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Family Composition and Child Health in Sudan and Lebanon

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I. Introduction:

It is generally acknowledged that changing economical and social conditions lead to a transition in patterns of family formation, changes in men's and women's roles and statuses within families, and altered notions of power and decision – making within the family. These changes have wide – ranging social and demographic implications. Change in family formation is one of them. Less is still known about the relationship between those changes in family formations and the well – being of vulnerable groups such as children, women, and the elderly.

The1990 and 1992 Demographic and Health Survey data for Niger and Nigeria, respectively, are used to explore the relationship between family structure and child immunization in the two countries. A strong interrelationship was found between socioeconomic status and family structure, with children in nuclear and elementary polygynous households being generally worse-off (Gage AJ et Al.1995).

The relationship between family forms and nutrition available to children tries in Latin America and West Africa were discussed by Desai S 1992. He uses demographic and health surveys data from Ghana, Mali, Senegal, northeast Brazil, Colombia, and the Dominican Republic to derive hypotheses regarding food available to young children in various household and family arrangements.

Another study by Dawson DA, 1991 describes the family arrangements of children 17 years of age and under and the association between family structure and various demographic and socioeconomic characteristics of the children and their families. The study focused on the relationship between family structure and children's health and well being. Physical health, educational attainment, and emotional health are compared for children in the four most common types of family.

Children in Guinea-Bissau in monogamous households had a lower risk of dying of measles than polygamous families. It is suggested that measles may be more severe in polygamous families because several children can have the disease simultaneously (Aaby P, et al 1983).

Introduction, objectives of the study, methodology, and data sources, will be in the first section. Features and characteristics of the changed family

form will be in the second section. Effect of changed family forms on child health will be in the third section. Consequences and conclusion will be in the fourth section followed by References.

Objectives of the Study:

The objectives of this study are as follows: Firstly, to identify features of the Sudanese and Lebanese family structural changes by place of residence. Secondly to examine the demographic characteristics of the changed forms of their families. Thirdly to study the demographic and social consequences of the changed family forms on child health as a part of child well – being.

The expected variation of family composition between Sudan and Lebanon was mainly behind choosing them for this study. To see a family with four generations living in the same household (grand parents, parents, sons and daughter, and descendents) is common in Sudan, while it is not in Lebanon.

Family composition has the following forms:

- Nuclear families where wife and husband are living together with / without children in the same household.
- Single person household where only a person is living in the household alone.
- Single parent families where only one of the parents is living together with his or her children in the same household.
- Extended families where more than parents and children are living together in the same household.

Methodology of the Study:

This study will follow the descriptive as well as the analytic approach. It compares between attitudes towards some relevant aspects such as: Child Immunization; and Diarrhea and cough and the changed family forms by different background characteristics. It also differentiates between the effect of actual changes and the changes due to sampling variation, hypothesis tests about population proportions from large samples are applied to nuclear and extended family proportions for the two countries. The study also uses discriminant technique to categorize variables under investigation and to identify the variables that are important for distinguishing the differences among the groups

The two discriminant models applied in this study present the identifications of characteristics that may affect child health for women lived in nuclear and extended families in Sudan and Lebanon. The used indicator variables of both Sudanese and Lebanese models are: intention to use contraceptives in the future (intend=0, do not intend=1), woman education (primary=0, otherwise=1), husband's education (primary=0, otherwise=1), woman's occupation (work for cash=0, does not work for cash=1), parity (less or equal to 2 children =0, more than 2 children =1), current contraceptive use (currently use=0, do not use =1), and the independent variable is the type of family the woman live in (nuclear=0, extended=1).

The linear discriminant model to confirm the group differences is expressed as follows:

$$D = B_0 + B_1X_1 + B_2X_2 + \ldots + B_pX_p$$

Where,

D is the score of cases

B's are estimates from the data

X 's are the values of independent variables

The above discriminant equation applies for both discriminant models for Sudan and Lebanon.

Data sources:

Sudanese and Lebanese maternal and child health surveys (1995) and (1996) are the main data sources.

Maternal and child health survey conducted by League of Arab States for Lebanon 1996, and Sudan 1995 are used. The Lebanese sample includes 5431 families, only 4600 of them are interviewed (85%). The total number of women less than 55 years old is 3443 women, only 3317 of them are interviewed (96%). The total number of children less than 5 years old are 2192 children, only 2156 of them are interviewed (98%).

The Sudanese Sample includes 5359 families in the northern states, only 5320 of them are interviewed (99.3%). The total number of women less than 55 years old is 5261 women, only 4869 of them are interviewed (92.5%). The total number of children less than 5 years old is 4683 children, only 4585 of them are interviewed (97.9%).

In the Southern States, The total number of families is 1000 families, and 1060 are interviewed. For unsettled population, The total number of families is 500, only 460 of them are interviewed.

Sec.II: Characteristics of the Changed Family Forms

It is important to identify and determine the characteristics of the new family forms. They are often associated with socioeconomic differences between households. Female-headed households frequently are poorer than those headed by males. In addition, household composition affects the allocation of financial and other resources among household members. Consequently, over all well – being of these individuals will be influenced.

Table (1) presents percent distribution of family type by different background characteristics for Lebanon 1996 and Sudan 1995. Percent of female-headed households in Lebanon is relatively higher than in Sudan. Females head 13.5 percent of families in Lebanon compared with 12.4 percent in Sudan. There is a remarkable variation of the proportion of female – headed households by residence in the two countries. Lebanese proportion of female – headed households in urban areas is 1.55 times the corresponding proportion in rural areas. They are almost 8 percent and 5 percent respectively. The opposite is practiced in Sudan, where the proportion (4 %) in urban areas is .5 times the corresponding proportion (8%) in rural areas.

About 77 percent of Lebanese families are nuclear, and 23 percent of them are extended. There are almost no variations in the proportion of nuclear households by residence. The variation is experienced by extended households. Their proportion in urban areas is 1.4 times the corresponding value in rural areas.

On the other hand about 60 percent of Sudanese families are nuclear, and 40 percent are extended. A large variation in the proportions of both nuclear and extended households by residence existed. The proportion of nuclear families in rural areas is 2.7 times the corresponding proportion in urban areas, while the proportion of extended families in rural areas is 1.2 times that in urban areas.

Lebanese distribution of family type by Governorate shows that about 32 and 24 percent of female-headed households are concentrated in Mountain Lebanon and Beirut respectively. About 37, 20, and 14 percent

of nuclear families are living in Mountain Lebanon, North, and Beirut respectively, while 35.7, 25.6, and 21 percent of the extended families are in Mountain Lebanon, Beirut, and North respectively.

Distribution of family type by Governorate in Sudan shows that 28, and 24 percent of the female – headed households are living in Darfur and Central respectively. About 26,23,and 17 percent of the nuclear families are living in Central, Darfur, and Kordfan respectively. While 28, and 27 percent of the extended families are in Khartoum, and Central respectively.

Table (2) presents Single person families, and female – headed households distribution by different background characteristics. Percents of single person families in Lebanon and Sudan are 4.7and 1.6 percent respectively.

Distribution of single person families by sex as indicated in table (2) shows that female single households are 1.4 times male headed households in Lebanon, while the corresponding value is 5.4 in Sudan.

About 73 percent of single person households heads are 50 years old and above.62 percent of them were school attendants in the past, and 37 percent of them did never attend a school. Primary is the highest certificate awarded to 21 percent of them. The majority are widowed and never married, their percents are 48 and 38 respectively.

On the other hand the majority of the Sudanese heads of single person families (87%) are also 50 years old and above and 96 percent of them did never attend a school. The majority of them are widowed, where their percent reached 77 percent.

As for Lebanese female – headed households,75 percent of their heads are 50 years old and above, about 60 percent of them were attending school in the past while 41 percent did never attend a school. Primary is the highest certificate obtained by 20 percent of them. 75.6 percent are widowed.

Sudanese female – headed households' characteristics show that 46 and39 percent of their heads are 50 years old and above and in the age group 30 – 49 respectively. 78 percent of them never attend school. Primary is also the highest certificate awarded to 5 percent of them. 44 and 42 percent of them are widowed and married respectively.

Sec III: Child Health Differentials and Family Form Variations

Variations resulting from the changed family formations especially those related to child health, as a part of the child well – being will be discussed in this section. Child immunization and childhood illness, may be affected by family type variations. Level and pattern of that effect will be indicated.

Child Immunization:

Immunization against the major preventable diseases of childhood is essential element in improving child survivals and usually provided by government. Tuberculosis (BCG); three doses of vaccines to prevent Diphtheria, Pertussis, and Tetanus (DPT); and three doses of Polio vaccine; and Measles are the main vaccines provided. Percentages of children who had received and completed vaccines among Lebanese and Sudanese children will be compared. Differentials between children grown up within nuclear and extended families by some background characteristics will be indicated.

Children having Diarrhea and Cough in the last 24 hours and in the last two weeks among children living in nuclear and extended families in the two countries by different background characteristics will be also compared. Differentials by family forms will be concluded.

Tables (3) and (4) present percentages of children under 5 years old who had received and completed vaccines by selected background characteristics in Lebanon and in Sudan.

Level of fully immunized children is slightly greater among children raised up in nuclear families than in extended families. Their percentages are 77 and 76 respectively in Lebanon. Coverage is generally increasing with age in nuclear families. 82 percent of the children registered fully immunized are aged 21 –17 months followed by 90.5 and 94.1 percent among children aged 18 – 23 and 24 – 59 respectively. The corresponding values for children living in extended families are 77, 93.3, and 92.1 percents respectively. The variation reached a peak for children aged 17 – 23 months.

The child sex makes a big difference with percentages of children fully immunized living in both nuclear and extended families. Percentage of females fully immunized is greater than that of males; they are 78.5 and 73 percent for females and males respectively in extended families. The corresponding values of fully immunized children living in nuclear families are 78 and 76 percent respectively.

Percentage of fully immunized male children living in nuclear families is higher than that corresponding to children living in extended families. These percentages are 76 and 73 percent respectively. Meanwhile, family type almost shows no difference among females.

Child sex also makes a big difference in the coverage level. Females are having relatively higher percentages than males. That is reflected by data about DPT3/ Polio3, and Measles respectively. Percent of female children who are immunized against them are 1.03 (extended families), 1.03 (nuclear families), and 1.06 (extended families) times corresponding male percents.

Urban children are much more likely to be immunized than rural children especially those living in nuclear families. Almost 80 percent of nuclear urban children are fully immunized. That value is 75 percent for nuclear rural children. The corresponding values are 76, and 75 percent respectively for children living in extended families.

Coverage levels vary by Governorate. About 84, 80, 77, and 76 percent of children fully immunized living in Beirut, Mountain Lebanon, Bekaa, North and Nabatieh. They are living in nuclear families as well.

The corresponding values for children living in extended families. are 86, 82, 77, and 67 percent and are found in South, Beirut, Mountain Leb. And North respectively.

For South and Nabatieh 86 and 100 percent of children living in extended families are fully immunized. For children living in nuclear families the corresponding values are 77 and 76 percent respectively. Fully immunized children living in South and in extended families are 1.1 times those living in nuclear families. The corresponding value in Nabatieh is 1.3.

The situation is strikingly different in Sudan. Table (4) shows that percent of children fully immunized in general is only 64.5 percent. Children fully immunized and living in nuclear families constituted lower

proportion when compared with those living in extended families. Percent of children fully immunized and living in extended families is 1.11 times those living in nuclear families.

In general, the higher is the age of the child the higher is the rate of coverage for all age groups. The percent of fully immunized children living in extended families is higher than the corresponding value for children that living in nuclear families.

Sex of child does not make any significant difference among fully immunized children living in nuclear families, while in extended families it is remarkably greater for females than males. The percent is 69.5 for females and 66.5 for males.

Urban children are much more likely to be immunized than rural children especially for nuclear families. Little difference is seen among children living in extended families.

Coverage levels vary by Governorate. Higher percentages of fully immunized children among those living in extended families compared with nuclear are experienced. 75 and 73 percent of children fully immunized are in Khartoum and Central Sudan respectively. The corresponding values in nuclear families are 69.5 and 68.5 percent.

Percent of fully immunized children living in nuclear families is only higher than those living in extended families in Eastern Governorates

The comparison between the percentages of vaccine completeness by type of family in Sudan and Lebanon indicates large absolute differences. The normal distribution significance test, Z, leads to the rejection of the null hypothesis that the proportions of vaccine completeness in nuclear families in both Lebanon and Sudan are equal. This implies that the differences are not merely sampling variations but are genuine variations (the P value = 0.000). The same is indicated with the extended families in the two countries.

Diarrhea and Cough:

Diarrhea:

Table (5) presents percentage distribution of children under 5 years old who had diarrhea and cough in the last 24 hours and in the last 2 weeks by selected background characteristics in Lebanon and in Sudan.

About 7 percent of children had diarrhea some time in the last 2 weeks preceding the survey in Lebanon compared with 13.6 percent in Sudan. Four percent are still having an episode of diarrhea at the time of the survey within the last 24 hours in Lebanon. The corresponding value in Sudan is 18 percent.

Children aged 6 – 23 months are more likely to have experienced diarrhea than children in any other age group. Children living in extended families have strikingly higher percentages than those living in nuclear families. Percentages corresponding to extended families are 1.8, 1.3, and 1.33 times percentages corresponding to nuclear families for the 0-5, 6-11, and 18-23 months age groups in Lebanon.

The situation is reversed in Sudan. Higher percentages of children living in nuclear families than those living in extended families had diarrhea in the 24 hours and 2 weeks preceding the survey. Percentages corresponding to nuclear families are 1.6 and 1.1 times those corresponding to extended families for the 6-11 and 8-23 month age group in the 24 hour period prior to the survey.

The corresponding values for the 2 week period are 15.5 and 12 percent for children living in nuclear families aged 18 – 23 and 24 – 59 months and 12 and 9 percentages of children living in extended families.

Large differentials by sex of child are existent. Percentages of children having diarrhea 24 hours and 2 weeks before the survey as shown in table (5) tend to be higher for male children than female children in Lebanon. Children living in extended families have higher percentages of having diarrhea than those living in nuclear families.

Tendency to higher levels of having diarrhea among male children is also experienced in Sudan. However children living in extended families have lower percentages compared with those living in nuclear families.

Family type in Lebanon does not make any difference with females having diarrhea 24 hours prior to the survey. Percentage of males living in extended families is 1.3 times those living in nuclear families. Sex variation in extended families is greater than in nuclear families.

Percentages of males living in extended and nuclear families are 2 and 1.6 times those of females females.

For the 2 week period preceding the survey, sex variation is remarkably higher for children living in extended families than those living in nuclear families. Percentage of male children is 1.8 times that of female children.

Sex of child makes remarkable difference in Sudan, percentages of male children who had diarrhea 24 hours before the survey is 1.2 times that of females within extended families, while it is only .85 within nuclear families.

Family type by sex exhibits also significant differences. Percentage of males living in extended families and having diarrhea in the 24 hours before the survey is 1.2 times percentage of those living in nuclear families. The corresponding value for females is .80.

For children having diarrhea during the two weeks before the survey, sex variation is also experienced. That percentage for males living in extended and nuclear families are 1.2 and 1.1 times those for females.

Family type by sex has its effect. Percentage of males living in extended families is .90 times that of males living in nuclear families, compared with .85 for females.

Generally, rural children are much more likely to have diarrhea than urban children in Lebanon. In the 24 hours period before the survey, the urban / rural variation is experienced. Percentage of children living in rural areas is 1.5 times percentage of children living in urban areas.

As for family type variation, children living in extended families are more likely subjected to diarrhea than those living in nuclear families in rural areas. The opposite is practiced in urban areas.

In the two week period before survey, variation by family type between rural and urban is obvious. The percentage in rural areas is 1.8 times that in urban areas.

In rural areas, the percentage of children living in nuclear families is 1.4 times those of children living in extended families. The corresponding value is 1.2 in urban areas. In Sudan and for the 24 hour period before survey, the percentages of rural children living in extended

and nuclear families are 1.4 and 1.4 times those of urban children. Variation by type of family is not as much as variation by urban rural.

In the two week period, the percentage of rural children living in nuclear families is 1.2 times the corresponding percentage for urban children.

Family type variation is higher in rural areas than in urban areas.

The Z significance test of the differences between the proportions of having diarrhea in Lebanon and Sudan proves that these differences are highly significant (p value= 0.000) for both extended and nuclear families.

Cough

Higher percentages of children having cough are experienced when compared with those having diarrhea in the two countries. Percentages of children with diarrhea two weeks before the survey are higher in Lebanon. They are higher than those percentages experiencing diarrhea 24 hours before survey.

The opposite is almost true in Sudan, where percentages of children with diarrhea two weeks before the survey are less than those percentages with diarrhea 24 hours before the survey.

Family type variation by Governorate is remarkably observed in some governorates. Bekaa in Lebanon and North in Sudan show the sharpest variation, where percentages of children living in extended families and having diarrhea 24 hours before the survey are 3.8 and 2 times those living in nuclear families respectively.

The opposite is experienced with children having diarrhea two weeks before the survey. In Bekaa and Eastern in Sudan percentages of children living in nuclear families are 1.5 and 1.7 times those living in extended families.

Variations by family type reach its peak in Bekaa, South, and Nabatieh in Lebanon, and Darfur in Sudan. The opposite is shown in South in Lebanon where the corresponding percentage for children living in nuclear families is 1.9 times the percentage of those living in extended families.

Significance tests assure the significance of the differences between the proportions in Lebanon and Sudan for both nuclear and extended families.

Results obtained from the discriminant analysis application support those indicated from the descriptive cross tabulations. Group means of the indicator variables by type of family presented in table (6) show that 70 percent of Sudanese women who live in nuclear families intend to use contraceptives, 90 percent are currently using, about 80 percent have at most 2 births. 87 and 75 percent of those women work for cash and have higher levels of education than primary school certificate. The corresponding values for women living in extended families are 60,80,70, 90, and 68 percent respectively. Variations in the group means of the indicator variables by type of family are obviously indicated.

In Lebanon very small variations in the group means and the indicator variables by type of family are indicated. The group separation by mean differences for Sudan and Lebanon is consistent because the standard errors of the group means as indicated from table (6) are generally small.

Table (7) contanes a test for univeriate equality of group means and wilks' lambda in Sudan and Lebanon. For Sudan it shows that all variables are significant with P- value of the test =0.000 except for women's work (0.001). If the P- value of the test is less than 0.05, then the hypothesis that all group means are equal is rejected. The coefficients of the variables indicate that group means are different and thus there is a difference between women living in nuclear families and those living in extended families. The opposite is indicated from the Lebanese data.

Wilks' lambda displayed in table (7) is the ratio of within- group sum of squares to the total sum of squares. A lambda of 1 occurs when all observed group means are equal, which is consistent with the Lebanese case.

The values in the correlation matrices presented in table (8) for Sudan and Lebanon show that the intention to use contraceptives and the current use have relatively the largest correlation coefficient (.601) in Sudan. Woman's education has relatively the largest correlation coefficient (.321) in Lebanon. The remaining indicator variables of the two models contribute more in indications of group differences because they are less multicolinear among each other.Ttaking care of

multicolinearity among indicator variables has indicated that the two discriminant models are effective.

According to the variable coefficients in table (9), the linear discriminant equations for these models in Sudan are:

Nuclear D= -10.256+.0628(intend to use)+4.365(parity)+4.004(w. edu)+8.92(w.work)+5.637(current use)

Extended D=-9.756-.419(intend to use)+4.080(parity)+3.744(w. edu)+9.167(w. work)+5.616(current use)

While the linear discriminant equations for the two models in Lebanon are:

NuclearD=-7.974+3.202(parity)+8.512(w.work)+3.909(w. edu)+3.173(h. edu)+1.885(current use)

Extended D=-8.598+3.276(parity)+8.575(w. work)+3.861(w. edu)+3.158(h. edu)+1.968(current use)

A linear discriminant function is expected to distinguish women living in nuclear families from those who live in extended families. The two groups are expected to differ in their discriminant values (D values). The average scores for groups (groups centroids) are the indicators of D values for each group. Table (10) presents the scores of the discriminant functions (D's) for group 1 (women living in nuclear families) and group 2 (women living in extended families). The results indicate that, on average women living in extended families in Sudan have smaller discriminant function score (-.158) than women living in nuclear families (.155). The opposite is experienced in Lebanon. Women live in nuclear families have smaller discriminant function score (-0.0245) than those who live in extended families (0.0419).

The results of cases classification as indicated in table (3.9) show that in Sudan out of 2361 cases in group 1, 1677 (71 percent) were correctly predicted as members of group 1, while 684 (29 percent) were incorrectly assigned to group 2. Similarly 973 cases (42 percent) out of 2308 cases of group 2 were identified correctly and 1335 cases (57.8) percent) were misclassified. The over all percentage of correctly classified cases is 56.8 (2650cases out of 4669 cases).

For Lebanon out of 2089 cases in group 1, 2065 (98.9 percent) were correctly predicted as members of group 1, while 24 (1.1 percent) were incorrectly assigned to in group 2. Similarly 25 cases (2 percent) out

of 1228 cases of group 2 were identified correctly and 1203 cases (98 percent) were misclassified. The over all percentage of correctly classified cases is 63 (2090cases out of 3317 cases). The discriminant functions for both Sudan and Lebanon as indicated are effective.

Sec.IV: Conclusion and Recommendations

The above work indicates that the majority of families are nuclear in both Lebanon and Sudan. Extended families come next. Also new types of families start to appear with considerable percentages, those types are female headed households and single person families which may be regarded as part of the nuclear families.

Described characteristics of these new family types indicate that they are elderly, have lower levels of education and almost uneducated, the majority are widowed and married. While the majority of the single person families are females.

Seventy seven percent of Lebanese families are nuclear. 4.7 percent of them are single families. Almost 2.7 percent of those single families are females. While 23 percent of the families are extended. It also noticed that females headed 13.5 percent of the total families, and 2.7 percent of them are living alone.

The corresponding values in Sudan are as follows: 60 percent of the families are nuclear, 1.6 percent of them are single families. Their distribution by sex shows that 1.35 percent are females. About 40 percent of the total families are extended.

The distribution of families by sex of the head indicates that females headed 12.4 percent of the families. 1.35 percent of them are single and living by their own. It is obvious that female-headed households as well as single person families start to appear and they are increasing. The majority of those females, in Lebanon and Sudan aged 50 years old and over. In Lebanon they attended school in the past and primary school certificate is the highest degree they got. Meanwhile the majority of them in Sudan did never attend a school. The majority in Lebanon is widowed and single while they are widowed and married in Sudan.

Distribution of Lebanese children under 5 years old who had received and completed specific vaccines with card seen indicates that: Children are having high tendency to complete vaccines. Percentages of

those children who are fully immunized are 76.7, 75.9 and 76.9 for total children, children living in extended families, and children live in nuclear families respectively. Small variation by family type is indicated.

The distribution of Sudanese children under 5 years old who had received and completed specific vaccines indicates a different situation. Percentages of those children who are fully immunized are 64.5, 68.0 and 61.5 for total children, children living in extended families, and children living in nuclear families respectively. Great variation by type of family is indicated.

Percentages of both Lebanese and Sudanese children under five years who had diarrhea 24 hours and 2 weeks before survey indicate that: children living in nuclear families experience higher percentages than children living in extended families. Four percent of the total children had diarrhea 24 hours before the survey in Lebanon. 4 percentage are living in nuclear families while 3.6 percent are living in extended families. The corresponding values for children had diarrhea 2 weeks before survey are 7, 7.4 and 6.3 percent respectively. Again significant variation by family type is not indicated in Lebanon.

For Sudanese children,18 percent had diarrhea 24 hours before the survey, and 18.3 and 18.4 percentage of them are living in nuclear and extended families. About 13.6 percent of total children had diarrhea 2 weeks before the survey.14.4, and 12.6 percent of them are living in nuclear and extended families respectively.

For children who having cough 2 weeks prior to the survey 60 and 52.6 percent are in Lebanon and Sudan. About 60.6 and 59.8 percent are living in nuclear and extended families in Lebanon respectively. Whereas 50.8 and 54.7 percent of them are living in nuclear and extended families in Sudan. A remarkable variation by type of family is indicated.

With the evidence of the statistical findings from the group means and their standard errors, correlation matrix and discriminant function scores it may be concluded that variables such as children ever born, current and intending to use contraceptives, and women's education are highly significant with women living in nuclear families in Sudan. In Lebanon variation between group means are very small where all observed group means are almost equal.

That explains and supports the findings obtained from the descriptive analysis. There is a difference between women living in

nuclear and extended families in Sudan. That difference is relevant to some indicator variables such as women's education, work, parity, and contraceptive use. It reflects and explains differences in the values of the chosen child health parameters in Sudan. The opposite is experienced in Lebanon. The difference in the mentioned indicator variables are not as much as in Sudan.

In general, family type in Lebanon does not show variations on the chosen child health parameters as much as in Sudan. The very small variation by family type in the socioeconomic status may be behind that

In Sudan, bigger variation by family type in socioeconomic status was behind the differences indicated from the chosen child health parameters. Despite the lower levels of some of the socioeconomic variables such as intention and current use of contraceptives, parity, women education and work among women living in extended families higher levels of child health indicator variables are indicated

Higher levels of the chosen child health parameters in Lebanon than in Sudan are observed. That was remarked mainly with vaccine completeness, and having diarrhea for children living either in nuclear or extended families. That implies that it is not only the socioeconomic status of the woman and the type of family she lives in but also something else. The availability of good quality health services, wherever and whenever they are needed, besides women's awareness, knowledge and experience are important elements irrespective of the type of the household.

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Table (1) Head of Household and Family type by different background Characteristics for Lebanon 1996 and Sudan 1995.

Background	Lebanon				Sudan			
	Head		Family Type		Head		Family Type	
	Male	Female	Nuc	Ext	Male	Female	Nuc	Ext
Area								
Urban	43.6	8.2	38.3	13.5	30.4	4.4	16.4	18.4
Rural	42.9	5.3	38.7	9.5	57.3	8.0	43.9	21.4
Total	86.5	13.5	77.0	23.0	87.6	12.4	60.3	39.7
Governorate								
Beirut	13.2	3.22	10.6	5.9				
Mount Leb.	32.5	4.3	28.7	8.2				
North	17.8	2.3	15.3	4.9				
Bekaa	10.2	1.8	9.8	2.1				
South	8.0	1.2	7.8	1.3				
Nabatieh	4.8	.7	4.9	.06				
Total	86.5	13.5	77.0	23.0				
Khartoum					17.4	2.0	8.0	11.3
Eastern					11.6	2.2	8.3	4.4
Central					23.5	3.0	15.7	10.8
Darfur					15.4	3.5	13.7	5.3
Kordfan					14.1	1.7	10.1	5.7
Northern					5.5	1.0	4.3	2.2
Total					87.6	12.4	60.3	39.7

Table (2) Single Person Families and Female headed Household distribution by different Characteristics, Lebanon 1996 and Sudan 1995.

Background	Lebanon	Lebanon	Sudan	Sudan
	Percent of Single Person Family	Percent of Female Headed H. Holds	Percent of Single Person Family	Percent of Female Headed H. Holds
Sex				
Male	42.5		15.7	
Female	57.5		84.3	
Total	100		100	
Age				
Less than 30	9.3	1.3	4.8	14.9
30 – 49	17.3	23.5	8.4	38.8
50 and more	73.4	75.2	86.7	46.4
Total	100	100	100	100
Schooling Status				
Curr. Attending	.9	.2	1.2	0.0
Atten. In the Past	61.7	59.2	2.4	21.7
Never Attend	37.4	40.6	96.4	78.3
Total	100	100	100	100
Highest Cert.				
None	13.1	16.5	1.2	11.1
Prime	20.6	21.1	0.0	4.9
Prep	7.9	10.0	0.0	0.0
Intermediate			1.2	2.0
Secondary	11.7	8.2	1.2	3.5
University	9.3	3.5	0.0	.3
Never attend	37.4	40.6	96.4	78.3
Total	100	100	100	100
Reading Ability				
Can Read	15.0	14.5	2.4	10.9
Cannot Read	35.5	42.3	95.2	78.4
Marital Status				
Single	38.3	12.9	2.4	1.2
Katb kitab	.5	.3	0.0	0.0
Married	6.5	5.3	9.6	42.2
Widowed	47.7	75.6	77.1	44.2
Divorced	5.6	4.5	9.6	12.2
Legal Separation	1.4	1.1	0.0	0.0
Total	100	100	100	100

Table (3) Percentage distribution of children under 5 years who had received and completed specific vaccines with card seen by the time of the survey by selected background characteristics in Lebanon 1996

Background Char.	DPT1/POLIO1		DPT2/POLIO2		DPT3/POLIO3		Measles		Complete Vacc.		Birth with Card seen
	Nuclear	Extended	Nuclear	Extended	Nuclear	Extended	Nuclear	Extended	Nuclear	Extended	
Age by month											
0-4	100	100	50.9	75.0	21.0	30.0	0.0	10.0	0.0	10.0	73
5-11	100	100	98.1	100	88.9	91.7	10.1	22.2	10.1	22.2	144
12-17	100	100	100	100	95.4	94.3	82.4	77.1	82.4	77.1	143
18-23	100	100	100	100	99.0	100	90.5	93.3	90.5	93.3	134
24-59	99.4	100	98.9	100	97.6	97.0	94.9	92.7	94.1	92.1	709
Total	99.7	100	96.3	98.3	91.8	91.6	77.4	76.2	76.9	75.9	1203
Sex of Child											
Male	99.4	100	96.1	98.0	91.8	90.0	76.5	74.0	75.7	73.3	636
Female	100	100	96.5	98.5	91.9	93.3	78.5	78.5	78.2	78.5	567
Total	99.7	100	96.3	98.3	91.8	91.6	77.4	76.2	76.9	75.9	1203
Area											
Urban	99.8	100	97.2	97.8	92.1	91.7	78.8	76.7	78.6	76.1	
Rural	99.6	100	95.5	99.0	91.6	91.4	76.2	75.2	75.4	75.2	
Total	99.7	100	96.3	98.3	91.8	91.6	77.4	76.2	76.9	75.9	
Governorate											
Beirut	96.8	97.5	90.4			90.1	84.0	73.6	84.0	81.5	174
Mountain Lebanon	100	100	96.3	99.0	94.2	95.1	80.0	76.7	80.0	76.7	427
North	98.2	100	95.1	98.1	89.0	86.5	74.8	67.3	72.0	67.3	216
Bekaa	100	100	96.3	100	89.0	89.3	69.7	64.3	69.7	64.3	137
South	100	100	94.8	95.2	92.5	95.2	76.9	85.7	76.9	85.7	154
Nabatieh	100	100	98.9	100	93.5	100	76.1	100	76.1	100	94
Total	99.7	100	96.2	98.3	91.8	91.6	77.4	76.2	76.9	75.9	1203
Total		100		97		92		77		77	

Table (4) Percentage distribution of children under 5 years who had received and completed specific vaccines with card seen by the time of the survey by selected background characteristics in Sudan 1995.

Background Char.	BCG		DPT1/POLIO1		DPT2/POLIO2		DPT3/POLIO3		MEASLES		Complete Vaccine		B.W.C.S
	Nuclear	Extended	Nuclear	Extended	Nuclear	Extended	Nuclear	Extended	Nuclear	Extended	Nu	Ex	
Age by month													
0-4	100	98.9	94.6	89.8	42.9	48.9	19.6	18.2	8.9	11.4	8.9	11.4	144
5-11	100	100	99.2	98.2	83.5	87.2	69.3	77.1	31.5	48.6	31.5	48.6	234
12-17	100	97.9	100	100	89.3	88.7	79.5	81.4	60.2	70.1	60.0	68.0	219
18-23	100	100	100	100	88.5	93.9	81.3	90.9	67.7	74.2	66.7	72.7	162
24-59	99.4	98.7	98.8	99.2	91.9	95.7	86.0	93.2	75.8	86.1	74.8	85.1	883
Total	99.7	98.9	98.9	98.2	86.9	88.0	78.0	80.4	62.3	69.0	61.5	68.0	1642
Sex of Child													
Male	100	98.1	99.3	97.9	89.0	86.2	80.0	79.3	61.9	67.9	61.7	66.6	821
Female	99.3	99.7	98.4	98.4	84.8	89.7	76.0	81.6	62.6	70.0	61.2	69.5	821
Total	99.7	98.9	98.9	98.2	86.9	88.0	78.0	80.4	62.3	69.0	61.5	68.0	1642
Area													
Urban	99.4	98.7	98.5	98.0	89.4	88.2	80.2	78.8	66.0	69.0	65.0	68.3	726
Rural	99.8	99.2	99.8	98.3	85.4	87.7	76.6	82.2	60.1	68.9	59.4	67.8	916
Total	99.7	98.9	98.9	98.2	86.9	88.0	78.0	80.4	62.3	69.0	61.5	68.0	1642
Governorate													
Khartoum	99.0	98.3	98.4	98.3	92.0	94.1	84.5	86.4	70.5	76.7	69.5	75.3	474
Eastern	100	988.6	99.0	97.0	83.3	78.3	73.5	72.5	57.0	36.4	56.9	52.2	171
Central	100	100	99.0	99.2	91.9	91.3	82.8	82.9	69.8	73.0	68.5	72.6	560
Darfur	89.9	100	99.0	100	81.8	81.6	73.7	76.3	48.5	60.5	46.5	47.9	137
Cordfan	99.2	97.5	98.5	95.1	74.3	67.9	61.0	59.3	46.6	49.4	44.8	46.9	217
Northern	100	100	100	96.7	88.7	86.7	86.8	83.3	71.7	63.3	71.7	63.3	83
Total	99.7	98.9	98.9	98.2	86.9	88.0	78.0	80.4	62.3	69.0	61.5	68.0	1642
Total		99.3		98.5		87.4		79.1		65.3		64.5	1642

Table (6) Group means and standard errors by selected background characteristics in Sudan 1995 and Lebanon 1996

Sudan					
Group means					
Groups	Intend to use	Parity	W.EDU	W.WORK	Current use
Nuclear	.7238	.7886	.7467	.8687	.8729
Extended	.6092	.7309	.6781	.8986	.8189
Group standard errors					
Nuclear	.0092	.0084	.0089	.0069	.0068
Extended	.0101	.0092	.0097	.0062	.0080
Lebanon					
Group means					
Groups	Parity	W.WORK	W.EDU	H.EDU	Current use
Nuclear	.6357	.8679	.7176	.6501	.3887
Extended	.6539	.8787	.7028	.6384	.4072
Group standard errors					
Nuclear	.0105	.0074	.0098	.0104	.0106
Extended	.0135	.0093	.0130	.0137	.0140

Table (7) Tests of univeriate equality of group means in Sudan 1995 and Lebanon 1996

	Sudan		Lebanon	
Variables	Wilks' Lambda	Significance	Wilks' Lambda	Significance
Intend to use	.985	0.000		
Parity	.995	0.000	1.000	.291
W.EDU	.994	0.000	1.000	.364
W.WORK	.998	0.001	1.000	.370
Current use	.994	0.000	1.000	.294
H.EDU			1.000	.499

Table (8) Pooled within family types groups correlation matrices in Sudan 1995 and Lebanon 1996

Sudan

	Intend to use	Parity	W.EDU	W.WORK	Current use
Intend to use	1.000				
Parity	.037	1.000			
W.EDU	.103	.017	1.000		
W.WORK	,016	-.042	-.114	1.000	
Current use	.601	.038	.068	.065	1.000

Lebanon

	Parity	W.WORK	W.EDU	H.EDU	Current use
Parity	1.000				
W.WORK	.141	1.000			
W.EDU	-.159	-.150	1.000		
H.EDU	-.145	-.161	.321	1.000	
Current use	-.119	.048	-.003	-.050	1.000

Table (9) Disciminant classification function coefficients in Sudan 1995 and Lebanon 1996					
	Sudan			Lebanon	
	Nuclear	Extended		Nuclear	Extended
Intend to use	.0628	-.419	Parity	3.202	3.276
Parity	4.365	4.080	W.WORK	8.512	8.575
W.EDU	4.004	3.744	W.EDU	3.909	3.861
W.WORK	8.921	9.167	H.EDU	3.173	3.158
Current use	5.637	5.616	Current use	1.885	1.968
Constant	-10.256	-9.756	Constant	-7.974	-8.598

Table (10) Functions at family type group centroids in Sudan 1995 and Lebanon 1996			
Sudan		Lebanon	
Nuclear	0.155	Nuclear	-0.0246
Extended	-0.158	Extended	0.0419

Table (3.9) Cases classification results for family type groups in Sudan 1995 and Lebanon 1996						
	Sudan			Lebanon		
	Nuclear	Extended	Total	Nuclear	Extended	Total
Nuclear	1677 71%	684 29.0%	2361	2065 98.9%	24 1.1%	2089
Extended	1335 57.8%	973 42.2	2308	1203 98%	25 2.0%	1228

Table (5) Percentage distribution of Children under 5 years who had Diarrhea and Cough in the last 24 hours and 2 weeks before the survey by selected background Characteristics, Lebanon 1996 and Sudan 1995.

Background Characteristics	Lebanon Diarrhea Last				Sudan Diarrhea Last				Cough Last 2 weeks			
	24 hours		2 Weeks		24 hours		2 Weeks		Lebanon		Sudan	
	Nu	Ex	Nu	Ex	Nu	Ex	Nu	Ex	Nu	Ex	Nu	Ex
Age by Months												
0-5	5.7	5.0	5.7	10.0	17.9	22.7	12.5	12.5	50.9	60.0	51.8	51.1
6-11	6.5	11.4	13.0	17.1	32.5	21.1	18.3	22.9	66.7	55.6	51.2	62.4
12-17	8.3	8.6	11.1	11.4	22.1	25.8	18.9	17.5	59.3	65.7	51.6	52.6
18-23	4.8	3.3	7.6	10.0	33.3	28.8	15.6	12.1	58.1	66.7	54.2	59.1
24-59	2.2	2.4	5.7	2.0	10.8	12.4	12.2	8.9	61.0	58.2	49.8	53.1
Total	3.9	3.6	7.4	6.3	18.3	18.0	14.4	12.6	60.5	59.8	50.8	54.7
Sex of Child												
Male	4.7	6.0	7.2	8.1	16.9	20.0	15.1	13.6	60.4	64.2	51.7	56.8
Female	3.0	3.0	7.6	4.4	19.8	16.1	13.6	11.6	60.7	54.8	49.9	52.6
Total	3.9	4.6	7.4	6.3	18.3	18.0	14.4	12.6	60.6	59.8	50.8	54.7
Area												
Urban	4.7	3.9	5.1	6.1	14.9	15.4	12.8	12.4	61.2	58.3	50.5	53.7
Rural	3.3	5.7	9.4	6.7	20.4	20.8	15.3	12.8	59.8	62.9	51.0	55.8
Total	3.9	4.6	7.4	6.3	18.3	18.0	14.4	12.6	60.4	60.0	50.8	54.7
Governorate												
Beirut	2.1	2.5	4.3	6.3					59.6	57.5		
Mount Leb	2.5	4.9	6.2	4.9					60.0	64.1		
North	6.1	6.0	7.9	9.8					56.7	57.7		
Bekaa	2.8	10.7	10.2	7.0					68.8	82.1		
South	3.0	0.0	7.5	4.8					62.7	33.3		
Nabatieh	9.8	0.0	9.8	0.0					57.6	0.0		
Khartoum					13.4	16.0	8.6	11.1			52.4	55.7
Estern					30.4	17.4	16.7	15.9			44.1	44.9
Central					18.2	19.2	15.3	14.8			58.1	60.3
Darfur					21.2	21.1	17.2	10.5			36.4	50.0
Kordfan					14.7	14.8	17.6	9.9			54.1	50.6
Northern					17.0	33.3	11.3	10.0			34.0	36.7
Total					18.3	18.0	14.4	12.6			50.8	54.7
Total	4.1		7.2		18.2		13.6		60.4		52.6	