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A Descriptive Study on Attitudes Toward Local Health Resource Allocation: The Case of Chongqing Province in China

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Abstract

Background: The variance of attitudes among stakeholders of health resource allocation has rarely been reported because health officials play a dominant role in most countries with implicit rationing.
Objectives: The aim of this descriptive study is to explore the priority-setting value in local health resource allocation in the province of Chongqing, China.
Methods: To test the local health rationing values in Chongqing, a survey was conducted on attitudes through a self-administered Likert scale questionnaire. The data were collected from February 1, 2013 to August 30, 2016. Attitudes among respondents (174 health officials and 480 health workers) were analyzed and compared through convenience sampling with the help of the local health bureau by using IBM SPSS Statistics 21.0.
Results: The mean values of officials' self-perception and health workers' assessment were opposite, with a coherent and optimistic perception from officials (most mean values > 4) versus a varied and pessimistic evaluation among health workers (most mean values < 3). Officials ranked highly on the severity of the disease, the fair distribution of resources, and public satisfaction, while health workers gave all the items of the questionnaires below 3 points. Officials ranked deemed the procedural process fair and officials depended more on themselves and public hospitals for health rationing, while the health workers prefer media and scholars. Value-based preferences for priority setting between the two groups were quite different.
Conclusions: The study concludes that local health rationing in Chongqing is a matter of political and value preference rather than an evidence-based decision. Officials were not willing to share their rationing power, and the lower evaluation of health workers than officials' assessment may result from insufficient participation.

Keywords: China, Healthcare Rationing, Value Preference, Health Resource, Priority Setting

1. Background

Values such as social community value and preferences influence action mechanism to occur in health systems. Health systems have developed over time as the result of evolving values embedded in public policy, history, and culture (1). In health systems, politics and public health ethics intrinsically intersect. Political pressures and priorities often impose ethical challenges that public health practitioners negotiate in their daily work (2). Most formal approaches to priority setting have been used by health authorities but not always successfully (3). From an empirical level, Fisher concluded that most managers do not use the rational model of decision making while dealing with values (4). Values from different stakeholders are important (5). Thus an informal approach to examining officials' values and preferences requires a thorough assessment of the value-based system to understand government-led rationing. However, the dichotomy of the attitudes of decision-makers' prediction and public preference can also be found in some countries' health system, such as public preference on the allocation of health funds (6).

According to Baltussen, governments in developing countries should not try to provide everything for everyone (7). Instead, the priority setting may be a suitable alternative. Priority setting is a value-laden and political process. A strategy to improve priority setting should include improving the legitimacy and capacity of institutions that set priorities (8). While considering the capacity of officials with decision-making powers in those institutions, officials' attitudes toward rationing at an individual level are often difficult to distinguish. Studies regarding officials' priority choices with regard to public health investment

and the factors that influence the rationing decision are rare.

Chongqing, a municipality in Southwest China, is the national reform pilot province for the urban-rural coordination development experiment. It is located at the confluence of the Yangtze and Jialing Rivers and is near the Three Gorges Dam, which has allowed the city to carry a large migrant population. With its mountainous landscape and inland location, a large poor population lives in this area. The present study conducted surveys in Chongqing, examined the value-based choice and preference of two groups (government officials and health workers), and compared their differences.

The study compared Chinese values and preferences in local healthcare rationing, considering the decisive role of the government in China's healthcare decision-making process, by analyzing health officials' rationing preferences compared with those of health workers. An attitude test can investigate officials' values in implicit rationing that they may not realize themselves. Local health officials play a key role in health rationing decision making, whereas health workers are in the frontline of implementing health policies and can truly participate in the local rationing policy making.

2. Objectives

This study focused on attitudes toward health resource allocation in the Chinese context, which has rarely been studied before. It compared the differences in attitudes among stakeholders in the local health priority setting, which might explain the reasons for variance. It also demonstrated the conflicts of interest in prioritizing local health resources. In addition, the study can help develop satisfying decision-making processes in local implicit rationing in China and similar countries.

3. Methods

3.1. Participants and Data Collection

From February 2013 to August 2016, an attitude test for exploring the priority setting values in local resource allocation was conducted in Chongqing, China. A total of 654 study samples were selected through convenience sampling with the help of the local health government and the Chongqing health information center. The sample included 174 officials from the health bureau who work at the local Health and Family Planning Commission (HFPC), 89 of which come from the provincial HFPC and 85 officials from the county-level HFPC. A total of 480 health workers were non-decision-makers, most of which were from medical service suppliers or worked in public hospitals, the Center for Disease Prevention and Control, the Health Inspection Center, insurance and drug companies, and universities. These respondents were familiar with health policies and were willing to participate in the study.

3.2. Content of the Questionnaire

A self-administered 5-point Likert scale questionnaire was used in this study, which included four parts, namely, basic demographic information, attitudes with regard to health investment priorities (16 items), implicit priority decision criteria (14 items), and factors influencing rationing (18 items). Health investment priorities were selected from the status quo and the new trend of investments such as developing private hospitals and high-technology facilities. Decision-making criteria were framed by interviewing experienced officials and by reviewing selected literature. The influencing factors focus on three perspectives: the preferences of participants, the fairness of the procedure, and the values behind prioritization. Respondents were asked to rank their answers from 1 to 5 for each item, with 1 as the lowest and 5 as the highest.

To ensure the quality of the questionnaire, the subjective test method was used to revise the questionnaire. Five civil servants, three professors, and seven local health officials were asked to make amendments to the questionnaire, which guaranteed good content validity. In the pilot survey, 40 master students in public health (MPH) who were experienced in health-related work were invited to test the validity. The Cronbach's alpha coefficients of the pre-survey were 0.835, 0.784, and 0.717 in priority items, decision criteria, and attitude test of influencing factors, respectively.

The questionnaire design was adjusted in time according to relevant reliability and validity values in the pilot survey. In the succeeding 654 samples in the investigation, the coefficients were good (Table 1).

3.3. Statistical Analyses

All data were entered and checked in Microsoft Excel twice. Statistical analysis was carried out using SPSS 21.0. The numerical variables were described as mean $\pm$ standard deviation (SD) based on the results of the normal distribution test. The reliability of the three testing parts such as priority investment, criteria, and influencing factors were evaluated using Cronbach's alpha. The value of each item was to test the consistency of officials' perception and health workers' assessment.

In the preface of the questionnaire, respondents were told that they could quit at any stage if they did not want

Table 1. Reliability of questionnaire (Cronbach's Alpha)

	Priority Investment	Priority Criteria	Influencing Factors	N
Officials	0.85	0.85	0.70	174
Health workers	0.93	0.92	0.85	480
Total	0.95	0.95	0.91	654

to answer the questions. In addition, I assured them of the anonymity and protection of individual data.

4. Results

4.1. Demographic Information

A total of 174 health officials and 480 health system employees (e.g., health officers, medical directors, sanitarians, nurses, and educators) participated in the study. Nearly half of respondents were 30 to 39 years old. 52.9% of respondents were female, 73% worked at the operational level in the administration, and 81.8% of respondents provided medical services or public health services (Table 2).

4.2. Priority Investment

The question in this part was "which of the following items would you prefer within the limited health resource?" A score of "1" means the least valuable investment program, whereas "5" refers to the most worthwhile investment program (Table 3).

Officials' top three preferences were health insurance (the mean value was 4.71), essential drugs (4.47), and food and drug administration (4.19). The least support was for private hospitals (2.79), new technology (3.40), and traditional Chinese medicine (3.43). However, health workers expected more investments only on private hospitals (3.07), whereas the rest of the items received low support (< 2.7), especially food and drug administration (1.79), essential drugs (1.72), and health insurance (1.63). The SD values of health workers' attitudes (> 1 point) were larger than that of officials' variance.

4.3. The Priority-Setting Criteria

The question raised in this part was, "in healthcare rationing, which of the following criteria is important?" For health workers, the question was changed to "how do you perceive officials' choice of criteria and its influence on health rationing?" A score of "1" means the least important, and "5" means the most important (Table 4).

Officials' top three concerns were the severity of the disease (4.60), fair distribution of resources (4.38), and public satisfaction (4.34). However, officials paid less attention to technical tools for rationing, such as evidence-based policy (3.62). Health workers chose performance evaluation (2.86) as the top concern and following the previous year's budget (2.54) as the second.

4.4. Influencing Factors

Government-led or bottom-up pattern?

This part asked participants to choose which factor is better for rationing ("5" indicates "strongly agree" and "1" indicates "does not agree at all"). Attitudes toward power perception varied between the two groups (Table 5).

The other question was "is the process of rationing fair?" To test the perception of the studied population about the fairness of the rationing process, four conditions of Accountability for Reasonableness Framework (A4R) were used. In fact, A4R is a predominant model proposed by Daniels and Sabin (2002) to evaluate procedural justice in priority setting. The framework's four conditions are publicity, relevance, revision/appeals, and enforcement (9, 10). A4R was used for examining public involvement, which is weak in China, where the government plays the dominant role and health workers cannot truly participate in local healthcare rationing (Table 6). "5" indicates "strongly agree" and "1" indicates "does not agree at all".

Officials thought the process was fair (all related mean values were above 4), and public participation was perceived to have the least importance. However, health workers ranked it conversely, evaluating that the government-led rationing process was unfair (mean value < 2).

4.5. Value-Based Preferences for Priority Setting

Values in priority setting as influencing factors varied between officials and health workers. A score of "5" means "strongly agree," whereas "1" means "does not agree at all" (Table 7).

Officials' opinions revealed that public needs (4.7) were the most important influencing factors in priority setting. It is followed by pro-poor rationing (4.49) and focus on health workers' health (4.38). Officials chose path dependence and obedience to leaders' policies. Given that the issue of efficiency or fairness is a priority, officials preferred value for money (3.87) more than a fair allocation of resources (2.44). In contrast, the public ranked fair allocation first.

Table 2. Demographic Analysis of the Survey Sample in Chongqing (N = 654)

	Health Officials, No. (%)	Health Workers (Health-Related Jobs), No. (%)	Total, No. (%)
Age, y			
20 - 29	51 (29.3)	185 (38.5)	236 (36.09)
30 - 39	86 (49.4)	180 (37.5)	266 (40.67)
40 - 49	24 (13.8)	97 (20.2)	121 (18.5)
50 - 59	12 (6.9)	18 (3.8)	30 (4.59)
60 - 69	1 (0.6)	0 (0)	1 (0.15)
Gender			
Male	82 (47.1)	191 (39.8)	273 (41.74)
Female	92 (52.9)	289 (60.2)	381 (58.26)
Administrative level			
High	4 (2.3)	25 (5.2)	29 (4.43)
Middle	43 (24.7)	158 (32.9)	201 (30.73)
Operational	127 (73)	297 (61.9)	424 (64.83)
Working area			
Administration	110 (63.2)	105 (21.9)	215 (32.87)
Clinical related	35 (20.1)	87 (18.1)	122 (18.65)
Disease prevention and control	20 (11.5)	59 (12.3)	79 (12.08)
Maternal and child health	6 (3.4)	9 (1.9)	15 (2.29)
Health supervision	3 (1.7)	28 (5.8)	31 (4.74)
Pharmaceutical companies	-	49 (10.2)	49 (7.5)
Health insurance	-	24 (5)	24 (3.67)
Well-educated respondents who are interested in the study	-	119 (24.8)	119 (18.2)
Total	174 (100)	480 (100)	654 (100)

5. Discussion

The mean values of the two studied groups were in contrast to each other. Officials ranked almost all items higher than health workers did, and they possessed positive and coherent attitudes toward current healthcare rationing. In contrast, health workers exhibited aversion against the current rationing, and the SD value of choices by health workers was larger than that of officials. The study showed that local health rationing practice is a matter of political and value preference rather than an evidence-based and technical choice. Officials preferred equity and accountability, fair procedure, and putting health workers' needs first, but they were not willing to share the power in making decisions on the distribution of resources.

In line with other research findings, local health decision making is not evidence-based, and the criteria of public health resource allocation, programmatic mandates, funding restrictions, local stakeholders, and workforce capacity appear to be more important than other factors, such as research evidence and perceived community needs (11). According to a similar study, economic analyses and needs assessments were used in setting priorities by less than 50% of local health officers in the US. Health workers' expectations were influential, but direct public input had a low impact on the allocation decisions (12).

In the priority criteria area, the severity of the disease, fair distribution, local financial burden, public satisfaction, social values, and management experience trump cost-effective and evidence-based policy-making in officials' attitudes. This finding is similar to another study demonstrating that the equality of healthcare seems more vital than cost-utility principles (13). My result is also in line with the other study result that equity, justice, and solidarity are the ethical basis of health priority setting, and medical needs and cost-effectiveness are also determined in decision making (14). The allocation of decision-making relies on the interaction of elements in situations that influence the individual's rational choice (15). Different preferences in rationing criteria may mean that health workers

Table 3. Preferred Choice of Public Investment Priorities (N = 654)

Priority Area by Public Investment	Officials' Preference (N = 174)		Health Workers' Preference (N = 480)	
	Mean ± SD	Rank	Mean ± SD	Rank
Medical insurance	4.71 ± 0.58	1	1.63 ± 1.09	16
Essential drugs	4.47 ± 0.71	2	1.73 ± 1.12	15
Food and drug administration	4.19 ± 0.87	3	1.79 ± 1.12	14
Urban and rural medical assistance	4.08 ± 0.78	4	2.05 ± 1.06	12
Maternal and child health care	4.06 ± 0.81	5	2.06 ± 1.11	11
Infectious diseases	4.04 ± 0.80	6	1.95 ± 1.05	13
Elderly care	4.03 ± 0.73	7	2.15 ± 1.04	10
Chronic disease	3.99 ± 0.85	8	2.25 ± 1.10	8
Health education and promotion	3.87 ± 0.82	9	2.26 ± 1.17	6
Health IT	3.79 ± 0.89	10	2.25 ± 1.12	7
Standardization of primary health care	3.79 ± 0.82	11	2.17 ± 1.06	9
Cutting-edge technology	3.45 ± 1.03	12	2.60 ± 1.18	2
Mental illness	3.43 ± 0.90	13	2.48 ± 1.14	5
Traditional Chinese medicine	3.43 ± 0.90	14	2.52 ± 1.10	3
Access to appropriate technology	3.40 ± 0.92	15	2.49 ± 1.07	4
Private hospitals	2.79 ± 1.00	16	3.07 ± 1.19	1

Table 4. Attitudes Toward Priority-Setting Criteria (N = 654)

Priority-Setting Criteria	Official's Choice		Health Workers' Perception	
	Mean ± SD	Mean Rank	Mean ± SD	Mean Rank
Severity of disease	4.60 ± 0.62	1	1.72 ± 1.12	14
Public satisfaction	4.38 ± 0.73	2	2.03 ± 1.15	9
Fair distribution	4.34 ± 0.70	3	1.95 ± 1.10	11
Burden of disease	4.29 ± 0.67	4	1.89 ± 1.06	13
Sustainable development of resources	4.21 ± 0.79	5	1.96 ± 1.07	10
Access to high-quality health resources	4.06 ± 0.85	6	1.95 ± 1.12	12
Integration of health systems, such as GP transfer	3.92 ± 0.79	7	2.11 ± 1.06	8
Local affordable finances	3.89 ± 0.88	8	2.28 ± 1.09	6
Social values	3.81 ± 0.79	9	2.25 ± 1.06	7
Management experience of decision maker	3.70 ± 0.94	10	2.37 ± 1.10	4
Maximum cost effectiveness	3.66 ± 0.88	11	2.48 ± 1.22	3
Evidence-based health decision making	3.62 ± 0.89	12	2.35 ± 1.05	5
according to previous year's allocation	3.34 ± 0.88	13	2.54 ± 1.10	2
Performance evaluation	3.11 ± 1.17	14	2.86 ± 1.22	1

disliked the criteria to bolster the promotion of the official or simply for easy control. The financial burden of disease, social values, and management experience were more important than cost-effectiveness and evidence-based policy-making in the eyes of officials. In addition, procedural justice was debated. The attitudes toward the fairness of the procedure were opposite, and the public believed that it is an unfair process according to the A4R framework. This study showed that health workers trust scholars and the media more than hospital officials and the government.

Table 5. Power from Different Stakeholders that Influence the Process of Rationing

	Officials' View, Mean ± SD	Health Workers' View, Mean ± SD
Government-led	4.34 ± 0.94	2.02 ± 1.19
Strong health provider	4.03 ± 0.84	1.88 ± 0.96
Develop private hospital	3.83 ± 1.10	2.14 ± 1.15
Public health literacy	3.24 ± 1.25	3.54 ± 1.26
Media	2.86 ± 1.25	3.35 ± 1.32
Scholar	2.75 ± 1.23	3.27 ± 1.29

Table 6. Attitudes Toward the Fairness of Procedures in Priority Setting

	Officials' View, Mean ± SD	Health Workers' View, Mean ± SD
Publicly informed	4.48 ± 0.77	1.65 ± 1.08
Revision or appeals	4.44 ± 0.66	1.70 ± 1.01
Relevance	4.33 ± 0.78	1.79 ± 1.07
Public participation	4.06 ± 0.85	1.90 ± 1.05

Health workers are in favor of more power, but officials are averse to media or academic research. Furthermore, some officials expressed their dissatisfaction with media's pro-patient stand as they are pro-public hospitals and doctors.

The reasons for the differences in the attitudes of the two studied groups can be attributed to the following reasons. Officials shared similar political ideals, which influence their rationing preference due to peer pressure within the bureaucracy. To follow the image of a responsible public servant, officials' perception of their ideal image supports a more optimistic attitude in a fair priority setting. In contrast, negative attitudes and low satisfaction emerged in the assessment of health workers. First, low participation may diminish health workers' trust when the decision-making process is not transparent and inclusive. The opacity of decision-making processes is one of the obstacles (16, 17). Some studies also list nine evaluation criteria of public involvement in health resource allocation decision making, such as fair process and adequate opportunity for participation (18). In my study, health workers expressed disappointment in healthcare rationing and its justification. The large SD value obtained from health workers' choice showed that health workers' point of view was often fragile and hard to determine. Furthermore, the study showed that health workers are unsatisfied with the current health rationing. The perception of people was different in terms of being in the center of rationing power or not. Health workers' dissatisfaction, in turn, played a deviant role in rationing. Health workers may have more complaints than the general public as they are executors in daily work without real bargaining power in health rationing decision making. High expectations of officials and dissatisfaction from health workers may enlarge the gap of mistrust.

The study has some limitations. The convenient sampling may seem biased, but as the topic is highly specific and cannot be answered by the general public, the targeted population may be the better representatives. Furthermore, as the topic of priority setting is more advanced than the old pattern of following upper government orders without the priority setting process, respondents' expectation or assessment may be limited by the lack of experience or personal prejudice. Thus, more interviews are needed to explore the complexities of practice and to find out how to make a satisfactory local health rationing.

5.1. Conclusions

In Chongqing, officials' value preferences influence the local rationing more than any other stakeholders. In this study, two sides of rationing attitudes coexisted. Officials believed they were positive and put the public first. However, health workers believed the opposite. Officials ranked highly on the procedural factors but did not accept the participation of health workers. They trusted other officials rather than outside stakeholders. The low-grade and unsatisfying responses from health workers may originate from the insufficient involvement in rationing. The divergence of attitudes should be a priority for local health policy-makers because unsatisfied health workers may challenge the justification of policies and the sustainability of local officials' rationing. Suggestions for local policymakers can be summarized in three ways. First, we should make the health rationing decision-making process transparent and open to the public. Second, from officials' perspective, evidence-based health decision-making is insufficient and should be improved. Third, communicating with the public is important to improve public satisfaction and make health rationing accountable for public interests.

Footnotes

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Table 7. Attitudes Toward the Influencing Factors in Value-Based Priority Setting

	Officials' View, Mean ± SD	Health Workers' View (Perception of the Official's Choice), Mean ± SD	Value Orientation
Considering public needs	4.70 ± 0.61	1.60 ± 1.02	Public accountability
Pro-poor rationing	4.49 ± 0.69	1.75 ± 1.04	Equity
Extra resource for public health first	4.38 ± 0.77	1.81 ± 1.01	Efficiency
Path dependence	4.02 ± 0.97	1.84 ± 1.03	Bureaucratic accountability
Obedience to leader's policies	3.93 ± 0.94	2.21 ± 1.11	Bureaucratic accountability
Public policy focusing on health equality	3.91 ± 1.15	2.22 ± 1.20	Equity
Cost-effectiveness	3.87 ± 1.18	2.12 ± 1.18	Efficiency
Ideal fair allocation	2.44 ± 1.43	2.88 ± 1.46	Equity

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