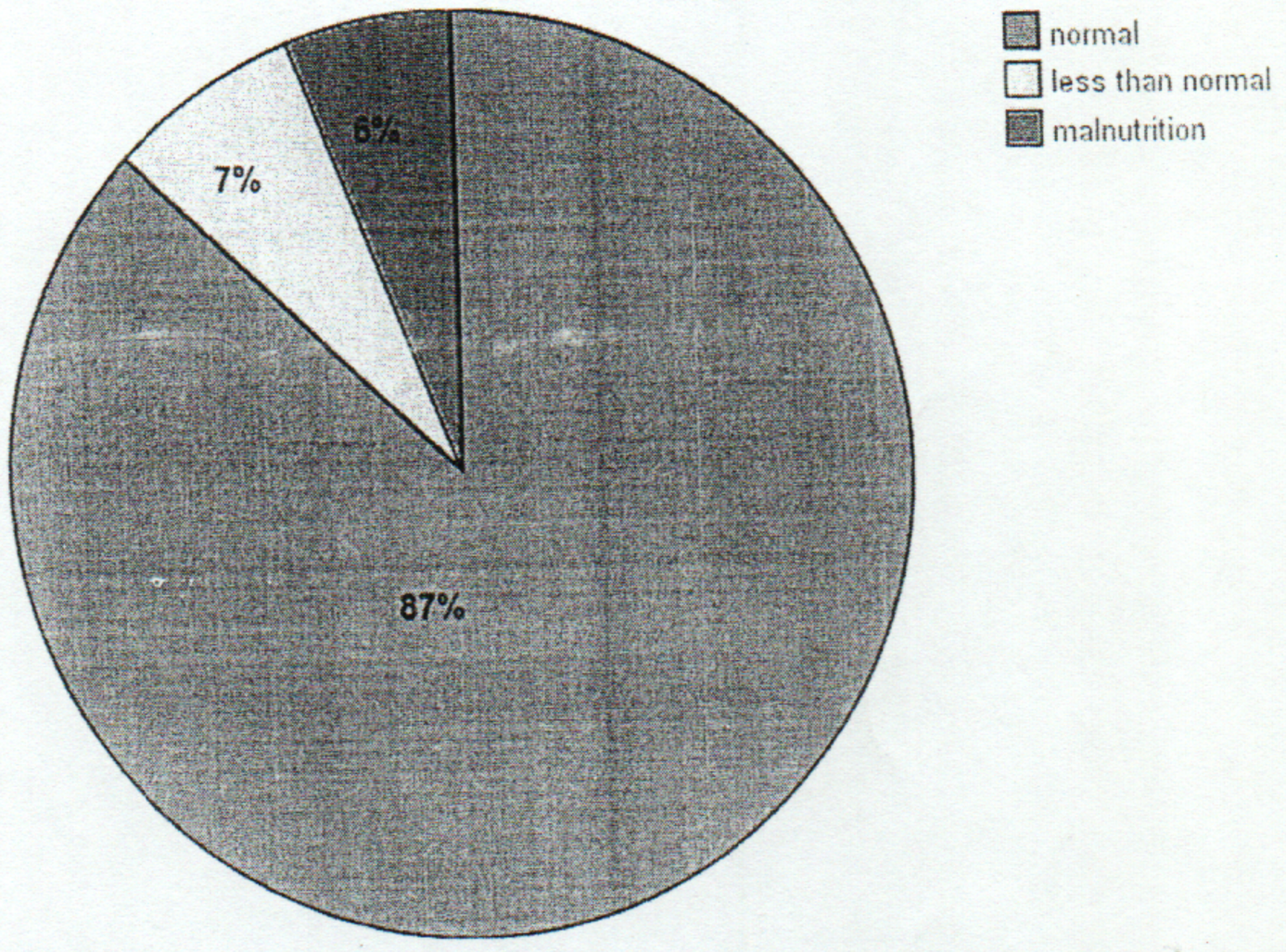


Figure 4.1.3 Distribution of study group in relation to MUAC measurement, show that 87% normal, 7% less than normal, 6% malnutrient

Table 4.1.4 Distribution of study group in relation of Child weight at birth

Variable	Distribution	Sample size	percent
1. Weight	Less than 2.500 Kg	53	13.8 %
	More than 2.500 Kg	331	86.2%
2. Has the child suffer from diarrhea frequently ?	Yes	66	17.2%
	No	318	82.8%
3. Was the breast feeding period absolute six month ?	Yes	182	47.4%
	No	202	52.6%
4. How old was the child when weaning ?	Less than 2 years	261	68%
	More than 2 years	123	32%
5. Is the child fully immunization ?	Yes	322	83.9%
	No	62	16.1%
	Total	**384**	**100%**

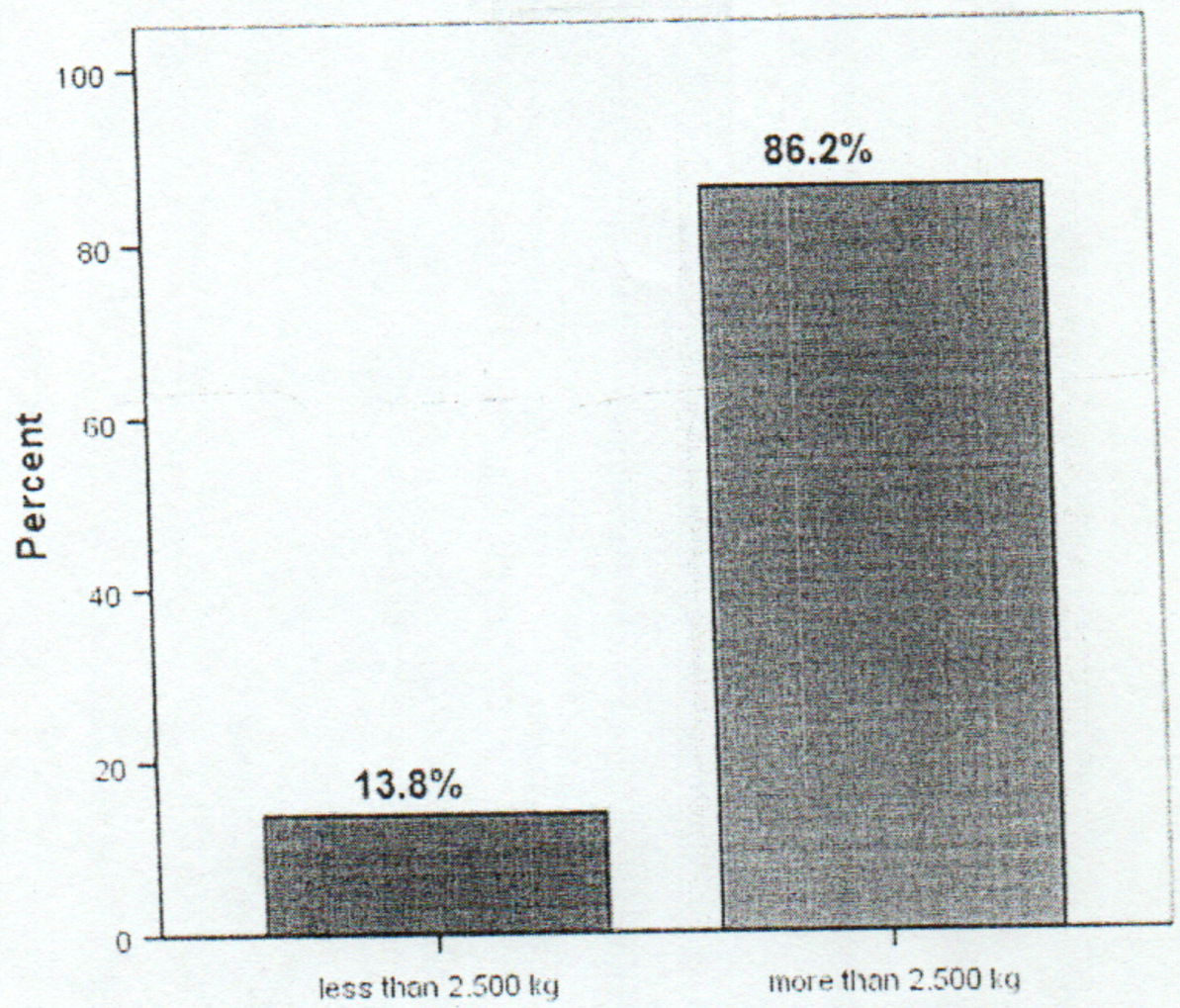


Figure 4.1.4 show distribution of study group relation to weight at birth

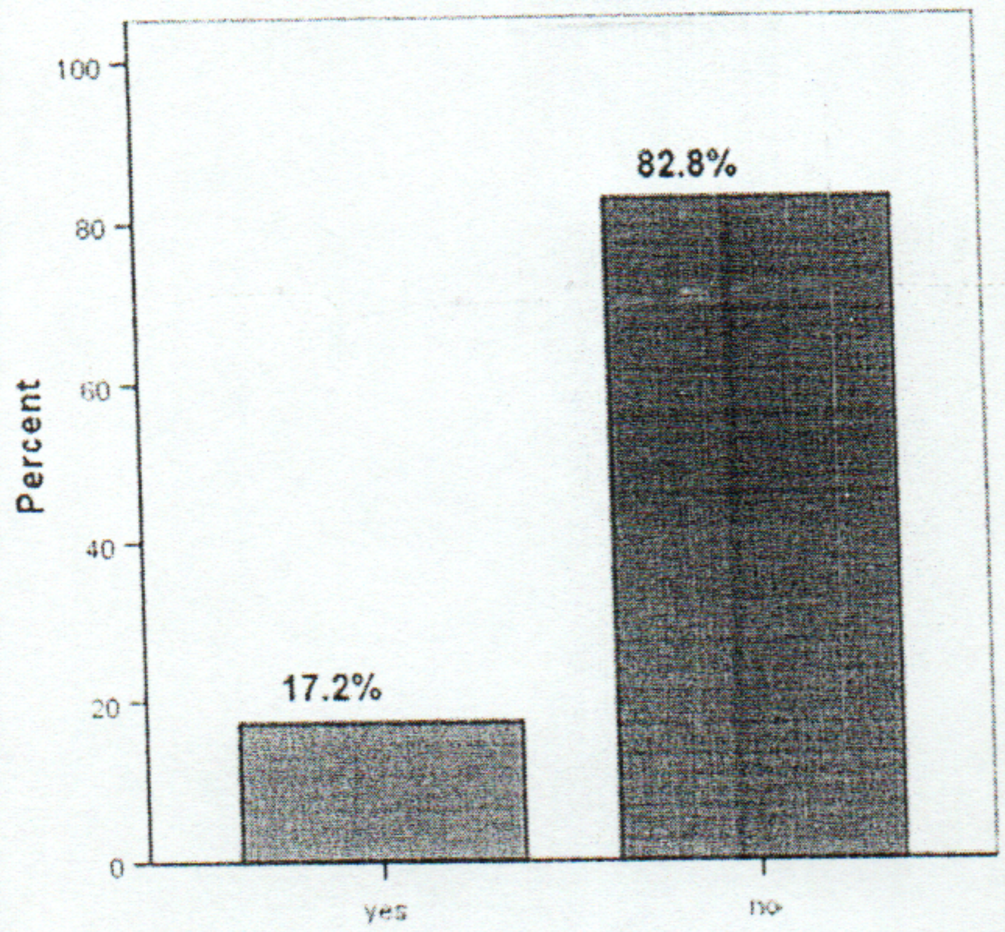


Figure 4.1.5 show distribution of study group relation to how child suffered from diarrhea frequently

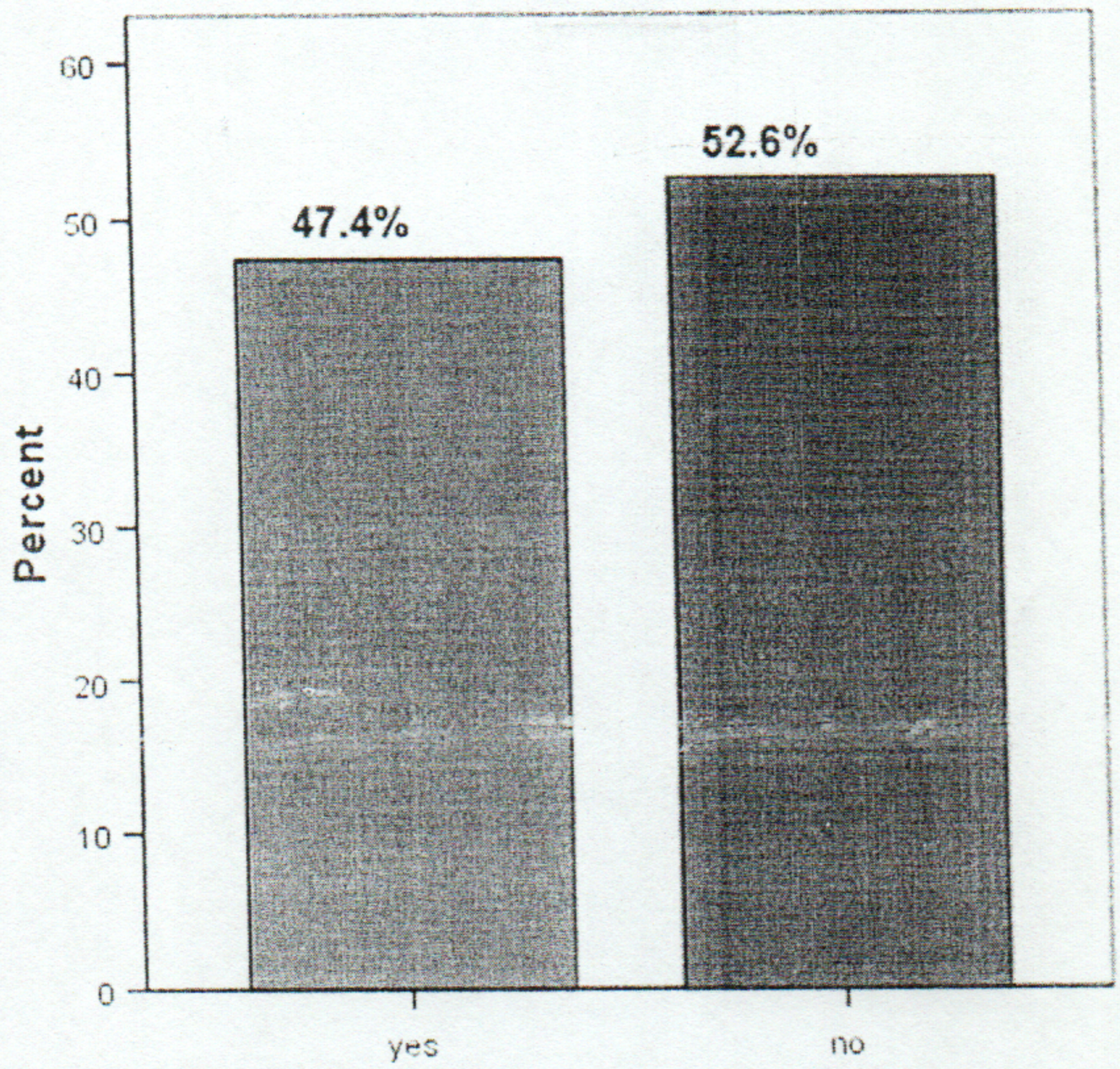


Figure 4.1.6 show distribution of study group related to was the period absolute six month ?

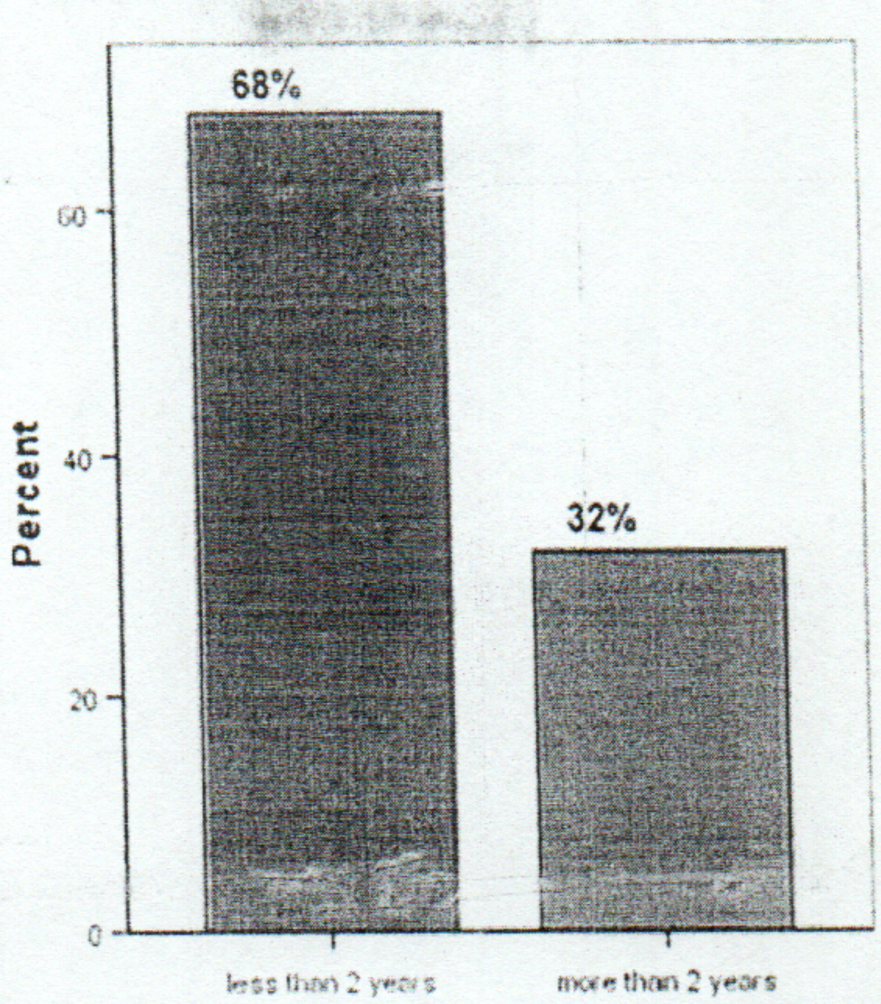


Figure 4.1.7 show distribution of study group related to how old was child when weaning?

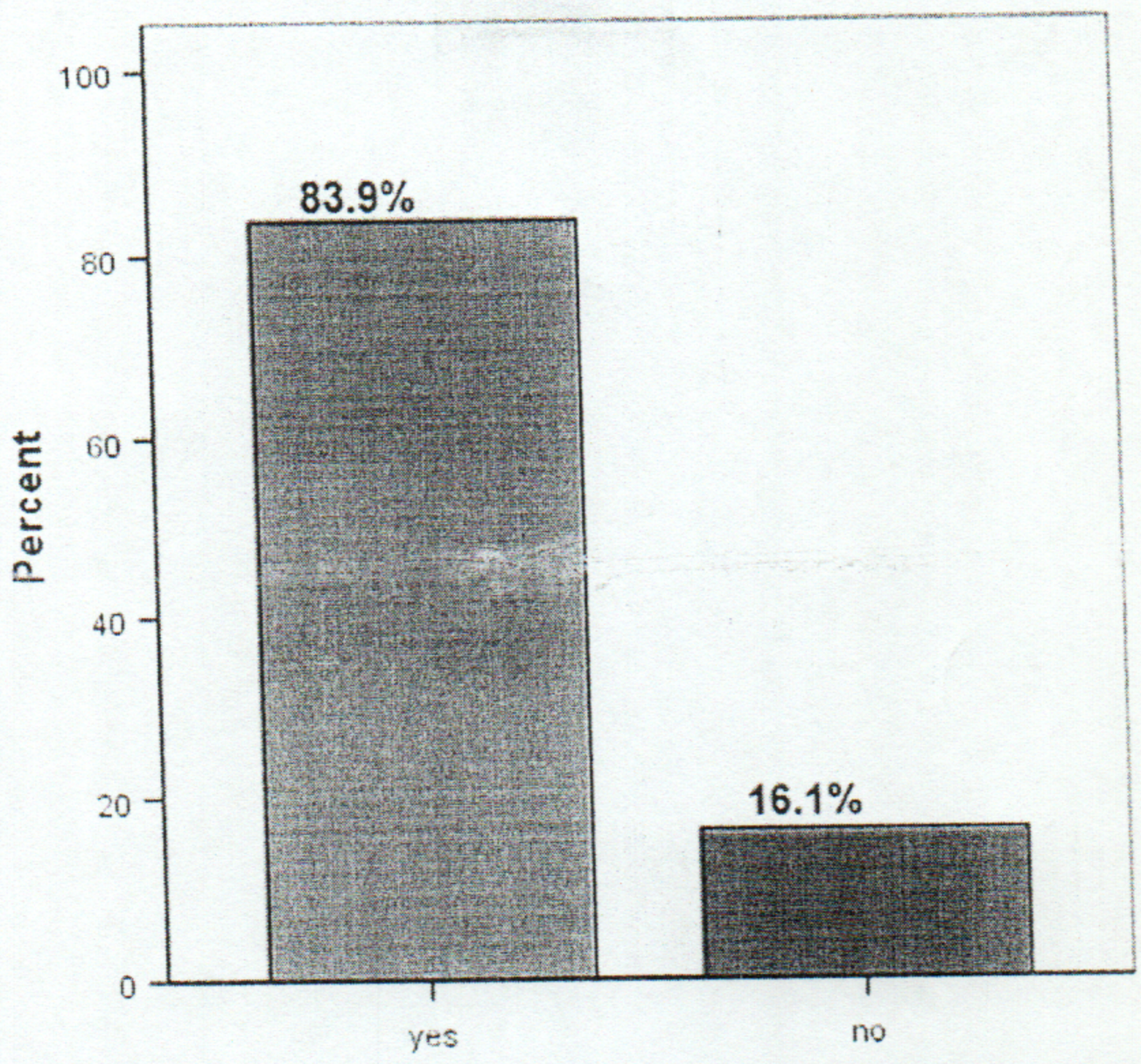


Figure 4.1.8 show distribution of study group related to if the child fully immunization ?

Table 4.1.5 Distribution of study group in relation to environmental factor

Variable	Age	Sample size	Percent
What is the water sours of the house ?	River	316	82.3%
	Well	33	8.6%
	Other	35	9.1%
Dose the house have electricity ?	Yes	379	98.7%
	No	5	1.3%
Environmental sanitation inside the house	Acceptable	341	88.8%
	No	43	11.2%
	Total	384	100%

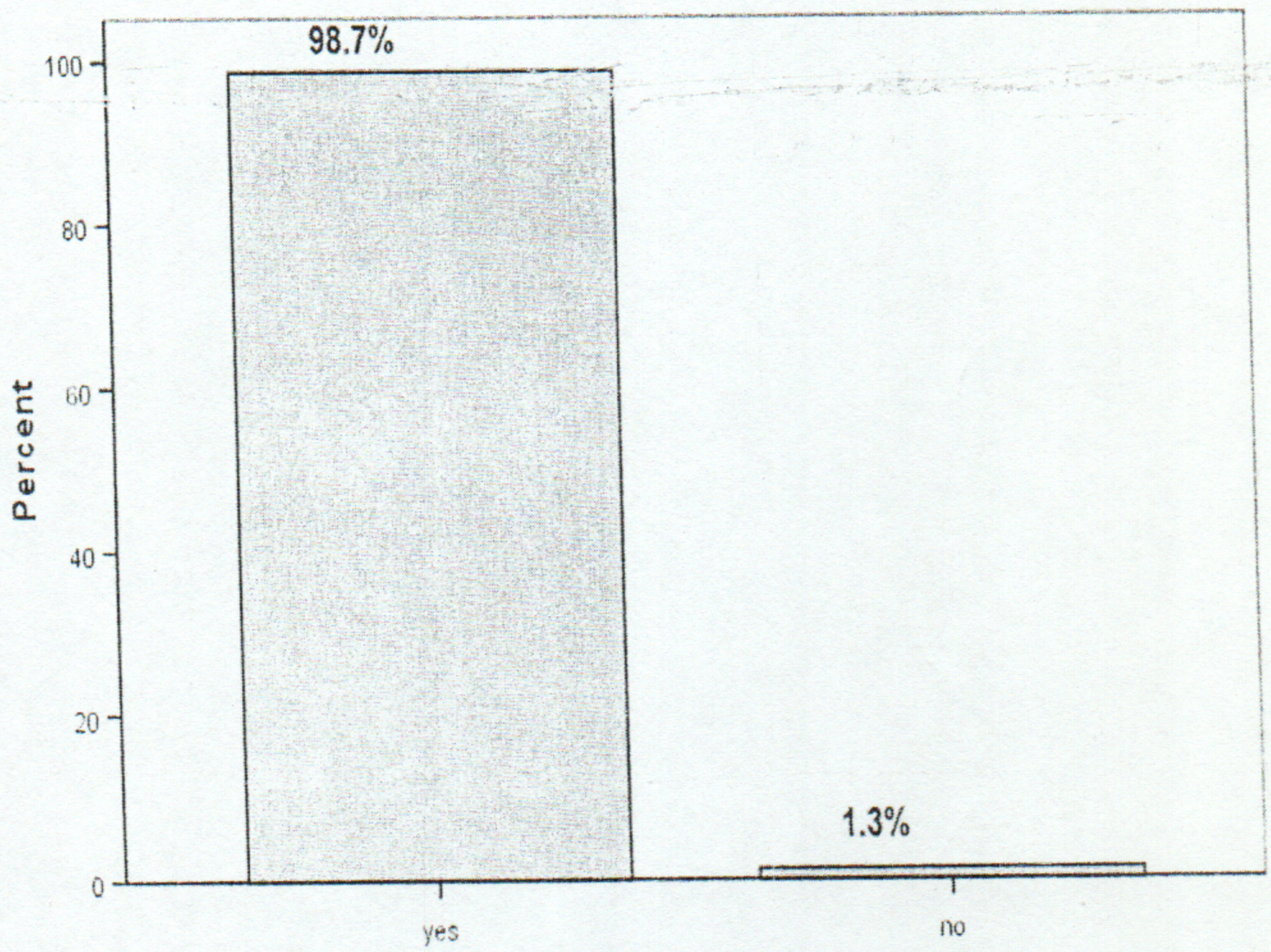


Figure 4.1.9 show distribution of study group in relation to environmental factor

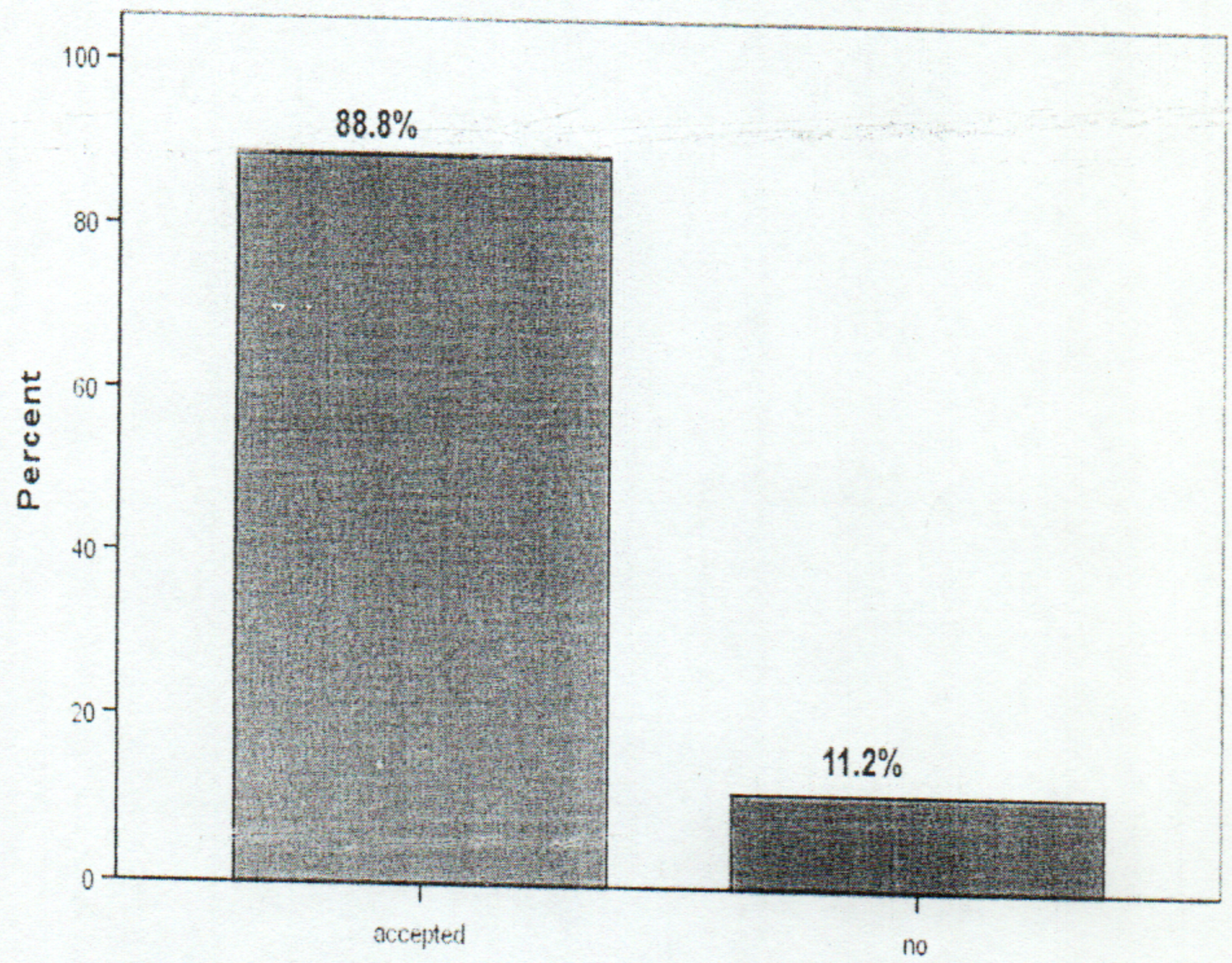


Figure 4.1.10 show distribution of study related to environmental sanitation inside the house

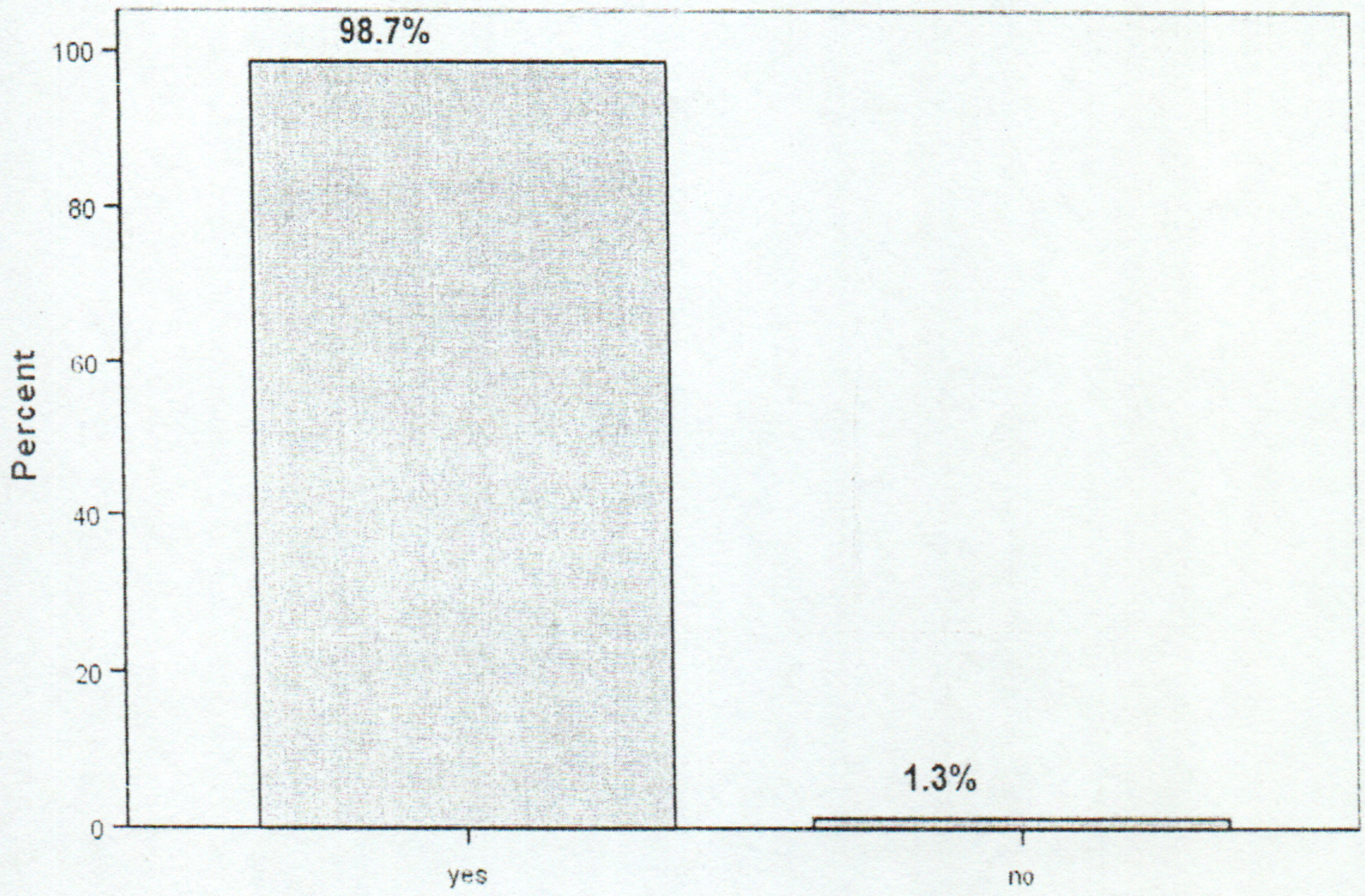


Figure 4.1.11 show distribution of study related to does the house have electricity?

Table 4.1.6 Distribution of study group In relation to socioeconomic factors.

Variable	Age	Sample size	percent
Number of family member	Less than 5 years	145	37.8%
	5-----7	180	46.9%
	More than 7	59	15.4%
Average difference between children	Less than 2 years	126	32.8%
	More than 2 years	258	67.2%
Dose the child have twins ?	Yes	30	7.8%
	No	354	92.2%
Health insurance	yes	146	38%
	No	238	62%
Family income	high	79	20.6%
	moderate	195	50.8%
	Low	110	28.6%
	Total	384	100%

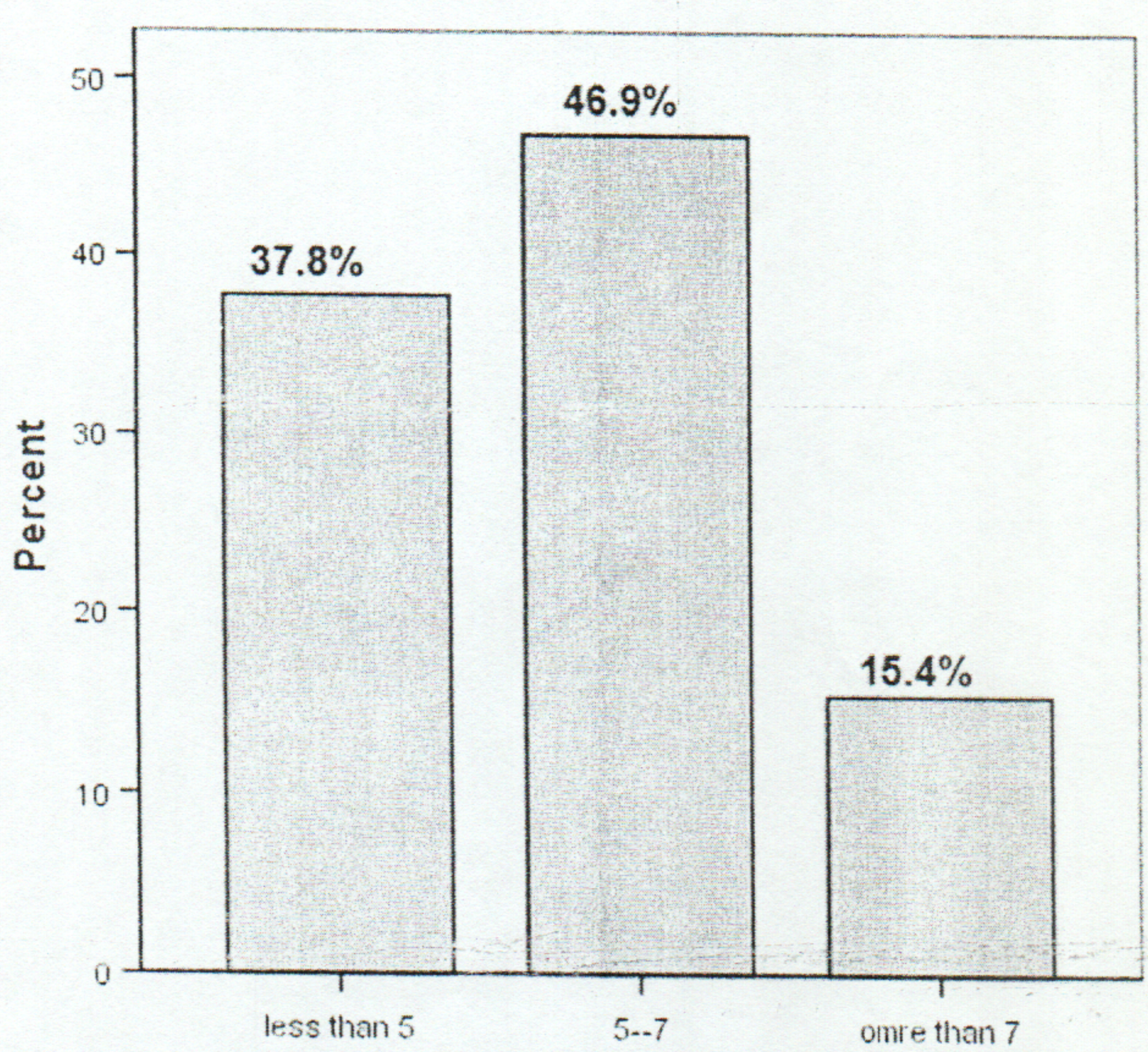


Figure 4.1.12 shows distribution of study group in relation to number of family member 37% less than 5 64.9% 5   7 , 15.45 more than 7 .

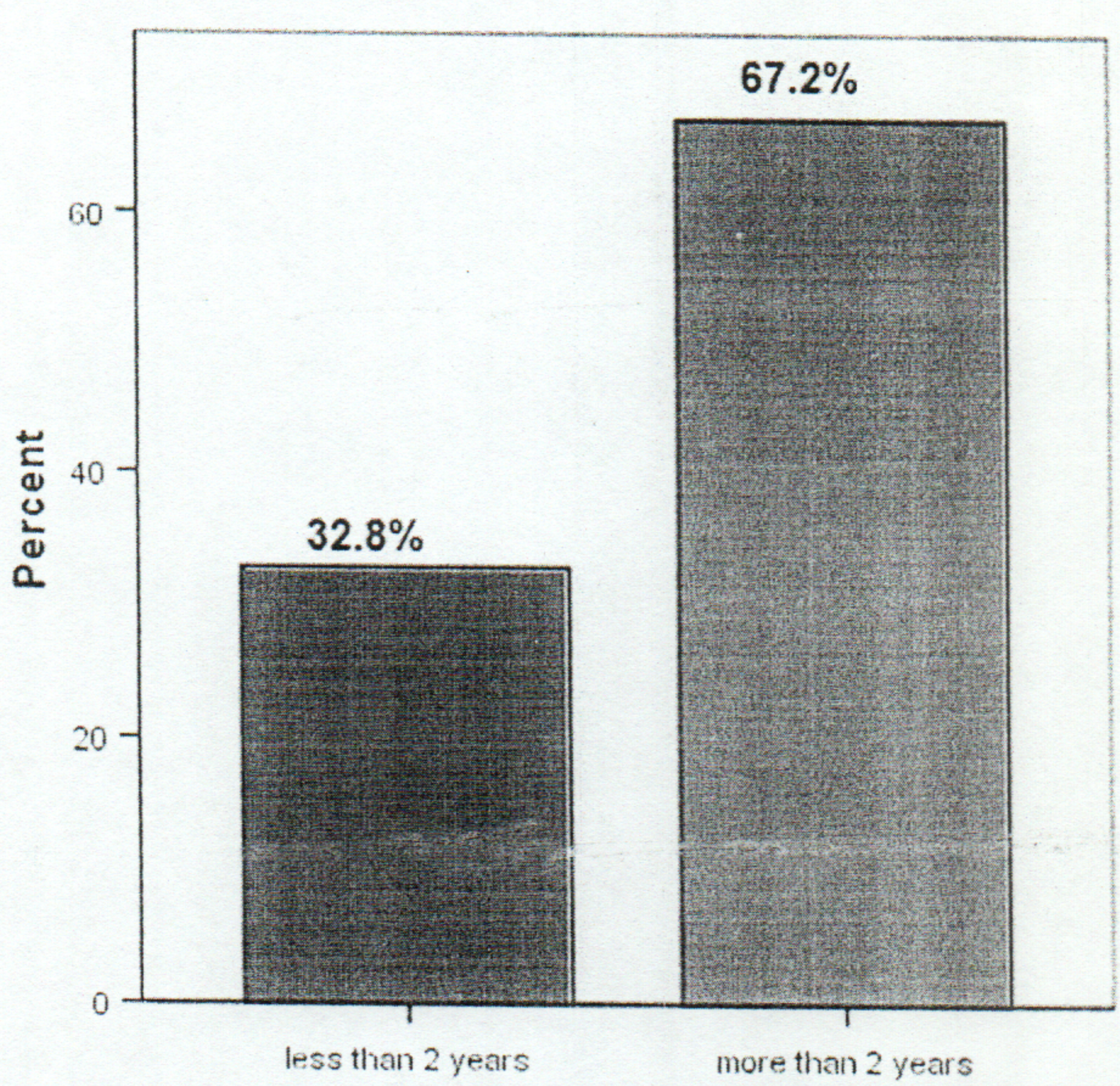


Figure 4.1.13 R shows distribution of study group in relation to average different between children 32.8% than 2 years .less than 2 years , 67.2 more than 2 years

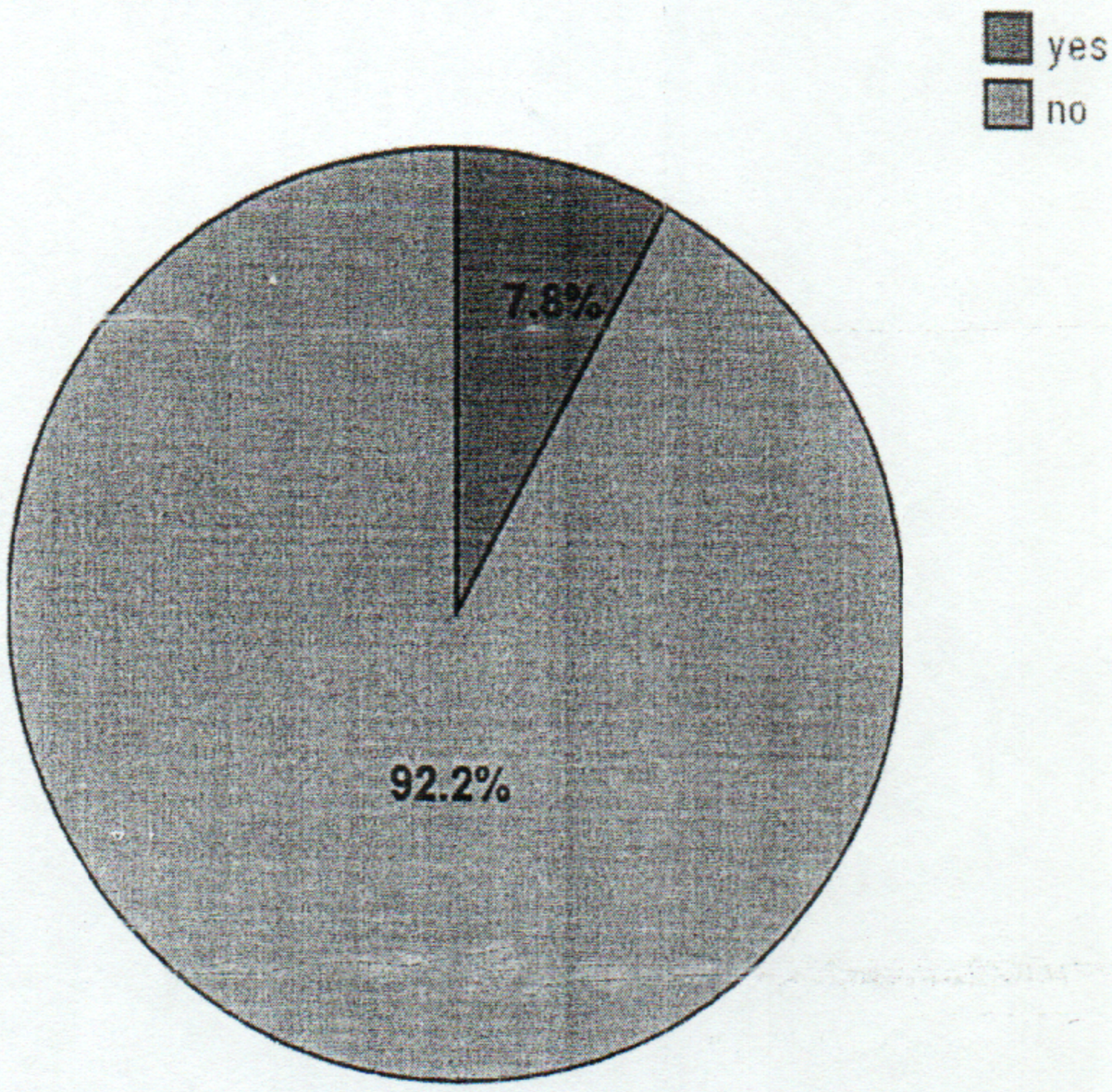


Figure 4.1.14 R shows distribution of study group in relation to does the child have twins 7.8% yes , 92.2 % NO .

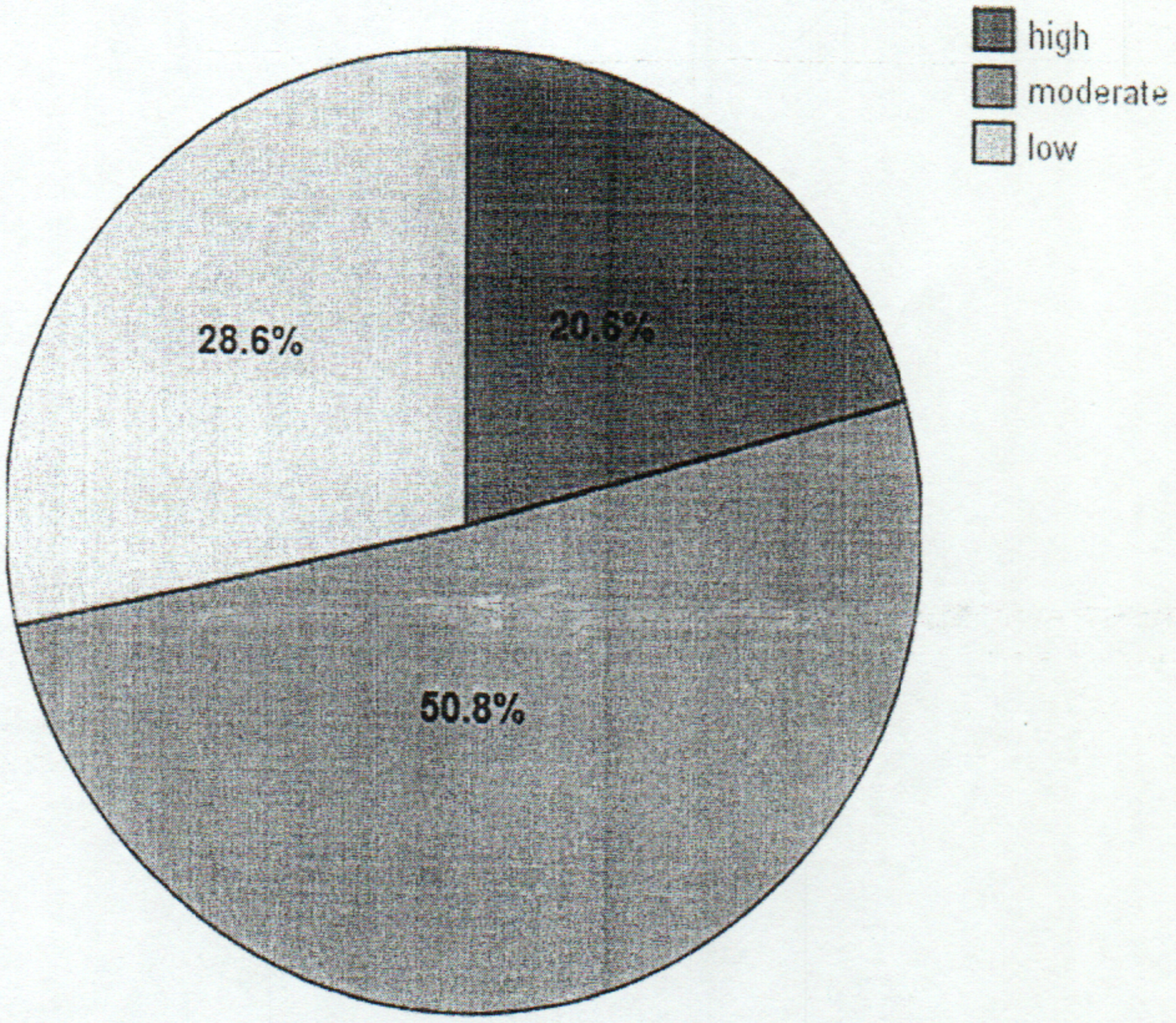


Figure 4.1.15 R shows distribution of study group in relation to family income 50% high , 28.6% moderate , 20.6 low .

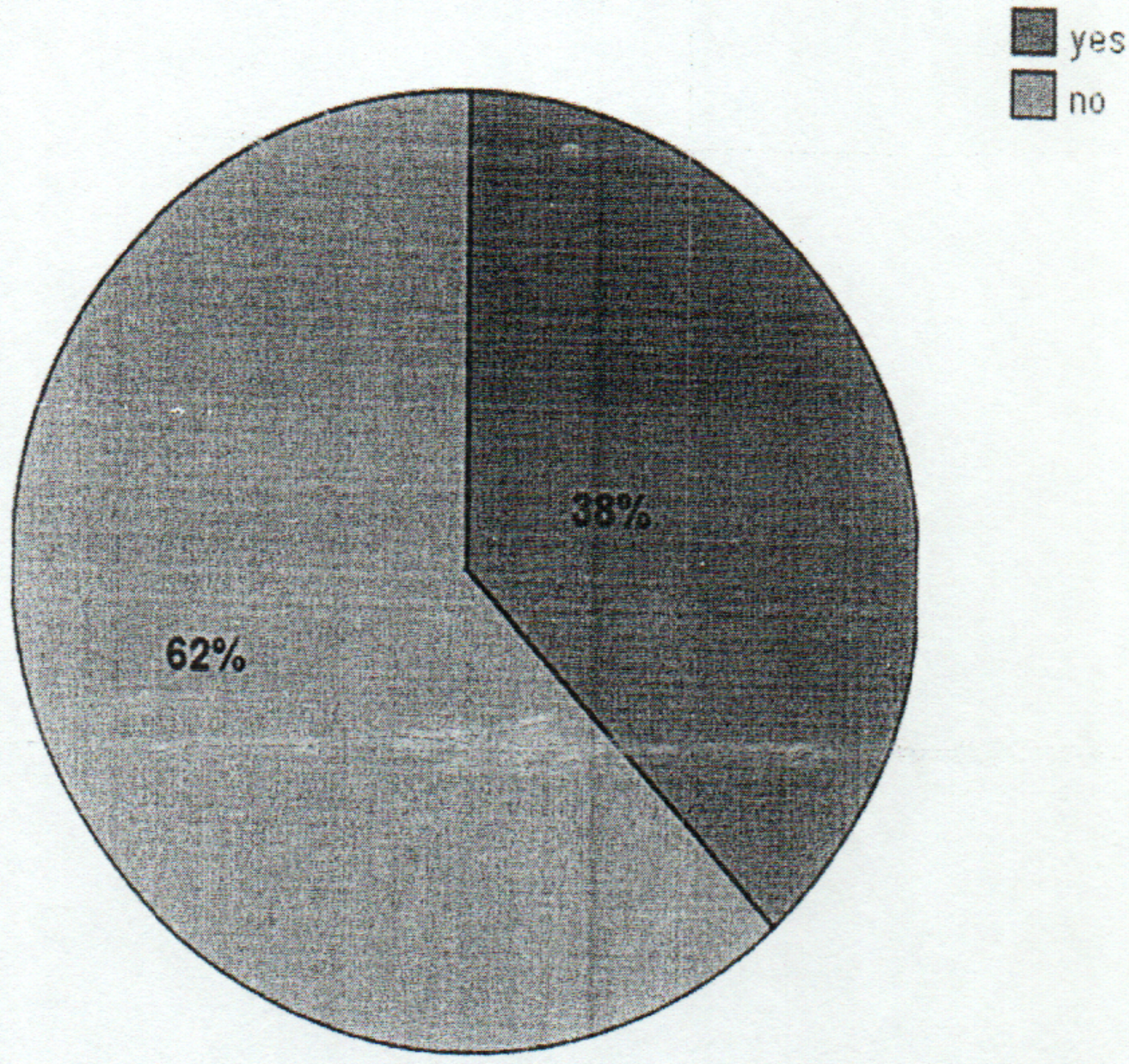


Figure 4.1.16 shows distribution of study group in relation to health insurance 62% yes , 38% NO .

Table 4.1.7 Relation

Measuring the relationship of the first variable	With the second variable	p-value (sig)	Comment
Was the mother had complication during pregnancy	Child weight at birth	**0.086**	There is relationship
Mother education level	Has the child suffer from diarrhea frequently	**0.007**	There is relationship
Mother education level	Number of family member	**0.05**	There is relationship
	Average different between children		There is relationship
MUAC measure	Was the mother had complication during pregnancy	**0.08**	There is relationship
	Mother education level	**0,00**	No relationship
	Child weight at birth	**0,01**	There is relationship
	Has the child suffer from diarrhea frequently	**0,014**	There is relationship
	How old was the child when weaning	**0,620**	No relationship
	Is the child fully immunization	**0,00**	No relationship

Chapter Five

Discussion

Discussion

5.1 Discussion :-

The study conduct in River Nile State during April – June 2018. The study include sample size 384 child from target population, instead River Nile State prevalence 6% . 51% of participate were male .at The age of participant classified according to mathematic equation from 1 month to 1 year, the number 100 that percent 26% , from 1 year to 2 years , the number 112 that percent 29.2% , more than 2 years, the number 172 that percent 44.8% , the common age group among participant more than 2 years . Level education of mothers 5.7% illiterate,3.8% khalwa, 22,9% primary school ,32.6% secondary school , 33.1% university ,1.8 % postgraduate studies. the common level of education group among participant university .

Age of mother during pregnancy less than 20 years , the number 41 that percent 10.7% , from 21-25years the number 106 that percent 27.6% , from 26-30 years the number 123 that percent 32%, from 31-35years the number 85 that percent 7.6%, more than 35years the number 29 that percent 7.6%.the common age of mother from 26-30 years .

Mid arm circumference measurement the number 334 that percent 87% normal , the number 27 that percent 7% less than normal , the number 23 that percent 6% malnutrition .the common participant normal.

weight of child at birth less than 2,500 Kg the number 53 that percent 13.8% , more than 2,500 Kg the number 331 that percent 86.2%. Immunization of child , the number 322 that percent 83,9 % fully immunization ,the number 62 that percent 16,1 % partially immunization.

Socioeconomic factors , family members less than 5 the number 145 that percent 37.8% , from 5-7 years the number 180 that percent 46.9% , more than 7 the number 59 that percent 15.4%, Average difference between

children , less than 2 years the number 126 that percent 32.8 % , more than 2 years the number 258 that percent 67.2% .

The result of study compared with other study we found that prevalence of study 28% in Ghana by Black RE higher than our study due to Longer breast feeding duration, multiple births, experience of diarrheal episodes, small size at birth, absence of toilet facilities in households, poor households, and mothers who are not covered by national health insurance .

The result of study compared with other study we found that prevalence of study 43% in Cango by Black R, Morris S and Jennifer B higher than our study due to environmental impact, food crisis, economic decision.

The result of study compared with other study we found that prevalence of study 36% in Somalia by Burke TK higher than our study due to fever, diarrhea, sex and age of child, household size and access to food.

The result of study compared with other study we found that prevalence of study 9.7 % in Nigeria by WHO higher than our study due to poor diet and infectious disease.

The result of study compared with other study we found that prevalence of study 29.2% in Ethiopia by Glewwe P and Black RE higher than our study due to diarrhea and feeding practices.

The result of study compared with other study we were that prevalence of study 30% in Kenya by Pelletier DL and Frongillo EA higher than our study due to children who introduces to food early.

The result of study compared with other study we found that prevalence of study 7.6% in Iraq by Mussaa near to our study due to low level of mother education, type of breast feeding, family income and more common in boys.

The result of study compared with other study we found that prevalence of study 49 % in by Nandy S, Irving M and Gordon D higher than our study

due to decrease in the intake of foods and nutrients over the periods, and was below recommended levels. Stepwise regression showed that the risk of underweight and stunting was significantly ($p<0.01$) higher among children of illiterate mothers and children from lowest and middle households wealth index.

The result of study compared with other study we found that prevalence of study 23.5% in Kibaha by UNICEF due to low income, and gender stereotype on decision making on household expenditure associated with lack of freedom of choice among women to buy food to feed their children. Also traditional belief supported by taboo on food of choice for pregnant mother and children. It was recommended to all stakeholders to increase efforts on awareness creation on the importance and means to achieve a healthy society.

The result of study compared with other study we found that prevalence of study 20.9 % in Khartoum State by Mahgoub AM and Alsheikh AM due to socioeconomic factor, poor nutrition, and mothers' knowledge and feeding practices.

5.2 Conclusion

The study concluded that malnutrition in River Nile State is still a concern that need timely intervention by governmental and non-governmental organization .

5.3 Recommendation

A long term national strategy to tackle malnutrition . The strategy aim of combating: food poverty ,nutritional inequalities, and poor quality nutritional care .

Educating the work force .To help prevent malnutrition arising in the community and to ensure that the highest quality care is provided institutional settings.

Removing the barriers to screening .

Establishing accurate and reliable information.

Chapter Six

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Appendix

THE REPUBLIC OF SUDAN
ELSHAIKH ABDALLAH ELBADRY UNIVERSITY
Faculty of Health Sciences
Department of Nursing

بسم الله الرحمن الرحيم
الخالق - الاخلاص - التميز

جمهورية السودان
جامعة الشيخ عبدالله البدري
كلية العلوم الصحية
قسم التمريض

Aquestionnair

Prevalence of malnutrition among children under five years old

1.Age ( )

2. Gender : male ( ) female ( )

3.Residence : atabra ( ) shandi ( ) albhera ( ) solaa ( )

4. (A) : MUAC measure : normal ( ) Less than normal ( ) Maluntrient ( )

(B) : Was the mother had complication during pregnancy :

Yes ( ) No ( )

(C) : Age of mother during pregnancy : ( ) years

(D) : Mother education level : unenlightened ( )

khalua ( ) primary ( ) secondary ( ) universal ( ) post graduate studies ( )

(5) (a) : Child weight at birth : less than 2.500 Kg( ) more than 2.500 Kg ( )

(B) Has the child suffer from diarrhea frequently: Yes ( ) No ( )

(C) was the breast feeding period absolute six month :

Yes ( ) NO ( )

(D) : How old was the child when weaning :

less than 2 years ( ) more than 2 years ( )

(H) : Is the child fully immunization : Yes ( ) No ( )

(6) (A) : What is water sours of the house : river ( )

well ( ) other ( )

(B) Dose the house have electricity : Yes ( ) No ( )

(C) : Environmental sanitation inside the house : acceptable ( ) No ( )

(7) (A) : Number of family member : less than 5 ( )

5---7 ( ) more than 7 ( )

(B) :Avarge dihherence between children : less than 2 years ( )

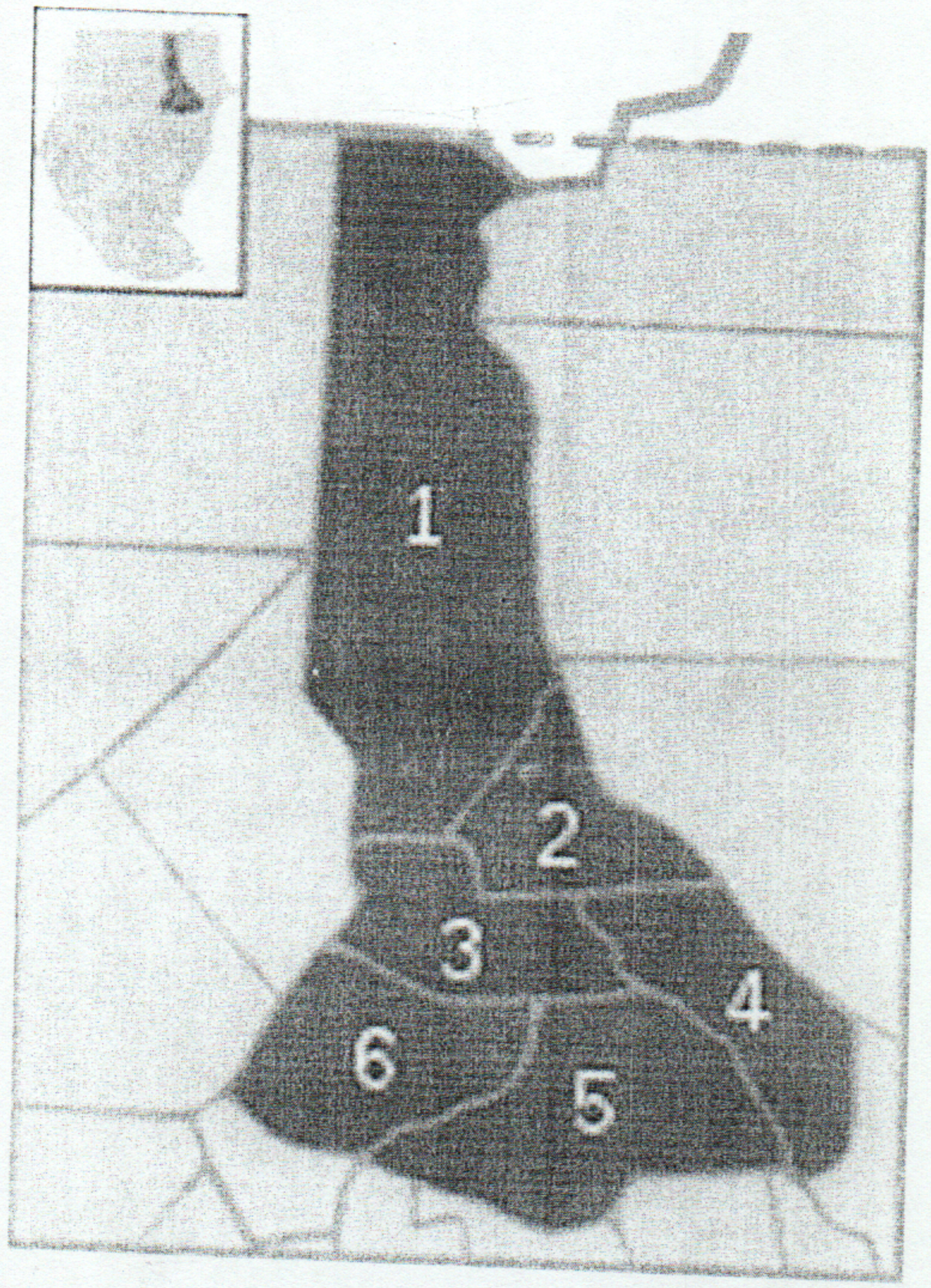
More than 2 years ( )

(C) : Dose the child have twins : Yes ( ) No ( )

(8) : Family income : High ( ) moderate ( ) low ( )

(9) health insurance :Yes ( ) No ( )

Map for Localities of River Nile State



2 Atbara

3 Almanaser

4 Solaa

5 Shendi