REHABILITATION OF THE URBAN POOR SCHOOL CHILDREN IN INDIA

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ABSTRACT

BACKGROUND: The urban poor children are one of the neglected sections in India. There exists a high percentage of malnutrition and diarrhoea in the slum dwelling children. Musculoskeletal aches and pains developed at early ages of life could lead to chronic pains in adulthood. However, the musculoskeletal health of the slum children has seldom been studied, despite the fact that recent studies have emphasized a pressing need for musculoskeletal physiotherapy for the urban poor children in India.

AIM & OBJECTIVE: The primary objective of the current review paper is to look into the need and feasibility of community physiotherapy for musculoskeletal issues among slum dwelling school children in India. Secondarily, it is of interest to identify the gaps in the existing system and suggest solutions (if any).

METHODOLOGY: A thorough review was conducted using search engines like PubMed, Google Scholar, ScopeMed and JSTOR.

RESULTS: There are seldom studies on the musculoskeletal issues in urban poor school children. Faulty postures adopted by the children at school are the leading cause of pain. Community intervention programs by musculoskeletal physiotherapists need to be adopted for the urban poor children in India by holding workshops, and preventive health camps. Involvement of the school staff and parents is of utmost importance while planning such preventive intervention programs. More research needs to be done in this field.

CONCLUSIONS: There is a dire need to focus on the musculoskeletal health of urban poor slum children. A holistic approach to musculoskeletal care for the urban poor children in India could be effective in not only preventing the chronicity of musculoskeletal health problems but also aiding in healthy adulthood. While designing musculoskeletal physiotherapy programs for the underprivileged school children, special emphasis needs to be given to postural training and ergonomic assessments, apart from inculcating healthy habits in these children.

KEYWORDS: slum dwellers; exercises; aches and pains; orthopaedic pain; community physiotherapy

INTRODUCTION

There is substantial research looking at the micro ergonomics for school children, mainly focusing on effective designs for school furniture. However, suggesting effective “micro ergonomics” is not sufficient all by itself and exercise intervention programs for school children are equally important. “Addressing ergonomic issues will ensure that children, the future productive generation contributing to economic growth and development of a country, are provided with opportunities in a healthy environment.”

While there are lot of studies looking at the ergonomic assessment and exercise interventions in school children from western countries, there has been seldom comprehensive research on ergonomics in school children in India.

The urban poor children are one of the neglected sections in developing countries like India. Earlier studies have shown that there exists a high percentage of malnutrition and diarrhoea in the slum dwelling children. However, the musculoskeletal health of these children has seldom been studied, despite the fact that recent studies have emphasized on a pressing need for musculoskeletal physiotherapy for the urban poor children in India.

AIMS & OBJECTIVES

The primary objective of the current review paper is to look into the need and feasibility of community physiotherapy for musculoskeletal issues among slum dwelling school children in India. Secondarily, it is of interest to identify the gaps in the existing system and suggest probable solutions (if any).

METHODOLOGY

A thorough review was conducted using search engines like PubMed, Google Scholar, ScopeMed and JSTOR. The key words that were used in the above mentioned search engines were musculoskeletal pain (or orthopaedic pain), slum dwellers (or urban poor), India, and school children.
**Inclusion criteria**

Only those studies that had all the key words were included. There were two key words with alternate meanings - if either one was present, the study was included.

**RESULTS**

There were six studies that have looked at the musculoskeletal pain in urban poor school children [see Table 1].

Table 1. Studies on school children in India

<table>
<thead>
<tr>
<th>Author and year</th>
<th>Location</th>
<th>Sample Size</th>
<th>Tool for data collection</th>
<th>Results</th>
<th>Socio-economic category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajan P. and Koti A., 2013 [6]</td>
<td>Vadodara, India</td>
<td>39 (28 male students)</td>
<td>Pictorial ergonomic grading questionnaire checked for validity and reliability</td>
<td>Girl students demonstrated worse ergonomics than male students. In addition, the presence of musculoskeletal pain was higher in girl students.</td>
<td>Urban poor</td>
</tr>
<tr>
<td>Rajan P. and Koti A., 2013 [7]</td>
<td>Pune and Vadodara, India</td>
<td>64 (Vadodara: n=32: 9 females; Pune: n=32: 10 females)</td>
<td>Tool developed in [6]</td>
<td>Students who underwent an ergonomic training workshop (Vadodara) demonstrate better ergonomics with school activities like reading and lifting book/s, maintaining good postures during sitting and use of computer, as compared to students who were not given ergonomic training (Pune). There was greater presence of musculoskeletal pain in students from Pune as compared to those from Vadodara.</td>
<td>Urban Poor</td>
</tr>
<tr>
<td>Rajan P. and Koti A., 2013 [8]</td>
<td>Pune, India</td>
<td>65 (29 male students)</td>
<td>Tool developed in [6]</td>
<td>More than 50% of the students demonstrated bad ergonomics with regular school activities like reading and lifting book/s and bad postures while sitting and using computer at school. Close to 65% of the students who demonstrated bad ergonomics also reported presence of musculoskeletal pain.</td>
<td>Urban poor</td>
</tr>
<tr>
<td>Kumar U et al, 2011 [9]</td>
<td>Mangalore, India</td>
<td>1500 school children (810 male students)</td>
<td>Pre shaded Manikin question; Visual Analogue Scale; Low Back Pain Symptom Characteristics questionnaire; The modified Hanover Low back pain disability Questionnaire</td>
<td>The prevalence of musculoskeletal pain is higher in girl students. There is high prevalence of back pain in school children in general.</td>
<td>Well-to-do</td>
</tr>
<tr>
<td>Iyer, 2001 [10]</td>
<td>India and America</td>
<td>248 Indian and 103 American schoolchildren</td>
<td>Jackson Strength Tester; Skinfold Caliper, the Borg Pain Scale</td>
<td>Presence of musculoskeletal pain in both groups was reported and majorly attributed to the use of heavy backpacks.</td>
<td>Well-to-do</td>
</tr>
</tbody>
</table>

**DISCUSSION**

The objective of the current review paper was to look into the need and feasibility of community physiotherapy for musculoskeletal issues among slum dwelling school children in India. Through the review, it was found that only six studies have looked at the musculoskeletal of school children in India and seldom research on urban poor children. This is one of the major gaps in research on urban poor school going children. It has been seen that aches and pains developed at younger ages lead to chronic health problems during adulthood, which is the phase of active contribution to the society. It is thus important to identify these problems as early as is possible and prevent chronicity of conditions.

**NEED FOR MUSCULOSKELETAL PHYSIOTHERAPY IN URBAN POOR CHILDREN**

Musculoskeletal pain has been reported in urban poor female school children as early as 12 years of age. The slum children are frequently involved in domestic labour in addition to attending school. Thus, the musculoskeletal joints tend to get stressed due to excessive burden on weak (growing) joints and also the bad postures and ergonomics during school activities. This dual effect further hastens the process of development of musculoskeletal aches and pains at young ages.
Early diagnosis can help to prevent chronicity of pain. Chronic conditions are not only difficult to treat but also costly. In a country like India, it is thus important to focus on preventive strategies, especially in a less privileged population like urban poor school children.

FEASIBILITY OF MUSCULOSKELETAL PHYSIOTHERAPY IN URBAN POOR CHILDREN

There is lack of quality health care services in India. In addition, it was suggested by Yeravdekar et al (2013) that in order to strengthen the health care system in the country, emphasis on early prevention and more investment in developing the capacities of preventive medical professionals and preventive medicine is required. In the extensive research work done by Rajan and Koti since 2012, it can be said that devising cost effective preventive strategies in musculoskeletal health for urban poor children is feasible.

Certain interventions have proved effective in urban poor school children rehabilitation like conducting ergonomic workshop and focus group discussions with children. It is of utmost importance to design cost effective health care strategies that could reach large masses at low costs. Community based physiotherapy has been shown to be effective in this regard. A team of physiotherapy specialists (community as well musculoskeletal physiotherapists) needs to be put in place which can reach the target population to diagnose musculoskeletal health problems as early as is possible. This approach has been pilot tested and has been proven to be effective. However, such interventions need to be cost effective.

LIMITATIONS

The study was not funded due to which paid search engines were not included in the current review. It is highly likely that all the relevant papers addressing the musculoskeletal issues of urban poor children in India have not been accessed due to the above reason.

FUTURE RECOMMENDATIONS

A team of physiotherapy specialists (community as well musculoskeletal physiotherapists) could go into the community to reach the target population and diagnose musculoskeletal health problems in this cohort. However, given the resource limitations in India, there is dearth of such interventions that use cost effective methods to rehabilitate slum communities.

CONCLUSIONS

In conclusion, it can be said that there is a dire need to study the musculoskeletal health in urban poor slum children. A holistic approach to musculoskeletal care for the urban poor children in India could be effective in not only preventing the chronicity of musculoskeletal health problems but also aiding in the formation of a strong youth who, in fact, are the pillars of future India. While designing musculoskeletal physiotherapy programs for the underprivileged school children, special emphasis needs to be given to postural training and ergonomic assessments, apart from inculcating healthy habits in these children. Involvement of the school staff and parents is of utmost importance while planning such preventive intervention programs.

CONFLICT OF INTEREST/DECLARATION

This review paper was presented at the International Conference on Convergence of Science, Engineering & Management in Education and Research-A Global Perspective II Edition, Bangalore, India in September 2013.

CLINICAL APPLICATION

Community physiotherapy to address the musculoskeletal health issues among urban poor children in India needs urgent attention. A good referral system needs to be established in the existing primary health care system so that the urban poor school children can lead a healthy pain-free life.

REFERENCES

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