



Self-reported health and the social body

Mirza Balaj¹

Published online: 12 October 2020
© The Author(s) 2020

Abstract

Since the strong predictive power of self-reported health (SRH) for prospective health and social outcomes has been established, researchers have been in a quest to build a theoretical understanding of this widely used health measure. Current literature based predominantly in a biomedical perspective asserts a linear relationship between physical conditions and perception of health. Discrepancies from this expected relationship are considered an important weakness of SRH. Systematic discrepancies between physical conditions and reporting of SRH have been documented across different socio-economic groups. Evidence identified for educational groups shows that for the same level of health status, lower-educated groups report poorer levels of perceived health. This raised doubts whether it is useful to use SRH to measure social inequalities in health within and between countries. To date, sociologists of health have not engaged in the discussion of reporting heterogeneity in SRH. After reviewing existing evidence, we contend that the discrepancy in SRH reporting across social groups argued to be a weakness of SRH as a health measure is a strength from a sociological perspective. SRH as a *social measure of health* is a better predictor than objective measures of health precisely because it captures the lived experience of the embodied agent.

Keywords Self-reported health · Reporting heterogeneity · Bourdieu · Capital interaction theory · Health inequalities

Introduction

Among health measures, self-reported health (SRH) has gained prominence in the last three decades in population health research. Studies have shown the ability of SRH to reflect individuals' view of their past health, their assessment of current health and to predict future health status. Indeed, there is ample evidence that

✉ Mirza Balaj
mirza.balaj@ntnu.no

¹ Department of Sociology and Political Science Dragvoll, Building 10, Level 4, 7491 Trondheim, Norway



beyond mortality (Idler and Benyamini 1997; DeSalvo et al. 2006; Bopp et al. 2012) SRH predicts new morbidity (Ferraro et al. 1997), decline in functional ability (Idler and Kasl 1991), recovery from illness (Wilcox et al. 1996) and health care utilization (Menec and Chipperfield 2001).

This evidence raises a quintessential question: What makes self-evaluation of health a stronger predictor of future morbidity and mortality than clinical markers of disease and disability (Picard et al. 2013)? There is an unequivocal consensus across research traditions that SRH is a complex multidimensional phenomenon that represents more than just objective health (Idler et al. 1999; Simon et al. 2005). In essence, several studies have shown that overall health reflects the distribution of resources in society (Wilkinson and Marmot 2003; Phelan et al. 2010). However, as Jylhä (2009) states hardly any measure has been more widely used and more poorly understood than SRH. Therefore, it remains to be theoretically addressed how the dynamic interaction of interdependent domains such as *objective health*, *resources* and *capabilities* shape the evaluation of health.

To unpack this dynamic interaction we will first start by examining the relationship between objective health status and the health evaluation process. The aim here is to explore if and what role could social conditions have in explaining this relationship. Secondly, we review the sources of different SHR reporting for the same health status by social groups in order to discern the effect of the mechanisms underpinning the evaluation of health. Lastly, we propose Bourdieu capital interaction theory to inform our understanding of the mechanisms that might explain why the same health status brings social groups to different experiences of the body in society and different reporting of SRH.

SRH evaluation models

Generally, components that are examined to varying degrees by current health evaluation models (Jylhä 2009; Knäuper and Turner 2003) can be grouped into (a) health status, (b) framework of evaluation and (c) interpretation of the SRH response scale as shown in Fig. 1.

Health status comprises somatic information that individuals take into account; such information includes medical diagnosis, functional status, and pain. Within these models, the framework of evaluation is grounded in cultural conceptions of health and social comparison processes (Morris 2018). The diversity of health definitions across societies is acknowledged in the cultural conception of health, whereas differences in the evaluation of health within the same society are suggested to derive from social comparison processes (psychosocial approach). These models rely extensively on a cognitive perspective to interpret the effect of social comparison processes in relation to health status and to the use of the SRH scale. For instance, the role of social position is considered in relation to differences among social groups in evaluating the importance of health-relevant information or different health expectations in reference to respective social comparison groups. As such, social comparison processes are expected to lead to different perceptions of health status and interpretations of the SRH scale by social position.



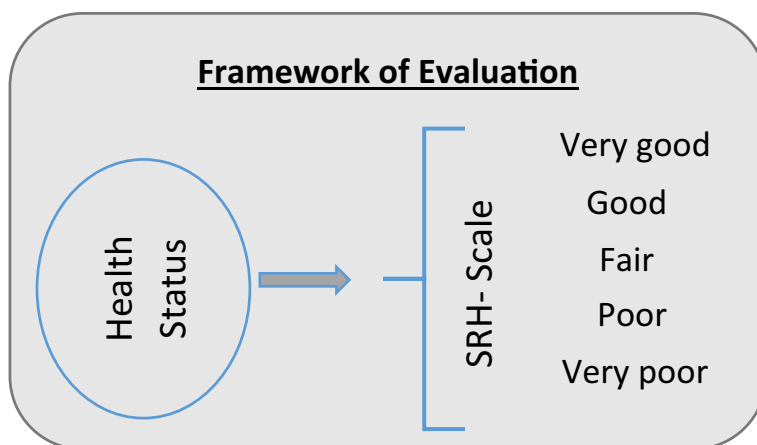


Fig. 1 Structure of SRH models

These models have been useful analytical tools to bridge the two understandings of SRH as a subjective assessment process and SHR as an indicator of objective health (Garbarski 2016). However, among the three components, primacy is given to health status while individual and social characteristics are limited to interpretative tools of health status. This approach indicates a persistent understanding that SRH is predominantly an indicator of objective health, while the role of individual and social characteristics in evaluations of the body is downplayed.

Indeed, limitations in these models arise if we want to explain differences in SRH reporting among objectively healthy individuals. Based on these models, for individuals with similar health conditions, inequalities can arise by subjecting these conditions to different individual frameworks of evaluation. However, if two people are equally healthy (no objective health conditions), individual and social characteristics—which Jylhä (2009) refers to as “non-health” factors, such as social position, standard of living and social support—should not interfere in the evaluation of health. In other words, the evaluative framework would become redundant in the relation between health status (of healthy individuals) and SRH rating. Nevertheless, empirical evidence shows that not all healthy individuals report good health or similar levels of SRH (Cott et al. 1999). This suggests that the evaluation framework itself has an effect on SRH reporting that is independent of the effect of health status. Therefore, in order to understand how health evaluation emerges, it is important not only to know the health status of individuals but also to develop a more comprehensive understanding of what constitutes the evaluation framework.

It is similarly difficult to argue about the primacy of health status versus the evaluation process in cases when respondents presenting a poor health status rate their health as good (Krause and Jay 1994). In disability studies, this is commonly referred to as the ‘disability paradox’ (Albrecht and Devlieger 1999). In this scenario, the evaluation process itself seems to counteract the effect of the cognition and knowledge of health status in reporting SRH. How does the evaluation process translate poor physical health status into good SRH? For Drum et al.



(2008), an objective assessment of health (measured as the number of healthy days) presents an incomplete picture of overall health. The authors suggest that “...the underlying process of assessing SRH may differ between people with and without disabilities”. In the former group, it seems that the social conditions of experiencing health become even more prominent (Idler et al. 1999). These limitations arising from the existing conceptualization of SRH point to the need to reconsider differences in SRH evaluation processes between different morbidity levels, especially from a social position perspective.

To overcome these limitations, we must include in the SRH evaluation process not only individuals’ social positions but also the social conditions in which they attain and maintain these positions. Existing models that combine cognitive and epidemiological perspectives acknowledge the role of social conditions in evaluation frameworks, but these models view this role as limited to shaping individuals’ cognitive abilities and determining the reference groups to which they compare themselves. This narrow perspective on *social conditions* overlooks the effect of material and non-material resources on the experience of the body. Indeed, most research examining social position differences in SRH assessment has focused on the two extreme ends of the SRH evaluation model—more concretely, how the evaluation framework shapes the understanding of health status as a physical experience and the understanding of the SRH scale.

In the next section, we synthesize the current empirical evidence from different disciplines on the sources of SRH reporting differences among social positions. In reviewing this literature, we focus on differences among educational groups. Education plays a crucial role in the social stratification of any modern society. Generally, education is attained in early adulthood and is considered the most stable marker of social position. For instance, compared to occupation or income, education level is much more stable to personal and societal changes.

Education is also an important determinant of both income and occupation (Lahelma 2001). The strength of education to predict and represent the social position of individuals (social destination) depends on their social origin and on the design and integration of the educational system and related modes of labour markets (Müller 2005). Social origin affects not only educational attainment but it has a direct effect on social destination independently of own education which might come in the form of capabilities and strategies acquired during childhood (i.e. communication skills, aspirations) and through direct access to social networks and inheritance (Bernardi and Ballarino 2016). There is also a pronounced variety across countries among educational and labour market institutions, and longitudinal studies have shown that educational expansion has resulted in cross-national variation in respect to how and to what extend educational attainment influences social destination (Ryan 2001; Kogan and Unt 2005). Although the expansion of education has slightly decreased the returns of education, nevertheless longitudinal studies have demonstrate the signalling power of educational credentials in the transition to work, class formation and entry to elite positions (Müller and Gangl 2003; Roberts 2010; Wakeling and Savage 2015; Bernardi and Ballarino 2016).



Reporting heterogeneity in SRH by social position

Since the late 1990s, social epidemiologists and, to a larger extent, health economists have been concerned with the relation between objective health and SRH reporting. Discrepancies between SRH and underlying true health are said to be due to differences in reporting behaviour. Reporting behaviour is influenced by components of evaluation frameworks of sub-population groups (Lindeboom and Van Doorslaer 2004; Layes et al. 2012), leading to what is commonly referred to as reporting heterogeneity. Simply put, reporting heterogeneity is measured as the variation in reported measures across population groups for a given level of true health (Shmueli 2003). Together, these two research traditions have identified three sources of reporting heterogeneity: (a) conceptualization of health, (b) representation of disease, and (c) interpretation of thresholds in SRH response categories.

Conceptualization of health

The first source of reporting heterogeneity essentially examines whether different populations and sub-groups of populations have systematically different conceptualizations of health. Several studies have reported that a broader definition of health has been adopted in Western societies since the early 1990s (Fylkesnes and Førde 1992; Smith et al. 1994). These findings have prompted concern regarding whether these variations in the definition of health vary systematically across social positions and are reflected in systematic reporting bias (Lindeboom and Van Doorslaer 2004; Groot 2000; Kerkhofs and Lindeboom 1995; Sadana et al. 2002).

Initially, qualitative studies investigated which health domains individuals use to assess their health. These studies identified physical dimensions of health as the core of SRH. Nonetheless, in the vast majority of cases, respondents tend to go beyond physical health consideration when evaluating their overall health. Across the qualitative studies carried out in the 1990s and early 2000s, the physical, functional, coping, social, well-being and behavioural dimensions were the most common health dimensions elicited from respondents. Several of these qualitative studies that investigated variations in social positions did not find significant differences among educational groups in the range of criteria used to evaluate their overall health (Idler et al. 1999; Krause and Jay 1994).

Representation of disease

The second source of reporting heterogeneity is related to the representation of disease. This type of heterogeneity can occur if population sub-groups have systematically different (a) knowledge, (b) inclinations to report, and (c) perceptions of the severity of the disease conditions.

To test patients' knowledge of disease, studies have examined the agreement between self-reports and criterion standards such as medical and hospital records, GP interviews and physical examinations. Two main findings have garnered large



support from this body of literature. First, individuals tend to underreport health conditions in self-administered questionnaires (Kriegsman et al. 1996; Metzger et al. 2002; Singh 2009; Englert et al. 2010). Second, the overall level of agreement between self-reports and medical sources depends on the nature of the disease. These studies conclude that patient-administered questionnaires may be a highly reliable source of information on well-defined chronic diseases, such as diabetes mellitus (Simpson et al. 2004; Hansen et al. 2014; Heliövaara et al. 1993; Bergmann et al. 2004), (Midthjell et al. 1992), stroke (Kriegsman et al. 1996; Okura et al. 2004; Van der Heyden et al. 2014), chronic pulmonary diseases (Singh 2009; Hansen et al. 2014; Merkin et al. 2007; Metzger et al. 2002), hypertension (Goldman et al. 2003; Vargas et al. 1997; Englert et al. 2010), and thyroid dysfunction (Bergmann et al. 2004; Hansen et al. 2014), but are less reliable for diseases with non-established diagnostic criteria and a fluctuating course (Kriegsman et al. 1996; van den Akker et al. 2015; Haapanen et al. 1997). Remarkably, although the underreporting of conditions decreases with multimorbidity (Van der Heyden et al. 2014) (Hansen et al. 2014), total agreement also decreases (Okura et al. 2004; Baumeister et al. 2010) because of an increase in overreporting (Englert et al. 2010; Okura et al. 2004), especially by individuals in lower social positions (Baumeister et al. 2010).

With some exceptions (Metzger et al. 2002; Bergmann et al. 2004; Merkin et al. 2007), studies generally find reporting accuracy to increase with education level for several conditions (Kriegsman et al. 1996) (Singh 2009; Simpson et al. 2004; Okura et al. 2004; Hansen et al. 2014). Nevertheless, overall agreement/accuracy reveals little about the overreporting (false positive) and underreporting (false negative) patterns of educational groups. Most of these studies find a lower overall agreement for individuals with lower education largely due to overreporting (false positive) of conditions such as arthritis, arthrosis, diabetes, cholesterol and heart disease (Kriegsman et al. 1996; Heliövaara et al. 1993; Baumeister et al. 2010; Baker et al. 2004; Corser et al. 2008), (Espelt et al. 2012). Exceptions to this pattern are cancer and hypertension, where lower-educated groups tend to underreport (false negative) (Goldman et al. 2003; Vargas et al. 1997; Schrijvers et al. 1994; Manjer et al. 2004). When identified, disagreement in reporting for higher-educated groups derives from underreporting of heart- and pain-related conditions (Haapanen et al. 1997; Corser et al. 2008). For higher-educated groups, cancer diagnosis represents an exception for this pattern, as there is a tendency for overreporting cancer (Corser et al. 2008; Manjer et al. 2004).

A temporal dimension seems to pervade the evidence on social inequalities in over- or underreporting patterns. In the Netherlands, Mackenbach et al. (1996) used data from 1991 in Eindhoven and demonstrated higher underreporting levels for heart disease, lung disease and diabetes for lower-educated groups. A more recent study of the same area, employing data from 2010, did not show educational differences either in under- or overreporting of these same conditions (van den Akker et al. 2015).

Apart from the variation in the knowledge of health conditions, educational differences in SRH for the same reported level of objective health can result from an inclination to report health conditions. Evidence on additional reporting of health conditions following a prompt finds that an individual's educational attainment



does not obstruct the presentation of health problems to health specialists (Macintyre et al. 2005; Westert et al. 2005). There is no definitive agreement concerning whether medical records should be considered the gold standard. However, the observed absence of educational inequalities in reported conditions sets a reliable baseline to compare patterns of over- and underreporting in health questionnaires.

Based on the observed reporting patterns, studies using self-reported morbidity to examine educational heterogeneity in SRH may not compare individuals with similar levels of morbidity. It is likely that between higher-educated and lower-educated groups reporting only one health condition, the former might underreport and the latter might overreport. This implies that in terms of health status, we might be comparing a lower-educated person who has objectively good physical health with a higher-educated person who has objectively poorer physical health. Although lower-educated groups may be in objectively better physical health on average (for each level of self-reported morbidity), studies on SRH heterogeneity show that they consistently report worse levels of self-perceived health than higher-educated groups.

The perception of disease severity is another potential source of SRH heterogeneity within disease representation. Anchoring vignettes have been used to disentangle differences in 'objective' health from differences in the perceived severity of objective health conditions by social position. Vignettes present survey respondents with hypothetical individuals with fixed levels of health, and any difference in health ratings of these fictitious cases is then (at least theoretically) attributed to reporting heterogeneity, which is dependent on respondents' individual characteristics (Dowd and Todd 2011).

Studies using vignettes have closely examined systematic socio-economic cut-off shifts in the threshold levels of severity in domain-specific self-reports such as pain, mobility, sleep problems, breathing problems, and depression. Across these studies, there is consistent evidence that higher-educated groups from different world regions report higher levels of severity, distress and difficulty compared to lower-educated groups for vignettes presenting the same level of health (Dowd and Todd 2011; Bago d'Uva et al. 2008b; Molina 2016). With respect to SRH evaluation, a higher level of perceived disease severity is expected to translate into poorer perceived health. Nevertheless, higher-educated groups continue to perceive their health as better than lower-educated groups, despite their propensity to rate the same health status as more severe. Another lesson from these studies is that the severity of the health conditions presented in vignettes is not understood equivalently cross-nationally (Hirve et al. 2013; Bago d'Uva et al. 2008a). Such cross-national variations lend empirical validity to cultural differences in the definition of health.

SRH thresholds

Regarding the third source of reporting heterogeneity, the literature has explored whether social positions use the threshold levels of the SRH response categories differently. Two methods have been applied to test differences in the SRH threshold. The first method uses vignettes. In the few studies using vignettes to investigate reporting heterogeneity in SRH scales, higher-educated individuals seem to report



consistently better overall health when presented with the same health vignettes (Grol-Prokopczyk et al. 2011; Xu and Xie 2017). Interestingly, studies controlling for the impact of respondents' morbidity in evaluating vignettes, which is understood as a proxy measure of familiarity/adaptation with health conditions, found no or limited evidence that familiarity leads respondents to rate vignettes as healthier (Hinz et al. 2016; Xu and Xie 2017; Grol-Prokopczyk et al. 2015).

The second method uses objective health status, measured by self-reported clinical health conditions, symptoms, pain or more complex constructs of health indexes, to measure differences in the understanding of the SRH scale among individuals with 'identical health'. With respect to education, studies conducted on Canadian (Lindeboom and Van Doorslaer 2004; Kerkhofs and Lindeboom 1995), British (Hernández-Quevedo et al. 2004), Israeli (Shmueli 2003) and French (Etilé and Milcent 2006) data do not find differential shifts in SRH cut-off points. However, some of these studies do find a parallel shift of all SRH thresholds (Hernández-Quevedo et al. 2004; Etilé and Milcent 2006). This parallel shift, which is the same as those reported in vignette studies on SRH (Grol-Prokopczyk et al. 2011; Xu and Xie 2017), points toward a systematically better health evaluation among higher-educated individuals for the same level of objective health.

In summary, qualitative and quantitative studies exploring variations in reporting behaviour between educational groups provide valuable insights into the translation process of objective health into perceived health. Studies reviewed in this section (results visually summarized in Fig. 2) did not identify differences among educational groups in the type of health information used for reporting SRH. However, there seems to be a consistent overestimation of the severity of the same health conditions by higher-educated groups compared to lower-educated groups. Remarkably, this overestimation of severity by the former does not translate health profiles into poorer SRH ratings. In contrast, positive parallel shifts in all SRH thresholds are typical for higher-educated individuals. Positive parallel shifts in all SRH thresholds were also observed in studies using self-reported morbidity, where we would expect higher-educated individuals to have underreported their conditions and lower-educated individuals to have overreported. In other words, higher-educated individuals

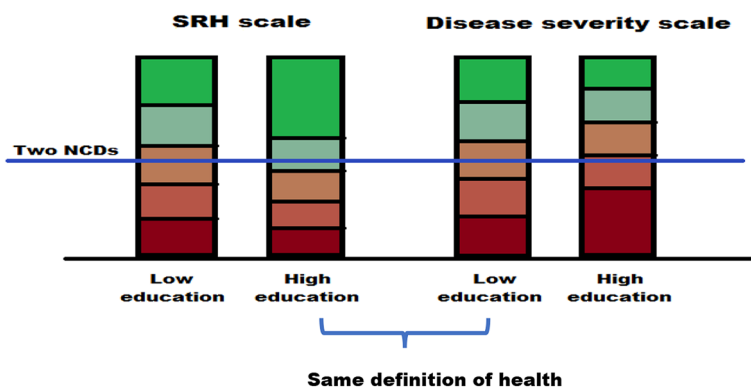


Fig. 2 Reporting heterogeneity by education level



seem to underreport health conditions on average and to rate the same health conditions as more severe, but they also seem to translate their health status into better perceived health compared to lower-educated individuals.

At the foundation of the reviewed literature in this section lies a one-to-one relationship between disease and SRH, showing that a predominantly biomedical conception of SRH has informed the reporting heterogeneity discussion. To put this into perspective, one of the main concerns is that if policy interventions aiming to improve health employ SRH as a health outcome but do not account for differences in SRH reporting by social position, they might be misled to overinvest in lower social positions. This is because once reporting heterogeneity is accounted for, the true health of individuals in lower social positions declines slower than their SRH. However, if SRH were a measure that captured only or mainly underlying true health, we would expect poorer health reporting from higher-educated individuals or better reporting from lower-educated individuals. In fact, the absence of such empirical patterns points to a disproportional impact of the mechanisms at play in the evaluative framework. These mechanisms are able to devalue the effect of poor objective health on perceived health for the socially advantaged and to devalue the effect of good objective health on perceived health for the socially disadvantaged.

Reporting heterogeneity of SRH in sociology

Notably, the conceptualization of SRH primarily as a health status measure is driven by the quest for its validity as a population health measure. However, above and beyond its role as a health measure, the perception of health retains a strong salutogenic or pathogenetic effect on the body (Chipperfield 1993; Stenholm et al. 2016). Practically speaking, if two individuals with the same condition perceive their health differently, they will have different health and social trajectories. Indeed, self-reports of general health predict not only future health and healthcare needs but also inequalities in integration in the labour market (Chirikos 1993; Cai 2010), earnings (Fukui and Iwamoto 2003), sickness-related absences (Eriksson et al. 2008) and early retirement (García-Gómez 2011). Overlooking these social processes that affect and are affected by SRH also means ignoring what Shmueli (2002) refers to as the social determinants of reporting heterogeneity.

Sociologists of health have thus far not engaged in discussions of reporting heterogeneity in SRH, which may derive from the fact that the very same mechanisms affect both objective and subjective health (Scambler et al. 2010; Bradby 2012). This line of argumentation neglects the context-bound synergic relation between individuals as objects (physical self) and as subjects (embodiment of self) (Leventhal et al. 1999). To illustrate, nutrition is a mechanism affecting objective health (obesity). At the same time, subjective and objective lack of control over this mechanism affects the perception of health (Mulder et al. 2011; Mirowsky and Ross 1998). Nonetheless, the impact of nutrition is intensified both objectively and subjectively when a specific disease requires changes in nutrition. Individuals' life choices, such as health behaviours, depend on their social position. In terms of nutrition, lower-educated groups are less likely to have been exposed to and to have accumulated



experience with healthy diets (Cockerham 2005, 2007). Therefore, a chronic condition that requires changing to a strict diet exposes both predisposition and contextual social vulnerabilities (financial constraints, access to fresh food markets) to adopting such a diet. This dynamic interaction turns nutrition into a more salient factor in the perception of health while simultaneously leading to a poorer objective health status. Qualitative studies have provided rich descriptions of how the relative intrusiveness of diseases can disrupt personal and social biographies of individuals and force new relationships between the physical body, self-conception and the environment, thus also recalibrating the perception of health (Charmaz 1993; Bury 1982; Ware 1999).

Social theorists have struggled to conceptualize the relationship between individuals' self-conception of *their bodies*, their physical bodies and their social context in their experience of health and illness. Empirical evidence has shown that health and the perception of health are independently associated with each of these social processes (Thoits 2013; Demakakos et al. 2007; Borrell et al. 2009; Lundberg et al. 2007; Siegel 2002). Nevertheless, the combined effect of self-conception, the body in its physical sense and of the social context on health is greater than the sum of its parts. The main obstacle in theorizing may rest in the dialectic nature of these social processes in time and space (Shilling 2012), and any theoretical paradigm favouring one over the other needs to negotiate their determinism (Scambler 2012).

In efforts to break this continuing cycle, theoretical constructs from different disciplines, such as the biopsychosocial (BPS) model and the social determinant of health (SDH) model, have placed the physical body at the centre of analysis in relation to concentric social, material, psychological and institutional factors. Such approaches have been criticized for presenting mechanistic boundaries and a static view of individuals' biological, psychological and contextual experiences of health in society (Freund 1990; Hatala 2012).

A similar criticism applies to the conceptualization of SRH as a health measure of the physical body developed in SRH evaluation models. Although the assessment of SRH is thought to consider human beings in their entirety (Benyamini 2011), the approach to SRH evaluation reflects the pervading dual conception of the body that is common in several sociological theories (Bradby 2012). In the objective part of SRH, naturalist views such as the biomedical paradigm tend to reduce the body to its biology, leaving individual agency and social structure at the margins. The subjective part of SRH, on the other hand, resembles social constructivist approaches that conceive of the body as interpreted via social forces and whose meaning ultimately resides in the mind. As Shilling (2012) states, these essentialist understandings of the relationships between society and social bodies and between society and biological bodies leaves the body as an emerging agent absent as a focus of investigation. Indeed, by confining the role of individual and social characteristics to cognitive factors in the evaluation of the physical status of the body, existing SRH models have narrowed the role of the social agent to perceive the body only as an object-like physiological system. This narrow view of SRH has cascaded down into socio-economic studies of reporting heterogeneity that have solidified this strict division between physical body and the social body (Nettleton 2010). Studies of SRH heterogeneity have avoided examining the relationship between the social and physical



bodies in health perception, thus overlooking the experience of the embodied social agent in society (Cromby 2004).

When individuals evaluate their health, they evaluate their bodies. According to Shilling (2012), the body “is best conceptualized as an unfinished biological and social phenomenon possessed of its own emergent properties...that can be transformed, within a certain limit, as a result of its participation in society”. These processes of transformation and continuity are embodied in the body physically (Krieger 2005), in the way that individuals view their bodies (Crossley 1996; Bourdieu 2013) and in individuals’ capabilities of deploying their body in society (Abel and Frohlich 2012; Fox 2011). Therefore, in referring to the embodiment of the social agent, we refer to the intertwined life course development of the physical, view of and capabilities of the body. If we adhere to this multidimensional conception of the body, we can also move away from understanding the health of the body from a purely biomedical perspective and apply the definition of health proposed by Fox (2011), namely, “the proliferation of a body’s capacity to affect and be affected”. For a body experiencing a disease, its health can be understood as the body’s widened capacities to make, resist and transform relations with its physical and social context (Fox 2011).

Therefore, in evaluating the health of their body, individuals assess their body’s accumulated experience of biological and social changes in society (Berthelot 1991). These changes can affect individuals’ perception of their health independently and in combination. The social circumstances under which social groups experience changes in their body determine the magnitude and interaction of these effects in their perception of health. Based on this perspective, it is possible to understand SRH as a social measure of health by integrating the evaluation of the interrelated biological and social bodies to better comprehend the dynamics of health inequalities.

With its integrative and dynamic nature (Benyamini 2011), the usefulness of SRH rests in its ability to reflect the embodiment of the social agent situated in the social context; in other words, the reporting of SRH is a cultural-contextual reflexive assessment of inextricably linked social, psychological and biological processes. According to Freund (2011), instead of attempting to establish a hierarchy of these processes in embodiment, we should pay attention to how the conjoint physical and social body is embodied in different social circumstances. How we experience our body is invariably social, and social position is a critical differentiating characteristic that individuals internalize in their social and institutional interactions (Nettleton 2010; Milkie et al. 2014).

Capital interaction theory and evaluation of the body

To understand how social inequalities in health arise and persist, it might be useful to depart from Bourdieu’s theory of capital interaction to address how the dynamic interaction of interdependent domains such as objective health, resources and capabilities shape differential health and social consequences across social positions. Similar to other contemporary sociologists (Giddens 1984), Bourdieu aimed to



reconcile the two main opposing approaches to social science, namely, the structuralist approach, which views social processes as determined by social structures, and the individualist approach, which highlights the importance of individuals' agency (Navarro 2006). Bourdieu employed three key concepts to reconcile social structure and individuals' agency: habitus, capital and field. According to Bourdieu, individuals engage in a social struggle to acquire, maintain and expand valuable material and non-material resources, which are referred to as capitals. These struggles for capitals take place in different fields of the social world, and different capitals are influential in structuring different fields. Therefore, each field can be conceived as a system of social stratification that places individuals/agents in different positions related to processes of accumulation and conversion of the most prominent capitals in the respective field (Savage et al. 2005). The sum of total fields present in a society constitutes the social space of the struggle for every form of capital.

According to Bourdieu and Wacquant (1992), acknowledging that "capital can take a variety of forms is indispensable to explain the structure and dynamics of differentiated societies". In *The Forms of Capital*, Bourdieu (1986) differentiates between four main types of capital. First, economic capital is directly convertible into money and material assets. Second, cultural capital can exist in three forms: in embodied disposition (habitus), in an objectified state as cultural goods and in an institutionalized state, the most prominent of which is educational qualifications. Third, social capital represents material and non-material resources that individuals can mobilize from mutual recognition as members of a group. Fourth, symbolic capital is the form each capital can assume when it is recognized as legitimate. The composition and volume of these capitals define the relative position of agents and their chances of profiting in the social space (Bourdieu 1985).

Cultural capital as an embodied disposition or habitus is the key concept developed by Bourdieu to integrate structure and agency. The various definitions of habitus aim to capture the formation, continuity and change of individuals' embodiment, agency and social position trajectory in the social space (Reay 2004). Habitus thus refers to "those internalized structures, dispositions, tendencies, habits, ways of acting, that are both individualistic and yet typical of one's social groups" (Oliver and O'Reilly 2010). Often criticized as deterministic (Lechte 1997; Williams 1995) the purpose of the habitus is to highlight not only that the social world is inscribed in the body but also that the deployment of the body in social and cultural practices shapes individuals' dispositions, actions and access to capitals (Bourdieu and Nice 1977).

One of the deepest dispositions of the habitus is revealed in the relation of individuals to their bodies (Bourdieu 2013). In studying the body as a social phenomenon, Bourdieu refers to physical capital as the acquisition of habits of body comportment through socialization in sports, patterns of food consumption and etiquette (Bourdieu 2013). Members of social groups, in response to conditions of living, can acquire and develop physical capital as a resource to distinguish or to instrumentalize their body. Consequently, how individuals view and develop their body is reflective of the social position in which they are born and raised. For individuals brought up in lower social positions, the function rather than the state of the body is important to meet the demands of material necessity. Therefore,



for people in lower social positions, the value of the body rests in its ability to be instrumentalized for acquiring and expanding other forms of capitals. In contrast, for individuals with a higher social position, the state of the body is more relevant because they view the body as an end in itself (Bourdieu 2013; Shilling 2012; Weininger 2002).

Viewing the body as a means or as an end can give rise to important distinctions in the evaluation of the body as a continuum of biological and social phenomena. Bourdieu's emphasis on the body as a social phenomenon is relevant for comparing educational groups with a healthy body in the physical sense because their evaluation of the body emphasizes its social part. When individuals from lower educational groups face constraints embedded in the social structure in instrumentalizing their body to maintain the same conditions (homeostasis) or increase the 'distance from necessity', they will experience the vulnerability of their body as a social phenomenon and perceive their body as suboptimal. The social struggle for an adequate level of capitals faced by those in lower educational groups in different societies varies with the social-political organization of these societies (Turner and Avison 2003; Elstad 1998). In contrast, individuals in higher educational groups with a healthy body in the physical sense and with more accumulation of social advantages are more likely to develop a positive evaluation of their body.

The social differences in the experience of the body as a continuum of biological and social phenomena become more evident when individuals develop chronic conditions. With few exceptions (Shilling 1991, 2012), little attention has been paid to physical capital as a prerequisite for participation in work, education and social activities. When the embodied agent is experiencing a chronic condition, the different conceptions of the body across social positions become even more salient in the evaluation of the body. Among lower educational groups, there is a double burden in maintaining homeostasis because the instrument itself to achieve capitals (the body) can reduce the 'distance to necessity' due to the inability to participate in work or social activities. Therefore, the persistence of health-damaging exposures and their eventual proliferation because of illness tend to increase the vulnerability of individuals in lower educational groups in maintaining a stable evaluation of their body. On the other hand, higher-educated individuals experiencing a chronic condition mobilize other forms of capital, creating a status shield that both preserves the distance from necessity and reinforces the attention to the body as a project (Cockerham 2007). This differential capability to change exposures due to a combination of material advantages and dispositions enables those in higher education group to preserve a more stable evaluation of their body (Bailis et al. 2003).

Therefore, the magnitude of vulnerability in the social space when experiencing similar levels of morbidity is a function of the differential capability between social groups—such as educational groups—to achieve, maintain, reconfigure the composition or increase the total volume of capitals based on their respective habitus and the embedded resources in their social position in the social space. As the possibility to achieve and maintain necessary capitals for promoting a healthy social and physical body vary by social position, we expect that heterogeneity in SRH reporting among educational groups to starts from objectively healthy individuals and to follow differences in accumulation of social advantages and disadvantages.



Conclusion

By expanding the discussion on reporting heterogeneity by educational level beyond differences in conceptualization of health, representation of disease and interpretation of SRH response categories we have drawn attention to social sources of SRH differences and to the conceptualization of SRH as a social measure of health. We have highlighted the importance of the social position and resources in which individuals experience their intertwined social and biological body and the capabilities they can deploy to maintain their view on the body. The constraining and enabling power to acquire resources by different social positions are distinctive to different social structures. Therefore, we would expect countries to have different magnitude of SRH differences by social position for same level of health. The magnitude of SRH differences among healthy social groups reproduced in the continues social struggle for resources and the level of social protection offered by different social structures will play a pivotal role in determining the divergent health trajectories of agents from different social positions whose physical capital is threaten by chronic conditions during the life course. In other words, countries with lower social protection and labour structure and regulations that tend to increase the insecurity of lower social groups will lead these groups to continuously compromise their health in the perpetual social struggle to maintain distance from necessity contributing thus to the increase and persistence of social inequalities in health. Inequalities will continue to persist also in more generous countries if rising levels of health conditions are better accommodated by social structures for higher social groups.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Abel, T., and K.L. Frohlich. 2012. Capitals and capabilities: Linking structure and agency to reduce health inequalities. *Social Science and Medicine* 74: 236–244. <https://doi.org/10.1016/j.socscimed.2011.10.028>.
- Albrecht, G.L., and P.J. Devlieger. 1999. The disability paradox: High quality of life against all odds. *Social Science and Medicine* 48: 977–988.
- Bago d'Uva, T., O. O'Donnell, and E. Van Doorslaer. 2008a. Differential health reporting by education level and its impact on the measurement of health inequalities among older Europeans. *International Journal of Epidemiology* 37: 1375–1383.
- Bago d'Uva, T., E. Van Doorslaer, M. Lindeboom, and O. O'donnell. 2008b. Does reporting heterogeneity bias the measurement of health disparities? *Health Economics* 17: 351–375.
- Bailis, D.S., A. Segall, and J.G. Chipperfield. 2003. Two views of self-rated general health status. *Social Science and Medicine* 56: 203–217.



- Baker, M., M. Stabile, and C. Deri. 2004. What do self-reported, objective, measures of health measure? *Journal of Human Resources* 39: 1067–1093.
- Baumeister, H., L. Kriston, J. Bengel, and M. Härter. 2010. High agreement of self-report and physician-diagnosed somatic conditions yields limited bias in examining mental–physical comorbidity. *Journal of Clinical Epidemiology* 63: 558–565.
- Benyamini, Y. 2011. Why does self-rated health predict mortality? An update on current knowledge and a research agenda for psychologists.
- Bergmann, M.M., E.J. Jacobs, K. Hoffmann, and H. Boeing. 2004. Agreement of self-reported medical history: Comparison of an in-person interview with a self-administered questionnaire. *European Journal of Epidemiology* 19: 411–416.
- Bernardi, F., and G. Ballarino. 2016. *Education, occupation and social origin: A comparative analysis of the transmission of socio-economic inequalities*. Cheltenham: Edward Elgar Publishing.
- Berthelot, J.M. 1991. Sociological discourse and the body. *Body Soc. Process Cult. Theory* 390–404.
- Bopp, M., J. Braun, F. Gutzwiller, D. Faeh, Swiss National Cohort Study Group. 2012. Health risk or resource? Gradual and independent association between self-rated health and mortality persists over 30 years. *PLoS ONE* 7: e30795.
- Borrell, C., A. Espelt, M. Rodríguez-Sanz, B. Burström, C. Muntaner, M.I. Pasarín, J. Benach, C. Marinacci, A.-J. Roskam, and M. Schaap. 2009. Analyzing differences in the magnitude of socioeconomic inequalities in self-perceived health by countries of different political tradition in Europe. *International Journal of Health Services* 39: 321–341.
- Bourdieu, P. 1985. The social space and the genesis of groups. *Information (International Social Science Council)* 24: 195–220.
- Bourdieu, P. 1986. The forms of capital. In: *Handbook of theory and research for the sociology of education*, 241–258. R1974 Power Brok. Robert Moses Fall N. Y.
- Bourdieu, P. 2013. *Distinction: A social critique of the judgement of taste*. London: Routledge.
- Bourdieu, P., and R. Nice. 1977. *Outline of a theory of practice*. Cambridge: Cambridge University Press.
- Bourdieu, P., and L. Wacquant. 1992. *An invitation to reflexive sociology*. Chicago und London: The University of Chicago Press.
- Bradby, H. 2012. *Medicine, health and society*. London: Sage.
- Bury, M. 1982. Chronic illness as biographical disruption. *Sociology of Health & Illness* 4: 167–182.
- Cai, L. 2010. The relationship between health and labour force participation: Evidence from a panel data simultaneous equation model. *Labour Economics* 17: 77–90.
- Charmaz, K. 1993. *Good days, bad days: The self in chronic illness and time*. New Brunswick: Rutgers University Press.
- Chipperfield, J.G. 1993. Incongruence between health perceptions and health problems: Implications for survival among seniors. *Journal of Aging Health* 5: 475–496.
- Chirikos, T.N. 1993. The relationship between health and labor market status. *Annual Review of Public Health* 14: 293–312.
- Cockerham, W.C. 2005. Health lifestyle theory and the convergence of agency and structure. *Journal of Health and Social Behavior* 46: 51–67.
- Cockerham, W.C. 2007. *Social causes of health and disease*. Malden: Polity.
- Corser, W., A. Sikorskii, A. Olomu, M. Stommel, C. Proden, and M. Holmes-Rovner. 2008. Concordance between comorbidity data from patient self-report interviews and medical record documentation. *BMC Health Services Research* 8: 85.
- Cott, C.A., M.A. Gignac, and E.M. Badley. 1999. Determinants of self rated health for Canadians with chronic disease and disability. *Journal of Epidemiology and Community Health* 53: 731–736.
- Cromby, J. 2004. Between constructionism and neuroscience: The societal co-constitution of embodied subjectivity. *Theory & Psychology* 14: 797–821.
- Crossley, N. 1996. Body-subject/body-power: Agency, inscription and control in Foucault and Merleau-Ponty. *Body & Society* 2: 99–116.
- Demakakos, P., E. Gjonca, and J. Nazroo. 2007. Age identity, age perceptions, and health: Evidence from the English Longitudinal Study of Ageing. *Annals of the New York Academy of Sciences* 1114: 279–287.
- DeSalvo, K.B., N. Blosner, K. Reynolds, J. He, and P. Muntner. 2006. Mortality prediction with a single general self-rated health question. *Journal of General Internal Medicine* 21: 267.
- Dowd, J.B., and M. Todd. 2011. Does self-reported health bias the measurement of health inequalities in US adults? Evidence using anchoring vignettes from the Health and Retirement Study. *Journals of Gerontology. Series B, Psychological Sciences and Social Sciences* 66: 478–489.



- Drum, C.E., W. Horner-Johnson, and G.L. Krahn. 2008. Self-rated health and healthy days: Examining the “disability paradox”. *Disability and Health Journal* 1: 71–78.
- Elstad, J.I. 1998. The psycho-social perspective on social inequalities in health. *Sociology of Health & Illness* 20: 598–618.
- Englert, H., J. Müller-Nordhorn, S. Seewald, F. Sonntag, H. Völler, W. Meyer-Sabellek, K. Wegscheider, E. Windler, H. Katus, and S.N. Willich. 2010. Is patient self-report an adequate tool for monitoring cardiovascular conditions in patients with hypercholesterolemia? *Journal of Public Health* 32: 387–394.
- Eriksson, H.-G., A.-S. von Celsing, R. Wahlström, L. Janson, V. Zander, and T. Wallman. 2008. Sickness absence and self-reported health a population-based study of 43,600 individuals in central Sweden. *BMC Public Health* 8: 426.
- Espelt, A., A. Goday, J. Franch, and C. Borrell. 2012. Validity of self-reported diabetes in health interview surveys for measuring social inequalities in the prevalence of diabetes. *Journal of Epidemiology and Community Health* 66: e15–e15.
- Etilé, F., and C. Milcent. 2006. Income-related reporting heterogeneity in self-assessed health: Evidence from France. *Health Economics* 15: 965–981.
- Ferraro, K.F., M.M. Farmer, and J.A. Wybraniec. 1997. Health trajectories: long-term dynamics among black and white adults. *Journal Health and Social Behaviour* 38: 38–54.
- Fox, N.J. 2011. The ill-health assemblage: Beyond the body-with-organs. *Health Sociology Review* 20: 359–371.
- Freund, P.E. 1990. The expressive body: A common ground for the sociology of emotions and health and illness. *Sociology of Health & Illness* 12: 452–477.
- Freund. 2011. Embodying psychosocial health inequalities: Bringing back materiality and bioagency. *Social Theory & Health* 9: 59–70.
- Fukui, T., and Y. Iwamoto. 2003. An estimation of earning losses due to health deterioration. Presented at the International Forum for macroeconomics issues, Tokyo.
- Fýlkesnes, K., and O.H. Førde. 1992. Determinants and dimensions involved in self-evaluation of health. *Social Science and Medicine* 35: 271–279.
- Garbarski, D. 2016. Research in and prospects for the measurement of health using self-rated health. *Public Opinion Quarterly* 80: 977–997.
- García-Gómez, P. 2011. Institutions, health shocks and labour market outcomes across Europe. *Journal of Health Economics* 30: 200–213.
- Giddens, A. 1984. The constitution of society: Outline of the theory of structuration. Policy.
- Goldman, N., I.-F. Lin, M. Weinstein, and Y.-H. Lin. 2003. Evaluating the quality of self-reports of hypertension and diabetes. *Journal of Clinical Epidemiology* 56: 148–154.
- Grol-Prokopczyk, H., J. Freese, and R.M. Hauser. 2011. Using anchoring vignettes to assess group differences in general self-rated health. *Journal of Health and Social Behavior* 52: 246–261.
- Grol-Prokopczyk, H., E. Verdes-Tennant, M. McEniry, and M. Ispány. 2015. Promises and pitfalls of anchoring vignettes in health survey research. *Demography* 52: 1703–1728.
- Groot, W. 2000. Adaptation and scale of reference bias in self-assessments of quality of life. *Journal of Health Economics* 19: 403–420.
- Haapanen, N., S. Miilunpalo, M. Pasanen, P. Oja, and I. Vuori. 1997. Agreement between questionnaire data and medical records of chronic diseases in middle-aged and elderly Finnish men and women. *American Journal of Epidemiology* 145: 762–769.
- Hansen, H., I. Schäfer, G. Schön, S. Riedel-Heller, J. Gensichen, S. Weyerer, J.J. Petersen, H.-H. König, H. Bickel, and A. Fuchs. 2014. Agreement between self-reported and general practitioner-reported chronic conditions among multimorbid patients in primary care-results of the MultiCare Cohort Study. *BMC Family Practice* 15: 39.
- Hatala, A.R. 2012. The status of the “biopsychosocial” model in health psychology: Towards an integrated approach and a critique of cultural conceptions. *Open Journal of Medical Psychology* 1: 51.
- Heliövaara, M., A. Aromaa, T. Klaukka, P. Knekt, M. Joukamaa, and O. Impivaara. 1993. Reliability and validity of interview data on chronic diseases The mini-Finland health survey. *Journal of Clinical Epidemiology* 46: 181–191.
- Hernández-Quevedo, C., A.M. Jones, N. Rice. 2004. Reporting bias and heterogeneity in self-assessed health. Evidence from the British Household Panel Survey. Health Econom. Data Group HEDG Work. Pap. 05 4.



- Hinz, A., W. Häuser, H. Glaesmer, and E. Brähler. 2016. The relationship between perceived own health state and health assessments of anchoring vignettes. *International Journal of Clinical and Health Psychology* 16: 128–136.
- Hirve, S., X. Gomez-Olive, S. Oti, C. Debpuur, S. Juvekar, S. Tollman, Y. Blomstedt, S. Wall, and N. Ng. 2013. Use of anchoring vignettes to evaluate health reporting behavior amongst adults aged 50 years and above in Africa and Asia—testing assumptions. *Global Health Action* 6: 21064.
- Idler, E.L., and Y. Benyamini. 1997. Self-rated health and mortality: a review of twenty-seven community studies. *Journal of Health and Social Behaviour* 38: 21–37.
- Idler, E.L., S.V. Hudson, and H. Leventhal. 1999. The meanings of self-ratings of health: A qualitative and quantitative approach. *Research on Aging* 21: 458–476.
- Idler, E.L., and S. Kasl. 1991. Health perceptions and survival: Do global evaluations of health status really predict mortality? *Journal of Gerontology* 46: S55–S65.
- Jylhä, M. 2009. What is self-rated health and why does it predict mortality? Towards a unified conceptual model. *Social Science and Medicine* 69: 307–316.
- Kerkhofs, M., and M. Lindeboom. 1995. Subjective health measures and state dependent reporting errors. *Health Economics* 4: 221–235.
- Knäuper, B., and P.A. Turner. 2003. Measuring health: Improving the validity of health assessments. *Quality of Life Research* 12: 81–89.
- Kogan, I., and M. Unt. 2005. Transition from school to work in transition economies. *European Societies* 7 (2): 219–253.
- Krause, N.M., and G.M. Jay. 1994. What do global self-rated health items measure? *Medical Care* 32: 930–942.
- Krieger. 2005. Introduction: Embodiment, inequality and epidemiology: what are the connections. *Embodying inequality. Epidemiologic perspectives*, 1–10. New York: Baywood Publishing Company Inc.
- Kriegsman, D.M., B.W. Penninx, J.T.M. Van Eijk, A.J.P. Boeke, and D.J. Deeg. 1996. Self-reports and general practitioner information on the presence of chronic diseases in community dwelling elderly: A study on the accuracy of patients' self-reports and on determinants of inaccuracy. *Journal of Clinical Epidemiology* 49: 1407–1417.
- Lahelma, E. 2001. Health and social stratification, 64–93. The Blackwell Companion to Medical Sociology.
- Layes, A., Y. Asada, and G. Kephart. 2012. Whiners and deniers—What does self-rated health measure? *Social Science and Medicine* 75: 1–9.
- Lechte, J. 1997. Book reviews: LANGUAGE AND SYMBOLIC POWER Pierre Bourdieu; edited and introduced by John B. Thompson; translated by Gino Raymond and Matthew Adamson Cambridge, Polity Press in association with Basil Blackwell, 1992, ix, 302 pp., 39.95(paperback). ACADEMIC DISCOURSE Pierre Bourdieu, Jean-Claude Passeron and Monique de Saint-Martin, with contributions by Christian Baudelot and Guy Vincent; translated by Richard Teese Cambridge, Polity Press 1994, viii, 136 pp., 75.00 (hardback). *Australian and New Zealand Journal of Sociology* 33: 403–407.
- Leventhal, H., E.L. Idler, and E.A. Leventhal. 1999. The impact of chronic illness on the self system. *Rutgers Series on Self and Social Identity* 2: 185–208.
- Lindeboom, M., and E. Van Doorslaer. 2004. Cut-point shift and index shift in self-reported health. *Journal of Health Economics* 23: 1083–1099.
- Lundberg, J., M. Bobak, S. Malyutina, M. Kristenson, and H. Pikhart. 2007. Adverse health effects of low levels of perceived control in Swedish and Russian community samples. *BMC Public Health* 7: 314.
- Macintyre, S., G. Der, and J. Norrie. 2005. Are there socioeconomic differences in responses to a commonly used self report measure of chronic illness? *International Journal of Epidemiology* 34: 1284–1290.
- Mackenbach, J.P., C. Looman, and J. Van der Meer. 1996. Differences in the misreporting of chronic conditions, by level of education: the effect on inequalities in prevalence rates. *American Journal of Public Health* 86: 706–711.
- Manjer, J., J. Merlo, and G. Berglund. 2004. Validity of self-reported information on cancer: Determinants of under- and over-reporting. *European Journal of Epidemiology* 19: 239–247.
- Menec, V.H., and J.G. Chipperfield. 2001. A prospective analysis of the relation between self-rated health and health care use among elderly Canadians. *Canadian Journal on Aging* 20: 293–306.



- Merkin, S.S., K. Cavanaugh, J.C. Longenecker, N.E. Fink, A.S. Levey, and N.R. Powe. 2007. Agreement of self-reported comorbid conditions with medical and physician reports varied by disease among end-stage renal disease patients. *Journal of Clinical Epidemiology* 60: 634–642.
- Metzger, M., M. Goldberg, J. Chastang, A. Leclerc, and M. Zins. 2002. Factors associated with self-reporting of chronic health problems in the French GAZEL cohort. *Journal of Clinical Epidemiology* 55: 48–59.
- Midthjell, K., J. Holmen, A. Bjørndal, and G. Lund-Larsen. 1992. Is questionnaire information valid in the study of a chronic disease such as diabetes? The Nord-Trøndelag diabetes study. *Journal of Epidemiology and Community Health* 46: 537–542.
- Milkie, M.A., C.H. Warner, R. Ray. 2014. Current theorizing and future directions in the social psychology of social class inequalities. In *Handbook of the social psychology of inequality*, 547–573. Springer.
- Mirowsky, J., and C.E. Ross. 1998. Education, personal control, lifestyle and health: A human capital hypothesis. *Research on Aging* 20: 415–449.
- Molina, T. 2016. Reporting heterogeneity and health disparities across gender and education levels: Evidence from four countries. *Demography* 53: 295–323.
- Morris, K.A. 2018. Measurement equivalence: A glossary for comparative population health research. *Journal of Epidemiology and Community Health* 72: 559–563.
- Mulder, B.C., M. de Bruin, H. Schreurs, E.J. van Ameijden, and C.M. van Woerkum. 2011. Stressors and resources mediate the association of socioeconomic position with health behaviours. *BMC Public Health* 11: 798.
- Müller, W. 2005. Education and youth integration into European labour markets. *International Journal of Comparative Sociology* 46 (5–6): 461–485.
- Müller, W., Gangl, M. 2003. Transitions from Education to Work in Europe: The Integration of Youth into EU Labour Markets. Oxford University Press on Demand.
- Navarro. 2006. In search of a cultural interpretation of power: The contribution of Pierre Bourdieu. *IDS Bulletin* 37: 11–22.
- Nettleton, S. 2010. *The sociology of the body*, 47–68. New Blackwell Companion Med. Sociol.
- Okura, Y., L.H. Urban, D.W. Mahoney, S.J. Jacobsen, and R.J. Rodeheffer. 2004. Agreement between self-report questionnaires and medical record data was substantial for diabetes, hypertension, myocardial infarction and stroke but not for heart failure. *Journal of Clinical Epidemiology* 57: 1096–1103.
- Oliver, C., and K. O'Reilly. 2010. A Bourdieusian analysis of class and migration: Habitus and the individualizing process. *Sociology* 44: 49–66.
- Phelan, J.C., B.G. Link, and P. Tehranifar. 2010. Social conditions as fundamental causes of health inequalities: Theory, evidence, and policy implications. *Journal of Health and Social Behavior* 51: S28–S40.
- Picard, M., R.-P. Juster, and C.M. Sabiston. 2013. Is the whole greater than the sum of the parts? *Self-rated health and transdisciplinarity*. *Health* 5: 24.
- Reay, D. 2004. 'It's all becoming a habitus': Beyond the habitual use of habitus in educational research. *British Journal of Sociology of Education* 25: 431–444.
- Roberts, K. 2010. Expansion of higher education and the implications for demographic class formation in Britain. *Twenty-First Century Society* 5 (3): 215–228.
- Ryan, P. 2001. The school-to-work transition: A cross-national perspective. *Journal of Economic Literature*. 39 (1): 34–92.
- Sadana, R., C.D. Mathers, A.D. Lopez, C.J. Murray, and K. Iburg. 2002. Comparative analyses of more than 50 household surveys on health status. *Summ. Meas. Popul. Health Concepts Ethics Meas. Appl.* Geneva World Health Organ, 369–386.
- Savage, M., A. Warde, and F. Devine. 2005. Capitals, assets, and resources: Some critical issues I. *British Journal of Sociology* 56: 31–47. <https://doi.org/10.1111/j.1468-4446.2005.00045.x>.
- Scambler, G. 2012. Health inequalities. *Sociology Health & Illness* 34: 130–146.
- Scambler, G., P. Afentouli, and C. Selai. 2010. Discerning biological, psychological and social mechanisms in the impact of epilepsy on the individual: A framework and exploration. In: *New directions in the sociology of chronic and disabling conditions*, 106–128. Springer.
- Schrijvers, C.T., K. Stronks, D.H. van de Mheen, J.-W.W. Coebergh, and J.P. Mackenbach. 1994. Validation of cancer prevalence data from a postal survey by comparison with cancer registry records. *American Journal of Epidemiology* 139: 408–414.
- Shilling, C. 2012. *The body and social theory*. London: Sage.
- Shmueli, A. 2002. Reporting heterogeneity in the measurement of health and health-related quality of life. *Pharmacoeconomics* 20: 405–412.
- Shmueli, A. 2003. Socio-economic and demographic variation in health and in its measures: The issue of reporting heterogeneity. *Social Science and Medicine* 57: 125–134.



- Siegel, J.M. 2002. Body image change and adolescent depressive symptoms. *Journal of Adolescent Research* 17: 27–41.
- Simon, J., J. De Boer, I. Joung, H. Bosma, and J. Mackenbach. 2005. How is your health in general? A qualitative study on self-assessed health. *European Journal of Public Health* 15: 200–208.
- Simpson, C.F., C.M. Boyd, M.C. Carlson, M.E. Griswold, J.M. Guralnik, and L.P. Fried. 2004. Agreement between self-report of disease diagnoses and medical record validation in disabled older women: Factors that modify agreement. *Journal of the American Geriatrics Society* 52: 123–127.
- Singh, J.A. 2009. Peer reviewed: Accuracy of veterans affairs databases for diagnoses of chronic diseases. *Preventing Chronic Disease* 6: A126.
- Smith, A.M., J.M. Shelley, and L. Dennerstein. 1994. Self-rated health: Biological continuum or social discontinuity? *Social Science and Medicine* 39: 77–83.
- Stenholm, S., M. Kivimäki, M. Jylhä, I. Kawachi, H. Westerlund, J. Pentti, M. Goldberg, M. Zins, and J. Vahtera. 2016. Trajectories of self-rated health in the last 15 years of life by cause of death. *European Journal of Epidemiology* 31: 177–185.
- Thoits, P.A. 2013. Self, identity, stress, and mental health. In *Handbook of the sociology of mental health*, 357–377. Springer.
- Turner, R.J., and W.R. Avison. 2003. Status variations in stress exposure: Implications for the interpretation of research on race, socioeconomic status, and gender. *Journal of Health and Social Behavior* 44: 488–505.
- van den Akker, M., B. van Steenkiste, E. Krutwagen, and J.F. Metsemakers. 2015. Disease or no disease? Disagreement on diagnoses between self-reports and medical records of adult patients. *European Journal of General Practice* 21: 45–51.
- Van der Heyden, J., D. De Bacquer, J. Tafforeau, and K. Van Herck. 2014. Reliability and validity of a global question on self-reported chronic morbidity. *Journal of Public Health* 22: 371–380.
- Vargas, C.M., V.L. Burt, R.F. Gillum, and E.R. Pamuk. 1997. Validity of self-reported hypertension in the National Health and Nutrition Examination Survey III, 1988–1991. *Preventive Medicine* 26: 678–685.
- Wakeling, P., and M. Savage. 2015. Entry to elite positions and the stratification of higher education in Britain. *The Sociological Review* 63 (2): 290–320.
- Ware, N.C. 1999. Toward a model of social course in chronic illness: The example of chronic fatigue syndrome. *Culture, Medicine and Psychiatry* 23: 303–331.
- Westert, G., F. Schellevis, D. de Bakker, P. Groenewegen, J. Bensing, and J. Van der Zee. 2005. Monitoring health inequalities through general practice: The Second Dutch National Survey of General Practice. *European Journal of Public Health* 15: 59–65.
- Wilcox, V.L., S.V. Kasl, and E.L. Idler. 1996. Self-rated health and physical disability in elderly survivors of a major medical event. *Journals of Gerontology. Series B, Psychological Sciences and Social Sciences* 51: S96–S104.
- Wilkinson, R.G., and M. Marmot. 2003. *Social determinants of health: the solid facts*. World Health Organization.
- Williams, S.J. 1995. Theorising class, health and lifestyles: Can Bourdieu help us? *Sociology of Health & Illness* 17: 577–604. <https://doi.org/10.1111/1467-9566.ep10932093>.
- Xu, H., and Y. Xie. 2017. Socioeconomic Inequalities in Health in China: A reassessment with data from the 2010–2012 China family panel studies. *Social Indicators Research* 132: 219–239.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Mirza Balaj holds a PhD in Sociology. She is a Postdoc and the Research Coordinator of Centre for Global Health Inequalities Research - CHAIN at NTNU. Balaj's research explores how the interaction of various mechanisms at the structural, social and individual level can explain the persistence of health inequalities and the differences in the magnitude of inequalities within countries. Her work has been published in e.g. *European Journal of Public Health*, *Scandinavian Journal of Public Health*.

