Prevalence and impact of disability in north-western Ethiopia

YOHANNIS FITAW & JOHANNA M. F. BOERSMA

Gondar University, Department of Community Health, Gondar, Ethiopia

Accepted October 2005

Abstract

Purpose. To assess the prevalence and impact of disability in one urban and three rural areas in north-western Ethiopia.

Methods. The study design is cross-sectional and quantitative. Data was collected by using pretested and standardized structured questionnaires containing socio-demographic characteristics, type of disability, functional, and social dysfunction.

Results. A total of 932 individuals with disability were found out of a total of 24,453 individuals giving the overall crude disability rate for the three towns as 3.8%. Disability in the lower locomotor was the most frequently reported type – 442 (47.0%) – followed by blindness 269 (28.6%), upper motor 152 (16.1%), mental retardation 97 (10.3%) and hearing loss 78 (8.3%) respectively. The major self-care problem experienced by the disabled is toileting in 292 (31.1%) cases, bathing in 248 (26.4%) and dressing 157 (16.7%). Other problems experienced by the respondents are parents' negative attitudes towards the disabled, evidenced by hiding them. This was observed in 340 (36.2%) cases. No care was provided by caregivers in 221 (23.6%) cases.

Conclusion. The majority of disabled people have problems with activities of daily life especially toileting, bathing and dressing. Interventions to alleviate the problems of the disabled should be designed and implemented.

Keywords: Disability, impact, prevalence, self care, dysfunction, Ethiopia

Background

In Ethiopia, where the income per capita is low and the illiteracy rate is high, and where roads are mostly unsurfaced, the impact of a loss in body functioning will be quite different from that experienced in more developed countries. Limited access to healthcare combined with widespread illiteracy results in communities with greater risk of disability. Complications associated with delivery, iodine deficiency disorders, the results of the Ethiopian-Eritrean war and accidents are factors that contribute to high prevalence rates of disability in Ethiopia [1 - 2]. Although the amount of studies into disability in Ethiopia is small, the studies carried out show that there is a significant prevalence and a lack of knowledge about the conditions [3 - 8]. Disability rates in Ethiopia, which vary from a low 1.3% to a high 2.9%, appear to be low if compared with crude disability rates given by international organizations such as WHO (10%, 1993) and UNDP (7%, 1997) [1].

Other surveys in Ethiopia reveal disability rates between 2.95% (1995) and 5.00% in a study some 20 years ago (1980) [5,9]. A household survey carried out in 1999 among 4211 inhabitants (aged 5 years or older) of one urban and three rural areas in Northern Ethiopia found an overall prevalence rate of 4.9%, of which the most common type of disability was walking disability (1.7%), closely followed by visual disabilities (1.5%) [6]. This study intended to assess the prevalence and impact of disability on the life of the disabled people in Northern Ethiopia.

Setting

The study was conducted in July/August 2004. The study area included one urban and three rural areas in Northern Ethiopia. These four areas were selected as a site for the community-based rehabilitation project (CBR) of the Gondar University. The project is expected to serve the people with disability in these areas.
Methods

The study was a community-based cross-sectional type. The sampling method used was cluster sampling. The initial sampling unit was the kebele (sub-city administrative units) taken as a cluster. Two kebeles from the urban and four kebeles from the rural were randomly selected. All people with disability aged greater than 5 years in the selected kebeles were included in the survey. The sample size was determined using the assumption where the proportion of crude disability among the adult population is 5% with margin of error 4%, level of significance 95%, non-response rate of 20% and design effect of 7. The calculated sample size was 959.

Data was collected by using a structured questionnaire containing socio-demographic characteristics, type of disability, functional dysfunction and social dysfunction. A standard questionnaire developed by the WHO was used [10]. The questionnaire was translated into the local language, Amharic, and adjusted to the need of the survey/program. The data collection instrument was pre-tested on 20 disabled individuals in the kebele adjacent to the study area and it was standardized. When asking questions about the causes of disability the answers should be regarded as the experience of the people with a disability. No test or physical examination was done to clarify the cause of the disability. The data collectors were all with a minimum educational standard of grade 10 (10 years of schooling) and previous similar experience of data collection. Data collection was done by people from each community who would understand the ways of communication and would create a lower threshold for involvement in the study. There were three field supervisors with a qualification of college diploma (12+2 years of schooling). A two-day training period was given using prepared training guidelines for the data-collection procedure. After the data was collected, it was checked for completeness and consistency by the field supervisors. Incomplete questionnaires were identified on the field by the supervisors and completed by making call backs. Since the respondents in the survey were lay people, disability in this setting can indicate problems in body function, structure or functioning. The ICF classification was taken into account when making the questionnaire but to keep the questions easier to understand the ICF terminology was not used when asking the questions. The respondent to the questionnaire was the disabled person but in cases where the disabled person was unable to communicate or under 15 years, the head of the household responded.

In this study, the International Classification of Functioning, Disability and health (ICF) definition of disability was used (WHO 2001). In this model, functioning was divided into three levels: The first looked at body function and body structures, the second was concerned with activities, and the third looked into participation [10].

After data cleaning, the data was entered in to Microsoft Excel 2000. The data analysis was performed using SPSS for windows version 10.1. The study got ethical clearance from the Gondar University research and publication office. As data collection required only an interview, there was no potential harm that could be inflicted on the study subjects. The utmost confidentiality was maintained when collecting the data. The respondents were informed about the purpose of the study. Participation in the study was solely based on willingness of study subjects. The consent form was read to the respondents. For those study participants who were unable to give consent, informed consent was given by their care-givers.

Results

A total of 932 people with disability were found out of a total 24,453 individuals. The number of respondents who were unable to communicate or under 15 years was 122. Among the study participants 528 (56.6%) were males and 404 (43.4%) were females. The majority of the study participants, 535 (56.9%) did not have formal education while 221 (23.5%) were educated up to primary level. Half of the study subjects – 469 (49.9%) – had a family size of >5. The means of livelihood of the study subjects were daily labourer, beggar, petty trade, pension and dependant on others (see Table I).

The overall crude disability rate for the three towns was 3.8%. The prevalence of disability in the rural areas was 3.5% and in urban area was 4.5%. Disability in the lower locomotor was the most frequently reported type – 442 (47.0%) – followed by blindness 269 (28.6%), upper motor 152 (16.1%), mental retardation 97 (10.3%) and hearing loss 78 (8.3%) respectively (see Table II).

Asked about the perceived cause of disability, 364 (38.7%) reported ‘disease’, while 142 (15.1%) attributed the cause to accident and birth injuries (5.7%). The rest of the participants attributed the cause of their disability to congenital causes, beating or fire. The age of onset of disability was reported to be 15–49 years in 328 (34.9%) cases, <1 year in 142 (15.1%) and between 1–14 years in 415 (44.1%) (see Table II).

Moving from place to place was the most frequently reported problem experienced by 473 (50.3%) of the disabled followed by inability to participate in family work consisting of 444 (47.2%), health problems in 307 (32.7%) and appliance
problems in 264 (28.1%) cases. Among the study participants, 392 (41.7%) experienced problem in self-care. The major self-care problems experienced by the disabled were toileting in 292 (31.1%), bathing 248 (26.4%) and dressing 157 (16.7%). The negative attitudes of parent towards the disabled as evidenced by hiding them was observed in 340 (36.2%) of cases. No care was provided by the caregivers in the cases of 221 (23.6%) disabled people (see Table III). Regarding participation in family activity, 682 (72.6%) were involved in eating together and, 675 (71.8%) were involved in socializing. Regarding participation in community activity, 575 (61.1%) reported to have no involvement. Among those who reported participation in community activity, 182 (19.4%) participated in religious events, 117 (12.4%) in school activity and 108 (11.5%) in social events (Table IV).

Among the disabled people aged greater than 7 years, 70.7% were not currently going to school. The reasons given for not going to school were disability in 362 (38.5%), lack of money in 291 (30.9%), physical access in 143 (15.2%) and family or community influence in 136 (14.5%).

Discussion

This study attempted to measure the prevalence of disability and the common problems encountered by the disabled individuals in Northern Ethiopia. The crude disability rate of 3.8% found in this study was higher than the national disability rate, which was 1.85% (7). A study carried out in Dabat, north-western Ethiopia found an overall prevalence rate of 4.9% [6]. Lower locomotor disability was the most frequent type identified in this study followed by blindness (visual impairment) and upper locomotor. The Ethiopian census of 1994 revealed that the majority of the disabled people had a locomotor disability (lower and upper locomotor of 32.1%) followed by visual disabilities (partial disability 20.4% and total blindness 11.9%) [9]. In the Dabat study, the most common type of disability was walking disability (1.7%), closely followed by visual disabilities 1.5% [6].

The proportion of the disability among males was greater than females. This could be attributed to the higher risk of disability in the Ethio-Eritrean war [1]. The major causes of disability, as perceived by the disabled, were accidents (15.1%), armaments (11.3%), and birth injury (5.7%). Some studies in Ethiopia have tried to identify specific causes of disability. A study in north-west and central Ethiopia revealed lathyrism as a major cause of disability. The prevalence of lathyrism was highest in north and

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number (n=932)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>523</td>
<td>55.6</td>
</tr>
<tr>
<td>Female</td>
<td>397</td>
<td>44.4</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–4</td>
<td>20</td>
<td>2.1</td>
</tr>
<tr>
<td>5–9</td>
<td>28</td>
<td>2.9</td>
</tr>
<tr>
<td>10–14</td>
<td>74</td>
<td>7.9</td>
</tr>
<tr>
<td>15–49</td>
<td>606</td>
<td>64.5</td>
</tr>
<tr>
<td>&gt;49</td>
<td>212</td>
<td>22.6</td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>535</td>
<td>56.9</td>
</tr>
<tr>
<td>Primary (1–6 years of schooling)</td>
<td>221</td>
<td>23.5</td>
</tr>
<tr>
<td>Secondary (7–12 years of schooling)</td>
<td>163</td>
<td>17.3</td>
</tr>
<tr>
<td>12+</td>
<td>21</td>
<td>2.3</td>
</tr>
<tr>
<td>Family size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;5</td>
<td>471</td>
<td>50.1</td>
</tr>
<tr>
<td>&gt;5</td>
<td>469</td>
<td>49.9</td>
</tr>
<tr>
<td>Address</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gondar</td>
<td>334</td>
<td>35.5</td>
</tr>
<tr>
<td>Aykel</td>
<td>202</td>
<td>21.6</td>
</tr>
<tr>
<td>Koladiba</td>
<td>403</td>
<td>42.9</td>
</tr>
<tr>
<td>Occupation of the household head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily labourer</td>
<td>210</td>
<td>23.2</td>
</tr>
<tr>
<td>Beggar</td>
<td>151</td>
<td>16.2</td>
</tr>
<tr>
<td>Petty trader</td>
<td>136</td>
<td>15.0</td>
</tr>
<tr>
<td>Farmer</td>
<td>118</td>
<td>13.1</td>
</tr>
<tr>
<td>Pension</td>
<td>69</td>
<td>7.8</td>
</tr>
<tr>
<td>Dependent on others</td>
<td>67</td>
<td>7.7</td>
</tr>
<tr>
<td>Civil servant</td>
<td>34</td>
<td>3.6</td>
</tr>
<tr>
<td>Others</td>
<td>127</td>
<td>14.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number (n=932)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of disability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locomotor (lower limb)</td>
<td>442</td>
<td>47.0</td>
</tr>
<tr>
<td>Loss of vision</td>
<td>269</td>
<td>28.6</td>
</tr>
<tr>
<td>Locomotor (upper limb)</td>
<td>152</td>
<td>16.1</td>
</tr>
<tr>
<td>Mental retardation</td>
<td>97</td>
<td>10.3</td>
</tr>
<tr>
<td>Hearing loss</td>
<td>78</td>
<td>8.3</td>
</tr>
<tr>
<td>Others</td>
<td>59</td>
<td>6.3</td>
</tr>
<tr>
<td>Cause of disability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘Disease’</td>
<td>364</td>
<td>38.7</td>
</tr>
<tr>
<td>Accident</td>
<td>142</td>
<td>15.1</td>
</tr>
<tr>
<td>Armament</td>
<td>102</td>
<td>11.3</td>
</tr>
<tr>
<td>Before birth</td>
<td>88</td>
<td>9.4</td>
</tr>
<tr>
<td>At birth/birth injury</td>
<td>54</td>
<td>5.7</td>
</tr>
<tr>
<td>Beating/violence</td>
<td>26</td>
<td>2.8</td>
</tr>
<tr>
<td>Fire</td>
<td>19</td>
<td>2.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>137</td>
<td>0.6</td>
</tr>
<tr>
<td>Age disability onset</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1 year</td>
<td>142</td>
<td>15.1</td>
</tr>
<tr>
<td>1–4</td>
<td>174</td>
<td>18.5</td>
</tr>
<tr>
<td>5–9</td>
<td>128</td>
<td>13.6</td>
</tr>
<tr>
<td>10–14</td>
<td>113</td>
<td>12.0</td>
</tr>
<tr>
<td>15–49</td>
<td>328</td>
<td>34.9</td>
</tr>
<tr>
<td>&gt;49</td>
<td>55</td>
<td>5.8</td>
</tr>
<tr>
<td>Unknown</td>
<td>7</td>
<td>0.7</td>
</tr>
</tbody>
</table>
south Gondar (north-western Ethiopia) reaching as high as 7.5/1000 population [3]. Another study carried out in the Deber Sina district (central Ethiopia) showed neurolathyrism causing disability in 2.38% of the studied population [4]. The role of various diseases like leprosy, neurologic diseases (epilepsy, post-polio-myelitis paralysis, mental retardation, peripheral neuropathy, deaf-mutism) and cataract were shown in various studies [5,11–13]. This study indicated that preventable causes of disability like birth injury, armament and accidents were significant contributors to the existing disability problem in the communities studied.

It is well known that disability is associated with a reduced chance of employment. The presence of disability is associated with lower levels of income and increased likelihood of being poverty-stricken [14]. An economic support system should be in place that will enable the bulk of disabled people to be involved in the labour force.

Failure to participate in family and community activity could mainly be caused by the stigmatizing attitude of the caregivers evidenced in 36.2% of cases. Moving from place to place was a major problem encountered which was indicated to be due to lack of appliances. Limitation of movement would entail limited social and educational activity.

A good proportion of the study subjects (41.7%) experienced problems in self-care. The majorities had problems in toileting, followed by bathing and dressing. Similar studies in other areas indicated the problems encountered by the disabled was more or less the same [15,16].

Conclusion

The proportion of people affected by disability is significant and deserves the attention of the relevant health authorities. Access to education by this community group is very limited. The lower locomotor disability is the most common type of disability observed among the studied disabled subjects followed by visual impairment. The majority of the disabled have problems in self-care especially toileting, bathing and dressing. The most common problem mentioned by the disabled people in the study was difficulty with movement for lack of appliances.

Based on the findings the following recommendations are made:

- The disabled people should have access to education tailored to their needs.
- Training the disabled in various skills is desirable so that they can support themselves.
- Provision of appropriate appliances would greatly facilitate the movement of the disabled.

Table III. Problems encountered due to disability among the study subjects in Northern Ethiopia, July 2004.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number (n=932)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problems experienced by the disabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appliance problems</td>
<td>264</td>
<td>28.1</td>
</tr>
<tr>
<td>Moving from place to place</td>
<td>473</td>
<td>50.3</td>
</tr>
<tr>
<td>Not able to participate in family work</td>
<td>444</td>
<td>47.2</td>
</tr>
<tr>
<td>Health problems</td>
<td>307</td>
<td>32.7</td>
</tr>
<tr>
<td>Nothing</td>
<td>89</td>
<td>9.5</td>
</tr>
<tr>
<td>Any problem in self-care?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>392</td>
<td>41.7</td>
</tr>
<tr>
<td>No</td>
<td>548</td>
<td>58.3</td>
</tr>
<tr>
<td>What self-care problems are problematic?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dressing</td>
<td>157</td>
<td>16.7</td>
</tr>
<tr>
<td>Toileting</td>
<td>292</td>
<td>31.1</td>
</tr>
<tr>
<td>Bathing</td>
<td>248</td>
<td>26.4</td>
</tr>
<tr>
<td>Eating</td>
<td>71</td>
<td>7.6</td>
</tr>
<tr>
<td>Others</td>
<td>59</td>
<td>6.3</td>
</tr>
<tr>
<td>Parents' attitude towards the disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hide/care</td>
<td>87</td>
<td>9.3</td>
</tr>
<tr>
<td>Hide/no care</td>
<td>404</td>
<td>42.9</td>
</tr>
<tr>
<td>No hide/care</td>
<td>134</td>
<td>14.3</td>
</tr>
<tr>
<td>No hide/no care</td>
<td>59</td>
<td>6.3</td>
</tr>
<tr>
<td>No hide/equal care</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table IV. Participation in social activity of the disabled in Northern Ethiopia, July 2004.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number (n=932)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you participate in family activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>216</td>
<td>22.9</td>
</tr>
<tr>
<td>No</td>
<td>722</td>
<td>77.1</td>
</tr>
<tr>
<td>In what activities do you participate?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household chores</td>
<td>333</td>
<td>35.4</td>
</tr>
<tr>
<td>Eating together</td>
<td>682</td>
<td>72.6</td>
</tr>
<tr>
<td>Socializing</td>
<td>675</td>
<td>71.8</td>
</tr>
<tr>
<td>Meeting neighbour/family</td>
<td>275</td>
<td>29.3</td>
</tr>
<tr>
<td>Do you participate in community activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>366</td>
<td>38.9</td>
</tr>
<tr>
<td>No</td>
<td>575</td>
<td>61.1</td>
</tr>
<tr>
<td>Community activities you participate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious</td>
<td>182</td>
<td>19.4</td>
</tr>
<tr>
<td>Social events</td>
<td>108</td>
<td>11.5</td>
</tr>
<tr>
<td>School</td>
<td>117</td>
<td>12.4</td>
</tr>
<tr>
<td>Shopping</td>
<td>78</td>
<td>8.3</td>
</tr>
<tr>
<td>Community meeting</td>
<td>62</td>
<td>6.6</td>
</tr>
<tr>
<td>Sports. Clubs</td>
<td>39</td>
<td>4.1</td>
</tr>
<tr>
<td>Is the person with disability going to school (age &gt; 7 years)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>264</td>
<td>29.3</td>
</tr>
<tr>
<td>No</td>
<td>638</td>
<td>70.7</td>
</tr>
</tbody>
</table>

Table V. Problems encountered due to disability among the study subjects in Northern Ethiopia, July 2004.
which in turn would enhance their participation in social and economically helpful activities.

- Establishment of community-based rehabilitation centers should be seriously considered to enhance the performance of the remaining functioning body functions to the maximum.
- Educating the community so as to reduce stigmatizing attitudes need to be undertaken.
- Efforts should be directed at reducing the risks of disability such as birth injuries, homicidal injuries and armament-related injuries.

Acknowledgment

We appreciate the financial support of PSO development fund in the conduct of the research.

References

Copyright of Disability & Rehabilitation is the property of Taylor & Francis Ltd and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.