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Original article

Measuring the impact of alcohol-related disorders on quality of life through general population preferences

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ABSTRACT

Objective: To estimate the intangible effects of alcohol misuse on the drinker's quality of life, based on general population preferences
Methods: The most important effects (dimensions) were identified by means of two focus groups conducted with patients and specialists. The levels of these dimensions were combined to yield different scenarios. A sample of 300 people taken from the general Spanish population evaluated a subset of these scenarios, selected by using a fractional factorial design. We used the probability lottery equivalent method to derive the utility score for the evaluated scenarios, and the random-effects regression model to estimate the relative importance of each dimension and to derive the utility score for the rest of scenarios not directly evaluated.
Results: Four main dimensions were identified (family, physical health, psychological health and social) and divided into three levels of intensity. We found a wide variation in the utilities associated with the scenarios directly evaluated (ranging from 0.09 to 0.78). The dimensions with the greatest relative importance were physical health (36.4%) and family consequences (31.3%), followed by psychological (20.5%) and social consequences (11.8%).
Conclusions: Our findings confirm the benefits of adopting a heterogeneous approach to measure the effects of alcohol misuse. The estimated utilities could have both clinical and economic applications.

Medición del impacto de los trastornos relacionados con el alcohol en la calidad de vida a partir de las preferencias sociales

Palabras clave:
Trastornos relacionados con el alcohol
Años de vida ajustados por calidad
Calidad de vida
Alcoholismo
Grupos focales

RESUMEN

Objetivo: Estimar los efectos intangibles del consumo abusivo de alcohol en la calidad de vida del bebedor, según las preferencias sociales.
Métodos: Los efectos más relevantes se identificaron mediante dos grupos focales realizados con pacientes y especialistas. Los niveles de estas dimensiones se combinaron para producir diferentes escenarios. Una muestra de 300 personas de la población general española evaluó un subconjunto de estos escenarios, seleccionados mediante un diseño factorial fraccional. Se utilizó el método de lotería equivalente para obtener la utilidad asociada a cada uno de los escenarios evaluados. Para estimar la importancia relativa de cada dimensión y obtener la utilidad para el resto de escenarios no evaluados se estimó una regresión con efectos aleatorios.
Resultados: Se identificaron cuatro efectos intangibles relevantes (familia, salud física, salud psicológica y social) con tres niveles de intensidad. Las utilidades asociadas a cada uno de los escenarios evaluados presentan una amplia variación (entre 0,09 y 0,78). La dimensión con mayor importancia relativa son las consecuencias en la salud física (36,4%) y las consecuencias en la familia (31,3%), seguidas de las consecuencias psicológicas (20,5%) y las sociales (11,8%).
Conclusiones: Nuestros resultados confirman la conveniencia de adoptar un enfoque heterogéneo para medir los efectos del abuso del alcohol. Las utilidades estimadas podrían tener aplicaciones tanto clínicas como económicas.

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Introduction

Alcohol-related disorders have multiple intangible adverse effects —such as suffering, loss of healthy living, or the deterioration of social and family relationships— that lead to a reduction in the drinker's quality of life.[1] Traditionally alcohol-related disorders were divided into two separate categories, abuse and dependence. However, the last edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM–5)[2] combines these categories into a single disorder measured on a continuum from mild to severe. In adopting this approach, we expect the adverse effects of alcohol misuse on the quality of life (QoL) to increase as we move along this continuum of severity. Although there is no universally accepted definition for the concept of QoL, ample literature identifies several dimensions that may be affected.[3,4] In the empirical literature, the measurement of these effects has been approached in different ways. The majority of the studies quantifying the effect of alcohol misuse on QoL have devoted their attention to measure the health-related quality of life (HRQL), using non preference-based generic instruments such as the 36-Item Short Form Health Survey (SF-36) and its variants.[4–10] However, these instruments are not appropriate for economic evaluations, in other words, they cannot be used to prioritize different health care programs and thus to assist decision-making about the allocation of health resources.[11]

For economic evaluations, the recommended approach for measuring HRQL is to use preference-based measures, quality-adjusted life year (QALY) being the most widely used. To estimate the number of QALYs lost because of alcohol misuse (or gained from an intervention), life years are weighted by preference weights (or utilities), where zero indicates death and one indicates good health (with a negative value indicating states worse than death). In studies on alcoholism, utilities are usually obtained to measure HRQL changes in response to a treatment or intervention, using generic HRQL scales, primarily the EuroQol-5D[12–14] or the Short Form 6D.[15,16] Another approach (also using generic scales), involves conducting population studies,[17–20] which seek to estimate the HRQL lost from alcohol misuse by using other groups of general population as a control group. However, the generic scales cited focus on evaluating the effects of alcohol misuse on HRQL and they ignore other intangible effects (family breakdown, social isolation, etc.), which may even have a greater impact on QoL than do health problems.[3,4,21,22] This narrow focus can lead to a large underestimation of the impact of different scenarios of alcohol misuse and could explain the lack of responsiveness of these generic HRQL scales in detecting meaningful changes in QoL found in the empirical literature.[18–20,14] In this line of reasoning, the suitability of these generic scales to measure the impact of alcohol misuse has been questioned.[23]

The few studies that have quantified the impact on QoL in a broad sense, using preference-based measures and estimating directly utilities for alcohol misuse profiles, have obtained a significant negative impact.[24–26] However, these studies have important limitations. Stouthard et al.[26] and Sanderson et al.[25] obtain the utility weights from the preferences of a small sample of physicians (less than 50). On the contrary, economic evaluation manuals recommend eliciting preferences from a representative sample of the general population.[11] In addition, the study of Stouhard et al.[26] does not directly estimate the weights for alcohol dependence (these weights were elicited from interpolations of others disease stages directly evaluated). Finally, the methodology used in these studies does not allow to identify and estimate the relative importance of QoL dimensions that are more affected by alcohol abuse.

This pilot study provides new empirical evidence on the loss of QoL associated with alcohol misuse, trying to overcome the limitations of previous studies. First, we estimate not only the impact on HRQL (as the generic HRQL scales do) but also other intangible effects, closely related to alcohol misuse. We focus on evaluating intangible effects because they have received the least attention in the literature and because the World Health Organization advocates "that they be explicitly separated from financial costs" (e.g., lost productivity or health care costs).[1] Second, we consider alcohol-related problems along a continuum of severity and therefore, although most evaluated states correspond to situations of alcohol dependence, we do not assume an explicit separation between abuse and dependence. The methodology proposed is capable of both identifying this heterogeneity and assigning values to several patient profiles. Third, we estimate utility indices based on a representative sample of the general population. Fourth, the method used to elicit preferences, the "probability lottery-equivalent" method, has only recently been applied in health economics, but it seems to mitigate some of the problems encountered when using the "standard gamble" method. Finally, we identify the relative importance of each dimension.

Methods

Focus groups and sample

The objective of our study's initial phase was to identify the most relevant consequences (dimensions) of alcohol misuse on the drinker's QoL. Dimensions were identified by means of two focus groups conducted with patients and specialists, both recruited from an alcoholism treatment unit in Galicia, a region in northwest Spain (see supplementary online Appendix 1). Briefly, we began by requesting the participants to identify what they considered the most negative consequences of alcohol misuse in a drinker's life. These consequences were then discussed within each group, grouping those reflecting similar outcomes. Finally, each participant ordered the assembled consequences in terms of their importance. We performed a subsequent interview with the specialist group to discuss the levels of dimensions and the clustering of some of them. As result of this process the following (ordered) list of consequences were obtained: family consequences, physical health consequences, psychological consequences, social consequences, labor problems, legal problems and health expenditures. Both groups listed these consequences; the only exception was health expenditures, which was mentioned only by the specialists. We selected the first four dimensions because these were considered the most relevant by participants in both groups and clearly captured the intangible effects of alcohol misuse. Table 1 lists the dimensions and the levels selected.

Altogether, the different levels of each dimension yield 81 hypothetical scenarios. As usual, we assume that the utility of each scenario can be represented by an additive model without interactions. This assumption allows us to reduce the total number of states (cards) to be evaluated to nine by using an orthogonal, fractional factorial design. To evaluate the nine cards, face-to-face interviews were conducted with individuals from a sample of 300 people living in Galicia. The sample was randomly selected using stratified random sampling adjusted for gender and age quotas.

Elicitation procedure

We used the probability lottery–equivalent method,[27,28] a variant of the lottery-equivalent method,[29] to derive utility weights. There is empirical evidence suggesting that this method mitigates the overvaluation of health states from the "standard gamble" approach.[28,30] Another advantage of our approach is that the same procedure can be used to estimate utilities both of states better and worse than dead.