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Title: Measuring Health Promotion in Sports Club Settings : A Modified Delphi Study

Year: 2020

Version: Accepted version (Final draft)

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Please cite the original version:

Johnson, S., Vuillemin, A., Geidne, S., Kokko, S., Epstein, J., & Van Hoye, A. (2020). Measuring Health Promotion in Sports Club Settings : A Modified Delphi Study. *Health Education and Behavior*, 47(1), 78-90. <https://doi.org/10.1177/1090198119889098>

Measuring Health Promotion in Sports Club Settings: A Modified Delphi Study

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1 **Abstract**

2 Settings-based approaches have become an increasing health promotion focus since the World
3 Health Organization's 1986 Ottawa Charter. While schools, cities and prisons have
4 implemented this approach, its development within sports environments is recent. Sports are a
5 growing leisure-time activity, requiring validated tools to measure health promotion. This
6 study's aim was to develop an internationally validated measurement tool of sports club's
7 health promotion activities. It is grounded in the settings-based approach and builds on theory
8 from previous works expanding their context and knowledge. An online, 3-round international
9 Delphi study was conducted, inviting experts in sports and health fields to participate in
10 designing the tool. Round one created a collaborative list of items, round two validated items
11 based on relevance, importance and feasibility and the final round classified items into one
12 determinant category: social, cultural, environmental or economic. Panelists (69) from 13
13 countries participated, creating a final list of 62 items at 3 organizational levels; the sports
14 club level included 23 items, the management level retained 20 items and the coaching level
15 contained 19 items. This study provides several innovations; 1- it applies the settings-based
16 approach to health promotion within sports clubs, 2- it defines each level of a sports club
17 (general sports club, management, coaching) and determinants (social, cultural,
18 environmental, economic) within levels, 3- the tool measures perceptions of health promotion
19 activities by categorizing items into determinants at each level and 4- validation was made by
20 an international expert panel. These advancements allow further research on promoting health
21 within sports clubs.

22

23 **Keywords:** modified Delphi study; sports clubs; health promotion; settings-based approach;
24 health determinants; socio-ecological approach

1 **Introduction**

2 According to the World Health Organization (WHO), Health Promotion (HP) is “the process
3 of enabling people to increase control over and to improve their health”. To develop this
4 process, the Ottawa Charter (World Health Organization, 1986) pointed out the importance of
5 a settings-based approach in health promotion based on the idea that “change is not solely
6 focused on individuals and their health problems, but that changes are generated in
7 organizations and communities to ensure the development of environments that support
8 population-wide changes in health-related behavior” (Whitelaw et al., 2001). The objective is
9 to go beyond a behaviorally focused approach and move toward a socio-ecological approach,
10 by working on cultural, social, economic and environmental determinants of health (Glanz &
11 Bishop, 2010). Multiple settings, such as schools (Rees et al., 2006), hospitals (Johnson &
12 Baum, 2001), workplaces (Noblet, 2003) and cities (de Leeuw, 2009) have already used this
13 framework when implementing HP programs. While these settings have merit, the application
14 of the socio-ecological approach has been limited in regard to leisure settings (Fredriksson,
15 Geidne, & Eriksson, 2018).

16 According to the Eurobarometer, in Europe alone, more than 33% of the population plays sports
17 in an organized club (European Commission, 2017). Thus, studies have supported the
18 recognition of sport clubs as health promoting settings (Kokko, 2014). Grounded in the socio-
19 ecological approach, the health promoting sport club includes the four determinants of health
20 (cultural, social, environmental, economic) and applies these at three organizational levels:
21 macro- (overall policies and orientations of club activities), meso- (activities of club
22 officials/management) and the micro-level (coaches’ activities in guiding, altering or
23 supporting actions of club members) (Kokko, 2014). As the application of the settings-based
24 model into sport clubs is recent, evaluation tools to measure HP in sports clubs are rare and
25 primarily focused on interviews and self-reported questionnaires (Casey, Harvey, Eime, &

1 Payne, 2011). In addition, a recent literature review on health promotion interventions in sports
2 clubs found that the majority of studies did not use validated measures, but rather non-validated,
3 qualitative measurements (Geidne et al., 2019). Furthermore, those that have been validated are
4 culturally specific (Casey et al., 2011; Kokko et al., 2009). To our knowledge, two Delphi
5 studies at a national level to identify indicators of health promoting sport clubs, one national
6 Delphi study aimed at policies, practices and capacity and one international Delphi study
7 focusing on social responsibility in sports clubs have been completed.

8 The first was based on the Ottawa Charter and the settings-based approach with the aim of
9 identifying standards for health promoting sports clubs. (Kokko, Kannas, & Villberg, 2006)
10 Consensus on 22 HP standards was reached by 27 Finnish experts. Standards were classified
11 into 4 categories: policy, ideology, practice and environment. The Health Promoting Sport
12 Clubs index (HPSC) was then validated among a Finnish sample of clubs, officials and coaches,
13 which yielded the HPSC index (Kokko, Kannas, & Villberg, 2009). This measurement tool has
14 been used at the official, coach and youth sports participant level in Finland (Kokko, Kannas,
15 Villberg, & Ormshaw, 2011; Kokko, Villberg, & Kannas, 2015), the official level in Belgium
16 (Meganck, Scheerder, Thibaut, & Seghers, 2015) and a modified version was tested at the club
17 (macro) level in Ireland (Lane, Murphy, Donohoe, & Regan, 2017) and the coaches level in
18 France (Van Hoye, Heuzé, Meganck, Seghers, & Sarrazin, 2018; Van Hoye, Sarrazin, Heuzé,
19 & Kokko, 2015).

20 A second Delphi study was conducted in Australia to determine aspects of sports clubs
21 necessary for developing healthy sporting environments for children (Kelly et al., 2014).
22 Involving 46 experts who rated standards relating to seven health promoting themes: healthy
23 eating, sponsorship and fundraising, alcohol management, smoke-free environment, sun
24 protection and social inclusion. Key HP areas were added from the Finnish Delphi study

1 including; smoking and tobacco use, healthy eating and social inclusion (Kokko et al., 2006).
2 These standards have yet to be directly used or tested among sports clubs.

3 A third Delphi study was primarily concerned with the social responsibility of sports clubs and
4 how health promotion fits into this framework. (Robertson, Eime, & Westerbeek, 2018) It
5 included a panel of 56 experts (sport management journal academics and national sport
6 organization managers) from 14 countries. Consensus identified 33 items among 7 social
7 responsibility dimensions: human rights, labor practices, economic, governance, community
8 development, fair operating practices and environment. These items have not been tested or
9 validated within sports clubs to produce a measurement tool.

10 The Health Promotion in Sport Assessment Tool (HP-SAT) captures sport related policies,
11 practices and organizational capacity across events and sports clubs, by questioning state sport
12 organizations (Casey et al., 2011), not sports clubs directly. Validation was done using a test-
13 retest reliability method among 22 sport state organizations in Australia. It included a general
14 organizational capacity section and the following dimensions: smoke-free environment,
15 responsible serving of alcohol, sun protection, healthy eating, injury prevention, club
16 management, welcoming and inclusive, violence in sport and other. This tool was based on both
17 a Delphi study and the HPSC index (Kokko et al., 2006, 2009).

18 Around the world, sports clubs are diverse and health behaviors vary between countries (e.g.,
19 sun protection, nutrition factors) thus, indicators relevant to diverse cultures and sport systems
20 are required (Kokko et al., 2016). Furthermore, approaches to health promoting sports clubs
21 vary, including approaches based on the setting (Kokko, Selänne, et al., 2015), capacity
22 building (Casey, Harvey, Eime, & Payne, 2012), social responsibility (Robertson et al., 2018)
23 or specific behaviors (Kelly et al., 2014) which should be considered when building
24 measurement indicators. Several limitations of previous works were identified: 1- mostly non-

1 validated, qualitative tools exist therefore no instrument rooted in a theory-based framework
2 has been fully validated, 2- several culturally specific tools were found yet, no international
3 consensus centered on health promotion measurement in sports clubs and 3- the existing
4 qualitative tools do not take into account the many determinants of health (social, cultural,
5 environmental, economic), each classified at the three operational levels of sports clubs. The
6 aim of this study is to reach an international consensus to create a measurement tool grounded
7 in the settings-based approach at the macro- (club), meso- (management) and micro- (coach)
8 levels of health promotion in sports clubs. This tool is for use by management, coaches and
9 sports participants to evaluate perceptions of health promotion orientation, guidance and
10 activities within their club.

11 **Methods**

12 Study design

13 A Modified Delphi method was chosen to elicit expert opinion on items to include at each level,
14 within each determinant. The Delphi method is described as a method for structuring group
15 communications, so that the process is effective in allowing a group of experts to reach
16 consensus regarding a complex problem (Okoli & Pawlowski, 2004). This method has the
17 advantage of collecting experts' perspectives without confronting them directly thereby
18 keeping responses anonymous. The Delphi method consists of establishing rounds of questions
19 where each round builds on the previous rounds' responses. A series of 3-rounds was conducted
20 which included stages of item selection, generation, modification and ranking.

21 Panelists

22 Sixty-nine experts were contacted, having one of three profiles (academic, sport club
23 director/management, sport/health institution), at least 5 years of experience within their field
24 and a working knowledge of English. Location and profession were taken into account to ensure

1 diversity and international representation. Panelists were chosen from members of the Sports
2 Clubs for Health group (SCforH), the Health Enhancing Physical Activity (HEPA) Europe
3 working group and snowballing from the researchers.

4 Preparation

5 The research team convened twice to review the existing tools, compile indicators, detect
6 similarities and reformulate some items. Initial items were chosen based on a literature review
7 (Geidne et al., 2019), the three previously mentioned Delphi studies (Kelly et al., 2014; Kokko
8 et al., 2006; Robertson et al., 2018) and the two validated measurement tools: the HPSC index
9 (Kokko et al., 2009) and the HP-SAT scale (Casey et al., 2011). Items from the adapted versions
10 of the HPSC index were also included (Kokko et al., 2011; Kokko, Selänne, et al., 2015; Van
11 Hoye, Heuzé, Van den Broucke, & Sarrazin, 2016). The research team clarified and refined the
12 definitions of each sports club level (macro, meso, micro) and the determinants within each
13 level (cultural, social, environmental, economic) based on the work of Kokko (Kokko, 2014).

14 Round 1

15 The first round helped to select and propose initial items and classify them at the three levels
16 (macro, meso, micro). Respondents were given the opportunity to delete and/or reformulate
17 items in order to establish a stable list. Panelists used three criteria for item selection: relevance
18 (how relevant is the item in regard to the concept in sports clubs?), feasibility (how
19 feasible/doable is it for sports clubs?) and importance (how important is this item in regard to
20 other priorities?). Experts were able to duplicate items from one organizational level to another
21 (i.e., macro-, meso-, micro-), to reformulate, modify, clarify and add supplemental information
22 such as explanations.

23 Round 2

1 The second round, included new suggested items and reformulated items from round 1.
2 Panelists were asked to validate the proposed items and to delete or add new items if they had
3 suggestions or felt items were problematic, duplicated or complicated. In addition to the three
4 criteria from round 1, panelists rated items based on sports culture within their country. Items
5 with a 70% agreement were established on the list.

6 Round 3

7 Researchers organized items into a specific determinant at each level to propose to panelists
8 (Figure 1). Panelists were asked to rank each item within the designated determinant per level.
9 Item ranking was based on feasibility, importance and cultural relevance. If an item was not
10 considered necessary, they had the option to leave it out of the ranking. The aim was to
11 prioritize between 5 – 10 items per determinant with a minimum of 3 per category.

12 Data collection

13 An email explaining the study's purpose, procedures and a consent clause was sent requesting
14 participation. Surveys were sent in English to all 69 experts in each round regardless of previous
15 round participation via the web-based software (limesurvey.com). Rounds were expected to
16 take 45 minutes to complete. Panelists were given two to three weeks to complete each round;
17 non-respondents were sent an email reminder after 7 days.

18 Analysis

19 Consensus for round 1 and 2 was reached with 70% expert agreement on item relevance,
20 feasibility and importance. Satisfactory consensus was met with panelists mentioning that they
21 'Do Rather' to 'Totally' agree (on a six-point Likert scale from 'Do Not Agree at All' to 'Totally
22 Agree') with the proposition on each the three criteria. Strong consensus was described as any
23 coded response that received a mean score of ≥ 4 and an interquartile range (IQR) ≤ 1 , moderate

1 consensus to any mean score ≥ 3.75 , or if an IRQ ≤ 1.25 (von der Gracht, 2012). After round 2,
2 a qualitative analysis of the items classified as not relevant to panelist's culture was carried out
3 to decide to exclude, keep or reformulate the item. During round 3 analysis, a weighted-point
4 value based on number of items per organizational level and determinant was used to rank items
5 for each panelist's answer. Depending on the number of items per determinant (e.g. 7), 7 points
6 were awarded for the highest ranked item, 6 points for the second, 5 points for the third item
7 and so forth. Scores were then averaged per item and the five highest scores within each
8 determinant were retained. If there were less than 5 items in a determinant, researchers retained
9 them all for the final questionnaire.

10 **Results**

11 Item levels with determinant classification, reformulations and agreement percentages for
12 feasibility and cultural relevance can be seen in *Table 1*. A flow chart of the number of panelists
13 participating per country in each round can be seen in Figure 2.

14 In the first round, the response rate included 41 experts (59%) accessing and 31 (45%)
15 answering the questionnaire. Males ($n = 16$) outnumbered females ($n = 12$) while 3 respondents
16 did not specify gender. Panelists were from 9 different countries across Europe and Australia
17 with a balance of academics ($n = 12$), non-governmental sports organization (NGOs) members
18 ($n = 11$), as well as others in sports and health related sectors ($n = 6$). The first round included
19 31 items at the macro, 11 at the meso and 17 at the micro level. All items were considered
20 relevant, feasible and important to HP at the meso and micro levels. The only items to fall below
21 70% were at the macro level; 2 in feasibility and 2 in importance which were subsequently
22 reformulated. Panelists added two items at the macro level. Duplicated items included 18 from
23 both the macro to the meso level and from macro to the micro level, 2 items were duplicated
24 from the meso to the macro level and 4 items from the meso to the micro level, as well as 2

1 from the micro to the meso level and 3 from the micro to the macro level. After duplication and
2 reformulation of items by the research team, the second round consisted of 38 items at the macro
3 level, 27 at the meso level and 26 at the micro level.

4 Twenty-four experts (35%, 14 males, 8 females, 2 not specified) from 11 countries across
5 Europe, Australia and Canada responded to the second round. The panelists were comprised of
6 9 academics, 9 NGO members and 4 others from the sports related sector. Of these panelists,
7 14 completed the first round and 10 were new to the second round. After the second round, 5
8 items at the macro level, 4 items at the meso level and 3 items at the micro level were deleted
9 as they did not reach 70% consensus for feasibility or cultural relevance. These items were
10 mostly centered on evaluation of HP actions, selecting coaches in regard to HP qualifications,
11 providing materials (kits, packs, tools) to support coaches' HP actions, including participants
12 in the decision making process and balancing time spent on sport activities with other daily
13 activities. The lowest consensus received was at the micro level for the feasibility an item
14 receiving a rating at only 56.2%. The other two lowest scores were at the macro level again
15 with feasibility only achieving 61.5%.

16 The third round required experts to order and rank the items. At each level, panelists arranged
17 items within the four determinants of health promoting sports clubs in order of highest priority.
18 Nineteen (28%) experts completed the survey (8 males and 6 females; 5 did not specify gender)
19 from 6 countries across Northern Europe and Australia, comprising 6 academics, 4 NGO
20 employees and 5 others in the sports sector.

21 At the end of the third round, the macro level contained 23 items; 7 cultural determinants, 6
22 social determinants, 5 environmental determinants and 5 economic determinants. The meso
23 level included 20 items; 6 cultural determinants, 5 social determinants, 5 environmental
24 determinants and 4 economic determinants. The micro level had 19 items; 6 cultural

1 determinants, 5 social determinants, 4 environmental determinants and 4 economic
2 determinants. The majority of items dropped (10) were at the macro level, most from the
3 cultural and environmental determinants. Due to the lack of participation from North America,
4 Asia and Africa, an e-mail was sent to 8 experts from these countries requesting their validation
5 on the final list of items. Two North American academics provided validation. The final list,
6 divided by sports club level and categorized into their respective determinant, can be seen in
7 *Table 2*.

8 **Discussion**

9 A Delphi method with 3-rounds was used to achieve international consensus from 13
10 countries. The final tool encompassed 62 total items: 23 at the macro, 20 at the meso and 19
11 at the micro level. During round 1 and 2, ratings were based on feasibility, importance and
12 relevance. In both these rounds, the feasibility indicator received the lowest consensus. Many
13 panelists felt items were important and relevant for HP but not feasible, especially at the
14 macro and micro levels. In comparison to other settings, such as schools which have
15 curriculums and paid employees, sports clubs are often run by volunteers with limited
16 budgets, viewing their primary objective as sports performance (Geidne, Quennerstedt, &
17 Eriksson, 2013; Kokko et al., 2009; Van Hoye et al., 2016). This point reinforces results from
18 a previous literature review showing that the settings-based approach is rarely implemented
19 within sports clubs (Geidne et al., 2019). Another strength of this study lies in the
20 development of a tool with cultural applicability in many sport systems, as broad variations
21 have been noticed in previous works (Casey et al., 2011; Kelly et al., 2014; Kokko et al.,
22 2016) and suggestions have been made for wider diversity in regard to geographical reach
23 (Kokko et al., 2016). Therefore, round 2 specifically incorporated a rating of cultural
24 relevance. Several items fell below the 70% agreement level in this area, for example the
25 item: 'My sports club ensures the balance between sport activities and participants' other

1 daily activities is considered in coaching practice' was duplicated at all three levels but not
2 found to be culturally relevance at any level. This may further demonstrate cultural
3 differences. In addition, one of the lowest agreed upon items for health promotion relevance
4 was in regard to financing: 'The sports club ensures that health promotion activities are being
5 properly resourced (e.g. staffing, financial summaries, highlights or case study reports)'.
6 Sports clubs are funded in different ways depending on the country therefore, they may
7 consider financing health promotion as the duty of their governing body while the club
8 typically targets increasing participation rates (Eime, Payne, & Harvey, 2008). Primary
9 directives must be kept in mind when encouraging sports clubs to promote health.

10 Interestingly, one of the lowest ranking items in importance had to do with offering flexible
11 membership options, which is frequently cited as a barrier to sport club participation
12 (Somerset & Hoare, 2018). If flexible membership options were offered in more clubs, this
13 might have the effect of attracting new members. This demonstrates the difference in
14 perceptions between levels; managers may not have the impression that membership options
15 are a high priority however sports participants may perceive this as paramount.

16 Current research has centered on the sports club as an entity (macro level) (Kokko et al.,
17 2016), whereas this measurement tool is based on 3-levels (management, coaches and sports
18 participants); offering the ability to compare perceptions of sports participants to those of their
19 coaches and likewise comparisons from coaches to management. Previous studies have shown
20 that interventions at multiple levels are more effective (Jackson et al., 2006) because actions
21 at one level are often dependent upon the policies and guidance of higher levels (Kokko,
22 2014). For example, at the macro level, the highest ranked item for importance and relevance
23 was: 'My sports club's regulations include a written section on well-being and/or health
24 promotion and/or health education and/or healthy lifestyle'. This item directly links to one of
25 the highest ranked items for importance at the micro level, 'My coach(es) follow(s) sports

1 club's health promotion regulations and policies'. Because each level addresses the levels
2 below, (coaches and volunteers answer the macro and meso level) if no written policies exist
3 or they are not expressed to the coaches from the management level, HP efforts are difficult to
4 realize. The addition of determinants at each level displays the complexity of the relationship
5 between individuals and the sports club environment. Determinants indicate areas for sports
6 clubs to focus on within each level for future planning.

7 Although other tools exist, this study has created a comprehensive tool incorporating multiple
8 components of measuring current health promotion within sports clubs. By considering health
9 determinants, it can better guide stakeholders in creating policies and action plans to impact
10 clubs at each organizational level.

11 Limitations

12 This study provides a first step towards an internationally developed measurement tool for
13 assessing health promoting sports clubs, but some limitations must be acknowledged.

14 Although experts from each part of the world were invited to participate in each round, not all
15 countries responded, meaning this tool might not be applicable everywhere in the world. A
16 second limitation exists regarding the panelists that chose to participate in the study. Their
17 views may be different from those that declined participation therefore, the final item list may
18 not fully represent experts in both the HP and sports club fields. In order to minimize this
19 limitation, one final email was sent out to the initial 69 experts requesting comments on the
20 final list of items. Only two return emails were received; one from a Canadian academic
21 expert and one from an American academic.

22 Implications for Practice and Future Research

23 Many researchers and government agencies have called for innovative settings to promote
24 health (Geidne et al., 2019; Kokko et al., 2016; World Health Organization, 1986) a tool such

1 as this can be a first step to include sports clubs. Previous research has demonstrated a link
2 between health promotion, positive sport experience and perceived health thus, increased
3 development to promote health within sports clubs is needed (Van Hoye et al., 2016, 2015).
4 This international Delphi study reached consensus after 3-rounds on the most important,
5 feasible and relevant items to monitor health promoting sports clubs. By measuring social,
6 cultural, environmental and economic determinants of health at three levels, this is a more
7 comprehensive measurement tool for comparing health promotion perceptions between sports
8 participants, coaches and management. Several practical implications can be taken from the
9 development of this tool: 1- allow comparisons of participants', coaches' and management
10 perceptions of health promotion done within sports clubs, 2- highlight areas for improvement
11 within each determinant per level and 3- shed light on the capacity of sports organizations to
12 implement and monitor health promotion policies and practices. Once the Delphi study was
13 completed, the measurement tool was translated from English into French with a classic
14 double translation procedure. The tools have been tested for comprehension and the next step
15 is validation within both an English speaking and French speaking population.
16

1 **References**

- 2 Casey, M., Harvey, J., Eime, R., & Payne, W. (2011). The test-retest reliability of a health
3 promotion assessment tool in sport. *Annals of Leisure Research, 14*(4), 304-324.
4 <https://doi.org/10.1080/11745398.2011.639340>
- 5 de Leeuw, E. (2009). Evidence for Healthy Cities: Reflections on practice, method and
6 theory. *Health Promotion International, 24*(Supplement 1), i19-i36.
7 <https://doi.org/10.1093/heapro/dap052>
- 8 Dooris, M. (2006). Healthy settings: Challenges to generating evidence of effectiveness.
9 *Health Promotion International, 21*(1), 55-65. <https://doi.org/10.1093/heapro/dai030>
- 10 European Commission. (2017). *Eurobarometer Sport and physical activity* (Special N° 472; p.
11 85). Consulté à l'adresse European Commission website:
12 [http://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/Survey/getSurveyDetail/
13 search/physical%20activity/surveyKy/2164](http://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/Survey/getSurveyDetail/search/physical%20activity/surveyKy/2164)
- 14 Fredriksson, I., Geidne, S., & Eriksson, C. (2018). Leisure-time youth centres as health-
15 promoting settings: Experience from multicultural neighbourhoods in Sweden.
16 *Scandinavian Journal of Public Health, 46*(20_suppl), 72-79.
17 <https://doi.org/10.1177/1403494817743900>
- 18 Geidne, S., Kokko, S., Lane, A., Ooms, L., Vuillemin, A., Seghers, J., ... Van Hoya, A.
19 (2019). Health Promotion Interventions in Sports Clubs: Can We Talk About a
20 Setting-Based Approach? A Systematic Mapping Review. *Health Education &
21 Behavior, 1090198119831749*. <https://doi.org/10.1177/1090198119831749>
- 22 Geidne, S., Quennerstedt, M., & Eriksson, C. (2013). The youth sports club as a health-
23 promoting setting: An integrative review of research. *Scandinavian Journal of Public
24 Health, 41*(3), 269-283. <https://doi.org/10.1177/1403494812473204>

1 Glanz, K., & Bishop, D. B. (2010). The Role of Behavioral Science Theory in Development
2 and Implementation of Public Health Interventions. *Annual Review of Public Health*,
3 31(1), 399-418. <https://doi.org/10.1146/annurev.publhealth.012809.103604>

4 Johnson, A., & Baum, F. (2001). Health promoting hospitals: A typology of different
5 organizational approaches to health promotion. *Health Promotion International*, 16(3),
6 281-287. <https://doi.org/10.1093/heapro/16.3.281>

7 Kelly, B., King, L., Bauman, A. E., Baur, L. A., Macniven, R., Chapman, K., & Smith, B. J.
8 (2014). Identifying important and feasible policies and actions for health at
9 community sports clubs: A consensus-generating approach. *Journal of Science and*
10 *Medicine in Sport*, 17(1), 61-66. <https://doi.org/10.1016/j.jsams.2013.02.011>

11 Kokko, S. (2014). Sports clubs as settings for health promotion: Fundamentals and an
12 overview to research. *Scandinavian Journal of Public Health*, 42(15_suppl), 60-65.
13 <https://doi.org/10.1177/1403494814545105>

14 Kokko, S., Donaldson, A., Geidne, S., Seghers, J., Scheerder, J., Meganck, J., ... Kannas, L.
15 (2016). Piecing the puzzle together: Case studies of international research in health-
16 promoting sports clubs. *Global Health Promotion*, 23(1_suppl), 75-84.
17 <https://doi.org/10.1177/1757975915601615>

18 Kokko, S., Kannas, L., & Villberg, J. (2006). The health promoting sports club in Finland--a
19 challenge for the settings-based approach. *Health Promotion International*, 21(3),
20 219-229. <https://doi.org/10.1093/heapro/dal013>

21 Kokko, S., Kannas, L., & Villberg, J. (2009). Health promotion profile of youth sports clubs
22 in Finland: Club officials' and coaches' perceptions. *Health Promotion International*,
23 24(1), 26-35. <https://doi.org/10.1093/heapro/dan040>

- 1 Kokko, S., Kannas, L., Villberg, J., & Ormshaw, M. (2011). Health promotion guidance
2 activity of youth sports clubs. *Health Education, 111*(6), 452-463.
3 <https://doi.org/10.1108/09654281111180454>
- 4 Kokko, S., Selänne, H., Alanko, L., Heinonen, O. J., Korpelainen, R., Savonen, K., ...
5 Parkkari, J. (2015). Health promotion activities of sports clubs and coaches, and health
6 and health behaviours in youth participating in sports clubs: The Health Promoting
7 Sports Club study. *BMJ Open Sport & Exercise Medicine, 1*(1), e000034.
8 <https://doi.org/10.1136/bmjsem-2015-000034>
- 9 Kokko, S., Villberg, J., & Kannas, L. (2015). Health Promotion in Sport Coaching: Coaches
10 and Young Male Athletes' Evaluations on the Health Promotion Activity of Coaches.
11 *International Journal of Sports Science & Coaching, 10*(2-3), 339-352.
12 <https://doi.org/10.1260/1747-9541.10.2-3.339>
- 13 Lane, A., Murphy, N., Donohoe, A., & Regan, C. (2017). Health promotion orientation of
14 GAA sports clubs in Ireland. *Sport in Society, 20*(2), 235-243.
15 <https://doi.org/10.1080/17430437.2016.1173920>
- 16 Meganck, J., Scheerder, J., Thibaut, E., & Seghers, J. (2015). Youth sports clubs' potential as
17 health-promoting setting: Profiles, motives and barriers. *Health Education Journal,*
18 *74*(5), 531-543. <https://doi.org/10.1177/0017896914549486>
- 19 Noblet, A. (2003). Building health promoting work settings: Identifying the relationship
20 between work characteristics and occupational stress in Australia. *Health Promotion*
21 *International, 18*(4), 351-359. <https://doi.org/10.1093/heapro/dag407>
- 22 Okoli, C., & Pawlowski, S. (2004). The Delphi method as a research tool: An example, design
23 considerations and applications. *Information & Management, 42*, 15-29.
24 <https://doi.org/10.1016/j.im.2003.11.002>

- 1 Rees, R., Kavanagh, J., Harden, A., Shepherd, J., Brunton, G., Oliver, S., & Oakley, A.
2 (2006). Young people and physical activity: A systematic review matching their views
3 to effective interventions. *Health Education Research*, 21(6), 806-825.
4 <https://doi.org/10.1093/her/cyl120>
- 5 Robertson, J., Eime, R., & Westerbeek, H. (2018). Community sports clubs: Are they only
6 about playing sport, or do they have broader health promotion and social
7 responsibilities? *Annals of Leisure Research*, 0(0), 1-18.
8 <https://doi.org/10.1080/11745398.2018.1430598>
- 9 Somerset, S., & Hoare, D. J. (2018). Barriers to voluntary participation in sport for children:
10 A systematic review. *BMC Pediatrics*, 18(1), 47. [https://doi.org/10.1186/s12887-018-](https://doi.org/10.1186/s12887-018-1014-1)
11 [1014-1](https://doi.org/10.1186/s12887-018-1014-1)
- 12 Van Hoya, A., Heuzé, J.-P., Meganck, J., Seghers, J., & Sarrazin, P. (2018). Coaches' and
13 players' perceptions of health promotion activities in sport clubs. *Health Education*
14 *Journal*, 77(2), 169-178. <https://doi.org/10.1177/0017896917739445>
- 15 Van Hoya, A., Heuzé, J.-P., Van den Broucke, S., & Sarrazin, P. (2016). Are coaches' health
16 promotion activities beneficial for sport participants? A multilevel analysis. *Journal of*
17 *Science and Medicine in Sport*, 19(12), 1028-1032.
18 <https://doi.org/10.1016/j.jsams.2016.03.002>
- 19 Van Hoya, A., Sarrazin, P., Heuzé, J.-P., & Kokko, S. (2015). Coaches' perceptions of French
20 sports clubs: Health-promotion activities, aims and coach motivation. *Health*
21 *Education Journal*, 74(2), 231-243. <https://doi.org/10.1177/0017896914531510>
- 22 von der Gracht, H. A. (2012). Consensus measurement in Delphi studies. *Technological*
23 *Forecasting and Social Change*, 79(8), 1525-1536.
24 <https://doi.org/10.1016/j.techfore.2012.04.013>

1 Whitelaw, S., Baxendale, A., Bryce, C., MacHardy, L., Young, I., & Witney, E. (2001).
2 Settings' based health promotion: A review. *Health Promotion International*, 16(4),
3 339-354. <https://doi.org/10.1093/heapro/16.4.339>

4 World Health Organization. (1986). WHO | The Ottawa Charter for Health Promotion.
5 Consulté 31 juillet 2018, à l'adresse WHO website:
6 <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/>

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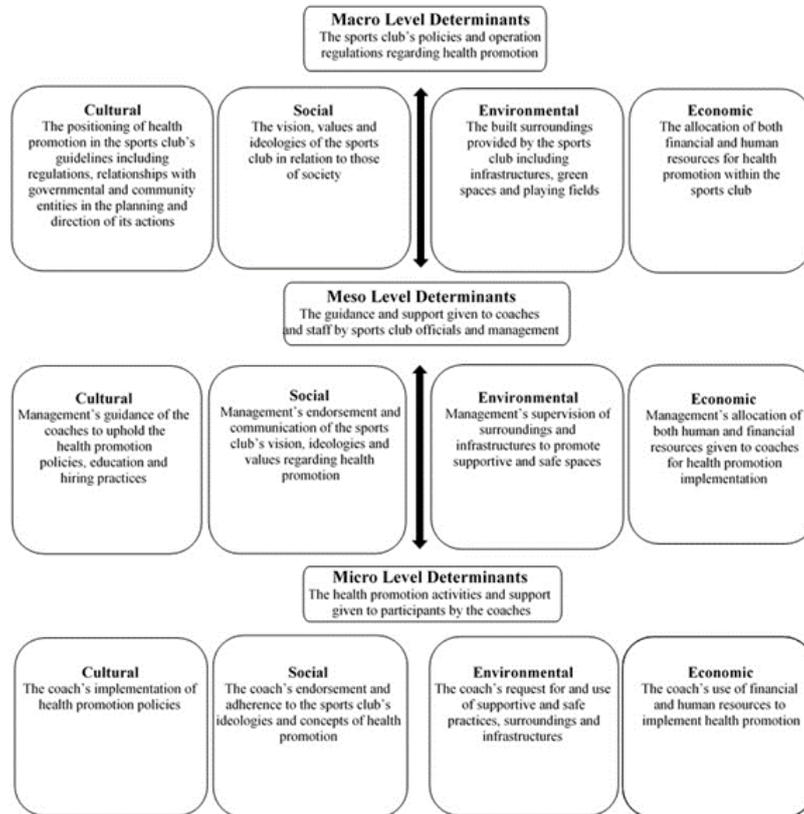
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1 **Figures & Tables:**

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3 **Figure 1: 4 Determinants at 3 Organizational Levels**



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1 **Table 1: Results from the 3 Rounds**

Level	Item	Feasibility %	Cultural relevance %	Determinant
		Round 1	Round 2	Round 3
Macro	**The (My) sports club assures that health education (...) is carried out (in their daily activities)	79%	85%	Cultural
Macro	*The sports club collaborates with external actors to promote health	94%	100%	Economic
Macro	The sports club (has) clearly defines responsibilities and expectations when working with other sectors (transport, health) to promote health	88%	85%	Cultural
Macro	*The sports club (collaborates with) considers that sponsors and sponsorship are made in a health promoting way (banning unhealthy sponsors)	83%	92%	Social
Macro	*The sports club (allocates resources) allows financial support to health promotion actions (e.g. communication systems, administrative support, staff time)	88%	92%	Economic
Macro	*The sports club provides incentives to participate in health promotion actions	80%	78%	
Macro	*The sports club ensures that health promotion activities are being properly resourced (e.g. staffing, financial summaries, highlights or case study reports)	64%	69%	Economic
Macro	*The sports club has staff with designated responsibilities to address the health of participants (e.g. time allocation to attend meetings)	71%	92%	Economic
Macro	The sports club (has staff) ensures that people who are likely to work on sport-related health promotion activities possess sufficient skills	85%	92%	Economic
Macro	The sports club's regulations include a written section on well-being and/or health promotion and/or health education and/or healthy lifestyle	85%	92%	Cultural
Macro	The sports club's regulations include a written section on health behavior (e.g. substance abuse. injury prevention)	100%	100%	Cultural

Macro	The sports club observes health and well-being viewpoints in the sports club's decision-making process	92%	92%	Cultural
Macro	*The sports club's health promotion activities and/or state of well-being are evaluated in the Annual Report	82%	92%	
Macro	The sports club promotes the 'everyone plays' ideology	85%	100%	Social
Macro	The sports club promotes the 'fair play' ideology	100%	100%	Social
Macro	The sports club (explicitly) promotes integration and equity through sport	100%	92%	Social
Macro	*The sports club (acts ethically) cares about ethics	84%	100%	Social
Macro	The sports club (ensures a) assumes its share of responsibility for a safe sports environment (e.g. reviews the sports environment yearly in co-operation with the proprietor)	100%	85%	Environmental
Macro	*The sports club provides equitable access to disadvantaged groups through subsidies. access times. location	75%	92%	Economic
Macro	*The sport club is aware that promoting health improves its credibility and enhances sport participants' experience	90%	92%	Social
Macro	The sports club proposes safe and welcoming infrastructures and changing facilities	100%	92%	Environmental
Macro	The sports club provides signage for health behavior (e.g. non-smoking, violence prevention, warm-up)	90%	85%	Environmental
Macro	The sport club ensures up to date occupational health and safety standards and procedures	83%	85%	Environmental
Macro	*The sports club (ensures) provides evidence that target group have been included in the decision process of health promotion actions	65%	92%	Cultural
Macro	The sports club ensures the appropriate organizational governance frameworks are in place to effectively identify and manage the organization's health promotion objectives	80%	69%	
Macro	*Around the sports club. there is a favourable external environment for promoting health through sport (e.g. the community opinion and policy	73%	92%	Social

	environment support the promotion of health through sport)			
Macro	The sports club contributes to increasing social capital and community cohesion through community Involvement	91%	92%	Cultural
Macro	The sports club disseminates its health promotion actions on the media	82%	92%	Cultural
Macro	The sports club works actively with youth and participant's involvement in the decision making process.	100%	92%	Cultural
Macro	The sports club actively collaborates with parents	100%	92%	
Macro	*The sports club encourages flexible membership options (e.g. pay as you go, social member)	73%	92%	Cultural
Macro	My sports club is recognized as a health promoting setting in my community	N/A	92%	Cultural
Macro	My sports clubs offer adapted sports for people who are insufficiently active.	N/A	100%	Cultural
Macro	*My sports club selects and approves coaches who have accredited health promotion qualifications (healthy lifestyle. first aid. violence/injury prevention)	N/A	92%	Economic
Macro	My sports club provides material (kits, packs, tools) to support coaches' health promotion actions	N/A	69%	Environmental
Macro	My sports club ensures the balance between sport activities and participants' other daily activities is considered in coaching practice	N/A	77%	
Macro	My sports club provides healthy food options during sports club's activities	N/A	85%	Environmental
Macro	My sports club ensures all juvenile events are held in an alcohol-free and tobacco-free environment	N/A	92%	Environmental
Meso	Officials ensure that coaches apply sports clubs' regulations and policies	100%	85%	Cultural
Meso	Officials ensure coaches play a role model for their participants	100%	100%	Social
Meso	Officials provide information to coaches and participants on health behaviors	90%	85%	Cultural

Meso	Officials disseminate and provide guidance to coaches on health promotion actions	80%	92%	Cultural
Meso	*Officials (prefer to hire) select and approve coaches who have accredited health promotion qualifications (first aid, violence/injury prevention, criminal record)	90%	85%	Cultural
Meso	Officials encourage coaches to register for health promotion training	80%	72%	
Meso	*Officials ensure that coaches-athletes conflicts are monitored (and solved)	90%	93%	Cultural
Meso	*Officials acknowledge coaches' health promotion actions (and disseminate them within and outside the sports clubs)	90%	93%	Cultural
Meso	Officials care that training pitches are distributed and scheduled fairly across all teams in the sports clubs	80%	100%	Environmental
Meso	*Officials provide material (kits, packs, tools) (allocate resources) to support coaches' health promotion actions	77%	72%	Economic
Meso	*Officials (encourage) care that coaches engage parents (family members) in their activities	80%	93%	Social
Meso	*Officials of my sports club care about the balance between sport activities and participants' other daily activities	N/A	64%	
Meso	Officials of my sports club provide healthy food options during sports club's activities	N/A	92%	Environmental
Meso	Officials of my sports club ensure all juvenile events are held in an alcohol-free and tobacco-free environment	N/A	92%	Environmental
Meso	Officials of my sports club ensure that health education (knowledge, information) is carried out in their regular activities	N/A	86%	Cultural
Meso	Officials of my sports club solicit external actors to promote health	N/A	93%	Economic
Meso	*Officials of my sports club have designated responsibilities to address health promotion	N/A	64%	
Meso	Officials of my sports club possess sufficient sport-related health promotion skills	N/A	93%	Economic
Meso	*Officials of my sports club provide written plans for coaches' health promotion guidance activities	N/A	79%	

Meso	*Officials evaluate their health promotion activities regularly	N/A	72%	
Meso	Officials of my sports club promote the 'everyone plays' ideology	N/A	92%	Social
Meso	Officials of my sports club promote the 'fair play' ideology	N/A	100%	Social
Meso	Officials of my sports club promote integration and equity through sport	N/A	93%	Social
Meso	Officials of my sports club share responsibilities for a safe environment	N/A	92%	Environmental
Meso	Officials of my sports club ensure attention is paid to disadvantaged groups in their guidance activity	N/A	93%	Social
Meso	*Officials of my sports club are aware that promoting health improves the clubs' credibility and enhances sport participants' experience	N/A	86%	Social
Meso	Officials include the target group in the decision process of health promotion actions	N/A	93%	Cultural
Meso	*Officials work actively with youth and participant's involvement in the decision making process	N/A	79%	Cultural
<hr/>				
Micro	Coaches encourage their players to respect sport regulations	100%	94%	Social
Micro	*Coaches organize lectures or invite external experts as health promotion action (allocate time)	70%	89%	Economic
Micro	*Coaches treat young athletes fairly in training and game (e.g. equitable participation, skills)	100%	94%	
Micro	Coaches care about safety issues during training and games	100%	94%	Environmental
Micro	*Coaches deal with (participant's) failure in a positive way	100%	94%	Social
Micro	*Coaches understand how their own behaviour affects the health behaviour of their participants, especially youth	100%	72%	
Micro	*Coaches encourage social interaction between athletes within and outside practice/competition	100%	72%	
Micro	Coaches talk about health behavior	90%	94%	Cultural
Micro	Coaches consider health promotion also beyond sport performance	80%	83%	Social
Micro	Coaches disseminate information about health behavior to sport participants	90%	88%	Cultural

Micro	*Coaches intervene in case of substance use (alcohol/illicit substance use)	90%	89%	Cultural
Micro	*Coaches care for (and talk about) athlete's nutrition (encourages healthy food options)	80%	78%	Environmental
Micro	*Coaches balance sport activities and participants' other daily activities	100%	79%	
Micro	*Coaches care (ensure) that training is sensible/fun	90%	94%	Cultural
Micro	*Coaches care (ensure) that healthy choices are the easy choices	90%	83%	Cultural
Micro	*Healthy food options are available following (during) sports activities	70%	83%	
Micro	*All juvenile (youth) events are held in an alcohol (and tobacco) free environment	70%	83%	Environmental
Micro	Coaches follow sports club's health promotion regulations and policies	N/A	94%	Cultural
Micro	*Coaches have health promotion qualifications	N/A	67%	
Micro	*Coaches participate in health promotion training	N/A	72%	
Micro	*Coaches have designated responsibilities to address the health promotion	N/A	72%	
Micro	*Coaches evaluate their health promotion activities regularly	N/A	61%	
Micro	Coaches promote the 'everyone plays' ideology	N/A	89%	Social
Micro	Coaches promote the 'fair play' ideology	N/A	100%	Social
Micro	Coaches promote integration and equity through sport	N/A	89%	Social
Micro	Coaches ensure attention is paid to disadvantaged people (groups)	N/A	82%	Social
Micro	*Coaches are aware that promoting health improves the clubs' credibility and enhances sport participants' experience	N/A	78%	
Micro	*Coaches include the target group in the decision process of health promotion actions	N/A	71%	
Micro	*Coaches work actively with youth and participant's involvement in the decision making process	N/A	72%	

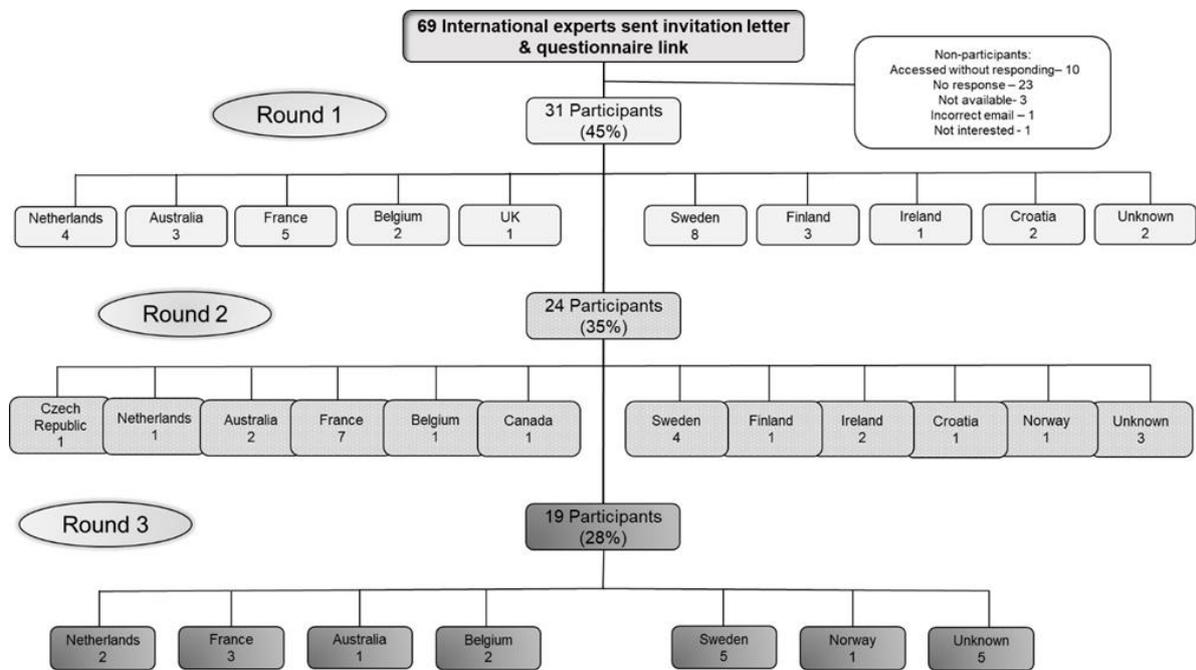
Items in grey were added in round 2

Items with a (*) were reformulated or deleted; reformulated items have added information in () rounds 2 or 3

**'My' replaced 'The' for items at the Macro level in rounds 2 & 3

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Figure 2: 3-Round Expert Panelist Flow Chart



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4 **Table 2: Final Item List**

Level	Determinant	Item
Macro My sports club...	Cultural	<p>...ensures that health education (knowledge, information) is carried out in their daily activities</p> <p>...has defined the roles, responsibilities and expectations when working with other sectors (health, transport...) to promote health</p> <p>...has regulations that include a written section on well-being and/or health promotion and/or health education and/or healthy lifestyle</p> <p>...takes the health and/or well-being of staff and members into account in the sports club's decision-making process</p> <p>...ensures that target groups (e.g. parents, participants...) have been included in the decision making process of health promotion actions</p> <p>...contributes to increasing social capital and/or community cohesion through community involvement</p> <p>...offers flexible membership options or adapted sport or sport for the most inactive people</p>
	Social	<p>...promotes the 'everyone plays' ideology</p> <p>...promotes the 'fair play' ideology</p> <p>...promotes integration and equity through sport</p> <p>...acts ethically and respects moral principles</p> <p>...is aware of the benefits of promoting health (improving its credibility and/or enhancing sport participants' experiences)</p> <p>...is recognized as a health promoting setting in my community</p>
	Environmental	<p>...assumes its share of responsibility for a safe sports environment (e.g. reviews the sports environment yearly, in co-operation with the proprietor)</p> <p>...provides safe infrastructures (e.g. locker room, practice field, indoor spaces...)</p> <p>...provides welcoming infrastructures (e.g. locker room, practice field, indoor spaces...)</p> <p>...provides clean infrastructures (e.g. locker room, practice field, indoor spaces...)</p> <p>...ensures up to date occupational health and safety standards and procedures</p>

Economic

- ...promotes health through collaborations with external actors (e.g., municipalities, experts...)
- ...allocates resources to health promotion actions (e.g. communication systems, administrative support, staff time)
- ...has staff with designated responsibilities to address the health of its members
- ...ensures that staff possess sufficient sport-related health promotion skills
- ...provides equitable access to disadvantaged groups through subsidies, access times, location, etc.

Meso
Managers
of my
sports
club...

Cultural

...ensure that health education (knowledge, information) is carried out in their regular activities

- ...ensure that coaches apply sports clubs' health promotion regulations and policies
- ...include the target group (e.g. parents and participants in the decision process of health promotion actions)
- ...provide guidance to coaches on health promotion actions
- ...prefer to hire coaches with accredited health promotion qualifications (healthy lifestyle, first aid, violence/injury prevention)
- ...club provide information to coaches and participants on health behaviors

Social

- ...promote the 'everyone plays' ideology
- ...promote the 'fair play' ideology
- ...promote integration and equity through sport
- ...are aware of the benefits of promoting health (improving its credibility and/or enhancing sport participants' experiences)
- ...make coaches understand that they are role models for their participants

Environmental

- ...take responsibility for a safe environment
- ...care that training infrastructures are distributed and scheduled fairly across all teams in the sports club
- ...provide healthy food options during sports club activities
- ...ensure all events, that youth attend, are held in a tobacco-free environment
- ...ensure all events, that youth attend, are held in an alcohol-free environment

Economic

- ...solicit external actors to promote health

...allocate human resources for health promotion actions (e.g. communication systems, administrative support, time)
 ...allocate material resources to health promotion actions (e.g. materials, toolkits, signage)
 ...sufficient sport-related health promotion skills

Micro
 My
 coach...

Cultural

...talk(s) about health behavior
 ...follow(s) the sports club's health promotion regulations and policies
 ...disseminate(s) information about health behavior to sport participants
 ...ensure(s) that training is sensible (well thought out, age- sport-level appropriate)
 ...ensure(s) that training is fun
 ...ensure(s) that healthy choices are the easy choices

Social

...promote(s) the 'everyone plays' ideology
 ...promote(s) the 'fair play' ideology
 ...promote(s) integration and equity through sport
 ...consider(s) health promotion as more than just sport performance
 ...deal(s) with participant's failure in a positive way

Environmental

...care(s) about safety issues during training and competition
 ...encourage(s) consumption of healthy food options
 All events, that youth attend, are held in an alcohol-free environment
 All events, that youth attend, are held in a tobacco-free environment

Economic

...mobilizes sports clubs and/or community know-how to promote health
 ...allocates time to health promotion during training and competition
 ...has material resources (materials, toolkits, signage) available to promote health
 ...allocates human resources to health promotion actions (e.g. volunteer engagement, time)

1 *For the final list, the word 'official' was replaced with 'management/director'