

NON-COMMUNICABLE DISEASE IN CHILDREN IN GHANA: HEALTH AND SOCIAL BURDEN OF CARE ON HOUSEHOLDS

Yawson A¹, Badasu DM², Atobra D³, Anarfi J², Abuosi AA⁴, Adzei FA⁴

¹Department of Community Health, School of Public Health, College of Health Sciences, University of Ghana, Accra, Ghana; ²Regional Institute for Population Studies, University of Ghana; ³Institute of African Studies, University of Ghana; ⁴Department of Public Administration and Health Services Management, University of Ghana Business School, Ghana.

Abstract

Background: Non-communicable diseases (NCDs) are on the increase among children. This paper determines the health and social burden of care imposed on households by NCDs among children in Ghana.

Methods: This was a cross-sectional study in three hospitals in Ghana, Ashanti, Greater Accra and Volta Regions. Interviewer administered structured questionnaire was used for data collection. Data was analyzed by proportions, ratios and chi square for association between categorical outcome measures (at 95% confidence level) using SPSS version 21.

Discussion: Burden of caregiving for children with NCDs rested heavily on women (169; 75.1%) and immediate family (176; 78.3%). Managing child's condition was expensive and created financial

difficulties for households. In all 87.4% of households depended on the national health insurance scheme (NHIS) and 45.8% indicated NCDs in children was a burden. In addition, 47% of the caregivers said life was much better before they found out about child's ailment. Families had no financial support from extended families or communities/employers. Despite enormous challenges faced by households, there was no indication families suffered isolation or discrimination. **Conclusion:** National Health Insurance coverage of NCDs especially childhood cancers will reduce the burden of care on households. Improving access to care at regional/district levels for children with NCDs is imperative.

Key Words: non-communicable diseases, children, financial burden, Ghana

Introduction

Developing countries continue to bear a high burden of morbidity and mortality from infectious diseases while non-communicable diseases are increasing in prevalence^{1,2}. In Ghana, global disease burden estimates by the World Health organization indicates NCDs and injuries account for 46% of the causes of morbidity and 40% of the causes of mortality³. In Ghana, childhood cancers have been on the increase⁴ and autopsy findings on mortalities in adolescents from the Korle-Bu Teaching Hospital (the largest tertiary care health facility in Ghana) showed NCDs contribute 41% of the deaths among adolescents⁵. The burden of care of family members who are ill has been shown to rest heavily on the immediate family especially women⁶, with impact on extended family^{7,8,9}. Health insurance aims at improving access to health care^{8,10}. Unfortunately, the national health insurance scheme of Ghana does not cover all NCDs in children; especially the childhood cancers¹¹ and therefore households of children with these NCDs are likely to suffer the impoverishing effect of the cost of health care. In

addition, children with NCDs suffer negative health and social consequences, including time out of school, and social activities^{12,13}. Households of children with NCDs may experience increased family tensions or frictions, social isolation and discrimination. In Ghana, social and cultural beliefs and attitudes influence how children with NCDs and congenital conditions may be availed for or denied treatment¹⁴. The goal of this analysis is to determine the health, financial and social burden of care imposed on households by NCDs among children in Ghana and implications for health policy.

Methods

Subjects and Methods

This was a cross-sectional study that collected data from care givers (≥ 18 years) of children with NCDs in three health facilities in different geographical regions of Ghana. Period of study was January, 2013. The study was conducted in the three major national hospitals; Korle-Bu Teaching Hospital, KBTH Komfo Anokye Teaching Hospital, KATH and Volta Regional Hospital, VRH. These referral centres receive cases of NCDs from all over the country and were purposively selected to reflect the health and social factors relating to care. Health facility interviews were conducted in these health facilities. Parent/care givers (≥ 18 years of age) of children (≤ 18 years of age) on admission during the study period in the Child Health Departments and the Sick Cell Units of the Hospitals were enrolled.

Corresponding Author: Alfred Yawson
Department of Community Health, School of Public Health, College of Health Science Room 46
Red Building, Korle-Bu, Accra, Ghana
Tel. Number: +233 244 662711/ 0302681648
Email Address: ayawson@yahoo.com
Conflict of Interest: None Declared

An interviewer administered structured questionnaire was used for data collection. The field team in each Hospital consisted of two supervisors and 24 interviewers (made of senior research assistants and research assistants from University of Ghana). Information captured included sociodemographic characteristics, attitude to NCDs, coping mechanisms and financial burden of caregivers. Informed consent was obtained from parent/caregivers.

Data analysis

Descriptive statistics such as frequencies, proportions and ratios were used for outcome variables selected for analysis. Summary statistics including mean and median were used for measured variables. All quantitative data was analyzed with Statistical Package for the Social Sciences (SPSS) version 21. In this analysis, primary care givers are persons responsible for the direct care (bathing, feeding, and administering medication) of the child with NCD, other support provided is considered secondary care.

Ethical issues

Ethical approval was obtained from the Institutional Review Board of Noguchi Memorial Institute for Medical Research (NMIMR), College of Health Sciences, University of Ghana (Federal Wide Assurance FWA 00001874, IRB 00001276, NMIMR-IRB CPN 014/12-13, IORG 0000908). Written informed consent was obtained from all the participants in the study.

Results

As shown in Table 1, a total of 225 parents/caregivers of children with NCDs were interviewed, 43.1% from

KBTH, 41% from KATH and 15.1% from VRH. 75.1% were females and 24% males. Age range was 18-68 years with a median of 35 years. Overall, 81.9% were urban residents with some formal education, 86.5% were Christians, and 63.1% were married. Among caregivers, 55.6% were of the Akan ethnic group, while 75.1% were the biological parents. In all, 149 children with NCDs were enrolled during the study as shown in Table 2.

Table 2 shows the basic characteristics of the 149 children with NCDs enrolled. 61.1% were males, while 59.1% were more than 5 years of age. The commonest NCD was sickle cell disease (26.2%) followed by congenital abnormality (17.4%).

Table 3 indicates that only 33.1% of parent/caregivers earned over three hundred Ghana cedis monthly while 12% had no regular monthly income. In all, 38% earned ≤GH 100 monthly, which translates into \$1 /day (below the poverty line). Among caregivers, 87.4% were covered by the NHIS which was the main source of funding. Interestingly, only 1.2% had support from extended family and employers. Mean spending on each outpatient and inpatient hospital visit (besides transport and feeding) on the child's condition indicated that majority of caregivers spent GHC 20 or less.

Table 4 indicates 103 (45.8%) of caregivers agreed that the child's ailment has been a burden to the household, however regardless of the burden experienced, 187 (83.1%) indicated this has not increased family tensions or frictions, nor has it led to the family suffering social discrimination 207 (93.2). Overall, 176 (78.3%) of caregiver did not depend on other family members financially to manage child's illness.

Table 1: Socio-demographic characteristics of parent/caregivers (≥ 18 years) of children on admission with NCDs in the three Hospitals in Ghana.

<i>Characteristics</i>	<i>Frequency</i>	<i>Percentage</i>
Place of residence		
Urban	184	81.9
Rural	21	9.3
Peri Urban	20	8.8
Total	225	100.0
Educational level		
No education	17	7.7
Primary	27	11.8
Middle/JSS/JHS	69	30.5
Sec/SHS/Vocational Technical	42	18.6
Post-secondary/Polytechnic	30	13.2
University	41	18.2
Total	225	100.0

Continuation of Table 1: Socio-demographic characteristics of parent/caregivers (≥ 18 years) of children on admission with NCDs in the three Hospitals in Ghana.

Characteristics	Frequency	Percentage
Religion		
Charismatic/Pentecostal	93	41.3
Protestant(Anglican Methodist/Presbyterian/Baptist/Lutheran)	82	36.5
Moslem	27	12.0
Catholic	20	8.7
Traditional/spiritualist	3	1.4
Total	225	100.0
Ethnicity		
Akan	125	55.6
Ewe	40	17.8
Ga-Adangme	21	9.3
Mole-Dagbani	17	7.6
Other Ghanaian	22	9.8
Total	225	100.0
Marital status		
Currently married	140	63.1
Never Married	57	25.7
Widowed	12	5.4
Living together	7	3.2
Separated	4	1.4
Divorced	4	1.4
Total	224	100.0
Profession		
Trader, Businessman/woman	72	32.0
Professional/Technical	56	24.7
Artisan	32	14.2
Administrative/managerial	13	5.9
Agricultural animal husbandry/fishing/hunting	12	5.5
Homemaker	2	0.9
Other	38	17.0
Total	225	100.0
Relationship of caregiver to child with NCD		
Parent	169	75.1
Self(respondent)	26	11.6
Other relative	24	10.6
Other non-relative	6	2.6
Total	225	100.0
Type of care being provided to child with NCD		
Primary	196	87.1
Secondary	29	12.9
Total	225	100.0

Table 2: Age and sex characteristics of children on admission and types of NCDs reported to the three large Hospitals in Ghana

Characteristics	Age group			Total (%)
	Under 5 years (%)	5-9 years (%)	10 years and above (%)	
Sex				
Male	38 (62.3)	24 (58.5)	29 (61.7)	91(61.1)
Female	23 (37.7)	17 (41.5)	18 (38.3)	58 (38.9)
Total	61 (100)	41 (100)	47 (100)	149 (100)
Non-communicable disease				
Cancer	4 (7.0)	2 (5.0)	6 (11.5)	12 (8.1)
Diabetes	4 (7.0)	4 (10.0)	16 (30.8)	24 (16.1)
Sickle Cell Disease	11 (19.3)	16 (40.0)	12 (23.1)	39 (26.2)
Congenital Deformity	13(22.8)	4 (10.0)	9 (17.3)	26 (17.4)
Others	25 (43.9)	14 (35.0)	9 (17.3)	48 (32.2)
Total	57 (100)	40 (100)	52 (100)	149 (100)

Table 3: Financing NCDs in children by households or families in three health facilities in Ghana (N= 225)

Characteristic	Frequency	Percent
Level of income per month *(in GHC)		
No regular income	27	12
< 50	23	10.2
50-100	35	15.7
101-300	65	28.9
>300	74	33.1
Total	225	100
Health insurance status of the child with an NCD		
Insured	197	87.4
Uninsured	28	12.6
Total	225	100
Source of income for treatment/management of child's condition		
Health insurance	174	77.5
Personal (immediate family)	48	21.3
Others (Extended family/relatives, Employer)	3	1.2
Total	225	100
Rating of how expensive it is to treat/manage child's condition		
High	135	60.2
Low	90	39.8
Total	225	100
Mean spending on each outpatient visit (besides transport and feeding) on the child's condition (in GHC)		
0-20	130	57.8
21-50	38	16.9
51-100	31	13.9
101-300	14	6.0
>300	12	5.4
Total	225	100
Mean spending on each inpatient visit (besides transport and feeding) on the child's condition (in GHC)		
0-20	108	47.8
21-50	47	20.9
51-100	22	9.7
101-300	25	11.2
>300	23	10.4
Total	225	100
Experience financial difficulties (cost of treatment and transportation) during child's hospitalization		
Yes	93	41.2
No	132	58.8
Total	225	100

* The exchange rate prevailing at time of data collection was \$1= GHC 1.95

Table 4: Caring experiences of families of children with NCDs in the three health facilities in Ghana

Parent/ care givers views	Effect on Family function	Social burden on family		Financial burden on Family
	The ailment of my child is a burden (%)	Child's ailment has increased family tensions/ frictions (%)	Family has been discriminated against because of child's illness (%)	Caregiver depends on other family members financially to manage child's illness (%)
Disagreed	121(53.6)	187 (83.1)	207 (93.2)	176 (78.3)
Agreed	103(45.8)	31 (13.9)	15 (6.6)	46 (20.5)
Uncertain	1 (0.6)	7 (3.0)	3 (1.2)	3 (1.2)
Total (N=225)	225	225	225	225

Discussion

The burden of primary care for children with NCD's rests mostly on mothers, mostly married and resided in urban areas. Caregiving in households among households in Ghana rest heavily on women⁶. Non-communicable diseases in children impose financial burden on families considering that 38% of them earn less than \$1 a day which by definition means poverty per the global World Bank definition. Caring for these children take caregivers away from work which reduces their income^{6,7,8}. In addition, only 1.2% received financial support from extended family and employers. The sick child misses on school activities and time away from other social and personal developmental activities¹³. This is because financial burden for treating and managing children with NCDs rests almost entirely on the immediate family or household. This analysis shows support from extended family members, community or from employers is almost non-existent; the immediate family bears the entire burden of care. However, 87.4% are covered by the NHIS which reduces some of the financial burden. Unfortunately, the NHIS do does not cover all NCDs in children; especially the childhood cancers¹¹ and therefore households of children with these NCDs are likely to suffer the impoverishing effect of the cost of health care^{12,13,15}. Indeed the cost of transportation, feeding and other personal cost to the family may not be covered by the insurance, the catastrophic and impoverishing effect of total cost of health care could be limited¹⁰. To improve care of NCD's, it is important that NHIS covers childhood cancers which accounted for 8.1% of the NCD's. Access to care for NCD's can be improved through in-service training for health workers for early detection and treatment. In addition, community sensitization and education are necessary component. Contrary to anthropological accounts on various ethnic groups in Ghana on attitudes towards children with non-communicable diseases¹⁴, 91.6% indicated no social discrimination. Anthropological accounts on various ethnic groups in Ghana provide insight on attitude to children with NCDs and congenital conditions and how children may be availed for or denied treatment¹⁴. In some Ghanaian traditional societies, children with chronic diseases, congenital defects and similar conditions are considered as

embodiment of "mischievous spirits that masquerade as normal children"¹⁶. In contrast, some anthropologists report that children with congenital deformities are considered as ancestors who are reincarnated and these therefore should be given special care to avoid any afflictions by ancestral spirits¹⁴. NCDs are perceived as afflictions by supernatural powers in traditional Ghanaian societies and by the traditional and faith-healing health systems^{17,18,19} which thus influence the health seeking behaviours of families and household within the communities.

Limitations

Assessment of incomes and spending on health care was subjective and is likely some income and expenditure sources may not have been adequately captured. The analysis generally demonstrates that Ghanaian families suffer financial challenges in caring for and paying for health care of their children with NCDs.

Conclusion

The burden of care giving for children with NCDs rested mostly on women, immediate family or household. Treating or managing the child's condition creates financial difficulties for households. To improve care of NCD's, it is important that NHIS covers childhood cancers. It is essential to improve access to care for children with NCD's through in-service training for health workers for early detection and treatment.

Acknowledgement

We are grateful to all the children and caregivers of the children in the three health institutions where the survey was conducted. We are thankful to the authorities of the three health institutions (Korle-Bu Teaching Hospital, Komfo Anokye Teaching Hospital and The Volta Regional Hospital) and the Heads of the Clinical Units where the survey was conducted. Financial assistance for the survey was provided through a grant, (URF/5/LMG-002/2011-2012) from the Office of Research and Innovation for Development (ORID), of the University of Ghana, Legon, Accra, Ghana.

Competing Interests

The authors declare no competing interest. The views expressed in this paper are those of the authors. No official endorsement by the Ministry of Health or Ghana Health Service is intended or should be inferred.

Authors' Contributions

D Badasu, AE Yawson and D Atobra developed the concept, AE Yawson analyzed the survey data and wrote the first draft. AE Yawson, D Badasu, A Abuosi, J Anarfi and F A Adzei contributed to reviewing various sections of the first draft manuscript. All authors reviewed the final version of manuscript before submission.

Authors' Information

Dr. AE Yawson is a consultant public health physician and senior lecturer, Department of Community Health, University of Ghana Medical School, College of Health Sciences, Korle-Bu, Accra. Dr D Badasu is a Senior lecturer at the Regional Institute for Population Studies, University of Ghana, and JK Anarfi is a Professor at the Regional Institute for Population Studies, University of Ghana, Ghana. Dr. D Atobra is a lecturer at the Institute of African Studies, University of Ghana. Dr. A Abuosi and Dr. F A Adzei are lecturers of the Department of Public Administration and Health Services Management, University of Ghana Business School, Ghana.

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