

The Contribution of Public Health and Improved Social Conditions to Increased Life Expectancy: An Analysis of Public Awareness

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6UW_[fc]bX. Historical analysis of health data suggests the majority of the life expectancy increase that occurred during recent centuries was caused by improvements in public health and social determinants of health. The purpose of this study was to assess lay public perceptions regarding why life expectancy has increased.

Ayh\cXg. A nationally representative sample of 705 adults were surveyed to determine which factors people credit for the 40 plus year increase in life expectancy that occurred since the mid-1800s. Survey items included open-ended questions, rank ordering of possible explanations, and numeric estimates of attribution.

FYgi`hg. Participants in the study rarely attributed increased life expectancy to public health measures or improvements in social health determinants. In contrast, subjects believed that medical care, by far, played the predominant role and attributed medical care for causing 80% of the life expectancy increase.

7cbW' i g]cb. The public grossly overestimates how much of our increased life expectancy should be attributed to medical care and is largely unaware of the critical role played by public health and improved puubli cawectM ctM Ae anaçtt ana] babilic

[13,14]. These more holistic models emphasize the ecological nature of multiple health determinants, which interact to form a “web of causation” explanation of health and life expectancy. p n M p M M G) ~ M Ú M M M p 2aiq det

discrepancies (n=7) that occurred were recoded after discussion and mutual agreement.

Second, participants were given a list of six factors that public health historians suggest were major causes for life expectancy increase since the mid-1800s. This second measure of attribution provided plausible explanations which participants may not have recalled and, therefore, considered when answering the open-ended questions. The question asked was: "Several factors have contributed to the rise in life expectancy seen in the U.S. from 1850 to the present day. Below, rank each factor by its level of contribution to the rise in life expectancy. 1= the most important factor; 2= the second most important factor; and so forth until you reach 6= the least important factor." The factors to be ranked were improved sanitation, improved food production, vaccinations, modern medicine (surgeries, medications, diagnostic techniques, etc.), reduction in poverty, and public education. These first two questions only allowed for a ranking of explanations to be calculated.

Third, the proportion of improved life expectancy people attributed to healthcare/modern medicine was assessed. Participants were informed that the nation spent 17% of its Gross Domestic Product in 2011 on healthcare/modern medicine (e.g., physicians, hospitals, clinics, diagnostic technology, surgery, and antibiotics). They were then

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expectancy is primarily the result of technology intensive medicine, they may be more willing to expend a large portion of the national budget on the healthcare sector of the economy. Consequently, JM H M

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Modern Medicine	462	66
Improved Lifestyle	67	9
Improved Nutrition	62	9
Education, Knowledge	15	2
Improved Sanitation	14	2
Other, Don't Know	85	12
Source: Survey Sampling International, 2012		

Table 2 Open-ended Responses for Explaining Increased Life Expectancy.

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Modern Medicine	302	43
Vaccination	141	20
Sanitation	120	17
Education	72	10
Poverty	43	6
Food Production	27	4
Source: Survey Sampling International, 2012.		

Table 3 Primary reasons given for the improvement in life expectancy

When asked to project what life expectancy would be if society had all the modern conveniences (e.g. sanitation, education, sufficient income and food production), with the exception of "healthcare/modern medicine," the average response was approximately 47 years. This would be a decline of 32 years from our current life expectancy of 79 years. These data indicate that of the 40-year life expectancy increase since the mid-1800s, the public attributes 80% of the improvement to modern medicine and only 20% to all other factors.

Discussion

The results of this study show that adults in the U.S. attribute 80% of the improvement in life expectancy since the mid-1800s to modern medicine. The combined impact of improved sanitation, literacy, housing, health behaviors, food production, safer environments, and other public health factors received relatively little credit. These misperceptions were consistently observed across the levels of age, sex, race, education or income.

This study has important implications for a nation that far outspends all others on healthcare, despite a life expectancy ranking in 34th place [30]. Prudent national health policy that seeks to increase life expectancy and lower healthcare costs should better appreciate the importance of multiple determinants of health. An incorrect understanding of the contribution of public health measures may have resulted in poor policy decisions and distorted funding priorities.

The 2011 World Health Organization Rio Conference report challenged nations to improve health by addressing social health determinants [31]. Unfortunately, when people believe increased life

