



# How does participating in a deliberative citizens panel on healthcare priority setting influence the views of participants?



Vivian Reckers-Droog<sup>a,\*</sup>, Maarten Jansen<sup>b</sup>, Leon Bijlmakers<sup>b</sup>, Rob Baltussen<sup>b</sup>, Werner Brouwer<sup>a,c</sup>, Job van Exel<sup>a,c</sup>

<sup>a</sup> Erasmus School of Health Policy & Management, Erasmus University Rotterdam, the Netherlands

<sup>b</sup> Radboud Institute for Health Sciences, Radboudumc, Nijmegen, the Netherlands

<sup>c</sup> Erasmus School of Economics, Erasmus University Rotterdam, the Netherlands

## ARTICLE INFO

### Article history:

Received 28 January 2019

Received in revised form 14 October 2019

Accepted 28 November 2019

### Keywords:

Healthcare  
Resource allocation  
Priority setting  
Societal views  
Public deliberation  
Q methodology

## ABSTRACT

A deliberative citizens panel was held to obtain insight into criteria considered relevant for healthcare priority setting in the Netherlands. Our aim was to examine whether and how panel participation influenced participants' views on this topic. Participants ( $n = 24$ ) deliberated on eight reimbursement cases in September and October, 2017. Using Q methodology, we identified three distinct viewpoints before ( $T_0$ ) and after ( $T_1$ ) panel participation. At  $T_0$ , viewpoint 1 emphasised that access to healthcare is a right and that prioritisation should be based solely on patients' needs. Viewpoint 2 acknowledged scarcity of resources and emphasised the importance of treatment-related health gains. Viewpoint 3 focused on helping those in need, favouring younger patients, patients with a family, and treating diseases that heavily burden the families of patients. At  $T_1$ , viewpoint 1 had become less opposed to prioritisation and more considerate of costs. Viewpoint 2 supported out-of-pocket payments more strongly. A new viewpoint 3 emerged that emphasised the importance of cost-effectiveness and that prioritisation should consider patient characteristics, such as their age. Participants' views partly remained stable, specifically regarding equal access and prioritisation based on need and health gains. Notable changes concerned increased support for prioritisation, consideration of costs, and cost-effectiveness. Further research into the effects of deliberative methods is required to better understand how they may contribute to the legitimacy of and public support for allocation decisions in healthcare.

© 2019 The Author(s). Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

Priority setting in the allocation of healthcare resources is inevitable due to the increasing demand for healthcare and resulting pressure on limited budgets. Different principles have been proposed for informing allocation decisions, including the principles of maximising health and prioritising those who are worse off in terms of health [1,2]. The proposed principles to some extent all reflect a shared understanding of distributive justice; however, none addresses completely the complex and value-laden problems that arise from the need to set priorities [1,3–5]. For example, some have argued that these principles insufficiently reflect public views and preferences concerning the allocation of scarce resources [6–9]. A considerable part of the public even opposes priority setting alto-

gether and considers access to healthcare a right to which patients are entitled without exception or restriction [10–12]. Those who do support priority setting hold different, sometimes conflicting, views about the criteria that should be taken into account when setting priorities [6–9]. This heterogeneity of public views may partly explain why the outcomes of allocation decisions at times lead to public debate and controversy [12].

In a time when the public demands greater transparency and accountability from their governments and increasingly seeks opportunities to actively participate in shaping the policies that affect their lives [13], it has been argued that allocation decisions in healthcare could be improved by considering preferences from the public that are evidence-informed and elicited by means of rational democratic deliberations [3,13–15]. Such deliberative methods aim to meet the demand for a fair, legitimate, and publically transparent way of decision making and may increase support for the outcomes of such decisions as they are more informed [3,15–17]. Examples of deliberative methods include deliberative focus groups, citizens juries, and citizens panels [17–20] that all share the following

\* Corresponding author at: Erasmus University Rotterdam, Erasmus School of Health Policy & Management, P.O. Box 1738, 3000 DR Rotterdam, the Netherlands.  
E-mail address: [reckers@eshpm.eur.nl](mailto:reckers@eshpm.eur.nl) (V. Reckers-Droog).

characteristics: (i) the formation of a small group of citizens who represent a larger population based on predefined characteristics, (ii) one or more meetings about the issue of interest, (iii) the preparation and dissemination of background information concerning the issue of interest, (iv) the involvement of experts to either inform the citizens or answer their questions about the issue of interest, and (v) the formulation of a set of recommendations or proposals based on the participants' deliberations [17].

Deliberative methods are increasingly applied to inform allocation decisions in healthcare, even though they are generally more time-consuming, labour-intensive, and expensive than non-deliberative methods (e.g. preference elicitation by means of surveys) [21], and very little is known about their effect. For example, empirical evidence concerning their effect on allocation decisions and the views and preferences of participants is scarce [17–22].

In the autumn of 2017, a deliberative citizens panel was held to obtain insight into participants' views and preferences concerning healthcare priority setting and identify the criteria they considered relevant for decisions concerning the composition of the basic benefits package of the health-insurance system in the Netherlands [23,24]. Health insurance is mandatory for all inhabitants of the Netherlands and the basic benefits package covers a broad range of curative and preventive treatments to protect citizens against catastrophic healthcare spending. Although in some countries deliberative citizens panels are more frequently applied, e.g. the citizens council applied by the National Institute for Health and Care Excellence in the United Kingdom (UK) [25], this panel was the first to be applied in the Netherlands in the context of healthcare priority setting. A detailed description of the applied deliberative approach and results of the panel can be found in Bijlmakers et al. [24]. The aim of the current study was to examine whether and how panel participation influenced participants' views on healthcare priority setting. To meet this aim, we used Q methodology to investigate the views among participants before and after they participated in the panel. This methodology is increasingly applied in health services research [7,26] and to identify and describe public views on healthcare priority setting [e.g. 6–9]. In the current study, we extended previous applications of this methodology to examine changes in participants' views over time. The application of Q methodology enabled us to combine aspects of quantitative and qualitative methods to systematically examine whether and how views changed at the group level as well as the extent to which individual participants still identified with their initial viewpoints after the panel. With this study, we aim to contribute to the existing literature on the effect of applying deliberative methods for informing allocation decisions in healthcare. The approach and results of this study may be of interest to public authorities and organisations in the healthcare sector as well as in other sectors that apply, or consider applying, deliberative methods in the context of policy development and evaluation. Furthermore, the results of this study provide insight into the possible additional value of applying deliberative methods in the context of healthcare priority setting.

## 2. Methods

### 2.1. Citizens panel

Twenty-four citizens were recruited for panel participation by Motivaction; an independent research and consultancy agency in the Netherlands. The sampling was aimed at composing a varied, yet balanced, panel regarding age, gender, geographical spread, and eight 'mentality groups'. Each of these groups represents a different set of shared values regarding work, leisure, and politics and has a distinct lifestyle and consumption pattern [24,27]. For more

information on the recruitment of participants and a description of the 'mentality groups', we refer the interested reader to Bijlmakers et al. [24] and Motivaction [27].

The panel met during three full weekends between September 16 and October 29, 2017. Two experienced moderators, who were employed by Motivaction, lead the panel's deliberations on eight reimbursement cases: dental (orthodontic) braces for children, medicines for patients with Alzheimer's disease, for patients with heartburn (pyrosis), and for children with Attention Deficit Hyperactivity Disorder, the orphan drug eculizumab for patients with atypical Hemolytic Uremic Syndrome (aHUS), a total body scan, bariatric surgery and prevention for patients with obesity, and a hip replacement for elderly patients [24]. These cases concern a broad range of health technologies and patient populations and were selected to represent the variety of criteria, arguments, dilemmas, and societal values that the panel could deem relevant for setting priorities [23,24]. The first four cases were discussed during the first weekend and the latter four during the second weekend. Each case was introduced with a short video in which information was provided about the prevalence, symptoms, and course of the disease as well as the available treatment options. After watching the video, participants read written case descriptions individually and deliberated on them in small groups, followed by plenary deliberations. During the third weekend, participants were asked to prioritise the eight cases for reimbursement and discuss the trade-off between the criteria they deemed relevant for setting these priorities. In three separate plenary sessions that were held during the second and third weekend, participants were given the opportunity to discuss their questions about medical, ethical, and economic aspects of healthcare priority setting with three experts on these topics who also had expertise on the reimbursement process in the Netherlands. These experts were instructed to answer participants' questions based on their professional knowledge and experience, but not divulge their personal views on this topic. More information on the selection of the reimbursement cases and a detailed overview of the programme of the panel can be found in Bijlmakers et al. [24].

On September 4, i.e. two weeks before the panel commenced, an information meeting was held during which the participants received general information about the topic, objective, and procedure of the panel. The provided information was kept sparse to avoid influencing the participants before the start of the panel [24]. After the first weekend, the participants received a brochure with information about increasing healthcare expenditures, the organisation and financial structure of the Dutch healthcare system, and how healthcare priorities are currently set in the Netherlands. This information was provided to facilitate more in-depth deliberations during the second and third weekend of the panel [24].

### 2.2. Approach

Our study was conducted in three consecutive steps common to Q methodology studies [26]. First, we developed a comprehensive set of statements relating to the topic of healthcare priority setting in the Netherlands. Second, we collected data by administering the same statement-ranking exercise twice: before the participants received the information package during the information meeting and directly after the final panel meeting. Third, we analysed the collected data to examine possible changes in participants' views during the course of the panel. We describe the steps in more detail below.

### 2.3. Statement set

We developed a structured statement set that was broadly representative of our topic of interest, and hence aimed to cover

all issues that participants could deem relevant for healthcare priority setting in the Netherlands. For this, we adopted the conceptual framework of the most recently conducted Q methodology study on healthcare priority setting in the Netherlands [9]. This study focused specifically on prioritising end-of-life care in the Netherlands [9] and its framework distinguished 20 characteristics that are categorised into six domains: characteristics of the patient, characteristics of the illness, characteristics of the treatment, health effects of treatment, broader effects of treatment, and moral principles. To better align this framework with our—more general—topic of interest, we additionally inspected the framework of a Q methodology study that focused more generally on healthcare priority setting in ten European countries, among which the Netherlands [7]. After considering the relevance of the characteristics included in these two frameworks for the current study, we removed statements concerning 'prior health consumption/previous health profile', 'distribution of fixed health gains/threshold effect', and 'capacity to benefit' from the first framework [9] and included statements concerning 'rarity of the disease', 'costs/budget impact of the treatment', and 'supplier-induced demand' from the second framework [7]. We then selected 25 statements from the first framework [9] and one statement from the second framework [7], and supplemented these with two statements from related Q methodology studies that were conducted in the UK [6,8]. In order to achieve a balanced statement set that covered all issues of interest to this study, we formulated seven additional statements based on criteria and considerations that policy makers in the Netherlands deem relevant in allocation decisions that were not yet reflected in the statement set [23,24,28,29]. Finally, we translated the statements into the Dutch language. Because the set was based on four previous carefully designed and piloted studies, no pilot test was conducted.

Table 3 in the results section includes the final set of 35 statements and their origin. The 20 characteristics in six domains and the associated statement numbers are presented in Appendix A.

#### 2.4. Data collection

All 24 participants in the citizens panel also participated in this study. This sample size was sufficient for the purpose of this analysis [26,30]. The participants completed the first statement-ranking exercise during the information meeting on September 4, 2017 ( $T_0$ ) and the second directly after the final panel meeting on October 29, 2017 ( $T_1$ ). Before performing the exercise, participants received an oral group instruction on how to perform the exercise from one of the researchers (MJ). They received a copy of these instructions on paper (see Appendix B), for reference. This researcher remained present during the exercise in case participants had any questions about the procedure. Subsequently, participants received a set of the 35 statements printed on cards, a sorting grid (see Appendix C), and a response sheet. Participants first read all statements and divided them into three piles ('agree', 'disagree', and 'neutral'). Then, they re-read the statements in the 'agree' pile, selected the two they agreed with most, and placed them in column 9 of the sorting grid, followed by placing the next three statements they then agreed with most in column 8 and so on until they finished this pile. Next, they followed the same procedure for the 'disagree' pile, starting with column 1, and finally placed the statements in the 'neutral' pile in the remaining open spots in the middle of the grid. After finishing the exercise, participants used the response sheet to explain in writing their motivation for placing the statements in the extreme positions of the grid, i.e. columns 1 and 9. The columns were presented to participants as being from 1 to 9 on the sorting grid to avoid imposing connotations of negative, neutral or positive to columns of the grid; however, we recoded the columns to -4 to +4 for the analysis of the data and interpretation of the viewpoints.

#### 2.5. Data analysis

We conducted a principal component analysis followed by oblimin rotation to identify groups of participants with highly (Pearson) correlated statement rankings at both time points separately. This type of oblique rotation method is typically used to allow for a non-orthogonal rotation. We selected the best number of factors from all possible factor solutions that were supported by the data by applying the criteria: (i) eigenvalues of factors > 1 and (ii) a minimum of two non-confounded 'exemplars' per factor. Exemplars are those participants with (i) a factor loading above the significance threshold of 0.33 ( $p < 0.05$ ; calculated as  $1.96/\sqrt{35}$ , where 35 is the number of statements) and (ii) for whom the square of the loading for a factor is larger than the sum of the square loadings for all other factors [30,31]. Based on inspections of the correlations between factors and the interpretation of the factors in each factor solution, we selected the factor solution that lead to the most intelligible reduction of the data. Subsequently, we computed factor arrays for each factor. These arrays represent how a participant with a correlation of 1 with a factor would have ranked the statements. We used the factor arrays, including the characterising and distinguishing statements, for interpreting the factors as viewpoints. Characterising statements are those that hold the positions -4, -3, +3, and +4 in the factor arrays, and as such represent the statements that participants with a specific viewpoint least and most agreed with. Distinguishing statements are those with a statistically significantly different position in a factor array from their position in the array of at least one other factor ( $p < 0.05$ ; calculated based on the absolute difference in z-scores of statements between the factor arrays). We used the verbatim quotes of exemplars that we obtained from the response sheets to help describe the viewpoints in the wording of the participants.

We examined changes in viewpoints in multiple ways. At the level of the viewpoints, we examined the correlations and the main similarities and differences between the viewpoints at  $T_0$  and  $T_1$ . At the level of the participants, we examined the extent to which participants associated themselves with the initial viewpoints, i.e. the viewpoints identified at  $T_0$ , after they participated in the panel (at  $T_1$ ). For this, we combined the data of  $T_1$  with the factor arrays of  $T_0$  and calculated the mean (SD) difference in correlation with the initial viewpoints between  $T_0$  and  $T_1$ . Furthermore, we examined the transitions between viewpoints made by exemplars over time and the extent to which the views of participants converged after the panel. We did this by examining the mean (SD) correlations of the statement rankings between participants at  $T_0$  and  $T_1$  and applying an F-test for small sample sizes to examine the difference in the associated variances.

We used Cohen's classification system for interpreting the obtained correlation coefficients [30]. In line with this system, we interpreted correlations below 0.30 as low, between 0.30 and 0.50 as moderate, and above 0.50 as high [32]. We used the 'qmethod' package in Rstudio 1.0.143 (Rstudio, Inc., Boston, MA, USA) for conducting the analyses [31].

#### 2.6. Ethics

The Committee on Research Involving Human Subjects of the Radboud University Medical Center reviewed and waived ethical approval for this study (reference 2017-3444).

### 3. Results

Tables 1 and 2 present the socio-demographic characteristics of participants and their factor loadings with the viewpoints at  $T_0$  and  $T_1$ , respectively.

**Table 1**  
Panel characteristics (n = 24).<sup>a</sup>

	n (%)	Mean (SD)	Min	Max
Age (Years)		44.5 (17.4)	20.0	72.0
Sex (Female)	12 (50.0)			
Education level <sup>b</sup>				
Middle	9 (37.5)			
High	15 (62.5)			

<sup>a</sup> Participants were distributed equally across the eight mentality groups and, therefore, this characteristic is omitted from the table.

<sup>b</sup> Middle = middle vocational and secondary school, High = higher vocational and academic education.

**Table 3** presents the factor arrays, including the characterising and distinguishing statements. Below, we describe the viewpoints before and after the panel and discuss the changes in viewpoints. We present the numbers of the most relevant statements within parenthesis with a hashtag (#), followed by their position in a factor array, e.g. (#1,+4). Distinguishing statements are presented with an additional asterisk, e.g. (#1,+4\*). Verbatim quotes of exemplars are presented within quotation marks, followed by their identification number, e.g. (id2).

### 3.1. Viewpoints before the panel

At T<sub>0</sub>, we identified three factors that together explained 61.6 % of the variance in the statement rankings. The correlations between the factors were low to moderate ( $\rho=0.14$  for 1 vs. 2,  $\rho=-0.01$  for 1 vs. 3,  $\rho=-0.30$  for 2 vs. 3). The factors had 12, eight, and three exemplars, respectively. Factor 3 had two positive exemplars (id9 and id10) and one negative exemplar (id8) and was, therefore, interpreted as being bipolar. One participant (id6) was statistically significantly associated with factor 1; however, did not meet the second criterion for being identified as an exemplar.

**Table 2**  
Factor loadings at T<sub>0</sub> and T<sub>1</sub> (n = 24).

id	Views at T <sub>0</sub>			Views at T <sub>1</sub>		
	1	2	3	1	2	3
1	0.74*	0.02	-0.28	0.85*	-0.17	0.10
2	0.72*	0.00	0.19	0.32	0.37	-0.33
3	0.50	0.55*	-0.06	0.16	0.67*	-0.35
4	0.58*	0.46	0.25	0.80*	0.14	0.27
5	0.94*	-0.20	-0.01	0.66*	0.14	-0.39
6	0.37	0.28	0.28	0.03	0.69*	-0.23
7	0.77*	0.21	-0.15	0.42	0.47	0.25
8	0.31	0.28	-0.52*	0.21	0.49*	0.10
9	-0.13	0.03	0.71*	0.12	0.14	0.54*
10	-0.01	-0.01	0.82*	0.14	-0.13	-0.22
11	-0.16	0.89*	0.10	0.13	0.73*	0.02
12	-0.09	0.79*	-0.18	-0.38	0.85*	0.01
13	0.81*	-0.04	0.21	0.62*	-0.03	-0.37
14	0.62*	-0.31	0.39	0.30	0.11	-0.73*
15	0.20	0.76*	0.02	0.59*	0.42	0.13
16	0.91*	-0.01	-0.17	0.60*	0.36	-0.01
17	0.75*	-0.13	0.04	0.40	0.05	0.63*
18	0.84*	0.06	0.00	0.86*	-0.08	-0.22
19	0.47	0.63*	0.07	0.18	0.83*	-0.03
20	0.25	0.48*	0.11	-0.02	0.78*	-0.03
21	-0.28	0.78*	-0.25	-0.13	0.73*	0.38
22	0.78*	-0.01	-0.14	0.85*	-0.05	0.03
23	0.05	0.68*	0.01	0.15	0.54	0.53
24	0.72*	0.22	0.13	0.47	0.26	-0.42
Explained variance (%)	33.6	19.2	8.8	22.6	22.5	11.1
Exemplars <sup>a</sup> (n)	12	8	3	8	8	3

<sup>a</sup> The factor loadings of exemplars are indicated with an asterisk (\*). These loadings meet the following two criteria: (i) the loading is above the significance threshold of 0.33 ( $p < 0.05$ , calculated as  $1.96/\sqrt{35}$ , where 35 is the number of statements) and (ii) the square of the loading for a factor is larger than the sum of the square loadings for all other factors [28,29].

### 3.1.1. Viewpoint 1

People with viewpoint 1 considered access to healthcare as a right and believed that everyone should have equal access to healthcare. According to people with this view access should solely be based on patients' need for care and not on their personal characteristics, such as their gender, age, ethnicity (#16,+3; #18,-3), lifestyle (#19,-4\*; #28,-4\*), or socio-economic status (#13,-3). "Everyone has a right to healthcare [and] personal characteristics are not important at all" (id7). As prioritisation in healthcare should be based on patients' need for care, "there should be no discrimination [between patients]" (id24). People with this view believed that healthcare costs should play no role in priority setting as "you cannot regard a life in an economic way" (id4). If there is a way of helping patients, it is morally wrong to deny them this treatment (#14,+3\*). People holding this view did not believe that a treatment should receive less priority if the total costs of treating a disease (for all patients) are high (#31,-3). Rather, if a treatment is costly in relation to its benefits, but is the only treatment available, it should still be provided (#21,+3\*). People with this view also believed that patients' choice for treatment should be supported, even if it is very costly in relation to its benefits (#11,+2\*). "Everyone has a right to healthcare; even when there is no or little treatment benefit you cannot deny treatment [to patients]!" (id13). They emphasised that you cannot put a price on life (#17,+4) and if it is possible to save a life, every effort should be made to do so (#29,+4). "Regardless of money, if it is possible, a life has to be saved" (id18).

### 3.1.2. Viewpoint 2

People with viewpoint 2 believed that everyone has a right to healthcare, but that this does not mean that everything can always be reimbursed (#25,+3\*). "Everyone is insured and has [...] a right to healthcare, but not everything can always be covered by the [public health] insurance" (id15). As "healthcare costs keep rising, there should be restricting measures" (id21). People with this view emphasised the importance of the effectiveness of treatments.

**Table 3**  
Factor arrays at T<sub>0</sub> and T<sub>1</sub>.

Statement	Views at T <sub>0</sub>			Views at T <sub>1</sub>		
	1	2	3	1	2	3
1 Younger people should be given priority over older people, because they haven't had their fair share of health yet. <sup>a</sup>	-2*	-3	+1	-2	-3	+2*
2 Children's health should be given priority over adults' health. <sup>a</sup>	-2*	-2	+4	-1*	-3*	+2*
3 Individual responsibility should not be taken into account because people don't always have control over their way of living. <sup>a</sup>	+1*	0*	-4*	+1*	-2	-2
4 The health system should be about looking after those patients in greatest need. <sup>a</sup>	0	0	-1	+1	0	+1
5 Priority should be given to those treatments that generate the most health. <sup>a</sup>	0*	+2*	-2*	+1	0	+3*
6 Priority should be given to restoring health to a level that is sufficient for people to participate in their usual activities. <sup>a</sup>	+1	+2	+1	+1	+2	0*
7 Priority should be given to preventive healthcare. <sup>c</sup>	+1	+4*	0	+2	+1	0*
8 Patients with a family should be prioritised because their treatments will benefit others as well as the patient themselves. <sup>a</sup>	-1	-2	+3*	-4	-4	0*
9 Treatments that are very costly in relation to their health benefits should not be reimbursed. <sup>a</sup>	-2	+1*	-1	-2*	-1*	+3*
10 The health system should restrict itself to treatments that have proven to bring about health gains. <sup>e</sup>	-1*	+1*	-4*	0	+1	+3*
11 We should support patients' choice for treatment, even if it is very costly in relation to its health benefits. <sup>a</sup>	+2*	-2	-2	0*	-2	-2
12 It's important to respect the wishes of patients who feel they should take every opportunity to extend their life. <sup>a</sup>	+2*	-3*	0*	+1*	-2	-2
13 Poorer people should be given priority because they don't have the same opportunities in life. <sup>a</sup>	-3	-4	+1*	-4*	-4*	-1*
14 If there is a way of helping patients, it is morally wrong to deny them this treatment. <sup>a</sup>	+3*	0	0	+4*	0*	-3*
15 If you choose to spend a lot of money on a specific patient group, you have to realise that there will be less money left for other patient groups. <sup>e</sup>	+1	+1	+2	+2	+3	+1
16 Access to healthcare should be based on need for care, not on patient characteristics, such as their gender, age, or ethnicity. <sup>a</sup>	+3	+2	0*	+4	+3	-3*
17 You can't put a price on life. <sup>a</sup>	+4	+1*	+4	+2*	0*	-4*
18 Priority should be given to younger people, because they may benefit from treatment for longer. <sup>a</sup>	-3	-4	+2*	-3	-3	+2*
19 People who live a healthy life should be prioritised over people with an unhealthy lifestyle. <sup>a</sup>	-4*	+1	+1	-1*	0	+1
20 People with a severe condition should be treated with priority over people with a non-severe condition. <sup>a</sup>	+2*	-1	-1	+2	-1*	+2
21 If a treatment is costly in relation to its health benefits, but the only treatment available, it should still be provided. <sup>a</sup>	+3*	-1	0	+3*	0**	-2*
22 There is no sense in saving lives if the quality of those lives will be really bad. <sup>a</sup>	0*	+2*	-3*	0*	+2*	+4*
23 There is no point in providing treatments that do not generate considerable health benefits. <sup>e</sup>	0*	+3*	-2*	0*	+1*	+4*
24 Treatment of illnesses that put a high burden on patients' families should receive priority. <sup>a</sup>	-1	-1	+3*	-2	-1	-1
25 Everyone has a right to healthcare, but this doesn't mean that everything can always be reimbursed. <sup>a</sup>	0	+3*	0	0	+3*	+1
26 At the end of life it is more important to provide a death with dignity than treatments that will only extend life for a short period of time. <sup>a</sup>	0*	+4*	-3*	0*	+4*	+1*
27 The health system should be about getting the greatest health benefit overall for the population. <sup>a</sup>	+1*	+3*	-1*	-1	+2*	0
28 People who are ill through no fault of their own should receive priority over people who in some way are responsible for their own illness. <sup>a</sup>	-4*	0*	+2*	-2	+1*	-1
29 If it is possible to save a life, every effort should be made to do so. <sup>a</sup>	+4	-3*	+3	+3*	-1	0
30 People can pay for inexpensive treatments out of pocket. <sup>e</sup>	-1	-1	-1	0	+4*	0
31 If the total costs of treating a disease (for all patients) are high, this treatment should receive less priority. <sup>e</sup>	-3	-1	-2	-1	-1	0
32 A treatment may cost more if it is not only beneficial for the patient but also for society. <sup>e</sup>	-1*	0*	+2*	-3	+1*	-3
33 Priority should be given to people with rare diseases, even when these diseases do not necessarily cause more health damage than more common ones. <sup>b</sup>	0*	-2	-3	-3	-2	-1
34 Medical tests for the early detection of diseases that often lead to unnecessary treatments should not be reimbursed. <sup>e</sup>	-2*	0	0	-1*	+2*	-4*
35 If a treatment is the only available treatment for a disease, it should be reimbursed. <sup>d</sup>	+2*	0	+1	+3*	0*	-2*

<sup>a</sup> Statement from Wouters et al. [9].<sup>b</sup> Statement from Van Exel et al. [7].<sup>c</sup> Statement from Baker et al. [6].<sup>d</sup> Statement from McHugh et al. [8].<sup>e</sup> Based on considerations that the Dutch Health Care Institute deemed relevant in the reimbursement cases.

\* Distinguishing statement, i.e. statement with a statistically significantly different position in a factor array from their position in the array of at least one other factor (p &lt; 0.05).

The health system should be about getting the greatest benefit overall for society (#27,+3\*) and there is no point in providing treatments that do not generate considerable health benefits (#23,+3\*). Accordingly, they support prioritisation based on treatment characteristics, such as the type and size of health gains from treatment, but like viewpoint 1, they oppose prioritisation based on patient characteristics, such as their age (#18,-4). They further emphasised that, at the end of life, it is more important to provide a death with dignity than treatments that may extend life only for a short period of time (#26,+4\*). They neither believed that, if it is possible to save a life, every effort should be made to do so (#29,-3\*) nor that it is important to respect the wishes of patients who feel they should take every opportunity to extend their life (#12,-3\*). They do believe that priority should be given to preventive healthcare (#7,+4\*), because "this can save a lot of money" (id12).

### 3.1.3. Viewpoint 3

People with viewpoint 3 were positively oriented towards prioritisation based on patient characteristics, such as their age. They

believed that children should be given priority over adults (#2,+4), because they may benefit from treatment longer (#18,+2\*). "Children hold the future and, if [...] a choice has to be made, the child is the first one entitled to receiving care" (id9). However, they opposed prioritisation based on lifestyle (#3,-4\*). People holding this view also found that broader treatment effects should be taken into consideration. They believed that treatment of illnesses that put a high burden on families of patients should receive priority (#24,+3\*), because treating these patients benefits them as well as others (#8,+3\*). Consequently, treatments that are beneficial for both the patient and society should be allowed to cost more (#32,+2\*). Although being positively oriented towards prioritisation in healthcare, they emphasised that you cannot put a price on life (#17,+4) and that, if it is possible to save a life, every effort should be made to do so (#29,+3). They believed there is a sense in saving lives, even if the quality of those lives will be really bad (#22,-3\*), and in providing treatments that do not generate considerable health gains (#23,-2\*).

In contrast, people who opposed this viewpoint were in favour of priority setting based on lifestyle (#3,–4\*). They also believed that priority should be given to those treatments that generate the most health #5,–2\*) and that the health system should restrict itself to treatments that have proven to bring about health gains (#10,–4\*). “If there is evidence that a treatment is effective, it should always be reimbursed” (id8).

### 3.2. Viewpoints after the panel

At T<sub>1</sub>, we identified three factors that together explained 56.3 % of the variance. The correlations between viewpoints were again low to moderate ( $\rho=0.30$  for 1 vs. 2,  $\rho=-0.18$  for 1 vs. 3,  $\rho=0.06$  for 2 vs. 3). The factors had eight, eight, and three exemplars, respectively. Factor 3 had two positive exemplars (id9 and id17) and one negative exemplar (id14) and was, therefore, interpreted as being bipolar. Four participants (id2, id7, id23, and id24) were ‘mixed loaders’ as they were statistically significantly associated with more than one factor. They did not meet the second criterion for being identified as exemplars. One participant (id10) was a ‘null loader’ as s/he was not statistically significantly associated with any of the factors.

Factors 1 and 2 at T<sub>1</sub> strongly resembled factors 1 and 2 at T<sub>0</sub>, with  $\rho=0.84$  and  $\rho=0.78$ , and hence can be regarded as slightly different manifestations of their corresponding viewpoints at T<sub>0</sub>. Therefore, we describe only the main similarities and differences between these viewpoints at T<sub>0</sub> and T<sub>1</sub>. The correlation between factors 3 at T<sub>0</sub> and T<sub>1</sub> was  $\rho=0.32$  and, therefore, we regard and describe factor 3 at T<sub>1</sub> as a newly emerged viewpoint.

#### 3.2.1. Viewpoint 1

Before the panel, people with viewpoint 1 emphasised equal access to care and that all treatments should be available for patients. Like people with this view before the panel, people with viewpoint 1 at T<sub>1</sub> believed that it is morally wrong to deny patients treatment, if there is a way of helping them (#14,+4\*) or if a treatment is the only one available (#35,+3\*). They also believed that access to care should be based on need and not on patient characteristics, such as their gender, age, ethnicity (#16,+4), or socio-economic status (#13,–4\*). However, people with this view less were strongly opposed to prioritisation based on lifestyle than those with viewpoint 1 at T<sub>0</sub> (#19,–1\*; #28,–2) and more strongly opposed to prioritisation based on characteristics of the illness, such as its rarity (#33,–3). They were notably more considerate of treatment costs. They believed less strongly that you cannot put a price on life (#17,+2\*) and that treatment should always be supported, even if it is very costly in relation to its health benefits (#11,0\*). They also believed less strongly that a treatment may cost more if it is not only beneficial for a patient but also for society (#32,–3).

#### 3.2.2. Viewpoint 2

Before the panel, people with viewpoint 2 believed that everyone has an equal right to healthcare and emphasised the importance of treatment effectiveness and efficiency. Like people with this view before the panel, people with viewpoint 2 at T<sub>1</sub> believed that everyone has a right to healthcare, but that this does not mean that everything can always be reimbursed (#25,+3\*). “There simply is a limited budget [and] choices have to be made” (id19). People with this view believed that access to care should be based on need for care and not on patient characteristics, such as their gender, age, ethnicity (#16,+3; +18,–3), or socio-economic status (#13,–4\*). However, people with this view were less strongly opposed to prioritisation based on lifestyle (#3,–2). They believed more strongly than those with viewpoint 2 at T<sub>0</sub> that inexpensive treatments can be paid out of pocket (#30,+4) as “it is relatively

cheap” (id6) and “does not really affect patients’ disposable income” (id12). They also believed more strongly that medical tests for the early detection of diseases that often lead to unnecessary treatments, should not be reimbursed (#34,+2\*) and that if you choose to spend a lot of money on a specific patient group, you have to realise there will be less money left for other groups (#15,+3). For people with this viewpoint, it was “more important that patients can die with dignity” (id20) than to extend life for a short period of time (#26,+4\*).

#### 3.2.3. Viewpoint 3

People with viewpoint 3 at T<sub>1</sub> believed that prioritisation should be based on the health effect of treatment and patient characteristics such as their gender, age, and ethnicity (#1,+2\*; #2,+2\*; #13,–1\*; #16,–3\*; #18,+2\*), and lifestyle (#3,–2; #19,+1; #28,–1). “People do have control over their lives, they cannot live recklessly and still benefit” (id9). According to people with this view, the health system should restrict itself to treatments that have proven to bring about health gains (#10,+3\*). They considered treatments that generate the most health to be the most important (#5,+3\*) and believed there is neither a point in providing treatments that do not generate significant health gains (#23,+4\*), nor in saving lives if the quality of those lives will be really bad (#22,+4\*). People with this view did not agree with the statements that you cannot put a price on life (#17,–4\*) and that it is morally wrong to deny patients treatment (#14,–3). They believed that treatments that are very costly in relation to their health gain should not be reimbursed (#9,+3\*). Nonetheless, they disagreed that medical tests for the early detection of diseases, that often lead to unnecessary treatments, should not be reimbursed (#34,–4\*).

In contrast, people who opposed this viewpoint believed that “costs are not the only thing that matters” (id14). If a treatment is the only available treatment for a disease it should be reimbursed and if it is not only beneficial for the patient but also for society it may cost more (#32,–3; #35,–2\*). “If costs need to be taken into account, people can pay for inexpensive treatments themselves in order to reimburse expensive treatments [from public funding]” (id14).

### 3.3. Association with initial viewpoints

The mean (SD) correlation between participants’ statement rankings at T<sub>0</sub> and T<sub>1</sub> was 0.57 (0.17), ranging from 0.19 to 0.78 (see Appendix D). For 18 participants the correlation between T<sub>0</sub> and T<sub>1</sub> was strong, for three moderate, and for another three low. Although none of the participants ranked the statements in exactly the same way, these relatively high correlations indicate that the views of most participants were largely similar before and after the panel.

Table 4 presents the extent to which participants associated themselves with the initial viewpoints, i.e. the viewpoints from before the panel (at T<sub>0</sub>), after they participated in the panel (at T<sub>1</sub>). These results show that most participants (n=19) correlated less strongly with the initial viewpoint 1 at T<sub>1</sub>, with a mean (SD) decrease in correlation of 0.08 (0.21). Of the participants, 17 correlated more strongly with the initial viewpoint 2 at T<sub>1</sub> with a mean (SD) increase in correlation of 0.07 (0.21) and 18 correlated less strongly with the initial viewpoint 3 at T<sub>1</sub>, with a mean (SD) decrease in correlation of 0.15 (0.22).

Table 5 presents the transitions between viewpoints made by exemplars over time. These results show that of the 12 exemplars with viewpoint 1 at T<sub>0</sub>, seven made no transition and still adhered to this viewpoint, two changed their view to viewpoint 3, and three were no longer associated with one of the viewpoints at T<sub>1</sub>. Of the eight exemplars with viewpoint 2, six made no transition and still adhered to this viewpoint, one changed his/her view to viewpoint 1,

**Table 4**

Factor loadings on the initial viewpoints (i.e. the views identified at  $T_0$ ) before (at  $T_0$ ) and after (at  $T_1$ ) the panel and the difference in factor loadings between the two time points ( $n = 24$ ).

id	View 1 at $T_0$			View 2 at $T_0$			View 3 at $T_0$		
	$T_0^a$	$T_1$	$T_1 - T_0$	$T_0^a$	$T_1$	$T_1 - T_0$	$T_0^a$	$T_1$	$T_1 - T_0$
1	0.74	0.73	-0.02	0.02	0.24	0.23	-0.28	-0.01	0.27
2	0.72	0.42	-0.30	0.00	0.12	0.12	0.19	0.04	-0.15
3	0.50	0.35	-0.15	0.55	0.57	0.02	-0.06	-0.11	-0.05
4	0.58	0.49	-0.09	0.46	0.28	-0.18	0.25	0.01	-0.25
5	0.94	0.80	-0.14	-0.20	0.22	0.42	-0.01	-0.10	-0.09
6	0.37	0.29	-0.08	0.28	0.49	0.22	0.28	-0.16	-0.44
7	0.77	0.37	-0.41	0.21	0.51	0.30	-0.15	-0.42	-0.27
8	0.31	0.28	-0.03	0.28	0.44	0.17	-0.52	-0.18	0.34
9	-0.13	-0.09	0.04	0.03	0.11	0.08	0.71	0.11	-0.59
10	-0.01	0.11	0.12	-0.01	-0.21	-0.20	0.82	0.77	-0.05
11	-0.16	0.26	0.42	0.89	0.59	-0.30	0.10	-0.04	-0.13
12	-0.09	-0.28	-0.19	0.79	0.46	-0.33	-0.18	-0.25	-0.07
13	0.81	0.73	-0.08	-0.04	0.03	0.07	0.21	0.14	-0.06
14	0.62	0.54	-0.08	-0.31	-0.13	0.18	0.39	0.40	0.01
15	0.20	0.59	0.39	0.76	0.53	-0.23	0.02	-0.23	-0.24
16	0.91	0.56	-0.34	-0.01	0.28	0.29	-0.17	-0.31	-0.14
17	0.75	0.19	-0.55	-0.13	0.14	0.28	0.04	-0.22	-0.26
18	0.84	0.71	-0.13	0.06	0.08	0.02	0.00	0.04	0.04
19	0.47	0.31	-0.16	0.63	0.71	0.08	0.07	-0.26	-0.33
20	0.25	0.19	-0.06	0.48	0.70	0.22	0.11	-0.27	-0.38
21	-0.28	-0.15	0.13	0.78	0.59	-0.19	-0.25	-0.24	0.01
22	0.78	0.68	-0.11	-0.01	0.24	0.24	-0.14	-0.12	0.02
23	0.05	0.04	-0.02	0.68	0.79	0.11	0.01	-0.28	-0.29
24	0.72	0.57	-0.16	0.22	0.19	-0.02	0.13	-0.34	-0.47
Mean (SD) difference	NA	NA	-0.08 (0.21)	NA	NA	0.07 (0.21)	NA	NA	-0.15 (0.22)

NA, Not Applicable.

<sup>a</sup> These factor loadings correspond with the factor loadings at  $T_0$  presented in Table 2.

**Table 5**

Transition matrix of exemplars' views.

		Views at $T_1$				Total
		1	2	3	No distinct viewpoint	
Views at $T_0$	1	7	NA	2	3	12
	2	1	6	NA	1	8
	3	NA	1	1	1	3
	No distinct viewpoint	NA	1	NA	NA	1
Total		8	8	3	5	24

NA, Not Applicable.

and one was no longer associated with one of the viewpoints at  $T_1$ . Of the three exemplars with viewpoint 3, none still adhered to this viewpoint at  $T_1$ . One exemplar changed his/her view to viewpoint 2, one changed his/her view to the new viewpoint 3, and one was no longer associated with one of the viewpoints at  $T_1$ .

### 3.4. Convergence between views

At  $T_0$ , the mean (SD) correlation between participants' statement rankings was 0.32 (0.28), ranging from -0.43 to 0.79. At  $T_1$ , this was 0.32 (0.25), ranging from -0.26 to 0.73. See Appendix E for the correlation matrices of participants' rankings at  $T_0$  and  $T_1$ . The difference in variance decreased marginally between the rankings at both time points ( $p < 0.001$ ), indicating some modest convergence between the views of participants over time.

## 4. Discussion

In this study, we examined whether and how participation in a deliberative panel influenced the views of participants on healthcare priority setting. Our main finding is that participants' views before and after the panel partly remained stable. There was a strong resemblance between two of the three views identified

before and after the panel, while the third view was distinctly different at both time points and 18 participants showed high correlation between their views at  $T_0$  and  $T_1$ . Equal access to healthcare, prioritisation based on patients' needs, and the relevance of the size and type of treatment benefits remained important during the course of the panel. We observed two notable changes. Firstly, support for prioritisation in healthcare generally seems to have increased after panel participation. Secondly, participants became more considerate of healthcare costs and of cost-effectiveness as a relevant criterion for setting priorities in healthcare.

To our knowledge, this study is one of the few to examine changes in views on healthcare priority setting through deliberation and the first to do so in the Netherlands. This limits us in our ability to compare our results with those of other studies. However, we can compare our results to two other studies that examined the effect of deliberation on views in the context of healthcare priority setting and two Q methodology studies that examined views on this topic in the Netherlands. Dolan et al. examined the effect of deliberation on views in a sample of 60 patients in the UK [21]. They observed a trend towards treating different patient groups more equally and participants who were initially unwilling to prioritise between patient groups remained so after deliberation. Abelson et al. examined the effect of deliberation in a sample of 46 participants in Canada, by using a controlled design [17]. They found that participants' views became more susceptible to change when more deliberation was introduced. Participants who changed their view did so in a similar direction, indicating that deliberation may lead to increased consensus among participants. Like in these studies, we found views opposing priority setting that remained relatively stable and that deliberation can lead to changes in viewpoints as well as to convergence between them. Van Exel et al. and Wouters et al. applied Q methodology to examine views on healthcare priority setting in the Netherlands. Like in these studies, we found that members of the public—before deliberation—generally hold a view on priority setting that emphasises the importance of equal access and disregards costs, while some recognise the scarcity of health-

care resources and are willing to accept certain criteria for setting priorities [7,9].

Before discussing the main strengths and limitations of our study, we would like to reflect on the bipolar nature of viewpoints 3 at  $T_0$  and  $T_1$ . Previous literature shows that there are different ways to deal with the computation and interpretation of bipolar factors. Some have argued that negative exemplars should be excluded from the computation of the factor array as this leads to a clearer, or purer, interpretation of the positive pole of the viewpoint [e.g. 33]. Others have argued that negative exemplars should be included in the computation of the factor array. Excluding them would lead to an unbalanced interpretation of the factor, as it no longer fully represents the views of the participants who define the factor (albeit on different sides of the pole) [e.g. 26]. Here, we followed the latter argument and chose to retain the negative exemplars in the computation of the factor arrays and the interpretation of the bipolar factors 3 at  $T_0$  and  $T_1$ . In order to explore the implications of this choice, we also inspected a solution excluding the negative exemplars. At  $T_0$ , the correlation between factors 3 with and without negative exemplars was 0.97, and hence these factors seem to portray the same view. At  $T_1$ , the correlation between factors 3 with and without negative exemplars was 0.65 and the positioning of some statements changed considerably. More specifically, compared to the interpretation presented in the Results section, the viewpoint would agree less strongly that personal characteristics should be taken into account in healthcare priority setting (#1,+1\*; #2,+1\*; #13,-4\*; #16,-1\*; #18,+1\*), and more strongly that individual responsibility is relevant (#3,-3\*) and inexpensive treatments can be paid out of pocket (#30,+4). Although excluding the negative exemplar leads to a slightly different viewpoint 3 at  $T_1$ , it remains a new view as compared to viewpoint 3 at  $T_0$  (excluding the negative exemplar;  $\rho = -0.03$ ) and, therefore, does not affect the main finding of our study.

The main strength of our study lies in the repeated use of Q methodology to examine in depth whether and how deliberation influences views on healthcare priority setting. To our knowledge, this approach has not been applied before, neither in nor outside the field of healthcare. Despite this strength, some limitations need to be discussed. Firstly, although we speak of the ‘influence’ of deliberation on views, no causal conclusions can be drawn in the absence of a control group. Secondly, the reimbursement cases may have primed the need for setting priorities and the relative importance of certain characteristics after the panel. We do note that the cases were carefully selected to represent all issues participants may have deemed relevant for setting priorities in a broad range of health technologies and patient populations. In that sense, they were aligned with the broad considerations represented in the statement set. Therefore, insofar the cases influenced the statement rankings after the panel, we think this influence is relevant in the context of this study. Finally, lower-educated people are not represented in the panel. However, this is only problematic if they differ from higher-educated people with respect to their susceptibility for deliberation. This we do not know and would be a relevant topic for further research.

Our study contributes to the limited literature on the effect of deliberative methods by giving insight into whether and how deliberation influences views on healthcare priority setting. Based on our results, some questions can be raised regarding the application of deliberative methods in the context of healthcare priority setting. For example, if the purpose is to inform allocation decisions, questions can be raised about the extent to which participants’ views over time still represent the actual views of the public. If the latter is desired in a panel, one could argue that the time anyone participates in such a panel should be restricted and that panel participants should regularly be replaced by other members of the public. However, if changes in views, as observed here, are interpreted as the

effect of learning and the purpose is that better informed and more considered views are represented in a panel, it can also be argued that panel members should participate in a panel for a longer period of time. In this case, one could also argue against the application of a deliberative citizens panel and in favour of better information provision to the public and more public debate, through which a similar learning effect perhaps can be achieved in members of the public at large. Notwithstanding, it is important to note that it is unlikely that any one of these approaches will lead to public consensus about allocation decisions. The recurrent finding in the literature that views on priority setting in healthcare differ and can conflict, together with the current finding that views remain diverse and only moderately converge after deliberation, suggests that any allocation decision will probably still be met with opposition from some group in society. Still, insight into the diversity of views is important to be able to understand the opposition that allocation decisions can bring about and how the outcomes of decisions, if so desired, can be better aligned with societal preferences.

We appreciate that, based on the design and results of the current study it remains unclear why exactly participants’ views changed and the extent to which their views changed under the influence of, for example, the other participants, information provided, and experts consulted. If changes do not result from the deliberations, but rather from external influences (e.g. from stakeholders, such as experts, patients, and industry), a deliberate panel may have limited additional value as these views usually are already represented in allocation decisions. The crucial question in this context is the purpose of applying deliberative panels. Is it for policy makers to consult citizens or give them a vote in allocation decisions, strengthen the appraisal of available evidence, increase the legitimacy of decisions, or rather to predict or increase public support for the outcomes of such decisions? Regardless of the purpose, it is important that citizens contribute in a way that is complementary to other stakeholders. Although answering these questions lies outside the scope of this paper, they are related to the issue that panel participants may experience (moderate) changes in their viewpoints over time. Moreover, they emphasise that further research is indispensable for applying these methods in a way that contributes to the legitimacy of and public support for allocation decisions in healthcare.

## 5. Conclusions

Our study showed that participants’ views partly remained stable over the course of the panel, specifically regarding equal access to healthcare, prioritisation based on patients’ needs, and the importance of the size and type of treatment benefits. Notable changes after deliberation concerned the increased support for prioritisation, consideration of costs, and relevance of a cost-effectiveness criterion in allocation decisions. Considering the increasing interest in deliberative methods among policy makers in healthcare and the limited empirical evidence concerning the effect of deliberative methods on participants’ views and preferences, further research is required to better understand how deliberative methods can contribute to the legitimacy of and public support for the outcomes of allocation decisions in healthcare.

## Declaration of Competing Interest

The authors have no conflicts of interest to declare.

## Acknowledgements

The Netherlands Organisation for Scientific Research (NWO) funded this study (grant number 453-14-003). The funders had no



role in the study design, data collection and analysis, preparation of the manuscript, and decision to publish. The views expressed in this article are those of the authors.

### Appendices Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.healthpol.2019.11.011>.

### References

- [1] Ottersen T, Mæstad O, Norheim OF. Lifetime QALY prioritarianism in priority setting: quantification of the inherent trade-off. *Cost Effectiveness and Resource Allocation* 2014;12(1):2.
- [2] Hernæs UJ, Johansson KA, Ottersen T, Norheim OF. Distribution-weighted cost-effectiveness analysis using lifetime health loss. *Pharmacoeconomics* 2017;35(9):965–74.
- [3] Fleck LM. Just caring: in defense of the role of democratic deliberation in health care rationing and priority-setting. In: Den Exter A, Buijsen M, editors. *Rationing health care. Hard choices and unavoidable trade-offs*. Antwerpen: Maklu; 2012. p. 25–45.
- [4] van de Wetering EJ, Stolk EA, van Exel NJA, Brouwer WBF. Balancing equity and efficiency in the Dutch basic benefits package using the principle of proportional shortfall. *European Journal of Health Economics* 2013;14(1): 107–15.
- [5] Reckers-Droog VT, van Exel NJA, Brouwer WBF. Looking back and moving forward: on the application of proportional shortfall in healthcare priority setting in the Netherlands. *Health Policy* 2008;122(6):621–9.
- [6] Baker R, Wildman J, Mason H, Donaldson C. Q-ing for health—a new approach to eliciting the public's views on health care resource allocation. *Health Economics* 2014;23(3):283–97.
- [7] van Exel NJA, Baker R, Mason H, Donaldson C, Brouwer WBF. Public views on principles for health care priority setting: findings of a European cross-country study using Q methodology. *Social Science & Medicine* 2015;126:128–37.
- [8] McHugh N, Baker RM, Mason H, Williamson L, Van Exel NJA, Deogaonkar R, et al. Extending life for people with a terminal illness: a moral right and an expensive death? Exploring societal perspectives. *BMC Medical Ethics* 2015;16(1):1–15.
- [9] Wouters S, van Exel NJA, Baker R, Brouwer WBF. Priority to end of life treatments? Views of the public in the Netherlands. *Value Health* 2017;20(1):107–17.
- [10] Mason H, van Exel NJA, Baker R, Brouwer WBF, Donaldson C, EuroVaQ Team. From representing views to representativeness of views: illustrating a new (Q2S) approach in the context of health care priority setting in nine European countries. *Social Science & Medicine* 2016;166:205–13.
- [11] Mason H, Collins M, McHugh N, Godwin J, van Exel NJA, Donaldson C, et al. Is “end of life” a special case? Connecting Q with survey methods to measure societal support for views on the value of life extending treatments. *Health Economics* 2018:1–13.
- [12] Reckers-Droog VT, van Exel NJA, Brouwer WBF. Who should receive treatment? An empirical enquiry into the relationship between societal views and preferences concerning healthcare priority setting. *PLoS One* 2018;13(6):e0198761.
- [13] Caddy J. *Evaluating public participation in policy-making*. Paris: Publications de l'OCDE; 2005.
- [14] Daniels N. *Just health: meeting health needs fairly*. Cambridge: Cambridge University Press; 2008.
- [15] Jansen MP, Helderma JK, Boer B, Baltussen R. Fair processes for priority setting: putting theory into practice: comment on expanded HTA: enhancing fairness and legitimacy. *International Journal of Health Policy and Management* 2017;6(1):43.
- [16] Abelson J, Forest PG, Eyles J, Smith P, Martin E, Gauvin FP. Obtaining public input for health-systems decision-making: past experiences and future prospects. *Canadian Public Administration* 2002;45(1):70–97.
- [17] Abelson J, Eyles J, McLeod CB, Collins P, McMullan C, Forest PG. Does deliberation make a difference? Results from a citizens panel study of health goals priority setting. *Health Policy* 2003;66(1):95–106.
- [18] Degeling C, Carter SM, Rychetnik L. Which public and why deliberate?—A scoping review of public deliberation in public health and health policy research. *Social Science & Medicine* 2015;131:114–21.
- [19] Abelson J, Wagner F, DeJean D, Boesveld S, Gauvin FP, Bean S, et al. Public and patient involvement in health technology assessment: a framework for action. *International Journal of Technology Assessment in Health Care* 2016;32(4):256–64.
- [20] Mitton C, Smith N, Peacock S, Evoy B, Abelson J. Public participation in health care priority setting: a scoping review. *Health Policy* 2009;91(3):219–28.
- [21] Dolan P, Cookson R, Ferguson B. Effect of discussion and deliberation on the public's views of priority setting in health care: focus group study. *BMJ* 1999;318(7188):916–9.
- [22] Street J, Duszynski K, Krawczyk S, Braunack-Mayer A. The use of citizens' juries in health policy decision-making: a systematic review. *Social Science & Medicine* 2014;109:1–9.
- [23] Baltussen R, Bijlmakers L, Jansen MP, Burgerforum Project Team. *Draagvlak voor lastige keuzes. Eindrapport van het Burgerforum 'Keuzes in de zorg'*. Available at <http://hdl.handle.net/1765/114121>. [Accessed 2 July 2018].
- [24] Bijlmakers L, Baltussen R, Jansen MP, Boer B, Helderma JK, Groenewoud S, et al. Increasing the legitimacy of tough choices in health care reimbursement: approach and results of a citizen forum in the Netherlands. *Value Health* 2019, <http://dx.doi.org/10.1016/j.jval.2019.07.015>.
- [25] National Institute for Health and Clinical Excellence. *Social value judgements: principles for the development of NICE guidance – Second edition*. Available at <https://www.nice.org.uk/Media/Default/About/what-we-do/Research-and-development/Social-Value-Judgements-principles-for-the-development-of-NICE-guidance.pdf>. [Accessed 22 May 2019].
- [26] Watts S, Stenner P. *Doing Q methodology research: theory, method and interpretation*. London: Sage Publications Ltd.; 2012.
- [27] Motivaction. *The Mentality groups*. Available at <https://www.motivaction.nl/en/mentality/the-mentality-groups>. [Accessed 22 February 2018].
- [28] Zorginstituut Nederland. *Package advice in practice: deliberations for arriving at a fair package*. Diemen: Zorginstituut Nederland; 2017.
- [29] Kleinhout-Vliek T, de Bont A, Boer B. The bare necessities? A realist review of necessity argumentations used in health care coverage decisions. *Health Policy* 2017;121(7):731–44.
- [30] Brown SR. *Political subjectivity: applications of Q methodology in political science*. New Haven, Connecticut: Yale University Press; 1980.
- [31] Zabala A. *qmethod: a package to explore human perspectives using Q methodology*. *The R Journal* 2014;6(2):163–73.
- [32] Cohen J. *Statistical power analysis for the behavioral sciences*, 2nd ed. New Jersey: Lawrence Erlbaum; 1988.
- [33] Hackert MQ, Brouwer WBF, Hoefman RJ, van Exel NJA. Views of older people in the Netherlands on wellbeing: a Q-methodology study. *Social Science & Medicine* 2019:112535.