Original Article:

Screening for depression among parents of children with congenital heart disease in a Nigerian paediatric cardiology clinic.

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Abstract

Background: Congenital Heart Disease (CHD) is one of the commonest congenital malformations in developing countries such as Nigeria. Despite being associated with a lot of morbidity and mortality, there is grossly inadequate effective treatment modality in the country. Consequently, a lot of burden of care is placed on the parents of children with this pathology; along with emotional complications in such parents. The dearth of literature on this necessitated this study.

Methods: Parents of children with CHD attending the Paediatric Cardiology clinic of Lagos University Teaching Hospital (LUTH), Lagos were recruited into the study along with sex and age matched controls, which is parents with no children with such pathology nor any other chronic illness. Ethical approval and individual consent were obtained for the study. The subjects and controls were administered with Socio-demographic Questionnaire and Zung Self-rating Depression Scale (SDS).

Results: A total of 64 parents of children with CHD (subjects) were studied with equal number of controls. The subjects were made up of 54 (84.4%) mothers (females), and mean age was 36.1±6.6 years. About two-thirds of both subjects and controls were of the low socio-economic class. Over 80% of subjects screened positive for depression with SDS compared to about 30% of controls, with significant difference of p=0.00*. Majority of the subjects that screened positive for depression were cases of mild depression (67.2%).

Conclusion: Our study has shown high risk of emotional distress among parents of children with CHD in our environment (Nigeria). Thus, there is the need to put in place measures for effective management of CHD in the country for possible attenuation.
in the associated morbidity both in the affected children and their parents.

Keywords: congenital heart disease, parents, risk of depression.

Introduction
Congenital heart diseases (CHD) refer to a heterogeneous group of disorders characterized by the presence of structural abnormalities of the heart and/or great vessels that are present at birth with real or potential functional impairment\(^1\). It is one of the commonest congenital malformations worldwide, and occurs in 4-8/1000 live births \(^2\). In Nigeria, studies have shown CHD as the second most common congenital malformation after those of the gastrointestinal tract; with incidence figure of 3.5 per 1000 births in an earlier study by Gupta and Antia (1967)\(^3\). More recent studies in the country gave figures as high as 3% of paediatric cases and prevalence rate of 9 per 1000 live birth \(^4,5\).

CHD is associated with high morbidity and mortality, but early surgical correction greatly improves prognosis \(^6,7\). Unfortunately, such treatment interventions are scarce in developing countries such as Nigeria where over 80% of slightly more than 1 million children that are born annually with CHD worldwide occur \(^8\). There is a lot of psychological morbidity among parents of children with CHD most especially in the face of treatment inadequacies for the malformation \(^9,10\). Consequently, children with CHD in Nigeria suffer from the pathology along with the burden of care and associated emotional trauma of the parents \(^11\). The dearth of research on the emotional sufferings of parents of children with CHD in the country prompted this study.

Materials and Methods
Study Location: The study was carried out in the paediatric cardiology clinic of Lagos University Teaching Hospital (LUTH), Idd-Araba, and Lagos. The city of Lagos is the commercial capital of Nigeria; and the hospital is one of the pioneer teaching hospital in the country.

Subjects: The subjects included parents of children with congenital heart diseases (CHD) which diagnosis was confirmed by echocardiography (ECG); and that were on routine follow-up in the paediatric cardiology clinic of the hospital. Controls were age and sex matched members of the extended families or from the surrounding neighbourhood of the subjects with no children having CHD or any other chronic illness. Systematic random sampling was used to select the sample in the clinic. Parents of children with other co-morbid chronic illnesses were excluded from the study.

Ethical approval to carry out the study was obtained from the Health Research and Ethics Committee of the hospital. Furthermore, informed consent was obtained from the parents who met the criteria to be included in the study. Confidentiality was assured on information obtained.

Instruments: Necessary socio-demographic profiles of the subjects were obtained with a Questionnaire constructed by the authors.

Zung Self-Rating Depression Scale (SDS): The instrument was designed by Zung (1965) as a screening tool covering psychological and somatic symptoms associated with depression, and consists of twenty items that are self-administered\(^12\). Each of the items is scored on a Likert scale.
of 1-4, with half of the questions scored in reverse order; hence the possible score range is 20-80. The obtained raw score could also be converted to a standard index as SDS Index= Raw Score x 100/80 or Raw Score x 1.25. However, from the raw score, <50 is normal, 50-59 is mild depression, 60-69 is moderate depression and ≥70 is severe depression.

The instrument has been used extensively in Nigeria to screen for depression in both hospital patients and in the general population (13,14). The Socio-demographic Questionnaire and SDS were administered on each subject and control.

**Data analyses:** Data obtained was entered and analyzed with Statistical Package for Social Sciences (SPSS) version 16. Means were obtained for continuous variables and where required, ‘t’ test was used to compare means. Chi-squared statistics was used to compare relationship between categorical variables, and with significant p value set at ≤0.05.

**Results**

**Socio-demographic Profiles**

A total of 64 parents of children with CHD (subjects) and equal number of controls were studied, and were made up of 54 (84.4%) mothers (females) and 10 (15.6%) fathers (males); for controls were 45 (70.3%) mothers (females) and 19 (29.7%) fathers (males) respectively. The mean age of subjects was 36.1±6.6 years, and 34.6±5.4 years for controls with non-significant difference (p=0.17). In term of social class, about two-thirds of the subjects (65.6%) and controls (67.2%) belonged to the low socio-economic classes 1 and 2 in accordance to the classification for our environment by Oyedeji (1985) (15).

**Screening for Depression**

A total of 52 (81.3%) of subjects had above cut-off on SDS assessment, that is screened positive for depression compared to 19 (29.7%) for controls; and the difference was statistically significant, $X^2=32.4$, $p=0.00*$. The mean SDS scores were 51.4±9.8 and 47.6±8.8 for subjects and controls respectively. On categorization of SDS scores among the subjects that screened positive for depression, 43 (67.2%) had mild depression, 8 (12.5%) moderate depression and 1 (1.6%) severe form of depression. For controls, 15 (23.4%), 2 (3.1%) and 1 (1.6%) had mild, moderate and severe depression respectively. The differences on the sub-categorization was significant with $p= 0.00*$ (Table 1).

**Inter-relationships between SDS scores and socio-demographic profiles**

As shown on table 2, more female subjects (83.3%) screened positive for depression compared to the males (70.0%); and more subjects of Christian faith (86.3%) had depression compared to the Muslims (61.5%). However, across all the socio-demographic variables, there was no significant difference in term of positive screening for depression (Table 2).

**Discussion**

The mean age of our subjects was relatively young, indicating the productive years when they become burdened with the care of special children with congenital malformation (CHD). This is also productive age bracket in which they are supposed to contribute to the country’s economy but now tied down most times to the care of their special wards. Furthermore, most of the parent subjects were women (84.4%); an indication of the pivotal roles mothers/ female members of the family play in African culture when children or other
members are ill in the family\cite{15,16,17}. In our study, about two thirds of our subjects belonged to low socio-economic status (SES); and this is in line with findings from previous studies where congenital malformations have been found to be strongly associated with low SES\cite{18,19}.

A large number of subjects (81.3\%) screened positive for depression, compared with the control group (29.7\%), and the difference was statistically significant (p=0.00). This high level of probable depression in the subjects is indicative of much psychological distress consequent to the burden of care for their wards with CHD; and our findings are comparable to those from previous studies \cite{9,20,21}. Our finding highlights the much neglected psycho-social components of CHD most especially in Africa. It is usual for greater attention to be paid to the physical component of management of CHD at the expense of the associated psycho-social variables for the parents of the affected children. Studies from developed countries have focused on the psychosocial complications among parents of children with CHD \cite{10,22}. Unfortunately, this has not been the case in developing countries such as Nigeria where studies to evaluate the psycho-social distress of such parents have not been given the desired priority \cite{11}.

Depression as an important psychological complications of care giving had been emphasized from previous studies, most especially caregivers of chronic medical illnesses with recurrent exacerbation. Even in Nigeria, few such studies have been carried out more so on subjects with other chronic illnesses, apart from CHD \cite{23,24}. Thus, there is the need to articulate the psychosocial morbidity among the care givers of children with CHD in the country.

**Conclusion**

A notable limitation to our study is the use of screening inventory and the small sample size. However, despite these it can be concluded that our study had attempted to contribute to the relevant literature on CHD in Nigeria by emphasizing the high risk of depressive morbidity among parents of children with CHD.

**References**


22. Sparacino PS; Tong EM; Messias DK; Foote D; Chesla CA; Gillis CL. The dilemmas of parents of adolescents and young adults with congenital heart disease. Heart Lung 1997; 26: 187-195.


Table 1: scores on SDS by subjects and controls

<table>
<thead>
<tr>
<th>Variable</th>
<th>Exact p</th>
<th>SDS scores</th>
<th>Fisher’s</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency (%)</td>
<td>Frequency (%)</td>
<td>X2</td>
</tr>
<tr>
<td>Negative (&lt; 50)</td>
<td>12 (18.7%)</td>
<td>45 (70.3%)</td>
<td></td>
</tr>
<tr>
<td>Positive (≥ 50)</td>
<td>52 (81.3%)</td>
<td>19 (29.7%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>64 (100.0%)</td>
<td>64 (100.0%)</td>
<td>32.4</td>
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**SDS categorization for positive scores**

<table>
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<tr>
<th>Category</th>
<th>Frequency (%)</th>
<th>Fisher’s</th>
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<tbody>
<tr>
<td>Mild (50-59)</td>
<td>43 (67.2%)</td>
<td></td>
</tr>
<tr>
<td>Moderate (60-69)</td>
<td>8 (12.5%)</td>
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</tr>
<tr>
<td>Severe (≥ 70)</td>
<td>1 (1.6%)</td>
<td>0.00*</td>
</tr>
</tbody>
</table>

Mean SDS scores

51.4 ± 9.8

47.6 ± 8.8

Table 2: Relationship between socio-demographic variables and SDS scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>Exact p</th>
<th>SDS scores</th>
<th>Fisher’s</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency (%)</td>
<td>Frequency (%)</td>
<td>X2</td>
</tr>
<tr>
<td>Gender of parents</td>
<td></td>
<td>Positive (&gt;50, n = 52)</td>
<td>Negative (&lt; 50, n = 12)</td>
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<tr>
<td>Male</td>
<td>7 (70.0%)</td>
<td>3 (30.0%)</td>
<td>10 (100.0%)</td>
</tr>
<tr>
<td>Female</td>
<td>45 (83.3%)</td>
<td>9 (16.7%)</td>
<td>54 (100.0%)</td>
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<tr>
<td>Age categories of parents</td>
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<td></td>
<td></td>
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<tr>
<td>29-29</td>
<td>6 (75.0%)</td>
<td>2 (25.0%)</td>
<td>8 (100.0%)</td>
</tr>
<tr>
<td>30-39</td>
<td>29 (78.4%)</td>
<td>8 (21.6%)</td>
<td>37 (100.0%)</td>
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<tr>
<td>≥ 40</td>
<td>17 (89.5%)</td>
<td>2 (10.5%)</td>
<td>19 (100.0%)</td>
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<tr>
<td>Religion of parents</td>
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<tr>
<td>Christianity</td>
<td>44 (86.3%)</td>
<td>7 (13.7%)</td>
<td>51 (100.0%)</td>
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<tr>
<td>Islam</td>
<td>8 (61.5%)</td>
<td>3 (38.5%)</td>
<td>13 (100.0%)</td>
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<td>Social class of parents</td>
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<tr>
<td>1</td>
<td>16 (76.2%)</td>
<td>5 (23.8%)</td>
<td>21 (100.0%)</td>
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<tr>
<td>2</td>
<td>17 (81.0%)</td>
<td>4 (19.0%)</td>
<td>21 (100.0%)</td>
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<td>3</td>
<td>10 (83.3%)</td>
<td>2 (16.7%)</td>
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<td>4</td>
<td>7 (87.5%)</td>
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<td>8 (100.0%)</td>
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<tr>
<td>5</td>
<td>2 (100.0%)</td>
<td>0</td>
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