




## MINI REVIEW

# Valuing maternal, newborn, child and adolescent health for societal progress – Going beyond the economic orthodoxy of gross domestic product

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## Abstract

**Aim:** In view of the long-standing recognition that gross domestic product (GDP) does not capture the unremunerated work largely conducted by women upon which societal well-being depends, to discuss the implications for GDP of maternal, newborn, child and adolescent health (MNCAH), and its influences on health, well-being and prosperity across the life course and across generations.

**Methods:** A wide-ranging discussion of the informal think-tank The Venice Forum was held over two days, with inputs from invited experts in person and online.

**Results:** There was consensus that a strong case could be made for inclusion of unremunerated work largely conducted by women as a positive contribution to GDP in view of its impact on future health and prosperity, and conversely exclusion from GDP of outputs from industries which harm health.

**Conclusion:** Taken with the current challenges from COVID, climate change and conflict, there is a compelling need to redefine economic progress through equitable models and metrics that incorporate short-/medium-/long-term societal value of activities that improve MNCAH.

## KEYWORDS

child and adolescent health (MNCAH), climate change and conflict (3C's), COVID-19, gross domestic product (GDP), health equity, maternal, newborn

**Abbreviations:** DOHaD, Developmental Origins of Health and Disease; GDP, Gross domestic product; GNH, Gross National Happiness; GPI, Genuine Progress Indicator; HDI, Human Development Index; ISEW, Index of Sustainable Economic Welfare; MNCAH, Maternal Newborn Child and Adolescent Health; OECD, Organisation for Economic Cooperation and Development; ONS, Office for National Statistics; PQLI, Physical Quality of Life Index; SDGs, Sustainable Development Goals; WI, Wellbeing Index.

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## 1 | INTRODUCTION: WHAT MAKES LIFE WORTHWHILE

Simon Kuznets, the pioneer of the concept of GDP, cautioned against using it as a measure of societal progress and well-being.<sup>1</sup> The criticism of such use of GDP has been well documented over the last 60 years. For example, Bannerjee and Duflo<sup>2</sup> write that “GDP values only things priced and marketed”. In the UK, the Office for National Statistics (ONS) data from 2016 estimates the value of unpaid household service work, largely conducted by women, at £1.24 trillion, a figure equivalent to 63% of GDP and larger than the non-financial corporate sector. Moreover, the value of unpaid household production per head in the UK grew at 67% compared with 31% for GDP between 2005 and 2016.<sup>3</sup> For instance, many of the steps planned to improve the “economic health” of the UK post-COVID-19, the effects of conflict in Ukraine and discussions about renewable versus fossil fuel sources of energy production have focussed on growth in GDP.

Work towards the sustainable development goals (SDGs) led to a range of different indicators and dashboards of progress such as the Genuine Progress Indicator (GPI), Human Development Index (HDI), Physical Quality of Life Index (PQLI), Gross National Happiness (GNH), Wellbeing Index (WI), Country Future Indicators, Index of Sustainable Economic Welfare (ISEW) and Calvert–Henderson Quality of Life.<sup>4</sup> These encapsulated the idea that progress towards achieving the SDGs does not need to depend solely on economic growth. Nonetheless, in most countries, GDP remains the main measure of socio-economic progress, driving investments into activities that lead to short-term GDP growth while ignoring those that will confer longer term benefits for societies.

The economic effects of lockdowns during the pandemic have been compounded by the wider repercussions of conflicts and their impact on trade along with food and fuel prices. These insults, set in the context of natural disasters globally, such as floods or bush fires as a result of climate change, present a new triple threat to societal well-being while also widening socio-economic inequalities. Fragile humanitarian settings such as conflict zones affect the long-term health and well-being of women, children and adolescents, and so do climate change-related events acting through malnutrition and infectious diseases. However, strategies for the mitigation of these crises rarely consider communities or families as central to developing policies.<sup>5</sup> In 2009, the French President Nicolas Sarkozy famously wrote, “if we refer to a representation of the world in which services people render within the family have no value compared with those that we can obtain on the market, we are expressing an idea of civilization in which family no longer counts for much. Who could imagine that would not have consequences?”<sup>6</sup>

## 2 | DISCUSSION

### 2.1 | Maternal, Newborn, Child and Adolescent Health (MNCAH) – Bedrock for societal value and wellbeing

A widely cited model of the later return to investment in early life uses the Heckman equation, derived from the work of the Nobel

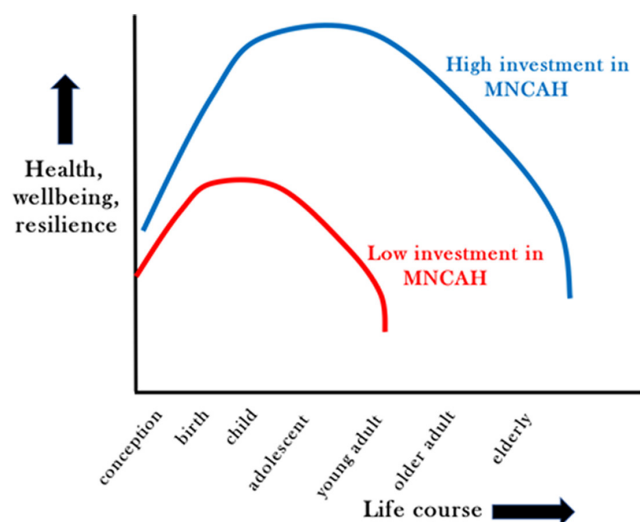
#### Key Notes

- Gross domestic product (GDP) continues to dominate economic well-being of societies and their resilience to shocks.
- GDP does not capture the unremunerated work upon which societal well-being depends but does include productivity from industries which actively harm health.
- Several current challenges impose the need to redefine economic progress through equitable models and metrics that consider the improvement of health, well-being and productivity across the life course of the mother/child dyad.

Laureate James Heckman and colleagues. They showed that promoting preschool education for relatively deprived communities in the US not only confers better health later in adulthood but also leads to higher earnings, greater family stability and reduced offending behaviour, effects that transfer to the second generation.<sup>7</sup> Heckman et al. calculate the return to investment of such early-life interventions as being about 10-fold. However, this model refers to so-called marginal productivity, e.g. the resulting increase in skill in adulthood from a small improvement in it through education earlier. This means that investment early in life increases the return on subsequent investments across time. However, the tenfold rate of return to early investment may not account for the dynamic complementarities of future investments. Consequently, the true benefits of investment in early-life health and well-being are even greater than in this model.

Health, well-being and resilience change over the life course (Figure 1). Starting at conception and over early life, the developing embryo, fetus, infant and child respond to their environment and adapt aspects of their structure and function in the prediction of the world in which they expect to live based on cues from their developmental environment.<sup>8</sup> This plasticity continues through adolescence. Hence, nurturing care, a healthy environment and healthy nutrition and lifestyle, which have profound effects on mental and physical development, have lifelong consequences.<sup>9</sup> The development of resilience in childhood and adolescence reaches a peak for many body systems by early adulthood, after which it declines. Improving health at this time has multiple implications not only for disease control but also economically.

There is considerable evidence to support this trajectory model of the short-, medium- and long-term adverse consequences of a poor start to life.<sup>10</sup> It illustrates how an inadequate focus on and investment in maternal, newborn, child and adolescent health (MNCAH) influence a range of processes that adversely affect societal value and how early development impacts resilience to challenges such as environmental exposures that are detrimental to health and well-being. By ‘investment,’ we mean much more than the provision of health care or other essential services, but the implementation



**FIGURE 1** Cartoon to depict a hypothetical speculation. Societal value (environmental, cultural, social care, justice, security as well as financial and health) is passed across generations, and the health, well-being and resilience of members of the population across their life course contribute to this value. The conceptual figure shows two different scenarios. It is proposed that the red line depicts the trajectory in a setting with low investment in maternal, newborn, child and adolescent health (MNCAH) and the blue line in a setting with high investment. Peak function/value attained develops more slowly in early life and reaches a lower peak in young adulthood, and then declines earlier in older age, in the low investment setting. The lines represent the decline in both settings, with the low-investment setting showing a steeper and earlier decline compared with the high-investment setting. The trajectory for these values is partly set before birth by factors such as parental socio-economic status, body composition, nutrition, and behavioural factors as well as genetic influences, followed by childhood factors such as nutrition, neurocognitive and emotional development through nurturing care.

of adequate, well-conceived and integrated public policies and programmes, because MNCAH depends on more fundamental societal structural issues reflected in equity, social justice, care of the environment and the effects of climate change or conflict. Inadequate attention to conditions in early development, of which the overwhelmingly major components lie outside healthcare, has taken and will continue to take an enormous toll on societies. Moreover, pre-existing inequalities are widened across lives and perpetuated across generations.

While mortality due to COVID-19 was seen to be higher in men, it is estimated that women and children face greater socio-economic and health consequences of the pandemic. For instance, global vaccine coverage declined between 2020 and 2021, with 25 million children missing out on essential vaccines due to pandemic-related disruptions.<sup>11</sup> The field of Developmental Origins of Health and Disease (DOHaD) has shown that both gender and socio-economic inequalities not only affect maternal health and well-being but can also have an intergenerational effect long term.<sup>12</sup> Using a social justice lens to uncover health disparities and the impact on MNCAH

post-pandemic is key to developing policies and interventions that look beyond health systems to include wider factors like the environment, poverty, gender and ethnicity that affect health outcomes. Such a framing demands recognition of women's contribution to society and economic growth through unpaid labour and caregiving.

Interventions to promote MNCAH at one life stage can build on earlier interventions to add value. For example, in "The Economics of Biodiversity: The Dasgupta Review,"<sup>13</sup> it has been shown that by investing just under \$2 per person, women's needs for modern contraception in low-middle income countries can be met, thus grounding the start of life for the next generation in parental choice about the timing of conception and the opportunity to prepare for pregnancy and parenthood.<sup>14</sup> By promoting resilience, early-life interventions will reduce the magnitude and duration of the effects of future socio-economic shocks. This model differs from those that attribute effects on health largely to contemporary environmental or behavioural factors, models that are favoured in neoliberal policies which tend to attribute risk and disadvantage largely to individual behaviours and choices.<sup>15</sup>

## 2.2 | Beyond GDP – Alternate measures for well-being

The continued use of GDP growth as an indicator of progress was referred to many years ago as a dominant design that sets the de facto standard in any context.<sup>16</sup> An additional problem with GDP is that it does not include indicators of population health but does include the outputs of the healthcare industries. Thus, expenditure on healthcare increases GDP, independently of the level of population health. Consequently, the United States spends almost twice on healthcare as a proportion of GDP than the average of Organisation for Economic Cooperation and Development (OECD) countries but has a lower life expectancy than any other high-income country.<sup>17</sup> Several other factors also stand in the way of adopting new metrics, most of which relate to political will, national accounting systems and the "perverse incentives" for politicians to claim short-term results, especially at the economic level, to gain political legitimacy within government and in public opinion.<sup>18</sup>

We recognise that replacing established indicators with alternatives is challenging because their wide adoption imposes barriers for other innovative measures to emerge and gain adoption. However, dominant paradigms can become obsolete when a wave of "creative destruction"<sup>19</sup> leads to the emergence of new approaches that are more relevant to the evolving needs of society. Other challenges which could obstruct the adoption of new metrics in practice include varying policy objectives, political interests at a high level, short policy cycles calling for short-term results and public opinion and values which can influence decision-making by policymakers.<sup>20</sup>

Stiglitz et al.<sup>8</sup> consider that no single measure can summarise the well-being of all members of society. Instead, they provide a set of recommendations to create a statistical measurement system that shifts from measuring economic production to measuring well-being

in the context of sustainability. These recommendations constitute a starting point towards a new paradigm, especially if such a new system can capture diversity in people's experiences and linkages across dimensions of the population's life, rather than just an average at a single time point.

Sen and Nussbaum highlight an approach based on capabilities rather than functioning.<sup>21</sup> For far too long, we have ignored the capabilities of society and have linked societal progress to the increase in the GDP. Income alone is not sufficient to determine well-being as other factors such as social and psychological aspects play a crucial role. Taking a household perspective takes into account payments across sectors but also non-market activities not included in GDP but having an important contribution to economic activity. They can be gauged by analysing information collected by household surveys on how people spend their time and household production of goods. Any indicator must also include robust information on the quality-of-life dimensions that predict life satisfaction such as social connections, political voice, security and equality of access to services. Finally, the system should measure sustainability to determine if the current level of well-being can be maintained for future generations.

We suggest therefore a compelling need for more comprehensive and innovative measures of societal progress and broader adoption by multiple actors of alternatives that can overcome the limitations of GDP. There are already signs that such developments are ongoing<sup>22,23</sup> so we can anticipate media attention and wider discussion among the general public as well as biomedical scientists. While the recently launched Child Health and Wellbeing Dashboards<sup>24</sup> provide a basis for measuring progress in MNCAH, they refer primarily to SDG targets as outputs for country comparisons, rather than to progress in investment in frameworks such as that for nurturing care.

### 3 | CONCLUSION

While GDP is the accepted measure of economic progress, it is widely recognised that it does not capture societal well-being. Although alternative measures have been devised, no model explicitly measures the activities that underpin MNCAH, the bedrock of well-being in both the short and longer term. There is an urgent need to redefine socio-economic progress through equitable, sustainable models that prioritise the benefits of investment in activities that improve MNCAH. This is the right moment to heed the United Nation's call for a transformative 2030 vision.<sup>25</sup> The current challenges of COVID, climate change and conflict make a compelling argument for abandoning the constrictive orthodoxy of GDP to promote the health and well-being of young people, parents and children and hence of both current and future generations.

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### CONFLICT OF INTEREST

None declared.

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