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Human functioning matters: now what?

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A Viewpoint on the Frontiers in Science Lead Article

The human functioning revolution: implications for health systems and sciences

Key points

- Human functioning is an important aspect of health that requires a clearer definition before it can be operationalized into assessment tools for data collection.
- Epidemiological studies should include measures of human functioning as outcomes in addition to morbidity and mortality.
- Human functioning assessments must be used to improve health systems to better serve populations despite the complexities involved.

Introduction: human functioning is of paramount importance

The measurement of health must go beyond morbidity and mortality to also consider functioning. This is the fundamental point made in the article "The human functioning revolution: implications for health systems and sciences" by Bickenbach et al. in *Frontiers in Science* (1). This recommendation is made because functioning measures how people are living in their daily lives, and so it is ultimately what matters most to people (2). This reasoning to take a broader view of health is very much in line with the World Health Organization (WHO) definition of health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (3). It is also consistent with the United Nations Sustainable Development Goal (SDG) concerning health and well-being, which is to "Ensure healthy lives and promote well-being for all at all ages" (4). However, Bickenbach et al. are correct in that the importance of functioning is not yet recognized in key health measures: these still do not address this more holistic view of health but instead focus on measures related to disease and mortality (4–6). The inclusion of functioning would be a welcome addition, but how can this goal be achieved?

Defining human functioning

First, we need a definition of functioning that can be operationalized for data collection. WHO defines functioning as "An umbrella term in the ICF [*i.e. the International Classification of Functioning, Disability and Health*] for body functions, body structures, activities, and participation. It denotes the positive aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors)" (7). There are strengths to this definition in that it recognizes the influence of contextual factors, as well as a health condition, on people's lived experience. Taking a step further, it means that health can be improved not just by medical interventions but also other diverse factors, such as addressing air quality, accessibility of the physical environment, stigma reduction, social inclusion, and provision of assistive technology. This definition also reflects the breadth of the experience of functioning, which can be at the level of the body, actions, or participation in key life areas (e.g., school, work, and social life). The problem is that this definition is difficult to operationalize to create a quantitative measure. As an aside, these debates on defining functioning are very similar to discussions on disability. This similarity is not surprising as the WHO definition of functioning is the inverse of their definition of disability, a concept that has been equally difficult to define. Here, the definition substitutes "impairments" for "body structures" and "negative aspects" for "positive aspects" but is otherwise the same[1]. Morbidity or mortality outcomes are far easier to define and measure.

How can human functioning be measured?

Given the complexity of the concept of functioning it is not surprising that a recent paper concluded that "a comprehensive functional assessment approach which incorporates all the ICF components is lacking" (8). How should functioning be measured? There are generic tools, which may be blunt and do not cover all the ICF domains. For instance, the WHO Disability Assessment Schedule (WHO-DAS) and 36-item Short Form survey (SF-36) include indicators for activities (e.g., standing, walking, and remembering) and participation (e.g., maintaining a friendship and taking care of household responsibilities) but not aspects of body structure or function (9). Condition-specific tools, such as a recently developed tool operationalizing the ICF Core Set for hearing loss (10), also include questions concerning the symptoms and experience of the impairment. They are therefore more comprehensive and precise but do not allow cross-condition comparisons. This leaves the question as to whether a comprehensive, usable measure of functioning is even possible, particularly for use outside of clinic settings. Perhaps a first step is to focus on improving the understanding and definition of functioning to allow clarity and consistency in its measurement. One possibility would be to limit the scope of functioning more specifically to activities. Then, body function and structures could be addressed by morbidity, and participation becomes an outcome of functioning or an indication of well-being. But these decisions will require much more discussion for consensus to be reached.

A tool to measure functioning would, of course, be helpful in clinic settings. The clearest example is to use functioning to measure the need for, and impact of, rehabilitation—as Bickenbach et al. (1) propose—and this is already often done. Arguably, maximizing functioning or quality of life is also a key ambition of palliative care. Other types of health services will also seek to improve functioning even if their core focus may be on treating diseases. Functioning is, though, influenced by many factors and so responsibility for its improvement lies across multiple sectors beyond health. Perhaps instead it is important to view functioning as an added lens when considering how to improve health systems to better serve the population. Improving functioning, as well as reducing morbidity and mortality, will require bridges to be built between healthcare and other sectors, which is important but not straightforward, particularly since budgets, policies, and plans are often siloed in different sectors.

Integrating functioning into epidemiological studies

The proposal for a new discipline of "human functioning sciences" is potentially less persuasive. Bickenbach et al. make a convincing argument that functioning should be integrated as a third metric together with morbidity and mortality. Arguably, it would be better for there to be a focus on functioning across public health rather than as a silo. Moreover, epidemiology is already flexible enough to be able to encompass functioning outcomes without being re-imagined as "functional epidemiology". Indeed, tens of thousands of published epidemiological studies already use SF-36 measures alone—recognizing the importance of functioning—although existing measures have limitations (11, 12). Perhaps a twin-track approach is needed instead, whereby functioning is included across epidemiological studies as a new metric of health, while targeted research is undertaken on how to measure and improve functioning.

Conclusion

Bickenbach et al. are, of course, right that a focus on human functioning is important across health systems and sciences. Yet, there are deep challenges to this view being adopted, such as the lack of robust assessment tools, the complexity of conceptualizing and measuring functioning, and the need to work beyond healthcare and across sectors to improve functioning. Further research is needed to develop holistic, rigorous tools to measure functioning across

1 WHO defines disability as "an umbrella term for impairments, activity limitations, and participation restrictions, denoting the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors)".

multiple domains. Furthermore, consensus building with health and other sectors is essential for understanding how to best utilize and operationalize the collection of data on functioning.

Author contributions

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Conflict of interest

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