Revista Colombiana de Anestesiología
Colombian Journal of Anesthesiology
www.revcolanest.com.co

Editorial

From the EQ-5D tool and the visual analog scale to happiness☆

Del instrumento EQ-5D y la escala visual análoga a la felicidad

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Quality-adjusted life years have been used widely in economic evaluation for many decades. More recently, the critical tools for this calculation, the EQ-5D form as well as the visual analog scale (VAS) used to assess health states identified in the EQ-5D, have been used for a different purpose: as indicators of happiness. Given that these tools were originally devised as an approach to usefulness, this newer practice raises questions that we will attempt to address below.

Traditional use

To start with, let us review how the VAS and EQ-5D were first defined. Despite the words "quality-adjusted", perhaps it would be more appropriate to refer to value-adjusted and not quality-adjusted. Indeed, the EQ-5D tool, rather than identify quality of life as used in other tools, was used to define a series of health states in a more objective way. In other words, the premise was that health conditions are not equal and each health state could have different associated value. Later, the value for each state was calculated in order to adjust life years in accordance with the value of each state. Several methodologies were proposed to calculate value. Considering that the definition of value is associated with the notion of choice under uncertainty, the best methodology was the standard option consisting on deriving value from the choice between risk situations and perfect uncertainty. A second option was the Time-trade-off, where the interviewee selects between two certain situations: one of perfect health and a different one. Given that it involves choice but not risk, it is not a matter of value, strictly speaking. The third method does not take place in a context of choice or uncertainty and, therefore, it does not really derive value. Although it is the weakest of the three in methodological terms, the VAS has gained popularity because, unlike the others, it is easy to apply even by mail without the need for an interviewer, thus reducing costs. It has been demonstrated that the results of the three assessment methodologies do not converge.[1,2]

The measurement of happiness

Recently, the EQ-5D VAS has been used as a measurement of happiness. In 2006, the worldwide Gallup poll[3] asked about the health dimensions contained in the EQ-5D and about satisfaction with health states on a scale of 1–10. It asked also about considerations associated with wellbeing such as emotion and mood (Yesterday, were you calm, sad, bored, happy, etc.?); satisfaction in life (Are you satisfied with your life? Did you eat well yesterday?); and philosophy of life (Do you feel that your life has an important purpose or meaning? Do you have a talent of any type or something that you do better than most people you know?) The module on wellbeing dealt explicitly with happiness. Although the health module was separate, the question on satisfaction with the current health state was associated in some way with the more general questions on satisfaction contained in the wellbeing module.

☆ Please cite this article as: Chicaíza-Becerra LA, García-Molina M. Del instrumento EQ-5D y la escala visual análoga a la felicidad. Rev Colomb Anestesiol. 2014;42:1–3.

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Later, the analysis related wellbeing with other aspects such as income level and health.[4] A weak relationship was found between life expectancy for the country and satisfaction with life in some countries (sub-Saharan Africa), but not so in others (old Soviet Union). No relationship was found between satisfaction in life and the prevalence of HIV. Satisfaction with the current health state showed a correlation with trust in the health system. Caution is advised in this regard because trust is a subjective variable, which does not necessarily indicate, objectively, how good the health system is.

An important question was to what extent overall satisfaction with life was explained by satisfaction in more specific aspects such as satisfaction with the health state.[5] In the Gallup poll, satisfaction with the health state was a significant variable and its inclusion eliminated the significance of life expectancy and economic growth.[4]

In Latin America, an expanded version of the Gallup poll.[6] sought to identify quality of life by asking about personal views on happiness, satisfaction with life, and satisfaction with living standard, health, education, employment, etc., and about the country's situation, the health system, etc. The subjective results were compared with objective indicators. The results on satisfaction in the different areas were interpreted in terms of happiness. The main result of this work was the aspirations paradox, according to which the poor are more content with their situation than the rich because they do not have as much access to information and, consequently, their aspirations are less.

The interpretation of satisfaction with the health state in terms of happiness was reinforced in later studies that looked at the relationship between the dimensions of the EQ-5D and satisfaction with health and life in Latin America and in Colombia.[7,8]

Happiness?

Does the health VAS measure happiness? The EQ-5D VAS tried to measure value, although with some difficulty. However, its properties from that point of view are known. For example, it is known that the visual analog scale provides systematically lower values than the short exchange and the standard approach. When used to measure value, the VAS in the general population is known to measure hypothetical states, and when it is given to patients, scores are higher.

Higher scores with patients point to a critical elements that needs to be considered: adaptation. After the initial shock, people who experience a disease have to adapt. This phenomenon manifests in many different ways, but one of them may be particularly insightful: faced with a disability, an individual may shift attention to areas that he/she had never considered before and experiment with new sources of wellbeing. A paraplegic individual, for example, may shift interest in sports to an interest in music and, as a result, the rating of his/her situation, once it is experienced, is not as low as it would have been expected before having the disability.[9] The result is that, even ratings from patients in extreme situations such as paraplegia or quadriplegia are much higher than would be expected given the ratings of the general population for those same situations.[10]

Note that human ability to adapt to adversity does not mean, for example, that the system is working well or that the situation at hand is desirable.

These elements give relevance to the question of what it is that these questions measure. Can happiness be equated with quality of life, value or personal views? Traditionally, studies that have measured happiness asked specifically about happiness or its components, and this type of analysis has also been conducted in Latin America.[11,12] One of the disadvantages of asking specifically about happiness is that the definition of happiness may change from one individual to another. Asking about other elements at the same time makes happiness appear more related to the elements that catch the respondent's attention at the time of answering the questions. For example, if there are questions about health state followed immediately by a question on satisfaction with life or even happiness, it may be that the answer is influenced by the answer to the previous questions. On the other hand, not asking using the term happiness directly may result in an answer that does not take into consideration those elements that may be important for people when thinking about happiness, as is the case, for example, with personal relationships. The problem lies in the fact that happiness is a multidimensional concept that is not necessarily captured in a single element.[13]

Experience and recall

Happiness experienced and happiness recalled are two different things for the same person. Recalled perception of pain during colonoscopy does not necessarily match the experience and appears to depend more on the peak of pain and pain at the end of the process.[14] If the process is protracted, the person suffers for a longer period of time and the experience is worse, although the memory is better.[15]

Therefore, it matters if the questions refer to the experience or the memory of it. Some methods used for measuring the experience of happiness (like asking randomly at different times of the day) are invasive because they interrupt the experience. An alternative is to use the day reconstruction method (Kahneman & Dolan). The recent trend has been to attach more importance to the happiness experienced than to the memory of happiness, but it may happen that measurements designed to improve experienced happiness may show a lower score for the memory of happiness.

How useful is the EQ-5D within this framework? Perhaps not very useful. The EQ-5D is a good tool for its original goal of identifying health states, but it does not tell anything about happiness. The VAS, applied to the person's own health situation at the time when the question is asked, helps measure the health state experience, but not happiness in general terms. When applied to hypothetical situations, it acts as an approach to recall or imagination, but does not measure happiness.

The questions that emerge are interesting but there are many interpretation challenges. There seems to be a lot to be done still in order to arrive at practical applications. Given the current state of the studies, it is safer to use the EQ-5D as a means to estimate quality-adjusted life years in cost-value

assessments. In other situations, its use is recommended only in the context of experimental research.

Funding

None.

Conflict of interest

The authors declare no conflict of interest.

REFERENCES

1. García-Molina M, Chicaíza L, Rincón CJ, Romano G. International comparisons of EQ-5D health-states valuations. Value Health. 2012;12:A309.
2. Chicaíza LA, García-Molina M, Romano G. Años de vida ajustados por calidad: evolución, fundamentos e implicaciones. Documentos FCE-CID Escuela de Economía. 2013;47:1–14 [Consulted May 2013]. Available at: http://ssrn.com/abstract=2261511
3. Gallup World Poll (GWP); 2007 [Consulted May 2013]. Available at: http://www.gallup.com/consulting/worldpoll/24046/about.aspx
4. Deaton A. Income health, and well-being around the world: evidence from the Gallup World Poll. J Econ Perspect. 2008;22:53–72.
5. Easterlin R. A life-cycle happiness and its sources: intersections of psychology economics and demography. J Econ Psychol. 2006;27:463–82.
6. Lora E. Calidad de vida; más allá de los hechos. Washington: BID, FCE; 2008.
7. Graham C, Higuera L, Lora E. Which health conditions cause the most unhappiness? Health Econ. 2011;20:1431–47.
8. Flórez CE, Castañeda C. Acceso y uso de servicios de salud. In: Colombia en movimiento. Bogotá: CEDE; 2011. p. 65–79.
9. Dolan P, Kahneman D. Interpretations of utility and their implications for the valuations of health. Econ J. 2008;118:215–34.
10. Brickman P, Coates D, Janoff-Bulman R. Lottery winners and accident victims: is happiness relative? J Pers Soc Psychol. 1978;36:917–27.
11. Cid A, Ferrés D, Rossi M. Testing happiness hypothesis among the elderly. Cuadernos de Economía. 2008;27:23–45.
12. Gerstenblüth M, Melgar N, Rossi M. Ingreso y desigualdad. ¿Cómo afectan a la felicidad en América Latina? Cuadernos de Economía. 2013;32:165–80.
13. MacKerron G. Happiness economics from 35,000 feet. J Econ Surv. 2012;26:705–35.
14. Redelmeier DA, Katz J, Kahneman D. Memories of colonoscopy: a randomized trial. Pain. 2003;104:187–94.
15. Redelmeier DA, Kahneman D. Patients' memories of painful medical treatments: real-time and retrospective evaluations of two minimal invasive procedures. Pain. 1996;66:3–8.