Study of Addictions and nutritional deficiencies in street children in Pune

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Study of Addictions and nutritional deficiencies in street children in Pune

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Abstract

OBJECTIVE: To study nutritional deficiencies and addictions in street children.

DESIGN: Cross sectional study.

SETTING: This study was conducted in street children in and around Pimpri, Pune by Department of Paediatrics Dr. D. Y. Patil medical college Pimpri, Pune.

PARTICIPANTS: 204 street children between 1 to 18 years in and around Pimpri, Pune not adopted by government and non government organizations.

RESULTS: Of the 126 children between 1-5 yrs, 47.6% had severe (Gr 4) malnutrition, 14.3%, 19.8%, and 18.3% children had Gr 1, Gr2, Gr3 malnutrition respectively. None of the children were well nourished. 48.5% had chronic malnutrition (were wasted and stunted). Multivitamin deficiencies was significantly more common in severely malnourished children (p<0.001). 100% children between 16-18 yrs were addicted, 60% between 11-15 yrs and 15% between 6-10 yrs were addicted. Tobacco and Gutka were commonest addicting agents (32%) followed by misri and alcohol 19.2% and 6.4% respectively.

CONCLUSION: Study concluded that all children below 5 yrs were malnourished, severe malnutrition and chronic malnutrition (48% each) was common. 41.1% of children in 6-18 yrs age group were addicted. Tobacco and gutka were common addictions.

Introduction

Children are the wealth of any nation. In India, one fifth of the population comprises of children between 5-14 years (1). Active promotion of health is now a priority for schools. Health of children is addressed through school health services, health education and school meals programs (2). Children who fail to grow during critical period may not make up the loss even on excellent diet in later life (1). The brain reaches adult size by the end of primary school age, during this period, life patterns and habits are established and the ground for quality of life is laid. Studies have shown that children who have suffered malnutrition during critical period were inferior to children who have not suffered from malnutrition (1). Protein energy malnutrition (PEM) is common in the developing world, 70% of world’s malnourished children live in Asia (3). In India, 47% of children exhibit some degree of malnutrition (4).

Street children are unfortunate children who have only intermittent contact with parents or family and live most of the times with other street children in city streets, or have been abandoned by parents, or found themselves on street from the beginning because of family problems (5). These children are left out of school education system and health system. These are the children who are vulnerable to protein energy malnutrition and substance abuse. The Global Youth Tobacco Survey in 2006 showed 3.8% of students smoke and 11.8% use smokeless tobacco (6). A study in Surat comprising of 300 street child labourers showed that 45% used substances. Substances used were tobacco, chewable tobacco, cannabis, opioids (7).

The present study was undertaken to study nutritional deficiency and substance abuse in them.

Methodology

The study was conducted in department of Paediatrics, Padmashree Dr DY Patil Medical College, Pimpri, Pune from August 2010 to September 2012. It is a cross-sectional study done on two hundred and four street children between 1 to 18 years in and around Pimpri Pune. Street children adopted by non government organisation or government agencies were excluded. After approval by local ethics committee, children were enrolled after obtaining informed consent from legal guardian. Children were interviewed and questionnaire based pro-forma was filled. Clinical examination was done and blood was drawn for haemogram. Haemoglobin percentage below 12 gm/dl was considered as anaemia. Data was entered into Microsoft excel worksheet and analysed by chi-square test.
Observations

Of the 204 children studied, 54.4% were male and 45.6% were females. 61.8% of children were between 1-5 yrs, 12.7% were between 6-10 yrs, 9.8% were between 11-15 yrs, 15.7% were between 16-18 yrs. In 1-5 yrs children, Grade 4 PEM (severe) was present in 47.6%, while grade -3 and grade -2 PEM was observed in 18.2 and 19.8 percent of children respectively. 14.3% children had Grade 1 PEM. Chronic malnutrition as evident by wasting and stunting was present in 48.4% children, 23.8% had acute malnutrition. Chronic malnutrition was more common (40%) than severe anaemia. Percentage of anaemia and its severity was similar in all age groups. Microcytic anaemia was commonest (85%), but macrocytic anaemia was present in (15%) children. Macrocytic anaemia was more prevalent in age group 6-18(30%). Vitamin deficiency of Vit A, Vit B, Vit C, Vit D was present in (62%) of children. Vitamin deficiency was common in Grade 4 PEM than in less severe PEM. Vitamin D deficiency being a disease of growing bones was uncommon.

Substance abuse was observed in 6-18 years age group (41.02%). It was most common in 11-15 yrs (60%), followed by 16-18 yrs (50%) and 6-10 yrs (18.18%). 35.2% male and 54.2% females were addicted. Tobacco and Gutka were major addictions (32.05% each), followed by mishri (19.23%) and alcohol (6.41%) respectively. Vitamin B deficiency was common in children with addictions (28.2%).

Discussion

In this study of 204 children, all 126 children between 1-5 yrs were malnourished. Unlike national distribution of malnutrition where more children have mild to moderate disease, in street children severe malnutrition is the commonest 47.6%, followed by grade 2, grade 3 and grade 1 malnutrition respectively. Chronic malnutrition was present in 48.4% of children as evident by stunting and wasting. Similar observation was made by Rita Patriasih et al while analysing health and nutritional status of street children. They found that 42.7% of malnourished street children were underweight and stunted. Vitamin deficiencies are common in these children due to nutritional problems. As severity of malnutrition increases vitamin deficiency became more rampant. In children with Gr4 malnutrition 47.6% had some vitamin deficiency. Vitamin A deficiency was observed in 37% of malnourished street children by Dharamsingh et al.

Addiction was a common problem in 6-18 yrs children (41.02%). Deepi Pagare et al reported that 57.4% street children indulged in substance abuse, and the youngest child was 5.5 yrs old. Tobacco and Gutka were most frequent use substance (32.05%) each. Naik P R et al found that tobacco and Gutka was used on an average by 40% of street children.

Malnutrition worsens due to direct or indirect effects of drug abuse. Finding severity of malnutrition and data on drug abuse among street children is essential to devise effective preventive strategies.

Conclusion

Study concludes that all children below 5 yrs are malnourished, severe malnutrition and chronic malnutrition (48% each) was common. 41.1% of children in 6-18 yrs age group were addicted. Tobacco and gutka were common addictions.

References

7) Bansal R K, Banerjee S. Substance use by child
labourer. Indian J. Psychiatry 1993;35:159-161


Illustrations
Illustration 1

Sex wise distribution

<table>
<thead>
<tr>
<th>SEX</th>
<th>NO. OF CHILDREN</th>
<th>NO. OF CHILDREN 6-18</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(PERCENTAGE)</td>
<td>(SUBSTANCE ABUSER)</td>
</tr>
<tr>
<td>MALE</td>
<td>111</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>(54.4)</td>
<td>(19)</td>
</tr>
<tr>
<td>FEMALE</td>
<td>93</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>(45.6)</td>
<td>(13)</td>
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</tbody>
</table>
Illustration 2
Age wise distribution

<table>
<thead>
<tr>
<th>AGE (YRS)</th>
<th>NO. OF CHILDREN (%)</th>
<th>SUBSTANCE ABUSER (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>126 (61.8)</td>
<td>-</td>
</tr>
<tr>
<td>6-10</td>
<td>26 (12.8)</td>
<td>4/26</td>
</tr>
<tr>
<td>11-15</td>
<td>20 (9.8)</td>
<td>12/20</td>
</tr>
<tr>
<td>16-18</td>
<td>32 (15.7)</td>
<td>16/32</td>
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Illustration 3

PEM and Nutritional deficiencies

<table>
<thead>
<tr>
<th>PEM-GRADE</th>
<th>TOTAL NO.</th>
<th>VIT-A</th>
<th>VIT-B</th>
<th>VIT-C</th>
<th>VIT-D</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-126</td>
<td>(%)</td>
<td>(%)</td>
<td>(%)</td>
<td>(%)</td>
<td>(%)</td>
</tr>
<tr>
<td>I</td>
<td>18 (14.3)</td>
<td>6/18 (33)</td>
<td>7/18 (38.8)</td>
<td>10/18 (55.5)</td>
<td>3/18 (16.6)</td>
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<tr>
<td>II</td>
<td>25 (19.8)</td>
<td>8/25 (32)</td>
<td>10/25 (40)</td>
<td>12/25 (48)</td>
<td>1/25 (4)</td>
</tr>
<tr>
<td>III</td>
<td>23 (18.3)</td>
<td>16/23 (69.6)</td>
<td>16/23 (69.6)</td>
<td>17/23 (73.9)</td>
<td>1/23 (4.3)</td>
</tr>
<tr>
<td>IV</td>
<td>60 (47.6)</td>
<td>42/60 (70)</td>
<td>46/60 (76.7)</td>
<td>52/60 (86.7)</td>
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### Illustration 4

Addiction wise distribution

<table>
<thead>
<tr>
<th>ADDICTION</th>
<th>NO. OF CHILDREN</th>
<th>PERCENTAGE</th>
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<tbody>
<tr>
<td>Alcohol</td>
<td>5</td>
<td>6.4</td>
</tr>
<tr>
<td>Tobacco</td>
<td>25</td>
<td>32.1</td>
</tr>
<tr>
<td>Mishri</td>
<td>15</td>
<td>19.2</td>
</tr>
<tr>
<td>Ghutaka</td>
<td>25</td>
<td>32.05</td>
</tr>
<tr>
<td>No addiction</td>
<td>46</td>
<td>58.97</td>
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</tbody>
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