

# Understanding the institutional context of health inequalities among young people: Study protocol for a multi-center research unit

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## ABSTRACT

### Introduction

While health inequalities among young people are well described, the underlying mechanisms have been explored far less. Little is known about explanatory factors at the contextual level. For example, compositional and contextual characteristics of institutional contexts (e.g. kindergartens, schools) are likely to shape health inequalities among young people and may have an impact above and beyond individual-level determinants. The aim of the research unit is to improve the understanding of the development of health inequalities at younger ages with a focus on contextual factors. The general research objectives are a) to systematically review existing evidence on the impact of different institutional contexts on health and health inequalities from childhood to early adulthood, b) to empirically study if characteristics of different institutional contexts are associated with the emergence of individual-level inequalities in health and c) to integrate findings from different life stages into a comprehensive theoretical model about the key mechanisms at individual and contextual levels.

### Methods and analysis

Building upon reviews of the existing evidence, each of the five subprojects of the research unit will analyse secondary data (cross-sectional and longitudinal surveys). The subprojects will focus on institutional contexts that serve as major socialisation agents in society, such as the family, kindergarten, school, tertiary education/work, as well as the health care system. Linear or logistic multi-

level modelling will be applied in order to examine the role of institutional characteristics for young people's health and health inequalities at the individual level.

### Ethics and dissemination

The dissemination activities include the publication of results in peer-reviewed journals, at international and national scientific conferences, as well as press releases in written and broadcast media to inform relevant stakeholders and the lay public. In the first funding stage, the research unit only uses secondary data of existing datasets. Therefore, ethical approval is not required.

### Strength and limitations of this study

- The research unit goes beyond previous research by a) applying a strict life stage approach and b) recognizing the interplay between individuals and institutional contexts in which individuals act.
- Using scoping review techniques and secondary data analysis, each subproject will generate new knowledge about the way health inequalities are positively or negatively influenced by compositional and contextual characteristics of key institutional contexts in young people.
- The analysis of existing data sets in the first project stage has some limitations in fully answering the cross-cutting research questions.
- This exploratory research will be the foundation of further empirical research in a second funding phase where we intend to conduct a multi-center study using a mixed-methods approach to examine factors influencing health inequalities not included in the existing datasets.

### Keywords

health inequalities, institutional context, life stages, young people, research unit

## INTRODUCTION

### Health inequalities in young people

While the identification and description of health inequalities among young people are receiving increasing interest in several scientific disciplines, there is little systematic research on the complex mechanisms underlying the association between socioeconomic position and health in this population, in contrast to inequalities at older ages [1]. In addition, theoretical reasoning and empirical research indicate a strong segmentation because many studies are restricted to only one specific age group (e.g. primary school children or university students) or a specific dimension of health instead of developing a comprehensive understanding of the first part of the life course (i.e. from birth to young adulthood).

Furthermore, it is necessary to broaden the analytical scope and to recognise that individual-level associations are embedded in a wider social context. From birth onwards, girls and boys grow, learn and act in different contexts: The family and the home environments serve as the primary socialization context, followed by more formalized institutional contexts, such as kindergarten, primary and secondary school, university, and the workplace [2, 3]. It is likely that these institutional contexts profoundly influence young people's health and well-being, as well as their attitudes, capabilities, social networks, and health behaviours. However, research is particularly scarce in explaining the impact of characteristics of institutional contexts on health inequalities in young people throughout different life stages from the very early beginning of life through to the emergence of adulthood.

### Explaining socioeconomic inequalities in health: proximal and distal determinants

The key to a better understanding of socioeconomic inequalities in health lies in the relationships existing between multiple levels of influence. For example, a number of researchers have pointed out that explanatory frameworks need to take into account that the likelihood of being exposed to individual material, psychosocial and behavioural factors is influenced by determinants at the macro-level (societal level), such as welfare state regimes, societal values and macro-economic policies (e.g. income distribution, national wealth). Spatial measures of poverty and deprivation have also been found to be associated with health outcomes – even after adjusting for individual-level factors. The effects of these higher-level variables on individual-level outcomes have been referred to as *contextual effects*. This discussion of the wider social determinants of health [1, 4] is a vast improvement compared to the dominant biomedical paradigm focusing on behavioural and lifestyle factors at the individual level as drivers of health inequalities.

Several conceptual frameworks were proposed in an attempt to summarise the different levels of influences on socioeconomic inequalities in health [5–7]. They

bridge levels proximal to the individual to more distal factors, such as economic and political characteristics of countries [1, 4, 8, 9]. Despite varying definitions of levels of influence, most frameworks at a minimum include an individual (micro) and macro level, as well as some kind of intermediary level, sometimes labelled as community or neighbourhood influences [7]. Interestingly, one of the most prominent conceptual frameworks on the relationship between socioeconomic position and health, the framework developed by the WHO Commission on Social Determinants of Health (CSDH) [10], is largely missing elements at the intermediary meso-level.

### The role of institutional contexts for explaining health inequalities in young people

With regard to socioeconomic inequalities in health in young people, surprisingly little is known about the role of contextual factors located at the meso-level [11]. Generally, meso-level entities can be understood as smaller-scale, lower-level social arrangements or units with a different set of guidelines for societal organisation. One key term to define these arrangements is “institutions”. In the social sciences, institutions are often broadly described as established and prevalent structures of social order that shape social life in particular ways [12, 13]. Institutions define the constraints and opportunities of individual development [14] and often serve as (secondary and/or tertiary) socialisation agents to the extent they stipulate certain, potentially health-related determinants. In the research unit, we use the term “institutional context” to refer to institutional influences at the meso-level [15]. Institutional contexts include not only kindergartens, schools, tertiary educational facilities (as universities) but also families and the health care system [7, 13]. Although the meso-level is explicitly mentioned in some of the integrative models on the explanation of socioeconomic inequalities in health, an explicit *institutional approach* including and differentiating compositional and contextual characteristics of the major institutional contexts in society has rarely been the focus of either theoretical reasoning or empirical research. Only recently has an institutional view on this phenomenon been stipulated in the discussion of health and health inequalities [7, 15, 16].

In general, the family, kindergarten, primary and secondary school, higher education system, vocational school and training, workplace and the health care system can be considered important institutional contexts, as they are relevant in most children's and adolescents' lives [2]. Variations in institutional contexts are likely to become manifest in a wide variety of specific experiences and environments that produce the psychosocial, behavioural and biological antecedents to health and disease among young people [7]. Some studies have shown that factors of different institutional contexts may have a strong influence on young people's health and well-being [17]. However, characteristics of different institutional contexts have

often been measured only at the individual level while structural characteristics of the institution itself were neglected [18]. It is likely that characteristics of institutional contexts have an independent *contextual effect* on health above and beyond the individual level in terms of size, composition, infrastructures, relationships, norms, restrictions, and quality.

### Research gaps

Socioeconomic inequalities in health in infancy, childhood, adolescence and young adulthood emerge in a complex interplay between the individual and different institutional contexts in which young people live, learn and grow up. The following research challenges will be addressed by this multi-centre research unit. First, previous research on health inequalities in young people has had a mainly descriptive focus. Thus, knowledge about the determinants and mechanisms of social inequalities in health in young people at the individual level or on the relative importance of different explanatory approaches (psychosocial, material, behavioural) is incomplete. Second, evidence is largely missing regarding the impact of key institutional contexts regarding the emergence and stabilisation of socioeconomic differences in health. Because individual factors, such as health behaviour or psychosocial resources depend on the institutional context, there is a need to understand how meso- and micro-level characteristics are linked during the different developmental stages from birth to early adulthood. This lack of evidence hampers the effective design of institutional interventions in the form of policies or preventive measures taken by the institutions themselves. The third gap is the lack of a life stage perspective taken in research. Prior studies paid little attention to time-related changes and the importance of different determinants of health inequalities – either individual or contextual features – as girls and boys grow older. Thus, a comprehensive life stage approach that takes the specific interrelations between the institutional domains into account would be significant scientific progress in contemporary health inequalities research.

## METHODS AND ANALYSIS

### Conceptual framework of the research unit

A preliminary conceptual basis for the research unit is presented in Figure 1 and will guide the empirical studies in the research unit, which aim to assess how contextual determinants from key institutional contexts influence inequalities in health from childhood to early adulthood. It embodies a series of principles that are important in such empirical evaluations. Below, we wish to highlight different key principles:

First, knowledge about mechanisms and processes of meso-level determinants on socioeconomic inequalities in health in young people is rather limited. We therefore apply existing conceptual approaches linking more proximal macro-level determinants (e.g. welfare state regimes) to health and health inequalities [19, 20]. According to these approaches, it is likely that

higher-level determinants have a) a direct effect on health and/or b) a mediating/moderating effect on the association between socioeconomic position and health. The institutional context generally includes higher-level characteristics [20] which can be separated in *compositional* (which people are found in an institution) and *contextual* factors (the structural characteristics of an institution) [11, 21, 22]. Compositional features refer to the intake of children's characteristics, for example in kindergartens and schools, by aggregating individual-level information from children/students to the kindergarten, class or school level. Those measures represent the share of children/students with certain characteristics in (pre)schools or classes, such as the mean or average levels of the psychosocial learning environment or proportion of children/students with specific background characteristics (e.g. proportion of gender or children from poor households). In contrast, contextual factors focus on the shared organisational, social, and physical nature of the institution, often surveyed, for instance, by (pre)school principals and teachers (e.g. the size of kindergarten/schools, the quality of instruction and curricula or the infrastructure quality of the kindergarten/school such as equipment, materials, availability of healthy food and physical activity resources) [23–25].

Second, we will apply well-established theoretical approaches on the explanation of health inequalities in adults. These include material, psychosocial and behavioural factors which can be understood as cumulative advantages/disadvantages (CAD). The CAD framework [26] suggests that early advantages and disadvantages continue to grow over time [27] while contextualising individuals in everyday routines and contexts. In particular, the CAD framework will be used to analyse the cross-level interaction between the meso and individual level. This allows the testing of “double jeopardy” theories (e.g. advantages/disadvantages at individual and meso-level) and analysis of the lives of multiply disadvantaged individuals.

>> Figure 1 about here <<

### Research questions

Following our conceptual framework, these common research questions (see the corresponding numbers in Figure 1) will be adapted and refined in each of the subprojects:

1. Do individual-level determinants contribute to the explanation of health inequalities in young people, and which material, psychosocial and behavioural factors show the strongest relative contribution to the explanation of socioeconomic inequalities in health in young people?
2. Are compositional and contextual characteristics at the meso-level (independently, additively, or

- even synergistically) associated with health and well-being in young people?
3. Is the association between socioeconomic position and health mediated (3a) or moderated (3b) by compositional and contextual characteristics of the institutional context above and beyond individual-level determinants of health inequalities?
  4. Are compositional and contextual characteristics linked with material, psychosocial and behavioural factors at the individual-level and, thus, contribute to the explanation of socioeconomic inequalities in young people's health and health behaviour.

### Structure of the research unit and overview of subprojects

We set up a multi-centre research unit that consist of five subprojects (SP) (see Figure 2). The research unit is structured by the two dimensions: institutions and life stages. The family (SP 1) and the health care system (SP 5) represent institutions which are relevant at all life stages. They can therefore be considered as transverse subprojects that frame the other institutional contexts. The other subprojects (SP 2 to SP 4) represent the key (formal) institutional contexts beyond the family. They are closely linked to the corresponding life stage.

>> Figure 2 about here <<

Collaboration within the research unit will be organised in the "Coordination project" (CP). Along with organisational tasks, the objective of the coordination project is to stimulate and synthesize the work across the subprojects. It will focus on coordinating all subprojects by linking their research topics as part of the research unit. In addition, the different determinants and mechanisms of health inequalities from birth through early adulthood will be gathered by the CP into a comprehensive model based on the results of all subprojects and taking the transitions between the stages into account. The CP will also articulate and coordinate the gender equality policies of the research unit.

### Study design

To answer the research questions, each subproject follows a mixed-methods design, including a scoping review of the existing literature (07/2019-06/2020), a secondary analysis of quantitative data (07/2020-11/2021), and a synthesis of the findings on the role of different individual- and meso-level determinants from each institutional context that explain socioeconomic inequalities in health in young people (12/2021-06/2022).

#### *Objective 1. Scoping review*

Each SP will perform a scoping review of the literature in order to identify the compositional and contextual

characteristics at the institutional level that have been associated with young people's health and health inequalities. The aim of each review is twofold: synthesizing findings of empirical research to group and cluster different factors and their respective impact on health and health inequalities, as well as summarizing the theories regarding the underlying causal connections and processes. We will search different databases (e.g. Pubmed, Web of Science, PsycInfo) for publications since 2000. We will include original articles in English or German based on empirical (quantitative and qualitative) data and theoretical approaches.

#### *Objective 2. Secondary data analysis*

All subprojects (SP) use secondary data analyses of key data sets on young people's health in the first funding stage.

Subproject 1: Family is the first and most present socialization context of children influencing health and health inequalities from pregnancy on. As a context, family is determining health of children by its own compositional and contextual characteristics and also by interacting with other contexts and buffering the effects of other contexts. Because of the varying role of the family over the life course, the empirical analyses are split up in two study sites, each having particular expertise in different life stages (Senftenberg; Berlin). The analyses are based on data from four empirical studies: The Early Childhood Health in Bielefeld Study (BaBi), the Preschool Intervention Study (PRINS), the German Health Interview and Examination Survey for Children and Adolescents (KiGGS), and the Panel Analysis of Intimate Relationships and Family Dynamics (pairfam). The data sets provide a wide range of measures of health, as well as contextual and compositional family characteristics, covering all life stages from pregnancy to early adulthood. The research questions will be analysed using multilevel models.

Subproject 2: Besides the family, kindergartens are the most important agent of socialization for the group of three- to six-year-olds. Based on a scoping review of the most recent evidence, SP2 will use two secondary datasets: the Preschool Intervention Study (PRINS) and the German National Educational Panel Study (NEPS). Collected in 52 kindergartens, the PRINS dataset includes very detailed (and partly longitudinal) data of n=1,134 children for general health and health behaviour as well as comprehensive contextual and compositional data of the kindergartens. Moreover, PRINS is one of the few datasets worldwide and the only one in Germany that assessed physical activity in pre-schoolers objectively using accelerometry. The NEPS dataset is a nation-wide representative study with multi-cohort sequence design. The relevant starting cohort SC2 comprises N=2,949 children from about 250 kindergartens, surveyed in six subsequent annual waves. The comprehensive data include not

only health outcomes but also data on kindergarten context and composition.

Subproject 3: Next to the family, the school represents a key institutional context for young people influencing their psychological, social and health-related development. SP3 will use data from the German National Educational Panel Study (NEPS). NEPS is a study carried out by the Leibniz Institute for Educational Trajectories (LifBi) at the University of Bamberg and its school cohorts are based on large and representative German school samples, surveying students within classes within schools [28]. It provides a unique database in order to examine socioeconomic inequalities in health and well-being of children and adolescents in light of compositional and contextual characteristics in classes and schools. NEPS has distinct advantages: First, by the start of the project, NEPS will have data available from all grades throughout primary and secondary education (6- to 18 year-olds). Second, in addition to individual-level data from students and their parents, NEPS provides data on the clustering of these students in classes and schools in order to analyse the school and class composition. Third, these data are further enhanced by additional surveys from teachers and school principals providing additional contextual information [29]. SP 3 will draw upon SC2 (Kindergarten, N = 2,949), SC3 (5th grade, N = 5,208), and SC4 (9th grade, N = 15,017).

Subproject 4: After secondary education, a time of social stratification and mobility begins. This stage of 'school-to-work-transition' usually occurs between the ages of 16 and 24 years and is a crucial period, both for the entire life course and for later health. The project focusing on this life stage will first summarize current evidence on health inequalities during school-to-work transitions and generate a conceptual framework for the empirical part, which covers three empirical case studies. The first study uses longitudinal NEPS data from the SC4 (see SP3) and investigates how health inequalities develop from the ages of 16 to 24 years, how individual-level factors contribute to health inequalities and how different institutional contexts moderate or mediate health inequalities [28]. Studies 2 and 3 focus on single institutions and their distinct characteristics, using the two examples university (NEPS, SC5; 17,910 university students; longitudinal data 7 years of follow-up) and vocational training/work ("Jugenderwerbstätigenbefragung"; cross-sectional survey of the German workforce <25 years; n= 3,214) [30].

Subproject 5: Health systems exist to maintain or improve health and many health care systems are designed to offer universal health coverage with the aim to achieve equity in access. Children and young adults have contact with health care suppliers on a regular basis but in contrast to the institutions described above the interaction with the health care system extends "from the cradle to the grave". Early contacts to health care systems may however not only have a direct ef-

fect on children's health but also impact upon the ability to overcome hurdles in access to and use of care in later life. The present project will therefore investigate the role of meso-level characteristics of the health care system in health care utilization and inequities in health care utilisation among children and adolescents. We will use anonymised claims data from 2013 to 2017 provided by the Techniker Krankenkasse (TK). The TK is a statutory health insurance company which covers approximately 9.8 million people and routinely collects data about, for example, their hospital stays, physician visits, medication and diagnoses.

## Data

Tables 1 and 2 give a short description of available measures for each subproject. In addition to analysing, for example, comparable measures of health, the subprojects will also focus on indicators that are distinct for the individual life stage (e.g. developmental measures such as cognitive and linguistic development). Further identification and operationalisation of the key measures will be coordinated by the CP with all SP partners. The coordination project will also stimulate coherence in the methods applied by different SPs and prepare a document describing the common methodology developed in the project.

>> Table 1 and 2 about here <<

## Data analysis

Methodologically, the conceptual framework highlights that young people across the life course are nested in institutional contexts (e.g. kindergarten, schools and health care). Thus, linear or logistic multi-level modelling will be applied in order to examine the role of compositional and contextual characteristics at the meso-level for young people's health and well-being on the individual level. All subprojects will use simple regression models to examine the mediation of the link between SEP and health by material, psychosocial and behavioral factors at the individual level (RQ1). The other research questions (RQ2-4) take into account the relationships between contextual features, individual-level determinants and health inequalities in young people. Thus, the SP's will use multilevel models to examine if and to what extent compositional and contextual characteristics of the institutional contexts are linked to individual health and wellbeing. Intra-class Correlation Coefficients (ICC) of the empty models will also provide information on the variations in health and well-being at the meso level [31]. The third research question will then explicitly analyze relevant contextual determinants as to whether these are mediators or moderators of the link between individual SEP and health. Finally, the fourth research question will examine if determinants at the contextual level are linked to the material, psychosocial and behavioral factors at the individual level and thus contribute indirectly to the explanation of socioeconomic inequalities in young people's health.

### *Objective 3. Synthesis*

In addition, findings regarding the role of individual-level and meso-level determinants for the explanation of health inequalities from the single subprojects will be compiled in the coordination project. The results will subsequently be synthesised in order to identify similarities and differences between contextual determinants across health outcomes, institutional contexts, and life stages using the common reference framework. In a next step, the reference framework will be complemented and refined by comparing contextual and compositional factors across the different institutional contexts and by identifying and describing overarching processes that could link meso-level influences and socioeconomic inequalities in young people's health. Taking into account existing mechanisms, the coordination project will prepare a cross-subproject manuscript summarising the key theoretical and empirical findings from the first funding stage. Based on this work, the coordination office, with the help of the other subprojects, will also prepare the preliminary set of "assessment indicators" for key institutional health-promoting or health-risk factors. In addition, the coordination project will develop new and revise existing instruments for joint data collection in the second funding stage.

### **ETHICS AND DISSEMINATION**

In the first funding stage, the research unit will analyze existing data sets and, therefore, ethical approval is not required. The research unit will disseminate the results of the project to the scientific community and related professionals through the following channels:

- Scientific publication in the most relevant peer-reviewed international scientific journals in the field of health inequalities research, medical sociology, public health, epidemiology. In our scientific publication policy we will include publications in open access journals to ensure dissemination of peer-reviewed results in the scientific community. The scientific work is expected to result in the publication of three to five international articles per subproject (including the scoping reviews), which will result in the publication of at least 20 papers in total.
- The research unit's work program will be started with a project kick-off and concluded with a closing conference where findings developed during the three-year period will be presented to the public. For both events, all relevant stakeholders, as well as media representatives, will be invited and we will cooperate with the universities' press relations offices.
- Website. One of the first tasks will be to build a website to communicate the research methods and results within the consortium to the larger scientific community, as well as to policy makers and professionals. For this purpose, a website will be designed with a public access area where all public

deliverables will be made available to the general scientific community and to the interested public

- Print and social media. The active dissemination processes beyond regular research publications requires centralized coordination and will be accomplished in various ways: results will be disseminated to the professional community, including relevant stakeholders and their representing bodies, and to the lay public by press releases in printed and broadcasted media.

### **CONCLUSION**

The research unit will provide two types of evidence: First, each subproject will generate new knowledge about the way health inequalities are influenced by compositional and contextual characteristics of specific institutional contexts. All contexts are highly relevant to young people's lives, and it will be important progress to better understanding the interrelatedness between individual- and meso-level determinants in each context. The second type of finding is overarching. We explicitly aim at advancing theory and generalising findings on micro/meso-level links that could guide further research. Our comprehensive approach will facilitate a better understanding of the similarities and discrepancies of micro/meso-level links for explaining socioeconomic inequalities in health across institutional contexts, life stages, and health-related outcomes in young people. Moreover, such a theoretical understanding is the prerequisite not only for further research, but also for designing health interventions at the level of institutional contexts (e.g. school-based) that are successful in reducing these inequalities. Moreover, the comprehensive perspective, covering all relevant periods from birth to labour market entry, will provide a unique view on the emergence of health inequalities from a life stage perspective.

The secondary data analysis in the first project stage has several advantages, especially in a new field of scientific research. However, we are also aware that this approach has limitations in fully answering our cross-cutting research questions. The different data sets include a limited number of either health outcomes or characteristics of institutional contexts. In addition, comprehensive retrospective as well as biographical data on transitions between the institutional contexts is rarely available. These limitations will be approached in the second funding phase by collecting primary data. It is planned that the common data collecting will be done in 2-3 regions/centres in Germany that are linked to one of the project sites. The aim of the second stage is to address new or more specific research questions based on the results of the first period and to collect primary data using an explicit mixed-methods design with quantitative and a qualitative studies conducted in all subprojects. This not only allows for validating the findings of the first funding stage but also for a broadening of the scope of research questions.

In the long term, the proposed research unit will contribute to the implementation of an interdisciplinary multilevel perspective on social inequalities in health and well-being across the life course at the interface of the fields of sociology, social epidemiology, and public health. By combining quantitative and qualitative research methods, the research unit also strengthens mixed-methods approaches in social sciences and public health research. Thus, the research unit provides innovative ways to organise and guide empirical and theoretical research across multiple disciplines.

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## Conflict of interest

The authors declare no conflict of interest.

## Authors contributions

MR and NS wrote the initial draft of the manuscript. MR and ND are responsible for the coordination of the project and led the grant application. All authors participated in overall study design as well as writing, editing and piloting the protocol. All the authors have read an approved the final version of the manuscript.

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**Table 1.** Synopsis of health outcomes and individual-level factors across subprojects (SP)

Variables at individual level	SP1	SP2	SP3	SP4	SP5
<b>Health outcomes</b>					
Subjective Health					
Self-rated health	X	X	X	X	
Quality of life/well-being	X	X	X	X	
Self-reported/diagnosed disease		X		(X)	X
Health care utilization	X	X			X
<b>(Family) Socioeconomic position</b>					
Parental income	X	X	X	X	X
Parental education	X	X	X	X	X
Parental occupation	X	X	X	X	X
<b>Individual-level factors</b>					
Material factors					
Living conditions	X	X	X	X	X
Family structure	(X)	X	X	(X)	X
Health behaviour*					
Substance use	X		X	X	X
Physical activity	X	X	X	X	X
Nutrition	X	X	X	(X)	X
Psychosocial factors					
Family	(X)	X	X		X
Kindergarten/School	X	X	X		
University/Work				X	
Personality	X		X	X	X

\* In line with the research questions health behaviour will also be used as an outcome measure.

**Table 2.** Synopsis of meso-level characteristics across subprojects (SP)

Variables at meso level	SP1 <sup>1</sup>	SP2	SP3	SP4	SP5 <sup>1</sup>
<b>Compositional characteristics *</b>					
Socioeconomic position	X	X	X	X	X
Gender	X	X	X	X	X
Migration	X	X	X	X	X
Age	X	X	X	X	X
<b>Additional compositional characteristics *</b>					
Academic achievement/competencies		(X)	X		
Family composition/structure	X	X	X	X	
<b>Contextual characteristics</b>					
Size of the institution	(X)	X	X	X	X
Staff (number/age structure)	(X)	X	X	X	X
Teacher/child or student ratio		X	X	X	
Type/Profile		X	X	X	X
Equipment		X	X		
Location		X	X	X	X
Facilities		X	X	X	
Health promotion activities		X		X	X

\* aggregated individual-level factors

<sup>1</sup> Due to the specific nature of SP 1 (Family) and SP 6 (Health care), the contextual characteristics differ from the other SPs.

Figure 1. Conceptual framework of the research unit <sup>1</sup>

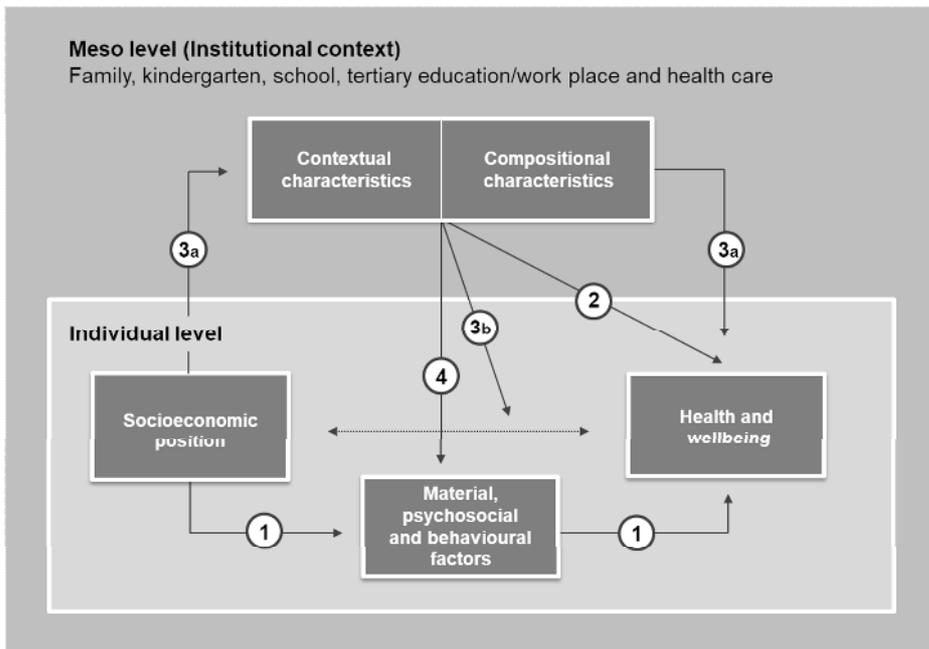


Figure 2. Structure of the research unit with six subprojects (SP)

