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Commentary

Subjective health and well-being: Toward robust cross-cultural comparisons

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Introduction

Subjective health and well-being are of considerable interest in population health research. Subjective assessments offer unique scope to capture latent health concerns that cannot be directly (or cost-effectively) captured through objective predictors (Jylhä, 2009). These assessments are sometimes more reliable indicators of old-age mortality than standard clinical biomarkers (Idler & Benyamini, 1997). At the same time, greater caution is warranted while studying subjective health and well-being in a cross-cultural setting (Jürges, 2007; Jylhä, Gurainik, Ferrucci, Jokela, & Heikkinen, 1998; McDowell, 2006; Schwarz, Oyserman, & Peytcheva, 2010). Glei (2017) succinctly elicit these concerns while examining self-reported physical limitation in United States and three other countries having similar life-expectancy (England, Taiwan and Costa Rica). It is noted that the absolute population-level prevalence of self-reported physical limitations varies across the four US-based surveys (HRS, MIDUS, NHIS and NHANES) and thus disallows a robust cross-country comparison. Such variability can have non-trivial implications for comparisons as one can arrive at contradictory conclusions regarding the nature of associations. For instance, MIDUS suggests that American men report walking limitations much earlier than Costa Ricans whereas HRS based assessment indicates that the American men are more advantaged.

Glei (2017) set up an interesting hypothesis regarding the association of subjective health indicators with macro-level and country-level indicators such as life expectancy or per capita incomes. Although, data limitations in terms of country units for analysis can prohibit robust country-level inferences but it outlines an important agenda for further research. For example, Fig. 1 presents the country-level association of percentage bad and very-bad self-rated health with per capita gross national incomes and life expectancy at birth. There is an inverse association of per capita incomes with percentage bad self-rated health with per capita gross national income and life expectancy at birth. The association appears consistent because high-income countries are also likely to have higher life expectancy at birth. Also, the fact that self-rated health and mortality share a significant relationship lends credence to this association (Idler & Benyamini, 1997). But the scatter also depicts considerable heterogeneity and reporting of bad or very bad health has large variations at lower per capita incomes and at higher life expectancies.

The question raised by Glei (2017) is embedded in this fundamental concern of heterogeneity in self-rated health outcomes and makes it important to understand how much of these variations are truly systematic, can be standardized (by age, education, income) or can be associated with variations in language, culture and categorical ordering of the question. In this commentary, we highlight some of these intricacies involved in robust cross-cultural comparative research. We present a list of key concerns that desire specific attention. Given the increasing relevance of subjective health research, we also call for systematic reviews on methodologies and comparability of findings in cross-comparative research.

Desiderata for cross comparative research

With increasing cross-cultural and cross-national analysis of health and well-being, it is mandatory to work toward strategies to ensure sound comparisons. While there is no gold-standard in comparative subjective health assessments, nevertheless it is worth reiterating certain tenets and requirements (Table 1). To begin, a clear comprehension of research question is elementary to outline the merit and the unit of analysis (Buil, de Chernatony, & Martínez, 2012; Ragin, 1982). Further, from a methods perspective, the subjective indicator of interest should enjoy a shared level of confidentiality across contexts. For instance, a general question on self-rated health may be more comparable across contexts than subjective assessments of intimate partner violence or sexual and reproductive health outcomes (Pallitto et al., 2013; Vyas & Watts, 2009). Robust comparisons in such cases may warrant further sensitivity adjustments for survey-related or contextual factors. Similarly, high correspondence between survey instruments and appropriate linguistic translation across contexts is a necessity for such assessments (Buil et al., 2012; McDowell, 2006; Schwarz, 1999; Schwarz et al., 2010). Under variable contexts, statistical approaches such as vignettes-based adjustments and cut-point shift are among a few alternatives recommended to facilitate robust comparisons (Jürges, 2007; Lindeboom & van Doorslaer, 2004; Salomon, Tandon, & Murray, 2004).

Furthermore, wherever feasible, it is important to verify the consistency of the estimates across multiple data sources for the same population. Quantitative analysis based on post-survey re-coding of...
Fig. 1. Association of percentage self-rated bad/very bad health (among aged 25 and over) with per capita GNI and life-expectancy at birth across 69 countries in 2002. Note: Data for the self-rated health status is based on World Health Survey (2002) and is sourced from Subramanian, Huijts, and Avendano (2010) whereas data for GNI per capita and life expectancy at birth are from World Development Indicators database. Linear trendline is also presented for GNI per capita (p < 0.01) and life expectancy at birth (p < 0.10).

Table 1
Critical concerns in comparative analysis of subjective health and well-being.

| Concern       | Meaning                                                                                                                                                                                                 | Relevance                                                                                           |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Desirability  | The purpose (question) of temporal, national or cultural comparison of subjective health status should be outlined with a clear motivation from a research and/or policy perspective.                                    | In general, there should be uniformity in the conceptualization of outcomes, unit of analysis and/or explanatory processes to arrive at meaningful comparisons. For instance, from a health perspective, a direct comparison of self-rated health between rich and poor countries has to be well-thought to understand explanatory processes that are common to these contexts. Analysis of social capital and self-rated health is an example of such research. |
| Confidentiality| The indicator used for the comparative analysis should display a similar degree of confidentiality or privacy level across comparison groups.                                                             | Despite use of uniform survey design, questions and interview protocols, it is plausible that the response to subjective assessment can vary depending on the level of comfortability shared by the respondent in general as well as particularly during the survey. Certain indicators that require greater degree of confidentiality and privacy are more likely to be biased because of systematic differences in the social environment. Subjective assessment of intimate partner violence or sexual and reproductive health are good examples. |
| Harmony       | The survey and instrument design across contexts should correspond well in terms of sequencing, ordering, coding and composition of the survey questions, in general, and subjective questions, in particular.       | Sequencing and ordering of the questions have considerable influence on the reported outcomes. These can be due to reasons associated with attention and interest of the respondents as well as fatigue factor that may lead to biased reporting. Any comparative analysis should aim to present a careful review of aspects related to sequencing, ordering, coding and composition of the survey questions along with its potential implications for analytical inferences. |
| Transferability| The use of wording and coding structures should display transferability from a sociocultural perspective and not merely reflect language translation.                                                                  | Translation loss can be severe in comparative analysis across contexts that have very different linguistic and cultural outlook. A clear identification of the presence of such problem and its potential implications should be presented as a limitation or adjusted using statistical analysis. Adjustments using vignettes-approach or cut-point shift is often used under such circumstances. |
| Replicability  | Estimates of subjective health should be consistent across replications within the same population or context.                                                                                               | A high degree of conformity between survey based estimates from the same population enhances its validity as a reference estimate for cross-cultural or cross-country comparisons. In case of variations, the best possible survey source should be identified by reflecting upon other critical concerns described here. |
| Sensitivity   | The transformation of qualitative or categorical subjective health information for quantitative analysis should be tested for sensitivity.                                                                   | Application of quantitative techniques for analysis of subjective health information involves certain assumptions for recoding of qualitative or categorical information. A binary coding of ordered or multi-categorical variables to facilitate a logistic regression is perhaps the most common example. Sensitivity analysis is one reasonable approach to verify the implications of such recoding practices. |
| Consistency   | The information used for comparative analysis should be verified for internal consistency with other subjective information within the surveys.                                                              | A high internal consistency of information implies greater validity of reported information and can facilitate better comparative analysis across contexts and situations. There are standard statistical tools such as reliability coefficients to aid such analysis. |

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ordered and categorical subjective health information should be tested for sensitivity bias. Similarly, it should be mandatory for studies to report reliability coefficients of relevant indicators (Cortina, 1993; Webb, Shavelson, & Haertel, 2006). The accuracy of interpretation can be further enhanced if one can ascertain the objective health information embedded within the subjective indicators. This is linked to what Sen (2002) refers to as an internal view of health whereby one can expect overestimation of positive self-rated health in deprived and uninformed settings. Empirical studies have confirmed such tendencies and also suggest that the deviations can be sensitive to the nature of the health indicator being assessed (Innerd et al., 2015; Johnston, Propper, & Shields, 2009; Mosca, BhuaChalla, & Kenny, 2013). A simple bivariate comparison of subjective and objective health indicators can shed some preliminary insights on these issues with corrections for endogeneity bias necessary in some contexts (Jones & Wildman, 2008). Finally, limitations of the survey, indicator and data should be explicitly discussed for generalizability and credibility of the findings. Comparative analysis that effectively address these concerns can allow more meaningful research inferences (Buil et al., 2012). In particular, well-thought research desirability backed by harmonious data and robust sensitivity checks can be a good starting point for such comparative research.

Concluding remarks

Glei (2017) draw attention towards an important methodological concern in comparative assessments of subjective health and well-being. This implies that researchers and organizations engaged in routine assessments of subjective health status also have a shared responsibility to report standard quality check parameters, particularly about consistency and reliability of subjective data and indicators. In fact, with increasing cross-cultural research, systematic reviews on various domains of subjective health are necessary to develop comprehensive methodological guidelines for robust comparisons.

Conflict of interest

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