The Perception Gap in Health: Comparing Self-Rated and Objective Indicators across Age and Sex in Italy

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Theoretical focus: Self-rated health (SRH) is a widely used indicator of population health, valued for its multidimensional nature and ability to capture physical, psychological, and social dimensions. In an ageing society, it has gained renewed relevance as a synthetic measure of individual health status. However, its subjective nature can introduce measurement errors and reporting biases, leading to discrepancies between perceived and objective health.

In Italy, recent work by Trappolini et al. (2025) highlights these challenges, showing that misclassification in SRH responses, particularly among older adults, can distort the estimated effects of socio-demographic determinants such as education, employment, and marital status, with systematic differences between men and women. Their findings underscore the importance of refining analytical models to account for the complexity of subjective health assessments. Similarly, Giacomozzi et al. (2020) found that the distribution of SRH in Italy follows patterns similar to those observed in other European contexts: with increasing age, the perception of good health tends to decline, particularly among women.

Yet, the degree of consistency between SRH and objective health indicators may vary across contexts and health domains. A recent study has proposed a "health asymmetry" framework to capture the mismatch between perceived and objective health (Calvey et al., 2024). Among older adults, both subjective and objective health are known to predict long-term mortality (Wuorela et al., 2020), and SRH shows strong associations with physical performance, with notable gender-specific differences (Moser et al., 2024). These findings collectively suggest that subjective assessments can reflect actual health status but may also reveal systematic perceptual biases linked to age, gender, and social context.

Among objective indicators, blood pressure, BMI, cholesterol, and diabetes are particularly relevant, as they capture complementary dimensions of cardiometabolic risk and self-management in the Italian adult population (e.g., Donfrancesco et al., 2022a; 2022b).

Nevertheless, to the best of our knowledge, the relationship between these objective indicators and self-perceived health has not yet been systematically examined in the Italian adult population.

This study provides the first nationally representative evidence on the alignment between subjective and objective health measures in Italy, across cardiovascular, metabolic, and anthropometric domains, and explores how this alignment changes with ageing and differs by gender.

Data: We use data from the Italian Health Examination Survey (HES), conducted by the Italian National Institute of Health within the CUORE Project between 2008 and 2012. The survey collected detailed information on socio-demographic characteristics, cardiovascular risk factors, health behaviours, and clinical parameters from representative samples of Italian adults aged 35-79 years, randomly selected from municipal population registries. Objective health measures (blood pressure, anthropometrics, and blood samples) were collected under standardized protocols, alongside detailed information on lifestyle factors such as physical activity, smoking, and diet.

SRH was assessed through the question "In general, how is your health?", with response options: very good, good, fair, poor, and very poor.

Hypertension was defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg, or current use of antihypertensive medication. Three subgroups were identified: unaware hypertensives, treated but uncontrolled hypertensives, and treated and controlled hypertensives; persons were considered 'controlled' when systolic blood pressure resulted <140

mmHg and diastolic blood pressure <90 mmHg. The first two categories indicate poorer objective cardiovascular health.
BMI was calculated as weight (kg) divided by height squared (m²) and categorized as underweight (<18.5 kg/m²), normal weight (18.5–24.9 kg/m²), overweight (25.0–29.9 kg/m²), and obese (≥30 kg/m²).
Hypercholesterolemia was defined as total cholesterol ≥240 mg/dL or current use of lipid-lowering medication. Three subgroups were identified: unaware hypercholesterolemics, treated but uncontrolled hypercholesterolemics, and treated and controlled hypercholesterolemics; persons were considered 'controlled' when total cholesterol resulted <240 mg/dL. The first two categories indicate poorer objective cardiovascular health.
Diabetes was defined as fasting blood glucose ≥126 mg/dL, previous clinical diagnosis of diabetes, or current use of antidiabetic medication. Three subgroups were identified: unaware diabetics, treated but uncontrolled diabetics, and treated and controlled diabetics; persons were considered 'controlled' when fasting blood glucose resulted <126 mg/dL. The first two categories indicate poorer objective metabolic health.
Methods: We examine the relationship between SRH and objective health indicators across four complementary domains (blood pressure, BMI, cholesterol, and diabetes), used to summarise both the burden of objectively measured conditions and awareness of one's own health status. The discrepancy between perceived and measured health will be quantified as the difference between standardized SRH and standardized objective indicators, distinguishing between overestimation and underestimation of personal health.
Analyses will be stratified by sex, age group (35–44, 45-54, 55–64, 65–74 years). Group differences will be tested using standard comparative statistics, and multivariable regression models will assess how the relationship between perceived and objective health evolves with ageing, accounting for socio-demographic and behavioural factors.
The analytical framework will be replicated and validated using data from the 2018–2019 HES.
Expected findings: Based on previous evidence, we expect a moderate association between SRH and objective health indicators, with the perception gap widening in older age groups. Older adults are likely to rate their health more positively than objective measures suggest, reflecting adaptive or selective perception processes in later life. Women are expected to report poorer SRH than men, even when objective indicators are comparable or better, consistent with gender differences in health awareness and reporting.
By linking subjective perceptions to objective measures, this study contributes to understanding how ageing and gender shape health awareness and self-assessment in Italy, offering new insights into subjective health inequalities in Europe.

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