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Health disparities in German obesity

Implementing life course perspectives in health policy

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Abstract

In this bachelor thesis, life course theory and approaches to health are presented and evaluated regarding their potential benefits to German obesity policy. It is guided by the research question *How can life course approaches to healthcare, and the framework of risk and protective factors laid out in them, be utilized to combat inequalities in health and improve health policy on the issue of obesity in Germany?*

Using the methods of literature review and content analysis, both the theoretical concepts crucial to life course approaches and German obesity policy are examined. Comparing theoretical and policy literature, the aim is to find areas where applying life course elements could improve policy. The potential relevance of the thesis thusly lies in its applicability to policies that may improve millions of lives.

The theory explains health, its development, and inequalities between people through examining their life courses, including biological and developmental determinants of health and the influence of socioeconomic conditions on people's health.

Based on the theory-backed content analysis, results indicate that there are several ways to improve policy through life course approach implementation, specifically by utilizing neglected policies such as specific taxation on unhealthy foodstuffs and expanding existing policies that take socioeconomic determinants of health into account and improve the living environment of at-risk groups.

Content

1. Introduction and Relevance

Obesity is one of the most prevalent health conditions in the world, especially in countries of the global north. Germany is no exception in this regard, with over 18% of adults being obese in 2015 (Robert Koch-Institut 2017) and more than half the population being overweight in general. Commonly, obesity is defined as a person having a Body Mass Index of above 30, indicating a high body fat percentage. Being obese, especially in severe cases, is unfortunately connected to various health problems such as cardiovascular issues, as well as social stigma around it (Westermann et al. 2019). Moreover, and perhaps the main aspect that makes obesity important to address, costs to the health care system and the overall economy arise due to the related health issues and loss of productivity (Vuik et al. 2019). From it being so widespread and consequential, the conclusion seems to be that it is of high societal relevance to tackle the issues that come with obesity-related health problems.

The topic's relevance is also visible in the abundance of publications on it, both by scholars and policy makers. Much of the literature is focused on childhood obesity, which is not necessarily the main interest in this context, but the setting of Germany is still well-researched. Examples of this literature are a publication by Schienkiewitz et al. in the Journal of Health Monitoring presenting an overview of the public health situation in Germany as it pertains to obesity (Robert Koch-Institut 2017), as well as Kuntz and Lampert's article on the socioeconomic determinants of obesity, which presents correlations found in many sources such as obesity being related to instable environments, lacking education and resources and being part of vulnerable groups (Kuntz and Lampert 2010). Since obesity is a major public health concern, there are also documents such as a special issue of the journal "Forschung und Praxis der Gesundheitsförderung" in which the German federal center for health education outlines strategies for prevention and intervention used (Bundeszentrale für Gesundheitliche Aufklärung 2015). The ministry of health itself also provides documents such as those found on their website (Bundesgesundheitsministerium 2021) that present current policies and measures in obesity prevention and treatment, although it is difficult to find documents concerned with adults, showing a potential gap in German policy approaches. These policy related texts will aid my understanding of the current state of obesity related health policy necessary for the later parts of my analysis.

As previously mentioned, obesity and with it the aims of the thesis are of societal relevance because of its widespread nature and negative effects on public health and productivity, as well as

the development seen almost universally towards ever more obese populations (OECD 2017). Moreover, there are clear disparities along socioeconomic lines, which is equally important to the bachelor thesis. The main relevant factors to observe in this thesis are income and education, as the literature provides consistent evidence for their importance, but other factors such as stable home environments, belonging to vulnerable groups, and age also play a role and must be included in an analysis on the topic (Braveman 2014). And finally, the societal relevance of the topic and the thesis itself stems from the policies related to it. German obesity policy has an important role to fulfill in public health, yet there are problems with it such as a lack of focus on prevention rather than treatment and difficulties to adequately target vulnerable groups of people (Eyler and Brownson 2016). Accordingly, there appears to be potential to improve the policy through applying new perspectives.

The knowledge gap the thesis is aiming to close is the understanding of societal mechanisms of obesity emergence (rather than individual ones such as caloric consumption and diseases). More specifically, it is supposed to address a lack of understanding of the effects of different life conditions on obesity that are presented in "life course approaches".

In the first chapter, a theoretical underpinning of these mechanisms and factors will be presented by examining the "life course theory", which may be applicable to them. The theory focuses on long-term effects of past life events and circumstances on future behavior and conditions and has been used in public health research since the mid-20th century, becoming widely prevalent since the 2000s (Yingwattanakul and Moschis 2017; Jones et al. 2019). In this field, life course approaches are often used to explain health disparities (Jones et al. 2019) and this could prove useful for the thesis' goal of defining policy improvements, because life course approaches provide a framework of factors that may help policy makers to better target and support groups in need.

The thesis aims to add an understanding of whether parts of an existing theory, the mentioned life course paradigm and related life course approach to health, can be applied to understand the specific health issue of (unequal) obesity in Germany. Subsequently the goal is to present ideas on how health policy could use this framework to better address the issue.

To achieve the aims of the thesis, it will focus on answering the following research question: *How can life course approaches to healthcare, and the framework of risk and protective factors laid out in them, be utilized to combat inequalities in health and improve health policy on the issue of obesity in Germany?*

The steps necessary to answer the research question can be formulated into several sub-questions which should guide the analysis towards a meaningful conclusion. First off, the theory chapter is dedicated to sub-question 1: *What is the life course paradigm in health research and how does it aim to explain health disparities?*

The main analysis then deals with obesity-related literature and policy, and aims to answer sub-question 2: *Which types of measures does German obesity policy focus on and (where) does it utilize life course approaches?*

Finally, the latter part of the analysis ending in policy recommendations is guided by sub-question 3: *What benefits could adopting life course approaches bring in German obesity policy and which policy changes could be derived from that?*

2. Theory

The theoretical underpinning of the thesis is the life course theory, and more specifically the approaches to health research and policy popularized in the last decades that are based on it. As indicated in the introductory section, this theory may be useful for examining and improving current policies due to its inclusion of many socioeconomic factors and its interdisciplinary approach. Various pieces of scholarly literature that deal with different aspects of it are reviewed.

First there will be an explanation of relevant terminology and that there has long been a connection drawn between socioeconomic and health disparities, which life course approaches also put as one of their cornerstones. Following that, the general development of life course theory in different disciplines and over the course of its 100-year long history is examined. From its basic assumptions I will delve deeper into its application to health research, through so-called life course approaches to health. Scholarly distinctions within the approaches such as Jones et al.'s developmental and structural approaches (Jones et al. 2019) will be presented and compared to receive an overview of the modern literature on life course approaches and research. The concept of risk- and protective factors which is found (though inconsistently named) all throughout the literature will be presented next, with this part setting up the later analysis section of the thesis. Lastly, the scholars' prevalent thoughts and recommendations on what merit life course approaches may have to research and policy will be summarized.

2.1 Inequalities

The concepts of socioeconomic inequality and health disparities are closely related and build the basis of what is to be examined here. Socioeconomic inequality refers to societal differences in access to resources such as money and education that determine much of peoples' opportunities and behaviors in life. These differences present along ethnic and gendered lines and are "compound disadvantages" (Braveman 2014) that influence the lives of affected people in several dimensions, such as peoples' own educational attainment and financial stability later in life, and their health.

Health inequalities are thus derived from socioeconomic ones in the sense that many public health issues affect people with a low socioeconomic status worse than those with a better standing (Lago et al. 2018).

Health, while affected by genetic factors and individual behavior, is very much determined by a person's access to prevention, treatment, and one's knowledge about, in the case of obesity for example nutrition, with all of these determinants correlating with socioeconomic factors as will be discussed later as well.

2.2 Life Course Theory

The "Life Course Theory" (or paradigm) is concerned with those influences on health and health related behavior that derive from previous experiences and circumstances. As Yingwattanakul and Moschis (2017) put it: "This paradigm suggests that changes in earlier-in-life conditions in the form of experienced life events create changes in patterns of thoughts and actions in later life as the result of adaptation through the processes of socialization, stress and coping, and human development". This is one part of the paradigm, but even more importantly to my analysis than life events are life conditions, such as those that constitute so-called risk and protective factors, which will be examined later.

The theory emerged as early as the 1920s in the field of sociology and developed from there (Elder et al. 2003), even though it influenced some fields later than others, with C. Wright Mills being a pioneer of it in behavioral science in the late 1950s. From there, life course theory did spread to many fields, including health research. Ben-Shlomo (Ben-Shlomo 2002) points out that focusing on the effects of childhood factors to explain phenomena experienced later was popular since the 1970s, although it had a long way to go until it would develop into modern life course approaches.

The implementation of life course approaches, using that name, into health research started more recently, with the first being seen from the early 2000s (Braveman 2014). Braveman also formulates why life course approaches

> *"may be relevant, to varying degrees, to all aspects of health, but it is profoundly relevant to health equity. A life-course perspective is essential for understanding—and intervening effectively in—how health disparities are created, exacerbated or mitigated, and reproduced across generations. The life-course lens focuses our attention on understanding how social factors—representing risks and opportunities—can create vulnerability or resilience at each stage of life, and how they accumulate across lifetimes and generations."*

2.3 Life Course Approaches to Health

Elaborating on life course approaches, there are specific elements of them in the context of (public) health research and policy that build upon basic life course theory. As stated above, for the last two decades, life course approaches to health have become more prevalent not only in research but especially in policy. (Braveman 2014; Kuruvilla et al. 2017)

The basic premises of applying a life course perspective to health research and subsequent policy are the same as in other fields, with perhaps some additional elements. Specifically, such approaches in health include conditions instead of just behaviors. An example of this would be being obese or being affected by related problems such as diabetes as the result of influences over one's life course rather than only engaging in unhealthy eating behavior. (Yingwattanakul and Moschis 2017).

Ben-Shlomo (Ben-Shlomo 2002) makes the observation that in health research, adopting a life course approach means to always acknowledge and analyze the interrelated nature of biological and social determinants of health, using what he calls "socio-biological" and "bio-social" pathways to understanding health. This implies that social factors may influence peoples' physical and psychological capability to be functionally healthy, meaning that they have reduced abilities to act and be healthy and thus act towards what they value in life (Kuruvilla et al. 2017). Vice versa, biological disadvantages may influence peoples' ability to for example achieve a high socio-economic standing, feeding into generational dynamics of accumulated disadvantage and disparity.

An especially important notion for this thesis is the differentiation between developmental and structural perspectives on health. Similarly to how Ben-Shlomo distinguishes between interrelated biological and social pathways to health inequality, the developmental perspective

focuses on events and experiences over ones' life course while the structural perspective is concerned with surrounding conditions and the interaction of, for example, socio-economic status with the effects of policies on people (Jones et al. 2019). Both are necessary parts of a holistic life course approach and are influenced by one another. As will be elaborated on later, structural influences determine which experiences a person will make, which in turn affects their ability to develop and function, once again potentiating health problems over the life course and intergenerationally.

Applicable to both perspectives, there is another concept often found in the literature, namely that of critical and sensitive periods. These are phases during a person's life where they are especially vulnerable to life events, such as during gestation and puberty, with sensitive periods being less clearly marked temporally and in tendency longer than critical ones (Jones et al. 2019). These periods may give insights into where along the life course policy could achieve the greatest effects and which circumstances and influencing factors are the most pivotal to address.

2.4 Factors & Correlations

This leads into what shall be the focal parts of life course theory used in the thesis: Risk and protective factors. These include health-enabling factors such as an environment conducive to movement and healthy nutrition, access to education (and specifically education on health issues) as well as financial resources during childhood as well as later on, which is also related to the inter-generational aspect of health disparities Braveman mentions. On the other hand, unstable conditions growing up, poverty, lacking awareness of health hazards and accordingly higher exposure to them (for example through smoking parents etc.) may pose risks to people across their life course, often resulting in such more vulnerable persons suffering from health conditions more frequently, as is the case with obesity in the global North including Germany (Public Health England 2019).

For this thesis' analysis, the main important correlations seem to be economic resource availability, education (both general and on the topic), household stability and being member of "vulnerable groups" such as ethnic minorities. Since much of the literature frames it this way as well, the focus will be on these factors as correlating negatively with health for affected people and positively with health disparities.

The economic correlation is quite intuitive and described by many scholars (Ben-Shlomo 2002; Kuruvilla et al. 2017; Braveman 2014). It causes and is exacerbated by risk factors such as

food insecurity and hazardous occupations, and is related to unhealthy behavior (Ben-Shlomo 2002). Basically, poor people often cannot afford healthy foods, work risky jobs and cannot enable their children's education as well as people with more financial means. This in turn leads to vicious cycles in which economically worse off families mostly stay that way for generations and poor children are at a compound disadvantage in regard to their health, as well as other aspects of their life (Braveman 2014).

Education also correlates with health, with less educated people suffering from worse health outcomes. The term "education" in the context of this thesis refers both to the general level of educational attainment of a person and their social and familial background, as well as nutritional knowledge that enables healthy behavior directly (Jones et al. 2019; Bundeszentrale für Gesundheitliche Aufklärung 2015). As mentioned earlier, both of these types of education correlate with economic status and household stability, reinforcing the notion of compound disadvantage experienced by people affected by risk factors (Braveman 2014).

Stability is a factor less commonly mentioned, but is important in determining health risks, nonetheless. Chaotic childhoods are described as conducive to behaviors associated with health risks (Ben-Shlomo 2002), and needing to cope with stressors throughout one's life can take the form of such behaviors as well (Yingwattanakul and Moschis 2017). While household instability growing up is more common among socially disadvantaged groups, most of the literature sees the problem in the developmental ramifications, meaning that being affected by instability earlier in life decreases human capital accumulation and "psychosocial functioning" in adult life (Ben-Shlomo 2002).

Finally, "vulnerable" groups such as ethnic minorities or women face unique health difficulties, making this the fourth category clearly correlated to health inequality found in the literature. In American literature, ethnic groups are often the unit of analysis in health research, showing for example black Americans to be disproportionately affected by obesity, especially women (Trust for America's Health 2022; Robyn Correll 2020). Moreover, people in vulnerable groups are often affected by the previous factors, such as poverty, being less educated and experiencing chaos, violence, and discrimination. Unfortunately, it is also evident that exposure to risk factors makes people oftentimes more vulnerable to health risks or prone to unhealthy behaviors, or as Braveman (2014) puts it: "Social Factors Affect Health Not Only by Determining Exposures But Also by Shaping Vulnerability, Resilience, and the Social Consequences of Illness".

2.5 Proposed Benefits to Policy

Life course approaches are proposed by many authors as suitable ways to improve policy, due to their integration of social and biological causes of health issues and disparities, as well as their longitudinal approach. At the same time, much of life course focused research also stresses the relevance of policy to improve health, including health, but also social policy. In fact, social policies seem to have a crucial role to play in reducing health problems and inequalities: "Assessing the potential health impacts of social policies for different populations and appreciating the role of policies in creating or diffusing stigma is an evolving way to leverage policies to promote population health over the life course." (Jones et al. 2019)

As Yngwattanakul and Moschis (Yingwattanakul and Moschis 2017) have stated, health research that informs policy is still overwhelmingly cross sectional rather than longitudinal in design, which presents an area where life course approaches can be useful due to their inherent longitudinal perspective.

They also think that especially the parts of life course approaches in research I would categorize as Jones et al.'s "structural perspective" (Jones et al. 2019) could improve policy by improving the more effective targeting of groups in need of intervention.

One more factor that makes life course approaches valuable to policy makers is a point by Kuruvilla et al. (Kuruvilla et al. 2017), which is that health can only be approached in an interdisciplinary fashion. Life course approaches lend themselves to this since they include determinants from different fields and acknowledge and use their interrelatedness to improve understanding and subsequent policy recommendations.

Overall, life course theory and approaches to health research derived from it seem to be useful in informing public health policy and addressing issues in the field. Therefore concepts from them will be used in this thesis' analysis to assess German public health policy on obesity and finally arrive at suitable recommendations for it.

3. Methods

The thesis utilizes several methods to answer the research question and its sub-questions, and in this part the data collection and coding process will be described, as well as the methods used in the theory and analysis parts.

3.1 Data Collection

Starting off, the data collection process consisted of reviewing literature on the aforementioned topics of obesity and life course theory, observing texts such as theoretical journal articles like those presented in the theory chapter (Elder et al. 2003), policy literature (Bundeszentrale für Gesundheitliche Aufklärung 2015), medical papers (Jones et al. 2019), and empirical studies (Robert Koch-Institut 2017).

Most of the collection process was conducted via online search tools such as google scholar, making use of university licenses that allowed access to many texts, especially the journal articles. For the documents on German policy, the online archive on the Bundestag's website was the most important place (Bundestag 2021), while much of the sources about obesity and health policy in general stemmed from the contributions on the websites of organizations concerned with it (Public Health England 2019).

The documents used in the central content analysis, the policy literature sources (see Appendix 1), were specifically chosen for their thematical proximity to German obesity policy. Together, they are supposed to represent a somewhat accurate picture of the main policy types currently utilized, although personal bias, insufficient extent of the search and varying availability of documents may have impaired this endeavor.

3.2 Coding Methods and Scheme

Following the collection process, the data was coded utilizing the tool "Atlas.ti". The theoretical sources were examined and coded first, which led to the categorization of prevalent concepts in them, such as structural and developmental determinants of health. Coding for the analysis part was conducted based on these concepts from the theoretical literature, in order to find parts of life course theory that may already be in use in policy or mentioned in policy and advice papers (Johnny Saldana 2016).

The coding scheme includes codes developed from all types of the literature used, they are however used to slightly different ends. The codes are organized in three overall categories, relating to the type of literature and the chapter they are predominantly used in. They are then further categorized thematically, which leads to the scheme's structure where every code belongs to a group of codes on a topic within a type of source (see table 1). While the codes on the sources in the theory part were mostly derived from the texts themselves organically, those for the other literature, policy papers etc. were in turn based on the already existing codes.

Table 1. Coding Scheme

Source Category	Code Category	Codes
Theory	Life Course	LCT
		LCA
	Correlations	Economic
		Education
		Vulnerable Groups
		Stability
	Factors	Risk
		Protection
	Health Disparity/Equity	Disparity/Inequality
		Equity/Equality
Health & Obesity	Obesity	Definition
		Statistics
		Stigma
	Policy	Aims
		Relevance
		Shortcomings
		Blind Spots (H&O)
		Implications/Recommendations
Policy	Examples	Fiscal
		Movement
		Nutrition
		Prevention
		Specific Education
		Structure/Environment
	Target Groups	Children
		Targeting
	Problems/Goals	Blind Spots (P)
		Interdisciplinarity

3.3 Theory Chapter Coding and Structure

There was a literature review on the life course theory conducted in the theory chapter, including life course approaches to health and specifically the risk- and protective factors and prominent correlations between socio-economic factors and obesity discussed within them. The goal of this part was answering the first sub-question, *"What is the life course paradigm in health research and how does it aim to explain health disparities?"* by examining definitions, historical development of the theory and its gradual implementation in the field of public health, and building a framework of often used health-related risk and protective factors, which in this case are economic standing, level of education, familial stability and belonging to a vulnerable group. These factors are part of the findings presented in the theory chapter.

For the theory part, four categories were formulated, namely "Life Course", "Correlations", "Factors", and "Health Disparity/Equity" (see table 1). Each category is thematic and encompasses several codes. They were categorized by reviewing recurring talking points in the literature on life course theory and approaches. For the most part, these codes were used as tools to keep an overview over the theoretical sources, their overlap and unique perspectives as well as to "code and retrieve" (Johnny Saldana 2016) potential quotes.

"Life Course" is supposed to categorize application or mention of life course theoretical concepts, and life course approaches to health. "Correlations" encompasses the prevalent mentions of socio-economic circumstances interacting or correlating with health condition and behavior. Quotations tagged with codes of the "Factors"-categories, on the other hand, signify instances where the sources note the more specific factors that influence health. Lastly, the "Health Disparities/Equity" category denotes where the literature explains these terms and their interaction with the other concepts.

3.4 "Health & Obesity" Coding

In the sources that are on the topics of obesity and on policies that are examples of how life course approaches can present themselves in health policy, the main code categories are "Obesity" and "Policy" (see table 1). The codes in these categories are once again used as code-and-retrieve tags that helped in writing the introduction, as well as finding the appropriate citations.

"Obesity" has several codes within it: *Definition* and *Statistics* are used as code-and-retrieve tools to find mentions of it easier and are mainly used in the introductory chapter to give an overview over the health issue at hand. *Stigma* on the other hand is not one of the major topics in the context of this thesis, but it needs to be mentioned since its effect of exacerbating obesity is

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prevalently shown in the literature (Westermann et al. 2019), which makes fighting stigma around obesity an important angle as well.

The "Policy" category marks parts of the texts mentioning aims, showing areas of application and thus *Relevance* and those parts where *Blind spots* and *Shortcomings* of the policy are visible. Only the code *Aims* is predominantly relating to direct citations, the other two being more interpretive. Lastly, one code of this category is used to denote where sources recommend policies or draw implications from life course theory, something that is relevant as it is similar to the thesis' aim.

3.5 Analysis Coding and Structure

The next step after the theory chapter is a content analysis of literature on obesity policy and German obesity policy papers (Given 2008). I utilized Atlas.ti for this part in order to categorize the data and find both the prevalent positions and their overlap with the life course approach and lack thereof respectively. The program was used for the theoretical sources as well, as was described in the explanation of the coding scheme earlier. However, its usage there was more basic, and the generated codes and categories are visible under "theory" in the scheme, while the content analysis is conducted using the codes from the "Policy" category. It is also conducted on the sources related to German policy exclusively (see Appendix 1). Moreover, Atlas.ti's function "word list" is utilized in this part to confirm the codes' validity by examining the texts for terms related to them. This is done due to the interpretive nature of most of the codes and subsequent possible bias and human error while reading and coding the sources. However, not all documents used for coding could be used for word list, specifically the coalition contract of the current German government (Bundestag 12/10/2021) was left out, because only small parts of it deal with obesity related topics.

Now the final category of codes will be explained, those used on the policy literature. They are distinct for easier overview when conducting the analysis, so it is visible whether a quotation on, for example, policy focusing on children, is derived from actual policy literature or sources from the overall health and obesity topic (see table 1).

Since oftentimes, German policy literature does not explicitly state theoretical underpinning or at least does not name "life course", there is no category by that name in the scheme. Instead, there are codes that stem from concepts in the other literature. The categories from these sources refer to policy examples, foci, and problems and goals. "Policy Examples" includes the codes

Fiscal, Nutrition, Prevention, Movement, Specific Education and Structure/Environment. These are all areas which German health policy focuses on as is seen in the sources. "Target Groups" entails the codes *Children* and *Targeting*, as most policies do exactly that, focusing their aims on children or targeting various other specific vulnerable groups.

The last category is "Problems/Goals", including the codes *Blind Spots* and *Interdisciplinarity*. The former denotes blind spots in the policies from the perspective of life course approaches, while the latter is about instances both of cooperation between different policy makers and lack of it where it would be needed.

The coding process laid out here led to multiple categories, which are of course subjective and could easily be conceptualized differently. They do however allow for the express aim to be pursued, since they include the main policy focuses, instances of usage of life course approaches as well as blind spots (which in this case are meant to be policy areas that are not utilizing elements of life course approaches when doing so could lead to policy improvement in some form).

3.6 Results and Conclusions Structure

The analytical steps laid out above are used to answer the second sub-question, namely "How is German obesity policy set up and (where) does it utilize life course approaches?". Once the characteristics of current obesity policies have been sufficiently analyzed, the aim is to pinpoint and describe the areas in which policy already uses life course approaches to health, as well as and especially those where life course perspectives could present opportunities to fill blind spots of existing policy, utilizing the coding scheme I presented earlier. This is done to set up the chapter dedicated to the results of the analysis and formulation of recommendations.

Answering the third sub-question, "What benefits could adopting life course approaches bring in German obesity policy and which policy changes could be derived from that?" will be the aim of the recommendations part in the results chapter. It builds on the acquired knowledge about life course approaches as well as obesity policy and its shortcomings, merging the theoretical work with the findings of the content analysis.

Following this, applying the framework of risk and protective factors, recommendations are made for future German obesity policy that may better address problems resulting from socioeconomic disparities correlating with said factors. These recommendations are based off the analyzed policies` shortcomings directly where possible, to theoretically ease actual implementation. The recommendations will be concluded by answering the research question, thus

presenting a judgement on the potential of life course approaches to improve policy outcome on the public health issue of obesity in Germany.

4. Analysis

The following chapter is dedicated to examining German policies in the fields of obesity policy, using the coding scheme described earlier. It aims to identify foci of the existing policies, as well as instances where they use concepts from life course approaches to health, and where it does not even though doing so could improve them.

4.1 Foci of Policy

Each of these "foci" is based on a code that tags policy types or characteristics. Each code's meaning will be explained, then its frequency will be examined alongside the policy contexts it is mostly appearing in. Beside the codes, a "word list" is examined and the prevalence of words related to each code will be examined and explained as well, although this may of course only yield results for those codes that relate to direct literal mentions in the sources. Finally, the codes' frequency in relation to the others is described and will help to identify the most prevalent elements in the examined policies.

Table 2. Policy Code Frequencies

Source Category	Code Category	Codes	Frequency	Related terms in Atlas.ti word list
Policy	Examples	Fiscal	10	285
		Movement	11	105
		Nutrition	19	1438
		Prevention	13	535
		Specific Education	18	45
		Structure/Environment	9	165
	Target Groups	Children	29	913
		Targeting	16	78
	Problems/Goals	Blind Spots	32	n/a
		Interdisciplinarity	12	50

Children is the most prevalent code found in the policy documents overall. It refers to instances that make mention of policy and policy measures targeting children and youth, which are numerous as those are popular choices of target groups. Children seem to be the main target group for two main reasons: The importance of childhood's developmental impact and the easy access to many children of different backgrounds policy has through the education system (Bundestag 2016).

The Code is found in the Policy sources a total of 29 times, making it the most prominent one besides *Blind Spots*, which will be examined later (see table 2). This was to be expected given the high number of policy literature especially focused on childhood obesity and health prevention which was found and selected, that represents the focus of German obesity policy overall (Bundestag 2021). It was mainly used at instances that described kindergarten or school-based measures, sometimes also with parent involvement. These policies were mainly aimed at nutrition, by information and school cafeteria food (Bundestag 2019a). One more context *Children* is often applied in is advertising, as many policy makers propose bans on, for example, advertisement of sugary drinks in children's TV programs etc. (Bundestag 2010). The "Word List" feature of Atlas.ti revealed that related terms, namely Kinder (Children), Jugendliche (teenagers), Kindheit (childhood), and terms derived from those, are very prevalent, confirming the code's frequency with direct mentions. In total, the related terms appear 913 times within the 17 Policy documents inspected for this (see table 2). This makes this theme the second-most frequent in the sources.

Nutrition is also a code that occurred often during the coding process. Many policies focus their measures on nutrition, for example in school cafeterias. This code denotes such policy measures that are described in the sources. Since nutrition is both behavioral and influenced by circumstance, it is an area that provides many opportunities for policy to take effect, leading to many of the examined measures in the sources being of this nature (Robert Koch-Institut 2020d; Bundestag 2019b).

It is used 19 times in the sources, which is perhaps even still surprisingly low considering the high focus many policies put on measures influencing nutrition and eating behaviors. Thus, its prevalence is also further showing in the Word List examination, where there were numerous terms relating to nutrition, including Ernährung (Nutrition), Lebensmittel (Food), Getränke (beverages), Zucker (sugar) and derivatives. In total, there are 1438 terms related to nutrition found in the policy sources (see table 1). *Nutrition* is the second most used code as well as the topic the most terms are connected to in the word list, showing the focus German obesity policy puts on it. However,

nutrition is used in many ways that overlap with other types of policy and other codes here, mainly it is connected to food regulation and taxation, as well as education measures (Deutsche Adipositas-Gesellschaft e.V. 2017), which will be explained next.

Many existing policy measures rely on teaching people specific knowledge conducive to health and fighting obesity. That is why the next code is named *Specific Education* and was used wherever in the sources education and information measures on obesity and its closely related fields were mentioned. While there are critics of this education-heavy approach, it seems that generally, education on obesity may help reduce it, as does the general level of education (or at least these show a correlation on the population level) (Seidell et al. 2005).

The code appears 18 times in the policy sources, which is not surprising in light of the above explanation. What is, is the relatively small number of direct mentions visible in the low count of 45 terms related to it in the word list, which are Bildung (education), Schulung (workshop) and similar education and information-adjacent terms (see table 2). Overall, education measures on nutrition, physical activity, and other obesity-related topics are exceedingly popular ways German obesity policy is implemented.

Another prevalent code that is related to the former is *Targeting*, which is used to describe passages of the sources' texts that refer to which groups are targeted by policy. This is related to the "vulnerable groups" correlation formulated in the theory chapter, since targeting normally involves policy makers trying to address those most in need of aiding measures. For the most part, the sources that were examined present policies that target quite similar groups, such as children and their families as well as socioeconomically weak households, relating again to the correlations as well as other codes derived from them (University of Southern California; Robert Koch-Institut 2020a).

Targeting is used to tag 16 passages in the sources, which makes it the fourth most frequent policy code. This shows that German policy in this field is often quite specific in its intent, as opposed to employing more general measures such as taxation, which are less often used currently. The word list brought up 78 mentions of Zielgruppen (target groups), but many of the instances this code was used were not direct mentions of that word, but rather stated *which* groups were the target of a given measure (see table 2).

While many sources resent the lack of preventive policy in health, it has still become a prominent part of obesity-combatting strategies (Babitsch 2020; Hilbert 2007). *Prevention* is the next code used on the policy sources, and it is meant to show which measures put a focus on preventive measures; oftentimes this occurs in conjunction with for example nutrition and education, as much of the preventive measures seem to be centered around teaching responsible behavior towards obesity related topics such as nutrition and physical activity (Nationale Präventionskonferenz 2018).

The code is not quite as frequently seen as some of those above, but it still has 13 appearances in the examined policy sources. Additionally, the word list returned a lot of mentions of Prävention (prevention) and derivatives, 535 overall, which makes this topic the third most written about in the sources (see table 2). However, this number is deceptively high, as many policy sources actually call for as of now *missing* preventive measures. Preventive policy is applied more and more in recent years, and it seems it will continue to do so since many experts stress its merits, especially its cost-effectiveness, and the necessity to introduce more of it (Robert Koch-Institut 2020b).

Interdisciplinarity is the code used at instances where the sources mention either thematic overlap between different types of policy measures or cooperation between for example communal and educational health service providers. It is seen as crucial that health care and consequently obesity policy must be provided in an interdisciplinary fashion, as many factors play into it, making many actors and policy makers involved (Bundeszentrale für Gesundheitliche Aufklärung 2015). The code is more interpretive than those before because it describes features of policies as much as it does aims.

Overall, the sources contain 12 passages tagged with the code, which is not that many considering the importance of cooperation between different policy makers and providers as well as the combination of different approaches that much of the literature stresses. The word list also does not show great frequency of related terms, like Zusammenarbeit (Cooperation) and interdisziplinär (interdisciplinary), which were found a total of 50 times across the documents (see table 2). Perhaps this indicates another problem of German obesity and, at large, health policy, namely that much of the policy is not systematically connected with other measures as well as other policy fields, especially social policy (Nationale Präventionskonferenz 2018).

Physical activity and providing knowledge about it is another focus German policy-makers often choose, leading to the code *Movement*. It denotes text passages mentioning any policy measures focusing on promoting health through sports or general activity. These measures are often used in conjunction with education and in the contexts of schools and kindergartens, once again showing the main ways German obesity policy is set up at the moment (Robert Koch-Institut 2020c, 2020d). Much of the policy literature stresses the negative impact of sedentary lifestyles on health and obesity (Bundestag 2014), however, movement based measures still seem far less frequent than for example nutrition based ones, possibly due to being more difficult to implement especially outside of schooling contexts.

In the examined documents, 11 mentions of policies aiming at physical activity warranted the code. Similarly rare, 105 words could be found using the word list function (see table 2). In this case, these were Bewegung (Movement) and inflected terms. It seems that influencing physical activity is less of a focus of policy, whether regarding individual behavior or setting up peoples' environment. Additionally, many movement related measures are actually also educational measures, for example for parents and teachers (Deutsche Adipositas-Gesellschaft e.V. 2017).

One of the less common codes is *Fiscal*, used to tag policies that include taxes designed to influence eating behaviors and obesity prevalence. Specific taxes on "unhealthy" foods and drinks are not commonplace in German policy, yet they may play an important role in a comprehensive obesity strategy (Bundestag 2018, 2015). Fiscal policy is one of the types of policy suited to address obesity, and one of the more prominent ones for which the target group is quite unspecific, but that is able to affect many people, especially those who may be difficult to reach by some of the more participatory measures.

The sources include 10 measures coded *Fiscal*, showing how little German policy makers currently utilize taxes in obesity policy, at least in comparison to the very prevalent educational measures. The word list showed 285 terms related to fiscal policy, which are Steuern (taxes) and derivatives (see table 2). Most commonly, these appear in the context of demanding more specific taxation of obesity-promoting foodstuffs, for example sugary beverages, not in descriptions of existing policy.

Lastly, which is perhaps indicative of the overall direction of current policy, the least prevalent code is *Structure and Environment*. In contrast to most policies that focus on (changing)

individual behavior such as eating habits, this code is used when the literature indicates policy concerned with external circumstances that influence health and obesity. Many sources claim that these types of measures must become more of a focus of future policy, which is in line with the structural perspective in health-related life course theory (Jones et al. 2019). However, it seems that up until now, German policy in the field lacks in this regard (Nationale Präventionskonferenz 2018), with policy makers instead focusing on other measures such as the examples of nutrition, education campaigns, physical activity and even taxation based obesity policy.

The examined documents include 9 passages that were tagged with the code, making it the least used code in this part of the analysis (see table 2). As stated, the existing policies do not focus on combatting obesity-enabling or setting up health-promoting structures very often. However, there are some mentions of it, mostly in the form of policy makers and those evaluating it pushing for more policies taking the environment of people into account (Deutsche Adipositas-Gesellschaft e.V. 2017). Thus, the word list contained 165 related terms (see table 2), mostly Lebenswelten ("life-worlds"), and Verhältnisse (conditions), which are actually technical terms mentioned in many of the sources, referencing the structures such as familial or school environments that policy aims to influence (Robert Koch-Institut 2020a, 2020c).

4.2 Elements of Life Course Approaches

The code *LCA* for Life Course Approaches is not only utilized in the theoretical literature but also in the policy literature analyzed here. In this part, its meaning will be explained, and its frequency and the policy contexts it appears in will be analyzed.

Here, *LCA* is used to indicate mentions of either the use of or the necessity of using elements that could be classified as being part of life course approaches to health. The former should provide insight in to what extent they are already implemented into German health policy, and in which areas. The latter on the other hand will be useful in the following part on policy blind spots, as it shows where policy makers themselves see shortcomings in existing policy that may be remedied by employing life course perspectives.

There are 10 total mentions of life course concepts in the policy sources tagged *LCA* (see table 2), of which six are about features of current policy. An overview of approaches in preventive children's obesity policy (Robert Koch-Institut 2020a) includes claims that a majority of examined measures aim to address both behavior of the target group as well as the conditions ("Verhältnisse") they live in that are conducive to obesity emergence. This is reminiscent of the structural

perspective to life course approaches (Jones et al. 2019), that also stresses the importance of one's environment in shaping behavior and health. The German National Prevention Conference also makes several acknowledgements of life course concepts being used in its "federal frame recommendations" (Nationale Präventionskonferenz 2018). It mentions "life world"-based prevention as part of health strategies, which is also an approach structural life course perspectives demand, since "life worlds" are the environments that people targeted by policy exist in and are shaped by. This makes such measures particularly important in a policy landscape that often neglects addressing factors outside of individual behaviors. It similarly stresses the merits of addressing workplaces as health-influencing environments of daily life.

Moreover, the developmental perspective of life course theory is also mentioned here, insofar as the conference argues for targeting young families, students etc. due to their potential of accumulating health impacts and their consequences over their comparatively long future life span (Nationale Präventionskonferenz 2018). Finally, the German Obesity Society also stresses the relevance of and applauds conditions-based ("verhätnisbezogener") measures in health prevention, such as designing and providing school environments conducive to healthy movement and nutrition (Deutsche Adipositas-Gesellschaft e.V. 2017).

4.3 Policy Blind Spots from a Life Course Perspective

This part of the analysis sets up the results, as it is the most interpretive section that deduces blind spots in existing policy which can be used as starting points in formulating them and making policy recommendations later.

The code *Policy - Blind Spots* is used here as well as *LCA*, to find areas that show weaknesses a life course approach would seek to, or could, improve on. As mentioned, this is highly interpretive as the codes do not denote mentions of policy elements but rather the lack thereof, making them undetectable in any direct word search or similar approaches. The codes' frequency and contexts will be examined, and preliminary blind spots deduced from it which will be fleshed out in the results chapter.

A lot of the literature reflects on blind spots or shortcomings of the policies it describes; thus, the corresponding code is very frequent with 32 instances (see table 2). Another four relevant codes are passages tagged *LCA* that speak of problems with the non-implementation of life course policy elements. The main problems identified are similar across sources, and they include a lack of coordination between measures and providers, the missing focus of policy on structural

conditions, and specific targeting and specification of measures towards "risk groups" that are most in need missing from much of the German strategies. Additionally, missing utilization of fiscal policy and long-term measures is criticized as well.

The German Bundestag, in a document assessing the effectiveness of obesity policy measures, writes about that first blind spot as a problem that diminishes the effects of individual policies (Bundestag 2021). This comprises a "blind spot" from the perspective of life course approaches to health because they stress the importance of different types of policy forming a coordinated strategy capable of addressing health problems properly.

Another focus stressed by life course theory is the targeting of life circumstances as they influence health conditions and behaviors, which is seen in the overview of obesity prevention measures by the Robert Koch Institute (2020b). It is argued that policy makers opt to address individuals rather than structures because it is more direct and its effects are easier to assess, however it is demanded that future policy should take this perspective more often.

Regarding the problem of measures not properly reaching those that would need them, the RKI also states that current policies struggle to reach people in low socioeconomic standing disproportionately in school-based programs. Generally, the sources point to the specification of measures to their intended target groups as a problem in current policies (Robert Koch-Institut 2020d).

Special taxation on foods that are exacerbating obesity are a common demand in the literature (Bundestag 2019c), although there are none as of yet in Germany. Life course approaches are typically in favor of such measures since they can target many people and change behaviors on a population level.

And lastly, the developmental perspective put forward in life course approaches (Jones et al. 2019) seems to be less widely employed in German policy than would be advantageous. Most measures are not conducted on a long enough time frame to really impact people along their development (Robert Koch-Institut 2020c), and they also fail to orient their specifications along sensitive periods in their target groups' lives (Babitsch 2020).

5. Results and Recommendations

Based on the analysis, this chapter's aim is to formulate answers on what the main characteristics and foci of German obesity policy are. Following that, it will be described where in

existing policy there are uses of life course concepts and where, in contrast, the policy has blind spots a life course perspective could possibly address better. The formulated sub-questions will be answered in this part, and policy recommendations that propose the inclusion of life course approaches into policy will be made.

5.1 Sub Question 1: Theory

Before delving into the results of the analysis, the first sub question, "*What is the life course paradigm in health research and how does it aim to explain health disparities?",* was already addressed in the theory chapter. The goal of this part was answering the first sub-question by examining definitions, historical development of the theory and its implementation into public health and building a framework of often used health- related risk and protective factors.

In short, life course theory first came about in the 1920s in sociology but was quickly adopted into other fields including health research starting in the 1950s. Its implementation into public health policy really took off with the beginning 21st century. The basic premise is that people's health and their health-related behavior is shaped by experiences and conditions in their past, making their life courses the theory's central concept as assessing it can inform decisions on how to address their health situation (Yingwattanakul and Moschis 2017; Elder et al. 2003).

Life course approaches to health recognize both biological and social pathways to how health develops that influence each other. They also explain health and differences in it between people from developmental and structural perspectives. The theory explains that health conditions and behavior are influenced by said biological and social exposures, and the structure one lives in determines to which experiences one will be exposed over time (Ben-Shlomo 2002; Jones et al. 2019). Specifically, the determinants of health can be formulated as risk- and protective factors, and experiencing them develops people's health and behaviors over time. Such factors are the access or lack thereof to financial and educational resources, household (in-)stability and the degree of exposure to environmental hazards to people's health. These factors are especially relevant in shaping health during sensitive and crucial periods in people's lives such as early infancy and puberty (Ben-Shlomo 2002). These approaches explain the emergence and perpetuation of health disparities using the concepts described. Structural determinants, paramount among them the socioeconomic status of one's environment (including one's own income and education, as well as familial and local circumstances), influence which risk- and protective factors are present during one's development. Plainly put that means growing up poor, uneducated etc. puts you at a

disadvantage regarding your health conditions and related behaviors. Your development is hindered in comparison to your more privileged peers, and you are more likely to develop health issues such as obesity. Without intervention, this typically turns into a vicious cycle that puts your descendants at a compound disadvantage as they are born into circumstances of low socioeconomic status and poor health. Their health develops accordingly, which also leads to perpetuated societal health inequalities (Braveman 2014).

5.2 Sub Question 2: Policy

German obesity policy was examined regarding which policy areas and types of measures it focuses on. The outcomes of this analysis comprise the basis of answering the second sub-question formulated, *"Which types of measures does German obesity policy focus on and (where) does it utilize life course approaches?"*.

Firstly, it appears that German obesity policy is mainly focused on children in kindergarten and school, while neglecting people at other life stages. This is due to the fact that children of all backgrounds can be reached through measures conducted in the education system, and it bears resemblance to life course approaches to health as the target groups are in sensitive life stages, where influences may have large impacts on future development (Bundestag 2019b; Jones et al. 2019). However, the neglect of other, especially adult people, is not indicative of a comprehensive life course-based approach that takes people's development at all ages into account.

Secondly, most existing policy measures are information programs and voluntary commitments on nutrition, as well as rather specialized measures aiming to influence obesity related behavior, mostly movement and eating behaviors (Bundestag 2010, 2021). This leaves out other potentially effective measures such as taxation and mandatory regulations on foodstuffs, which may affect broader groups of people and shape their decisions and exposures indirectly through changing their environment. There is not much of a focus on life course elements visible in the choice of measures overall. Policy mainly focuses on individual behaviors, which are an important variable in health, but strategies truly based on life course theory would also stress the relevance of shaping environments for public health (Jones et al. 2019).

Another characteristic of German obesity policy is that it does not focus on long term and longitudinally evaluated measures but rather shorter (and often insufficiently coordinated) interventions (Bundestag 2021). This seems problematic regardless of absent life course elements, but it is indeed especially opposed to the approach, because orienting health policy along people's

life course demands continuous measures and support for patients and those that policy makers aim to prevent developing health issues (Babitsch 2020). It is difficult to coordinate policy measures between the many providers, and longitudinal health research as well as long term preventive and treatment measures are expensive and complicated to conduct. However, life course approaches argue in favor of these anyway for their long term benefits and cost efficiency, and existing implementation proves them right (Bundeszentrale für Gesundheitliche Aufklärung 2015).

And lastly, current policy is not interdisciplinary enough, neglecting structural determinants of obesity and social policy's role in obesity prevention. In a similar vein as the previous aspect, German obesity policy is not coordinated well enough, which is especially apparent in the lack of cooperation with policy makers not specifically in the field of health. Following the structural perspective in life course theory, the conditions people live in shape their health, and not all of them can be addressed through classical health policy. Further focus on interdisciplinary measures would be necessary, especially acknowledging the central role social policy has for shaping living conditions beyond what health policy can provide (Jones et al. 2019).

5.3 Sub Question 3: Recommendations

Having concluded the analysis of policy literature, the missing part is to formulate an answer to the third sub question based on it, "*What benefits could adopting life course approaches bring in German obesity policy and which policy changes could be derived from that?"*, and propose some changes to current policy from a life course perspective.

The potential benefits of implementing more elements of life course approaches into current policy are manifold. Life course approaches offer a framework for effective long-term strategies, following which could make policy more coordinated and effective. Orientation along the life course of potential patients may ease the specification of measures to different target groups (Babitsch 2020). Moreover, risk factors are also a framework that could be useful in making out which measures might be needed and suitable for people vulnerable to health issues (Braveman 2014). Health research could also benefit from utilizing more life course perspectives and corresponding longitudinal studies in the field, providing more knowledge about the interplay of determinants of health over time (Lago et al. 2018). And lastly, policies conceived with life course perspectives in mind could be introduced and add effective tools to current policy, since they could complement it in areas that it is not very successful in (Bundestag 2021).

It is important to examine in which policy areas life course approaches would be most advantageous to implement, and what general additions to existing policy would need to be made from a life course perspective. First off, measures targeting people at older life stages need to be intensified. Children are, rightfully so, a focus of policy since they are impressionable and easily reached. However, there are for example education based measures that would be better suited to adults, as they have more autonomy in actually implementing what they learn into their behavior (Hilbert 2007). Moreover, types of policy that are underutilized today should be reviewed in their potential from a life course perspective and implemented more, such as mandatory regulation and specific taxation on obesity-conducive foodstuffs. Such "non-specific" measures can be very effective in reaching people who might otherwise be difficult to address, and change the behavior of many people organically by changing their environment (Bundestag 2015). Speaking of environment, any measures targeting the improvement of living conditions towards less risk factor-laden ones could benefit from assessment and expansion with life course theory in mind. This would also be a fitting place to start implementing new policies (Deutsche Adipositas-Gesellschaft e.V. 2017), since life course approaches have much to offer in terms of ideas from their structural perspective. Finally, life course approaches would be useful in creating synergies with other areas of policy that can influence obesity, specifically social policy that can effectively address living environments and consequently exposure to risk factors (Nationale Präventionskonferenz 2018).

Potential more concrete recommendations to current policy could be the following: Firstly, the intensification of "Lebenswelten"-based policy measures. These policies focus their efforts on the "life worlds" of their target groups, which means the various environments they live and are exposed to influences in (Nationale Präventionskonferenz 2018). This is commendable from a life course perspective as it employs a structural approach rather than focusing on individual behavior only as does much of the current policy. Especially expanding the measures of this type that address the environments of workplaces and neighborhoods would be beneficial, as it would both improve living conditions for people in disadvantaged areas and hazardous jobs, alleviating many risk factors, and put more energy into reaching adults than at the moment. These measures are quite non-specific, but they can reach people who need it effectively through improving their living environments (Nationale Präventionskonferenz 2018). And secondly, the introduction of taxes on food and beverages that can lead to obesity (such as sugary drinks and fast food) beyond the regular sales tax. This is successful practice in many countries already (Bundestag 2015), and can steer

peoples nutritional behaviors towards healthier and less obesity-inducing choices, especially for people who may not possess sufficient knowledge on nutrition.

Overall, the implementation of such policies and the assessment of current strategies could provide benefits to public health and reduce health inequality.

6. Conclusion and Discussion

After answering the sub-questions and discussing the results of the analysis in detail, a conclusion can now be drawn on the overall findings of the thesis. The research question will be answered and a discussion on potential implication of this paper and its limitations will be conducted.

6.1 Conclusion on the Research Question

The overarching question laid out in the introduction, which guided the analysis of this thesis, was "*How can life course approaches to healthcare, and the framework of risk and protective factors laid out in them, be utilized to combat inequalities in health and improve health policy on the issue of obesity in Germany?*".

Life course approaches as strategies in health research and policy are based on life course theory, a paradigm that stresses and analyzes the role of past life experiences and living conditions in determining health. In these approaches, people's current health is both based on health development and behavior as well the environment people live in which influences the former elements. One concept in these approaches is risk- and protective factors, which are especially interesting since they represent many of the determinants of health (such as eating behavior, household income and education level, and more). Additionally, they can be used in policy for targeting appropriate groups of people with fitting methods.

German policy does not yet apply these concepts and the approaches derived from them widely, which is the reason for trying to formulate recommendations where to implement them best. Ideas on how to implement more life course elements to improve policy include the expansion of "Lebenswelt"-based policy that utilizes the structural perspective especially for the often-neglected adult target group. Another proposition would be the introduction of taxes on unhealthy foodstuffs, as is practice in many other countries, to influence behavior in difficult to reach parts of the population.

In summary, life course approaches do indeed appear to possess potential for improving German health policy on the issue of obesity. They can be utilized both in amending existing policy and informing the introduction of new ones. An additional benefit could be to health research that informs future policy, with life course theory's longitudinal perspectives.

6.2 Discussion of Implications and Limitations

This thesis provided an overview of life course theory and approaches to health, examined current German policy on obesity from that perspective and presented some ideas on how to integrate the two. Going forward, this can have implications for both research and policy in the field. Research on the benefits of life course approaches should continue and take the setting of German health policy into account more, precisely because of it not utilizing life course concepts frequently yet. This could open new opportunities to examine effects of policies from their implementation onwards, as well as improve policy through constant evaluation from a "new" perspective. Life course theory and approaches themselves must also be further researched, including but not limited to in the field of health. Finally, as the recommendations proposed, future policy should implement life course approaches and evaluate its use in different policy areas.

The thesis can of course only scratch the surface of this topic, due to its short extent and limited methodology. The method of content analysis utilized in it also specifically presents a potential danger, namely personal biases that may have influenced document choice for the sources as well as how they were interpreted. And lastly, this study cannot aim to present a holistic evaluation of the concrete benefits of life course-inspired policy due to its qualitative nature. More statistical and comparative work is needed to that end.

7. References

Babitsch, Birgit et al. (2020): Kurzbericht Prävention von Kinderübergewicht in Lebenswelten (SkAP). Kurzbericht. Alice Solomon Hochschule Berlin. Available online at https://opus4.kobv.de/opus4-ash/frontdoor/deliver/index/docId/293/file/SkAP-Kurzbericht_SkAP-Fin.pdf.

Ben-Shlomo, Y. (2002): A life course approach to chronic disease epidemiology: conceptual models, empirical challenges and interdisciplinary perspectives. In *International Journal of Epidemiology* 31 (2), pp. 285–293. DOI: 10.1093/ije/31.2.285.

Braveman, Paula (2014): What is health equity: and how does a life-course approach take us further toward it? In *Maternal and child health journal* 18 (2), pp. 366–372. DOI: 10.1007/s10995-013-1226-9.

Bundesgesundheitsministerium (2021): Förderschwerpunkt Prävention von Übergewicht bei Kindern und Jugendlichen. bundesgesundheitsministerium.de. Available online at https://www.bundesgesundheitsministerium.de/themen/praevention/kindergesundheit/praevention -von-kinder-uebergewicht.html, checked on 4/22/2022.

Bundestag (2010): Werbeverbot für ungesunde Lebensmittel. Available online at https://www.bundestag.de/resource/blob/414496/e07ccfdc50ff4d9771c8f4a992973459/WD-10-078-10-pdf-data.pdf.

Bundestag (2014): Studien und Informationen zu Übergewicht und Adipositas bei Kindern im Zusammenhang mit Lebensmittelwerbung. Available online at https://www.bundestag.de/resource/blob/409760/818263b02576676ed2363faf475db094/WD-5-154-14-pdf-data.pdf.

Bundestag (2015): Die besondere Besteuerung von Lebens- und Genussmitteln als Steuerungsinstrument der Volksgesundheit - Folgenabschätzungen. Available online at https://www.bundestag.de/resource/blob/408410/5016655b72cff281a91869eaf9d67a5c/WD-9-125-14-pdf-data.pdf.

Bundestag (2016): Steigender Zuckerkonsum Zahlen, Positionen und Steuerungsmaßnahmen. Available online at https://www.bundestag.de/resource/blob/480534/0ae314792d88005c74a72378e3a42aec/WD-9-053-16-pdf-data.pdf.

Bundestag (2018): Studien zu gesundheitlichen Auswirkungen einer Zuckersteuer. Available online at https://www.bundestag.de/resource/blob/562780/dcea822b4d31be27c18f84da7d28f8c1/WD-9-028-18-pdf-data.pdf.

Bundestag (2019a): Förderprogramme des Bundes und der Länder für gesunde Ernährung in Krippen, Kitas und Schulen und für Schulküchen. Available online at https://www.bundestag.de/resource/blob/592964/e18e1af2fa5f36faa713855afe2eadd2/WD-5-164-18-pdf-data.pdf.

Bundestag (2019b): Maßnahmen ausgewählter Länder gegen steigenden Zuckerkonsum. Available online at https://www.bundestag.de/resource/blob/656020/460313a5081bc450baafdf698c00f1b7/WD-5-060-19-pdf-data.pdf.

Bundestag (2019c): Ernährungsstrategien ausgewählter Länder. Available online at https://www.bundestag.de/resource/blob/661530/0190e487d400cc2f59e6887cb9743400/WD-5-067-19-pdf-data.pdf.

Bundestag (2021): Maßnahmen zur Prävention von Adipositas und deren Wirksamkeit. Available online at https://www.bundestag.de/resource/blob/858470/4f02efacc70fac12a564325e0a5c9cb6/WD-9-017-21-pdf-data.pdf.

Bundestag (12/10/2021): MEHR FORTSCHRITT WAGEN. BÜNDNIS FÜR FREIHEIT, GERECHTIGKEIT UND NACHHALTIGKEIT. Available online at https://www.bundesregierung.de/resource/blob/974430/1990812/04221173eef9a6720059cc353d759a2b/2021-12-10-koav2021-data.pdf?download=1.

Bundeszentrale für Gesundheitliche Aufklärung (2015): Prävention und Gesundheitsförderung in Deutschland. Konzepte, Strategien und Interventionsansätze der Bundeszentrale für gesundheitliche Aufklärung. Aufl. 1.2.02.15. Köln (Forschung und Praxis der Gesundheitsförderung, Sonderheft 1).

Deutsche Adipositas-Gesellschaft e.V. (2017): Adipositasprävention 2017: Aktueller Stand – Bewertung – Weiterentwicklung. Available online at https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/5_Publikationen/Praevention/Berichte/Adipositaspraevention_Beitraege_DAG_Jahrestagung.pdf.

Elder, Glen H.; Johnson, Monica Kirkpatrick; Crosnoe, Robert (2003): The Emergence and Development of Life Course Theory. In Jeylan T. Mortimer, Michael J. Shanahan (Eds.): Handbook of the Life Course. Boston, MA: Springer US, pp. 3–19.

Eyler, Amy A.; Brownson, Ross C. (2016): The Power of Policy to Improve Health. In Amy A. Eyler, Jamie F. Chriqui, Sarah Moreland-Russell, Ross C. Brownson (Eds.): Prevention, Policy, and Public Health: Oxford University Press, pp. 3–16.

Given, Lisa (2008): The SAGE Encyclopedia of Qualitative Research Methods. 2455 Teller Road, Thousand Oaks California 91320 United States: SAGE Publications, Inc.

Hilbert, Anja et al. (2007): Primäre Prävention der Adipositas bei Erwachsenen. Eine interdisziplinäre Analyse. In *Herz* 32, pp. 542–552. Available online at https://www.academia.edu/11590929/Prim%C3%A4re_Pr%C3%A4vention_der_Adipositas_bei _Erwachsenen?auto=citations&from=cover_page, checked on 6/23/2022.

Johnny Saldana (2016): The Coding Manual for Qualitative Researchers. 3rd ed. London: SAGE Publications, Inc. Available online at https://www.sfu.ca/~palys/Saldana-CodingManualForQualResearch-IntroToCodes&Coding.pdf.

Jones, Nancy L.; Gilman, Stephen E.; Cheng, Tina L.; Drury, Stacy S.; Hill, Carl V.; Geronimus, Arline T. (2019): Life Course Approaches to the Causes of Health Disparities. In *Am J Public Health* 109 (S1), S48-S55. DOI: 10.2105/AJPH.2018.304738.

Kuntz, Benjamin; Lampert, Thomas (2010): Socioeconomic factors and obesity. In *Deutsches Ärzteblatt international* 107 (30), pp. 517–522. DOI: 10.3238/arztebl.2010.0517.

Kuruvilla, Shyama; Sadana, Ritu; Montesinos, Eugenio Villar; Beard, John; Vasdeki, Jennifer Franz; Araujo de Carvalho, Islene et al. (2017): A life-course approach to health: synergy with sustainable development goals. In *Bulletin of the World Health Organization* 96 (1), pp. 42–50. DOI: 10.2471/BLT.17.198358.

Lago, Santiago; Cantarero, David; Rivera, Berta; Pascual, Marta; Blázquez-Fernández, Carla; Casal, Bruno; Reyes, Francisco (2018): Socioeconomic status, health inequalities and non-communicable diseases: a systematic review. In *Zeitschrift für Gesundheitswissenschaften = Journal of public health* 26 (1), pp. 1–14. DOI: 10.1007/s10389-017-0850-z.

Nationale Präventionskonferenz (2018): Bundesrahmenempfehlungen. nach § 20d Abs. 3 SGB V. Available online at https://www.npk-info.de/fileadmin/user_upload/ueber_die_npk/downloads/1_bundesrahmenempfehlung/bundesrah menempfehlung_BRE_praevention_barrierefrei.pdf.

OECD (2017): Obesity Update 2017. Available online at https://www.oecd.org/els/health-systems/Obesity-Update-2017.pdf, checked on 3/11/2022.

Public Health England (2019): Health matters: Prevention - a life course approach. Available online at https://www.gov.uk/government/publications/health-matters-life-course-approach-to-prevention/health-matters-prevention-a-life-course-approach, checked on 2/13/2022.

Robert Koch-Institut (2017): Übergewicht und Adipositas bei Erwachsenen in Deutschland. Available online at https://www.rki.de/DE/Content/Gesundheitsmonitoring/Gesundheitsberichterstattung/GBEDownloadsJ/FactSheets/JoHM_2017_02_Uebergewicht_Adipositas_Erwachsene.pdf?__blob=publicationFile, checked on 3/11/2022.

Robert Koch-Institut (2020a): AdiMon-Themenblatt: Konzeptionelle Ansätze von Präventionsmaßnahmen. Available online at https://www.rki.de/DE/Content/Gesundheitsmonitoring/Studien/Adipositas_Monitoring/Ma%C3%9Fnahmen/PDF_Themenblatt_Massnahmen_SkAP.pdf?__blob=publicationFile.

Robert Koch-Institut (2020b): AdiMon-Themenblatt: Policy-Maßnahmen. Available online at https://www.rki.de/DE/Content/Gesundheitsmonitoring/Studien/Adipositas_Monitoring/Ma%C3%9Fnahmen/PDF_Themenblatt_Massnahmen_Policy.pdf?__blob=publicationFile.

Robert Koch-Institut (2020c): AdiMon-Themenblatt: Maßnahmen der Prävention und Gesundheitsförderung in Kindertagesstätten. Available online at https://www.rki.de/DE/Content/Gesundheitsmonitoring/Studien/Adipositas_Monitoring/Ma%C3%9Fnahmen/PDF_Themenblatt_Massnahmen_GKV_Kita.pdf?__blob=publicationFile.

Robert Koch-Institut (2020d): AdiMon-Themenblatt: Maßnahmen der Prävention und Gesundheitsförderung in Schulen. Available online at https://www.rki.de/DE/Content/Gesundheitsmonitoring/Studien/Adipositas_Monitoring/Ma%C3%9Fnahmen/PDF_Themenblatt_Massnahmen_GKV_Schule.pdf?__blob=publicationFile.

Robyn Correll (2020): Health Disparities: What They Are and Why They Matter. Verywell health. Available online at https://www.verywellhealth.com/health-disparities-4173220, updated on 1/24/2020.

Seidell, Jacob C.; Nooyens, Astrid J.; Visscher, Tommy L. S. (2005): Cost-effective measures to prevent obesity: epidemiological basis and appropriate target groups. In *The Proceedings of the Nutrition Society* 64 (1), pp. 1–5. DOI: 10.1079/PNS2004402.

Trust for America's Health (2022): Prevention and Public Health Policy. Available online at https://www.tfah.org/issue-details/prevention-public-health-policy/.

University of Southern California: 6 Examples of Health Disparities and Potential Solutions. Available online at https://healthadministrationdegree.usc.edu/blog/examples-of-health-disparities/, checked on 2/23/2022.

Vuik, Sabine; Lerouge, Aliénor; Guillemette, Yvan; Feigl, Andrea; Aldea, Alexandra (2019): The Heavy Burden of Obesity: OECD.

Westermann, Stefanie; Happe, Kathrin; Fiedler, Klaus; Hauner, Hans; Hertwig, Ralph; Huber, Gerhard et al. (Eds.) (2019): Übergewicht und Adipositas. Thesen und Empfehlungen zur Eindämmung der Epidemie. Deutsche Akademie der Naturforscher Leopoldina. Halle (Saale): Deutsche Akademie der Naturforscher Leopoldina e.V. - Nationale Akademie der Wissenschaften (Diskussion / Deutsche Akademie der Naturforscher Leopoldina, Nr. 22). Available online at http://nbn-resolving.org/urn:nbn:de:gbv:3:2-114468.

Yingwattanakul, Preecha; Moschis, George P. (2017): Life Course Perspectives on the Onset and Continuity of Preventive Healthcare Behaviors. In *The journal of primary prevention* 38 (5), pp. 537–550. DOI: 10.1007/s10935-017-0482-7.

8. Data Appendix: Policy Documents

This appendix consists of a table displaying the documents used in the analysis and their coding. It includes the Documents' names in Atlas.ti and the corresponding original titles, as well as number of codes and quotations, which codes were used for each document and whether they were utilized in the word list.

Table 3. Policy Documents Appendix

Name of Source Document/ Atlas.ti Document Name	No. of Codes	Codes	Quotation Count	Included in Word List
Maßnahmen Adipositasprävention 2021 BT	9	Policy - Prevention Policy - Interdisciplinarity Policy - Kids Focus Policy - Relevance Policy - Specific Education Policy - Blind Spots Policy - Examples Policy - Fiscal Policy - Targeting	25	yes
Studien Zuckersteuer 2018 BT	3	Policy - Blind Spots Policy - Fiscal Policy - Examples	3	yes
Förderprogramme 2019 BT	4	Policy - Blind Spots Policy - Kids Focus Policy - Relevance Policy - Examples	2	yes
besondere Besteuerung 2015 BT	3	Policy - Relevance Policy - Fiscal Policy - Specific Education	2	yes
Werbeverbot 2010 BT	6	Policy - Targeting Policy - Kids Focus policy shortcomings Policy - Nutrition Policy - Examples vulnerable groups correlation	3	yes
Ernährungsstrategien 2019 BT	2	Policy - Blind Spots implications/recommendations	2	yes
Studien Kinder Werbung 2014 BT	5	factors Policy - Kids Focus Policy - Nutrition Policy - Specific Education vulnerable groups correlation	2	yes
Steigender Zuckerkonsum 2016 BT	8	Policy - Nutrition Policy - Blind Spots Policy - Specific Education vulnerable groups correlation Policy - Kids Focus Policy - Prevention Policy - Interdisciplinarity Policy - Targeting	4	yes

Maßnahmen gegen Zucker 2019 BT	5	education correlation Policy - Nutrition Policy - Relevance Policy - Examples Policy - Specific Education	4	yes
Koalitionsvertrag 2021	3	Policy - Examples Policy - Nutrition Policy - Prevention	2	no
RKI_Themenblatt_Massnahmen_ Policy	8	Policy - Specific Education Policy - Blind Spots Policy - Nutrition Policy - Fiscal Policy - Examples Policy - Kids Focus implications/recommendations Policy - Prevention	11	yes
RKI_Themenblatt_Massnahmen_ Schule	12	Policy - Interdisciplinarity Policy - Targeting Policy - Relevance Policy - Prevention Policy - Nutrition Policy - Movement Policy - Kids Focus vulnerable groups correlation Policy - Specific Education Health Disparity/Equity Policy - Blind Spots implications/recommendations	15	yes
RKI_Themenblatt_Massnahmen_ Kita	8	Policy - Blind Spots Policy - Kids Focus implications/recommendations Health Disparity/Equity vulnerable groups correlation Policy - Relevance Policy - Nutrition Policy - Movement	7	yes

RKI_Themenblatt_Massnahmen_ SkAP	12	Policy - Examples Policy - Relevance LCA Policy - Blind Spots Policy - Specific Education Policy - Interdisciplinarity factors Policy - Kids Focus Policy - Structure/Environment Policy - Targeting blind spot Policy - Prevention	11	yes
NPK BRE vom 29.08.2018	14	Policy - Kids Focus Policy - Targeting Policy - Relevance LCA Policy - Structure/Environment factors stigma Policy - Specific Education Policy - Interdisciplinarity Policy - Nutrition Policy - Examples education correlation economic correlation vulnerable groups correlation	22	yes
Kurzbericht_SkAP-Fin__002_	7	Policy - Blind Spots LCA Policy - Interdisciplinarity vulnerable groups correlation Policy - Prevention Policy - Kids Focus Policy - Targeting	7	yes
Adipositaspraevention_Beitraege_ DAG_Jahrestagung	8	Policy - Kids Focus Policy - Nutrition Policy - Movement Policy - Prevention Policy - Structure/Environment Policy - Blind Spots LCA Policy - Specific Education	12	yes

Erwachsenenprävention Adipositas	5	stigma	4	yes
		Policy - Blind Spots		
		Policy - Targeting		
		Policy - Prevention		
		Policy - Interdisciplinarity		