(2021) , 2(2), 1-6| Article ID: WH-2107272112378

Work Health

Journal homepage: http://www.htpub.org/Work-Health/

Morbidity profile of working children of footwear Units of Agra, India

Rajnarayan R Tiwari*

ICMR-National Institute for Research in Environmental Health

Article Information

Article History
Received: 20/05/2021
Accepted: 25/11/2021
Available online: 30/01/2022

Keywords
Social factors,
Child labour,
footwear units,
India.

Abstract

Introduction: There are millions of working children worldwide. Several causes are suggested for this social evil of which poverty plays a significant role in whether a child will work. This study was undertaken to understand the morbidity profile and the social dimensions of working children of the cottage units of footwear making.

Methods: The present cross-sectional study included 139 working children of footwear making units of Agra as exposed group and 160 school children as comparison group. Using interview technique, the demographic characteristics, occupational and clinical history were recorded on a pre-designed proforma. The reason for taking up the job, income from the job and their desire to attend the school were recorded. Statistical analysis was done using SPSS 15.0.

Results: The mean age of working and school children was 10.8 ± 1.5 years and 11.0 ± 1.5 years respectively. The mean height of working and school children was 131.0 ± 9.8 cms and 136.9 ± 9.4 cms respectively and the difference was statistically significant ($t=5.5$; $df=1$; $p<0.05$) Similarly, the mean weight of working children (25.9 ± 5.6 kgs) was significantly lesser than the mean weight of school children (28.6 ± 5.6 kgs) ($t=4.2$; $df=1$; $p<0.05$). In all 70.5% of the working children were symptomatic while only 104 (65%) school children had symptoms.

Conclusion: To conclude, the social factors forcing the children to work, results in deterioration of their health as suggested by presence of symptoms and also affect their growth parameters such as height and weight.

1. Introduction

The child labor in developing countries including India is a serious and enormously complex social issue(Kaur, Anand, Arora, & Jindal, 2018) (Abdelwahed12 & Jiang, 2021). The working children are denied of their basic rights of survival, development, protection, and participation. The children are forced to take up exploitative jobs in which they work in difficult and hazardous conditions and are usually underpaid. This adversely impacts the mental, physical, social, and emotional health of children(Roggero, Mangiaterra, Bustreo, & Rosati, 2007).

* Corresponding author at: *ICMR-National Institute for Research in Environmental Health*.
Email address: rajtiwari2810@yahoo.co.in

According to ILO report, a total of 152 million children-64 million girls and 88 million boys - are in child labour globally, accounting for almost one in ten of all children worldwide(ILO, 2017). Nearly half of all those in child labour are in hazardous work that directly endangers their health, safety, and moral development. As per Census 2011, 10.1 million (3.9% of total child population) of the total child population in India in the age group (5-14) are working, either as 'main worker' or as 'marginal worker'(ILO, 2017) (Dev, 2018). However, the good news is that the incidence of child labour has decreased in India by 2.6 million between 2001 and 2011 particularly in rural areas(ILO, 2017).

Most of the children work in the informal economy. The "informal sector" mainly includes the cottage and smaller units carrying out income-generating activities particularly in urban slums and rural areas. The informal workers have increased susceptibility to health hazards as these workplaces are not cover under the legal framework to protect the workers at workplace(Kuimi, Oppong-Nkrumah, Kaufman, Nazif-Munoz, & Nandi, 2018). The informal economy is spread across all economic sectors and may be closely linked to formal sector production, for example, in situations where formal sectors outsource work to the informal economy(Edmonds & Theoharides, 2020).

India is the second largest global producer of footwear after China, accounting for 13% of global footwear production of 16 billion pairs. Nearly 95% of its production goes to meet its own domestic demand. The major production centers in India are in Tamil Nadu, Maharashtra, Uttar Pradesh and Punjab. About 1.10 million workers are engaged in the footwear manufacturing industry(ILO, 2017; Kaur et al., 2018; Roggero et al., 2007) (Gangopadhyay, Ara, Dev, Ghoshal, & Das, 2011).

Child labour is a complex problem and numerous factors influence whether or not children work. Family poverty plays a significant role for child labour(Kumuda, 2014). Wide-scale poverty compels parents to encourage child labour activities with the assumption that more working hands will enhance the income of the family thereby result in alleviation of poverty. Further to keep alive the family tradition the parents wish their kids to learn and grow in the same occupation though many times the child has desire to attend school like their peers.

The toxic and hazardous chemicals used in the workplace affect growth and development as well as physical and mental health of the working children(Tiwari & Saha, 2014). The physical growth is affected by factors such as working in same posture for longer time, lack of proper illumination and ventilation at workplace while the verbal and physical abuse by parents or employer impacts the social and mental growth of the working child.

The unorganized cottage units of footwear units are operable from the homes. They usually collect or buy the cut pieces of leather from larger organized units and make footwear out of it. While the designing, cutting and assembling activities are done by adults, the children are often employed for fixing the upper parts of the footwear with the sole using different adhesives commonly known as soling. Footwear -making is a labor-intensive process that involves a number of hazards such as noise, dust pollution, and injuries caused by presses and machines without double-handed safeguards. In addition, the adhesives used contain a mixture of organic solvents known to affect the health of the worker(Chen & Chan, 1999) (Gangopadhyay et al., 2011). The working children either work for their parents or for contractors. The Government of India along with International Labour Organization has initiated the Child Labour Elimination programme under which the working children are registered in the school run under National Child Labour Programme. In these schools, the children are given informal as well as formal education. The attempts are also made to bring these children into the mainstream education system by helping them to appear for mainstream education system examinations and qualify it.

With this background the current study was undertaken to find out proportion of various morbidities suffered by the two groups of children and to study the social dimensions of working children of the cottage units of footwear making.

2. Methods

The present cross-sectional study with comparison group included 139 child labourers (not completed 18 years) working in the footwear making unit at Agra as exposed group and 160 comparison group children. As the total number of children employed in the footwear units as well as the prevalence of morbid conditions among them was not available, it was decided to have a list of all the schools run be National Child Labour Programme (NCLP) was obtained. Considering the feasibility three schools were randomly selected and all the working children studying in these selected schools were taken for the study as case groups. Similarly the list of all the government schools in the vicinity of these selected schools were chosen and after age and sex group matching school children were randomly selected for the study. It was ensured through interview that these school children have never worked in any form of child labour either in footwear making or any other industry. The ethical approval was obtained from the Institutional Ethics Committee of ICMR-National Institute of Occupational Health (Agenda 4.4/NIOH/4IEC/211004). As both working as well as school children were selected from their respective schools, it was not feasible to take the consent of their parents. Thus, before initiating the data collection, consent of their teachers, who act as their guardians during school timing, was taken and informed verbal assent of participating child was also taken. All the children were examined at the study centre which was temporarily established in hired 2-3 rooms during the study period. Using interview technique as a tool for data collection the demographic characteristics, occupational and clinical history were recorded on a pre-designed proforma. The socio-economic status of the two groups was group-matched. Socio-economic status was defined according to the modified Kuppuswamy's scale(Wani, 2019). This was followed by detailed clinical examination of each participant.

Statistical analysis included calculation of proportions and percentages, application of test of significance i.e. Chi-square test and calculation of Odds ratio with 95% Confidence Intervals. Multivariate analysis was carried out by dichotomizing the variables. Statistical software SPSS 15.0 was used for statistical analysis.

3. Results

The present study included 139 working children considered as exposed group and 160 school children considered as unexposed or comparison group. The exposed group included 56 (40.3%) males and 83 (59.7%) females while the comparison group included 81 (50.6%) males and 79(49.4%) females. Majority of the child labourers and school children belong to 10-14 years age group. The mean age of child labourers was 10.8 ± 1.5 years and the mean age of comparison group was 11.0 ± 1.5 years. The difference was found to be statistically non-significant ($t=1.1$; $df=1$;$p>0.05$).

The occupational characteristics of working children are demonstrated in Table 1. 61(43.9%) of the children were working since last 6 months to 2 years while only 36(25.9%) subjects had work exposure was more than 2 years. The mean duration of exposure was 20.5 ± 16.2 months. Most of the children were working for less than 4 hours a day and the mean working hours per day was 3.9 ± 1.9 hours. It was found that the male children were working in the processes like cutting leather, putting the leather piece on cast (fitter) and application of adhesives while females were working mainly in the manual knitting of the upper portions of chappals. The mean income earned by these children was found to be 53.4 ± 7.1rupees per week. Though some children were being paid daily most of the children were getting remuneration at the end of the week.

The physical growth and development as measured through attained height and weight is shown in Figure 1. The mean height of the child labourers was 131.0 ± 9.8 cms while that of school children was

136.9 ± 9.4 cms. The difference was statistically significant (t=5.5; df=1; p<0.05) Similarly, the mean weight of child labourers i.e. 25.9 ± 5.6 kgs was significantly lesser than the mean weight of school children i.e. 28.6 ± 5.6 kgs. (t=4.2; df=1; p<0.05). From the figure it can be observed that height and weight of working children is lower than that of school children in the earlier ages which later on catch up as the age advances.

The distribution of self-reported symptoms is depicted in Table 2. In all 98 (70.5%) of the child labourers were symptomatic while only 104 (65%) school children had symptoms. The mean number of symptoms per working child was 1.4 ± 1.2 while that in school children was 1.1 ± 1.0. This difference was statistically non-significant (t=1.83; df=1; p>0.05). The common complaints in working children included eyestrain and lacrimation from eyes in 43.9% followed by respiratory symptoms such as cough and frequent common cold in 33.1% subjects and neurological complaints such as headache, tremor, tingling numbness, etc. in 26.6%. In the comparison group the common symptoms were respiratory symptoms in 41.9%, followed by neurological symptoms in 20.6% and musculoskeletal symptoms such as back pains and leg pains in 16.3% subjects.

The Table 3 shows the distribution of some social attributes among the working children. 94 (67.6%) of the children were compelled by the parents to work in the shoe manufacturing while 42 (32.2%) have taken it on their own choice. When asked about the money they earn while working about two-third of the children said that they give it to parents. 21(15.1%) child labourers have lost their one parent and that to father in most of the cases. Only one female child has lost both of her parents and was being cared by her aunt at the time of survey.

4. Conclusion

The present study suggests that the working children of footwear units are exposed to various harmful factors at their workplace which is more often their home. As a result, they were susceptible to health problem, which was reflected by a prevalence of 70.5% symptomatic among the working children. High proportion of female working children raises concern about the female literacy rate. The female literacy rate in the state like Uttar Pradesh is already lower than national average and this type of social evil will further deteriorate it. This becomes a vicious cycle with illiteracy resulting in child labour which further in increases illiteracy. Thus, education will play a significant role in curbing this evil(Tripathi, 2010).

The duration of exposure suggests that though most of the children have taken the job only recently, many of these children work for about six hours or more daily under unsafe working condition of ill-ventilation, poor illumination, awkward posture, unhygienic conditions and dust exposures. All these are known to affect the human health in adverse ways in terms of symptoms or deficit physical or mental growth.

The study also revealed that the physical growth, as measured by height and weight of attained by the working children, was significantly lower than that of school children. When these anthropometric parameters were analyzed after adjusting for age it was revealed that both height and weight of the child labourers was lower than that of school children. This difference was more remarkable in the earlier age groups. This can partly be attributed to the hazardous exposure at workplace and partly may be due to the nutritional status of these children which is also affected by work at younger age(Agarwal, 2017) (Jariego, 2021). However, with increasing age a catch phenomenon was observed for height as well as weight.

As mentioned earlier that these children are performing the activity of fixing the upper part of the footwear with the sole using adhesives. These adhesives are rich in organic solvents many of which are reported to affect neurobehavioral functions and cause skin problems. This study also found higher prevalence of neurological and skin related symptoms among working children though not significantly different from school children. Also, eyestrain and work-related injuries are the specific hazards associated with the job seen in working children. On the other hand, the musculoskeletal

symptoms were more in school children as compared to working children which may be partly attributed to factors such as heavy school bags, prolonged sitting on floor during school hours.

The injuries were more among child labourers because the work process makes them susceptible to sustain injuries. When asked how they take care of cut injuries sustained during job, many children mentioned that they apply adhesives to the wound. This was a wrong practice as this will not only make the wound contaminated but also provide direct access of the organic solvents present in the adhesives to systemic circulation thereby exerting a more potent effect. However, conclusion regarding injuries should be drawn cautiously as the sample size is very small.

Though poverty is considered as the main cause of children preferring work over education(Naeem, Shaukat, & Ahmed, 2011) (Edmonds & Theoharides, 2020), the study also revealed that in most instances the parents compelled the children to help them financially and learn the art so as to become self-dependent to earn their livelihood as they grow. However, the financial help was not significant as the earning of these children in term of money or increased number of products made was not significant when weighed against the benefits of getting educated. Thus, while motivating and helping the children to get admissions in school, the parents also need to be counseled for the harmful effect of working in the units to curb the social evil.

Thus, the present study reveals that the child labour is a social evil resulting from social factors like poverty and family cultural influences. However, a holistic approach should be applied, as it not only results in illiterate future workers but also unhealthy workforce for the country.

References:

Abdelwahed12, A., & Jiang, L. (2021). The Health Impact of Child Labor in Agriculture Sector in Developing Countries: Evidence from Egypt. NAAR, 4(6), 89-109. doi: https://doi.org/10.5281/zenodo.4993805

Agarwal, S. (2017). Impact of child labour on the nutritional level and developmental 9–12 Years. Journal of Textile Science and Engineering, 7(3), 1-4.

Chen, M.-s., & Chan, A. (1999). China's “market economics in command”: Footwear workers' health in jeopardy. International Journal of Health Services, 29(4), 793-811.

Dev, S. M. (2018). Labour Market Inequalities in India: Dimensions and Policies. Indian Journal of Human Development, 12(2), 217-235.

Edmonds, E. V., & Theoharides, C. (2020). Child Labor and Economic Development.

Gangopadhyay, S., Ara, T., Dev, S., Ghoshal, G., & Das, T. (2011). An occupational health study of the footwear manufacturing workers of Kolkata, India. Studies on Ethno-Medicine, 5(1), 11-15.

ILO. (2017). Global estimates of child labour: results and trends, 2012-2016: ILO Geneva.

Jariego, I. M. (2021). Causes and Consequences of Child Labor Community Prevention of Child Labor (pp. 19-32): Springer.

Kaur, G., Anand, T., Arora, P., & Jindal, A. (2018). Morbidity Profile of Workers in Scissors Manufacturing Industries in a City in Northern India. International Journal of Contemporary Medical Research, 5(11), 1-5. doi: http://dx.doi.org/10.21276/ijcmr.2018.5.11.10

Kuimi, B. L. B., Oppong-Nkrumah, O., Kaufman, J., Nazif-Munoz, J. I., & Nandi, A. (2018). Child labour and health: a systematic review. International journal of public health, 63(5), 663-672.

Kumuda, D. (2014). Child Labour in India-Present Scenario. IOSR Journal of Economics and Finance 5(1), 33-36.

Naeem, Z., Shaukat, F., & Ahmed, Z. (2011). Child labor in relation to poverty. International journal of health sciences, 5(2 Suppl 1), 48.

Roggero, P., Mangiaterra, V., Bustreo, F., & Rosati, F. (2007). The health impact of child labor in developing countries: evidence from cross-country data. American journal of public health, 97(2), 271-275.

Tiwari, R., & Saha, A. (2014). Morbidity profile of child labor at gem polishing units of Jaipur, India. The international journal of occupational and environmental medicine, 5(3), 125.

Tripathi, S. (2010). Child labour and education in India: promise and performance. The Indian Journal of Political Science, 469-480.

Wani, R. T. (2019). Socioeconomic status scales-modified Kuppuswamy and Udai Pareekh's scale updated for 2019. Journal of family medicine and primary care, 8(6), 1846.