



BIHR COVID-19 Scientific Advisory Group (C-SAG)* Briefing Paper

Children's physical activity during Covid-19 from the Born in Bradford Cohort

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Background

The social isolation and movement restrictions during the Covid-19 pandemic mean that engagement in daily physical activity is incredibly important for everyone's health and wellbeing. High levels of daily physical activity, particularly moderate-to-vigorous physical activity (MVPA), and low levels of time spent being sedentary are widely acknowledged to improve health and wellbeing across all aged including children and young people. The benefits of physical activity during childhood include: improved cardio-metabolic profile, muscle and bone health, reduced risk of obesity, better mental health and improved academic achievement.

Prior to COVID-19, physical activity levels in children were less than optimal -self-reported data across England in 2018/19 showed that the majority of children (53.2%) were not meeting the recommended guidance of a daily average of ≥ 60 minutes of moderate-to-vigorous physical activity (MVPA). Moreover, children from ethnic minority groups had poorer movement profiles (less active, more sedentary) than their White British peers, and peers living in areas of greater affluence. Understanding why and how physical activity differs between ethnic and socio-economic groups is of vital importance to enable tailored support for all groups during the pandemic and particularly because the consequences of the pandemic are likely to further increase already well-established ethnic and deprivation inequalities.

Methods

The current study is part of the wider Born in Bradford COVID-19 Research Study. The following demographic data was extracted from the BiB cohort dataset: age, sex, ethnicity, and Index of Multiple Deprivation (IMD). Self-reported physical activity, and daily frequency/time leaving the home (including garden/yard) was collected via survey from 949 children aged 9-13 years old. These data were used in the analysis of Aims 2 and 3 (see results section below). Whether children were attending school was also collected and controlled for in the analysis. The most recent BiB follow-up (Growing-Up) included physical activity survey data for 634 (66.8%) of these 949 children, and was used for the analysis of the Aim 1 (result section below).

Results

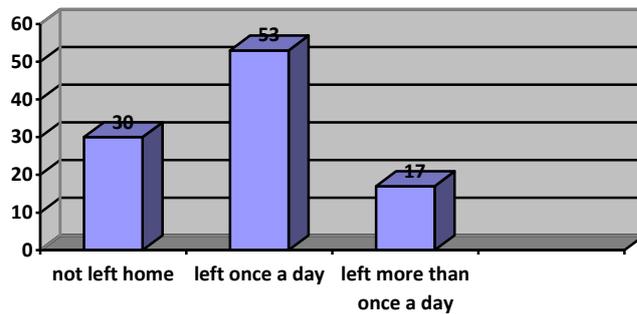
Aim 1: comparison of proportion of children meeting physical activity guideline pre and during COVID-19 pandemic lockdown

- There was a significant reduction in the proportion of children (n=634) being sufficiently active for health and well-being (i.e. >60 minutes of MVPA) during the first COVID-19 lockdown (25%) compared with prior to the pandemic (69%).
- Statistical analysis (logistic regression) showed that the reduction was not due to the children being older at the second measurement time point (during Covid-19).

Aim 2: Describe the self-reported movement profiles of children from a multi-ethnic city with high levels of deprivation during the 1st COVID-19 lockdown in England (May-July 2020).

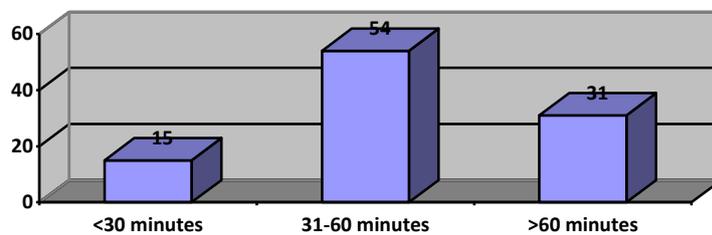
- In the larger sample of 949 children, 27% met the guidelines of 60 minutes of MVPA a day during COVID-19 lockdown.
- Thirty per cent of children reported that they had normally stayed at home in the previous 7 days (i.e. they had not left the house, garden/yard).

Figure 1: Proportion of children reporting leaving the home on a normal day in the previous 7 days



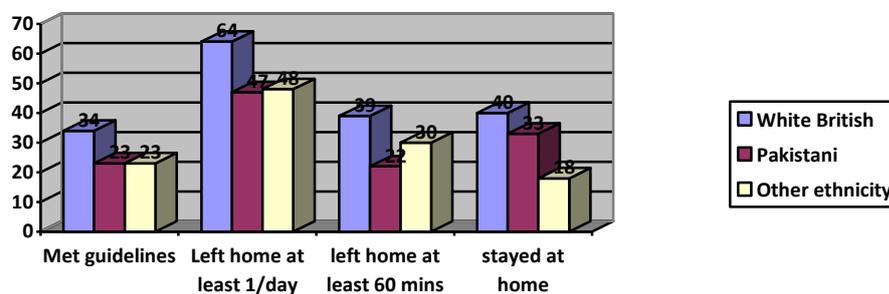
- Of the children who reported leaving the home at least once a day, most left for greater than 30 minutes.

Figure 2: Proportion of children reporting spending time away from home on a normal day in the previous 7 days



- There was no significant difference in meeting physical activity guidelines or frequency/time leaving the house between boys and girls.
- Significantly more White British children met physical guidelines compared to children Pakistani or 'Other' ethnicity children (Figure 3). There were significant differences in the frequency children left the home and the time spent away from home between ethnic groups, with White British children leaving more frequently and for longer (Figure 3).

Figure 3: Ethnic differences in physical activity and the frequency and duration of time spent away from home



Aim 3: Understand modifiable factors relating to children's compliance with physical activity guidelines during lockdown.

- The number of times children left the house significantly affected whether they met physical activity guidelines.



- If they left once compared to stayed at home, their odds ratio (OR) of meeting guidelines was 1.6 (a 60% increase in odds of meeting guidelines). If they left more than once compared to stayed at home their O.R was 2.7 (170% increase in odds of meeting guideline).
 - White British children were more likely to leave the home than Pakistani or children of other ethnicity, and this explained the significant difference in physical activity levels between the groups (see Aim 2 and Figure 3).
- For children who did leave the house, the amount of time they left for significantly affected whether they met physical activity guidelines.
- Children who left for 30-60 mins compared to < 30 mins had an OR of 2.7 for meeting guidelines (170% increase in odds of meeting guidelines). Children who left for >60 mins compared to <30 mins had an OR 9.8 for meeting guidelines (880% increase in odds of meeting guidelines).

Key Points/discussion

- Only a quarter of children were active enough for benefits for their health during the 1st Covid-19 lockdown (this has more than halved compared to pre-covid).
- Significantly more White British children met physical activity guidelines than Pakistani children or children from other ethnic groups.
- 30% of children were not leaving the house (including garden/yard) on a normal day during lockdown. Significantly more Pakistani and other ethnic minority children than White British were staying at home, and this explained the difference in physical activity seen between the groups. Promoting leaving the home safely (face, hands, space) to be active outdoors is important for all children and particularly important for ethnic minority children, to address physical activity inequalities.
- When children left the house for greater than 60 minutes their odds of meeting guidelines were massively increased. Promoting safe extended periods (>60 minutes) of activity outdoors is important to support children's physical activity, health and wellbeing.
- The measurement used were questionnaire based, which means we can expect the problems to be worse due to self-report questionnaires sometimes over-reporting physical activity.