

Supplementary File 3. Global Adolescent and Children Physical Activity Questionnaire (GAC-PAQ) draft used for cognitive interviews.

Note: text in blue font is intended for participants in the cognitive interviews. Text in italic font will be narrated in the app.

Physical activity can take place in many ways including in your free time, doing sports, playing, when going places (like school, parks, shops, and friends' or relatives' houses), at school, during chores and work. The app will guide you through each way one by one.

We will ask you about different efforts of physical activity. When we say "medium or hard effort" we mean activities that make your heart beat faster and get you out of breath some of the time. [Examples shown in the app may include soccer/football, swimming, running, skipping, skating, cross-country skiing, weight training, or cycling].

When we say "easy effort", we mean activities that do not make you out of breath. Examples shown in the app may include slow walking, caring for pets or farm animals, playing in a sandbox, and many household chores.

There are no right and wrong answers. Please answer all the questions the best you can.

*For this survey, we want to measure how active you were in the **past week (seven days)**.*

A. SCHOOL

1. Did you attend school **in the past week**?
 - a. Yes
 - b. No → the following questions in this section will be skipped in the app
2. How many days did you attend **school** in the past week? [children will be asked to select one of the radio buttons shown in the app, ranging from 1 to 7 days. Responses will help us weight school days and non-school days properly instead of assuming that children attend school 5 days per week].
3. How many **physical education** classes did you have in the past week? [The app will show images of PE classes and participants will be asked to drag a square (or whatever shape works best) from 0 to 7. A "don't know" option will be included. If they respond 0, then questions 4 and 5 would be skipped].
4. How long are your **physical education** classes?
 - a. Less than 30 minutes
 - b. 30-45 minutes
 - c. 46-60 minutes
 - d. Over 60 minutes
 - e. Don't know

5. Which of the following images shows what you do most of the time in physical education class? [During the narration, the app will show images of children during physical education. Some images will show children sitting during instructions from the teacher, standing waiting for their turn, and engaging in physical activities. At the end of the narration, children will be presented with 3 images corresponding with the options below and they will use radio buttons to select one option].
- Mostly not moving
 - Mostly easy effort
 - Mostly medium or hard effort

		
Mostly not moving	Mostly easy effort	Mostly medium or hard effort

6. On a normal school day, how much **break time** do you have? (Please add the time together – for example two 15-minute recess/break periods per day and 30 minutes for lunch would be 60 minutes) [By combining recess and lunch time, we hope to minimize the length of the questionnaire and to account for the fact that, in certain countries, children don't have lunch at school].
- 0 minutes
 - 1-15 minutes
 - 16-30 minutes
 - 31-60 minutes
 - More than 60 minutes
 - Don't know
7. Which of the following images shows what you do most of the time during your **breaks**? [During the narration, the app will show images of children during break time. Some images will show children sitting, children standing or walking around, and children playing ball games. At the end of the narration, children will be presented with 3 images corresponding with the options below and they will use radio buttons to select one option].
- Mostly not moving
 - Mostly easy effort
 - Mostly medium or hard effort

		
Mostly not moving	Mostly easy effort	Mostly medium or hard effort

B. WORK

8. In the past week, did you **volunteer** or have a **job** that earned you or your family some income? *This does not include chores or tasks you might do around your home, like washing dishes, preparing meals, and cleaning floors.*

- a. Yes
- b. No → the following questions in this section will be skipped in the app

9. In the past week, how many hours have you spent **volunteering and/or working**?

- a. 0 hours per week
- b. 1-9 hours per week
- c. 10-19 hours per week
- d. 20-29 hours per week
- e. 30 or more per week

10. Which of the following shows what you do most of the time while **volunteering and/or working**? [During the narration, the app will show images of children volunteering or working. Some images will show children doing mostly sedentary tasks (e.g., sitting at a desk), others will show children engaging in light-intensity work (e.g., cashiers, fast-food workers, fruit pickers), and others will show children doing higher intensity work (e.g., carrying heavy loads, loading/unloading trucks). At the end of the narration, children will be presented with 3 collages corresponding with the options below and they will use radio buttons to select one option. Again, the specific examples presented can vary by country]

- a. Mostly not moving
- b. Mostly easy effort
- c. Mostly medium or hard effort

		
Mostly not moving	Mostly easy effort	Mostly medium or hard effort

C. CHORES

11. In the past week, did you do active **chores or tasks**? [examples shown in the app could include mowing the lawn, gardening, cleaning the floors, washing dishes, preparing meals, setting the table. Examples could be adapted for different countries]
- Yes
 - No → the following questions in this section will be skipped in the app
12. How many days did you do **chores** during the past week? [children will be asked to select one of the radio buttons shown in the app, ranging from 1 to 7 days.]
13. On the days when you did **chores** during the past week, how much time did you spend doing chores throughout the day?
- 15 minutes or less per day
 - 16-30 minutes per day
 - 31-60 minutes per day
 - 61-90 minutes per day
 - 91 minutes or more per day
14. Which of the following shows what you do most of the time during your **chores**? [During the narration, the app will show images of children doing various household chores. Some images will show children doing mostly sedentary tasks (e.g., sitting), others will show children engaging in light-intensity chores (e.g., setting the table, preparing food, washing dishes, laundry), and others will show children engaging in chores requiring harder effort (e.g., mowing the lawn, scrubbing floors, shoveling snow). At the end of the narration, children will be presented with 3 images corresponding with the options below and they will use radio buttons to select one option. Again, examples presented can vary by country]
- Mostly not moving
 - Mostly easy effort
 - Mostly medium or hard effort



D. TRANSPORTATION

15. How did you get **from home to school** in the past week? (Select the **main** mode that you used). [The app will only present questions 15 and 16 if participants reported that they attended school in the past week when responding to question 1). The app will show pictograms of different travel modes].
- Walking
 - Cycling
 - Wheeling (e.g., wheelchair use, skateboard, push scooter, rollerblades)
 - School bus
 - Public transit (e.g., bus, train, tramway, subway, boat)
 - Car, truck, or motorcycle
 - Other, please specify
 - Non-applicable (I am home-schooled or attend a boarding school)
- 15b. How often did you use this mode in the past week? [The app will specify that if they went back home during the day (e.g., for lunch) and then went back to school, this should count as two trips to school.
- 15c. How long does it normally take you to go from home to school?
- 10 minutes or less
 - 11-20 minutes
 - 21-30 minutes
 - More than 30 minutes
16. How did you get **from school to home** in the past week? (Select the **main** mode that you used). [The app will use the same process as for question 15]
- Walking
 - Cycling
 - Wheeling (e.g., wheelchair use, skateboard, push scooter, rollerblades)
 - School bus
 - Public transit (e.g., bus, train, tramway, subway, boat)
 - Car, truck, or motorcycle
 - Other, please specify
 - Non-applicable (I am home-schooled or attend a boarding school)
17. How did you get **from home to work** in the past week? (Select the **main** mode that you used). [Questions 17 and 18 will only be shown in the app for participants who indicated that they worked or volunteered in section B (question 8). The process will be the same as described for question 15].
- Walking
 - Cycling
 - Wheeling (e.g., wheelchair use, skateboard, push scooter, rollerblades)
 - Public transit (e.g., bus, train, tramway, subway, boat)
 - Car, truck, or motorcycle

- f. Other, please specify
- g. Non-applicable (I work from home)

17b. How often did you use this mode in the past week? [The app will specify that if they went back home during the day (e.g., for lunch) and then went back to work, this should count as two trips to work.]

17c. How long does it normally take you to go from home to work?

- i. 10 minutes or less
- ii. 11-20 minutes
- iii. 21-30 minutes
- iv. More than 30 minutes

18. How did you get **from work to home** in the past week? (Select the **main** mode that you used). [The app will use the same process as for question 17]

- a. Walking
- b. Cycling
- c. Wheeling (e.g., wheelchair use, skateboard, push scooter, rollerblades)
- d. Public transit (e.g., bus, train, tramway, subway, boat)
- e. Car, truck, or motorcycle
- f. Other, please specify
- g. Non-applicable (I work from home)

19. In the past week, did you use active modes (e.g., walking, cycling, wheeling) to go to **places other than school or work** (e.g., a friend's house, a park, a shop)? Please select **all** responses that apply to you. [Same process as the previous questions. The app will be programmed to insert either school, work, or both based on the participant's responses to sections A and B]

- a. Yes, I walk
- b. Yes, I bike
- c. Yes, I use another active mode. Please specify _____.
- d. No → the following question in this domain will be skipped in the app

19b. How often did you use this mode in the past week?

19c. How long did a normal trip take you?

- i. 10 minutes or less
- ii. 11-20 minutes
- iii. 21-30 minutes
- iv. More than 30 minutes

E. PLAY OR FREE TIME

*This includes all the physical activity that you do during your **play or free time**. This is the time that you decide how to use. Physical activity during free time can include sports, dancing, gymnastics, games, and active play. [The app will show examples that can vary by country]*

20. Did you play any **school, club or organized activity** during the past week? [The app could clarify that we are referring to team and/or individual sports and provide examples of both of these categories. Relevant examples will be selected by country investigators; soccer/football would likely be a good one for most countries]
- Yes
 - No [the next 2 questions would be skipped]
21. How many days did you do these **activities** during the past week? [children will be asked to select one of the radio buttons shown in the app, ranging from 1 to 7 days.]
22. On the days that you do these **activities** during the past week, how long did it usually last?
- 30 minutes or less per day
 - 31-60 minutes per day
 - 61-90 minutes per day
 - More than 90 minutes per day

*For the next questions, **do not** include the activities that you just reported.*

23. In the past week, on an average day, how much time did you spend **playing actively, just for fun**? [The app will explain that we are asking about activities that are not done for the purposes of competing or training. Children will be asked to select the best duration for them. Examples may include playing ball games, tag, hide and seek, playing in the sandbox, building forts or treehouses, etc.]
- None
 - An hour or less per day
 - About 2 hours per day
 - About 3 hours per day
 - 4 hours or more per day
24. In the past **week**, how many days per week did you do activities that make you **stronger**? [The app will show images of children/youth doing gymnastics, climbing, push-ups, weightlifting, or using monkey bars. Then children will be asked to drag a square to indicate the frequency from 0 to 7 days per week].

F. OUTDOORS

25. In the past week, on an average day, how much time do you spend **outdoors**? [The app would show examples of outdoor activities and indicate that we are asking about outdoor time in any context (i.e., at school, work, chores, active transportation, and free time). Then children will be asked to select the best duration for them].

- a. None
- b. An hour or less per day
- c. About 2 hours per day
- d. About 3 hours per day
- e. 4 hours or more per day

[Image source: Freepik.com]