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The Association Between Social Disadvantage and Morbidity in Hospitalised Children

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Summary

Oyedeji GA, Oyedeji AO, Ajibola AJ. The Association between Social Disadvantage and Morbidity in Hospitalised Children. *Nigerian Journal of Paediatrics* **2002: 29: 5.** The nutritional status, length of hospitalization and the diagnoses in 207 socially disadvantaged and 232 non-disadvantaged controls admitted into the Wesley Guild Hospital, Ilesa, over a six-month period were compared. The patterns and frequencies of the diseases diagnosed in the two groups were similar. However, compared with controls, significantly greater percentages of disadvantaged children were hospitalized for over six days ($p<0.005$), and were malnourished by weight ($p<0.001$) and by height/length ($p<0.005$). The findings suggest the need to generate more data on social disadvantage in developing countries and to recognize and give affected children and families special attention at the various health and social care service points. Moreover, services should be provided in the community with a view to reducing the incidence of social disadvantage and at mitigating their effects on child health.

Key words: Social, Disadvantage, Morbidity, Hospitalised children

Introduction

THERE is scanty literature on social disadvantage and its effects on child health in developing countries. The presence of overt and urgent competing health problems in such countries may be partly responsible for this. Yet, many of such problems merely represent the tip of the iceberg of social factors underlying and sponsoring them. Also, many may feel that since polygamy is traditionally the African way of life, children whether born in or out of 'official' wedlock are always loved and wanted and that the effects of social disadvantage on child health need not receive much attention. Such a view would be wrong. However, different socioeconomic and cultural circumstances demand different definitions of social disadvantage. The British National Child Development study on social disadvantage included children from families with poor socio-economic status, unsatisfactory housing, one parent or many children; by this definition, six per cent of the children surveyed fell into this category.[1,2] Families involved in crises situations in any culture of the world are to be considered disadvantaged. Such crises may include death, divorce, separation, plural marriage, poor education, mental retardation, young age, antisocial/deviant behaviour or unemployment of parents and living in overcrowded unhealthy environment.

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The aim of the present study was to identify by history, such factors present among children hospitalized for all kinds of conditions and compare their morbidity with that of other hospitalized non-disadvantaged children. Although a study of social disadvantage should best be based in the community, a hospital based one can also be informative especially regarding the health effects of the disadvantages seen in the children.

Materials and Methods

Socio-demographic and other details were obtained by means of a semi-structured questionnaire from the parents or surrogates accompanying 439 children admitted through the children's emergency and outpatient units into the main and isolation children's wards of the Wesley Guild Hospital Ilesa, between January and June 1998. Wesley Guild Hospital, Ilesa is the only public hospital providing general and specialist care to the Ijesha Yoruba population of Western Nigeria. The hospital receives patients from towns and villages spread over a 40 kilometer radius around its semi-urban location. The children studied were not selected but were those out of a total of 788 admissions into the two wards during the study period in whom all essential details of the study could be completed before their discharge or death. The wards have a rapid turn-over rate and the questionnaire was completed as soon after admission as possible, usually within 24 to 48 hours. Weight, height/length, head and mid upper arm circumference measurements were taken using previously described methods.[3] The diagnoses were recorded and the children managed along the usual lines till discharge or death. The families were allocated into social classes

using a combined score derived from the occupation and educational attainments of both parents as described by Oyedeji.[4]

Children considered to be socially disadvantaged were those:

(a) Born out of wedlock
(b) Born to unemployed parents, young, illiterate or poorly educated mothers.
(c) Being brought up in polygamous families
(d) Being brought up by divorced parents.
(e) Being brought up in one-parent families and/or living away from the two parents for such reasons as marital discord, death, desertion or divorce.
(f) Being brought up in displaced families e.g. as a result of communal disturbance.

The results were analysed and the data on disadvantaged children was compared with those of the non-disadvantaged used as controls. For the assessment of the nutritional status, the positions of the weights and heights/lengths for the ages of the children on Jane *et al's*[5] curves for elite and poor Nigerian children were determined. These curves have been found to be similar to American international reference population curves and have been advocated for use in Nigerian children. Children whose weights or heights/length on the curves fell below the third percentile for Nigerian elites were considered malnourished and if below the third percentile for Nigerian poor children, very severely malnourished.

Results

Seven hundred and eighty eight children were admitted during the period of study. Of these, 439 (55.7 per cent) were studied – 262 boys and 177 girls (M:F ratio 1.5:1). Of the 439 studied, 207 (47.2 per cent) were socially disadvantaged – 127 boys and 80 girls (M:F ratio 1.6:1), whilst 232 (52.8 per cent) were non-disadvantaged controls – 135 boys and 97 girls (M:F ratio 1.4:1). The age patterns of both groups were similar as shown in Table I; 82 per cent of the children were aged five years and below.

Table I

Age Groups of Patients

Age Groups (Years)	No of Children			Per cent of Total
	Disadvantaged	Controls	Total	
Birth -1	76	90	166	37.8
>1 – 2	42	57	99	22.6
>2 – 3	17	34	51	11.6
>3 – 4	7	17	24	5.5
>4 – 5	12	8	20	4.5
>5 – 6	6	7	13	3.0
Over 6	47	19	66	15.0
Total	207	232	439	100.0

Table II

Duration of Hospital Stay

Duration (Days)	No of Children		Total
	Disadvantaged n(%)	Controls n(%)	
1	1(0.5)	5(2.2)	6
2	30(14.5)	39(16.8)	69
3	31(15.0)	66(28.4)	97
4	30(14.5)	35(15.1)	65
5	21(10.1)	22(9.5)	43
6	15(7.2)	13(5.6)	28
7	11(5.3)	9(3.9)	20
>7	68(32.9)	43(18.5)	111
Total	207(100)	232(100)	439

Hospital Stay

Table II shows the length of hospital stay in the two groups. The mean duration of stay for the socially disadvantaged group was 9.8 ± 16.8 days compared with 6.1 ± 10.1 days for the controls. It can be seen from the table that 128 (61.8 per cent) of the 207 disadvantaged group stayed for six days or less compared with 180 (77.6 per cent) of the controls whilst 79 (38.2 per cent) stayed for over six days as compared with 52 (22.4 per cent) of the controls. Thus greater percentages of disadvantaged compared with controls stayed for longer duration. These differences are significant ($\chi^2 = 12.83$ df = 1; $P<0.001$).

Diagnoses

These are shown in Table III. The patterns were similar in the two groups with the largely preventable conditions of severe anaemia, malaria, pneumonia, measles, gastroenteritis and protein energy malnutrition featuring among the seven most frequently diagnosed conditions.

Education and Occupation of Parents

The educational attainments are shown in Table IV. The fathers were generally better educated than the mothers with 242(59.7 per cent) of them obtaining at least, secondary school leaving certificate or grade two teachers certificate compared with 190(44.4 per cent) of the mothers. Also parents of disadvantaged children were less educated than those of controls with 102(56.4 per cent) of the 181 fathers of disadvantaged children attaining less than the secondary school leaving certificate or grade two teachers certificate levels compared with 65(28.5 per cent) of the 228 fathers of controls. These differences are significant ($\chi^2 = 32.38$, $P<0.001$). In the case of the mothers, the differences are even more striking with 143 (73.7 per cent) of 194 mothers of disadvantaged children

Table III

*The Main Diagnoses**

Diagnosis	*No of Patients*		*Total*
	Disadvantaged	*Controls*	
Severe anaemia	50	63	113
Malaria	39	43	82
Pneumonia	34	44	78
Measles	17	35	52
Febrile convulsion	16	28	44
Gastroenteritis	10	16	26
PEM	13	7	20
Septicaemia	10	9	19
Typhoid	9	2	11
Fractures	6	5	11
Others	74	63	137
Total	278	315	593

PEM = Protein energy malnutrition
* Many patients had more than one diagnosis

attaining less than the secondary school or grade two teachers certificate level compared with 95 (40.6 per cent) of the 232 mothers of non-disadvantaged children (χ^2 = 47.11, P <0.001). The main occupations of the parents are shown in Table V.

Custodians of the Children

Out of the 232 non-disadvantaged children, 217 (93.5 per cent) lived in the custody of the two parents living together whilst nine lived with the mother alone and six with grandparents and other relations. In the case of the 207 disadvantaged children, only 115 (55.6 per cent) of them lived with their two parents living together, 47 (22.7 per cent) lived with their mothers living alone, 43 (20.8 per cent) with their grand parents and other relatives and two with their fathers living alone. Thus, 44.4 per cent of the disadvantaged children were not living in the custody of their two parents living together.

Social Classes

Seven of the families of non disadvantaged children were in social class I, 29 in II, 113 in III, 72 in IV and 11 in V compared with three in I, 24 in II, 47 in III, 82 in IV and 51 in V for the families of disadvantaged children. Thus, 149 (64.2 per cent) of the 232 families of controls were in the higher social classes I to III and 83 (35.8 per cent) in IV and V compared with 74 (35.7 per cent) of the families of disadvantaged children in social classes I to II and 133 (64.3 per cent) in IV and V. There was a reversal of the percentages in higher and lower social classes in the two categories of subjects.

Social Disadvantages

Table IV

*Educational Attainments of Parents**

Levels Attained	*No of Fathers*			*No of Mothers*		
	Disadvantage No (%)	*Controls No (%)*	*Total*	*Disadvantaged No (%)*	*Controls No (%)*	*Total*
University Bachelor's, Master's and doctorate degrees	20(11.0)	28(12.3)	48	0(0)	6(2.6)	6
Ordinary or advanced level school certificate plus polytechnic, teaching, nursing or other professional qualification	8(4.4)	27(11.8)	35	12(6.2)	33(14.1)	45
Ordinary level secondary school and Grade 2 teacher's certificate	51(28.2)	108(47.5)	159	39(20.1)	100(42.7)	139
Primary six plus uncompleted secondary school education	6(3.3)	27(11.8)	33	36(18.6)	50(21.4)	86
Primary six	49(27.1)	32(14.0)	81	46(23.7)	45(19.2)	91
Below primary six or no formal education	47(26.0)	6(2.6)	53	61(31.4)	0(0)	61
Total	181(100)	228(100)	409	194(100)	234(100)	428

*This information was not available in respect of 30 fathers and 11 mothers

Table V

Main Occupations of Parents

Main Occupations	No of Fathers			No of Mothers		
	Disadvantaged No (%)	Controls (No (%)	Total	Disadvantaged No (%)	Controls No (%)	Total
Trading artisans eg carpenters, tailors, hairdressers,	18(8.6)	24(10.4)	42	99(47.8)	88(37.9)	187
Mechanics etc	38(18.2)	67(29.1)	105	50(24.2)	87(37.5)	137
Teaching	6(2.9)	20(8.7)	26	11(5.3)	30(12.9)	41
Farming	57(27.3)	25(10.9)	82	27(13.0)	6(2.6)	33
Driving	30(14.4)	33(14.3)	63	0(0)	0(0)	0
Intermediate grade public service	23(11.0)	31(13.5)	54	4(1.9)	10(4.3)	14
Managers, professionals, tertiary institution lecturers, senior public service and similar grades	18(8.6)	22(9.6)	40	0(0)	6(2.6)	6
Labourers, messengers and similar grades	12(5.7)	5(2.2)	17	2(1.0)	0(0)	2
Unemployed, full time housewives and students	7(3.3)	3(1,3)	10	14(6.8)	5(2.2)	19
Total	209(100)	230(100)	439	207(100)	232(100)	439

Table VI

The Social Disadvantages Seen in 207 Families

Social Disadvantages	No of Families
Polygamy	125
Father or mother permanently away because of work	22
Father (6) or mother (15) dead	21
Parents divorced or separated because of discord	26
Parents unmarried	15
Mother not educated up to primary six level	61
Father (7) or mother (21) are divorcees now remarried to each other or other partners	28
Other Disadvantages	3

*Some patients had more than one social disadvantage

Social Disadvantage

These are shown in Table VI. There were many instances of multiple disadvantages than the number of disadvantaged families. In the polygamous families, the number of wives per father ranged from two to ten with a mean of 2.5 and the mothers of the patients being the first wives of the fathers in 29 families, the second in 77, third in 12, fourth in three, fifth in three and tenth in one. Seventy five (60 per cent) of the 125 polygamous families were in the lower social classes IV and V and the rest in I to III. The fathers and mothers separated by work, lived away from the rest of the family on a more or less permanent basis, only visiting occasionally.

Nutritional Status

One hundred and forty seven (71.0 per cent) out of 297 disadvantaged children compared with 98 (43.6 per cent) out of 225 controls were malnourished with weights below the third percentile for elite Nigerian children (χ^2 = 33.30, P <0.001). Also 121 (58.5 per cent) of 207 disadvantaged children compared with 101 (44.9 per cent) out of 225 controls had heights below the third percentile for Nigerian elites (χ^2 = 7.97, P <0.005). Seventeen (17.3 per cent) of 98 malnourished controls were below the third percentile for Nigerian poor children compared with 53 (36 per cent) of the 147 who were malnourished by weight among the disadvantaged children. Corresponding figures for malnutrition by height in the two groups were 16 (15.8 per cent) of 101 controls and 44 (36.4 per cent) of 121 disadvantaged children. Thus greater percentages of disadvantaged than of controls were severely malnourished.

Discussion

Although the prevalence rate of social disadvantage in Nigeria is unknown, almost half of the children in the present study were considered disadvantaged. Pringle[6] included children living in large or one parent families or away from their parents in his groups of deprived children whose development may be damaged or stunted because of their personal, family and social circumstances. He suggested that such children may be up to 13–18 per cent of the whole population. Polygamy, lack of, or poor maternal education and parental separation for such reasons as marital discord, work or death are the leading factors of social disadvantage identified in the present study. One can appreciate how such factors may impair health and increase morbidity in children. Polygamy may breed unhealthy rivalry and threaten some forms of family security which are necessary for the healthy living of children. Polygamous families tend to be large and such numbers stress available family resources. Child mortality has been linked with large polygamous families in Nigeria;[7] and in Jamaica,[8] high birth order (implying large families) was one of the risk factors identified for childhood malnutrition which is clearly linked with social disadvantage in the present study. Poverty, an established predictor of poor health,[9,10] is closely associated with the lower social classes[7] to which large numbers of polygamous families belong. Thus, 60 per cent of the polygamous families as well as significantly greater numbers of disadvantaged, compared with control families in this study, were found to be members of social classes IV and V.

Parental separation plunges the children involved into lives in one-parent families in which they may suffer from the financial and other inadequacies and complications of the broken family lives of the custodian parents. Such children often experience profound emotional deprivation, ill health and even growth retardation[6] such as has been described in thirteen children with severe growth retardation simulating idiopathic hypopituitarism with endocrine deficiencies of adrenocorticotrophic and growth hormones.[11] As for maternal education, whereas its positive effect on child health and survival has been well documented,[12-14] poorly educated mothers have been shown to make less use of health promoting and disease preventive services to ensure the health of their children, than their well educated counterparts.[15-17] Of course, poor parental education is itself a major determinant of low social class with the health implications of the latter. The social disadvantage factors mentioned above are likely to be the antecedents responsible for the much higher percentage and degrees of malnutrition seen in the affected children compared with even the unacceptably high levels previously reported in Nigerian children[3] and seen here in the controls. Thus, in the present study, greater morbidity was found in disadvantaged children than in controls – evidenced by the significantly longer hospitalization and greater percentages and degrees of malnutrition seen in disadvantaged children.

The findings invite concrete action. More research should be conducted to gather data on the impact of the various aspects of social disadvantage on morbidity and mortality in the hope that some of the data so collected may assist health and social workers to identify at risk families and children so that they can be targeted for special attention. More significantly, relevant action should be undertaken and services provided in the community which may lead to the prevention of some of the factors of social disadvantage or the amelioration of their effects on child health. Promotion of female education and empowerment, provision of social workers, marriage counseling, community and religious group assistance programmes and socio-economic measures are examples of actions and services which may help.

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