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Review Article

Glossary: Self-Reported Health

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Abstract

The inclusion of self-reported health into cross-country population surveys has contributed to substantial progress in the social science, public health and epidemiology fields. Measuring self-reported health in cross-country population surveys is a cost-effective method to gain information on individual-health status. The self-reported health measurement however is not without flaws. In this glossary we provide a basic definition of self-reported health. Cross-country population surveys that contain self-reported health data are discussed. We highlight the limitations and advantages of using self-reported health measure. Other aspects related to self-reported health are discussed, including the importance of the self-reported health measurement for future long COVID-19 investigations.

Keywords: Subjective Health; Self-Rated Health Status; Self-Rated General Health; Self-Assessed Health; Self-Perceived Health; Population Health, World Health Survey; European Social Survey; COVID-19; Long COVID-19

Introduction

Multiple disciplines outline different theoretical concepts to understand the mechanisms of health [1]. Consequently, many different definitions of health exist. These include definitions that are negative (i.e. biomedical definitions that suggest good health is the absence of illness or disease) and positive (i.e. holistic/social - definitions, such as being physically fit, having good psychosocial wellbeing or emotional stability) [1].

Health is defined objectively or subjectively. Objective health includes mortality measures, and health status as diagnostically defined by health professionals. This division has in later research emerged into a distinction of disease and illness [1]. Disease represents the doctor's understanding of a patient's health status, while illness represents the subjective response of the same person [1].

Subjective health focuses on a person's own comprehension of his or her health status. Definitions of subjective health might be functional (i.e. ability to participate in normal social roles) or experiential (i.e. takes the expression of self into consideration) [1].

The definition of health outlined by the World Health Organization (WHO) in 1948 considers health as being, 'a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity [2].' The WHO definition of health has undergone a considerable amount of criticism. The WHO definition of health is labeled as difficult to measure. It is viewed as an unobtainable health state in modern times, given the advancements in society and an ageing population [3].

In social science and public health research, subjective health measures, such as self-reported health are increasingly utilized. Even though self-reported health is widely used in the social science and public health research, uncertainty concerning what self-reported health measures remains a matter of discussion. This glossary defines self-reported health and discusses its use through reference to comparative health research. Despite its notable conceptualization flaws, self-reported health is a well-respected and increasingly utilized measurement in public health and epidemiological research.

Defininiton of Self-Reported Health

Self-reported health is often written in the literature using the abbreviated form SRH. SRH represents the perception of one's own health. SRH is the most widely used measurement of health in comparative research measuring current overall general health status.

Other Names for Self-Reported Health

Terms used to describe SRH include: Subjective health, self-rated health status, self-rated general health, self-assessed health and self-perceived health.

Distinction between Self-Reported Health and 'True' Health

SRH is often times misconstrued [4]. It is not an objective measure of a person's health as what would be assessed by a medical professional. It does not tell us anything about if a person is disabled or has a chronic illness or a debilitating disease. A person might be categorized as disabled but may report having 'very good' self-reported health. SRH is a subjective health measurement that estimates how a person perceives their health state at the point in time when the survey is being assessed. Studies have found that subjective measures of health correlate well with mortality, especially at area level [5,6].

Assessing Self-Reported Health

SRH is assessed using three different approaches:

I. Single-item measurement of self-reported health

In cross-country population-based surveys SRH is typically assessed by a single question (e.g., 'In general, how would you rate your health today?') with five answer choices, namely 'very good', 'good', 'moderate', 'bad' or 'very bad.' In some surveys moderate is substituted with the word 'fair' or there are four answer choices instead of five.

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II. Multi-item measurement of self-reported health

Multi-measures of SRH are when several single-item questions are used to account for a person's SRH status. The responses are not weighted or summed [7].

III. Scale measurement of self-reported health

Scales can be used to assess a person's health. Usually, scales are devised by utilizing multiple questions rather than single-item questions, given that more information can be obtained from multiple questions. Responses are typically totaled and may be weighted [7].

Categorical Response

SRH is typically assessed as a categorical measurement. Categorical variables can be transformed into nominal, ordinal or dichotomous variables [7]. For ease of interpretation, the standard procedure is to transform SRH into a binary variable instead of a polytomous response. Respondents are typically dichotomized into reporting 'good health' or 'poor health.' People in good health are usually those who report 'very good', 'good', or 'moderate' health while poor health tends to consist of those who reported 'bad' or 'very bad' health.

Continuous Response

SRH can also be measured on a continuous scale. Generally, similar results as with the binary dichotomy are obtained [8].

Single Measure *vs*. Multi-Measure

Single measures of SRH have been compared to multi-measures of SRH [9]. Researchers conclude that while the SRH indicator using a single question is easily available, and hence useful to health researchers, a multi-measure of health containing physical activity information might be a more powerful predictor of mortality [9].

Sensitivity Analyses

A limitation to transforming SRH into a dichotomy is that information is lost. To account for this, sensitivity analyses are carried out using different cut-off values to assess if results are sensitive to how SRH is dichotomized. For example, 'good health' would contain information from those reporting 'very good', 'good', while all others are placed in the 'poor health' category [10].

Negative Conceptualization of Self-Reported Health

Most research tends to report results from respondents who state being in 'poor health.' Good health is taken as the starting point and deviations from this are measured instead of using an all-encompassing view to health [7]. By focusing on poor health as an outcome, we are using a negative rather than a positive approach to define a person's health. A drawback to this method is that a limited number of people within high-income countries will rate SRH as being in a severe state [7].

Other Self-Reported Conditions

Self-reported health is the most widely applied subjective health measure within the parallel fields of sociology, social medicine, epidemiology and public health. However, typically in health surveys, other SRH conditions are included as well [11]. These are usually related to chronic disease or disability (e.g., 'overall in the last 30 days how much difficulty did you have with moving around?'), dimensions of mental health (e.g., 'During the last 12 months, have you had a period lasting several days when you felt sad, empty or depressed?'), wellbeing 'over the last 2 weeks 1.) I felt cheerful and in good spirits, 2.) Calm and relaxed 3.) Active and vigorous 4.) Woke up feeling fresh and rested and 5.) Their daily life has been filled with things that interest me' [12] or quality of life, which is broadly related to wellbeing, but can be defined in many ways. There are a multitude of scales used to measure these other types of SRH conditions some being the Beck Depression Inventory, Edinburgh-Warwick scales and WHO Quality of Life-BREF. It is outside the scope of this glossary to address the way these other SRH conditions are measured. However, it is worth noting that SRH is conceptually different from these other types of SRH conditions. SRH responses are not always a consistent match to responses of other SRH conditions [10]. For instance, a person might report being disabled, yet this same person might also report having very good SRH. This is attributed to disability being a dimension of health that is more obvious or difficult for a respondent to deny. Yet with SRH a multitude of subjective issues are being captured, making SRH a more sensitive measurement of health. This will be an important consideration to keep in perspective as we enter the period of the aftermath of the COVID-19 pandemic. The scientific literature will increase in the area of research examining long COVID-19 using self-reports. People who have contacted long COVID-19 have lingering symptoms that are in line with those who have myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) [13]. Given that globally the population of people with long COVID-19 is growing, understanding the nuances of the concept of SRH, and how to utilize the measurement in population health surveys will be critical for global public health now more than ever.

Self-Reported Mental Health

Cf. OTHER SELF-REPORTED CONDITIONS

Self-Reported Wellbeing

Cf. OTHER SELF-REPORTED CONDITIONS

Validity of Self-Reported Health

Some criticism surrounds the validity and reliability of self-reported health. It is argued that SRH is not an optimal measure to utilize. Objective health assessments carried out by a medical health professional is often preferred measurement of health [14]. However, not all illnesses can be identified with medical tests. A person may feel ill, not just because of physical pain or unpleasantness, but because the person knows that he or she should feel ill, according to social "labeling" on a certain social arena. Sickness is then not determined objectively, but rather by a dynamic subjective interpretation. SRH is based on health being partly determined by a person's own socio-cultural perception of good or poor health. Individuals are part of a social context, and their subjective meanings will evolve through interactions with other actors within the same social organization.

In addition, different health expectations play a major role in self-reports of health [14]. People from cities might be inclined to report their health differently as someone from a rural community,

perhaps due to having different health expectations [15]. Moreover, if a person is accustomed to living in an environment where disease runs rampant with little medical intervention, then this person may underreport self-perceived health problems because of feeling that contracting certain preventable illnesses might not be abnormal [14]. This is also evident with people who have high expectations to health, as high expectations might trigger people to underreport their 'true' health states.

SRH measures a person's interpretation of their lives. Therefore, it might be that a person's actions or subjective experiences are given other meanings by a health professional. While this may be true and should not be underestimated, others find that SRH is a valid and reliable measurement, useful for examining overall general health [15]. SRH measures are strongly correlated with objective health measures, such as death [16-19]. Undoubtedly, these findings support the validity and reliability of self-reported health.

Reliability of Self-Reported Health

Cf. VALIDITY OF SELF-REPORTED HEALTH and SELF-REPORTED HEALTH AND MORTALITY.

What is Self-Reported Health Capturing?

Some determinants to SRH include the state of health: (i) currently, (ii) during the past year and (iii) if a person has a chronic condition [20]. A number of other explanations are also recognized. Theories suggest that self-reports of health may be a reflection of ill health that cannot be diagnosed by a medical professional [1]. Research shows that self-report of health capture social determinants of health that influence health outcomes, such as those related to lifestyle choices (e.g. smoking, excessive alcohol consumption) or socioeconomic situations [21]. While others explain that outcomes of self-reports of health might be capturing a feeling of failure due to the inability to navigate within a particular country system [22].

Country norms are known to impact SRH responses and this is especially evident in Eastern European regions and East Asia [10]. Providing a socially acceptable answer or optimism is also an explanation of SRH responses, especially within African countries, where people seem to underestimate their health situation [23]. SRH might be influenced by stress – with people living in stressful societies reporting poorer health [23,24]. Additionally, a person who is excessively health conscious (e.g. hypochondriasis disorder) might also over- estimate their self-reports of health [25,26].

Self-Reported Health and Mortality

Research consistently shows that SRH is a strong predictor of mortality [16-19]. Most of these studies examine high-income countries, but this phenomenon is also observed in middle- and low-income parts of the world [27,28]. Idler and Benyamin examined over twenty longitudinal studies, which investigated this relationship, and their findings are consistent. SRH is identified as an independent predictor of mortality in nearly all the studies [29]. This finding holds despite the inclusion of numerous specific health indicators and other relevant covariates known to predict mortality [29]. A study from Finland showed that poor SRH is a strong predictor of mortality. The association is only partly explained by medical history, cardiovascular disease risk factors and education [30]. Recent findings show that the predictive power between SRH and mortality has increased in the last two decades and this is in part attributed to people becoming better equipped at accessing their health, especially if they conduct personal health research using the Internet [31].

Social Determinants of Health

The social determinants of health are factors related to a person's economic and social situation. Social determinants of health can influence a person's health status [32]. The well-known social determinants of health model by Dahlgren & Whitehead show determinants of health that an individual cannot control (e.g., those related to demographic factors) [33]. It also depicts individual factors related to lifestyle choices (e.g., physical activity level) and environmental factors (e.g., related to the social arena or living location). Olsen and Dahl analyzed individual-level social determinants of health and identified that education, economic satisfaction; social network, unemployment, and occupational status are related to the health of men and women [34]. At the country-level social determinants of health related to socioeconomic development are associated to SRH [34].

Self-Reported Health and Socioeconomic Status

The role of socioeconomic status on SRH shows mixed conclusions. Some contend that SRH is a stronger predictor of mortality in higher-socioeconomic groups [35,36] while others suggest the opposite is true [20]. In a study on education and SRH it is identified that if lower educated people rely more on stressors that they experience in daily life when reporting their health, it might reduce the association of their subjective health with subsequent mortality as compared with higher educated people [36]. A meta-analysis showed that education is strongly associated to health. Education is a positive predictor of health in higher-educated people [37]. However, another study found that no difference in the relationship between SRH and mortality between educational groups [37] and these findings correspond with other investigations [35,38-40].

Research concerning occupational status and SRH showed working class people do not overestimate illness. Research suggests that the predictive power of SRH for mortality is unaffected by occupational group, as SRH predicted survival equally well for high- and low-occupational groups in a Swedish cohort [39]. With respect to income, van Doorslaer and Gerdtham concluded that there is no systematic adjustment of self-assessed health by socio-economic group, suggesting that the measured income-related inequality in self-assessed health is unlikely to be biased by reporting error [41].

Despite these inconsistencies, research overwhelmingly shows that socioeconomic status might have some influence on self-reports of health, even within middle- and low-income countries [15].

Self-Reported Health and Education

Cf. SELF-REPORTED HEALTH AND SOCIOECONOMIC STATUS.

Self-Reported Health and Occupation

Cf. SELF-REPORTED HEALTH AND SOCIOECONOMIC STATUS.

Self-Reported Health and Income

Cf. SELF-REPORTED HEALTH AND SOCIOECONOMIC STATUS.

Comparability between Countries

A substantial number of studies utilize SRH in comparative research. However, there is little data on the comparability of SRH across countries. Results from a Finnish study comparing differences in responses to SRH between people living in Finland and Italy, suggest that self-reported health is a useful health measurement, but may be sensitive to environment [42]. This example highlights the issue of comparability and shows that adjusting for possible country (and ethnic group) differences is difficult. This is largely due to respondents from different countries might respond or interpret the SRH question differently [43]. Health expectations might vary according to country and direct country comparisons of SRH outcomes in general should be made with caution. To address this issue, anchoring vignettes have been introduced in some population-based surveys. The tests show that using anchoring vignettes may improve the comparability of SRH across countries [43,44]. Despite this, vignettes are usually not feasible in comparative research. To aid in feasibility, single item measures are typically the utilized approach.

The use of anchoring vignettes is not new. Even though anchoring vignettes might improve cross-country comparability, anchoring vignettes are not yet routinely applied in comparative research.

Cross country comparison remains a challenge when using SRH. The researcher cannot ignore issues with translation, and the misunderstandings and differing of interpretations regarding the concept of individual 'health' given the society one lives. When undertaking cross country analysis, it is important not to underestimate the influence of country location on SRH.

Cultural Differences

Cf. COMPARABILITY BETWEEN COUNTRIES.

Anchoring Vignettes

Cf. COMPARABILITY BETWEEN COUNTRIES.

Self-Reported Health and Social and Economic Health Inequality

Variations between countries in the level of self-rated health inequalities might be a result of cross-country variations in the extent to which health is reported [22]. Our knowledge regarding the mechanisms that explain how cross-cultural variation in SRH also impacts cross-national differences in social and economic health inequalities is limited. What we know is that higher income inequality in a country is associated to poorer SRH [45]. It is also identified that income-level is the greatest determinant of self-reported health inequality in USA, Canada and Europe [46]. Bambra and colleagues compared educational inequalities in SRH in six age groups by European welfare-state regime. In their study it is found that inequalities in health tended to increase rather than decrease with age [47].

Self-reported general health is more sensitive to country norms as compared to inequality measures of self-reported health. In relation to socioeconomic factors, poorer SRH is observed in Estonia as compared to Finland, although Estonia and Finland share a similar socioeconomic pattern of health [48].

Many investigations identify what is coined the 'Nordic paradox.' The Nordic paradox refers to people in Nordic countries generally reporting better self-reported health as compared to other countries [22,34]. However, relative and absolute inequalities are not smallest in Nordic countries. This finding is unexpected given the strong social protection system (i.e. welfare-state regime). Inconsistencies and mixed results are evident for the Nordic paradox, possibly because of normative differences in self-reports of health [49]. Nevertheless, mortality studies have produced similar results to the Nordic paradox self-reported health conclusions [50,51].

Psychosocial Factors and Self-Reported Health

Psychosocial factors (e.g., social cohesion) are powerful predictors of SRH [52]. For example, an insecure social network or limited social support can influence morbidity and mortality [52]. Psychosocial factors related to work such as 'psychological demands', 'decision latitude', 'social support' and 'physical demands' are found to be strongly associated to SRH [53]. For women, SRH is sensitive to the level of social support at work and if the job has a high physical workload, whereas for men low decision authority seems to be most influential [53]. Feeling loss of control, especially in older age is also associated to SRH [54]. Although psychosocial factors are an important determinant to SRH, evidence shows that psychosocial factors do not strengthen the extent to which SRH can predict mortality (Cf. SELF-REPORTED HEALTH AND MORTALITY) [55].

The Gender Paradox

Women on average have a lengthier longevity as compared to men, [56] yet paradoxically worldwide women tend to report having poorer health as compared to men. Perhaps this is attributed to women being more cognizant internally to how they feel as compared to men. Or it might be related to social acceptability, and how woman verbalize how they are feeling with little to no stigma in many societies. SRH is a stronger predictor for mortality in men as compared to women. This is thought to be due to gender differentials in perceptions of health [57]. What is known is that women tend to live longer lives with chronic illness as compared to men who die at higher rates of the same chronic illness [58]. Psychosocial factors at work also have an influence on SRH and effect women and men differently (Cf. PSYCHOSOCIAL FACTORS AND SELF-REPORTED HEALTH). The COVID-19 pandemic brought the gender paradox in health to the forefront, with women being diagnosed more often with COVID-19, yet men dying more from COVID-19 [60]. Women had a hard time being believed by doctors about their self-reported COVID symptoms lasting longer than expected. Women are also more often diagnosed with long COVID-19 as compared to men [13].

Self-Reported Health and Age

SRH can be linked to age (e.g. 'how do you rate your health as compared to others your age?'), or take a temporal form (e.g. 'how do you rate your health now as compared to the past?') [61]. Incorporating time to assess future health (e.g. 'Next year, would

you predict that your overall health will be better, about the same, worse, or don't know?)" [62] Might be more accurate method in predicting mortality risk. SRH can predict future health and survival in older populations [18]. See also DEFINING SELF-REPORTED HEALTH and SELF-REPORTED HEALTH AND SOCIAL AND ECONOMIC HEALTH INEQUALITY. SRH can vary over the life course. SRH should reflect age-adjusted prevalence of ill health. The elderly population may rate their health as being good, however this response might be tapping into what is called 'the survival of the fittest,' which alludes to the possibility that the extremely frail elderly who are sick who might have reported a poorer health state may have already died [50]. Data suggests that inquiring how healthy an elderly person believes they will be in the future can be a good indicator of up to 10-years into the future for mortality in the elderly population [63]. SRH also predicts future physical ability in the elderly [64].

Large International Surveys

World Health Survey (WHS), World Values Survey (WVS), World Mental Health Survey (WMH), EU Statistics on Income and Living Conditions Survey (EU-SLIC), Youth Risk Behavior Surveillance System Survey (YRBSS), the Survey of Health, Ageing and Retirement in Europe (SHARE), the Study on Global Ageing and Adult Health (SAGE), the European Social Survey (ESS), and the General Social Survey (GSS), are all rich data sources that contain substantial self-reports of health data [65-73]. These surveys are often utilized by social epidemiologists and medical sociology researchers interested in multi-country international health studies. The WHS is considered a useful dataset to study population health worldwide [74]. The WHS is a cross-sectional comparative survey that was first implemented in 2002-2004 by the World Health Organization. Over a quarter of a million people living within up to 70 countries around the world are surveyed. A wealth of self-reported information is contained within the survey concerning general health, chronic conditions, mental health and health system responsiveness. The ESS is a 21-30 nation comparative cross-sectional survey and includes an upwards of 30,000+ respondents. The 2015 ESS survey was a notable moment in history since it was the first time a European social survey integrated health epidemiological data allowing for an expansive investigation of a broad number of health conditions related to self-reported general and mental health. The General Social Survey (GSS) is implemented in the United States, and is the American version of the ESS. A plethora of self-reported health questions are in the GSS. The GSS is updated to include perspectives regarding the COVID-19 pandemic. The GSS is a rich dataset for health researchers interested in studying the social implications of the COVID-19 pandemic in the USA. The Study on Global Ageing and Adult Health (SAGE) is part of WHO efforts to monitor longitudinally health of adult populations across six countries (China, Ghana, India, Mexico, Russian Federation and South Africa). The survey has data from 2002 to 2019 for social scientists desiring to use multi-level methods to merge country-level data with individual-level health data, it is possible to achieve this type of observational study design using all aforementioned surveys. Some examples of this include an investigation on corruption and population health in Africa using WHS data [75], another study examined the gender gap in SRH using the WHS [76]. The WMH survey was used to identify helpfulness in treatment for people with depression [77]. The issue with participant dropout in longitudinal surveys that examined self-reported health was examined using SHARE [78]. The SAGE survey was used to examine self-reports of health in Ghana between different socio-economic groups, lifestyle factors and wellbeing [79]. Another example is a study that investigated self-reported health and marital happiness in consensually non-monogamous adults using the GSS [80].

Limitations of Self-Reported Health

Some limitations to the SRH construct include: its reliance on self-observation, its inability to capture true health and its sensitivity to the environment, external contextual influences and personal (e.g. gender) as well as socioeconomic circumstances. It is possible to measure SRH in a multitude of ways. Some researchers prefer multi-item scales as compared to single-items scales [82]. How the question is asked can differ. The country in which SRH is asked can influence responses and the attrition rate in a study can sway results. These are all aspects that make SRH challenging to measure consistently across different investigations.

Advantages of Self-Reported Health

SRH is a valuable measurement in research. Some of the main advantages are that SRH is widely available for cross-country comparative research [83]. It is a relatively easy and low-cost solution for large population-based surveys and tends to generate a higher response rate. In some cases, it is the only health indicator available in national surveys. Using SRH as an outcome makes it possible for researchers to gain insight on the individual-level health situation within many countries. This is an extremely costly task for objective health measurements, given the massive financial expense involved with implementing large population-based surveys worldwide. Despite these advantages, it is essential that researchers remain critical in how self-reports of health are interpreted, especially when using results to inform policy.

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