CSA JPI HDHL 2.0

Evaluation of Joint Funding Actions

DEDIPAC KH: Knowledge Hub on Determinants of Diet and Physical Activity

Content

1 Introduction and aims

Monitoring and evaluating of JPI HDHL activities is highly important to measure the success, concrete outcomes and impact of the JPI HDHL and to allow for continuous improvement and development of this initiative. Therefore, these activities are an integral part of the work plan of the current Coordination and Support Action (JPI HDHL CSA 2.0).

The evaluation activities continuously performed by JPI HDHL include:

- Monitoring and evaluation of the processes and general performance of JPI HDHL → Report on the third and fourth Process evaluation of JPI HDHL (CSA Deliverable D6.1, D6.4)
- Evaluation of the funding activities of JPI HDHL → Report on the evaluation of JPI HDHL funding activities (CSA Deliverable D6.2 , the present report)
- Monitoring and evaluation the activities of JPI HDHL not related to funding → Report on the evaluation on the progress of the alignment activities (CSA Deliverable D6.3)
- Overall evaluation of the impact of JPI HDHL → Report on the evaluation of the impact of JPI HDHL (CSA Deliverable D6.5)

These tailored activities focus on different aspects of JPI HDHL presented in the consecutive published Implementation Plans (IP) and will result in publically available reports like this one.

The main aim of this report is to evaluate the monitoring data of the funded research in JPI HDHL in relation to the respective aim of the call and the IP and to analyse the output, outcomes and impact of JPI HDHL funding activities (both on call and project level). The results of the evaluations will allow the fine-tuning, refining and planning of new activities for the following IP to reach the expectations of all stakeholders and fulfill the JPI HDHL objectives. The evaluation will also assist in raising awareness for the activities performed under the umbrella of JPI HDHL and provides the basis for the communication and dissemination of JPI achievements.

2 Approach for the evaluation of the Joint Funding Actions (JFA)

The evaluation is based on comparison of the objectives of the IPs and the outputs/outcomes of the different funding activities of the JPI HDHL. In addition, the Scientific Advisory Board (SAB) and Stakeholder Advisory Board (SHAB) of the JPI HDHL have been involved in the evaluation process. The evaluation of the Joint Funding Actions builds on the related work packages in the ERA-Net ERA-HDHL, in particular WP 7, dealing with monitoring and communication of the additional transnational JFAs and their results.

The present report includes evaluations of all JFAs implemented by the JPI HDHL in 2015 and earlier:

- Determinants of Diet and Physical Activity Knowledge Hub (DEDIPAC KH, 2013)
- European Nutritional Phenotype Assessment and Data Sharing Initiative (ENPADASI, 2014)
- Biomarkers for Nutrition and Health (BioNH, 2014)
- Food Processing for Health (FP4H, 2014)
- Malnutrition in the Elderly (MaNuEl, 2015)
- Intestinal Microbiomics (IM, 2015)
- Nutrition and Cognitive Function (NutriCog, 2015)

2.1 Methods

For this report a 'Framework for the evaluation of JPI HDHL joint funding activities' (see Annex) has been developed by the task leader and agreed with the other involved CSA partners.

In a first step, relevant indicators have been collected and defined (see chapter **2.2 Indicators** for details). Based on these indicators the required data from the funded projects have been collected systematically in form of project reports and oral presentations at the project symposia (see chapter **2.3 Monitoring** for details). If necessary, further questions were addressed to the coordinators of the research consortia. In parallel, other necessary data and information (call documents, call statistics, etc.) have been collected from the respective Call Secretariats. In addition, the success and impact of funded projects has been assessed by experts (previous or former SAB and SHAB members) based on final project reports and symposia. For the experts' assessment a specific short evaluation questionnaire, based on the elaborated indicators, has been developed. This template asked the respective expert for a short written assessment of the funded projects based on 3-4 leading questions after the attendance of the final symposium and/or reading of the final report.

The actual evaluation has then been performed by the task leader by analysing the different data available following the evaluation framework and afterwards agreed with the other involved CSA partners.

2.2 Indicators

The indicators used in this evaluation report have been developed in a designated task force by several CSA partners in a separate task (Subtask 6.1.1 Definition of performance indicators) within the CSA JPI HDHL 2.0. Two different types of indicators on have been defined, general and specific indicators, comprising outcome, output and impact level:

(1) General indicators for all JFAs

To enable the comparison between joint funding actions (at least with JFAs using the same funding instrument) a set of general indicators for all JPI HDHL JFAs has been developed. These general indicators can be grouped into six overarching categories comprising several more specific indicators: Alignment of national funding, Involvement of national scientific communities, Collaboration, Capacity Building, Data and Knowledge Sharing, and Impact.

(2) Specific indicators for each respective JFA

Since the aims and objectives differ greatly between the various JFAs, the definition of specific indicators was necessary to evaluate the success of a JFA in itself and not only in comparison to other JFAs. To evaluate the success of each JFA separately, specific indicators following from the corresponding Strategic Research Agenda and IP as well as the call text as of each JFA have been developed.

2.3 Project Monitoring

The comprehensive monitoring of the output and outcomes of the running and finished funded projects builds the basis for the performed evaluations. The systematic and structured collection of data from all funded projects has mainly been organized within a designated work package of the ERA-Net ERA-HDHL (WP7). The monitoring activities within ERA-HDHL comprised the monitoring of

the progress and the results of the research projects of the non cofunded JFAs implemented as part of ERA-HDHL, as well as the previous calls implemented through the IP 2014-2015.

Data from all funded projects have been collected in accordance to the indicators defined in WP6 of the CSA JPI HDHL 2.0. This comprises data both on call and project level:

(1) Call level:

For each Joint Funding Action, the funding organisation responsible for the Joint Call Secretariat (JCS) of a JFA was in charge of the statistical analysis of the call results based on the elaborated indicators (see 2.2). In particular the geographic distribution of the scientists applying to the call, the discipline and the type of organisation, the amount of funding requested per partner/consortium and the transnational cooperation has been analysed.

(2) Project level:

The follow-up of funded projects was taken care of by the respective JCS. For each funded project, annual scientific progress reports and one final report have been collected.[1] Project coordinators were asked to submit the respective scientific reports for the joint project, on behalf of the whole consortium to the respective JCS based on a pre-defined template including the specific indicators (see 2.2). Since 2019, these reports are collected using an online submission tool.

For the calls launched 2015 and later, the progress of ongoing JFAs has also been monitored by two status symposia organized by JPI HDHL. One status symposium has been held during the runtime of the projects (midterm symposium) and one just before the project is about to finish (final symposium). The main purpose of these symposia is to provide the JCS, the Call Steering Committee and members of the former Scientific Evaluation Committee (SEC) as well as representatives from SAB and SHAB with an update on the progress of the research projects. The presentations by the project coordinators and partners PIs are followed by a plenary discussion with questions from the audience.

For most of the earlier calls (DEDIPAC, ENPADASI, FoodBall/BioNH, MaNuEl) a final conference has been organized by the consortia itself without participation of SAB, SHAB or former reviewers.

[1] The data collection for the specific indicators as part of the final report was not possible for the first three JFAs (DEDIPAC, ENPADASI & MaNuEl) since the specific indicators have only be defined after the projects where finished. The project coordinators have been contacted retrospectively to answer those indicators.

3 JPI HDHL JFA: Knowledge Hub on Determinants of Diet and Physical Activity (DEDIPAC KH)

3.1 Aim of the call

The Knowledge Hub on Determinants of Diet and Physical Activity (DEDIPAC KH) was the first joint funding action that has been implemented by the JPI HDHL in December 2012 within Research Area 1: "Determinants of Diet and Physical Activity" from its first Strategic Research Agenda. The aim of this funding action, in which initially 13 JPI member countries participated as funders, was to boost transnational cooperation, multidisciplinary and interdisciplinary networking collaboration and communication among researchers' communities in this particular research field.

Within DEDIPAC KH, a network of selected research groups from JPI Member States and Associated Countries was established to carry out joint trans- and multidisciplinary research activities aiming to integrate biological, behavioural and social sciences expertise, knowledge, facilities and databases for a better understanding of how individual, social and environmental determinants influence food choices and physical activity behaviour. The following specific research challenges were to be addressed by the DEDIPAC KH:

- establishing a joint and standardised monitoring system of dietary intake and physical activity patterns;
- collecting and using harmonised data: fostering methodological and data management procedures in all relevant disciplines for studying the determinants of diet, nutritional status, food choices and physical activity behaviour. The ultimate goal was to obtain all relevant data in the most harmonised manner, enabling cross European comparisons, multi-centre studies and secondary data analyses;
- implementing systematic foresight activities and initiate scenario studies, including and exploiting relevant expertise from European trans-disciplinary research networks on determinants of dietary and physical activity representing all EU countries. The goal of such activities was the generation of a common research agenda across disciplines, relevant to European research needs in the area of determinants of diet, food and physical activity choices;
- making better use of existing databases by pooling existing prospective cohort studies, including data from biological, social or behavioural sciences;
- establishing and maintaining integrated multidisciplinary databases that have used state-of-the-art methodologies.

3.2 Peer-review Procedure and Results

Indicators used:
- Description evaluation process, pros and cons
- Results (project list)

The call for the DEDIPAC Knowledge Hub was launched on the 1st of November, 2012. The Joint Call Secretariat was located at the DLR Project Management Agency, Germany. The implementation process was organized as a three-step procedure (see fig. 1). In the first step researchers in all participating countries were asked to submit an **Expression of Interest -letter** (EoI), stating their expertise and scientific excellence in the relevant field, personal and institutional capacities and infrastructures and the potential contribution to the activities of the KH. In the following **national evaluation processes**, each participating funding organisation selected their DEDIPAC KH members according to national eligibility criteria as well as agreed criteria as stated in the call document (scientific quality of the intended contribution of the research group/organisation and how it matches the objectives of the DEDIPAC KH, quality of the

planned activities in the DEDIPAC KH, good balance among different expertises). After finishing the national evaluation, the funders represented in the DEDIPAC Steering Committee discussed and adapted the overall selection of candidates to ensure sufficient scientific and geographical balance of the network partners. Subsequently, the applicants were informed on the outcome of the process.

In the 2nd step, the selected partners of the DEDIPAC KH met for the first time at the **networking meeting on the 7th-8th of March 2013 in Berlin,** to facilitate the concept development and drafting of one **transnational network proposal**. During the course of this networking meeting, the selected hub members identified the three main thematic areas (TAs) of their future work programme and elected a coordinating team. A first draft framework for the proposal was also outlined at the meeting and over the course of the next three months a full joint proposal was developed describing the work programme of the knowledge hub. The network proposal was submitted by the coordinator on 15th of May, 2013.

In the 3rd step, the DEDIPAC KH proposal was evaluated in a **peer-reviewed process** by 11 internationally renowned experts in the field, according to the criteria that were described in the call text.

The Evaluation Panel (EP) discussed the network proposal in an **evaluation meeting** on the 27th of June 2013 in Berlin, including a hearing of the knowledge hub coordinating team. As a result of that meeting, the hub coordinator was invited to revise and re-submit the network proposal according to recommendations from the EP. The revised proposal was again evaluated by the EP and based on the positive result, the Call Steering Committee decided to fund the knowledge hub (August 2013).

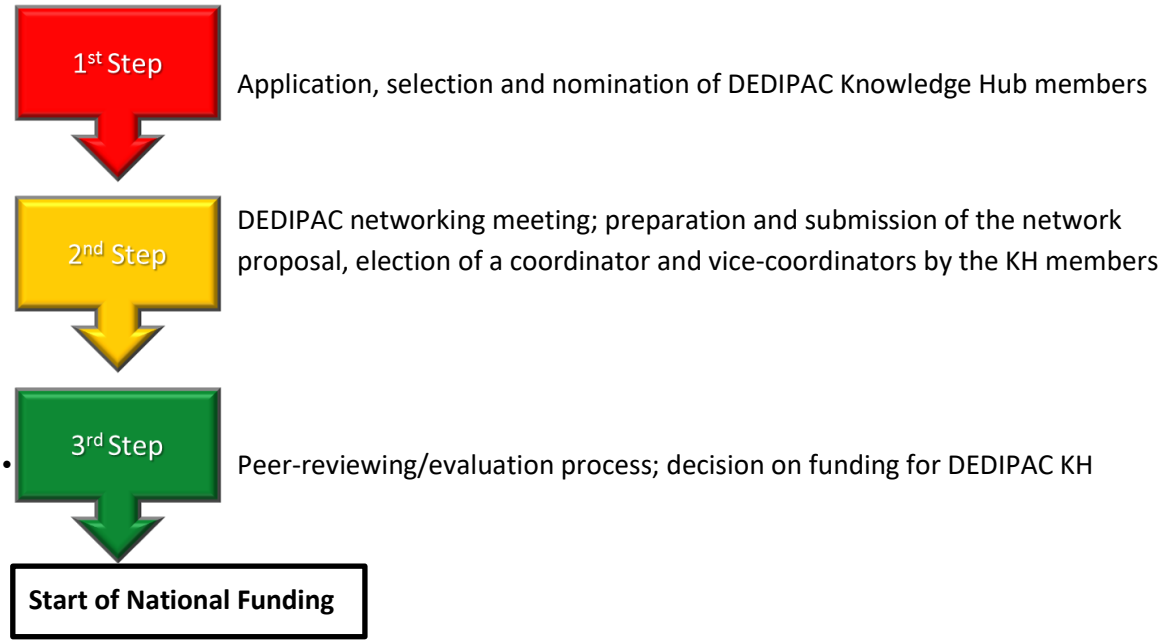


Figure 1: Implementation of the DEDIPAC Knowledge Hub

In December 2013 the DEDIPAC KH officially started its work. The network was organized in a decentralized way, with coordinators elected for both the overall organization as well as for the individual TAs. The DEDIPAC management team consisted of a central hub coordinator (Johannes Brug, NL), two vice-coordinators (Ute Nöthlings, DE and Paul Finglas, UK) as well as leaders and co-leaders for the different TAs and work packages.

In total, almost 300 researchers from 68 institutions across all 13 participating European countries were involved in the DEDIPAC KH. In addition, there is also one international organization (International Agency for Research on Cancer, WHO) participating in the DEDIPAC KH with in kind

contribution. A list of all DEDIPAC Knowledge Hub partners can be found in Annex 1. There were some changes in the composition of the network during the course of the three years funding period. The Finnish funding organization withdrew early in the process as their national funding body was not able to provide the necessary support for the Finnish partners. A Danish organization joined with own resources after the formal establishment of the Knowledge hub.

The DEDIPAC KH officially ended in November 2016 after having presented its results in a final symposium in October 2016. The final report[2] was published on the 1st of December 2016 on the DEDIPAC website. In November 2017, a summary paper "Determinants of diet and physical activity (DEDIPAC): a summary of findings"[3] was published in the Journal of Behavioural Nutrition and Physical Activity, including updated information on the DEDIPAC KH results and achievements.

3.3 Evaluation Results

3.3.1 General Indicators

3.3.1.1 Alignment of national funding

Indicators used:
- Number of countries/partners participating in the call
- total committed budget

Initially, 12 JPI HDHL partner countries and 13 funding organisations participated in the call (Denmark with one research institute joined later in the process as 13th country). The total *in cash* budget committed by the participating funding organisations for the Knowledge Hub was 6.39 Mio. € plus approx. 10 Mio. € *in kind*. **Therefore, a significant amount of national funding in the research field of Determinants of Diet and Physical Activity could be aligned by this funding initiative.**

3.3.1.2 Involvement of national scientific communities

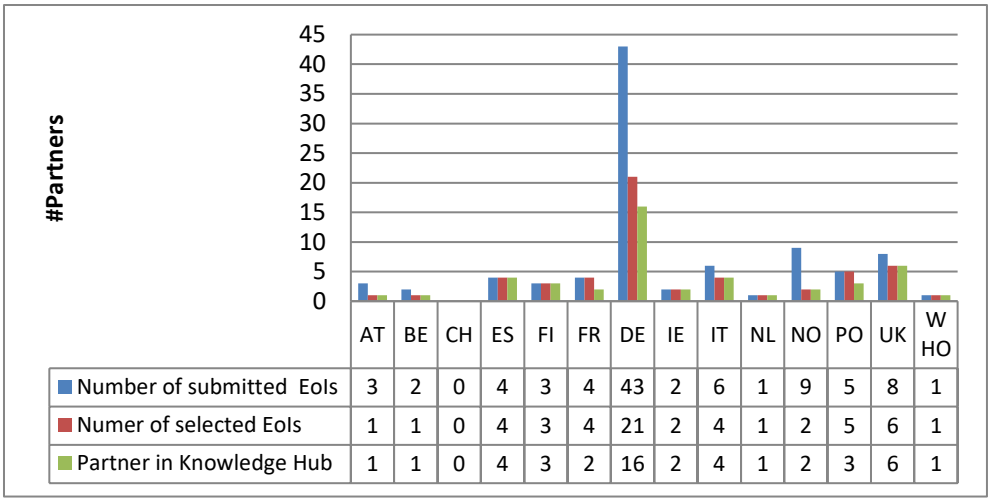
Indicators used:
- Number of submitted pre/full-proposals per country/funding organisation
- Number of accepted proposals per country/funding organization
- Committed budget per country
- Budget requested /allocated per country
- % of the total budget spent
- Number and type (Research/SME/Large industry) of organisations/teams in the funded consortia

3.3.1.2.1 Participation of national scientific communities

In response to the call 90 EoI letters had been submitted, of which 54 were selected as hub members in the national selection processes (step 1) and invited to attend the networking meeting (step 2). In the submitted network proposal 46 research groups (incl. one international organisation) were involved as partners (step 3).

The distribution of the submitted EoI letters and selected hub members over the participating countries is depicted in fig. 2. In almost all participating countries at least one EoI letter was submitted in response to the call and research groups and/or scientists were selected to join the knowledge hub (fig. 2). Only in Switzerland, no EoI letters had been submitted, therefore no Swiss partners could be selected to participate in this network.

2 DEDIPAC KH final report https://www.dedipac.eu/
3 Brug *et al.* International Journal of Behavioral Nutrition and Physical Activity (2017): Determinants of diet and physical activity (DEDIPAC): a summary of findings



	AT	BE	CH	ES	FI	FR	DE	IE	IT	NL	NO	PO	UK	WHO
Number of submitted EoIs	3	2	0	4	3	4	43	2	6	1	9	5	8	1
Numer of selected EoIs	1	1	0	4	3	4	21	2	4	1	2	5	6	1
Partner in Knowledge Hub	1	1	0	4	3	2	16	2	4	1	2	3	6	1

Figure 2: Numbers of research groups per country in the implementation of DEDIPAC KH

From the 54 research groups/scientists that were selected in the national processes and attended the networking meeting, 46 (85%) were finally involved as partners in the joint network proposal, showing that despite the top-down selection processes on national levels the network succeeded to integrate most of the selected partners in a joint network programme.

The numbers show some imbalance in the distribution of hub member over countries. This was partly due to the fact that the available funding budget for the participating funding organisations was very different (see below). However, it should be also noted that the term "partner" was quite differently interpreted in the different countries. In some countries, only single research groups applied as hub partner (e.g. DE), while in other countries a group of researchers formed a national consortium which together applied for membership in the knowledge platform as one partner (e.g. NL). Therefore, the numbers given in the statistics should be interpreted with some caution.

All DEDIPAC KH partners were scientists and research groups from research institutions, no industry partners or other type of institutions were involved, reflecting the academic nature of this research field.

3.3.1.2.2 Distribution of national funding

Like all subsequent joint funding actions implemented by the JPI HDHL, the funding of the DEDIPAC KH was organized as „virtual common pot", meaning that each country and/or funding organization finances the activities of „their" national scientists.

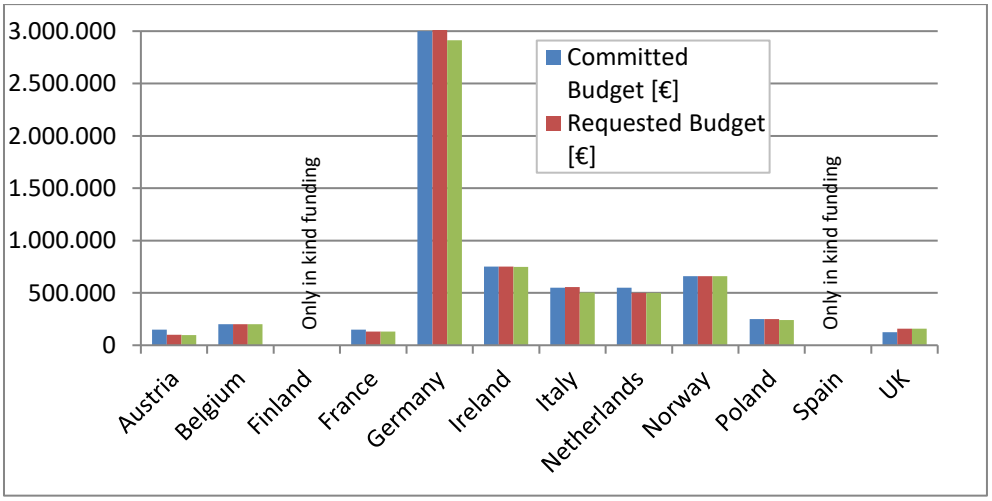


Figure 3: Committed, requested and granted funding budget of the DEDIPAC Knowledge Hub, distributed by countries.

In the joint network proposal, the Knowledge Hub requested a total budget of 6.32 Mio. € *in cash* and committed around 800 Person Month (PM) *in kind*. Almost the same amount was also allocated to the hub members by the different funding organisation over the course of the three year funding period. The total granted and spent budget sums up to 6.15 Mio. € which is 96% of the initially committed budget. As shown in fig. 3 the available funding budget differed substantially between the participating countries. The largest amount of *in cash* budget was available for the German applicants. Therefore, German researchers comprise the largest group of partners in the network and took over a large number of tasks and work packages. Also the eligibility regulations differed between funding organisations, for example all funding organisations were able to fund travel and communication costs, however only some funding organisations were able to also fund research, coordination or training activities.

3.3.1.3 Success of implementing collaboration

Indicators used:

- Interdisciplinary collaboration (Number of disciplines per consortium, list of disciplines)

- Success of transnational collaboration (Number of new collaborations with academia, collaboration with other JPI funded projects)

- Number of project coordinators/partner per country

- Intensity of Collaboration (Number of Meetings, Number of mobility/lab visits within a consortium)

The DEDIPAC Knowledge Hub was specifically designed to boost transnational co-operation, multi- and interdisciplinary collaboration and communication. Its main aim was to bring together research groups from different disciplines to contribute to the understanding of how biological, ecological, psychological, sociological, economic and socio-economic factors interact and influence consumer decision-making. In particular, the variability across European Member States and Associated Countries in economic, social and policy environments presented the perfect opportunity to improve the understanding of how these contextual factors influence diet and physical activity.

Thus, the funding action was conducted as a joint Knowledge Hub with its members addressing one research challenge together, rather than as in classical competitive call, resulting in several smaller research consortia addressing several single research questions in parallel. The success of the established collaboration on transnational and scientific level is being assessed in the following subchapters.

3.3.1.3.1 Interdisciplinary collaboration

More than 16 different scientific disciplines were involved in the DEDIPAC KH, including Nutrition Sciences, Behavioural Sciences and Psychology, Biology, Physical activity, Sedentary behaviour, Public Health, Sociology, Economy (see fig. 4). However, due to the non-centralised national selection procedure it was difficult to ensure a good balance among scientific expertise in the KH. One measure that was taken to achieve this goal was a meeting of the Call Steering Committee after finalisation of the national selection processes to discuss and, if needed, adapt the composition of the network. This turned out to be difficult since the national priorities and country balance proofed to be as important as the scientific balance for most of the funders. **However, a good balance of expertise could still be achieved in the final selection of hub members** (fig 4).

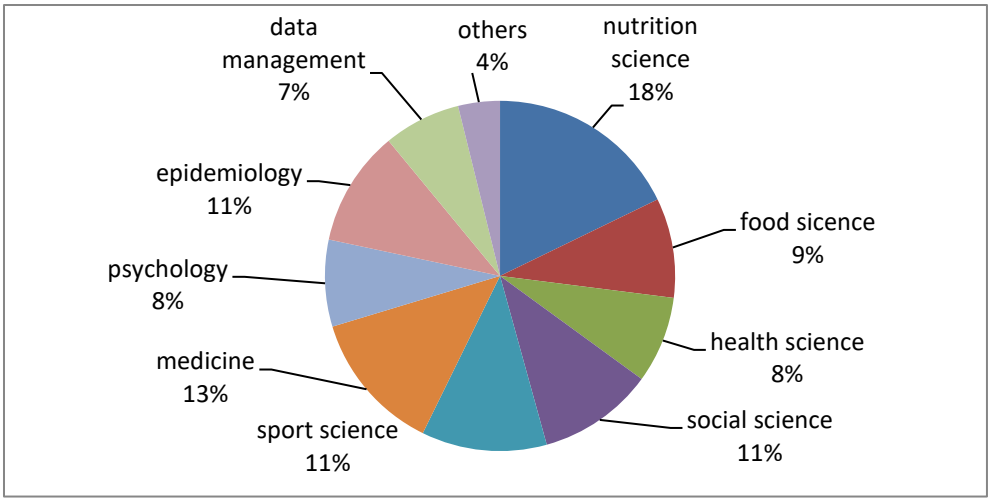


Figure 4: Scientific expertise represented in the DEDIPAC KH

Noteworthy, many KH members declared in personal conversation that even though interdisciplinary collaborations existed already to some extent in this research field, many Knowledge Hub partners met for the first time at the networking meeting. **Especially researchers from scientific areas that are traditionally not very closely related (for example food science and psychology) for the first time had the chance to interact and develop new approaches and ideas within this funding initiative.**

3.3.1.3.2 Transnational collaboration

The transnational composition of the Knowledge Hub is depicted in Fig. 5.

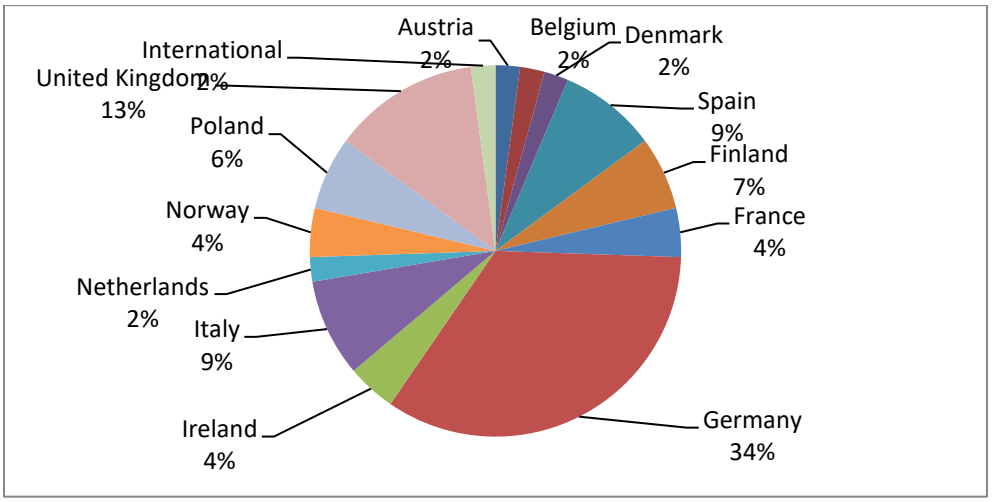


Figure 5: Transnational composition of DEDIPAC KH

Due to the differences in funding budgets and eligibility rules, there was **some geographical unbalance within the hub composition**. In particular, Southern and Eastern European countries were underrepresented since only few funding organisations from these countries took part in this call. Moreover, the majority of partners originated from Germany (however, please see comment to the differences in definition of "partner" in section 4.1.2).

Compared to the national composition of partners, **the distribution of leading roles (TA leader, Work package leader, Task leader) within the network as stated in the network proposal was more evenly distributed over the participating countries** (see fig. 6). This shows the great dedication from some of the involved researchers, despite limited funding, and is also due to the considerable

increase of available funding in some countries / funding organisations (see 4.1.2) in response to the joint network proposal.

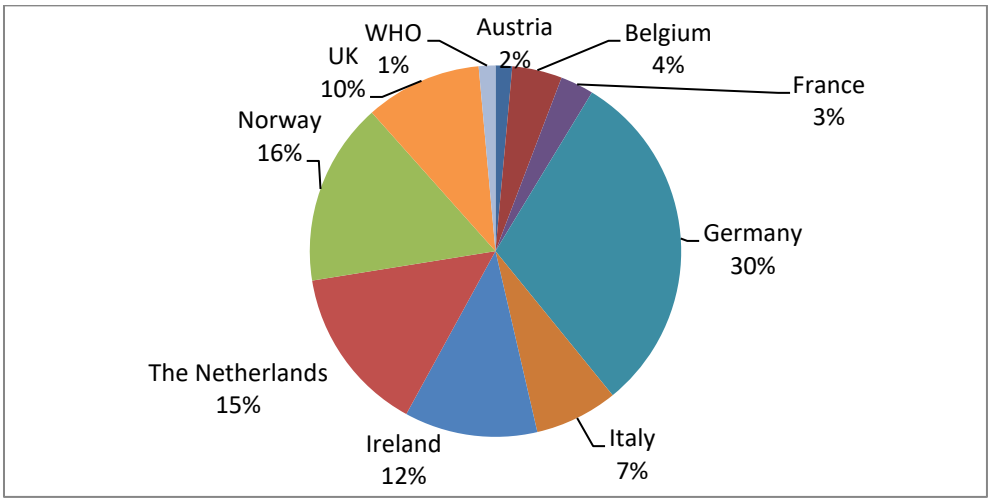


Figure 6: Distribution of Tasks / Leading Roles within the network over countries

3.3.1.3.3 Intensity of Collaboration

The whole consortium met at two occasions during the three years funding period of the Knowledge Hub: the first was the Kick-off meeting in May 2014 in Amsterdam, the second the final symposium in October 2016 in Bonn. More meetings of the whole group seemed not feasible and meaningful due to the high number of involved scientists. In addition, there were **45 meetings of the different TAs** (15 in TA1, 22 in TA2, 8 in TA3) and 58 further networking events and meetings within the DEDIPAC KH allowing more focused and issue-specific collaboration. Communication and frequent scientific exchange between the network partners was ensured by a specific "Partner Portal" on the DEDIPAC website and by live and teleconference meetings at task, WP and TA level as well as regular meetings of the DEDIPAC management team (DMT), consisting of the hub coordinator, the vice coordinators and TA leaders.

3.3.1.4 Success of scientific collaboration

Indicators used:
- Number of new publications related to the project
- Number of presentations related to the project
- New funding obtained

3.3.1.4.1 Scientific Output

At the publication date of the final report[4] (Dec 2016), DEDIPAC KH had produced 21 scientific publications that were published or accepted for publication in peer-reviewed international journals, 20 additional publications were still in progress. All of these papers involve two or more DEDIPAC KH partners. On average, DEDIPAC papers have been published by 15 authors with a maximum of 40 authors on one paper, illustrating the intensity of the collaboration. At the date of the final summary paper[5] in Nov 2017 **a total of 36 original papers had been published as result of DEDIPAC KH, with further 34 publications under way**. At the time of drafting this report (August 2019), an additional PubMed inquiry indicated **56 DEDIPAC publications**, not including papers in local journals or non-

4 DEDIPAC KH final report https://www.dedipac.eu/final-report
5 Brug et al. International Journal of Behavioral Nutrition and Physical Activity (2017): Determinants of diet and physical activity (DEDIPAC): a summary of findings

medical journals that are not otherwise indexed in PubMed. These publications include systematic literature reviews, secondary data analysis, inventories and framework concepts on determinants of dietary, physical activity and sedentary behaviour. Details of these publications with regard to the addressed subjects, behaviours and target groups are further described in section 3.3.1.8.2.

In total, **45 presentations were held at international meetings, symposia and congresses,** presenting the DEDIPAC KH results (not including the presentations at DEDIPAC-organised events.). There were also **four public events** organised by DEDIPAC to communicate and discuss results and foster exchange within the network as well as with the wider scientific community and/or the public.

- DEDIPAC workshop at the world EXPO, Milan 2015
- Two satellite events at the annual meetings of the International Society of Behavioural Nutrition and Physical Activity (ISBNPA) in 2015 (Glasgow) and 2016 (Cape Town)
- Irish DEDIPAC symposium, Dublin 2016

3.3.1.4.2 New funding obtained

12 new grant applications originated from the DEDIPAC KH until December 2016; however, only of one of these has been funded at the time of publication of the final report. This application was related to another call that was launched by the JPI HDHL in March 2017: "Effectiveness of existing policies for lifestyle interventions – **Policy Evaluation Network (PEN)**". The aim of this call was to establish a multi-disciplinary research network for the monitoring, benchmarking and evaluation of policies that affect dietary and physical activity as well as sedentary behaviour with a standardized approach across Europe. This new Policy Evaluation Network was supposed to make use of the achievements of the DEDIPAC KH, especially Thematic Area 3, and to build on the results, although it was explicitly not meant as a direct continuation of the DEDIPAC KH. From a total of 28 PEN partners, 16 partners from DEDIPAC KH were involved in the PEN network that started its work in February 2019.

3.3.1.5 Involvement in other JPI HDHL activities

The DEDIPAC KH presented at three events organised by JPI HDHL: the JPI HDHL conferences in June 2015 and December 2017 and the Kick-off meeting of the JPI HDHL funded Knowledge Hub "Malnutrition in the Elderly", also in 2015. In addition, there were close contacts with other funded projects of the JPI HDHL, such as ENPADASI[6] and FOODBALL[7], discussing both practical (e.g. consortium agreement) and methodological (e.g. data sharing and harmonisation) issues.

In addition, a workshop was organised by the JPI HDHL in March 2018 to follow up on both, the DEDIPAC KH and ENPADASI projects and their results and discuss possible future developments in the research field of determinants of dietary and physical activity behaviours. In this workshop, the DEDIDPAC consortium presented a concept for a future joint action that builds on the needs and gaps identified by DEDIPAC KH. The goal of this suggested action would be to work towards the establishment of a pan-European cohort study, with thorough and longitudinal assessment of behaviours and behavioural determinants, with a particular focus on contextual determinants. This study should be based on a coherent, standardised and validated pan-European protocol that builds on the results of DEDIPAC and progress in the PEN network, and takes advantage of the

6 European Nutritional Phenotype Assessment Data Sharing Initiative (ENPADASI): Knowledge Hub, implemented by JPI HDHL in 2014

7 Food Biomarker Alliance (FOODBALL) is one of the projects that received funding in the third JFA of the JPI HDHL "Biomarkers in Nutrition and Health" in 2014

achievements of ENPADASI with respect to data sharing and harmonisation infrastructure. The concept was presented to the management board of the JPI HDHL and is currently under discussion.

3.3.1.6 Capacity Building

Indicators used:
- Training activities
- New jobs/positions generated in the project
- Use of existing tools and/or development of new capacities or resources (e.g. a transnational database, biobanks, animal models, cohorts)

Within the DEDIPAC KH **2 master theses and 4 PhD theses** were achieved. There was also a publicly accessible inventory of graduate programs within DEDIPAC institutes.

In addition, the network implemented **four workshops** that were dedicated to training and knowledge exchange between the members of the network, in particular early career scientists, as well as the external scientific community:

- Feb 2014: Workshop on systematic literature analysis
- July 2015: Workshop on statistical analysis
- Oct 2015: Workshop on economic evaluation
- Apr 2016: Workshop on surveillance systems

Moreover, new capacities and resources for research have been developed as results of the DEDIPAC KH project:

- Establishment of **a transnational and multidisciplinary network of researchers**: approx. 300 researchers from 68 research institutes in 13 European countries, from more than 16 different scientific disciplines; many of whom never collaborated before DEDIPAC
- **Development of two online toolboxes**: 1): suitability of tools and assessment methods for research, surveillance and interventions (TA1 and 2); 2): development, evaluation and implementation of policies and multi-component interventions (TA3)
- Development, pilot-testing and optimizing of **two novel assessment instruments for research and surveillance purposes**: 1) sugar-sweetened beverage consumption and 2) sedentary behaviour and its determinants.

For further details see section 3.3.1.8

3.3.1.7 Data and Knowledge Sharing

Indicators used:
- Use of existing data: Has existing data been used / pooled for the project?
- Has the consortium used samples from existing cohorts and / or other epidemiological studies?
- To perform the project, have you used samples (omics-based) from bio-bank or/and other disease register sample collections?
- FAIR-Data principles: Has the data generated in the project made available by following the FAIR principles?

To deliver on its specific aims and objectives **69 existing databases / cohort studies have been pooled in the three TAs** within DEDIPAC KH. These data were further processed and used in various secondary data analysis, including data set pooling and harmonisation of variables. In addition, DEDIPAC KH provided overviews on assessment methods and tools to be used for research, surveillance and intervention purposes as well as state-of-the-art evidence on determinants of

dietary and physical activity behaviour. For the latter, a total of **24 inventories, systematic literature reviews and mapping/scoping reviews were published**, complemented with expert consultations and some original research (see 4.1.8.1 for further details). All literature reviews have been complied with the PRISMA guidelines and review protocols and were published in the international prospective register of systematic reviews PROSPERA, where appropriate. The results and findings were presented and disseminated by an **open-access online platform with toolboxes** for researchers, practitioners and policy makers. In addition, the DEDIPAC KH progress and deliverables were communicated via the **DEDIPAC KH website**.

3.3.1.8 Impact

Indicators used:

- Contribution of the project to the coordination/harmonization of research activities (standardisation of methods and protocols, data harmonisation, data and knowledge sharing)
- Activities towards innovation (New industry collaboration, Development of new methods/research tool/products, Patents: number and geographical scope)
- Contribution to public health (Target groups, Interaction with End-Users (consumers, patients in intervention studies)
- New strategies/applications to reduce incidence of diet related chronic diseases)

General Remark: The JPI HDHL defined a set of general indicators to be used in the assessment of all Joint Funding Actions implemented by JPI HDHL (grey boxes). In addition to this, a specific set of indicators had been identified for each Joint Action, based on the specific design, aims and objectives of respective call (green boxes). In the case of DEDIPAC KH, these specific indicators were very closely connected to the general impact indicators, therefore both sets of indicators are analysed together in the following sections.

3.3.1.8.1 Contribution of the project to the coordination/harmonization of research activities

Specific DEDIPAC indicators used:

- generation of common research agenda across disciplines
- pooling of existing databases and cohort studies
- harmonisation of data assessment
- contribution to the understanding of consumer decision making in context of diet and physical activity on health
- facilitation of future prospective studies at pan-European level
- establishment of a joint and standardised monitoring system
-link research activities with pillars 2 and 3

The DEDIPAC KH work programme, in particular Thematic Areas 1 ("Assessment and harmonisation of methods for future research, monitoring and evaluation of interventions") and 2 ("Determinants of dietary behaviour, physical activity and sedentary behaviour across the life course and in vulnerable groups"), was **specifically built towards harmonization and integration of methodology and knowledge, and to develop a research infrastructure for studying, monitoring and surveying determinants of dietary, physical activity and sedentary behaviours**. In the following sections, the results and achievement in TA1 and TA2 with impact to these goals are described:

Generation of common research agenda across disciplines

Within DEDIPAC KH, a transnational and multidisciplinary network of researchers has been established, involving approx. 300 researchers from 68 research institutes in 13 European countries. The Knowledge Hub assembled more than 16 different scientific disciplines; many of whom never

collaborated before DEDIPAC (see 3.3.1.3.1). The network drafted and submitted a joint network proposal, representing a common agenda and work programme in this research field for the upcoming years. In addition, to fulfil its tasks and structure the work, TA2 established four distinct networks of researchers across DEDIPAC-affiliated institutes, countries and disciplines (WP2.1-2.4), addressing dietary behaviour, physical activity, sedentary behaviour and social inequality and ethnic minorities, respectively, with dedicated research agendas and work plans for each network across the involved scientific disciplines.

Table 1: Overview on trans-disciplinary networks in TA2

Focus	Number of scientists and partners	Number of countries	Number of areas of expertise
WP2.1 Diet	100 scientists 23 partners 40 organizations	13	21
WP2.2 Physical activity	74 scientists 12 partners 25 organizations	8	19
WP2.3 Sedentary behaviour	18 scientists 8 partners 9 organizations	6	16
WP2.4 Social inequalities and ethnic minorities	13 scientists 7 partners 7 organizations	6	5

All four networks (including sub-networks in case of WP2.1) established their own management and working structures that include regularly meetings and telephone conferences as well as the preparation of network reports. However, in addition to the underrepresentation of researchers from Southern and Eastern Europe countries (see 3.3.1.3.2) there were other limitations, e.g. a limited number of members who focus on adolescents as well as members with expertise in contextual determinants.

Pooling of existing databases and cohort studies

In total, **69 existing databases/cohort studies have been pooled in the three TAs** within DEDIPAC KH (see chapter 3.3.1.7). These data were further processed and used in various secondary data analysis, including data set pooling and harmonisation of variables. **In TA1,** a total of **18 systematic literature reviews (SLR)** had been conducted at the time of the final report to identify state-of-the-art assessment methods for dietary, physical activity and sedentary behaviour, including their determinants. As a general criterion studies had to be conducted in two or more different European countries to be included in the SLRs. Of the total number, 9 SLRs addressed diet and 8 addressed physical activity and sedentary behaviour, most of them according to subgroups divided by age. Only one SLR addressed the *determinants* of dietary and physical activity behaviours, showing that the availability of standardised assessment methods for behavioural determinants, the "causes of the causes", lags behind. **In addition, secondary data analyses had been performed on existing data sets, where possible, to assess and compare objectively measured behaviours across different European countries.** However, in many cases it turned out that harmonization and pooling were not possible due to the high diversity of datasets.

In addition, also in TA2 secondary data analyses as well as meta-analyses have been conducted by pooling and harmonizing data sets to further develop the conceptual frameworks on determinants of diet, physical activity and sedentary behavior (further details see indicator "contribute to the understanding of consumer decision making").

In a first step, relevant data sets were identified and combined in a dataset compendium that included details on the study designs, study populations and measures as well as level of data accessibility. **A total of 114 datasets have been included in this compendium.** In the next steps, key topics and approaches for secondary data analyses were defined and a process of gaining access to the data was developed. In the end, **14 of these datasets could be obtained and integrated in the DEDIPAC data harmonization platform to address 10 exemplar research questions on determinants of physical activity and sedentary behaviour**. To assist with the required analytical approaches, a workshop was organized within TA2 in July 2015 (see 3.3.1.5) to share knowledge and expertise on different statistical techniques and specifically address the challenges associated with conducting secondary data analyses, pooling, harmonization and re-analysis of multiple data sets. As it turned out, the DEDIPAC data harmonization platform was useful for the pooling of data, however, harmonization was often restricted to only few core outcome variables. This was due to a many barriers, including the time required to gain access to the data sets, variation in harmonization potential of variables, lack of datasets addressing determinants of behaviour and few longitudinal studies etc. Furthermore, there was a clear lack of indicators covering ethnic minority status in the datasets.

In WP2.1 the analyses of 14 proposed research questions with regard to determinants of dietary behaviour was undertaken via a **meta-analysis, based on a common analytical syntax that was applied to locally stored data.** This type of analysis does not require the physical exchange of data but is combining aggregated information to a single research outcome. **This approach is now being further used within the ENPADASI Knowledge Hub**, therefore the DEDIPAC KH project proofed to be highly useful for this type of joint analysis.

The secondary data analyses resulted in a total of eight publications, of which six addressed dietary intake and two focused on physical activity and sedentary behaviour.

Harmonisation of data assessment

In TA1, an online toolbox was constructed based on the information extracted from the SLRs and secondary data analyses. It comprises an **inventory of methods and tools for assessing dietary, physical activity and sedentary behaviour, divided by study domain and target group, including information on their validity, reliability and acceptability.** The toolbox is publicly available since early November 2017, **providing guidance for underpinning choices and advancing further development and standardization of assessment methods for research, surveillance and evaluation**. In particular, it is meant to underpin the appropriate methodology for future pan-European cohort studies on determinants of diet, physical activity and sedentary behaviours.

To ensure sustainability beyond the termination of DEDIPAC, a license had been agreed by the toolbox developers and the DEDIPAC DMT, allowing others to use, adapt and further build upon the toolbox, as long as DEDIPAC is being credited and their new creations are being licensed under the same conditions.

Facilitation of future prospective studies at pan-European level

One outcome of the analyses conducted in TA1 was that available methods usually address either diet, physical activity (in- or excluding) sedentary behaviour or the respective determinants, but very seldom assess different behaviours and their determinants simultaneously in one person. It would however be highly desirable to cover also the interconnectivity between different behaviours and determinants. Therefore, as an initial step to bridge this gap, a **novel integrated research instrument was developed to collect data on sugar-sweetened beverage consumption simultaneously with GPS and other data, e.g. physical activity or psychosocial factors via a smartphone-based**

methodology. The instrument was developed by DEDIPAC partners and pilot-tested in three countries (DE, NL, NO), which indicated an acceptable compliance for using this application. It is planned to extend the application for other types of variables and determinants as an objective and integrated tool to be used for future research purposes.

In addition, **an innovative methodology was developed to be used for surveillance purposes to assess sedentary behaviour and media use**, both of which relevant but under-represented aspects in current surveillance systems. For this, existing questionnaires were screened and suitable parts integrated into the new instrument, complemented by a SOP manual. The resulting questionnaire was then combined with a postural measurement tool for objectively assessing sedentary behaviour to test the suitability and validity of the questionnaire.

Establishment of a joint and standardised monitoring system

In TA1, an **inventory was made of 50 existing surveillance systems** for diet, physical activity and sedentary behaviour and their determinants in Europe, showing that the majority of these systems focus on food and nutrient intake as well as physical activity, but much less information is collected on sedentary behaviour. In addition, children and adolescents are underrepresented compared to adult target groups. Moreover, an expert panel with representatives from relevant surveillance systems in Europe (including WHO-COSI, EU MENU, GloboDiet, KiGGS and others) had been established to further discuss the necessary steps towards a harmonized pan-European surveillance system. It was concluded that a future harmonized pan-European surveillance system should be built on already existing systems rather than establishing a completely new one. For this, a publically available roadmap consisting of four steps towards the development of such a system was developed.

Contribute to the understanding of consumer decision making

In order to foster a multidisciplinary approach and systems thinking in the research field of determinants of dietary and physical activity behaviour, dynamic frameworks of determinants for each behaviour were developed in TA2. For this, the existing evidence on determinants was collated in SLRs and/or umbrella SLRs. **Overall, 21 systematic reviews were conducted in all four networks, with 10 reviews already published at the time of the update paper** (Nov 2017)[8]. For example, for dietary behaviour a systematic interdisciplinary mapping review was conducted, comprising 1820 publications from more than 10 scientific disciplines across a period of 60 years. The findings of these reviews were combined with expert opinions in a structured process (concept mapping procedure) to structure the potential determinants into groups and rate them with regard to research priority, modifiability and potential effect. Finally, this was visualized in publicly available systems frameworks (EU-PAD for physical activity and SOS for sedentary behaviour) or in case of the dietary determinants as interactive website (DONE model). WP2.4 developed its own frameworks for each group of determinants with regard to ethnic minorities, but also addressed similarities and differences compared to the main frameworks.

The described analyses revealed certain gaps and limitations within the existing knowledge. In general, consistent definitions for dietary and physical activity behaviour variables are currently missing. In addition, a wide range of assessment methodologies and study designs are being used in the primary study, with most study designs being cross-sectional, limiting the strength of evidence of determinants and behaviours *changes* over time. Moreover, primary studies only seldom address sedentary behaviour or information on ethnic minorities. In addition, most of the research to date

8 Brug et al. International Journal of Behavioral Nutrition and Physical Activity (2017): Determinants of diet and physical activity (DEDIPAC): a summary of findings

focuses on individual determinants (biological, psychological or product-related factors), whereas more upstream influences (environmental or policy influences) or the interrelations between determinants are scarcely considered. **In this way, the systematic analyses of existing knowledge and data identified new determinants for future research and how known determinants should be studied in different contexts (e.g. with policy determinants) in further studies.**

3.3.1.8.2 Contribution to Public Health

Indicators used:

- Target groups and addressed subjects

- New strategies/applications to reduce incidence of diet related chronic diseases

- Interaction with end-users (e.g. consumers, patients in intervention studies)

- To what extent have the high risk populations been covered?

Target groups and addressed subjects

In general, DEDIPAC KH addressed the determinants of dietary and physical activity behaviours as well as behaviour changes in the whole European population and across the life course (subdivided into four subgroups: Infants and children (0 to 12 years); Adolescents (12 to 18 years); Adults (18 to 65 years) and Older adults (>65 years)). One Work package (WP 2.4) specifically focused on high-risk population groups, particularly ethnic minorities. However, there were some limitations due to the fact that the DEDIPAC work plan primarily built on data sets that already existed and were made available to the DEDIPAC consortium during the course of the project. Therefore, only those subjects and population groups within reach of these available datasets could be covered in the various analyses. The addressed behaviours, populations and age groups included in the DEDIPAC publications are depicted in figures 7-9.

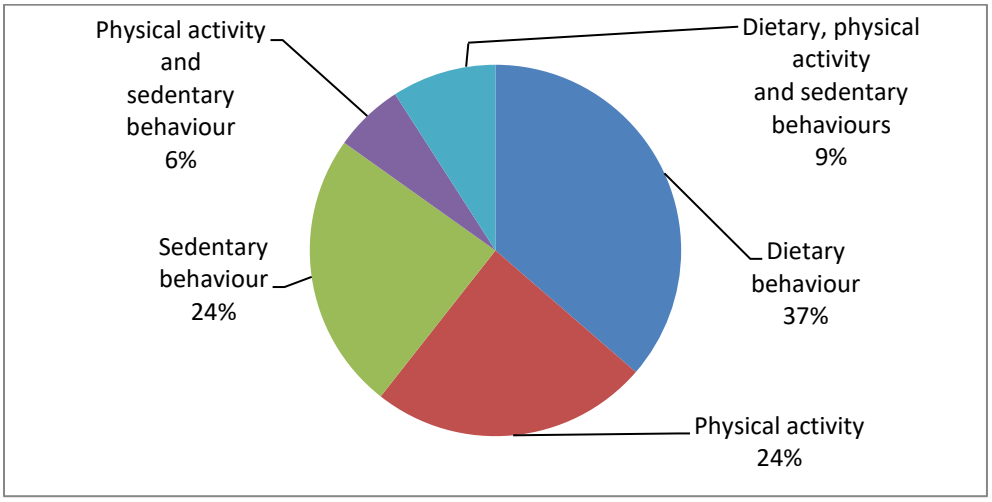


Figure 7: Addressed behaviours in DEDIPAC KH papers

The analyses show that although DEDIPAC managed to cover a wide range of subjects and populations groups, the evidence base on determinants of diet, physical activity and sedentary behaviours among different target groups varies substantially throughout Europe and a number of gaps have been identified.

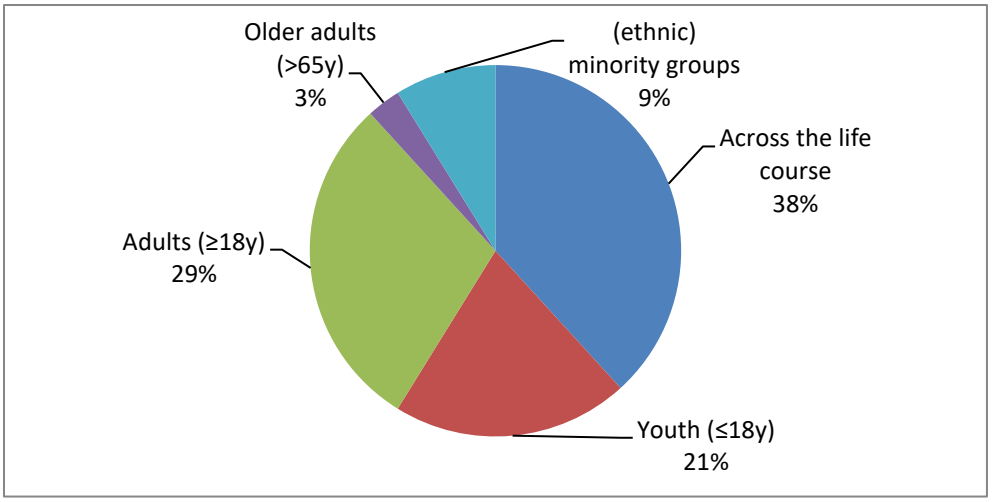


Figure 8: Addressed age groups in DEDIPAC KH papers

In particular, older adults and ethnic minorities are not well covered in existing datasets or their numbers are too small to enable meaningful analyses (see fig. 8).

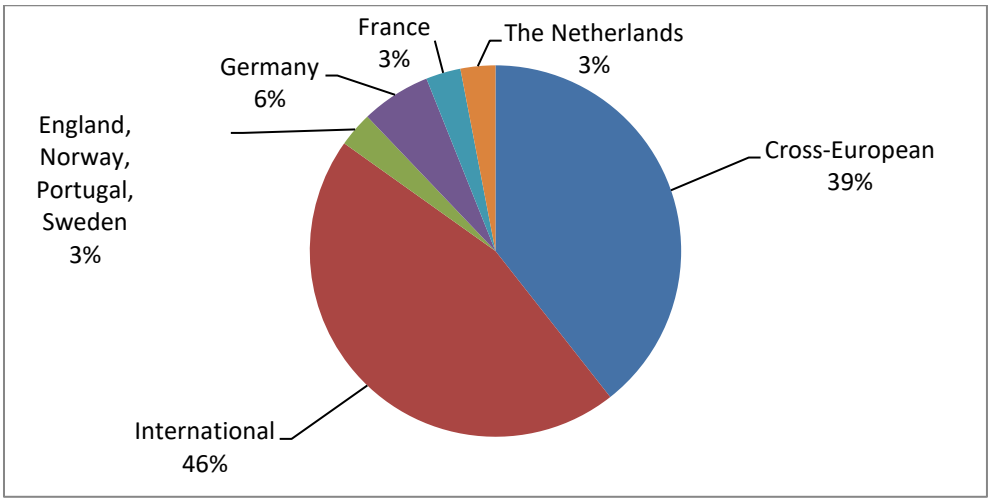


Figure 9: Addressed countries or regions in published DEDIPAC KH studies

Figure 9 shows that for most publications Cross-European or even international data could be used. Only for few analyses data from only single or a small number of European countries have been available.

<u>New strategies/applications to reduce incidence of diet related chronic diseases</u>

The overall aim of **Thematic Area 3** was to increase the quality of public policies and interventions targeting healthy dietary behaviour, sufficient levels of physical activity and a reduction of sedentary behaviour across the life course, in order to improve public health and reduce the incidence of diet and lifestyle-related chronic diseases.

To reach this aim, an umbrella review was conducted on the definition and characteristics of good practice policies and multi-component interventions. In this review **53 good practice characteristics were identified**, 18 of which focusing on intervention and policy content, another 17 were related to implementation and the residual 18 on monitoring and evaluation processes.

Based on these defined characteristics a **"quick-scan" inventory of a good practice of public policies and multi-component interventions was developed,** based on the input from ten DEDIPAC partner countries. The 79 examples in this inventory were further analysed using an online questionnaire to the founders of these practices, asking them to provide more information on the main characteristics of these policies / interventions. Based on this, **an online database of good practices was developed**

containing 44 examples of good practices of policies and interventions in eight DEDIPAC partner countries. The database contains information on the main intervention characteristics (e.g. aim, target population and behaviour), implementation (e.g. sustainability) and monitoring and evaluation (e.g. outcome and effect). Most of these focus on children in school setting and address both diet and physical activity. The database is publicly available and is supported by a fact sheet that is also online available and can be used to disseminate the database for policy makers and health professionals.

One of the aims of TA3 was to improve implementation and transferability of policies and interventions. To meet this objective an umbrella review was conducted to identify critical conditions for successful implementation and transferability of policies and interventions. The review identified **83 critical conditions**, most of them relevant for both, multi-component interventions and polices (7 were policy-specific). The identified conditions target aspects like reaching the target population, adoption issues by staff and institutions, costs and maintenance. In addition, **six example policies and six example interventions were identified in five DEDIPAC partner countries** (BE, DE, IE, NO, PO) and analysed as case studies. For this, interviews were held with 40 stakeholders, mainly public health promotion professionals and policy makers. The analysis resulted in a **range of factors that are important for the successful implementation of policies/interventions**, including active involvement from relevant stakeholders (policy, health and educations sectors), good communications between the coordinating organisations and the government and sufficient training of staff.

One of the main achievements of TA3 was the development of a **concept online toolbox for the development, monitoring and evaluation of public policies and multi-component interventions across Europe**. For this, a rapid review on monitoring and evaluation of public polices and multi-component interventions was carried out and an inventory of standardised measures to evaluate changes in determinants, behaviours and physical and mental health indicators was developed as well as procedures for economic and process evaluations. The information gathered in the reviews and inventories were then combined in a preliminary toolbox, which included information on the design and content of the policies/interventions, the implementation conditions, the best methods to evaluate reach, effectiveness, adoption, implementation and maintenance. As a next step, **the preliminary toolbox was tested in different European countries by using natural experiments of five policies and six interventions** that were already running or that were soon to be implemented in the different countries. Stakeholders were asked to apply the toolbox and give written comments on the usefulness. Based on the feedback, adaptations of the toolbox were discussed and agreed in a consensus meeting with all TA3 partners in April 2016. **The final version of the toolbox was made publicly available online to support policy makers and other stakeholders in the development, evaluation and implementation of public policies and multi-component interventions.**

Interaction with end users (e.g. consumers, patients in intervention studies)

The output of this work (mainly the online toolbox) is primarily **targeted towards researchers, health promotion professionals, policy makers and other stakeholders who want to develop, implement, monitor and evaluate multi-component interventions and/or policies targeted on dietary, physical activity and sedentary behaviour.** The toolbox informs them about critical factors and conditions that need to be considered in the design and implementation of public policies and multi-component interventions. During development of the toolbox, a preliminary version was shared with external stakeholder groups to collect feedback on its usefulness and feasibility, which was then incorporated during the further process.

3.3.1.8.3 Activities towards innovation (new industry collaborations, development of new methods, research tools/products; patents)

This funding initiative was specifically targeted to foster networking, transnational and multidisciplinary collaboration as well as harmonisation and sharing of knowledge and data in the research field of determinants of dietary and physical activity behaviour. Due to this purely academic focus, no industry partners were involved in this funding measure and no new collaborations with industrial partners have been initiated in this project. However, as described in 3.3.1.8.1 an innovative research tool has been developed by DEDIPAC partners. **Using this integrated, smartphone-based method the consumption of sugar-sweetened beverages can be assessed in young adults alongside with data on physical activity levels, geographical data as well as socio-psychologic factors.** The new method has been pilot-tested in three DEDIPAC countries, showing that the methods in principle is feasible and suitable to answer complex research questions, however further tests in more diverse populations are needed. **The methods is meant to be used in further research studies, no commercial exploitation is currently being planned by the consortium.**

In addition, **an innovative methodology, consisting of questionnaire combined with a postural measurement tool to assess sedentary behaviour and media use**. This new instrument **was developed to be used for surveillance purposes** with no commercial exploitation being planned.

3.3.1.9 Experts' assessment on general aspects and the specific aims of the DEDIPAC KH

Indicators used:
- Contribution of the JFA to fill relevant research gaps in the field
- Contribution of the JFA to better coordination and collaboration
- (Future) Impact of JFA results for changes/improvement in the food and/or public health sector

Due to the complexity of this funding initiative, both with regard on the size and scientific scope, the Call Steering Committee (CSC) agreed that an independent external Scientific Advisory Board (SAB) should be implemented to provide guidance and advice for the DEDIPAC consortium during its run time. The five members of this external DEDIPAC SAB (Annex 2) were nominated by the CSC and covered different scientific disciplines and countries (within and outside DEDIPAC partner countries). The DEDIPAC SAB was invited to the consortium meetings and gave short written comments on the annual progress reports and the final report.

In conclusion, the DEDIPAC SAB stressed that considering that DEDIPAC KH was an exceptionally huge and complex project it generally achieved its goals at a very satisfactory level. The project resulted in a large number of published papers, including a commendable number of systematic reviews. In addition, some interesting frameworks/overviews of determinants of diet, physical activity and sedentary behaviour have been produced. However, the impact of DEDIPAC KH results and output is difficult to judge at the time of the final report, especially with regard to policy. Ideally, this assessment should be made several years after completion of the project.

Concerning the general aims and objectives as described in the call text the DEDIPAC SAB felt that the extent of achievement differs depending on the respective goal (see also fig. 10).

- **- Did the DEDIPAC results contribute to the facilitation of future pan-European studies?**

Although difficult to assess at that point of time, it was assumed that DEDIPAC KH had contributed at least to **some extent** to this goal. DEDIPAC KH provides a good basis for an evidence-based design, implementation and evaluation of future Pan-European initiatives aiming to tackle obesity and related comorbidities among children and adults. The toolbox for assessment methods surely is of great value to researchers.

- **Which progress has been achieved in harmonising cross-European data collection and management (harmonisation of assessment tools/ databases etc.)?**

The project has shown that harmonisation of definitions and data collection procedures are a challenge. Considering the huge heterogeneity DEDIPAC KH managed, up to a **certain extent**, to achieve this goal by producing a compendium of 114 unique data sets and by conducting quite a lot of secondary data analyses and a considerable number of important publications.

- **What are the DEDIPAC achievements towards a joint and standardised monitoring system of dietary intake and physical activity patterns?**

DEDIPAC KH has **substantially** contributed towards a joint and standardised monitoring system of dietary intake and physical activity patterns throughout Europe. Still the heterogeneity among and within populations/countries in Europe remains an obstacle towards the development of harmonized surveillance systems and as such more work needs to be done in this area.

With regard to the specific scientific objectives mentioned in the call text, the DEDIPAC SAB assessed to what extent these aims could be achieved:

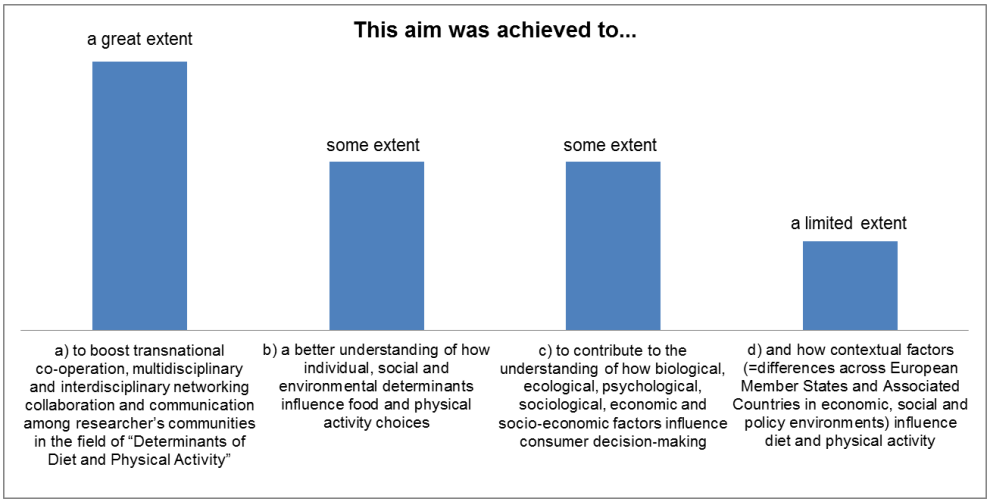


Figure 10: Assessment of specific scientific objectives in the DEDIPAC KH call text by the SAB

Critical points raised by the DEDIPAC SAB:

- The number of researchers was very large, which has surely led to many networking opportunities, but it made the project unwieldy and somewhat inefficient ("organizational complexities").

- The balance between measurement issues (too heavy) and policy, evaluation and health inequalities (too light) was not optimal. More focus on inequalities using stratifiers like sex, education, income, social class, country of birth, migration status etc. could have been useful.

- Systematic Reviews of determinants are already in the literature. Based on these umbrella reviews were produced by DEDIPAC KH. This means that innovation was not given as high priority as planned and that the project has not resulted in much new knowledge.

- For this 3 year project comprised of researchers from many countries, the purpose of TA3 to improve policy and practice was impossible to reach.

- The TA3 concept toolbox is of questionable use since it is not clear, whether it will be updated on a regular basis.

- The "natural experiments" are not really natural. It seems more of a random sample of interventions carried out by the participating countries with variables success. The database was supposed to contain "good practice" examples, but examples were not always "good".

3.3.2 Conclusions

Within the DEDIPAC KH 300 scientists from 13 countries across Europe have worked on a better understanding of the determinants of dietary, physical activity and sedentary behaviours and to translate this knowledge into more effective promotion of a healthy diet and physical activity. In order to reach this aim the consortium has generated and implemented a common research agenda across disciplines creating a comprehensive, scientific overview that explains nutrition and physical activity behaviours. In addition, the DEDIPAC consortium delivered a toolbox for the development, implementation and evaluation of interventions and policy measures to improve and support healthy lifestyles including several best practice examples.

As one of its main aims the DEDIPAC KH has made a huge progress in the standardization of behavioural data by pooling 69 existing databases and cohort studies to conduct secondary data analyses on existing data sets and by publishing 18 systematic literature reviews to identify state-of-the-art assessment methods. In addition, great progress has been made towards a pan European surveillance system by establishing an inventory of 50 existing surveillance systems and the generation of a four step-roadmap towards the development of a joint and standardised monitoring system for Europe.

The first JPI HDHL call has brought together research groups that would not have found each other through a regular call for proposals and thus facilitated the formation of a new interdisciplinary transnational research community that has continued their collaboration (in smaller subgroups) beyond the runtime of DEDIPAC, for example in the “follow-up” joint funding activity Policy Evaluation Network (PEN).

3.4 Annexes

3.4.1 Annex 1: List of DEDIPAC KH partners

Due to data protection regulations the list of DEDIPAC KH partners was removed.

3.4.2 Annex 2: Members of the external DEDIPAC Scientific Advisory Board

Due to data protection regulations the names of SAB members were removed.

3.4.3 Annex 3: Used data sources

Call Text "The JPI HDHL Knowledge Hub on "DEterminants of DIet and Physical Activity" (DEDIPAC KH)" published via https://www.healthydietforhealthylife.eu/.

Revised Network Proposal "Determinants of Diet and Physical Activity; Knowledge Hub to integrate and develop infrastructure for research across Europe" submitted on 31.08.2013

DEDIPAC KH final report submitted on 30.11.2016 *(https://www.dedipac.eu/final-report, DEDIPAC webpage is currently being transferred to JPI HDHL website https://www.healthydietforhealthylife.eu/)*

Brug et al. (2017): Determinants of diet and physical activity (DEDIPAC): a summary of findings. International Journal of Behavioral Nutrition and Physical Activity 14:150. DOI 10.1186/s12966-017-0609-5.

Written feedback to final report from DEDIPAC Scientific Advisory Board

3.4.4 Annex 4: Overview on general indicators

4.1.1 Alignment of national funding	
- Number of countries/partners participating in the call	12 countries, 13 funding organisations
- total committed budget	6.39 Mio € + ca. 10 Mio € in kind
4.1.2 Involvement of national scientific communities	
- Number of submitted pre/full-proposals per country/funding organisation	90 EoIs submitted in total
- Number of accepted proposals per country/funding organization	54 EoIs selected in total, 46 groups in final proposal
- Committed budget per country	6.39 Mio € in total
- Budget requested /allocated per country	6.32 Mio € in total
- % of the total budget spent	96 % (6.15 Mio. € spent in total)
- Number and type (Research/SME/Large industry) of organisations/teams in the funded consortia	46 research groups, no industry partners
4.1.3 Success of implementing collaboration	
- Interdisciplinary collaboration	
Number of disciplines per consortium	16 scientific disciplines
List of disciplines	See fig. 4
- Success of transnational collaboration	
Number of new collaborations with academia	n/a
Number of collaboration with other JPI funded projects	3
- Number of project coordinators/partner per country	See fig. 6
- Intensity of Collaboration	
Number of Meetings	2 meeting with all partners, 45 meetings of different Thematic Areas
Number of mobility/lab visits within a consortium	n/a
4.1.4 Success of scientific collaboration	
- Number of new publications related to the project	44 published papers
- Number of presentations related to the project	45 presentations
- New funding obtained	12 grant applications, 1 successful (PEN)

4.1.5 Involvement in other JPI HDHL activities	MaNuEl, ENPADASI, PEN
4.1.6 Capacity Building	
- Training activities	4 training workshops
- New jobs/positions generated in the project	2 master theses and 4 PhD theses
- Use of existing tools and/or development of new capacities or resources (e.g. a transnational database, biobanks, animal models, cohorts)	- establishment of transnational and multidisciplinary network of researchers - 2 online toolboxes developed - 2 two novel assessment instruments for research and surveillance purposes
4.1.7 Data and Knowledge Sharing	
- Use of existing data: Has existing data been used / pooled for the project?	Pooling of 69 existing databases/ cohort studies Publication of 24 inventories, systematic literature reviews and mapping/scoping reviews
- Has the consortium used samples from existing cohorts and / or other epidemiological studies?	yes
- To perform the project, have you used samples (omics-based) from bio-bank or/and other disease register sample collections?	n/a
- FAIR-Data principles: Has the data generated in the project made available by following the FAIR principles?	n/a
4.1.8 Impact	
- Contribution of the project to the coordination/harmonization of research activities (standardisation of methods and protocols, data harmonisation, data and knowledge sharing)	High contribution
- Activities towards innovation	
New industry collaboration	n/a
Development of new methods/research tool/products	2 two novel assessment instruments for research and surveillance purposes
Patents: number and geographical scope	n/a
- Contribution to public health	
Target groups	whole European population and across the life course: - Infants and children (0 to 12ys) - Adolescents (12 to 18ys) - Adults (18 to 65ys) - Older adults (>65ys). WP 2.4 specifically focused on high-risk population groups, particularly ethnic minorities
Interaction with End-Users (e.g. consumers, patients in intervention studies)	Toolbox targets towards researchers, health promotion professionals, policy makers and other stakeholders
- New strategies/applications to reduce incidence of diet related chronic diseases	2 online toolboxes developed

4