


# BMJ Open Mapping the evidence regarding school-to-work/university transition and health inequalities among young adults: a scoping review protocol

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## ABSTRACT

**Introduction** School-to-work/university transition is a sensitive period that can have a substantial impact on health and health behaviour over the life course. There is some indication that health and health behaviour is socially patterned in the age span of individuals in this transition (16–24 years) and that there are differences by socioeconomic position (SEP). However, evidence regarding this phenomenon has not been systematically mapped. In addition, little is known about the role of institutional characteristics (eg, of universities, workplaces) in the development of health and possible inequalities in health during this transition. Hence, the first objective of this scoping review is to systematically map the existing evidence regarding health and health behaviours (and possible health inequalities, for example, differences by SEP) in the age group of 16–24 years and during school-to-work transition noted in Germany and abroad. The second objective is to summarise the evidence on the potential effects of contextual and compositional characteristics of specific institutions entered during this life stage on health and health behaviours. Third, indicators and measures of these characteristics will be summarised.

**Methods and analysis** We will systematically map the evidence on health inequalities during school-to-work-transitions among young adults (aged 16–24 years), following the methodological framework proposed by Arksey and O'Malley. The literature search is performed in Ovid MEDLINE, Web of Science, International Labour Organization and National Institute for Occupational Safety and Health, using a predetermined search strategy. Articles published between January 2000 and February 2020 in English or German are considered for the review. The selection process follows a two-step approach: (1) screening of titles and abstracts, and (2) screening of full texts, both steps by two independent reviewers. Any discrepancies in the selection process are resolved by a third researcher. Data extraction will be performed using a customised data extraction sheet. The results will be presented in tabular and narrative form.

**Ethics and dissemination** Ethical approval is not required for this scoping review. The results will be published in a peer-reviewed scientific journal and

## Strengths and limitations of this study

- This will be the first scoping review to systematically map the existing evidence regarding health and health behaviours (and possible health inequalities, for example, differences by socioeconomic position) in the age group of 16–24 years and during school-to-work/university transition.
- It will also be the first attempt to summarise the evidence on the potential effects of contextual and compositional characteristics of specific institutions entered during this life stage on health and health behaviours, and to gain information on how these characteristics are typically measured.
- This scoping review will include various types of study designs to capture a vast range of evidence.
- It will be conducted based on a well-established, rigorous scoping review methodology with a systematic search approach supported by an experienced information specialist.
- Due to the complexity of the research question and the unreliable availability of core concepts of the research question in the abstracts of relevant references, we will probably not be able to capture all relevant studies with our search strategy.

presented at international conferences and project workshops.

## INTRODUCTION

Following secondary education, a time of social stratification and mobility begins with different possible scenarios. Young individuals between the ages of 16 and 24 years (ie, from late adolescence to young adulthood) either (a) enter tertiary education, (b) start vocational training, (c) work without formal training, (d) become unemployed or (e) neither enter the labour market nor tertiary education due to several reasons.<sup>1,2</sup> These so called ‘school-to-work/university-transitions’



are important in that individuals are leaving their parental homes and social networks which used to be relevant during childhood and adolescence, and build new friendships and networks with peers.<sup>3</sup> Further, decisions regarding career paths are made which impact individuals' biographies later on. During these events, individuals are confronted with new institutional contexts and the task of having to learn new social roles.<sup>4 5</sup> For example, young adults are exposed to new, previously unknown educational contexts, such as those of vocational schools or universities, or employment conditions.

Results of a study by Sawyer *et al* suggest that young adults entering tertiary or vocational education experience increasing psychosocial stress arising from a high workload and examinations in this context.<sup>6</sup> In some cases, and as a result of coping with these new stressors encountered, young adults adopt health-damaging behaviour. Smoking, alcohol and substance use are initiated in late adolescence and persist beyond this life stage affecting individual health status in the long term.<sup>7</sup> In addition, symptoms of psychological disorders, such as depression, are often observed for the first time during this stage. For example, data of the Robert Koch Institute indicate that 7% of women and 4% of men aged 18–29 years in Germany report having received a diagnosis of depression within the last 12 months.<sup>8</sup> Also, the prevalence of overweight and obesity, a major risk factor for chronic non-communicable diseases, such as type 2 diabetes and coronary heart disease,<sup>9 10</sup> is 30% among women and 35% among men, and 10% and 9%, respectively, among individuals aged 18–29 years, respectively.<sup>11</sup> Despite the research outlined above highlighting the incidence of risk factors for non-communicable diseases and harmful behaviours potentially endangering health during this sensitive period, the majority of young adults are generally in good health. Many age-dependent diseases have not emerged, yet, and physical resilience is high in this age bracket.<sup>12</sup>

Previous research also suggests that health and health behaviours are socially patterned.<sup>13 14</sup> Notably, health inequalities seem to be particularly pronounced among individuals aged 16–24 years compared with other age groups. Higher rates of impaired health among young adults with a lower socioeconomic position (SEP) have been found in several international studies examining social patterns of health conditions, such as depression,<sup>15</sup> migraine, schizophrenia, asthma, back pain, obesity,<sup>7</sup> early cardiovascular risk factors (eg, high blood pressure),<sup>16</sup> work-related injuries<sup>17</sup> and sickness absence.<sup>18</sup> One study<sup>19</sup> even reported inequalities in rates of mortality for young men and women based on longitudinal registry data from Finland and taking parental education as a proxy for SEP. Only few of the international studies have been replicated in Germany, but there is some evidence indicating that these social patterns may also exist there.<sup>8 20</sup> For example, higher rates of diagnosed depression and obesity are observed among young adults with a lower SEP compared with their higher SEP

counterparts. Similarly, young adults raised in disadvantaged families report poorer self-rated health compared with those from more advantaged families.<sup>8</sup> Also, social mobility (ie, mobility in terms of SEP during life) seems to accompany better or worse health, depending on the direction of change.<sup>21</sup> The social mobility in Great Britain report indicates that where a young person lives can be a cause of inequalities in social mobility with long-lasting effects into adulthood.<sup>22</sup> However, little is known about the role of institutional characteristics (eg, of universities, workplaces) in the development of health and possible inequalities in health during the transition from school to work/university.

Hence, the first objective of this scoping review is to systematically map the existing evidence regarding health and health behaviours (and possible health inequalities, for example, differences by SEP) in the age group of 16–24 years and during school-to-work/university transition noted in Germany and abroad. The second objective is to summarise the evidence on the potential effects of contextual and compositional characteristics of specific institutions entered during this life stage on health and health behaviours. Third, indicators and measures of these characteristics will be summarised. Due to the lack of systematic research in this area, an explorative approach will be adopted by conducting a scoping review.

## METHODS

### Protocol design

The scoping review will be informed by the methodological framework proposed by Arksey and O'Malley<sup>23</sup> which was further developed by Levac *et al*<sup>24</sup> and the Joanna Briggs Institute.<sup>25 26</sup> This type of review synthesises broader topics addressing complex and inter-related research questions. The difference between a scoping and a systematic review is explained by Arksey and O'Malley: 'A systematic review might typically focus on a well-defined question where appropriate study designs can be identified in advance whilst a scoping study tends to address broader topics where many different study designs might be applicable. Second, the systematic review aims to provide answers to questions from a relatively narrow range of quality assessed studies, whilst a scoping study is less likely to seek to address very specific research questions nor, consequently, to assess the quality of included studies' (p20).<sup>23</sup> To conclude, this method has advantages in this particular setting because a broad range of findings is covered, including evidence from observational and qualitative studies.

Arksey and O'Malley's scoping review framework recommends organising the review process in at least five central methodological stages<sup>23</sup>:

- ▶ Stage 1: Identifying the research question.
- ▶ Stage 2: Identifying relevant studies.
- ▶ Stage 3: Study selection.
- ▶ Stage 4: Charting the data.
- ▶ Stage 5: Collating, summarising and reporting results.

The original framework proposed by Arksey and O'Malley suggests an optional step (Stage 6: Undertaking consultations with key stakeholders), which will not be performed in our project. Furthermore, our scoping review will be performed in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses: Extension for Scoping Reviews (PRISMA-ScR).<sup>27</sup>

### Stage 1: Identifying the research question and modifying the existing logic model

Prior to conducting the scoping review and in preparation of the grant proposal (FOR 2723),<sup>28</sup> we outlined the following questions:

1. What is the current state of evidence on health and health behaviours (and possible health inequalities, for example, differences by SEP) in the age group of 16–24 years during school-to-work/university transition?
2. What is the current evidence on health effects of contextual and compositional characteristics of the specific institutions involved?
3. How are relevant institutional characteristics measured in current and past studies?

However, these questions will be refined after having analysed the literature on health inequalities during school-to-work/university transition and possible effects of contextual and compositional factors of various contexts entered by young adults on health.

Further, during the preparation of the grant proposal,<sup>28</sup> the following conceptual model was developed in an attempt to map influences of contextual and compositional factors on health (see figure 1). This model will also be adapted after the scoping review is completed.

### Stage 2: Identifying relevant studies

Following the second stage of the framework of Arksey and O'Malley, we aim to identify criteria to be used for selecting studies. Studies will be included which examine the previously defined research questions in the population and contexts outlined in table 1.

We defined the below criteria that the studies have to meet to be eligible for inclusion:

1. Descriptive study (cross-sectional):  
Differences in health and health behaviours (eg, by SEP) are described.
2. Trajectories/transitions (longitudinal studies):
  - a. T0 and T1 within the age range.
  - b. Clear contextual reference (eg, workplace, university) in studies describing trajectories.

The following criteria will also be used as eligibility criteria:

- Language: only studies published in English or German will be included.
- Timeframe: January 2000–current.

The following resources will be searched:

1. Electronic database: Ovid MEDLINE.
2. Electronic database: Web of Science.
3. Grey literature: website of the International Labour Organization.
4. Grey literature: website of the US National Institute for Occupational Safety and Health.

The search strategy to identify the relevant literature is described in online supplemental appendix 1. The search strategy was developed by an information specialist using text analysis methods with the web-based tools Voyant (<https://voyant-tools.org/>) and Search Refiner (<https://>

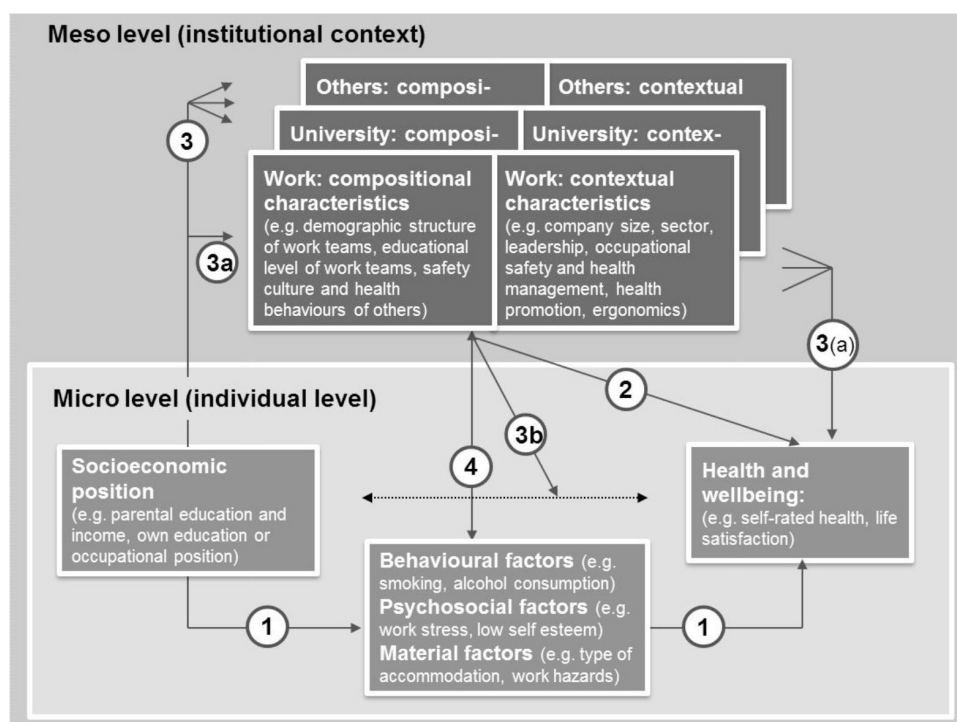


Figure 1 Conceptual framework of the research unit.<sup>28</sup>

**Table 1** Inclusion and exclusion criteria for identification of eligible studies

	Inclusion criteria	Exclusion criteria
Population (aged 16–24 years)	<ul style="list-style-type: none"> <li>▶ Students</li> <li>▶ Employed; unemployed</li> <li>▶ Other individuals in this age group neither entering the labour market nor tertiary education due to several other reasons (eg, military service)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Age range only from 16 to 17 years (ie, only includes 2-year range)</li> <li>▶ Populations with chronic diseases (type 1 or 2 diabetes, disabled populations)</li> <li>▶ Teen pregnancy/sexual health</li> </ul>
Concept	All research investigating health inequalities in the stage of school-to-work transitions.	
Study design	<ul style="list-style-type: none"> <li>▶ Cross-sectional studies</li> <li>▶ Prospective or retrospective cohort studies</li> <li>▶ Case-control studies</li> <li>▶ Qualitative studies</li> <li>▶ Reviews (systematic and unsystematic)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Case studies</li> <li>▶ Comments, statements, replies, editorials</li> <li>▶ Animal studies</li> <li>▶ Cell studies</li> <li>▶ Abstracts conferences</li> <li>▶ Concept papers</li> </ul>
Context	<ul style="list-style-type: none"> <li>▶ Studies conducted at the population is in the school, university or work contexts (including: apprenticeship, vocational training, unemployment and unskilled work)</li> <li>▶ Studies analysing contextual and compositional characteristics of institutions</li> <li>▶ Only study populations from developed countries (according to the country classification of the United Nations)<sup>31</sup> will be included</li> </ul>	<ul style="list-style-type: none"> <li>▶ School-based studies or studies with pupils</li> <li>▶ University students are mentioned or young adults, but socioeconomic position<sup>29</sup> or status<sup>30*</sup> is not reported</li> <li>▶ Socioeconomic status or position only adjusted for but no subgroup analyses by socioeconomic status or position presented</li> </ul>

\*'Socioeconomic position' is defined by the social and economic factors that influence the positions that individuals or groups occupy within the structure of a society<sup>29</sup> and 'socioeconomic status' refers to a measure of social position that generally includes income, level of education and occupation.<sup>30</sup>

ielab-searchrefiner.uqcloud.net/). The strategy was conceptualised based on a set of 13 relevant references known to the authors.

### Stage 3: Study selection

Following the framework of Arksey and O'Malley, the third stage of the scoping review process aims to identify the studies that will be included in the scoping review. The search results will be deduplicated using the reference management software EndNote. The resulting set will be imported to and screened with the online tool Rayyan (<https://rayyan.qcri.org/welcome>). We will report the process of study selection using an adapted PRISMA flow chart (see [figure 2](#)).

The study selection phase will involve two screening stages and will be performed independently by two members of the research team. During the first stage, titles

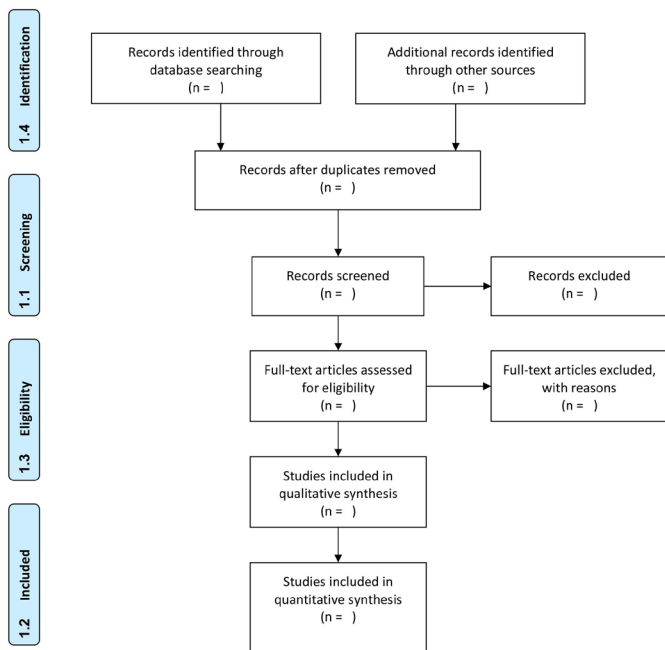
and abstracts of each article will be examined to assess their relevance for the review according to predefined inclusion and exclusion criteria; during the second stage, all records included in the first stage will be full text read for data extraction. Any disagreement between the two reviewers will be resolved with a third researcher of the team.

According to the 'Joanna Briggs Institute Reviewers' Manual 2015',<sup>26</sup> a scoping review does not require an assessment of the quality of the studies included. Therefore, the quality assessment will not be performed.

### Stage 4: Charting the data

In this stage, we will collect the basic characteristics of the studies and relevant information on outcomes that will be used to answer our refined research questions. Data extraction will be performed independently by two





**Figure 2** Adapted Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram. From: Moher *et al.*<sup>32</sup>

authors. Any disagreement will be resolved by discussion or, if no consensus can be reached, by consulting with a third researcher of the team. Inter-rater reliability will not be assessed at this stage. Hand searching of the reference lists of the included records (snowballing) will be performed. Also, if necessary, key authors will be contacted for articles in press or recently submitted.

As a tool for systematic data extraction, a predetermined template in Microsoft Excel will be developed by the authors. Data extraction in this scoping review will include mainly charting the results in a descriptive summary.

The extracted data will include, but are not limited, to the following information:

- ▶ Author.
- ▶ Year of publication.
- ▶ Study location.
- ▶ Number of participants.
- ▶ Age range.
- ▶ Study population.
- ▶ Size of population.
- ▶ Study design.
- ▶ Outcomes.

### Stage 5: Collating, summarising and reporting the results

After charting the relevant data of the studies in the spreadsheets, major findings will be discussed with the research team and after reaching agreement, the collected data will be summarised according to the specific research question addressed in our planned publication (evidence mapping).

The results will be presented in a tabular and narrative form. The content of the articles will be analysed by

using a qualitative synthesis approach in order to extract the most important information on health inequalities. The synthesis will also include quantitative analysis (eg, frequency analysis) of the study design, country of the study, main health outcomes. We will use the PRISMA-ScR<sup>27</sup> to report the results.

### Patient and public involvement

No patient involved.

### Ethics and dissemination

Because a scoping review is aimed at collecting, reviewing and synthesising material from publicly available publications, this study does not require an ethical approval. The results of the scoping review will be published in a peer-reviewed scientific journal and presented at national and international conferences. This scoping review is part of a multicentre research project. For this reason, the results will also be presented at project workshops.

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**Contributors** PMMF and CP conceived the idea of a scoping review protocol. PMMF wrote the first draft. CP, ND and MR contributed to the writing of the protocol. MM conceptualised the search strategy and BR commented on the search strategy. SH, KD, BW, LS and MH were involved in critical revision of the drafted manuscript for important intellectual content. PMMF wrote the final draft. All authors critically revised the final version of the protocol and gave approval for publishing it.

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