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EFFECTS OF PREGNANCY INTENSIONS ON PHYSICAL AND NUTRITIONAL STATUS OF BABIES IN OWERRI MUNICIPALITY

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ABSTRACT

The study investigates the effects of pregnancy intentions on the physical, nutritional and health status of babies aged 0-4 months. Anthropometric measurements (obtained according to standard procedures of WHO and calculated into z-scores by the use of National Centre for Health Statistics (NCHS) reference population) and energy and protein intakes and health characteristics of 100 babies from wanted (50) and unwanted (50) pregnancies were obtained. Student t-test distribution and chi-squared test were used to determine the significant of difference. Findings indicated that babies from wanted pregnancy had significantly higher anthropometric indices; for weight for age and height for age, ($P<0.5$ and $P<0.001$) as well as better intakes of energy and protein. The differences were significant in both energy and protein intakes ($P<0.05$). Prevalence of poor health parameters were also higher in unwanted than wanted babies. Pregnancy intentions affect the physical and nutritional status of unborn babies. There is need to educate the woman especially adolescents by the various health authorities on the right of a child to live and survive through adequate nutrition and proper medical care.

INTRODUCTION

Pregnancy intentions have great effects on the psychological, physical and growth of unborn child (Korenman *et al*, 2002). Pregnant mothers with high level of satisfaction and enthusiasm about their unborn children, improve maternal nutrition and health practices during pregnancy (Theodore *et al*, 2000). Maternal nutritional status during pregnancy has repeatedly been demonstrated to be associated with pregnancy outcome for the infant (Kaisen, and Allen 2002). Increasing evidence indicates that positive nutritional support of pregnancy, rather than negative restriction due to limited knowledge and false assumptions, promotes a positive successful outcome with increased health.

On the other hand, unwanted pregnancy is a problem at any age because there is an outright display of unwillingness to carry on with the pregnancy and denial of nutritional and health advantages to the unborn babies by the mothers (Theodore et al, 2002). Unwanted pregnancy has serious complications for both the mother and the baby, among which include low birth weight, premature babies, high prenatal mortality and poor health and nutrition (The Alan Cuttmacher-Institute 2005). Poor weight gain,. pregnancy induced-hypertension, anemia, obesity, poverty have been observed in the mothers.

The period of pregnancy makes extra nutritional demands on the mother's body. Research studies have shown that the mother's diet and her health during pregnancy affect the

conditions of the baby at birth and also the mother's ability to breastfeed her baby after birth (Canadan Health Metwork (1999), Khan (2004), Mitoulas et al (2002).

The importance of adequate diet during pregnancy has long been appreciated by nutritionist and dieticians. Pregnant women are recognized as a vulnerable group in all intervention projects and national programmes, although concern has been more for the health and vitality of the neonate than for the mother herself. The study examines the physical characteristics and nutrition of wanted and unwanted new-born babies aged (0 – 4months) and their associations to pregnancy intensions.

METHODOLOGY

The samples of 50 nursing mothers with babies aged 0 – 4 months that were visiting Federal Medical Centre (FMC) Owerri, at the Infant Welfare Unit were randomly selected from the visit of 250 mothers that indicated 'wanted pregnancy' for their babies. Random selection of 50 mothers that indicated unwanted pregnancy out of 150 was mainly obtained at Sisters of the Needy, Nekede due to the fact that very few that visited Antenatal Clinic FMC, Owerri indicated that their pregnancies were unwanted pregnancy.

Data were collected from the mothers and their babies on the following; age, health of the babies (such as birth weight, presence and duration of sickness, immunization) through structured questionnaire forms given to the literate mothers while illiterate mothers were interviewed and responses recorded by the researcher.

Anthropometric measurements of weight, height of the babies from the selected mothers were obtained according to standard procedures of (WHO 1976) and converted into anthropometric indices (weight for age, height for age and weight for height). The indices were converted to z-scores using the formula below and the mean values obtained. National Centre for Health Statistics was used to determine mean z-scores that were above or below the reference population (NaCHS (1976).

$$\text{Z-score} = \frac{\text{Child's measurement} - \text{median value.}}{\text{SD value}}$$

The mean weight of the babies was 3.25kg $\pm$ 2.03 with a mean age of 1.15 months $\pm$ 1.01. Energy and protein intakes of the babies were obtained from two different sources because of the mode of feeding for the wanted and unwanted babies. For the unwanted babies, the volume of breast milk taken were obtained by weighing the infants before and after breast feeding with light clothing, using the electronic weighing scale and the difference obtained. The difference in weight of each baby was multiplied by the number of times the baby was fed per day to get the total volume of breast milk taken.

For the unwanted babies artificial milk was fed to the babies because of the unwillingness of mothers to breastfeed their babies. The amount of artificial milk taken per feeding was weighed using small kitchen scale under accuracy of 0.1g. The total weight of the artificial milk used for each baby was obtained by multiplying the weight of milk per feeding and the number of times per day baby was fed.

The energy and the protein intakes for each baby were obtained using human milk intake table (Butte *et al* 1983) for wanted and from the information on the nutrition label of the artificial milk. The data were converted to means and standard deviations.
Student T-test was used to determine the mean difference between groups. Chi-square was used to determine the associations between pregnancy intensions and physical characteristics, and the nutrient intakes of the babies.

RESULTS AND DISCUSSIONS

Table 1 shows that the anthropometric indices of the babies were higher in wanted than unwanted babies, but were significant only in weight for age and height for age indices. The better mean z-scores of the indices in wanted babies could be attributed to the fact that in wanted pregnancy babies are given attention in both medical and nutrition, right from the womb. Pregnancy related complications of the unwanted pregnancy included low birth weight which is an indicator of a life-long health problems. Physical growth may be impaired as is often the case, as a result of other environmental factors including nutrition (Rainer, and Noel, 2002).

Table 1: Means anthropometric indices of the babies by pregnancy intention group

Pregnancy Intension		Weight for age		Height for age		Weight for height	
		Mean		mean		Mean	
	n	z-score	SD	z-score	SD	z-score	SD
Wanted	50	-1.34	1.72	-0.64	1.69	0.41	0.31
Unwanted	50	-1.09	1.06	0.39	0.21	0.39	0.32

(a) $P<0.05$, t –ratio = 1.74 for weight for age
(b) $P<0.001$, t-ratio = 2.551 for height for age
(c) $P>0.05$, t-ratio = 0.148 for weight for height

Table 2 shows that the health status of the babies from unwanted pregnancy was lower, and significant for birth weight and duration of sickness ($P<0.05$). This could be due to the fact that maternal nutrition during pregnancy is associated with pregnancy outcome for the infants (Keen 2005). Women who do not have good nutrition have babies with poor health. Tomkins et al (Philip *et al* 1997) have observed that in wanted pregnancy better healthy conditions are observed.

Table 2: Percentage of the babies by health factor and pregnancy intention group

Health factor	Wanted			Unwanted	
	n	%		N	%
Presence of sickness	6	12		14	28
Presence of immunization	44	88		22	44
	n	x	SD	X	SD
Birth weight(kg)	50	3.3	0.37	2.4	0.61
Duration of sickness (days)	50	4.3	3.21	2.8	2.49

P<0.05, t-ratio = 2.572 for birth weight

P< 0.05, t -ratio = 2.013 for duration of sickness

Table 3 shows that the mean protein and energy intakes of the wanted babies were higher but significantly lower in the protein intakes of the unwanted babies. This indicates that mothers of unwanted pregnancy do not feed their babies on demand with breast milk, which is the practice for the wanted babies. This has a greater disadvantage in the nutrition and health status of the babies. Feeding a baby on demand with breast milk improves the nutrient intakes and prevents infections that could reduce the intake of the babies (Dettwyler ad Stuart-Macadam 1995).

Table 3: Mean energy and protein intakes of the babies by pregnancy intention group

Nutrient intake	Wanted			Unwanted	
	n	$\bar{x}$	SD	$\bar{x}$	SD
Energy (kcal/day	50	40.15	650.8	399.0	462.5
Protein	50	7.9	23.1	5.5	19.41

(a) P>0.05; t-ratio = 0.987 (b) P<0.05; t-ratio = 2.467

The association between the pregnancy intentions of the mothers and anthropometric indices of the babies (Table 4) were significantly higher in babies their pregnancies were wanted than the unwanted for weight for age, height for age and weight for height indices (P<0.05).

There is a strong epidemiological evidence of an association between the resultant effects of pregnancy intentions (e.g.) maternal weight gain during pregnancy and low birth weight /uterine growth retardation especially in undernourished women who begin pregnancy in a nutritionally disadvantaged state. Women are at the greatest risk of having a low birth weight infant if low pregnancy weight and low weight gain during pregnancy are combined.
Children resulting from unwanted pregnancy suffer from higher rates of low birth weight and related health problems. (Groff *et al* 1997). Low birth weight doubles the chances that a child will later be stunted or underweight in life (Shapiro-Mendoza 2005).

Table 4: Associations between pregnancy intention and anthropometric indices of the babies

Pregnancy Intention		Weight for height		Height for age		Weight for height	
		Above -2SD %	Below -2SD %	Above -2SD %	below -2SD %	above -2SD %	below -2SD %
	n						
Wanted	50	78	22	68	32	62	38
Unwanted	50	36	64	28	72	42	58

Above/Below -2SD NCHS reference population

(a) X^2 = 58.98; P< 0.05; df = 1 for weight for age

(b) X^2 = 56.0;P<0.05;df = 1 for height for age

(C) X^2 = 50.68;P<0.05; df = 1 for weight for height.

Similarly, the pregnancy intentions of the mothers associated significantly lower (Table 5) only in the intakes of energy and protein for the unwanted than wanted babies (P<0.05). Pregnancy intentions affect the condition of the baby at birth and also the mother's ability to breast feed her baby after birth. Studies have found that milk from malnourished women who begin pregnancy in nutritionally disadvantaged state as in the case of unwanted pregnancy have reduced energy and protein level in breast milk and low fat level (Wilson and Pugh 2005; Greiner, 1994). Although there is little scientific evidence of substantial effects of maternal nutritional status on lactation, both health professional and women believe the effect is large (Allen, 2001).

Table 5: Associations between pregnancy intention and energy and protein intakes of the babies

Pregnancy Intention		Energy Intake		Protein Intake	
	n	Above RDA %	Below RDA %	Above RDA %	Below RDA %
Wanted	50	82	18	74	26
Unwanted	50	42	58	32	68

RDA = Recommended daily allowance for nutrient intakes

X^2=76.67; P<0.05, d.f = 1 for energy intake

$X^{2=}$60.69; P<0.05; d.f =1 for protein intake

CONCLUSION

Pregnancy intentions have great effects in building up the manpower of a nation. Unwanted pregnancy in most cases results to great adverse effect on the populace because of outright display of unwillingness of the mothers to carry on the pregnancy and denial of nutritional and health advantage of the unborn into the world.

There is need for more enlightenment campaign at the local, state, national and international level by the various health authorities on the right of the child to live or survive. This can be achieved through formulation of policies that will help protect the life and integrity of unwanted pregnancy. Government should establish and fund more Nutritional Rehabilitation Centre, to assist pregnant women and their infants as well as inculcating godly principle on the women especially adolescents through various religious groups and associations of women.

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