ANALYSIS OF RESULTS

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The total number of studied cases was 1033 infants and children from three MCH centers. Their ages ranged from birth up to 4 years (495 ♂ & 538 ♀), sex ratio 9:10

PART I of tables:-

Table (1), shows the distribution according to age and locality of MCH center. They are nearly equally distributed. About 60% of infants are below one year of age the other 40% above age of one year.

Table (2,3), describe the bilogical data of the studied sample. Table (2), gives the birth order of the infant while table (3), shows his serial order in the family; the first order infants are the most common with descending percentage up to the 5th order children. The difference between the two in corresponding age group gives the % ge of losses in each group.

Part II of tables :

This group of tables describes the socioeconmic aspect of the study group.

Table (4)a describes the educational state of the parents of the study group. There is marked contrast between maternal educational state where the majority of them (59.09%), are illiterate and only (3.48% , have secondary and high education; the rest (37.24%), are either literate or with primary ducation.

As regards fathers, the sample is approximately equally distributed in the three groups: 33.9% illetrate, 37.9% secondary & 28.1% of high eduction.

Table (4)b shows the economic level of the studied group, the lowest was not less than 5 L.E./capitum/month; the highest was not less than 30 L.E./capitum/month; sometimes it exceeded this figure much according to the locality.

The lowest socio economic families were those reported from middle zone represented by Darb-El-Ahmar center.

The highest were of Helipolis .

Those from south zone were in between.

Part III.

This part is devoted for the study of the type of feeding in relation to knowledge, attitude and feeding practice (KAP). & illustrated in tables (6-13).

Out of the total study group 94.68% of infants were breast fed at birth, 41.53% of them started breast feeding before the third day while 46.27% started breast feeding from 3rd - 7th day and only 6.87% started breast feeding after the 7th day.

Table (6), gives the contrast between mothers attitude twards duration of breast feeding versus the duration in actual practice. The majority of mothers have the attitude to breast feed their infants up to 18th month (64.14%), while only (32.3%), of mothers reached that time in practice. Table (5), shows that 5.32% of mothers failed to breast feed at all.

Table (7), indicates that (77.46%), of mothers adopted the method of demand feeding and only (21.95%), of them adopted regular feeding.

Table (8), clearly illustrates the causes of difficult breast feeding. These were due to maternal causes in 39.9% of cases and due to infantile causes in (9.9%), the minority were due to both materanal and infantile causes.

Different causes of breast feeding difficulty were:- scanty milk supply with

ent or breast abcess. Also local causes in the infant e.g. stomatitis, glossitis, congenital hairlip or cleft palate as well as some of the systemic diseases e.g., measles, and herpes may be the cause of difficulty.

As regards attitude who decides type of feeding practice: 90.7% of mothers take the decision by their own, while grand mothers, mothers in law shared this decision with their daughters. (9.3%).

Table (9), shows that mothers (82.59%), being housewives, they take care of their infants; care takers in working mothers, in descending order were as follows:- grand mothers, nursery in anear by locality and lastly the father(table 10).

The source of knowledge about infant feeding for the mothers in the mojority of cases was medical advice including those in MCH centers (65.83%), followed by parents (26.44%), radio and television health education programes (5.99%), and others (table 11).

Medical advice and economic status of the family were the two major causes behind the choice of particular type of infant feeding (87%), as shown in table 12).

Table (13), illustrates the attitude towards the start of weaning versus that in actual practice.

The majority of mothers (52.8%), tended to start weaning by the age of 6M while in practice many mothers

started weaning by the age of 4 months or less.

Table (14), shows the number of weaned infants versus non-weaned in different age groups.

Generally the ratio of non-weaned/weaned is decreasing with increasing age but the least number of non-weaned children was found above 12 M of age.

Preparation of the formula for artificially fed infants was of normal dilution, proper for age as throughly interrogated, in (57.0%), of cases, over concenterated in (15.6%), and over diluted for age in (27.4%), of artificially fed babies (Table 15),

Table (16), illustrates mothers attitude versus actual practice for infant weaning showing that scanty milk supply and other pregnancy, maternal and infant diseases are the common causes behind weaning.

Part IV.

This part deals with the impact of nutrition on the health status of children.

Tables (17-21) give the mean and S.D± of body weight, body height, head circum-ference, triceps skin fold thickness and mid arm circumference of the studied infants as a whole devided according to their age groups . Plotting these data on percentile charts it is shown to match 25-50 th centile for age.

Table (22), and figure (2) give an idea of health profile of the studied group showing that the common finding in descending order are :-
mouth disorders (mainly stomatitis),
abdominal distension, pallor of face, dental caries, skeletal disorders (mainly rickets), and acute, recurrent and chronic respiratory infections.

Table (23), indicated that the over all incidence of rickets in the studied group was (4.26%), (44 cases out of 1033 cases). According to Opie score (1975), these cases were devided into mild or suspected cases, (1.65%), moderate (0.97%), and severe cases (1.64%).

By distribution of the studied group according to weight/height/age (McLaren 1972), in relation to type of feeding (table 24 a), it was observed that 17.5% of cases were obese, 50% of whome were breast fed while 18.3% and 31.7% were artificially fed and mixed fed respectively.

The group with normal wt/Ht/age constituted 58.7% of the whole group and it was mainly breast fed (60.2%), the rest of the group (18.8%), was malnourished. Mild cases of PEM were mostly breast fed, while moderate and severe cases of PEM recieved artificial or mixed feeding.

Table (24b), shows the various types of artificial feeding used by infants in the study group, (1.02%) only used fresh fluid animal milk, while (54.89%) used dried milks, others (36.08%), used various types of starchy foods as rice pudding rice water, Riry..... etc.

Table (25), shows that the general ratio for gross motor development was 2:1:1 for normal delayed and advanced cases for age respectively. This trend is the same for the three types of feeding practices.

This may be explained by the multifactorial effects of nutrition, economic level, social, cultural as well as medical advice on the ultimate outcome of gross motor development.

Table (26), shows the interaction between type of feeding and social behaviour of the child, the difference is not marked and this may be explained as stated above in motor development.

Many of our health surveys lack the follow up studies. In this work follow up of infants and children was done for one complete year in which on the average five visits were conducted for each child to find in a longit-

udinal way, the relation between nutrition and other surr-ounding factors and growth and development of our Egyptian children in the low socio economic class.

Table (27), gives morbidity versus type of feeding, it is evident that cases of rickets, anaemia and mild cas-es of PEM are more prevelant in cases with exclusive brea-st feeding more than in those artificially or mixed feedi-ng.

This is due to supplementation of artificial feeding by external source of vitamin D, iron , and excess calories.

Part V.

This part deals with the follow up data. Table (28) gives the picture of broad lines of these data with the number in each center, percentage of deaths and absentees and relation to each group.

Table (29), illustrates the distribution of normal, delayed and advanced cases as regards gross motor development in the first visit compared to figures in the fifth visit. This evidently shows that delayed cases headed the list in 5th visit (56.2%), followed by the advanced cases (32.3%), and lastly normal cases constituting a minor fraction (11.5%). Dead and absent cases were excluded.

Table (30), gives a little pit different picture for social behaviour and play where the distribution is as follows:-

delayed cases, 42.4%, normal 31.8% and advanced cases 25.8%. This may be explained by lower social status of the studied group.

The distribution of the delayed cases as well as others, is well marked in table (31), in relation to gross motor development versus locality. The heighest percentage of normal and advanced cases was in Helipolis , while the heighest number of delayed cases was in the middle zone (Al DARB El-AHMAR). Those of southern province standed in between.

From tables (29-31), although it was clear that there

was an increase in advanced cases during the follow up study but there was also an increase in the delayed cases reflecting the multifactorial ecological factors which affect growth and development of our children in the low socio economic classes inspite of the presence of medical care given by MCH centers.

Table (32), illustrates the distribution of studied cases according to wt/ht/age during the first & 5th visit i.e. to those children before and after one year of age. it is noted that during the first visit below one year age, the percentage was, 59.8%, 13.7%, and 26.5% for normal, overweight and PEM cases respectively.

During the 5 th visit, the distribution took another picture i.e. cases of mild PEM headed the list, (28.6%), followed by overweight babies 22.1%, normal cases (22.1%), moderate and severe cases of PEM (18.4% - 8.8%).

Table (33), gives the distribution of cases according to weight/Heighr/Age versus locality.

During the first visit, the situation was that;while PEM cases constituted almost one third of studied infants both in south and middle province; the same group represented only 11% of cases at Heliopolis . Obese cases were heighest in south and least in middle province. In the 5th visit the picture is that cases of PEM was heighest in middle zone followed by south and least in Heliopolis

PEM cases in Heliopolis center were only of mild or moderate variety.

The heighest percentage of obese cases (48%), were found among cases from Heliopolis center.

Table (34), gives the picture of acute infections in the first visit. This shows that 70% of cases have got either acute respiratory or gastro intestinal infection or both, while in the 5 th visit only 33% of cases were affected.

As regards chronic infections, it was observed that in first visit 9.4% have suffered from chronic infection. This figure increased to 37.7% one year later during 5th visit (Table 35).

Triceps skin fold thickness as shown in table (36), the majority of cases were below the 50th centile for age (98%), while only (38,39,40 a & b),for breast, artificial, mixed and weaning foods respectively.

For the first year of age from fig I it is seen that 11.3% of breast fed infants were obese while 30% of the obese were artificially Fed. 18.9% of those on mixed feeding were obese, while 15% of infants on weaning foods were obese.

The corresponding figures for the normal group were 60% of breast feeding 13% for artificial, 22% for mixed and 5% for those on weaning food alone.

Cases showing PEM: in the first visit 22% of the

breast fed, 25.8% of the mixed fed and 48.8% of the artificially fea.

By comparing these fisures to the corresponding ones in the 5th visit: 43.1% of breast fed, 61.9% of artificially fed, 48.9% of the mixed fed and 60.3% of those taking weaning food only, suffered from PEM it seems that the general pattern is more or less the same taking in consideration that the number of breast fed infants is decreasing by time and giving way to other types of feeding.

Table (41), shows that breast feeding have the heighest percentage of the non-infected group yet acute infections can occur among them in the same or even higher percentage than other types of feeding .

The situation is quite different in case of chronic infection where breast fed are the least affected group.

Table 42 and fig . (4), clearly illustrate that the % ge of cases of delayed gross motor development (61%), is noted in exclusively breast fed up to age beyond one year of age, this may be explained by relative deficiency of vit. D. in breast milk. Those fed with artificial or mixed feeding are given an extra supply of vitamin D.

Tables (43-46) illustrate the reflection of the pattern of feeding on the different parameters of development. The general trend observed is regression of the number of normal cases, while delayed cases were predominant as regards gross motor and fine motor development, hearing and

speech, social behaviour and play.

In case of handeye coordination, the normal group predominated in all types of feeding pattern, specially with artificial feeding weaning foods alone. The significance of this pattern is discussed in details later.

Table 47a anf fig 3 show the group of children reared on weaning foods and weaned early, it was found that in the first visit, 13.6% of cases were obese, 62.0% of normal weight, and 24% of cases suffering from PEM.

During the second year of life these figures are 22.9%, 22%, 55% for, obese, normal and PEM cases respectively.

Table 47b shows the distribution of %ge of weaned children as well as the pattern of weaning whether proper or improper versus locality taking in consideration that weaning foods are classified into: fruit juice, starchy foods, milk products and protein rich food.

Accordingly and with refrence to the age at weaning and quality of food given; it was found that in the south zone (Ein El-sera) weaning foods are mainly starchy foods i.e. it was not proper in amount or time. In the middle zone the majority of infants were weaned on home menu with starchy fluids but the minority were properly weaned. The difference between the total not properly weaned and those who suffer from PEM was statisticaly significant.

If we compare the properly weaned infants

to those not properly weaned, the ratio was found to be 1:2, 3:1 and 4:5 in the three centers (middle, south and Heliopolise), respectively.

The chemical structure and nutritional value of some of the commonly used Biekosts are given in details in the appendix (pp xxii).

Table (48), gives the HB% in two age groups below and after one year of age. cases were devided into three groups (WHO 1978):

cases with HB level 11gm% or above (normal)

cases with HB level. 9.5-11gm% (mild anaemia and moderate).

cases with HB. level < 9.5 gm% (severe anaemia)

cases are presented versus type of feeding pattern.

Table (49) shows the study of the different developmental parameters to reveal any link between the feeding pattern and each parameter; and if any parameter is more affected than the others.

These parameters are: gross motor, finemotor, hand eye coordination, vision, hearing and speech and lastly social behaviour and play according to Denever`s classification (Prince 1980).

This table (49) shows the percentage of delay in each parameter and its relation to each pattern of feeding in the 5th visit only. Those infants on exclusive breast feeding fell behind those on mixed and artificial