Results From Qatar's 2016 Active Healthy Kids Report Card on Physical Activity for Children and Youth

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Background: The first Qatar Active Healthy Kids (QAHK) Report Card was developed in 2015–2016. It is a synthesis of the available evidence on physical activity in children and youth in the state of Qatar—an assessment of the state of the nation. The report card is important for future physical activity advocacy, policy, and program development. **Methods:** The QAHK Report Card was inspired by the Active Healthy Kids Scotland 2013 Report Card. The methodology used in Scotland's report card was adapted for Qatar. A Working Group identified indicators for physical activity and related health behaviors, and evaluated the available data on these indicators. The card grades were determined by the percentage of children meeting guidelines or recommendations. **Results:** The 2016 QAHK Report Card consisted of 9 indicators: 6 Physical Activity and Health Behaviors and Outcomes, and 3 Settings and Influences on these health behaviors and outcomes. The indicator National Policy, Strategy, and Investment was assigned the highest grade (*B*). Four indicators were assigned *D* grades: Sedentary Behavior, Dietary Habits, Organized Sports Participation, and Family and Peer Influence. Physical Activity and Obesity were both graded *F*. Two indicators could not be graded due to insufficient data and/or absence of a recommendation: Active and Outdoor Play, and Community and School Influence. **Conclusion:** The QAHK Report Card identified weaknesses and gaps in the evidence on physical activity and health in children and youth in Qatar. The quality of evidence was poor for some indicators, with some data collection methods of limited validity and reliability, or only available for a limited age range, so the grades are best estimates of the current situation in Qatar. Future surveys and research using objective physical activity measures will support the development of a second QAHK Report Card by 2018.

Keywords: sedentary behavior, obesity, diet

Physical activity enhances children's health and prevents many diseases that may impact their lives.¹ Modern children spend much of their free time in sedentary activities, such as watching TV or playing video and computer games. Physical activity (PA), particularly moderate-to-vigorous physical activity (MVPA), protects from many diseases including diabetes and cardiovascular disease.² According to the World Health Organization, a lack of PA leads to obesity, one of the major risk factors for morbidity in developing countries.³

In the State of Qatar, the prevalence of overweight and obesity among children and youth is increasing dramatically.⁴ Evidence on secular trends in PA is limited, but the epidemics of obesity and diabetes suggest that PA levels have probably declined in Qatar, as is true elsewhere in the Arabian Gulf.⁵ Promotion of active healthy living and prevention of obesity in children requires addressing not only the health behaviors of individuals, but also the social, economic, and cultural factors that influence these health behaviors.⁶

Research, surveillance, and policy initiatives on PA in children are now advanced in many countries.⁷ For example, The Active Healthy Kids organization in Scotland (www.activehealthykids-scotland.co.uk) was formed in 2013, inspired by the Active Healthy

Kids Canada report card (www.activehealthykids.ca) established for over 10 years.⁸ Establishing an Active Healthy Kids Report Card in Qatar is important to increase awareness about PA and sedentary behavior among children and youth, and to facilitate development of strategies that can impact these behaviors, as in other countries.⁹ The first QAHK Report Card was therefore developed in 2015–2016, providing a synthesis of the available evidence on PA among children and youth in the state of Qatar. The main aim of this first QAHK Report Card was to inform the nation on how active our children and youth are. The main aims of this articles are to describe the process of developing the QAHK Report Card and to discuss the results obtained from this process.

Methods

The 2016 QAHK Report Card was developed based on the method used for the 2013 Active Healthy Kids Scotland Report Card,^{10,11} which was in turn based on a Canadian model.^{12,13} The report card was created by a Research Working Group (RWG) at Aspetar Orthopedic and Sport Medicine Hospital (the authors of the current manuscript), in collaboration with a Stakeholder Group consisting of 5 members, one from each of 5 well-established academic and health institutions in Qatar: Weill Cornell Medicine-Qatar, Qatar University, Hamad Medical Corporation, The Supreme Council of Health, and The Primary Health Care Corporation. The RWG conducted a comprehensive review of published and unpublished literature in Qatar in 2015, and then met with stakeholders to discuss the information obtained (eg, to identify any evidence which

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was missed in the review; see Figure 1). The Stakeholder Group was responsible for identifying additional data and data sources as required, and for reviewing the draft grades produced by the RWG. The QAHK Report Card was funded by Aspetar Orthopedic and Sport Medicine Hospital, a major sub unit of Aspire Zone foundation in Qatar (www.aspetar.com). The funder aims to support evidence-based healthy life style programs and PA and health initiatives for the community in Qatar.

Nine indicators were used for the QAHK Report Card, consisting of both individual PA and health behaviors and outcomes (Physical Activity, Sedentary Behavior, Active and Outdoor Play, Obesity, Dietary Habits, and Participation in Organized Sport), and settings and influences on these health behaviors and outcomes (Family and Peer Influence, Community and School, National Policy/Strategy/Investment). The 9 QAHK Report Card indicators were graded based on multiple sources of data available for Qatar which had been collected between 2004 and 2014. Between January and June 2015 the RWG developed a template which described the indicators in detail, listed the type of data which would be eligible for each indicator, and then searched published and unpublished sources of data. Work with the stakeholders identified additional relevant data for some of the indicators. From July to September 2015 the RWG reviewed the data critically, decided on eligibility of the data, and discussed the draft assignment of grades for each indicator. Discussion with the Stakeholder Group led to the final agreed grades for each indicator at the end of 2015. During 2016 the activity of the RWG concentrated on planning dissemination of the report card, which included the graphic design, cover image, theme, printing, and distribution. The card will be launched in December 2016.

Report card grades were assigned by comparing point prevalence estimates for health behaviors against the percentage of children and youth meeting the relevant PA ‘benchmarks’ (ie, guidelines

or recommendations): A: 80% to 100%; B: 60% to 79%; C: 40% to 59%; D: 20 to 39; F: 0% to 19%; INC: incomplete data and evidence. Grades were also assigned a ‘-’ if they were getting worse over time and/or if there was evidence of significant inequality (eg, by gender or socioeconomic differences), and a ‘+’ if they were improving over time and/or there was evidence of little or no inequality.

The Overall Physical Activity grade was based on data from the Qatar National Survey, the GSSHS.¹⁴ The benchmark for grading was relatively straightforward with the presence of Qatar National Physical Activity Guidelines¹⁵ and international recommendations of a minimum of 60 minutes of MVPA every day for school-age children and youth.

The RWG’s judgment about the eligibility of evidence was based on the validity of the measurements used to obtain the data for that indicator. Since grades are based on prevalence estimates, it is important that the measures used to derive the grades are not subject to large biases (eg, overestimates or underestimates of the prevalence of children and youth meeting PA recommendations). Some Qatar data were excluded from the report card grading because of high probability of bias, and/or because they provided only a very indirect measure of the indicator in question. For example, there was no evidence that the measure of Active and Outdoor Play gives the true prevalence of this indicator and so it was considered ineligible for grading. Final decisions on eligibility of data for grading were made by the RWG in consultation with the Stakeholder Group. For all indicators national, regional, or international evidence-based recommendations were used as benchmarks for grading where these were available. For some indicators no recommendations were available, and so grading was difficult (eg, Active and Outdoor Play).

The RWG agreed on the cover page and themes of the QAHK Report Card after discussion with the Stakeholder Group. The cover page (see Figure 2) and themes were intended to deliver important messages from the QAHK Report Card: PA among children and

Figure 1 — Qatar Active Healthy Kids (QAHK) report work plan.

Figure 2 — Front cover of the 2016 Qatar Active Healthy Kids Report Card.

youth seems to be suffering due to the availability of screen-based behavior, while sport, play, and PA facilities and opportunities are widely available in Qatar.

Results and Discussion

Identification of eligible data and grading of each indicator was based on the methodology described for the Active Healthy Kids Report Cards from Scotland and Canada^{10–13} as noted above. The 2016 QAHK Report Card is the first Qatari Report Card, and it included 9 indicators and their respective grades (Table 1).

The Physical Activity and Health Behaviors and Outcome grades were generally low (*D* and *F* grades). Despite limitations in the methods used to obtain some of the data, as well as limited coverage (eg, typically data collection did not extend across all of

Table 1 Grades According to Physical Activity Indicators in the 2016 Qatar Active Healthy Kids Report Card

Indicator	Grades
Physical Activity	<i>F</i>
Sedentary Behavior	<i>D</i>
Active and Outdoor Play	<i>INC</i>
Obesity	<i>F-</i>
Dietary Habits	<i>D</i>
Organized Sports Participation	<i>D</i>
Family and Peer Influence	<i>D</i>
Community and School	<i>INC</i>
National Policy, Strategy, and Investment	<i>B</i>

Note. The grade for each indicator is based on the percentage of children and youth meeting a defined benchmark: *A* is 80% to 100%, *B* is 60% to 79%, *C* is 40% to 59%, *D* is 20% to 39%, *F* is <20%, and *INC* is incomplete data.

childhood and adolescence), the evidence available generally suggested relatively low levels of PA. Active and Outdoor Play could not be graded because of a lack of acceptable Qatari data and the absence of a recommendation as noted above. Obesity was graded as *F-*, which reflects the high and increasing prevalence of obesity among children and youth in Qatar.

Grading the Settings and Influences on Physical Activity and Health indicators was challenging. For the Family and Peer Influence indicator some data suggested a *D* grade, while other data suggested an *F* grade. For the Community and School indicator, evidence on school physical education was identified; but other important data were not currently available on this indicator in Qatar, in particular quantitative information on the built environment such as the availability of parks, play areas, walking routes, and play and sport facilities. As a result this indicator had to be graded *INC*. For the National Policy, Strategy, and Investment indicator, there was clear evidence of a great deal of recent governmental activity, including the recent development of national policies on PA and health which included a focus on children and youth. This indicator was given a grade of *B*, reflecting the presence of excellent new policies, but not a grade of *A*, because of the lack of time and opportunity to evaluate policy implementation and effect.

Physical Activity and Health Behaviors and Outcomes

Overall Physical Activity: *F* The Overall Physical Activity grade (*F*) was based on a national survey (the GSSHS) which used a subjective method that probably had reasonable validity and reliability, but an objective PA measurement should be considered for future national surveillance of PA in Qatar. The other elements of the PA recommendations, such as vigorous PA and muscle and bone strengthening activity, are not part of routine surveillance, but are also worth considering for future surveillance of PA and health in Qatar.

Sedentary Behavior: *D* More than 70% of children and adolescents in Qatar reported exposure to recreational screen time for more than 2 hours/day.¹⁴ The benchmark (recommendation)

here is reasonably straightforward so long as we operationalize sedentary behavior as screen time, since there are international as well as Qatari recreational screen time recommendations of no more than 2 hours/day. Other forms of sedentary behavior probably matter (eg, sitting times, breaks in sitting time) but have not yet reached the stage where we have an evidence-based recommendation and there is no evidence on these other sedentary behaviors for children or adolescents in Qatar.

Active and Outdoor Play: INC. The cover story for the QAHK Report Card was the Active and Outdoor Play indicator (Figure 2), and the possibility that screen time was displacing this behavior. The rationale was that active and outdoor play provides an opportunity for increasing PA and reducing recreational screen time. The challenge in grading this indicator was the absence of evidence based recommendations for this behavior. Some countries took the view that the point prevalence of parent reported outdoor play could be matched against the report card grading scheme (eg, if 80% of parents reported that their child regularly played outdoors this was considered as an A in a few countries). In Scotland, the authors of the 2013 Active Healthy Kids Report Card felt that active and outdoor play should be the norm, common and frequent, and felt unable to grade in the absence of a recommendation and they did not feel that using a point prevalence was useful. Around 69% of children were reported to have played outdoors in the past week in Scotland, but the authors of the Scottish report card did not feel they could grade this as a B, so assigned an incomplete grade. In the 2014 Active Healthy Kids Canada Report Card, mean weekly reported time playing outdoors was 4.1 hours and they graded that as incomplete.

Many countries have no surveillance of active and outdoor play, and for most of the nations now producing report cards it is accepted that grading is problematic in the absence of a recommendation. However, even when grades can't be assigned, the report card can, in the future, make a useful contribution by examining changes in the indicator over time.

Obesity: F-. The Obesity indicator was graded F-. The benchmark (recommendation) here is problematic as it is not clear what the prevalence should be, and many countries which produce Active Healthy Kids Report Cards (eg, Canada) do not grade obesity. Some stakeholders involved in the Active Healthy Kids Scotland Report Card felt that the point prevalence of 'nonobesity' should provide the grade (eg, if obesity prevalence is 'only' 20% then this means 80% are nonobese and so the grade should be A).¹¹ For a variety of reasons, point prevalence now for child and adolescent obesity is the highest in history and still increasing. As point prevalence is conservative when based on BMI, using the point prevalence in this way was not considered appropriate and we felt that an F grade was justifiable (eg, because 21% of all children and adolescents and 31% of adolescent girls had a waist circumference >98th centile).¹² Including health outcomes such as obesity in a report card which is based on health behaviors does cause problems, but in Qatar and in many other countries, childhood and adolescent obesity was considered too important to ignore, and highly relevant to the behaviors being graded in the card.

Dietary Habits: D. Diet (intakes of sugar, total and saturated fat, fruit and vegetables) is one of the health behaviors with relatively straightforward benchmarking (national and international recommendations in relation to these dietary behaviors). Dietary guidelines were recently published by the Qatar Supreme Council of Health.¹⁶ Therefore, including these dietary behaviors in the report

card was considered to be very useful by the RWG and Stakeholder Group and should make a valuable addition to report card in future.

Organized Sports Participation: D. According to the GSSH national survey in Qatar,¹⁴ around 30% of Qatari children participated in at least 1 organized sport throughout the year. There are no evidence-based recommendations for the Organized Sport Participation indicator, and so grading was problematic. Point prevalence estimates of some form of sports participation are available in many countries, but these don't easily translate into report card grades. For example, in Scotland the national survey reported that 69% of 2- to 15-year-olds participated in sport in the previous week.¹¹ The authors of the 2013 Active Healthy Kids Scotland Report Card did not feel that this merited a grade; a minority view among Scottish stakeholders was that 69% is a B grade, but that makes the assumption that participating in sport once in the previous week is sufficient.¹¹ In the 2014 Active Healthy Kids Canada report card the equivalent point prevalence estimates were 75% do 'some sport' and '46% do some sport all year round,' which was graded C.¹³ We note also that even when grades can't be assigned the report card can, in the future, make a useful contribution by examining changes in the behavior over time. In Qatar there is a National Sport Day, and the presence of organizations dedicated to sport participation (including the Aspire Zone foundation and Qatar Olympic initiatives) these support the grade of D.

Settings and Influences on Physical Activity and Health

Family and Peer Influence: D. The Family and Peer Influence indicator was graded D based on adult data which were considered by the RWG and Stakeholder Group as adequate proxies for family influence. Grading of data based on families and peer influence has been problematic in many countries because surveillance of influence is lacking. For example, in Scotland, as in most other countries, adult survey data on PA, obesity, and diet, were used as proxies for family influence, and they used point prevalence data on compliance with recommendations for PA and diet in adults to derive the grade: low PA, poor diet, and high and increasing prevalence of overweight and obesity all contributed to our D grade for Family and Peer Influence in Qatar. In contrast to Scotland and Qatar, Canadian public health surveillance questionnaires contain specific questions directed to parents on their financial support for child PA, and on the extent to which they model PA for their children. These questions make it possible to grade this indicator in the Active Healthy Kids Report Card Canada.¹³ High financial support for sport/activity, but poor/little modeling contributed to a C grade in Canada in 2014, for example.¹³

Community and School: INC. Grading of the Community and School Influence indicator, or the Community the Built Environment indicator, used in report cards in some other countries requires data and evidence-based recommendations. The premise used by most countries which produced report cards was that the entire population of children and adolescents should have access to places to play/be active which are safe. In Qatar, the concept of universal physical education at schools is well-established and is the subject of policy effort (see below), but the existing national surveys did not focus on availability, accessibility, and perceived safety of spaces for play/PA. Therefore we considered the grade as INC. In the 2013 Active Healthy Kids Scotland Report Card this indicator was operationalized as perceived safety, access, and availability of places

to play and it was graded based on point prevalence estimates of these indicators from national surveys.¹¹ The Canadian surveillance data are available for similar indicators and with similar prevalence estimates were also graded *B* in the 2014 card.¹³

National Policy, Strategy, and Investment: B. National Policy, Strategy, and Investment was the indicator with highest grade (*B*) of the 9 indicators in the first QAHK card, and this reflects the fact that PA and health of children and youth are major concerns in Qatar. National policies and strategies have been developed very recently, and evidence on implementation and evaluation of these policies and strategies should be available in future. Grading is also challenging for this indicator. In Qatar as in most countries, including Scotland and Canada, what was graded was the *presence* of national strategies and investments in relation to child/adolescent PA and health. Grades were lowered where there was doubt about whether policies were being implemented in Scotland. In both Scotland and Canada there are numerous national policies, strategies, and targets in relation to child/adolescent PA and health which might have been graded *A*, but in both countries evidence that the policies are being implemented successfully is lacking and so the indicator was graded *B* in Scotland and *C* in Canada.

Strength and Limitations

The strength of this work is the participation of a group of experts in the field and their valuable input in the identification and critical assessment of the most up to date evidence on child and youth PA in Qatar. The major limitations associated with the first report card in Qatar include the inadequacy of some information on PA (eg, dependence on subjective measures of PA, surveillance for a number of indicators which did not always include all age groups); and the fact that data used in grading may not reflect the current situation in Qatar (for a number of indicators data collected as far back as 2004 had to be used, in the absence of more recent evidence). The complete lack of evidence on some indicators is also a weakness (eg, direct evidence of Parent and Peer Influence), but it is hoped that identifying this weakness will lead to the measurement of 'missing' indicators in Qatar in future.

Conclusions

This is the first QAHK Report Card and it provided a concise and critical summary of the available evidence on PA levels and their determinants in children and youth. The report is important as the basis of for future advocacy around PA and health, and should also be used for policy and program development in future. It is planned that the QAHK report card will stimulate research on the indicators which received low grades, and on the indicators graded *INC* due to lack of evidence. In addition, the first card will be used for making international comparisons as part of the sixth International Congress of Physical Activity and Public Health at the end of 2016. The longer-term plan is to publish the second QAHK report card in 2018, and to develop a more detailed long-form version of the report card describing the data available and decisions made in relation to the grades for each indicator.

References

1. Giugliano R, Carneiro E. Factors associated with obesity in school children. *J Pediatr (Rio J)*. 2004;80(1):17–22. [PubMed doi:10.2223/JPED.1128](#)
2. EMRO. *Report of the Regional Director*. Cairo: EMRO; 2006.
3. World Health Organization. *Obesity: Preventing and Managing the Global Epidemic. Report of a WHO Consultation on Obesity*. Geneva: World Health Organization; 1998.
4. Bener A, Kamal AA. Growth patterns of Qatari school children and adolescents aged 6–18 years. *J Health Popul Nutr*. 2005;23(3):250–258. [PubMed](#)
5. Alkhateib M, Elzoghbi M, Saleh M, Qotba H. Influence of sedentary lifestyle on body weight in Qatari school children *J Saudi Soc Food Nutr*. 2013;1/2.
6. Webber LS, Catellier DJ, Lytle LA, et al; TAAG Collaborative Research Group. Promoting physical activity in middle school girls: trial of activity for adolescent girls. *Am J Prev Med*. 2008;34:173–184. [PubMed doi:10.1016/j.amepre.2007.11.018](#)
7. Tremblay MS, Gray CE, Akinroye K, et al. Physical activity of children: a global matrix of grades comparing 15 countries related to the physical activity of children. *J Phys Act Health*. 2014;11(suppl.1):S113–S125. [PubMed doi:10.1123/jpah.2014-0177](#)
8. Gray CE, Barnes JD, Cowie Bonne JC, et al. The 2014 Active Healthy Kids Canada 10th Anniversary Report Card on Physical Activity for Children and Youth. *J Phys Act Health*. 2014;11(suppl.1):S26–S32. [PubMed doi:10.1123/jpah.2014-0178](#)
9. Colley RC, Brownrigg M, Tremblay MS. The Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth. *Health Promot Pract*. 2012;13(3):320–330. [PubMed doi:10.1177/1524839911432929](#)
10. Active Healthy Kids Scotland. The 2013 and 2016 Active Healthy Kids Scotland Report Cards (Short Form). Glasgow: Active Healthy Kids Scotland. www.activehealthykidsscotland.co.uk.
11. Reilly JJ, Dick S, McNeill G, Tremblay MS. Results from the Scottish Report Card on Physical Activity for Children and Youth. *J Phys Act Health*. 2014;11(suppl 1):s93–s97. [PubMed doi:10.1123/jpah.2014-0183](#)
12. Barnes JD, Colley RC, Tremblay MS. Results from the Active Healthy Kids Canada 2011 Report Card on Physical Activity for Children and Youth. *Appl Physiol Nutr Metab*. 2012;37:793–797. [PubMed doi:10.1139/h2012-033](#)
13. Active Healthy Kids Canada. *Are We Driving Our Kids to Unhealthy Habits? The 2013 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth*. Toronto: Active Healthy Kids Canada; 2013.
14. GSSHS, National survey, 2011. http://www.who.int/chp/gshs/Qatar_GSHS_FS_2011.pdf?ua=1. Accessed November 7, 2016.
15. Qatar National Physical Activity Guidelines, <http://namat.qa/publications.aspx#>.
16. Qatar National Dietary guidelines, SCH, 2015. <http://www.fao.org/3/a-az908e.pdf>. Accessed November 7, 2016.