**Supplementary file 1.**

The school-based intervention was based on Creating Active Schools (CAS; Daly-Smith et al., 2020) and Self-Determination Theory (SDT; Ryan & Deci, 2017) frameworks. The top of the model of CAS is based on the behaviour change wheel (Michie et al., 2011) by including capability, opportunity, and motivation through initial and in-service teacher training to deliver whole-school lifestyle behaviours. School teachers were present in the 10 sessions to acquire knowledge, health literacy skills, and Motivation and Behaviour Change Techniques (MBCTs) in order to be able to implement this intervention next year. This framework shows that school leaders, teachers, children, parents, and wider stakeholders should be involved in lifestyle interventions. Events/visits, recess, physical education classes, curricular lessons (non-physical education), before/after school sport participation, active commuting to and from school, and interventions with family/community has been identified as possible dimensions of intervention. Therefore, although this school-based intervention was only developed in curricular lessons such as is the tutorial action plan, other agents such as families or teachers and other components such as the school break, active commuting to and from school, and after-school sport participation were indirectly involved in this intervention. In addition, this school-based intervention is based on the postulates of SDT because 16 out of the 21 MBCTs provided by Teixeira et al. (2020) were used: five of the seven autonomy-supportive techniques (i.e. eliciting perspectives on condition or behaviour, the use of non-controlling informational language, exploring life aspirations and values, providing choice, and encouraging the person to experiment and self-initiate the behaviour), all the relatedness-supportive techniques (i.e. prompt identification, and seeking available social support, providing opportunities for ongoing support, using empathic listening, demonstrating/showing interest in the person, showing unconditional regard, encouraging the asking of questions, and acknowledging and respecting perspectives and feelings) and, finally, four of the seven competence-supportive techniques (i.e. addressing obstacles to change, clarifying expectations, offering constructive, clear, and relevant feedback, and assisting in setting optimal challenges) (Teixeira et al., 2020). The definition and mode of implementation and examples of each MBCTs can be seen in table 1.

**Table 1.** MBCTs used during this school-based lifestyle intervention.

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| --- | --- | --- |
| **Label** | **Definition** | **Mode of implementation and examples** |
| Autonomy-support techniques | | |
| MBCT 1. Elicit perspectives on condition or behaviour | Encourage exploration and sharing of perspectives on current behaviour (e.g. causes, perpetuating factors etc.). | Their own physical activity levels, screen time, and sleep duration were examined, according to 24-hour movement guidelines, throughout the intervention. Discussions were held with students about their health-related behaviours in order to learn their individual perceptions of all of them. For instance, ‘Do you think you spend a lot of time on screens? Why?’ |
| MBCT 2. Use non-controlling, informational language | Use informational, non-judgemental language that conveys freedom of choice, collaboration, and possibility when communicating (avoiding constraining, pressuring, or guilt-inducing language). | The language used throughout the intervention was not controlling. For example, we use ‘might’ or ‘could’ instead of ‘should’ and ‘must’. Students were not forced or coerced to participate in any activity. For instance, ‘Would you like to participate in a sport event on the weekend? We will enjoy it a lot!’ |
| MBCT 3. Explore life aspirations and values | Prompt identification and listing of important life aspirations, values, and/or long-term interests and explore how changes in behaviour (or maintaining the status quo) could be linked to them. | Students' interests and preferences were considered in the design of this school-based intervention. For instance, ‘What activities would you like to get intovled in during the school break?’ |
| MBCT 4. Provide choice | Provide opportunities to make choices from a collaboratively devised menu of behavioural options and autonomous goals. It includes the decision not to change, to delay change, to select the focus/intensity of change, personally endorsed intrinsic goals and standards for success, including the timing or pace for certain outcomes. | A series of cards with healthy challenges (e.g. active commuting to and from school every day) were created. Each card had alternative and varied challenges, so that each student could choose the card that best suited his or her individual interest and preferences. |
| MBCT 5. Encourage the person to experiment and self-initiate the behaviour | Prompt the person to experiment and self-initiate (new) target behaviour that could be fun and enjoyable, and which is experienced as a positive challenge, an opportunity for learning or personal expression, and/or is associated with skill development, all of which provide experiential/immediate positive reinforcement. | All sessions were conducted with the help of fun games to learn by playing. For instance, the identification of sugar content in common foods and beverages. Moreover, detailed information on opportunities and facilities for physical activity participation was provided, for instance, ‘Recreational games are organised in this park in the afternoons. |
| Relatedness-support techniques | | |
| MBCT 6. Acknowledge and respect perspectives and feelings | Provide statements of empathy and acknowledgement of the person’s perspective, conflicts/ambivalence, distress and negative affect (fear, confusion, etc.) and also expression of positive feelings when communicating with the client (concerning the target behaviour, treatment, or other related matters). | The research team member present during the school-based intervention was empathetic, supportive, and friendly to the students. The students were also allowed to privately express their fears and concerns. |
| MBCT 7. Encourage the asking of questions | Prompt the client to pose questions regarding their goals/behavioural progress. | At the beginning of the sessions, students verbalised their progress and the achievement of their health goals. For instance, students identified the healthy goals they had achieved to the rest of their peers. |
| MBCT 8. Show unconditional regard | Express positive support regardless of success or failure. | Throughout the school-based intervention it was explained that the criterion for success was to make progress with respect to themselves and not with respect to others. For instance, one physical activity goal for them was to increase their physical activity time from the previous week. Social comparisons between students were always avoided. |
| MBCT 9. Demonstrate/show interest in the person | Provide statements of interest and curiosity about the person’s thoughts and perceptions, personal history and background, social context, life events, and so on, when communicating. | During the intervention, students were asked about their opinion about the programme, their feelings, as well as other aspects unrelated to the school-based intervention, such as their academic studies, social context, leisure-time interests, and so on. For instance, at the beginning of all the sessions, they were asked how they were doing and how they felt. |
| MBCT 10. Use empathic listening | Demonstrate attentiveness to the client’s responses (e.g., stay silent to allow the person to complete sentences), and provide reflective and summary statements when appropriate (directed at affect or content) when communicating. Prompt permission to provide new information, guidance, or advice. | Attention was paid to student responses to videos and discussions of this school-based intervention. For instance, a short video called ‘What will your last 10 years look like?’ was discussed by the children. The teacher stimulated the discussion and tried to get the students to find the answers on their own. |
| MBCT 11. Providing opportunities for ongoing support | Offer the person an appropriate venue and means to contact you in the event of difficulties or questions during the behaviour change process. | A member of the research team was present at the school during the two and a half months in which the school-based intervention was developed. Although the tutorial action plan was held once a week, this member was available to resolve all kinds of doubts and questions for the students related to the intervention. For instance, at recess, students showed the researcher and teachers the fruit they had brought, and they reinforced this behaviour. |
| MBCT 12. Prompt identification and seek available social support | Prompt identification of sources of support for behaviour change (if relevant), acknowledge challenges in recruiting adequate support (autonomous vs controlled), and promote effective ways of seeking positive support. | All the challenges proposed in the healthy card could be developed with a family member and/or friend, with the objective of promoting the social support of these significant others. For instance, ride a bike with his or her family on the weekend. |
| Competence-support techniques | | |
| MBCT 13. Address obstacles for change | Prompt identification of likely barriers to behaviour change, based on previous attempts, and explore how to overcome them (e.g. what may have worked in the past). | Barriers to energy balance-related behaviours were identified. For instance, ‘What barriers do you have to not engaging in physical activity?’ Different solutions to increase physical activity were proposed by the students. |
| MBCT 14. Clarify expectations | Prompt statements of client’s own expectations in terms of behaviour change (e.g., identify a clear goal or learning objective), both its experiential elements (process) as well as outcomes. | The main expectations and challenges in terms of behaviour change of the students were identified in order to tailor the school-based intervention design. For instance, most students stated that they wanted to do enjoyable activities and were not concerned about the intensity of the activities. |
| MBCT 15. Assist in setting optimal challenge | Assist in identification of goals that are realistic, meaningful, challenging, and achievable. | Based on the initial assessment of health-related behaviours, each student was asked to identify short-term realistic goals. The researcher and teachers tried to help them adjust them according to what was possible for them. For instance, students chose healthy challenges according to their personal situation. |
| MBCT 16. Offer constructive, clear, and relevant feedback | Provide relevant, tailored, non-evaluative feedback on goal/behavioural progress. | Private and process-focussed feedback was provided during the intervention. For instance, during the Kahoot activity, the teacher offered non-evaluative feedback based on the response of the students. The objective was to improve students' knowledge and awareness of healthy behaviours. |

**Note.** MBCT = Motivation and Behaviour Change Techniques

**Supplementary file 2.**

**Table 1.** Content and main health-related behaviours involved in each session.

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| --- | --- | --- | --- | --- | --- |
| **Session number** | **Description of session contents** | **Energy balance-related behaviours** | | | |
| **Physical activity** | **Screen time** | **Sleep duration** | **(Un)eating diet** |
| 1 | -Paper-and-pencil survey of health-related behaviors (pre-test).  -Introduction of the school-based lifestyle intervention.  -Discussion about children's lifestyle behavior patterns through different photographs of health-risk behaviors and health-related behaviors. | **X** | **X** | **X** | **X** |
| 2 | -Knowledge and awareness about good eating habits and diet recommendations.  -Identification of healthy and unhealthy foods in their daily diet.  -Elaboration and presentation of a poster of Flemish Food Triangle in small-group work.  -Different diet challenges were proposed to improve healthy food consumption.  -Children were provided with nutritional advice in a diptych to take home.  -Using a gamification approach, food intake during school break was evaluated daily. Depending on the quality of the mid-morning lunch and using the colors of the Flemish Food Triangle, students obtained different scores: 4 points (dark green area: fruits, vegetables, unsalted nuts, etc.), 3 points (light green area: vegetable sandwiches, etc.), 2 points (yellow zone: butter, chocolate spread, pate sandwiches, etc.), 1 point (red zone: ultra-processed food, biscuits, cereals, sweets, soft drink consumption, etc. or skipping mid-morning lunch). |  |  |  | **X** |
| 3 | -Reading a story about a child who spent many hours in front of the screens. Once they have finished reading, they must complete a crossword puzzle to obtain the screen time guidelines.  -Knowledge and awareness of screen time and sedentary time guidelines.  -From baseline data, analyses their own screen time: gender and between-day differences (weekday and weekend differences).  -Discuss the main barriers and causes of high screen time.  -Different solutions to reduce screen time were proposed. | **X** | **X** |  |  |
| 4 | -Reviewing diet and screen time recommendations and challenges.  -Knowledge and awareness of sleep duration guidelines.  -Three pilates and yoga postures were taught aimed to learn how to relax.  -Reading a set of healthy lifestyle recommendations and answer several questions about reading.  -Elaboration and presentation of 10 healthy lifestyle advice in small-group work. | **X** | **X** | **X** | **X** |
| 5 | -Discuss the importance to adopt a healthy lifestyle.  -Watching the short video called “What will your last 10 years look like?”. This video compares the last 10 years of life of two older people who have adopted a different lifestyle.  -Consequences of adopting health-risk behaviors.  -Physical, social, and cognitive benefits of physical activity.  -Knowledge and awareness of physical activity guidelines.  -From baseline data, analyze their own physical activity: gender and between-day differences (weekday and weekend differences).  -Discuss the main barriers and causes of physical inactivity.  -Different solutions to adopt an active lifestyle were proposed.  -Detailed information on opportunities and facilities for physical activity was provided.  -A Physical Activity Triangle infographic to promote more physical activity and less sitting was presented. | **X** | **X** | **X** | **X** |
| 6 | -Discuss the role and benefits of school break.  -A list of physical activities to be conducted at school break were discussed by the children.  -Empower children in the design of physical activities for school breaks.  -Oral presentation of the proposed physical activities (explanation, material, place, day/s of the week, etc.).  -Poster design for school break activities. | **X** |  |  |  |
| 7 | -What is sugar? Sugar types and (free and added sugar) and recommendations.  -Adverse health effects of high added sugar consumption.  -Identification of sugar content in common foods and beverages.  -Benefits of drinking water.  -Photographs of the sugar content in common foods and beverages were hung on the school walls.  -[Experiment to see how much sugar is in a can of coke.](https://www.thoughtco.com/see-how-much-sugar-is-in-a-soda-607825)  -Use of ‘Yuka’ mobile app to identify the nutritional quality of food and to know healthy food substitutions. |  |  |  | **X** |
| 8 | -Reviewing the 24-hour movement guidelines and diet recommendations.  -Explanation of the importance of an optimal balance between different 24-hour movement behaviors.  -Strategies to manage their time effectively.  -A healthy card with 15 physical activities, screen time, sleep duration, and diet challenges were proposed. | **X** | **X** | **X** | **X** |
| 9 | -In small-group work, game-based learning about the contents of this school-based lifestyle intervention was carried out through Kahoot. Questions, where at least one group had failed, were reviewed to strengthen the health-related knowledge.  -Evaluation of the health-related behaviors challenges to obtain a healthy card. | **X** | **X** | **X** | **X** |
| 10 | -Summarize of the main conclusions of this program.  -Photographic exhibition with the different actions carried out in this school-based lifestyle intervention.  -Certificates of participation were provided to children.  -Paper-and-pencil survey of health-related behaviors (post-test). | **X** | **X** | **X** | **X** |
| **Total lessons** |  | **8** | **7** | **6** | **7** |