

Excess Weight, Physical Activity, and Lifestyle Changes During COVID-19 Among Young Lives Study Participants in Peru

Introduction

Nearly two years after the first wave of COVID-19 in Peru, young people's lives have changed substantially. The pandemic has had profound effects on young people's education, employment and mental health, with widening inequalities and concerning increases in poverty and food insecurity, as highlighted in the [fifth call](#) of the Young Lives COVID-19 phone survey.

The pandemic is also having a profound effect on young people's lifestyles, dietary patterns and body weight. Even before the pandemic, 34 per cent of young adults (aged 18–19 years) were classified as either overweight or obese, also referred to as having 'excess weight'.¹ Conversely, 12 per cent of children under 5 years old were reported to have stunted growth, and 21 per cent of women of childbearing age were affected by anaemia (INEI 2020). The coexistence of excess weight (overnutrition) and nutrient deficiency (undernutrition) is often referred to as the 'double burden' of malnutrition.

This report summarises the impact of the COVID-19 pandemic on levels of malnutrition among young people in Peru, tracked since 2001 and now 19–20 years old, by providing early evidence on changing lifestyles (physical exercise, sedentary activities and sleep patterns), dietary patterns (consumption of healthy and unhealthy foods) and body weight. These are the most important risk factors for non-communicable diseases such as diabetes, hypertension and cardiovascular disease which are growing public health concerns in Peru and worldwide.

Our findings are based on a preliminary version of the data collected during the fifth call of the [Young Lives phone survey](#), alongside a parallel online survey carried out in October–December 2021 as part of the [Study of Obesity, Nutrition, Genes and Social factors \(SONGS\)](#).

HEADLINES

1. Over a quarter (27 per cent) of 19–20 year olds in the Young Lives sub-sample had excess weight in October–December 2021. Those from better-off households, in urban areas and from coastal regions were more likely to have excess weight (29 per cent, 28 per cent and 34 per cent, respectively), while those living in the highlands were the least likely to (16 per cent).
2. A significant proportion of young people were not physically active during the pandemic; only 44 per cent of 19–20 year olds met the World Health Organisation (WHO) recommendation for undertaking moderate physical activity, and 42 per cent met the recommendation for vigorous physical activity. Young women and those classified as obese were less likely to undertake vigorous activity (23 per cent and 32 per cent, respectively).
3. Overall, young people spent just under half of their waking time engaged in sedentary activities; young women and those classified as obese were particularly inactive.
4. Young people with excess weight (overweight or obese) before the pandemic, were much more likely to have gained weight (66 per cent) and undertaken less physical activity (42 per cent) during the pandemic, compared to those of healthy weight (27 per cent and 25 per cent respectively).
5. The coexistence among young people of both low physical activity and increased time spent in sedentary activities suggests an increased risk of excess weight and related health implications (such as diabetes, hypertension and cardiovascular disease).
6. Interestingly, young people reported a number of positive changes in dietary patterns since the start of the pandemic, with 60 per cent of 19–20 year olds eating fewer high-fat foods, 46 per cent eating fewer sweet and salty snacks, and 43 per cent drinking fewer sugary drinks; 47 per cent also reported eating fewer meals prepared outside of the home. There was also a modest shift towards healthy foods such fruit, vegetables and legumes.

1 National Institute of Health (2018). Excess weight was defined as a body mass index higher than 25 kg/m².

Methods

The [fifth call of the Young Lives at Work phone survey](#) took place between 7 October and 15 December 2021, following a shorter [fourth survey call](#) conducted between 4 August and 5 September 2021. A total of 2,178 young people were contacted: 1,664 from the Younger Cohort (aged between 19 and 20 years) and 514 from the Older Cohort (aged between 26 and 27 years). Younger Cohort respondents with access to a smartphone and home internet connection were also invited to participate in the SONGS online survey, to collect additional information on self-perceived lifestyles, dietary intake, and body weight. A total of 1,499 respondents from the Younger Cohort completed the online survey (91 per cent of those contacted for Call 5).

This report focuses on a sub-sample of 19–20 year olds from the Younger Cohort who participated in both Call 5 and the online survey, totalling 1,124 respondents.² Current sociodemographic characteristics, anthropometric data, and physical activity levels were self-reported and collected by trained interviewers during Call 5. Changes in lifestyle, including questions regarding the intake of healthy and unhealthy food, physical exercise, sleep time, sedentary time, and experience of stress and anxiety, were measured

through responses provided in the online survey. All survey instruments were validated in a pilot study in July 2021.

Results

Nutritional status and sociodemographic characteristics

Nearly 3 out of 10 (27 per cent) young people had excess weight (either overweight or obese) at the age of 19–20 years. Young people living in coastal regions (34 per cent, compared to 25 per cent in jungle regions and 16 per cent in highlands), in urban areas (28 per cent, compared to 18 per cent in rural areas), among better-off households³ (29 per cent, compared to 20 per cent) and those whose first language is Spanish (28 per cent, compared to 21 per cent for those whose mother tongue is not Spanish) were more likely to have excess weight (Figure 1).

The longitudinal nature of the Young Lives data allows us to compare the body weight of 19–20 year olds in October–December 2021 to their recorded weight at age 15 (measured during our last in-person visit in 2016) to investigate changes in young people's nutritional status over time (Figure 2).

Figure 1. Nutritional status according to body mass index and sociodemographic characteristics

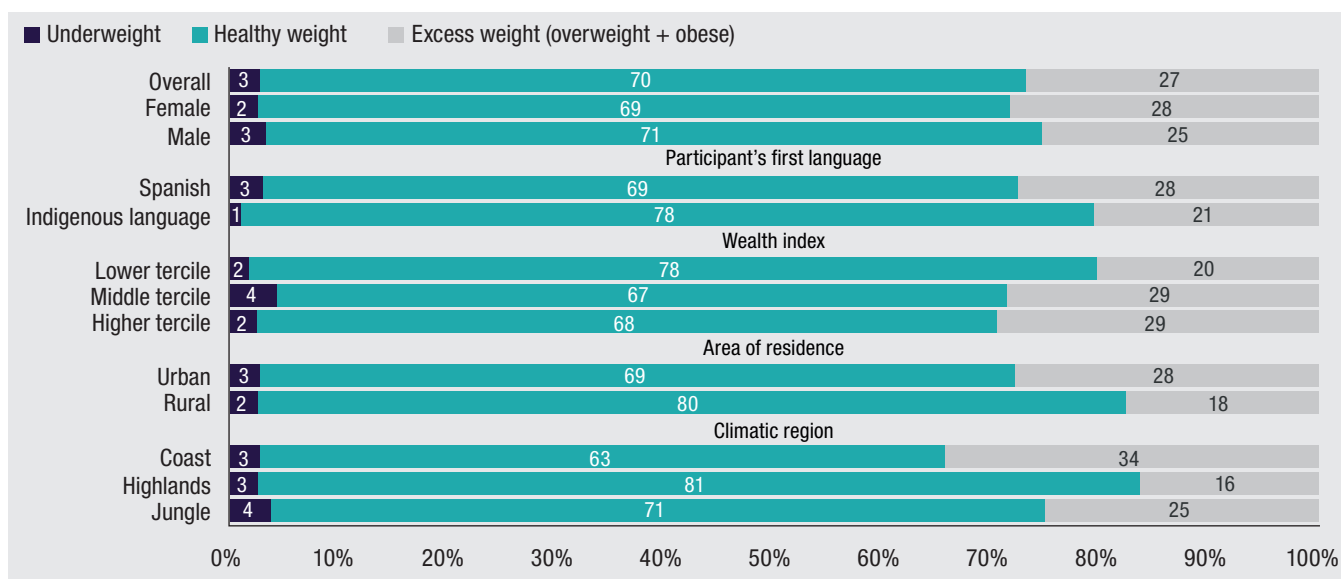
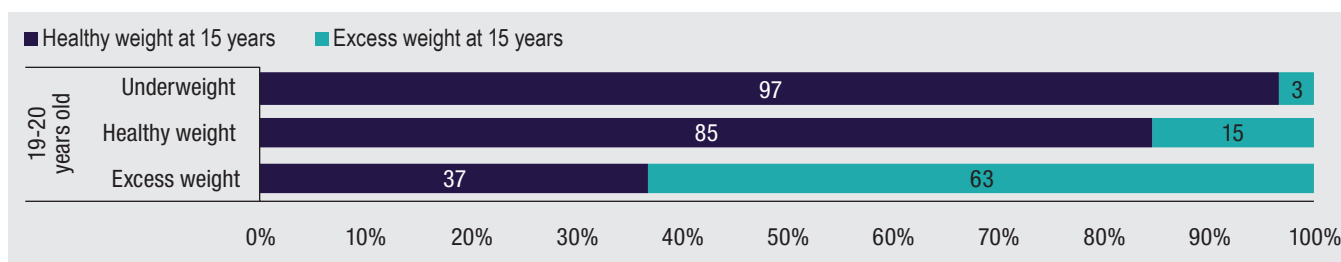


Figure 2. History of healthy versus excess weight at 15 years old



² The sub-sample excluded 371 participants who did not know their current weight and/or height during Call 5, and four pregnant women.

³ Relative household wealth is determined using the [Young Lives wealth index](#) measured during the Young Lives Round 5 survey, undertaken in 2015/16.

Our results confirm a **worsening of body weight between age 15 and 19–20, with more young people carrying excess weight**, and highlight the **need for prevention and control of excess weight from an early age, given the high probability of retaining excess weight in adulthood for young people who were overweight or obese in adolescence**. The majority of 19–20 year olds (63 per cent) with excess weight had the same condition at age 15. Conversely, of 19–20 year olds with healthy weight in October–December 2021, only 15 per cent had excess weight at age 15 (improving body weight). Further, 37 per cent of those with excess weight at age 19–20 experienced their body weight worsening overtime, as they *did not* have excess weight at the age of 15. Promoting broad public health initiatives alongside individual strategies to address excess weight will be important to reduce the surge in excess body weight observed over recent years.

Physical activity and sedentary behaviour

We measured levels of physical activity using the Global Physical Activity Questionnaire (GPAQ) developed by WHO. WHO guidelines recommend at least 150 to 300 minutes of moderate-intensity physical activity, or 75 to 150 minutes of vigorous-intensity physical activity throughout the week, to maintain a healthy lifestyle and help prevent excess weight gain (WHO 2020). We also measured time engaged in sedentary activities, since an inactive lifestyle increases the risk of obesity, independent of physical activity.

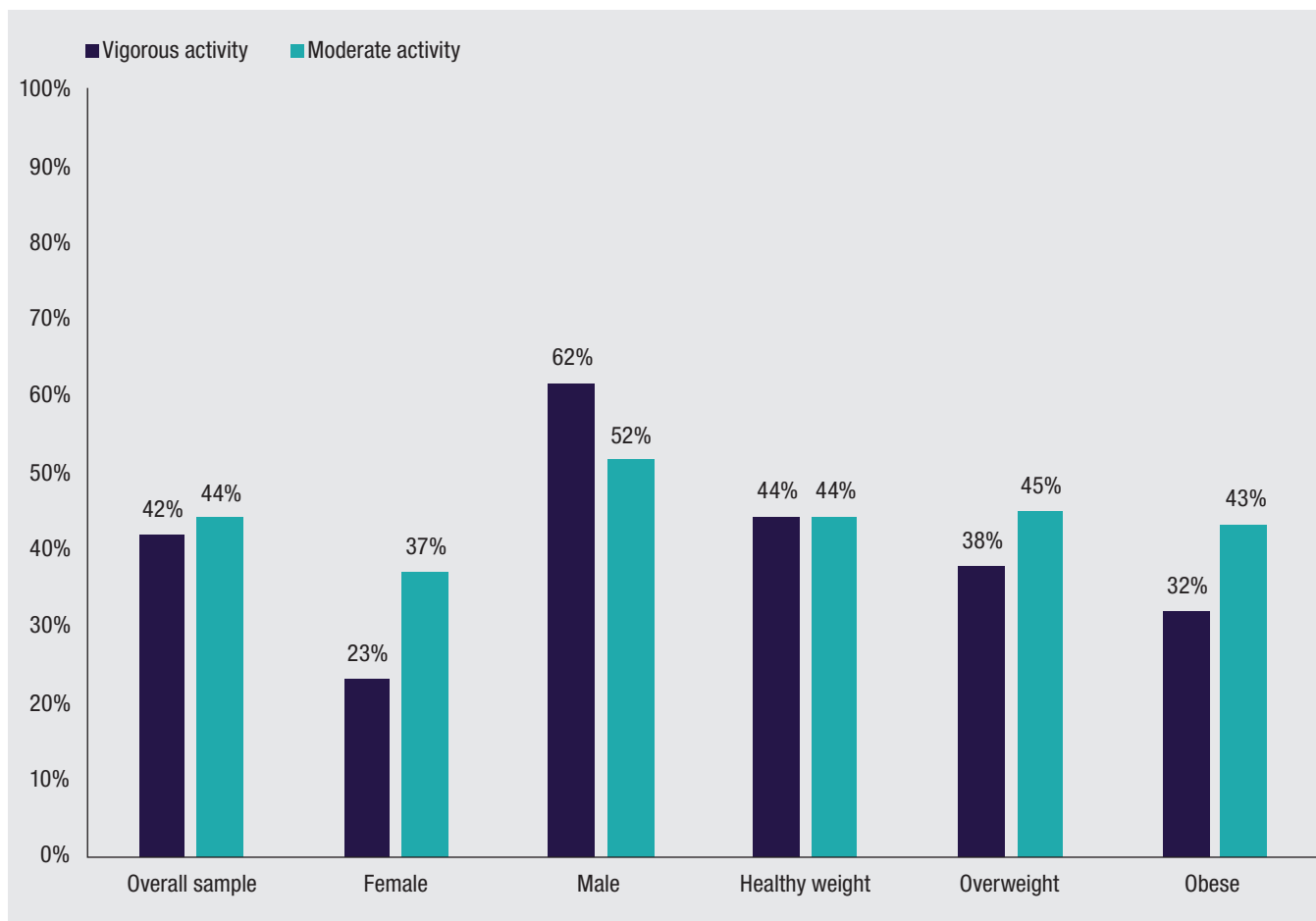
During the pandemic, 19–20 year olds spent a significant part of their day undertaking sedentary activities, with levels of physical activity closely correlated with body weight. Overall, respondents spent an average of 5.9 hours in a day in activities such as sitting or reclining, with young women and obese respondents reporting slightly higher than average times (6.2 and 6.1 hours, respectively).

Only 44 per cent and 42 per cent of 19–20 year olds met WHO recommendations for moderate and vigorous physical activity, respectively (Figure 3). The most common forms of physical activity were active transportation (commuting on foot or cycling) and doing moderate activities at work.

Young women reported the lowest levels of activity, with 37 per cent meeting the recommendation for moderate activity and 23 per cent for vigorous activity, compared to 52 per cent and 62 per cent respectively for young men. Those with excess weight were also less likely to meet the recommendation for vigorous activity (obese respondents 32 per cent, and overweight respondents 38 per cent), compared to those with healthy weight (44 per cent).

The dual impact of low physical activity and increased time spent in sedentary activities among young people in our study suggests an increase of the risk of negative health-related implications of excess weight, such as diabetes, hypertension and cardiovascular disease.

Figure 3. Percentage of 19–20 year olds who met WHO recommendations for physical activity



Changes in lifestyles and body weight

Young people with excess weight were much more likely to have gained weight and undertaken less physical activity during the pandemic, compared to those with healthy weight. Overall, 37 per cent of 19–20 year olds reported an increase in weight during the pandemic (Figure 4).

Those with excess weight were much more likely to have experienced an increase in weight during the pandemic (66 per cent), compared to those with healthy weight (27 per cent). Likewise, those with excess weight reported reduced time spent on physical activities such as running and cycling (42 per cent, compared to 25 per cent for those with

healthy weight), reduced time spent sleeping (40 per cent, compared to 34 per cent), and increased time on sedentary activities (49 per cent, compared to 44 per cent) during the pandemic. Those with excess weight also reported higher levels of stress and anxiety during the pandemic (50 per cent), compared to those with healthy weight (44 per cent).

Changes in dietary patterns

Young people reported a number of positive changes in their dietary patterns during the pandemic, including a significant reduction in meals eaten outside of the home, and reduced intake of high-fat and sugary foods (Figure 5).

Figure 4. Changes in lifestyles and body weight during the pandemic

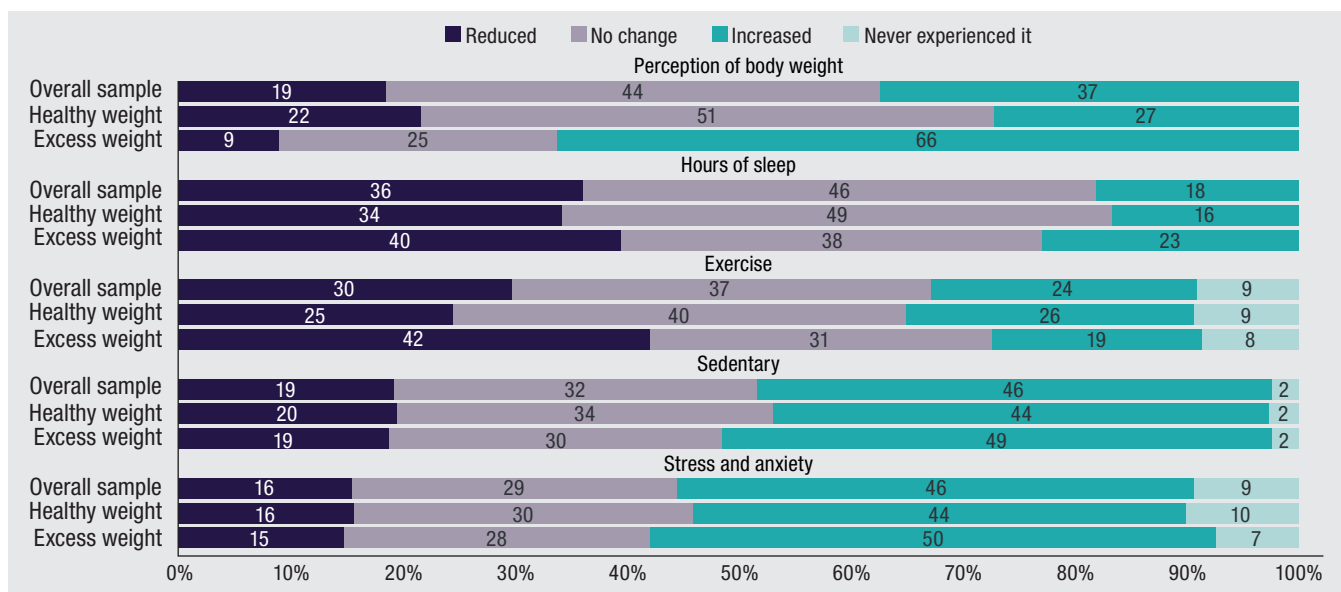
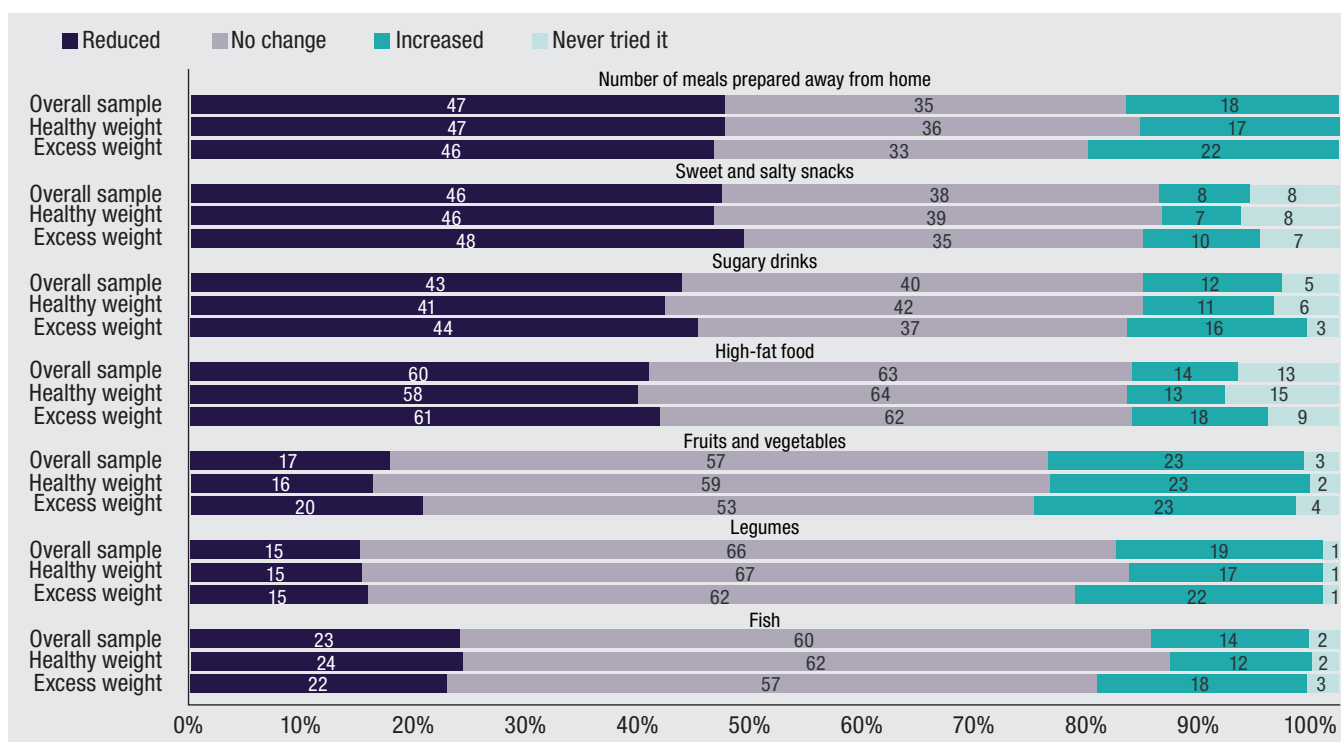


Figure 5. Changes in dietary patterns during the pandemic



Overall, 47 per cent of 19–20 year olds reported eating fewer meals prepared away from the home (via delivery or in restaurants), with a significant reduction in unhealthy foods: 46 per cent reduced their intake of sweet and salty snacks; 43 per cent reduced their intake of sugary drinks, and 60 per cent reduced their intake of high-fat foods such as butter, sausages, burgers, fries and pizza.

By contrast, there was a modest shift towards eating healthy foods such as fruit and vegetables (23 per cent increased their intake, compared to 17 per cent decreasing their intake), and legumes, including lentils and beans (19 per cent increasing, compared to 15 per cent decreasing). Interestingly, there were no significant differences observed in changing dietary patterns between those with healthy and excess weight. Both groups also reported a modest reduction in their intake of fish, with 23 per cent overall eating less fish (compared to only 14 per cent eating more fish).

Conclusion

There has been a significant change in young people's lifestyle, dietary patterns and body weight change during the pandemic. A significant proportion of young people were not physically active, with increased time spent on sedentary activities and less time spent sleeping during the pandemic, further increasing the risk of excess weight and related health consequences, with those who were already overweight or obese before the pandemic particularly at risk.

These results are likely to be a direct consequence of the confinement measures introduced during the COVID-19 lockdown and related restrictions, which resulted in many young people studying and working from home, potentially for long periods of the day. There was a higher proportion of young adults with excess weight among better-off households, and in urban areas and coastal regions. Policies to encourage physical activity and reduce time spent in sedentary activities should be promoted, particularly in more urbanised areas that might have more access to unhealthy food, as well as fewer opportunities for physical activity.

Interestingly, positive changes in dietary patterns such as eating fewer unhealthy foods (high-fat and sugary food and drinks) and healthier foods (fruits, vegetables and legumes) might also be a result of COVID-19 restrictions increasing the time young people spent at home, and therefore

reducing the number of meals consumed that are prepared outside the home, that are often of poor nutritional quality.

Targeted policies to encourage physical activity and reduce time spent in sedentary activities should be promoted among young people, if Peru is to avoid increasing rates of excess weight. Likewise, promoting healthy diets through education and public health campaigns should remain a top priority as restrictions are relaxed and young people return to eating more food prepared outside the home (through deliveries, takeaways and in restaurants).

Strategies could include improving the affordability of healthy food and primary health care initiatives to promote healthy weight, alongside improving the infrastructure and safety for active transportation, given this was the most common form of physical exercise among young people.

This survey allowed us to investigate the social and behavioural aspects of excess weight during the pandemic. One limitation of our analysis is that, by design, our survey respondents were more likely to be from urban areas as internet access was required. Further research, including analysis of the food intake measured by a food frequency questionnaire, food preferences, and the collection of biomarkers and new in-person data during our planned fieldwork in 2022, will enable a broader analysis of the genetic and molecular biomarkers of malnutrition and obesity.

References

- National Institute of Statistics (INEI) (2020) 'Peru Demographic and Family Health Survey (ENDES) 2020', Lima: Peru.
- National Institute of Health (2018) 'Nutritional Status in Adults from 18 to 59, Peru: 2017–2018. Technical Report on Nutritional Food Surveillance by Life Stages: Adult', https://web.ins.gob.pe/sites/default/files/Archivos/cenan/van/sala_nutricional/sala_3/2021/Informe%20Tecnico-%20Estado%20nutricional%20en%20adultos%20de%2018%20a%2019%20a%202021%20CVIANEV%202017-2018.pdf (accessed 2 March 2022).
- World Health Organization (WHO) (2020) 'Physical Activity', <https://www.who.int/news-room/fact-sheets/detail/physical-activity> (accessed 2 March 2022).

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