

## Calibrating Contentment: The Metrics of Health and Happiness

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**This historical note examines Puerto Rico's pioneering role in the development of happiness studies. In 1963-64, the Puerto Health Department's Master Sample Survey included a series of questions on well-being to tap into self-assessed happiness. The study found that happiness was positively correlated with income, education, and health. It also found that women were less happy than men, and that well-being was negatively correlated with age. Since then, the metrics of happiness have gained currency, and several countries have adopted indices to measure their population's self-perceived well-being. Studies have also documented the reciprocal relationship between health and happiness. [P R Health Sci J 2014;33:136-139]**

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The Declaration of Independence of the United States posits the “pursuit of happiness” as an inalienable right of all citizens. But, what does “happiness” mean? What are its determinants? Is it linked to health? And how can we gauge if a particular population is enjoying this right?

Many researchers have tried to answer these questions. One of the pioneering studies to measure happiness was conducted in Puerto Rico more than 45 years ago; since then the topic has been addressed using different methods, indices, and samples. This essay provides a history of the metrics of happiness, from its initial efforts to more recent methodological and policy developments.

Behavioral scientists have been focusing on happiness as a scholarly subject for almost 100 years. In 1917, one scholar promoted the discipline of “eupathics,” defined as the study of “the well-being of the normal” (1). In the 1920s and 1930s, subjective measures of satisfaction were included in studies related to marital success, educational psychology, and personality psychology (2).

Interest in the topic heightened in the 1960s when quantification became part of the social scientists' armamentarium. Then, “measures of happiness and satisfaction were recruited as proxies for mental health and well-being in large, representative samples” (2). Particularly important in this effort were the studies carried out by Norman Bradburn and David Caplovitz in the early 1960s. They started from the premise that “there is a dimension variously called mental health, subjective adjustment, happiness or psychological well-being, and that individuals can be meaningfully described as being relatively high or low on such a dimension” (3). They then studied communities in the United States to determine what factors made for greater happiness. In their pilot, they used self-reported measures to survey 450 households in rural Illinois. The study's dependent variable was avowed happiness or the feeling of psychological well-being. In their words,

The model specifies that an individual will be high in psychological well-being in the degree to which he has excess of positive over negative affect and will be low in well-being in the degree to which negative affect predominates over positive (3).

Thus the model viewed “an individual's happiness or well-being in terms of the degree to which pleasure predominates over pain in his experiences” (Bradburn, 1969: 9).

The study's contributions were both methodological and substantive. The researchers found that “individuals varied along two dimensions --- one indicative of positive affect and the other of negative affect. Further, it was clear that these two dimensions were independent of one another, making it impossible to predict an individual's score on the negative affect dimension from any knowledge of his score on the positive affect dimension and vice versa” (4). The best predictor of the overall self-rating was the discrepancy between the two scores: the greater the excess of positive over negative affect, the higher the overall rating of psychological well-being (4). They therefore devised a five-point “Affect Balance Scale” along which individuals could be plotted. In terms of substantive findings, the researchers found that happiness was positively correlated with education and income, negatively correlated with age, and unrelated to gender (3).

Bradburn and Caplovitz replicated their study in different communities, refining their methods and confirming their

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findings in Detroit, Chicago, a suburban county near Washington, DC, and among a sample of residents from the ten largest metropolitan areas in the United States. With these studies as a baseline, the scholars hoped to collect time-series data which would allow them to assess how changing conditions affect self-reports on happiness.

Closely following this effort, sociologist Norman Matlin came to Puerto Rico in the early 1960s to see if the US findings held for the island, which had experienced dramatic changes over the previous two decades. Between 1940 and 1960 the island's labor force had shifted from agriculture to manufacturing and services, and in 1952 the Puerto Rico had become a commonwealth of the United States. In the health field Puerto Rico had undergone an epidemiological transition from a high incidence and prevalence of infectious and parasitic disease to one in which chronic conditions prevailed. Within two decades overall and infant mortality were more than halved, and life expectancy rose an unprecedented 26 years (5). While Puerto Ricans were undoubtedly more prosperous and healthier, there remained a gnawing question: were they happier?

But this question was not the only factor that piqued the interest of social scientists. Puerto Rico also had the infrastructure to facilitate research. The Master Sample Survey (MSS) of the Puerto Rico Department of Health, begun as a pilot in 1958 and institutionalized in 1962, allowed scholars to supplement the basic questionnaire with topic-specific questions that addressed their own research interests. Matlin used the MSS as the vehicle for his study, which included 1407 respondents from a random sample of families in Puerto Rico. These were interviewed between November 1963 and October 1964.

Matlin summarized his findings in a 1966 report titled "The Demography of Happiness" (6). Although his research instrument required some adjustments, it was similar to the one used in the US samples; the results were therefore comparable to those of earlier studies. The study looked at self-reported happiness and its relationship to five variables: income, education, age, gender, and health.

The survey found that income was positively correlated to happiness in Puerto Rico as measured by the Affect Balance Scale. This was due to a decrease in negative feelings (from 1.6 to .5) more than to an increase in positive feelings as income rose: positive feelings increased only from .9 to 1.1 as income increased from less than \$1,000 to \$10,000 per year and over. Persons with incomes under \$1000 reported being very happy 10% of the time, compared with 27% for those with incomes over \$10,000 (6).

The relationship between happiness and education was also positive in Puerto Rico: those reporting being "very happy" doubled (from 11% to 22%) as education increased, while those indicating there were "not too happy" dropped from 40% to 17% as years of schooling rose. The differences were particularly

evident in terms of the Affect Balance Scale, with those reporting a positive balance rising from 31% to 55% as education rose. Matlin, however, cautioned against inferring causality or giving too much weight to this finding:

However much we would like to envision persons of education as having become philosophically reconciled with their lot in life or having learned in their course of studies to pursue the good, the true, and the beautiful, the facts are somewhat more prosaic. People with more education make more money or expect to make more money in the future. This is so partly because they start with more money, wealthier families giving their families more education, and partly because the possessors of diplomas in our society have easier access to well-paying jobs and opportunities (6).

The researcher therefore controlled for income and age to assess the effect of education on happiness. Having done this, he concluded that "it appears that the better educated are happier only when education has met the condition of providing greater income or the prospect of greater income" (6). It was therefore the *instrumental* rather than the *intrinsic* value of education that was associated with greater well-being.

The relationship between age and perceived well-being showed older age groups to be less happy and more likely to show a negative affective balance. Thus, while 29% of those between the ages of 20 and 29 said they were "not too happy," the corresponding proportion rose to 36% among those 60 and older. Even more dramatic, the proportion of those reporting an affect balance of -3 (indicating the greatest unhappiness) more than doubled with age, rising from 10% for those 20-29 to 21% for those 60 and over (6). Matlin attributed this finding to the fact that Puerto Rico was in the midst of a transition to a complex society in which younger people had better life chances than their elders (6).

With respect to gender, Puerto Rican females reported themselves to be less happy than Puerto Rican males: while 18% of the men reported being "very happy" and 28% said they were "not too happy," the corresponding percentages for women were 15 and 47, respectively (6). Similarly, 17% of the women (vs. 12% of the men) scored -3 on the Affect Balance Scale. This was different from the pattern in the United States, where women reported themselves as slightly happier than men.

Finally, the study looked into the relationship between happiness and health, a topic that had not been explored in any of the prior studies. The Puerto Rican survey found that healthier respondents reported themselves as happier: 22% of those with no conditions and 10% of those with 5 or more conditions reported themselves to be "very happy." Conversely, 21% of those with no conditions and 52% of those with 5 or more conditions said they were "not too happy."

Matlin posited that the effect of health on happiness was indirect, and that “what makes a person unhappy is his feeling of being in a poor state of health, regardless of the actual number of medical conditions he has” (6). The survey therefore asked respondents to judge their state of health as excellent, good, fair, or poor. While their answers to this question correlated with the number of medical conditions they reported, there were some anomalies. Some 23% with one or no medical conditions reported themselves to be in poor health, while 10% with three or more medical conditions reported their health as excellent. The researchers explained this finding by pointing out that what respondents “consider conditions is a very mixed bag,” ranging from the trivial to the serious. Moreover, persons assess their own health not in absolute terms, but rather in relation to what they judge it should be.

Whatever the basis for the respondents’ subjective health assessment, Matlin concluded that it predicted happiness very well: 33% of respondents in excellent health reported themselves as “very happy,” compared with only 8% of those in poor health. Conversely, 13% of those in excellent health and 68% of those in poor health reported themselves as “not very happy” (6). And self-assessments of health were a better predictor of happiness than the number of conditions. In Matlin’s words, “the people in excellent health [were] happier than the people with no medical conditions, while the people in poor health [were] unhappier than those reporting 5 or more conditions” (6). This was reflected more clearly in the relationship between reported health and the Affect Balance Scale. The survey found that 15% of those in excellent health, in contrast to 71% of those in poor health, had a negative affect balance.

On the island, these findings elicited limited interest. And a US congressman expressed dismay that public funds had been spent on a study in which the findings were self-evident (7). Whether because of this or other reasons, the survey was never fully replicated locally, thereby precluding an assessment of trends in self-reported happiness and their correlation with changes in health, income, employment, and education.

The Puerto Rican survey nevertheless contributed to the existing literature, and demonstrated that happiness could be studied in different cultures. This has been done for the past 30 years. Since 1981, scholars throughout the world have conducted a periodic World Values Survey on values and attitudes. They have devised an international “happiness scale” which ranks countries in terms of how happy its inhabitants consider themselves to be. Over time, this survey has expanded to include countries with almost 90 percent of the world’s population, thereby allowing for cross-country comparisons. In addition, because the survey is conducted periodically, it can identify trends and changes over time (8). Although Puerto Rico has participated in only some of the 6 waves of the survey, it has repeatedly ranked among the happiest countries. Indeed, a 2004 publication ranked the island first in the world

in “subjective well-being” (9). And a “happiness index” of over 100 countries placed Puerto Rico near the top: only 7 countries scored higher than the island (10). Moreover, the data show that the Puerto Rico population has not only registered a high level of happiness, but also shown a steeply rising score over time (8). The fact that this was the case during a period when the island experienced structural unemployment, job insecurity, rising crime, and political uncertainty suggests that, as Matlin indicated, psychological factors trump environmental factors as determinants of happiness.

Recent years have seen a surge in the literature on happiness. This has ranged from self-help books to rigorous studies which have mined the existing findings for policy implications. There is a peer-reviewed *Journal of Happiness Studies*, and the field has attracted renowned experts. Nobel prize-winning economists Amartya Sen and Joseph Stiglitz (11) and Harvard’s former president Derek Bok (12) have addressed the topic, contributing to the scholarship and enhancing the debate. Countries as disparate as France, Canada and Bhutan, among others, have re-examined their social indicators in order to supplement or replace the gross domestic product (GDP) as the main measure of a society’s performance. As a result, there are now competing indices of overall performance, including the Canadian Index of Well-being and Bhutan’s Gross National Happiness Index.

Moreover, the growing literature has made the connection between health and happiness more robust. Studies have shown that social connections are a major driver of health and happiness (13), that happiness is linked to health more strongly than it is to wealth (14), that the relationship between health and happiness is reciprocal or in both directions (14), and that mental health plays a greater role in happiness than does physical health (15). Because all of these findings have implications for both individuals and the body politic they can shed light on what we do singly and collectively to achieve a healthier and happier society.

## Resumen

Esta reseña histórica enfoca sobre el papel que jugó Puerto Rico en el desarrollo de estudios sobre la felicidad. En 1963-64 la Muestra Básica de Salud del Departamento de Salud incluyó una serie de preguntas sobre la percepción que tenían los encuestados sobre su propia felicidad. El estudio encontró una correlación positiva entre felicidad e ingresos, educación, y salud. También encontró que las mujeres indicaban estar menos felices que los hombres, y que había una relación negativa entre edad y felicidad. Desde entonces la medición de la felicidad se ha popularizado, y varios países han adoptado indicadores para auscultar la felicidad y el bienestar de población. La relación recíproca entre salud y felicidad ha sido ampliamente documentada.

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