

Better Data to Assess Policy Impact

Obtaining Harmonized Indicators of Diet- and Physical Activity-Behaviours and their Determinants by Pan-European Surveillance



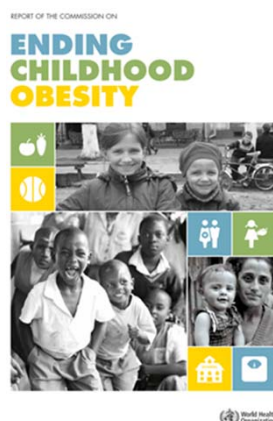
PEN Preconference

**Evaluating implementation of public policy for
the promotion of physical activity and healthy
nutrition**

[Antje Hebestreit](#), Gert B.M. Mensink, Karim Abu-Omar, Wolfgang Ahrens, Celine Murrin
on behalf of the PEN Consortium

EUPHA Berlin, 9.11.2022

Background



→ The EU member states committed themselves to support nutrition and health related actions and **surveillance systems across the life course**



→ „A process is needed to develop **internationally comparable core indicators** for national health surveillance systems”.

DEDIPAC Inventory

European Journal of Public Health, 1–9

© The Author 2017. Published by Oxford University Press on behalf of the European Public Health Association. All rights reserved.
doi:10.1093/eurpub/ckx023

Inventory of surveillance systems assessing dietary, physical activity and sedentary behaviours in Europe: a DEDIPAC study

Silvia Bel-Serrat¹, Inge Huybrechts¹, Barbara F. Thumann², Antje Hebestreit², Peter M. Abuja³, Stefaan de Henauw⁴, Carine Dubuisson⁵, Thorsten Heuer⁶, Celine M. Murrin⁷, Giacomo Lazzeri⁸, Caroline van Rossum⁹, Lene F. Andersen¹⁰, Robert Szeklicki¹¹, Jesús Vioque¹², Rachel Berry¹³, Hidde P. van der Ploeg¹⁴, Wolfgang Ahrens^{2,15}, Nadia Slimani¹; on behalf of the DEDIPAC Consortium



1. List of indicators common to member states but measured differently

“Indicators are specific and measurable characteristics of changes that demonstrate progress towards outcome or impact. Indicators may be observable or not observable”

2. Identification of international surveillance systems measuring health indicators

DEDIPAC Inventory

European Journal of Public Health, 1–9

© The Author 2017. Published by Oxford University Press on behalf of the European Public Health Association. All rights reserved.
doi:10.1093/eurpub/ckx023

Inventory of surveillance systems assessing dietary, physical activity and sedentary behaviours in Europe: a DEDIPAC study

Silvia Bel-Serrat¹, Inge Huybrechts¹, Barbara F. Thumann², Antje Hebestreit², Peter M. Abuja³, Stefaan de Henauw⁴, Carine Dubuisson⁵, Thorsten Heuer⁶, Celine M. Murrin⁷, Giacomo Lazzeri⁸, Caroline van Rossum⁹, Lene F. Andersen¹⁰, Robert Szeklicki¹¹, Jesús Vioque¹², Rachel Berry¹³, Hidde P. van der Ploeg¹⁴, Wolfgang Ahrens^{2,15}, Nadia Slimani¹; on behalf of the DEDIPAC Consortium



WHO COSI: 6-9 year olds;

WHO HBSC: 11, 13, 15 year olds

NORMO: 7-12 year olds and 18-65 year olds

EHIS: 15+ year olds

...and KiGGS (Germany): 0 to 24 year olds

DEDIPAC Knowledge Hub


International Journal of Public Health (2019) 64:615–623
<https://doi.org/10.1007/s00038-019-01227-y>

SSPH+
SWISS SCHOOL OF
PUBLIC HEALTH

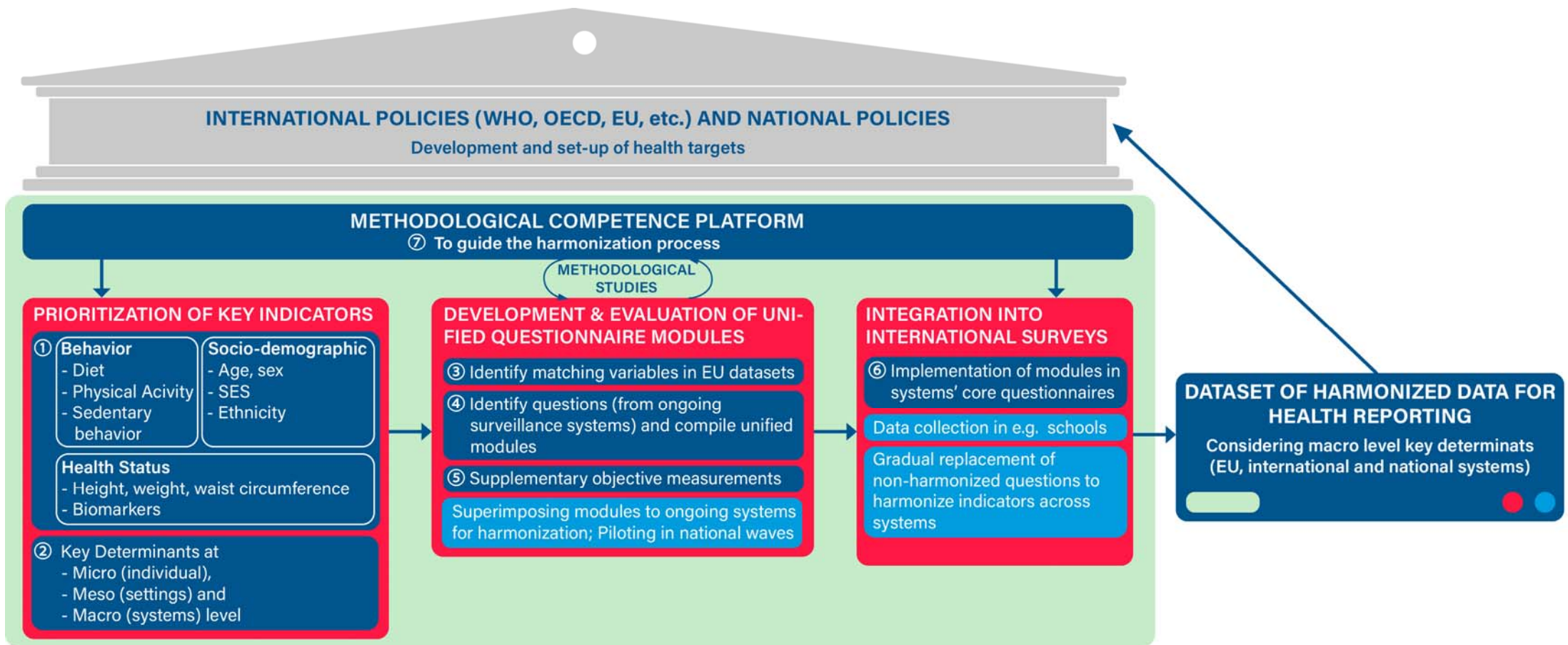
ORIGINAL ARTICLE



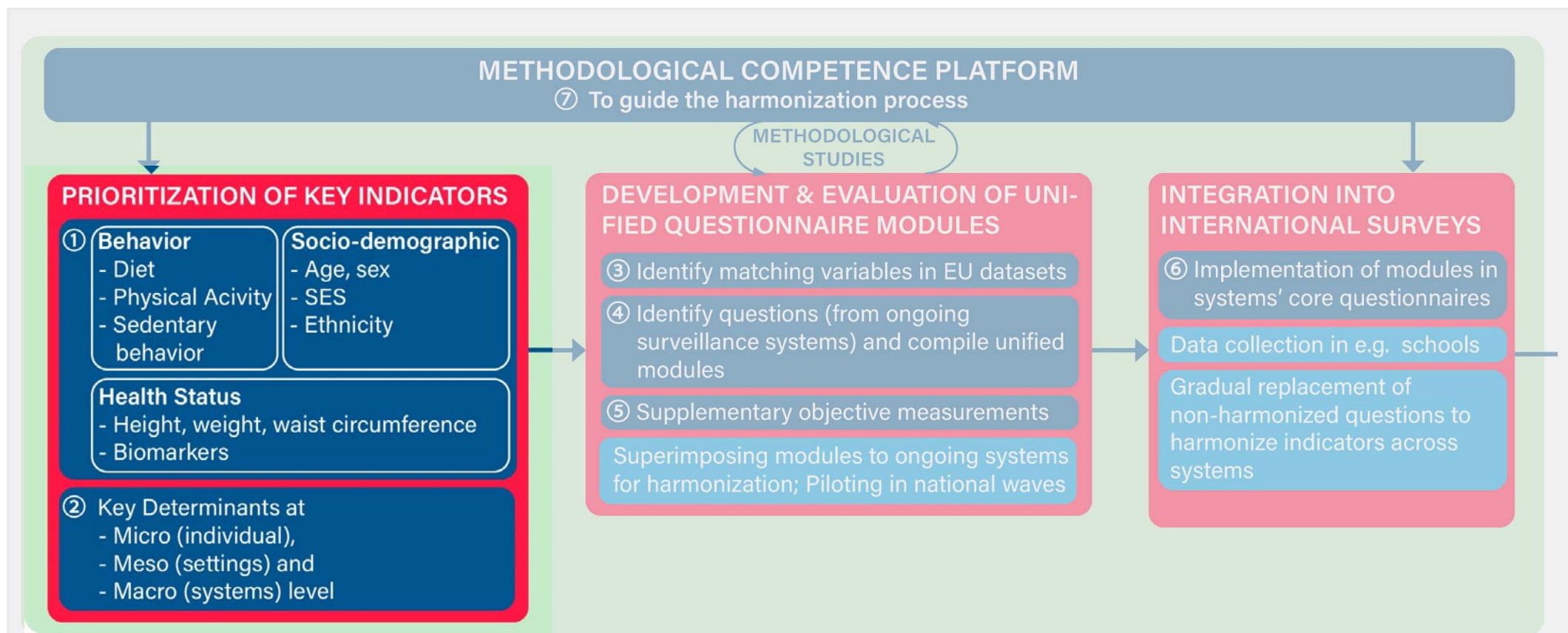
Road map towards a harmonized pan-European surveillance of obesity-related lifestyle behaviours and their determinants in children and adolescents

Antje Hebestreit¹  · Barbara Thumann¹ · Maike Wolters¹ · Jens Bucksch² · Inge Huybrechts³ · Joanna Inchley⁴ · Cornelia Lange⁵ · Nanna Lien⁶ · Kristin Manz⁵ · Nadia Slimani³ · Hidde P. van der Ploeg⁷ · Wolfgang Ahrens^{1,8} on behalf of DEDIPAC Consortium

Roadmap towards a harmonized surveillance



(1+2) Identification and prioritization of key indicators



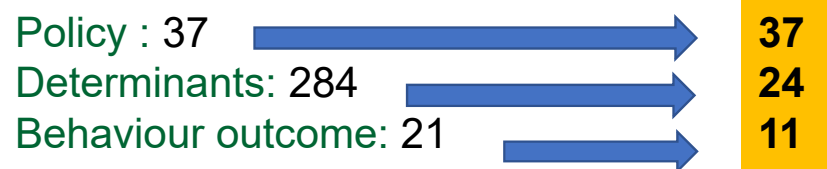
(1+2) Identification and Prioritization of Key Indicators

- Aim
 - To identify and prioritize key indicators for both diet and physical activity
- Methods
 - Based on:
 - Frameworks targeting obesity prevention
 - European Core Health Indicators
 - Literature research to complete missing indicators
 - Criteria for the selection of indicators, e.g.
 - Relevance
 - Feasibility
 - International comparability

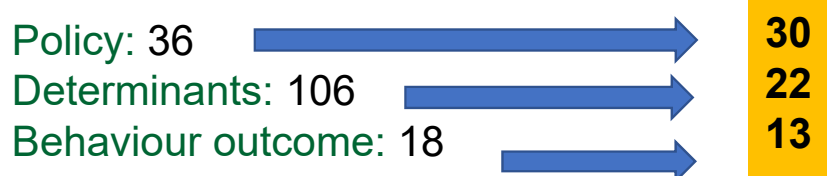
(1+2) Results

3 expert ranking rounds

Diet



Physical Activity & Sedentary Behaviour



Garnica Rosas et al. *International Journal of Behavioral Nutrition and Physical Activity* (2021) 18:48
<https://doi.org/10.1186/s12966-021-01111-0>

International Journal of Behavioral Nutrition and Physical Activity

METHODOLOGY

Open Access



Selection of key indicators for European policy monitoring and surveillance for dietary behaviour, physical activity and sedentary behaviour

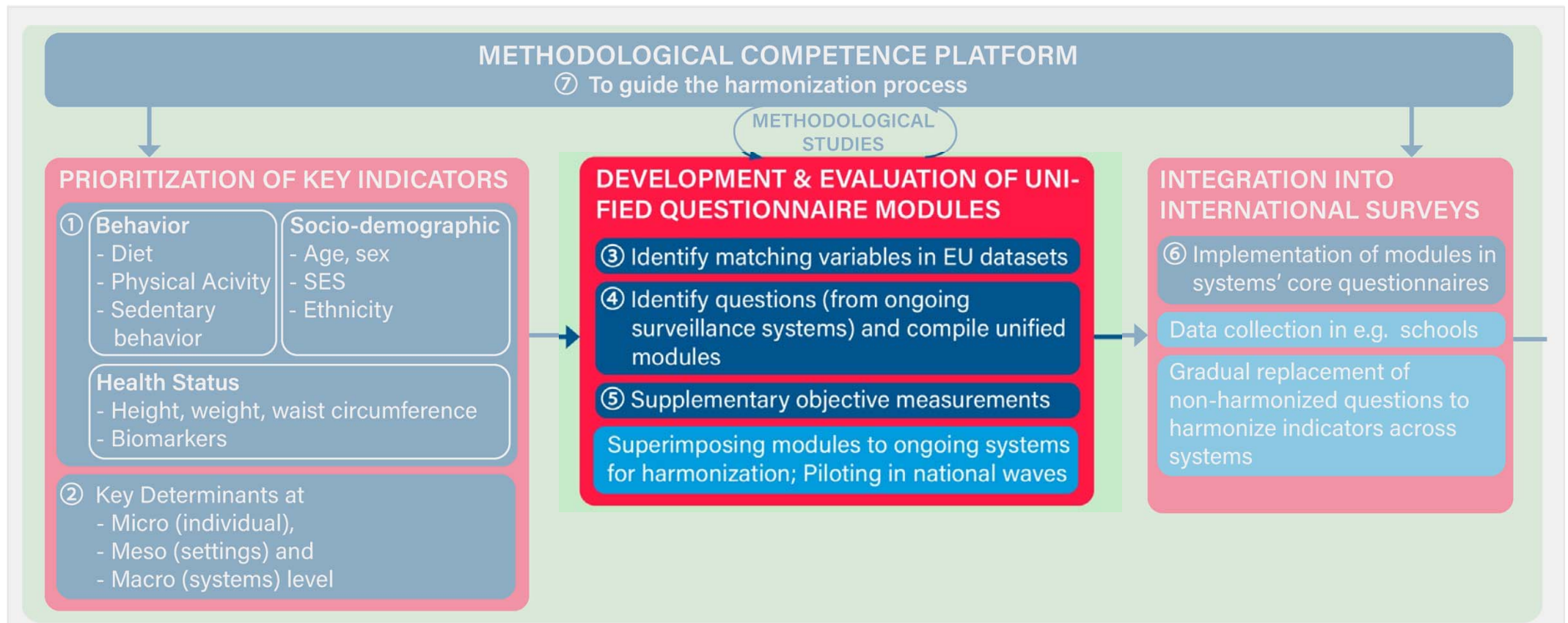
Lina Garnica Rosas¹, Gert B. M. Mensink^{1*}, Jonas D. Finger¹, Anja Schienkiewitz¹, Stefanie Do², Maike Wolters², Isobel Stanley³, Karim Abu Omar⁴, Katarzyna Wieczorowska-Tobis⁵, Catherine B. Woods⁶, Celine Murrin³, Wolfgang Ahrens^{2,7†}, Antje Hebestreit^{2†} and on behalf of the PEN Consortium

Abstract

Background: A pan-European approach to evaluate policy impact on health behaviour requires the employment of a consensus set of established and relevant indicators.

Methods: As part of the Joint Programming Initiative on a Healthy Diet for a Healthy Life, the Policy Evaluation Network PEN identified key indicators of health behaviours and their determinants. These key indicators are already, or have the potential to be, adopted by large European Union surveillance systems for the assessment of policy impact. The iterative selection process included consultations in two rounds via email prior to a 2-days expert workshop. The experts collated a list of dietary behaviour, physical activity and sedentary behaviour indicators for European policy monitoring in young and adult populations based on existing frameworks and literature reviews. The expert panel was composed of researchers, policy makers and representatives of major European surveillance systems and related initiatives, as well as, representatives of organisations providing monitoring data, such as the European Commission and Eurostat.

(3) Identify matching variables in EU data sets



(3) Identify matching variables in EU data sets

- Aim
 - Mapping of key indicators against available European indicators in monitoring datasets
- Methods
 - Available European datasets
 - Identification of national contact points, data managers
 - Request for data dictionaries/variable lists and properties
 - Develop criteria for inclusion, e.g. degree of aggregation of data
 - Mapping
 - Checking data dictionaries for relevant indicators
 - Agree on fit of indicators PEN/data sets (Likert scale)

(3) Existing surveillance and monitoring systems

- WHO Childhood Obesity Surveillance Initiative (**COSI**)
- WHO Health Behaviour in School Aged Children (**HBSC**)
- European Health Information Survey (**EHIS**)
- WHO Stepwise Approach to CVD risk monitoring (**STEPS**)
- Nordic Monitoring Survey (**NORMO**)
- Survey of Health, Ageing and Retirement in Europe (**SHARE**)

- EPHA policy mapping
- HEPA PAT
- Eurobarometer 88.4
- European Union Statistics on Income and Living Conditions (EU-SILC)
- European Social Survey (ESS)
- Eurostat Food Price Monitoring Tool
- EFSA Food composition database
- Global dietary database
- WHO Global Nutrition Policy Review, etc.

(3) Online catalogue on indicators available in European data sets



European Journal of Public Health, 1–7

© The Author(s) 2022. Published by Oxford University Press on behalf of the European Public Health Association.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited.

<https://doi.org/10.1093/eurpub/ckac043>

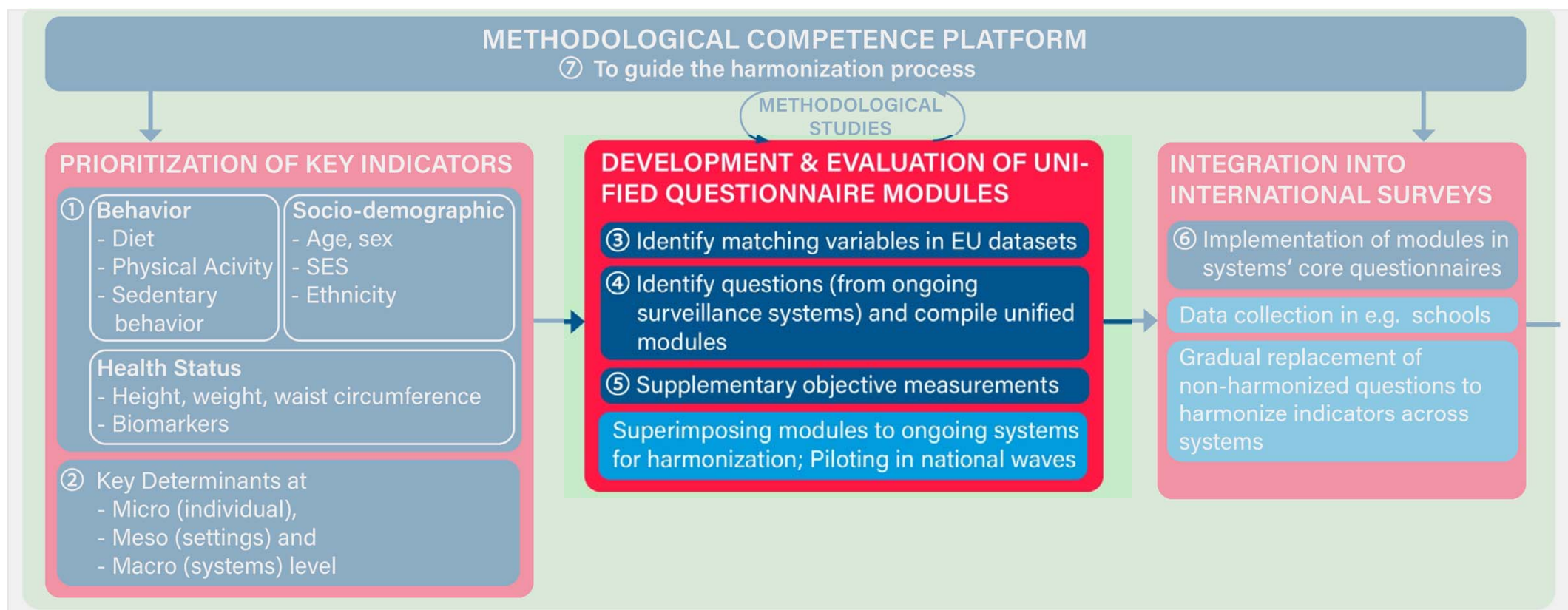
Health surveillance indicators for diet and physical activity: what is available in European data sets for policy evaluation?

Isobel Stanley ¹, Agnieszka Neumann-Podczaska², Katarzyna Wieczorowska-Tobis², Gert B.M. Mensink³, Lina Garnica Rosas³, Stefanie Do⁴, Karim Abu Omar ⁵, Catherine Woods⁶, Wolfgang Ahrens^{4,7}, Antje Hebestreit^{4†}, Celine Murrin^{1†}; on behalf of the PEN Consortium



<https://www.jpi-pen.eu/pen-eu-policy-indicator-catalogues.html>

(4) Compile unified questionnaire modules



(4) Identify instruments and compile unified questionnaire modules

- Aim
 - Short instruments for measuring comparable indicators in the ongoing surveillance surveys
- Methods
 - Identification of measurement instruments according to specific criteria, e.g.
 - Application in one/several existing system(s).
 - High validity
 - High reliability
 - Suitability to monitor adherence to WHO recommendations
 - Robustness in a cross-cultural context

(4) Identify instruments and compile unified questionnaire modules

- The questionnaire modules allow
 - The measurement of individual-level behavioral indicators in ongoing surveillance systems
 - The incorporation of policy and contextual indicators into downstream indicators (individual determinants and behavior) and weight status

SIMPLE Modules: "**S**electe**I**nstruments for **M**ultilevel **Po**Licy and **I**mpact **E**valuation"

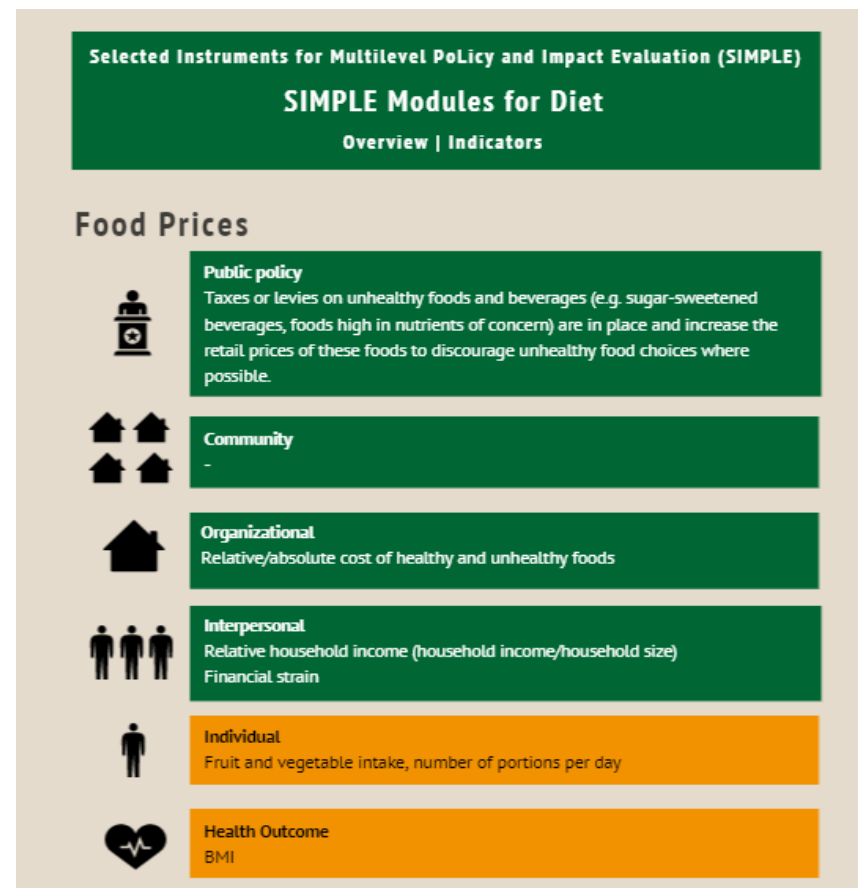
(4) SIMPLE Modules

7 unified questionnaire modules to measure indicators in dietary and physical activity behaviour

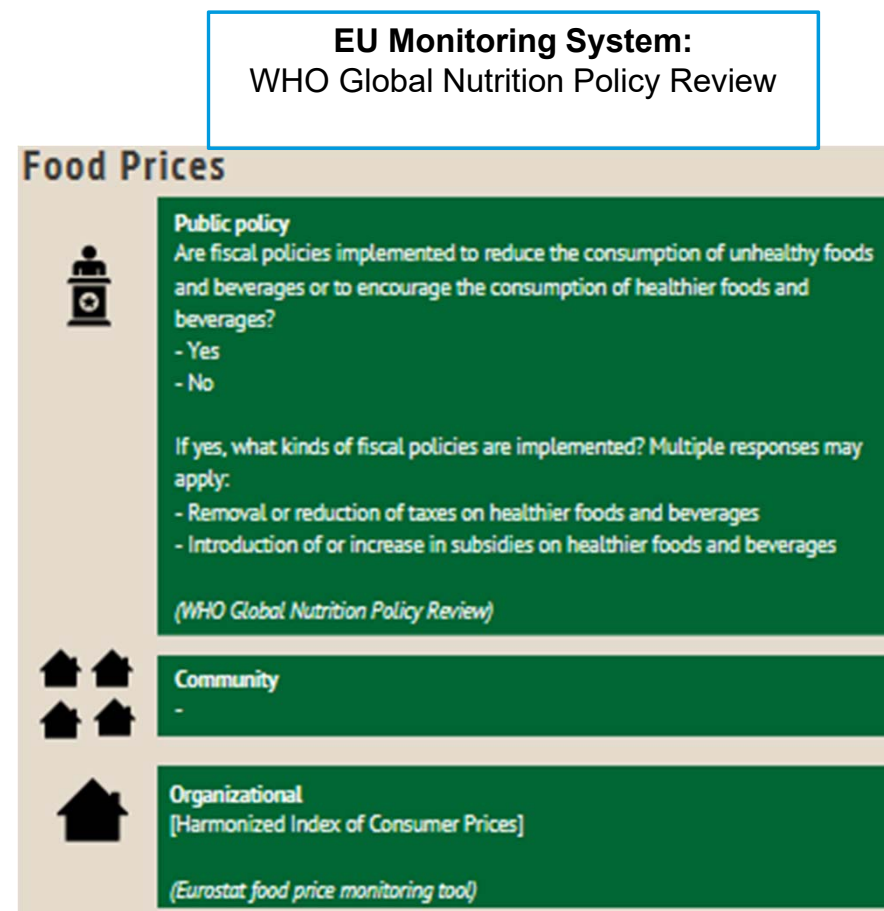
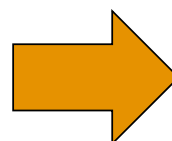
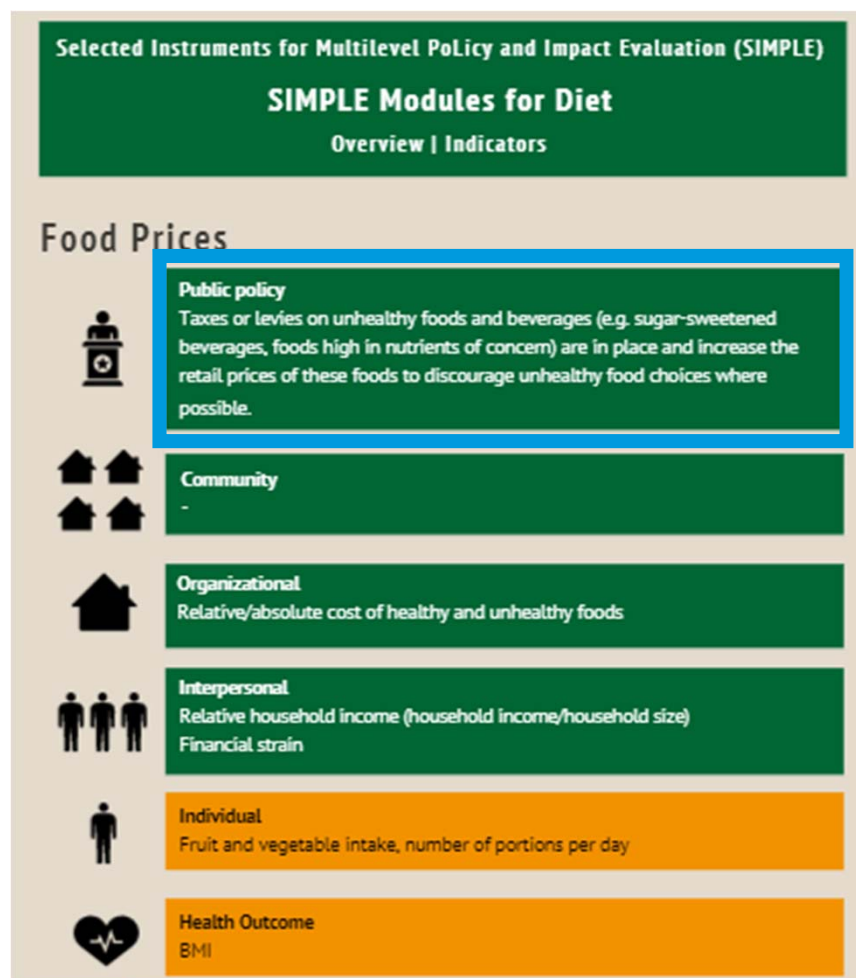


SIMPLE Modules

- Short sets of instruments
- Assessment of **individual** health indicators/behaviours
- Alignment with the **determinants** of these behaviours
- Indicators are interconnected on different levels of an ecological model.



Food Price Module




Food Price Module

Selected Instruments for Multilevel PoLicy and Impact Evaluation (SIMPLE)

SIMPLE Modules for Diet


Overview | Indicators

Food Prices




Public policy

Taxes or levies on unhealthy foods and beverages (e.g. sugar-sweetened beverages, foods high in nutrients of concern) are in place and increase the retail prices of these foods to discourage unhealthy food choices where possible.




Community

-




Organizational

Relative/absolute cost of healthy and unhealthy foods




Interpersonal

Relative household income (household income/household size)
Financial strain



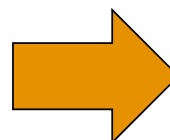
Individual


Fruit and vegetable intake, number of portions per day



Health Outcome

BMI





Individual

In a typical week, on how many days do you eat fruit?

- __ days per week

How many servings of fruit do you eat on those days?

- __ servings / day

In a typical week, on how many days do you eat vegetables?


- __ days per week

How many servings of vegetables do you eat on one of those days?

- __ servings / day

(STEPS)

WHO STEPS



Health Outcome

How tall are you without shoes?

- __ cm

How much do you weigh without clothes and shoes?

- __ kg

(EHIS)

EHIS/HBSC

How can the SIMPLE modules be used?

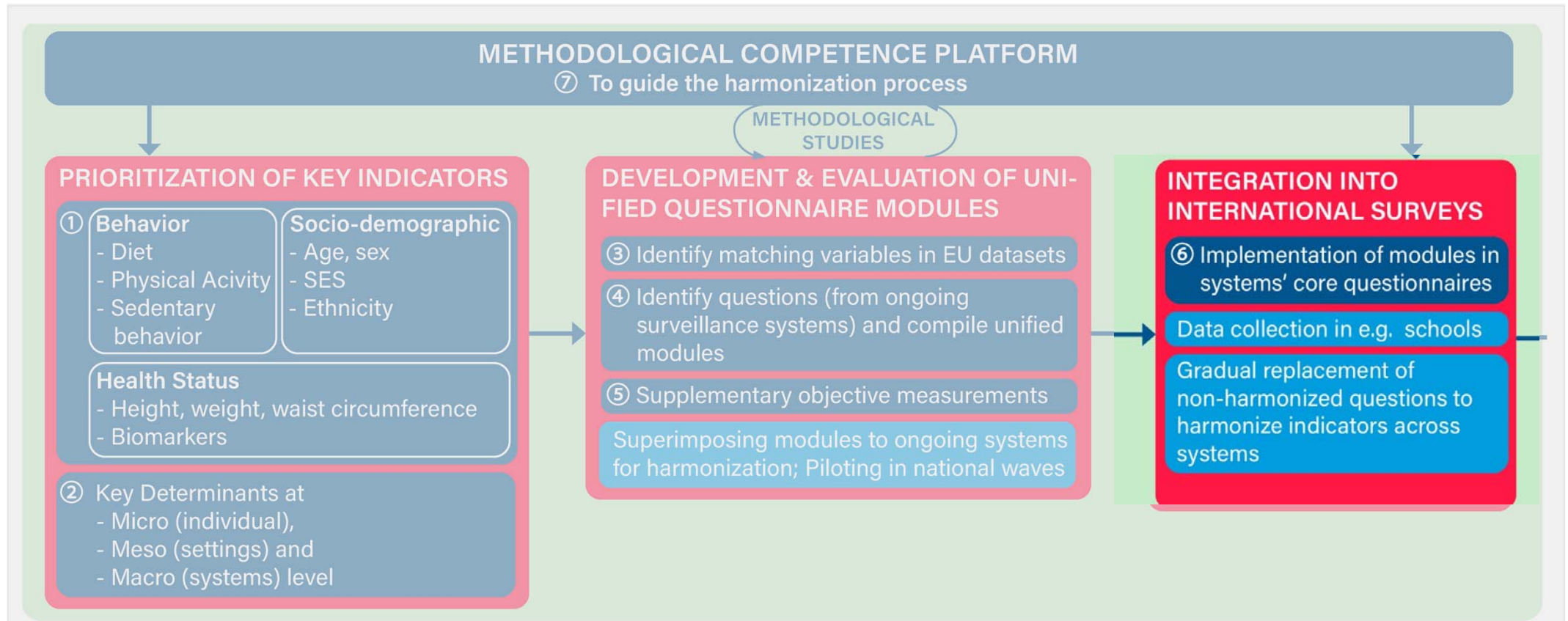
1. Individual level modules

- Primary data collection by health-related surveillance systems for PA & diet.
 - Surveillance systems can integrate one or more modules into their established instruments
- Obtain comparable individual data.

2. Multilevel modules

- Existing surveillance systems measure variables that may determine health
- thus providing routine monitoring data.
- Can use these different data sources to evaluate outcomes related to policy actions and infrastructure support influencing individual and population behaviour at a national or pan-European level.

(6) Implementation of modules into systems' core questionnaires



(6) Implementation of modules into systems' core questionnaires

- Aims
 - Explore barriers and facilitators for implementation of one or more questionnaire modules
 - Opportunities for (in-country) piloting
 - Discuss membership in a methodological competence platform
- Methods
 - Consultative process with main representatives of the surveillance systems
 - Recording and transcription of consultations to circulate and agree on the main aspects

(6) Expert consultation rounds – representatives of surveillance systems

Children and adolescents:

- WHO COSI: **6-9 year olds**
- WHO HBSC: **11, 13, 15 year olds**
- NORMO: **7-12 year olds**
- EHIS: **15+ year olds**



Adults, including EHIS:

- WHO STEPS – STEPwise Approach to NCD Risk Factor Surveillance: **18+ year olds**
- NORMO: **18-65 year olds**



(6) Results

Barriers

- Pressure of systems to present time trends
- Backwards- rather than forward-oriented view of systems
- Limited resources of EU member states (money, personnel)
 - Limitations on length of questionnaire/ duration of interview
 - Unsuitability to repeat very similar questions
 - Only a limited number of questions and variables can be added between waves
- EU member states may focus on different health policy targets

Facilitators

- Consensus on the need to harmonize surveillance data
- Need to update instruments or include measurement of new indicators

(6) Results

European Journal of Public Health, 1–12

© The Author(s) 2022. Published by Oxford University Press on behalf of the European Public Health Association.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited.

<https://doi.org/10.1093/eurpub/ckac061>

Towards a harmonized European surveillance for dietary and physical activity indicators in young and adult populations

Antje Hebestreit¹, Stefanie Do^{1,2}, Maike Wolters¹, Gert B.M. Mensink³, Lina Garnica-Rosas³, Karim Abu-Omar⁴, Sven Messing⁴, Agnieszka Neumann-Podczaska⁵, Katarzyna Wieczorowska-Tobis⁵, Nanna Lien⁶, Isobel Stanley⁷, Wolfgang Ahrens¹, Celine Murrin⁷ and on behalf of the PEN Consortium

Harmonizing national and international indicators

Barriers

- Pressure of systems to present time trends
- Limited resources of EU member states (money, personnel)
 - Limitations on length of questionnaire/ duration of interview
 - Unsuitability to repeat very similar questions
 - Only a limited number of questions and variables can be added between waves
- EU member states may focus on different health policy targets



**Update of instruments
and new indicators**

Facilitators

- Consensus on the need to harmonise surveillance data
- Need to update instruments or include measurement of new indicators

Harmonizing national and international indicators

Barriers

- Pressure of systems to present time trends
 - Limited resources of EU member states (money, personnel)
 - Limitations on length of questionnaire/ duration of interview
 - Unsuitability to repeat very similar questions
 - Only a limited number of questions and variables can be added between waves
 - EU member states may focus on different health policy targets
- ➔ **Synergies (e.g. with SDGs) may help to reduce costs**

Facilitators

- Consensus on the need to harmonise surveillance data
- Need to update instruments or include measurement of new indicators

Harmonizing national and international indicators

Barriers

- Pressure of systems to present time trends
- Limited resources of EU member states (money, personnel)
 - Limitations on length of questionnaire/ duration of interview
 - Unsuitability to repeat very similar questions
 - Only a limited number of questions and variables can be added between waves
- EU member states may focus on different health policy targets  **Enable comparability with international surveillance systems and close data gaps**

Facilitators

- Consensus on the need to harmonise surveillance data
- Need to update instruments or include measurement of new indicators

Added value of harmonizing national and international indicators...

As a UN member state

- Contributing to the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development
- Health co-benefits of climate action
 - Reduced air pollution
 - Increased physical activity
 - Dietary change

→ Enable monitoring national progress towards SDGs such as



Added value of harmonizing national and international indicators...

As a UN member state

- Contributing to the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development
- Health co-benefits of climate action
 - Reduced air pollution
 - Increased physical activity
 - Dietary change

As a EU member state

- Aiming to turning the EU into the first climate neutral continent by 2050
 - E.g. reducing the environmental and climate footprint of the EU food system
- Enable monitoring the European New Green Deal



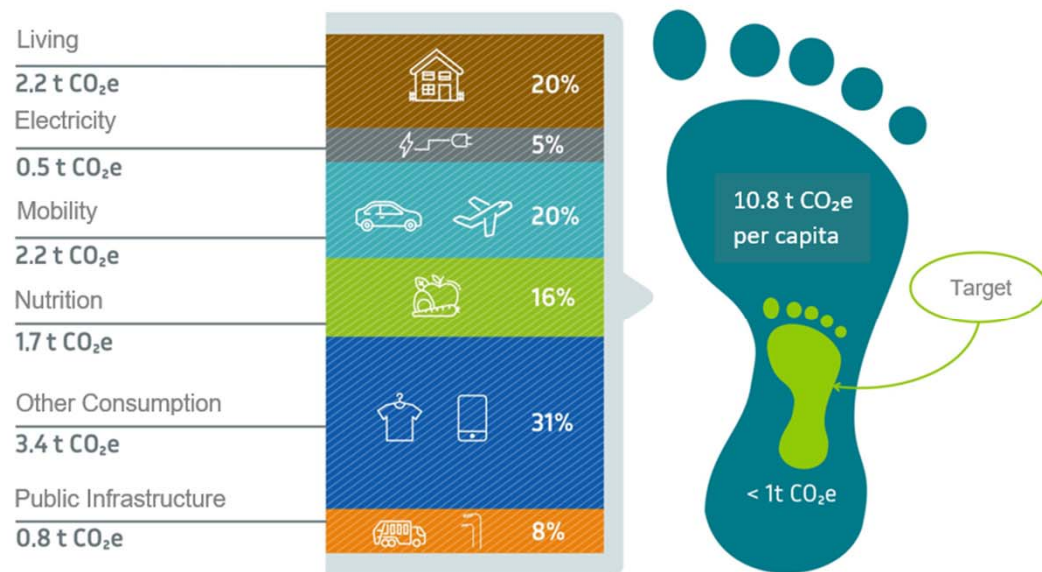
healthy and affordable
food

Example: Germany

- Diet
 - Max Rubner Institute conducts ongoing national nutrition monitoring in adults
 - Federal Ministry of Food and Agriculture currently develops new nutrition strategy until 2023 to promote healthier, resource-saving and plant-based diets and more physical activity - also taking into account current problems such as rising food costs
- Physical activity
 - Federal Ministry of Health targets physical activity promotion with initiatives such as the "Round Table Exercise and Health"
- National public health center (RKI) develops a Public Health Surveillance and a Health Information System (HIS)
 - HIS includes many indicators from EHIS, incl. Fruit and vegetable intake, physical activity and overweight

Example: German Sustainability Development Strategy

Average Per-Capita CO₂ Footprint in Germany



CO₂e: Die Effekte von unterschiedlichen Treibhausgasen (z.B. Methan) werden zu CO₂-Äquivalenten umgerechnet und in die Berechnung einbezogen.

© ⓘ ⓘ Dieses Werk ist unter einer Creative Commons Lizenz vom Typ Namensnennung - Weitergabe unter gleichen Bedingungen 4.0 International zugänglich

Quelle: Umweltbundesamt CO₂-Rechner (Stand 2022)
© Kompetenzzentrum Nachhaltiger Konsum

- Sustainable development strategy envisions
 - Reducing greenhouse gas emissions of at least 65% by 2030 compared to 1990 levels
 - Greenhouse gas emission neutrality by 2045
- Diet and physical activity related goals are targeted in two actions:
 - Sustainable building and the transformation of transportation (SDGs 7, 8, 9, 11, 12, 13)
 - Sustainable agricultural and food systems (SDGs 2, 3, 8, 12, 13)
- Federal Statistical Office routinely collects SDG indicators

Key developments

- **DEDIPAC** (2016) → **Inventory** of European Surveillance Systems¹ ; **Roadmap** for Pan-European Surveillance².
- **PEN** (2019 - 2022) → Prioritized **Key Indicators** for Policy Monitoring & Surveillance³;
 - Identified existing indicators in **EU datasets**⁴;
 - Provision of **short questionnaire modules** to initiate integration & harmonization across EU systems⁵
- Future needs and perspectives:
 - **Standardize methods** for measuring key indicators across European Surveillance Systems
 - **Further develop/improve methods** for indicator measurement, incl. European Core Health Indicators
 - Need to **fill** multiple **indicator gaps** in monitoring ecological determinants of diet and PA behaviours
 - Improve harmonization and **alignment with SDGs**

1. Bel-Serrat et al., (2017) Eur J Public Health; 2. Hebestreit A, et al (2019) Int J Publ Health;
3. Garnica-Ross et al. (2022) IJBNPA; 4. Stanley I. et al. (2022) Eur. J Public Health;
5. Hebestreit et al, (2022) Eur J Public Health

Thanks to all people involved in this work!



Antje Hebestreit,
Stefanie Do,
Maike Wolters,
Wolfgang Ahrens



Celine Murrin,
Isobel Stanley



Gert B. M. Mensink,
Lina Garnica Rosas



A. Neumann-Podczaska,
K. Wieczorowska-Tobis



Karim Abu-Omar,
Sven Messing