Is our Youth Cycling to Health? Results From the Netherlands’ 2016 Report Card on Physical Activity for Children and Youth

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Background: The Active Healthy Kids the Netherlands (AHKN) Report Card consolidates and translates research and assesses how the Netherlands is being responsible in providing physical activity (PA) opportunities for children and youth (<18 years). The primary aim of this article is to summarize the results of the 2016 AHKN Report Card. Methods: Nine indicators were graded using the Active Healthy Kids Global Alliance report card development process, which includes a synthesis of the best available research, surveillance, policy and practice findings, and expert consensus. Results: Grades assigned were: Overall Physical Activity Levels, D; Organized Sport Participation, B; Active Play, B; Active Transportation, A; Sedentary Behaviors, C; Family and Peers, B; School, C; Community and the Built Environment, A; Government Strategies and Investments, INC. Conclusions: Sedentary behavior and overall PA levels are not meeting current guidelines. However, the Dutch youth behaviors in sports, active transportation, and active play are satisfactory. Several modifiable factors of influence might be enhanced to improve these indicators or at least prevent regression. Although Dutch children accumulate a lot of daily PA through cycling, it is not enough to meet the current national PA guidelines of 60 minutes of moderate-to-vigorous PA per day.

Keywords: child health, health communication, knowledge translation, exercise, play, public health
Methods

The Principal Investigator and Project Manager formed a research work group (RWG) together with 6 researchers of the University Medical Centre Utrecht, Utrecht University, and Utrecht University of Applied Sciences. The RWG made a first inventory of the possible data sources by knowledge of available databases and by searches in scientific databases and websites of useful institutes. In addition, an inventory for themes and relevant experts and/or organizations was made. Subsequently, an expert group was formed with involvement of the Dutch situation. The research evidence was compared against the benchmarks of the indicators from the Canadian framework to the RWG and expert group had to define the definitions and adjust national representativeness and consecutive measurement years. The grades for the different levels of school were aggregated to grade was based on the percentage of children meeting the Dutch Physical Activity Guideline was used to grade the indicator.

For the evaluation of the indicators, data of the period 2010 up to 2014 has been included. When available, we used data from national surveys conducted by Statistics Netherlands (CBS) and RIVM as primary sources. If these sources could not provide the required data to grade an indicator, data from other (partial) governmental sources were used (eg, TNO, Netherlands Institute for Social Research (SCP), Mulier Institute) or data from nongovernmental organizations (eg, Jantje Beton).

Benchmarks

For the indicator Overall Physical Activity, the percentage of children meeting the Dutch Physical Activity Guideline was used to grade the indicator. The grading was based on data from the National Health Survey (NHS). The NHS is part of the Lifestyle Monitor, in which data regarding several lifestyle themes are gathered annually. For Organized Sport Participation, consensus was reached to use data regarding engaging in sports on a weekly basis. In the NHS, respondents were asked their participation in sports in a regular week in the past months and it was assumed that this was representative for sports participation in the entire year.

For Active Transportation it was decided that grading should be based on the percentage of children who use active transportation (walking or cycling) to and from school and/or work, at least 3 times a week. For both indicators, data from the NHS were used. Active Play was assessed by the amount of time that children and youth engaged in unstructured/unorganized active outside play in the last week. Data from TNO Monitor Convenant Healthy Weight (MCGG) were used. TNO includes a continuous national survey called Accidents and Movement in the Netherlands (OBiN). OBiN monitors sports injuries, sports participation, exercise behavior and sedentary behavior. The MCGG used several OBiN questions in an additional module in which determinants of exercise, eating behavior and sports participation were collected in a subsample. No national survey that incorporated active play was performed in the period 2010 to 2014. Two hours of screen time was used as benchmark to grade Sedentary Behavior, using OBiN data for the grading. The indicator Family and Peers was graded based on multiple studies and findings. Data of the NHS, MCGG regarding family and peers next to data of a Mulier Institute study, in which the central theme was sports participation in children in poverty. Results of the ENERGY-project were used as well. The aim of the study was to explore differences in weight status and energy balance behaviors according to ethnic background among adolescents across Europe.

The indicator Community and the Built Environment was graded based on national survey data from CBS and SCP called Leisure Time Omnibus (VTO). Three aspects were part of the grade: 1) there are enough sports facilities available in my neighborhood; 2) I have sufficient choice of various sports in my neighborhood; and 3) there are sufficient sidewalks, cycle tracks, or other public areas to be physical active in my neighborhood. In this survey, sports and cultural behavior and participation was the area of research. The indicator School was divided in grades for Primary School, Secondary School, and Secondary Vocational Education. The grades for the different levels of school were aggregated to generate an overall School grade. For each type of education the grade was based on active school policies, duration of physical education (PE) and the presence of a specialist PE educator. Not all aspects concerning school were integrated in national surveys, thus a combination of data from SCP, Mulier Institute and DSP-group was used. For Secondary Vocational Education, it was decided to follow the national advice of the government and Secondary Vocational Education board: the students have to meet the 5% norm. This means that 5% of the contact time (education time minus the internship time) exists of exercise and sport. This corresponds to 60 minutes of exercise per week, at times that the student does not do his/her internship.

For Government Strategies and Investments, the RWG and experts decided that this indicator could not be graded. There were no clear and well-founded benchmarks or criteria to state that policy is effective or which amount of investments is acceptable. Multiple documents of the government were considered, for example the Educational Agenda for sports, PA and healthy lifestyles in and around school, National nota health policy letter and evaluation reports of the Mulier Institute concerning several policies and programs. For nongovernmental, websites and annual reports from several national foundations were considered.

The RWG and experts met to evaluate the evidence for each indicator and discuss the proposed grading. In an earlier meeting it was already determined that data from primary sources were to be used for the grading of the indicators.

The grade for each indicator was based on the percentage of children and youth meeting a defined benchmark: A was 81% to 100%; B was 61% to 80%; C was 41% to 60%, D was 21% to 40%; F was 0% to 20%; INC was incomplete data. This grading system is according to the Canadian Report card framework. During the grading meeting it was decided not to use the designation of a plus (+) or minus sign (-) next to the grade, because consensus was reached that it was unclear which cut-off points and/or which and how many factors results in a plus or minus sign.
Results

The 2016 Dutch Report Card is the first assessment of PA behaviors, setting, and sources of influence and government strategies and investments. The grades are summarized in Table 1.

Overall Physical Activity Levels: D

The grade for Overall Physical Activity levels was a D. For the period 2010 to 2014, an average of 29% of Dutch 12- to 17-year-olds met the Dutch PA guideline of Healthy Physical Activity (NNGB).14,15 So, more than two-thirds of Dutch children were not involved in at least moderate PA for at least 60 minutes a day. The most recent data of 2014 showed that 28% of the Dutch children met this guideline, showing that this indicator is fairly stable in recent years. Except for 2011, boys did meet the guideline more often than girls (average 33% boys versus 25% girls).14,15

Organized Sport Participation: B

Organized Sport Participation was graded a B. In 2012 to 2014, 74% of the 12- to 17-year-old children reported engaging in sport weekly14,15 (see Methods for criteria weekly athlete). Sports participation was quite consistent over recent years and there was only a minor difference in sport participation between boys and girls (74% versus 68% respectively in 2014).14,15 Data of NOC*NSF showed that 31.8% of the organized sport memberships are from youth (0 to 17 years).16

Active Play: B

Active Play was graded a B, because 70% of the Dutch 4- to 11-year-old children reported that they played outside in the past week in the afterschool period.8 Data of MCGG was used to grade this indicator. Results of a study in the South of the Netherlands showed that 22% of 10- to 12-year-old primary school children, reported that they spend for 3 or more hours per day playing outside, and 21% played 2 to 3 hours per day outside.17 These data were self-reported by children.17 A small study initiated by Jantje Beton (a foundation to promote outdoor play) showed that boys play ‘more often outside’ than girls (21% versus 14%).18

Table 1 Grades According to Physical Activity Indicator in the Netherlands’ 2016 Report Card on Physical Activity for Children and Youth

<table>
<thead>
<tr>
<th>Indicator</th>
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<td>Overall Physical Activity Levels</td>
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<td>Active Play</td>
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<td>Sedentary Behaviors</td>
<td>C</td>
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<td>Family and Peers</td>
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<tr>
<td>School</td>
<td>C</td>
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<tr>
<td>Community and the Built Environment</td>
<td>A</td>
</tr>
<tr>
<td>Government Strategies and Investments</td>
<td>INC</td>
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Note. The grade boundaries for each indicator are: A is 81% to 100%; B is 61% to 80%; C is 41% to 60%, D is 21% to 40%; F is 0% to 20%; INC is Incomplete data.

Active Transportation: A

Active Transportation was graded an A, because NHS data showed that 79% of the 12- to 17-year-old children cycled 3 or more days to or from school or work and 17% of the 12- to 17-year-old children walked 3 or more days to or from school or work.14,15 The median minutes per week for cycling to or from school or work was 150 minutes per week. The duration was the same for the age ranges 12–14 and 15–17 years and no differences were observed between genders.14,15

Sedentary Behaviors: C

Data from the TNO MCGG survey reported that 57% of 4- to 11-year-old children sit in front of a computer or watch TV less than 2 hours a day.8 Therefore, the overall grade for Sedentary Behavior was a C. When evaluating the sitting and lying patterns of children during school, 4- to 11-year-olds sit/lie on average of 7.5 hours per day and 12- to 17-year-olds sit/lie even more, 9.9 hours per day. On weekend days children of both age groups sit/lie also a large part of the day (4.2 hours for the youngest and 5.4 hours for the adolescents).2

Family and Peers: B

The overall grade for Family and Peers was a B. The indicator grade was based on assembling several findings and some of these findings will be listed here. Research from the Mulier Institute regarding poverty and sports participation in children showed that 88.6% of the children live in a family with sufficient financial resources to participate in sports and cultural activities.9 However, 77% of children in prosperous families have a sports club membership, compared with only 44% of the children in poor families.9 In total, 53% of the parents (single or with a partner) met the Dutch PA guideline (to engage in at least 30 minutes of moderate PA for at least 5 days a week) in 2014.19 For peers and friends of 4- to 11-year-old children it was found that 57% exercised very often, while in the older age group, results of TNO MCGG showed that 40% of the friends exercised very often.8 According to parents, 62% of their 4- to 11-year-old children were stimulated to exercise more by their friends. This was 57% in the 12- to 17-year-old age group.8

School: C

The overall School grade was a C. Regarding the policies and infrastructure benchmark, some findings will be listed on which the grade was based. In primary school for example, 79% of the PE teachers agreed (totally) with the statement that an annual planning for PE is present at their school20 and 67% of the PE specialists indicated that their school works with a student tracking system.20 The Mulier Institute assessed several aspects of PE (eg, policy, infrastructure, duration of the lessons) in Secondary School.21 Their results showed 98% of the section leaders of PE reported the presence of an annual planning for PE, 75% of the secondary schools collaborated with a sports club and 55% collaborated with the municipality.21 The DSP group monitored on behalf of the Secondary Vocational Education board, Secondary Vocational schools from 2006 to 2014, to assess how exercise and sports were integrated in the curriculum.13 Their results showed Secondary Vocational Education schools have integrated sports and exercise in their policies for sectors, clusters and domains and 91% of these schools have explicit attention for the health themes sports and exercise.13 Regarding the benchmark
of the presence of a PE specialist for the PE lessons, it was shown that in Primary School a PE specialist teacher to provide PE was only used in 25% of the schools for groups 3 to 8. For groups 1 and 2, only in 5% a PE specialist teacher was present. As dictated by governmental regulations, students in Secondary Schools are taught by a PE specialist teacher. When Secondary Vocational Education schools offered PE, in 92% of these schools a PE specialist provides the PE lessons.

Regarding the duration of the PE lessons, in primary school an average of 48% of the students received 120 minutes or more PE per week. Over the years, 85% of the Secondary School students had ≥ 120 minutes PE per week. Of the SVE students, only 12% met the 5% policy.

Community and the Built Environment: A

For this indicator, the data of VTO showed that 82% of 12- to 18-year-olds was satisfied with the sports and activity opportunities in their neighborhood. This percentage is a combination of 3 aspects: 1) there are enough sports facilities available in my neighborhood, 2) I have sufficient choice of various sports in my neighborhood, and 3) there are sufficient sidewalks, cycle tracks, or other public areas to be physically active in my neighborhood (see methods for more details). Hence, an overall A grade was assigned. A small study initiated by Jantje Beton showed that 6- to 8-year-olds perceived sidewalks and squares in their neighborhood as boring; in addition 46% of the 9- to 12-year-old children agreed with this.

Government Strategies and Investments: INC

The indicator Government Strategies and Investments was graded as INC due to the absence of clear, well-established criteria of efficacy for this indicator. The Dutch Government strives to offer suitable sport and exercise opportunities, which are safe and accessible. The Ministry of Health, Welfare and Sports funds activities that include: exercise close to home, accessible opportunities, customized and reliable information, and an information infrastructure to help create resilient youth and to make healthy choices easy and stimulate collaborations with the public-private sector. In this policy, community sport coaches have an important role. Community sport coaches are individuals who operate to increase a connection between sectors as school, community and sport organizations. Their purpose is to create more opportunities for PA and to organize sports activities in neighborhoods. Many community grants are available (eg, Impulse Community Schools, Sports and Culture).

From 2012 to 2016, the Educational Agenda for sports, PA and healthy lifestyles in and around schools was developed by the Ministry of Health Welfare and Sports in collaboration with the Ministry of Education, Culture and Science. School boards and managements were stimulated to conduct their policies according to a ‘Healthy School’ strategy. For this agenda €4 million was available for the period of 4 years.

In terms of nongovernmental initiatives, several foundations and funding agencies exist. For example, Youth Sports Foundation, funded by the private sector and donations, aims to ensure that children of low socioeconomic status have opportunities to participate in sports and support them in sporting attributes which are needed. Moreover, there are foundations (Johan Cruyff Foundation, Krajicek Foundation, YALP & Marc Lammers), which offer special playgrounds/sporting fields to promote PA and promote outdoor play opportunities, also in problem areas.

In the short overview previously described, it is shown that many (non)governmental programs and initiatives and interventions are present. Unfortunately, in not all programs or initiatives clear goals and indicators are present and consequent monitoring is sometimes lacking. In addition validation of indicators should also be addressed. Therefore, it is currently not possible to give a valid judgment about success or effectiveness for (non)governmental strategies and investments.

Figure 1 illustrates the cover story for the Dutch Report Card on Physical Activity for Children and Youth.

Discussion

The aim of the present article was to provide an overview of the methods and results of the first Dutch Report Card. The results showed that sedentary behavior and overall PA levels of Dutch youth are not meeting current guidelines. However, behaviors in sports, active transportation and active play are satisfactory.

The Dutch use the bike as a way of transportation, but also for sports and exercise. Bike-use fits well in an active lifestyle and it could be the case that cycling is responsible for a large part of the
daily PA in Dutch youth. It is estimated that Dutch people have on average a 6-month longer life expectancy attributable to bicycle use. It has been shown that correlations exist between active transport behavior and the attractiveness of the school neighborhood environment, the presence of parks (or trails in parks) and (traffic) safety. Questions that arise are, can the current built environment still serve the many young cyclists next to the increasingly busy traffic? Is it still safe for children to cycle? Are sports accommodations easy accessible and not too far away from home to use the bicycle? Do the schools have sufficient space to accommodate bike parking? Trends suggest that more parents, because of traffic unsafety, drive their children to and from school even for small distances. The question is what can convince parents to stop driving their children and instead use the bicycle? Answers to all these questions can provide knowledge about this phenomenon of a bicycling nation and if the Dutch are indeed cycling to health. Therefore, we have the selected the bicycle usage in children as the cover story. Moreover, our results show that many Dutch children use the bike as their way of transportation and it was demonstrated that active transportation is responsible for a large part of school related PA in Dutch youth. To improve the current situation and to make sure that children will remain using their bikes to go to school or friends, traffic safety and construction of the neighborhood seems important aspects to address.

Even though the overall grading of the community and the built environment is an A, still some children reported that playgrounds are not always easily accessible. They have to cross difficult junctions or busy streets to reach play areas. Also parents reported that they would not allow their children to cycle by themselves to sports clubs or school because the routes are too dangerous. Thus, when developing new neighborhoods attention should be drawn to make it more cycle friendly and accessible in which concerns of end users should be incorporated in the design.

The school seems to have an important role in the overall PA patterns of the Dutch children. At school, almost all children can be reached. Schools could attempt to find strategies to make the PE lessons more active and/or that the moderate- to vigorous active time is more efficient. Research has shown that less than half of the time of the PE lessons is of moderate-to-vigorous intensity in both primary and secondary school. Next, during PE lessons or during recess, attention should also go to the children who are not already active. Girls are currently a bit neglected in this respect. PE specialists, community coaches or people from sports clubs can all work together to address this. Furthermore, more collaboration between schools, sports clubs and other organizations should be arranged. Sharing facilities will be beneficial for all parties.

Organized sports (concerning sport clubs) has an important role in PA patterns for youth as well. There is a wide range of sports clubs for organized sport. Eighty percent of Dutch children are member of one of the 25,000 local sports clubs, kids having 1 training or more per week and a game a week (competition). Training/coaching is given mostly by volunteers, which makes it questionable if moderate-to-vigorous active time is reached during training. Organized sport could cooperate more with schools, PE teachers and professional trainers in sport.

Finally, the behavior of parents seems to have a great influence on the activity and sedentary behaviors of their children. As the results showed, with a B for family, Dutch parents are not doing it that bad currently. However, despite the fact that the children aren’t exercising enough, about a half of the parents don’t believe it is necessary for their children to exercise or sport more. Trends also suggest that more children are brought by car to school and sports. Not all parents are aware that their sports behavior, TV viewing behavior or active transport behavior is related to the behavior of their children. Consequently, social marketing campaigns, strategies and interventions to increase the knowledge of parents are encouraged and hopefully this will result in more parents who are active with their kids in sport of active play and more parents who cycle together with their children to play grounds or school. If successful, we can maintain the active culture for Dutch youth.

Taking all grades of the indicators into account, it is remarkably that an average of 29% of the Dutch 12- to 17-year-old youth meets the Dutch PA guidelines, while the grades for nearly all other indicators which contribute to overall PA are higher. Plausible is that the used benchmarks are not distinguishing enough. Duration of an activity (related to the indicators active play, active transportation, organized sport) are currently not included and should perhaps be incorporated next to frequency. It would be perhaps even better, to include the intensity of the several activity behaviors as well.

For now, we can state that a large amount of the Dutch youth cycle frequently, however it might be that the average duration of a cycle trip is getting shorter. For organized sport for example, it could be that of the activity of a weekly athlete, a minor part exists of at least moderate intensity. When this knowledge is present, the behaviors which contribute to overall PA will be better understood and more evidence-informed and effective strategies and policies can be developed to attack the physical inactivity crisis.

Strengths and Limitations

This is the first Dutch Report Card that provides a robust overview over a period of 5 years about how the Netherlands is doing, regarding PA opportunities, overall PA levels and the role of sources of influences. Strength of the Dutch Report Card is the many data from nationwide surveys and databases. Furthermore, the participation of many experts and organizations in this area make that all important data sources were identified and included. Unfortunately, not all indicators are integrated in national surveys yet (eg, active play, family and peers, sedentary behaviors). Thus for some indicators, we had to use research with smaller sample sizes and less well representative samples. RIVM has stated that some aspects are integrated already in the 2016 national survey. Hopefully, the other indicators are integrated in future national surveys as well.

The respondents of the national surveys used here (2010–2014) only included 12- to 17-year-old children, thus data of the younger age group are unfortunately lacking. Fortunately, the age group of 4- to 11-year-olds will be included since the 2016 survey.

For active play, sedentary behavior and government strategies still no established criteria for the definition, measurements and benchmark or its relationship with health exist. As for sedentary behavior, only for screen time guidelines are present but not yet for sitting and lying behavior. All this needs further national and international discussion and consensus.

The Health Council of the Netherlands (commissioned by the Minister of Health, Welfare and Sports) evaluates already and if necessary adjusts the current PA and sedentary guidelines based on recent scientific insights.

Self-report and/or parent-report was applied in almost all surveys, however, the (possible) discrepancy for these subjective methods and objective measurements is under discussion. Thus, this needs further scientific exploration as well.
Conclusion

This first Dutch Report Card indicates that the sedentary behavior and overall PA levels of the Dutch youth, are not meeting current guidelines. Fortunately, behaviors in sports, active transportation and active play are satisfactory. Several modifiable factors may be targeted to improve these indicators or at least prevent regression. Turning sitting time into non-sedentary time might be a feasible way of improving activity levels of Dutch children. Although Dutch children accumulate a lot of daily PA through cycling, it is not enough to meet the current national PA guidelines of 60 minutes of moderate-to-vigorous PA per day. Cycling is important, however cycling alone is not enough for sufficient levels of PA.

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