

Perceptions of environmental opportunities for physical activity in the European Union

Summary

Objectives: This article is the last in a series of four that present data about physical activity in 15 members states of the European Union collected by the Eurobarometer 58.2. The focus of this article is on the perception of environmental opportunities for physical activity across the European Union.

Methods: Data were collected in 2002 as part of the Eurobarometer by face-to-face interviews. A total of 16 230 respondents age 15 years and older were interviewed. Sample sizes ranged about 1 000 respondents in most nations. Physical activity was assessed with the last 7-days short version of the International Physical Activity Questionnaire (IPAQ).

Results: Results indicate relationships between the perceptions of environmental opportunities; gross household income and physical activity level (in MET-hours/per week) of respondents. Respondents who reported lower income and less physical activity had also more negative perceptions of environmental opportunities. Across nations, respondents in Denmark, the Netherlands, Luxembourg, and Western Germany had the highest satisfaction with environmental opportunities for physical activity. In some nations, positive correlations between the perception of environmental opportunities and physical activity levels could be observed.

Conclusion: Results show variations in the perception of environmental opportunities across the EU. Overall, the majority of respondents rated their environmental opportunities for physical activity favourable.

Keywords: Physical activity – Environment – Environmental perceptions – European Union – International Physical Activity Questionnaire.

The interest in environmental determinants of physical activity has surged in recent years (Sallis et al. 1998; Humpel et al. 2002). This interest has been stimulated by demands for

health promotion strategies to include the creation of supportive environments and the strengthening of community actions (WHO 1986). Not only in the area of physical activity promotion, but also for other health behaviours, environmental and policy determinants have received increased attention (Schmid et al. 1995).

Physical activity has, in the meantime, been associated with objective and subjective features of the environment. Objective features of the environment that have been linked to physical activity and more active lifestyles included access to exercise facilities (Sallis et al. 1990), living in proximity of exercise and recreational facilities (Giles-Corti & Donovan 2002), living in coastal proximity (Bauman et al. 1999), and visual aesthetics and safety of neighbourhoods (Craig et al. 2002). Subjective or perceived features of the environment that have been associated with physical activity included residents satisfaction with recreational facilities in the community (MacDougall et al. 1997), perceived access to exercise facilities (Booth et al. 2000), and the perceived attractiveness and safety of neighbourhoods (Ball et al. 2001; Carnegie et al. 2002). Also, a positive perception of environmental opportunities for physical activity in general has been associated with a more active lifestyle (Stahl et al. 2001).

While such data have successfully demonstrated associations between environmental determinants and physical activity, there has been, to date, a lack of cross-national data on the perception of environmental opportunities for physical activity. One of the few studies to explore this issue, Rütten et al. (2001) showed for six European nations with sample sizes of about 400 respondents per nation, that perceived opportunities for physical activity might be associated with physical activity levels of populations. Moreover, within the framework of this study, such perceptions of environmental opportunities have been found to correlate with subjective health status. In a comparison of existing infrastructures for physical activity between Finland and Germany, differences in physical activity rates on the population level have also

been associated with differences in the density of infrastructures for physical activity between the two nations (Stahl et al. 2002). That environmental perceptions might not only correlate with health behaviours but also with subjective and functional health status has been confirmed by other studies (Sooman & Macintyre 1995; Balfour & Kaplan 2002).

As such, cross-national comparative data on perceptions of the environment are potentially valuable for our understanding of the interplay between environmental and policy determinants, health behaviour, and ultimately health status. They can potentially provide important arguments for health promotion actions that are related to the creation of supportive environments as specified in the Ottawa Charter (WHO 1986). Additionally, such data on the perception of environmental opportunities for physical activity might help explain the observed north-south gradient in leisure time physical activity participation in Europe (Martinez-Gonzalez et al. 2001). If such lower participation rates are partly caused by poor environmental opportunities, one might expect that respondents in these nations are also more critical in their perception of environmental opportunities.

Importantly, this study is the first to present comparative data on the perception of environmental opportunities in 15 member states of the European Union. Including sample sizes of considerable size for most nations, this study thus allows for the analysis of environmental perceptions for population subgroups. This might help in identifying population subgroups that are vulnerable to poor environmental opportunities for physical activity, and can assist in specifying strategies for the promotion of physical activity for such subgroups.

Methods

Data were collected between October and December of 2002 as part of the Eurobarometer 58.2. The Eurobarometer is conducted since 1970 and has, in the meantime, provided valuable cross-national data on a wide variety of topics (Mossialos & King 1999). The Eurobarometer 58.2 dealt with questions on smoking, environmental pollution, health status, mental health, physical activity, and developmental aid. Fieldwork was carried out in 15 member states of the European Union by a consortium of market and public opinion research agencies (INRA, GfK Worldwide).

The population covered by the Eurobarometer were residents aged 15 years and older of the nationalities of the European Union. Data were collected by personal interviews. In all countries, a multi-stage, random sample design was applied. Within the sample framework, for each nation a number of sample points was drawn with the probability for each sample point being proportional to population size and population

density. These sampling points were drawn systematically for the existing national administrative units. Sampling points consisted of a randomly drawn starting address, and further addresses were drawn by a standard random route procedure. Within the household, respondents were drawn at random.

The realized sample sizes for each nation were: Belgium (1 110), Denmark (1 000), Eastern Germany (1 020), Western Germany (1 022), Greece (1 003), Spain (1 000), France (1 037), Ireland (1 013), Italy (1 027), Luxembourg (602), the Netherlands (1 035), Austria (1 023), Portugal (1 002), Finland (1 024), Sweden (1 000), Great Britain (1 010), Northern Ireland (302). Across all nations, the mean response rate for the face-to-face interviews was 54.6%. Lowest response rates were achieved in Great Britain (23%) and Denmark (32%), highest rates were achieved in France (84%) and the western part of Germany (78%).

Environmental perceptions of opportunities for physical activity were assessed with three items: "The area where I live offers me many opportunities to be physically active", "Local sport clubs and other providers offer many opportunities to be physically active", and "My local authority does enough for its citizens concerning their physical activities". The three items are intended to measure three different dimensions of the environmental opportunities for physical activity (opportunities as offered by the area, opportunities as offered by commercial providers, and policy support for physical activity).

Answer categories for the statements ranged from "strongly agree" to "strongly disagree" on a 4-point Likert-scale. The three items were used previously in two international research projects on physical activity (Rütten et al. 2001; Stahl et al. 2001; Stahl et al. 2002), and have been tested for reliability (Rütten 2001). Test-retest reliability after four to seven days was found to be between Spearman's Rho of 0.65 to 0.71 for the three items. This is well within the range for test-retest reliability of environmental perceptions that has been reported by other studies (Sallis et al. 1997; Kirtland et al. 2003). The correlations between the three items in the total data set ranged from 0.53 to 0.69.

For the analysis, respondents were divided into those who strongly agreed or agreed to the statements and compared to those who disagreed, strongly disagreed or answered, "don't know" to the statements (Tab. 1 to 3). Table 1 shows the percentage of respondents who strongly agreed or agreed to the items by gender, age, income, MET-hours/week, place where respondent lived, and nation. Table 2 shows the percentage of respondents who strongly agreed or agreed for those who had reported higher than average MET-hours, and Table 3 for those who had reported lower than average MET-hours. Table 4 presents Spearman's correlation coefficients between perceived environmental opportunities and MET-

Table 1 Perception of environmental opportunities for physical activity in the member states of the European Union (% who strongly agree-agree to the statements (95% C.I.))

| | n | The area where I live offers me many opportunities to be physically active | Local sport clubs and other providers offer many opportunities to be physically active | My local authority does enough for its citizens concerning their physical activities |
|-------------------------------------|--------|--|--|--|
| All | 16 230 | 71.8 (71.1–72.5) | 70.5 (69.8–71.2) | 57.4 (56.6–58.2) |
| Gender | | | | |
| Female | 8 730 | 69.8 (68.8–70.7) | 69.1 (68.1–70.0) | 56.6 (55.5–57.6) |
| Male | 7 500 | 74.1 (73.1–75.1) | 72.2 (71.1–73.2) | 58.4 (57.2–59.5) |
| Age | | | | |
| 15–24 | 2 466 | 73.1 (71.3–74.8) | 75.0 (73.3–76.7) | 56.5 (54.6–58.5) |
| 25–34 | 2 852 | 73.8 (72.2–75.5) | 74.2 (72.6–75.8) | 56.8 (55.0–58.6) |
| 35–44 | 3 053 | 74.6 (73.1–76.2) | 73.3 (71.7–74.9) | 58.2 (56.5–60.0) |
| 45–54 | 2 599 | 73.8 (72.1–75.5) | 73.5 (71.8–75.2) | 60.2 (58.3–62.1) |
| 55–64 | 2 298 | 73.2 (71.4–75.0) | 68.9 (67.0–69.8) | 60.2 (58.2–62.2) |
| 65+ | 2 962 | 62.9 (61.1–64.6) | 58.9 (57.1–60.7) | 53.3 (51.5–55.1) |
| Gross household income ¹ | | | | |
| -- | 2 741 | 63.3 (61.5–65.1) | 61.1 (59.3–62.9) | 51.7 (49.8–53.5) |
| - | 2 809 | 70.4 (68.7–72.1) | 69.5 (67.8–71.2) | 57.6 (55.8–59.4) |
| + | 2 611 | 76.2 (74.5–77.8) | 75.3 (73.6–77.0) | 62.3 (60.5–64.2) |
| ++ | 2 561 | 80.9 (79.4–82.4) | 80.1 (78.5–81.6) | 64.6 (62.7–66.4) |
| MET-h/week ² | | | | |
| -- | 3 687 | 63.2 (61.6–64.8) | 61.2 (59.7–62.8) | 52.0 (50.4–53.6) |
| - | 3 617 | 72.2 (70.8–73.7) | 70.9 (69.4–72.4) | 57.0 (55.4–58.6) |
| + | 3 629 | 75.7 (74.3–77.1) | 75.5 (74.0–76.8) | 61.4 (59.8–63.0) |
| ++ | 3 610 | 77.3 (76.0–78.7) | 76.1 (74.7–77.5) | 60.6 (59.0–62.2) |
| Area of living | | | | |
| Rural/village | 5 998 | 68.6 (67.5–69.8) | 64.7 (63.5–66.0) | 53.5 (52.3–54.8) |
| S/m sized town | 4 974 | 75.8 (74.6–77.0) | 76.2 (75.0–77.4) | 62.9 (61.5–64.2) |
| Large town | 5 258 | 71.5 (70.3–72.7) | 71.6 (70.4–72.8) | 56.7 (55.3–58.0) |
| Nation | | | | |
| Austria | 1 023 | 80.9 (78.5–83.4) | 72.7 (70.0–75.5) | 61.0 (58.0–64.0) |
| Belgium | 1 110 | 72.1 (69.4–74.7) | 70.6 (68.0–73.3) | 65.1 (62.2–67.9) |
| Denmark | 1 000 | 87.3 (85.2–89.4) | 86.6 (84.5–88.7) | 69.3 (66.4–72.2) |
| Finland | 1 024 | 79.4 (76.9–81.9) | 77.5 (75.0–80.1) | 66.6 (63.7–69.5) |
| France | 1 037 | 73.9 (71.2–76.6) | 71.4 (68.6–74.1) | 67.2 (64.3–70.0) |
| Germany (West) | 1 022 | 81.8 (79.4–84.2) | 79.1 (76.6–81.6) | 64.0 (61.0–67.0) |
| Germany (East) | 1 020 | 68.4 (65.6–71.3) | 59.4 (56.4–62.4) | 47.2 (44.1–50.2) |
| Great Britain | 1 010 | 66.7 (63.8–69.6) | 70.6 (67.8–73.4) | 48.5 (45.4–51.6) |
| Greece | 1 003 | 63.3 (60.3–66.3) | 62.4 (59.4–65.4) | 49.8 (46.7–52.9) |
| Ireland | 1 013 | 71.1 (68.3–73.9) | 72.2 (69.4–75.0) | 42.7 (39.7–45.8) |
| Italy | 1 027 | 55.6 (52.6–58.6) | 55.7 (52.7–58.7) | 40.1 (37.1–43.1) |
| Luxembourg | 602 | 76.6 (73.2–80.0) | 73.3 (69.7–76.8) | 65.6 (61.8–69.4) |
| Netherlands | 1 035 | 80.8 (78.4–83.2) | 89.8 (87.9–91.6) | 73.1 (70.4–75.8) |
| Northern Ireland | 302 | 65.2 (59.8–70.6) | 70.9 (65.7–76.0) | 51.3 (45.7–57.0) |
| Portugal | 1 002 | 47.6 (44.5–50.7) | 43.8 (40.7–46.9) | 39.3 (36.3–43.3) |
| Spain | 1 000 | 69.0 (66.1–71.9) | 69.8 (67.0–72.7) | 54.0 (51.3–57.5) |
| Sweden | 1 000 | 77.2 (74.6–79.8) | 73.4 (70.7–76.1) | 68.5 (65.6–71.4) |

¹ = Quartile of national income.

² = Quartile of MET-h/week (-- = 0-8; - = 8.01-24; + = 24.01-51.1; ++ = 51.11 and more)

hours/week. The percentage of respondents who agreed or strongly agreed to all three statements was calculated for Figure 1.

Physical activity was assessed using the last 7-days short-version of the International Physical Activity Questionnaire (IPAQ). The IPAQ measures the frequency, duration, and level of intensity of physical activity in the last seven days across all contexts. The last 7-days short version does not allow the separation of physical activities performed in diffe-

rent settings, and thus only the total metabolic equivalents across all settings can be calculated from the short-version. Physical activity related metabolic equivalents (MET) in hours per week were calculated following existing guidelines (Ainsworth et al. 2000). For the analysis, respondents were divided in MET-hours/week quartiles (“--” refers to the lowest quartile, “++” refers to the highest quartile of MET-hours/week), and along the median for MET-hours per week.

Table 2 Perception of environmental opportunities for physical activity of individuals who are physically less active (less than 24 MET-h/week): percentage who strongly agree-agree to the statements (95% C.I.)

| | n | The area where I live offers me many opportunities to be physically active | Local sport clubs and other providers offer many opportunities to be physically active | My local authority does enough for its citizens concerning their physical activities |
|------------------|-----|--|--|--|
| Austria | 465 | 76.1 (72.2–80.0) | 66.7 (62.6–71.2) | 57.4 (52.9–61.9) |
| Belgium | 552 | 69.2 (65.3–73.1) | 67.6 (63.4–71.5) | 62.1 (58.1–66.2) |
| Denmark | 405 | 83.7 (80.1–87.3) | 81.5 (77.7–85.3) | 63.7 (59.0–68.4) |
| Finland | 478 | 77.0 (73.2–80.8) | 76.4 (72.5–80.2) | 64.4 (60.1–68.7) |
| France | 558 | 68.8 (65.0–72.7) | 68.6 (64.8–72.5) | 64.3 (60.4–68.3) |
| Germany (West) | 343 | 74.6 (70.0–79.3) | 70.9 (66.0–75.7) | 56.6 (51.3–61.8) |
| Germany (East) | 353 | 65.4 (60.5–70.4) | 57.2 (52.0–62.4) | 49.9 (44.6–55.1) |
| Great Britain | 545 | 62.6 (58.5–66.6) | 66.1 (62.1–70.0) | 45.5 (41.3–49.7) |
| Greece | 436 | 62.6 (58.1–67.2) | 60.8 (56.2–65.4) | 49.1 (44.4–53.8) |
| Ireland | 511 | 66.0 (61.8–70.1) | 67.5 (63.4–71.6) | 40.3 (36.1–44.6) |
| Italy | 495 | 50.7 (46.3–55.1) | 51.1 (46.7–55.5) | 38.0 (33.7–42.3) |
| Luxembourg | 230 | 70.9 (65.0–76.8) | 68.3 (62.2–74.3) | 64.8 (58.6–71.0) |
| Netherlands | 290 | 81.0 (76.5–85.6) | 89.3 (85.7–92.9) | 73.5 (68.3–78.6) |
| Northern Ireland | 181 | 57.5 (50.2–64.7) | 64.6 (57.6–71.7) | 44.2 (36.9–51.5) |
| Portugal | 415 | 42.2 (37.4–46.9) | 37.6 (32.9–42.3) | 33.7 (29.2–38.3) |
| Spain | 496 | 65.7 (61.5–69.9) | 64.1 (59.9–68.4) | 52.2 (47.8–56.6) |
| Sweden | 551 | 77.0 (73.4–80.5) | 70.1 (66.2–73.9) | 68.2 (64.3–72.1) |

Table 3 Perception of environmental opportunities for physical activity of individuals who are physically active (24.01 MET-h/week and more): percentage who strongly agree-agree to the statements (95% C.I.)

| | n | The area where I live offers me many opportunities to be physically active | Local sport clubs and other providers offer many opportunities to be physically active | My local authority does enough for its citizens concerning their physical activities |
|------------------|-----|--|--|--|
| Austria | 397 | 86.9 (83.6–90.2) | 80.1 (76.2–84.1) | 67.3 (62.6–71.9) |
| Belgium | 416 | 77.4 (73.4–81.4) | 77.6 (73.6–81.7) | 71.8 (67.5–76.2) |
| Denmark | 532 | 89.9 (87.3–92.4) | 89.5 (87.3–92.4) | 74.3 (70.5–78.0) |
| Finland | 505 | 81.8 (78.4–85.2) | 80.4 (76.9–83.9) | 70.7 (66.7–74.7) |
| France | 405 | 80.0 (76.1–83.9) | 74.3 (70.0–78.6) | 69.6 (65.1–74.1) |
| Germany (West) | 518 | 88.4 (85.7–91.2) | 88.0 (85.2–90.8) | 71.6 (67.7–75.5) |
| Germany (East) | 516 | 72.3 (68.4–76.2) | 61.2 (57.0–65.5) | 46.9 (42.6–51.2) |
| Great Britain | 431 | 72.6 (68.4–76.9) | 76.6 (72.6–80.6) | 52.7 (48.3–57.4) |
| Greece | 527 | 65.5 (61.4–69.5) | 65.8 (61.8–69.9) | 52.0 (47.7–56.2) |
| Ireland | 459 | 76.7 (72.8–80.6) | 77.3 (73.5–81.2) | 44.5 (40.3–49.5) |
| Italy | 381 | 61.4 (56.5–66.3) | 60.6 (55.7–65.6) | 41.2 (36.2–46.2) |
| Luxembourg | 301 | 80.1 (75.5–84.6) | 74.4 (69.5–79.4) | 61.8 (56.3–67.3) |
| Netherlands | 608 | 81.6 (78.5–84.7) | 90.5 (88.1–92.8) | 73.2 (69.7–76.7) |
| Northern Ireland | 97 | 76.3 (67.7–84.9) | 79.4 (71.2–87.6) | 62.9 (53.1–72.7) |
| Portugal | 383 | 52.0 (46.9–57.0) | 48.3 (43.3–53.3) | 44.1 (39.1–49.1) |
| Spain | 378 | 72.2 (67.7–76.8) | 74.3 (69.9–78.8) | 55.0 (50.0–60.0) |
| Sweden | 385 | 77.1 (72.9–81.4) | 78.7 (74.6–82.8) | 70.1 (65.5–74.7) |

In the analysis, the monthly gross household income was presented as the national income quartile that the respondent belonged to. “–” refers to the lowest national quartile, “++” to the highest national quartile.

Results

A total of 16 230 interviews were conducted. Overall, 71.8% of respondents agreed or strongly agreed that the area where they live offered them many opportunities to be phy-

sically active. 70.5% of respondents agreed that local sport clubs and other providers offered many opportunities to be physically active, and 57.4% agreed that their local authority did enough for its citizens concerning their physical activities (Tab. 1). The perception of environmental opportunities remained relatively stable across age groups. The exception being respondent’s age 65 and older, who perceived environmental opportunities for physical activity more negative than younger age groups.

Table 4 Spearman's correlation coefficients between positive perceptions of environmental opportunities for physical activity and MET-h/week

| | n | The area where I live offers me many opportunities to be physically active | Local sport clubs and other providers offer many opportunities to be physically active | My local authority does enough for its citizens concerning their physical activities |
|------------------|-------|--|--|--|
| Austria | 1 023 | 0.200*** | 0.197*** | 0.141*** |
| Belgium | 1 110 | 0.133*** | 0.150*** | 0.115*** |
| Denmark | 1 000 | 0.127*** | 0.141*** | 0.075* |
| Finland | 1 024 | 0.066* | 0.029 | 0.056 |
| France | 1 037 | 0.133*** | 0.099** | 0.107** |
| Germany (West) | 1 022 | 0.226*** | 0.215*** | 0.147*** |
| Germany (East) | 1 020 | 0.094** | 0.046 | 0.012 |
| Great Britain | 1 010 | 0.042 | 0.036 | 0.007 |
| Greece | 1 003 | 0.102** | 0.103** | 0.044 |
| Ireland | 1 013 | 0.143*** | 0.161*** | 0.085** |
| Italy | 1 027 | 0.155*** | 0.104** | 0.087* |
| Luxembourg | 602 | 0.145** | 0.090* | 0.038 |
| Netherlands | 1 035 | 0.083 | 0.048 | 0.012 |
| Northern Ireland | 302 | 0.168** | 0.170** | 0.074 |
| Portugal | 1 002 | 0.085* | 0.107** | 0.103** |
| Spain | 1 000 | 0.149*** | 0.169*** | 0.092** |
| Sweden | 1 000 | 0.023 | 0.091** | 0.009 |

$p < 0.05$ (*), $p < 0.01$ (**), $p < 0.001$ (***)

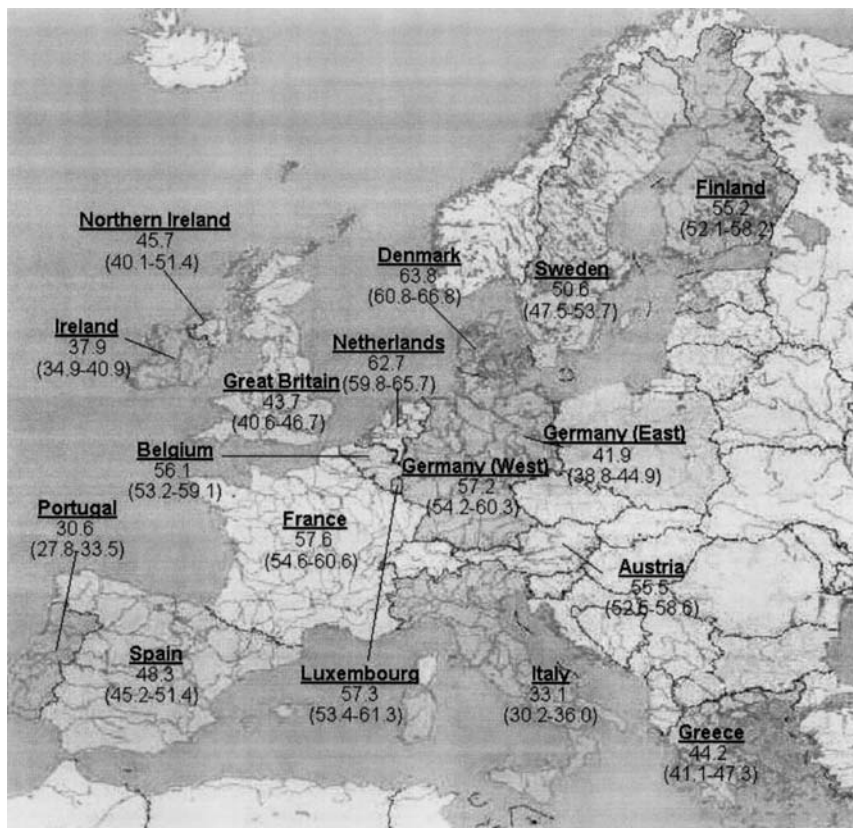


Figure 1 Percentage of respondents who have a positive perception of environmental opportunities for physical activity (95% C.I.): respondents who agreed to three items about environmental opportunities

With increasing gross household income, agreement to the statements about environmental opportunities increased. Respondents with higher MET-hours/week agreed to a larger degree to the statements about environmental opportunities than respondents with lower MET-hours/week. Compared to respondents living in rural areas or large towns, respondents living in small and medium sized cities were more satisfied with environmental opportunities for physical activity. Across nations, respondents in Denmark and the Netherlands rated the environmental opportunities for physical activity most favourable. Respondents in Italy and Portugal rated environmental opportunities for physical activity least favourable.

Table 2 presents the results for respondent who reported to be physically less active (up to 24 MET-hours/week of physical activity in the last seven days). Among physically less active respondents, environmental perceptions of opportunities for physical activity in the area where one lives were favourable in Denmark (83.7%), the Netherlands (81%), and Sweden (77%). Compared to the other member states, more negative perceptions were found in Portugal (42.2%), Italy (50.7%), and Northern Ireland (57.5%). Local sport clubs and other providers were perceived as providing many opportunities for physical activity in the Netherlands (89.3%) and Denmark (81.5%). In Portugal (37.6%), such opportunities were rated as being not so good. The engagement of local authorities for physical activity was evaluated the best in the Netherlands (73.5%) and Sweden (68.2%); it was evaluated more negative in Portugal (33.7%), and Italy (38%). Across most nations, perceptions of environmental opportunities among those who reported to be physically active were more favourable than among those who were physically less active (Tab. 3). Among those that were physically active, respondents in Denmark and the Netherlands rated the opportunities for physical activity most favourable. Again, respondents in Portugal and Italy rated such opportunities less favourably.

Spearman's correlation coefficients between the three items on the perception of environmental opportunities and MET-hours/week varied widely across nations (Tab. 4). For Austria, Western Germany, Spain, and Belgium significant correlations were observed, indicating that in these nations a positive perception of environmental opportunities was related to higher MET-hours/week. In Great Britain and the Netherlands no significant correlations between environmental opportunities and MET-hours/week were found.

Discussion

The study has reported data on the perception of environmental opportunities related to physical activity in the mem-

ber states of the European Union. Across member states, more than 70% of respondents agreed that such opportunities as provided by the area where one lives and by local clubs and other providers were favourable. For local authorities, 57.4% of respondents agreed that those were doing enough concerning physical activity. On a descriptive level, the perceptions of environmental opportunities seemed to be related to household income, physical activity as measured in MET-hours/week and the place where one lives. In most nations, respondents who were physically active reported higher satisfaction with environmental opportunities than those being physically less active. Correlations between the perceived environment and MET-hours/week were significant in some nations.

In a composite measure across the three items that were used to assess environmental opportunities for physical activity, respondents living in the southern countries Portugal, Italy and Greece showed low satisfaction with environmental opportunities (Fig. 1). Satisfaction with environmental opportunities was highest in Denmark, the Netherlands, Luxembourg and Western Germany. Interpretation of these results should consider the validity of perceptions of environmental opportunities, the cognitive construct that such perceptions might represent, and potential causal relationships between perceptions of environmental opportunities and physical activity status.

Several studies have attempted to assess the validity of perceptions of environmental opportunities for physical activity. Sallis et al. (1990) reported no association between individual's perceived convenience to get to exercise facility and the objective density of facilities in the area where respondents lived. Troped et al. (2001) found that a model using perceived environmental barriers and a model with objective barriers to using a bikeway produced similar results in predicting bikeway use. The kappa's for the validity of perceptions of the environment have been reported to be in the range of 0.19 to 0.37 (Kirtland et al. 2003). Overall, these results might indicate that the validity of perceptions of environmental opportunities has still to be clarified. Consequently, it has yet to be determined, what cognitive construct such perceptions of environmental opportunities do represent.

Equally important, the causality between environmental perceptions and physical activity should be addressed. So far, the direction of the relationship between environmental perceptions and physical activity is not known. It might be that negative perceptions of environmental opportunities do lead to sedentary lifestyles, or that those who are physically active develop more positive perceptions of environmental opportunities. Support for the argument that the environment

might indeed influence physical activity patterns comes from urban planning (Frank & Engelke 2001; Berrigan & Troiano 2002; Handy et al. 2002).

Results of this study showed lower satisfaction with environmental opportunities in some of the southern countries. Martinez-Gonzalez et al. (2001) reported for those countries also lower levels of leisure time physical activity. However, the correlations between the perceived environment and MET-hours/week found in our study do not indicate a strong relationship between physical activity across all contexts and environmental perceptions. This might have been caused by use of the IPAQ for physical activity assessment. Since the

short-form of the IPAQ also assesses physical activity at work and at home, and thus in two domains where no large influence of the environment would be expected, this might have lowered the observed relationship.

While this study identified variations in the perception of such opportunities for physical activity across member states, it should be noted that the majority of respondents were satisfied with the infrastructural characteristics of the place where they live, but were more critical in the evaluation of local policies for physical activity. This result should encourage the development of policies for the promotion of physical activity on the local level.

Zusammenfassung

Wahrnehmung der Umweltbedingungen zur Ausübung körperlicher Aktivität in der Europäischen Union

Fragestellung: Dieser Beitrag ist der letzte in einer Reihe von vier Beiträgen, die Daten zu körperlicher Aktivität aus den Eurobarometer 58.2 für Mitgliedsstaaten der Europäischen Union vorstellen. In diesem Beitrag wird die Wahrnehmung der Umweltbedingungen zur Ausübung körperlicher Aktivität in 15 Mitgliedsstaaten der Europäischen Union verglichen.

Methoden: Die Daten wurden im Jahre 2002 als Teil des Eurobarometers mit persönlichen Interviews erhoben. Insgesamt wurden 16 230 Personen ab 15 Jahren befragt. Die durchschnittliche Samplegrösse lag in den meisten Nationen bei ca. 1 000 Interviews. Körperliche Aktivität wurde mit dem International Physical Activity Questionnaire (IPAQ) erfasst.

Ergebnisse: Insgesamt zeigen sich auf einer deskriptiven Ebene Zusammenhänge zwischen der Wahrnehmung der Umweltbedingungen zur Ausübung körperlicher Aktivität, dem Haushaltseinkommen und dem Aktivitätsstatus (in MET-Stunden/Woche). Besonders Personen mit niedrigem Haushaltseinkommen und relativ geringer körperlicher Aktivität bewerten die Möglichkeiten die ihnen ihr Wohnumfeld für körperliche Aktivität bietet als negativ. Die höchste Zufriedenheit mit den Umweltbedingungen für körperliche Aktivität wurde in Dänemark, den Niederlanden, Luxemburg und West-Deutschland gemessen. In manchen Nationen zeigten sich positive Korrelationen zwischen der Wahrnehmung der Möglichkeiten für körperliche Aktivität und der Ausübung von körperlicher Aktivität.

Schlussfolgerungen: Die Ergebnisse zeigen Unterschiede in der Einschätzung von Möglichkeiten für körperliche Aktivität zwischen den Nationen. Insgesamt ist aber die Mehrheit der Befragten mit den Umweltbedingungen für körperliche Aktivität zufrieden.

Résumé

Perception des conditions environnementales en rapport avec l'activité physique dans l'Union Européenne

Objectifs: Cet article est le dernier dans une série de quatre qui présentent des données sur l'activité physique dans 15 états membres de l'Union Européenne, récoltées par Eurobarometer 58.2. Il porte sur la perception des conditions environnementales en rapport avec l'activité physique dans l'Union Européenne.

Méthodes: Données récoltées en 2002, par des entretiens en tête-à-tête. Au total, 16 230 personnes âgées de 15 ans et plus ont été interrogées. Les tailles des échantillons étaient d'environ 1 000 personnes dans la plupart des pays. L'activité physique était évaluée par le questionnaire international d'activité physique (IPAQ en anglais).

Résultats: La perception des conditions environnementales est associée au revenu brut du foyer, au niveau d'activité physique (en MET-heures par semaine). Les personnes déclarant moins de revenu et d'activité physique avaient la perception la plus négative des conditions environnementales. Les Danois, Hollandais, Luxembourgeois et Allemands de l'Ouest étaient les plus satisfaits de leurs conditions environnementales en rapport avec l'activité physique. Dans certains pays, il y avait une corrélation positive entre la perception des conditions environnementales et les niveaux d'activité physique observés.

Conclusion: La perception des conditions environnementales varie à travers l'Union Européenne. En générale, la majorité des répondants considèrent que ces conditions sont favorables à l'activité physique.

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