

## A Technical Introduction to World Suffering

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### Introduction

The principal focus of quality of life studies, including those measuring subjective well-being and happiness, has been on positive rather than negative elements whether the study be concerned with subjective or objective measures or both. Consequently, QOL researchers have largely overlooked suffering even though it is common knowledge that those in states of serious suffering may be less able to articulate positive affect or identify positive qualities in their lives. In 1985, Diener, Larsen, Levine & Emmons published their analysis of the inter-relationship between positive and negative affect. Their conclusion was that the degree of the association varied, and it did so largely because of differences in the intensity and frequency of any associated affect (Diener, et al. 1985). This explanation also accounted for the weakening of the correlation between positive and negative affect over time.

The measurement problem of combining positive and negative elements in quality of life (QOL) research results from not only the need to combine positive and negative elements, but because underlying these elements are two separate theoretical constructs, negative QOL and positive QOL, both of which have a natural zero-point, a state at which there exists absolutely zero magnitude of the construct and, therefore, no scores less than zero exist. On the other hand, the goals of many researchers are to produce a unipolar composite indicator that encompasses the bipolar positive and negative elements, even though it makes a true zero point impossible. Furthermore, in a typical QOL item with response categories labeled “least possible” at one end and “most possible” at the other end, some respondents perceive the zero-point to be at midpoint and others at the bottom of the scale (Alexandrova 2005; Diener, et al. 1986; OECD 2013).

Attempting to overcome these challenges, Krueger and Kahneman (Krueger 2009) invented the U-index, which was operationally defined as the proportion of time a person feels unpleasant. It was a step forward, but few studies have the resources to collect such data over time. In their research, they also examined the relationship between negative experiences yesterday and positive experiences yesterday and found results similar to Diener’s above.

After an extensive review of these challenges and solutions, an OECD report on measurement of well-being concluded:

*“The literature on scale polarity is relatively sparse and largely limited to affect measures, rather than evaluative or eudemonic measures of well-being. Although not widely studied, there is some evidence to support the view that scale polarity matters, in particular for affective measures of well-being” (OECD, 2013; p 88).*

Research by Lelkies (2013) provides the most instructive and important conclusions with regard to these challenges. Using data from 29 European countries, she compared QOL measures of both life satisfaction and happiness for each of several positively defined social groups (e.g., education and income) with negatively defined social groups (e.g., disabled, unemployed, and ethnic minorities) and found the differences in both of the QOL measures to be two to three times greater within the negatively defined groups rather than within the positively defined groups.

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It is my general observation that QOL studies tend to explore positive predictors of QOL more often than negative predictors, which may explain why some studies do not find large social differences in QOL. The fact that QOL indicators generally assess the positive rather than the negative aspects of the underlying constructs also may account for the difficulty in producing QOL indicators that have a high degree of face validity. It may be that combining happiness with unhappiness, well-being with ill-being, and negative attributes with positive attributes, will produce indicators that not only are more comprehensive but that appeal more to social policy makers and policy advocates. Going in this direction will require incorporating suffering more fully into the assessments, and incorporating suffering will require a better understanding of suffering itself and how to measure it. It is to this end, that the research that follows seeks to progress.

### **Defining and delineating world suffering**

Despite each individual's unique suffering, it is possible to study suffering among not only individuals, but families, groups, communities, nations, and the world. Study after study, conducted in different communities and countries, reveals that despite small cultural differences, the structure, patterns, and oftentimes meanings of suffering, ring true across all social contexts around the globe (Anderson 2014). I had expected that many of the most interesting findings would be comparative (across communities or countries), but this was not the case. Instead, the most intriguing results were based on the uniqueness of a study's methodology. Progress on social policies regarding suffering requires multiple methods: subjective and objective measurements; qualitative and quantitative data collection; formal and informal analytical approaches, in both research and policy.

Cassell (1991) defined suffering as severe distress that interfered with one's personhood. I elaborated on Cassell in defining suffering as distress resulting from threat, major loss, or damage to one's body and/or self-identity (Anderson 2014). Cassell distinguished not only the body and mind but also the conceptions that a person holds of time, causation, and most of all, meanings of life.

There are times, particularly in ethnographic studies, when one should focus on the meanings (principally for the sense of self) that suffering has, or does not have, for different individuals. But for large-scale comparisons, it is important to focus upon the principal source of the suffering: physical, mental, interpersonal or social. *Physical suffering* is the subset of distress resulting from threat or damage to one's physical being, whereas *mental suffering* is distress perceived as originating in one's cognitive or affective self-identity (Anderson 2014). Physical suffering is equated with pain, even though it often co-occurs with mental suffering (Black 2005; Carr et al. 2005; Livingston 1998; Morris 2002; Wilson et al. 2009). Mental suffering includes cognitive suffering (thoughts that produce suffering) and affective or emotional suffering (Francis 2006). Mental suffering does not necessarily have an origin in painful sensory events, and is more elusive. Depression and anxiety, perhaps the most persistent varieties of mental suffering, when combined with other mental maladies such as grief, serious mental illness, and existential suffering, together form a major type of suffering labeled here as mental suffering.

Physical suffering, typified by chronic pain, usually depends upon neurological paths between a sensory organ and the brain as a communication system. However, recent neuroscience research discovered a number of ways that pain arises without following the simple neurological pathways (Borsook 2012).

The more extreme the suffering, the more likely the sufferer is to experience multiple types of suffering. In fact, it is not uncommon for sufferers to simultaneously feel all types of suffering: physical, mental, social, and interpersonal. Cicely Saunders (2006), the founder of the modern hospice movement, called this type of suffering, "total pain." To be specific, she defined total

pain as the intersection of physical, mental, spiritual (existential), and social. Some people prefer to equate the word suffering to situations of “total pain”; I prefer to reserve the label *total suffering* for deep distress that intersects all the major types of suffering.

### **Interpersonal and Social Suffering**

The third major class of suffering, *interpersonal suffering*, constitutes another name for what many call “social pain.” Common examples of interpersonal suffering would be social rejection, forced social isolation, and withdrawal of affection or interaction privileges. It can also be defined as distress inflicted by a primary group: family, friends, or people with whom one might have had regular contact. Franks (2015) summarized the research in neuroscience on social pain (interpersonal suffering), including (1) the potential for highly traumatic brain responses to social isolation and rejection, and (2) the discovery that interpersonal suffering and physical suffering affect identical areas of the brain.

In contrast to interpersonal suffering, *social suffering* results from social institutions, especially from community or societal norms that encourage discrimination or harm against members of social groups toward which stigma has been directed, e.g., minority belief groups, disability or racial groups. These negative effects are legitimized and maintained by powerful organizational institutions like governments and religions.

In the past two decades, the label ‘social suffering’ has come to mean suffering produced primarily by social conditions that damage a collective’s sense of self-worth and heightens powerlessness produced from socially shared traumas (Kleinman, Das, & Lock 1997; Wilkinson 2005). One frequent consequence of social suffering is the loss of caring for self and others as valued human beings. Good examples of social suffering are victims of social discrimination, disability, poverty, and others treated as second-class citizens. Social institutions typically maintain the status quo that perpetuates the stigma and the socially shared suffering (Bourdieu et al. 2000).

Social suffering as a concept concerns more than trauma produced by social forces. Those who continue to write about social suffering seek to convey that those who experience social suffering, and in some instances, those who perpetuate it, come to understand the interconnectedness of all involved. Such illumination of the full reality of the imposition on those persecuted presumably leads to awareness of the moral-immoral aspects of the social relations in play. Another way of thinking about social suffering is that it exposes the role of the larger community and society in maintaining unequal social trauma ranging from a structure of violence to subtle disparaging of others (Wilkinson 2012, 2013).

### **Findings on Suffering in America**

Not surprisingly, those who think about the concepts of pain or suffering, or work with those trying to manage their pain or suffering, lack a common vocabulary (Thernstrom 2010). This greatly constrains discourse on the subject and blocks the emergence of theory and research, and curtails the building of a global knowledge base.

A typology of suffering from the perspective of both the social sciences and public health and development could facilitate communication as well as empirical research on suffering. My general-purpose taxonomy of suffering, detailed in the previous section, addresses research as well as practice needs. To illustrate, statistics from a large, national health survey, reported in the second column of Table 1, provides a portrait of suffering in America in 2010.

One of the most important findings from the suffering prevalence analysis of the American health study was that the most common type of suffering found was the co-occurrence of two or three types rather than one type (physical, mental, or social) alone. Figure 1 shows that among adults in the USA in 2010 about a third (36%) self-reported that they had recently had one or more types of suffering. Nearly half of these respondents had two or more types of suffering

concurrently. Differences in suffering prevalence across social groups were generally substantial. For example, the prevalence of physical suffering steeply rose by age group. However, of all the different types of suffering, the only type of suffering that dramatically increased with age was physical. Those 60 or older were three times more likely than adults in their 20s to report significant physical pain (Anderson 2014).

Suffering disparities by income groups proved pronounced and large. Both physical pain and mental suffering were found to be highly related to lower income in the USA. (See Figure 2.) Those with income below the poverty line were twice as likely to have chronic pain or mental distress than those earning \$75K or more. Furthermore, those in poverty were three to five times more likely to have extreme pain or extreme mental distress than those earning \$75K or above. Those with middle income levels were in between the two income extremes in likelihood of suffering.

### **Global Trauma and Suffering**

Global violence may have declined over the past 3,000 years on a per capita basis, but it is doubtful that the absolute number of people killed each year has declined because the population has been rising so rapidly, particularly in agrarian societies. The global population tripled in the twentieth century alone. At some point between the distant past and the twentieth century, typical but cruel punishments came to be called atrocities. Furthermore, as record-keeping systems improved, the volume of deaths, injuries, diseases, and displacements could be estimated with increasing precision. Based upon UN and World Health Organization (WHO) statistics, Table 3 provides estimates of unnatural deaths and other events producing traumatic world suffering in 2010.

These statistical estimates contain error and only approximate the number of people actually suffering for a considerable amount of time during the year. The table shows that at least 44% of the global population (one in five persons) had a major suffering event such as those listed in Table 2 during the year 2010. This numeric picture of suffering significantly underestimates the total suffering in certain ways: e.g., deaths from infectious diseases other than HIV did not get included because many countries do not count them separately from other deaths.

In the past 25 years the population of the developed world sector rose 0.6% per year, while the 40 least-developed countries increased in size by 2.5% per year. These demographic statistics were derived from the World Health Organization's online data files, accessed 25 June 2014. Meanwhile, the life expectancy in the top 40 countries increased to 22 years longer than those living in the 40 least-developed countries (80 versus 58 years life expectancy at birth). Therefore, rising global inequality leads to greater worldwide suffering except in so far as greater longevity may increase total suffering.

Normally, longevity is seen as a sign of good health, but in fact those who live to a very old age tend to report a much higher prevalence of reoccurring illness, such as stroke. Thus, some affluent individuals may suffer more in general than the poor who do not live so long. Furthermore, those who live in societies with high life expectancies also tend to suffer from "affluenzas" (Graaf, Wann, & Naylor 2014) – ailments such as obesity, diabetes, and depression with associated suicide risk.

The estimates of suffering in Table 3 do not include any direct estimates of social suffering. Instances of severe racial discrimination, constant bullying, slavery, severe poverty, and disabilities have not been included. Including such prevalences might double the number of sufferers.

### **Comparing Subjective and Objective Measures of Suffering by Nation**

A measure of subjective suffering for each nation was constructed from the Gallup World Poll data. Specifically, the subjective 'life satisfaction' measure (also called 'life evaluation') uses the Cantril Self-Anchoring Striving Scale refined by Gallup for its annual World Poll of 160 countries. An interviewer using the following instructions typically administers the question:

“Imagine a ladder with steps numbered from zero at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?” Now show a visual of a ladder.”

I produced the ‘subjective suffering’ indicator used here from the formula:  $11 - X$ , where  $X$  is a national average of life satisfaction from the Gallup polls. This reverses the codes so that larger values represent either lower satisfaction or greater suffering. As the lower bound is defined to respondents as “least possible satisfaction,” it creates the illusion but not the reality of a zero point. The construct remains bipolar because dissatisfaction implicitly resides in judgments about satisfaction levels.

A more objective measure of suffering was constructed from estimates of social trauma listed in Table 2. To evaluate the predictive validity of each type of calamity that might help compose a total measure of objective suffering, each calamity type was modeled by regressing subjective suffering on them. One of the challenges of obtaining estimates of objective suffering is that they naturally overlap. For instance, many of those persons who suffer malnutrition also live in poverty. In this analysis, I addressed the overlap problem by generating statistical estimates of overlaps between pairs of variables and adjusting the joint prevalences for each pair. The grand total of estimated world suffering is about three billion people, or 44% of the world population in 2010, when poverty is included.

The four calamity types in Table 2 (hunger, poverty, child deaths, and HIV prevalence), which were the most predictive of the subjective suffering measure, were used as the additive components of a composite indicator of objective suffering. The scatterplot of that objective measure with the subjective (negative satisfaction based) indicator is displayed in Figure 3. While the scatterplot reveals considerable linearity between the two variables, to some extent this was to be expected given that the four components of objective suffering were selected on their predictive stamina. The four weighted calamity variables explain 58% of the variance in the subjective suffering indicator, which means that 42% was unexplained. The linear relationship between the four weighted composite calamity predictors (X-axis) of this model and subjective suffering (Y-axis), while not validating either indicator of suffering, suggests that further research along these lines will contribute toward the refinement of suffering indicators and ultimately toward comparative understanding of suffering.

### **Using Estimates of Human Rights Violations to Measure Suffering**

The human rights perspective gained momentum from growing popularity of beliefs that humane values applied universally. A key component of this movement has been that extreme but preventable suffering should be eradicated. This has been the driving force behind the trends of eliminate slavery and torture. While traditional human rights focused on political and civil rights, a large sector of the movement has adopted an agenda that defines social and cultural rights including the rights to shelter and adequate nutrition. Because of this close alignment of suffering avoidance and human rights, it might be possible to measure levels of suffering by estimating the extent to which human rights are violated.

The Fund for Peace already compiles data annually on indicators of human rights violations for 178 countries and releases this information as the Fragile State Index (Fund for Peace 2011, 2014). Formerly called the “Failed States Index,” this index combines thousands of reports daily on each of 178 countries, using a combination of automated and manual syntheses of the information on human rights policies and practices in each country. The Fund for Peace also provides sub-index estimates and one of these sub-indexes captures political/civil rights; another measures social/human rights. The two were added together for the analysis below.

Figure 4 shows the scatterplots for 122 countries, which we had both the subjective suffering data and the human rights data. This inter-relationship depicts a moderately high degree of correlation. The correlation depicted in Figure 4 is 0.8, although if you take away either the political or the social sub-indices, the degree of correlation declines to 0.6. The co-variation between suffering and a rough measure of political and social human rights violations constitutes a sign that further work on using human rights violations as indicators of suffering has a strong likelihood of yielding greater understanding of major elements of global suffering. In addition, it might even lead to a more robust and reliable indicator of “objective” suffering.

Further refinements are needed to develop better national and community indicators of both subjective and objective suffering. Using indicators of human rights violations has considerable promise for either predicting suffering or at least representing the miserable conditions of suffering. These indicators offer the potential for greater objectivity, validity, and precision.

## Conclusions

Progress in social measurement tends to be slow because it requires an understanding of measurement theory, subject matter expertise, experience in conducting research that leads to progress in measurement, skill in data analysis, ability to communicate results, and in some cases, sheer luck. Certainly, this is true of the measurement of quality of life and suffering. The work reported here might be characterized as “a running start,” as it offers a typology of suffering grounded in both conceptual and colloquial considerations. But mostly, several prototype measures of suffering have been applied with relevant data. The hope is that others will also take up the challenge of pioneering reliable and valid measures of human suffering and related concepts that will enhance quality of life research. While much work needs to be done on the measurement of suffering alone, eventually it may be possible to combine suffering and other negative attributes of quality of life with indicators of positive attributes of life’s quality.

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## Tables and Figures

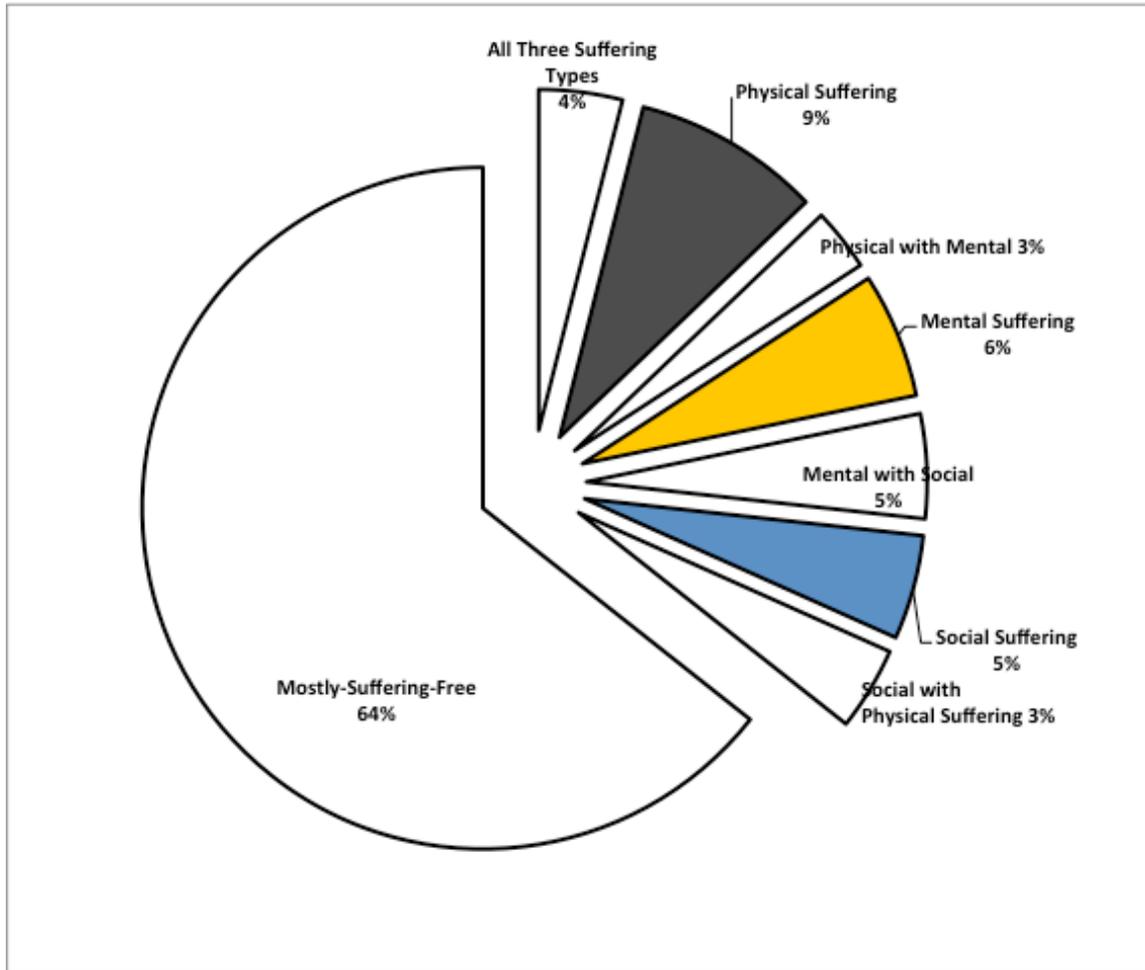
**Table 1.** A proposed typology of global suffering, prevalences with operational definitions\*

<b>Types of suffering</b>	<b>Prevalence in USA 2010**</b>	<b>Operational Definitions</b>
1.0 Physical (aka chronic pain)	19%	In past 3 months, had pain most or all days
1.0.1 Extreme pain	3%	Chronic pain feeling excruciating & unbearable
2.0 Mental/Affective (any)	14%	Having 1 or more of 4 types below
2.1 Depression	9%	Feeling depressed daily or weekly
2.0.1 Extreme pain	4%	Depression that makes one stay in bed
2.2 Anxiety	8%	Worried or anxious every day
1.0.1 Extreme anxiety	4%	Anxiety that sometimes makes it hard to breath
2.3 Existential suffering	5%	Feeling hopeless and purposeless
2.4 Grief	3%	Immobilizing loss, sorrow or heartbreak
2.5 Major mental illness	-	(Not yet defined)
3.0 Interpersonal suffering	-	E.g., unexpected divorce, victim of bullying
4.0 Social suffering	14%	E.g., poverty, or disability-based indignity
5.0 Total suffering	3%	Co-occurrence of pain, mental & social suffering

\* An earlier typology with data was published in Anderson (2014) using data from 2010 Integrated or National Health Interview Study in the United States in 2010, which is distributed by the Minnesota Population Center (<https://www.pop.umn.edu/>) N=6,011. The earlier typology also will appear in chapter 1 of Anderson (2015).

\*\* Prevalences overlap categories, thus they cannot be summed to 100%. Prevalence of any type of suffering in the study was estimated as 58%, however this represented only 36% of respondents. See Figure 1.

- The dash refers to a category that was not included in the prevalence analysis.



**Figure 1. Prevalence of Suffering Types and Joint Types for US Adults in 2010\***

\* An earlier typology chart with this data was published in Anderson (2014) using data from 2010 Integrated or National Health Interview Study in the United States in 2010, which is distributed by the Minnesota Population Center (<https://www.pop.umn.edu/>) N=6,011.



**Figure 2. Prevalence of Types of Suffering by Three Income Groups in USA, 2010\***  
 \*Source: Integrated Health Interview Study in the United States, which is distributed by the Minnesota Population Center (<https://www.pop.umn.edu/>) N=6,011.

**Table 2. Global Traumatic Suffering Estimates, 2010\***

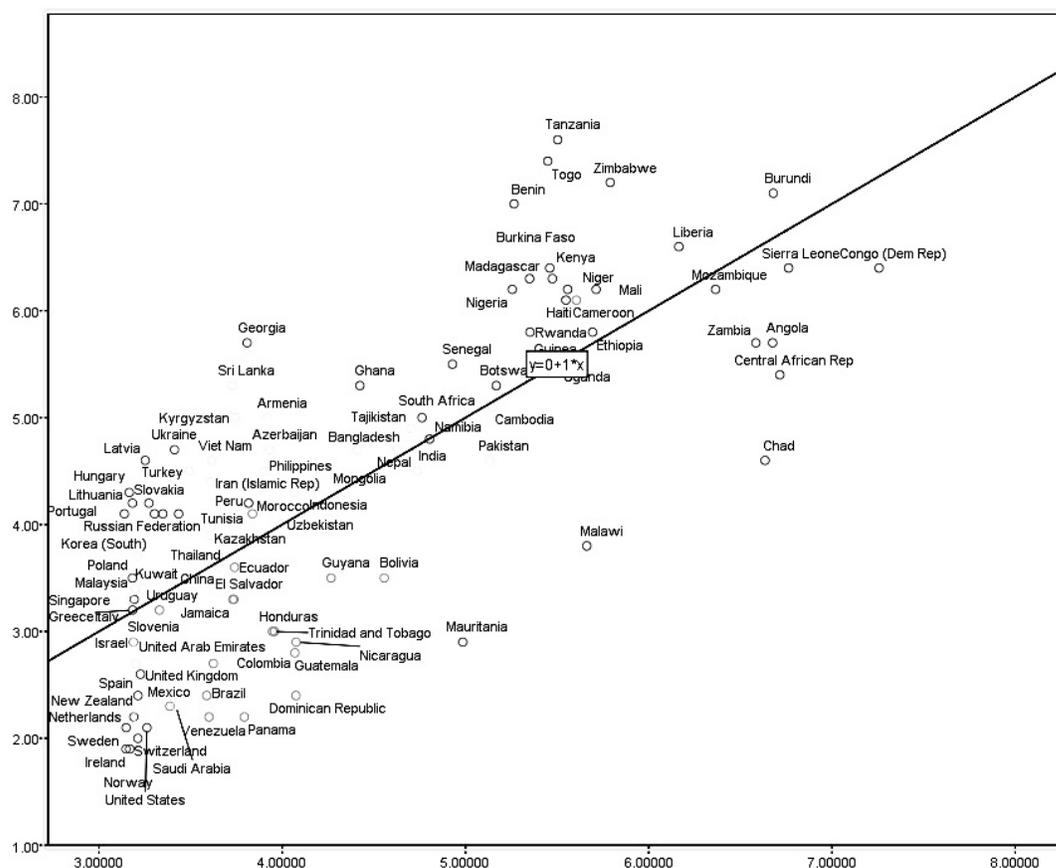
	Estimates
Unintended starvation (energy-deprived diets)	766,229,726
Non-lethal assaults (officially reported)	380,746,682
Natural disasters (deaths & displacements)+	257,272,601
HIV/AIDS prevalence	33,446,568
Suicides and attempted suicides++	20,000,000
Needless deaths from non-infectious diseases#	14,281,370
Pollution-related deaths	5,030,203
Homicides	302,093
Civil war deaths	103,437
Poverty (UNDP's multidimensional poverty)	1,587,702,000
Grand Total (44% of world population)	3,065,114,680

\*Source: United Nations Development Program (2010) Human Development Report

+Displacements were those relocated due to lost housing.

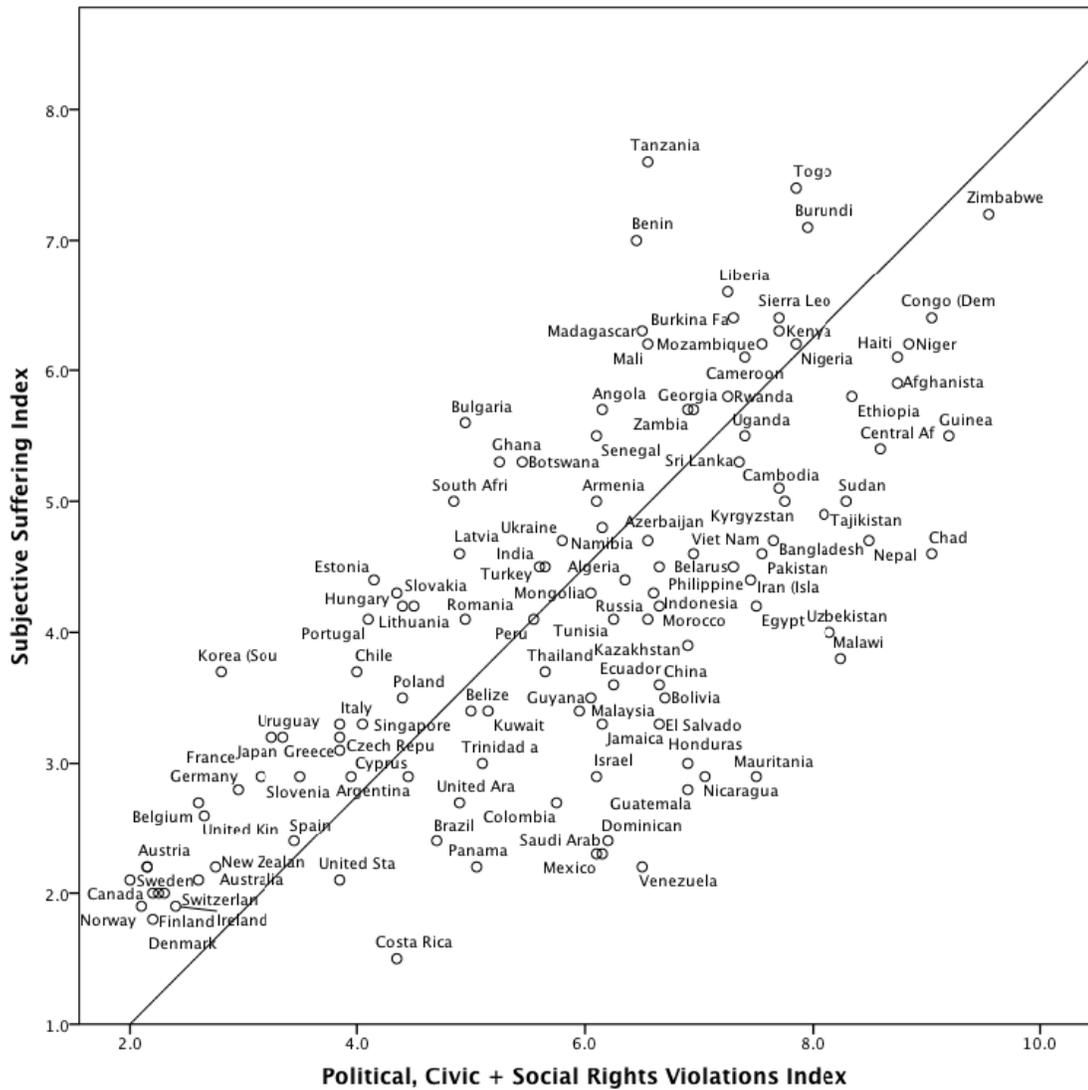
++WHO suicide database

#This death count was calculated from HDR (2010) data by comparing the top 40 (HDI) nations with the remaining 130 less developed nations.



**Figure 3.** Scatterplot of Subjective Suffering on the vertical Y-axis predicted by the objective suffering composite of four factors (hunger, poverty, child deaths, and HIV prevalence) distributed on the horizontal X-axis

Source: All data were obtained from the United Nations Development Program (2010) Human Development Report



**Figure 4.** Subjective Suffering as a Function of Political and Social Human Rights Violations  
 Source: Subjective Suffering Index data were obtained from the 2010 Human Rights Report, which acquired them from the Gallup World Poll. The Human Rights Violations Index was taken from the Fragile State Index (Fund for Peace 2011, 2014) as noted above.