

Model for Value-based Policy-making in Health Systems

Abstract

Background: Values are at the heart of discussions related to policy-making and any kind of reforms in health systems. Despite wide recognition of its importance, the concept of value is still vague and the policy-making processes remain astray with respect to values. This study aims to provide a model of value-based policy-making and to explain the concept value and how it affects policy-making.

Methods: The main question of the current study is to explain the concept of value-based policy-making and developing a model, based on the explained concept. In this line, critical review method and Carnwell and Daly approach and using particular keywords related to stewardship, and searching databases were used. In the initial search, 739 studies were obtained, of which using targeted sampling method, 11 studies were finally selected. Then, in order to design and explain different aspects of the value concept in the health system and to develop a model, selected studies were criticized, and finally, the conceptual model of value is designed and explained. **Results:** The concept of value and its effects, dimensions and its relation to principles, evidence and criteria were determined at different stages of the policy-making process. It was also revealed that value-based policy-making in a health system is contingent upon the realization of terminal values. **Conclusions:** In the process of selecting the best policy option, it is necessary to identify the relationship between terminal, instrumental, criterion, and evidence to avoid deviating from the reference value framework in any country and to avoid blindly imitating other experiences in other countries.

Keywords: Ethical theory, health policy, reference values, research evidence

Introduction

Health systems in the 21st century are expected to play a growing role in responding to the changing health-care needs of people by ensuring efficiency, effectiveness, quality, and promoting equity in service delivery. Maintaining and improving public health at national and regional levels require the policy-making, good intrasectoral governance, and intersectoral leadership^[1] Health policy-making, which is at the heart of health system stewardship,^[2-4] is one of the most challenging functions in a health system.^[5,6] Thus, the appropriate functioning of health systems is tied to adequate stewardship, which is in turn, more than anything, contingent upon the quality of policy-making.^[7] In spite of the high dynamicity and complexity, much of the policy-making decisions are made on the basis of instant intuitions, sporadic preferences, past experience, and anecdotes.^[8-10] Low quality of health policy-making results in ineffectiveness,

inefficiency, inequity, and dissatisfaction in the health sector.^[11]

There have been numerous efforts during the last three decades to expand evidence-based policy-making in order to create a policy-making process based on best evidence available.^[10] These efforts have led to the extent that evidence-based policy-making is one of the elements of good governance.^[11] Evidence could be used at all levels of the policy-making process starting from problem definition and conceptualization to policy impact analysis.^[12]

Policy-making is a dynamic and complex process that contains element of uncertainty.^[8,10,13] Like many other functions and tasks, the policy-making process passes through significant changes associated with the rapid advancement of science. Besides, the process is in transition from personal, preferential, and inexperienced wisdom to collective wisdom experienced by others while focusing on prediction and assessment of possible advantages and disadvantages.^[5,6] This uncertainty is

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reflected in decision -making as doubts about choosing solutions at the level of individual decision maker and/or disagreement on chosen solutions among decision makers. At the lower levels of decision-making such as clinical decisions, uncertainties generally emanate from lack of evidence and unawareness of decision-makers on available evidence. Generating scientific evidence or informing for decision makers, therefore, helps in clearing doubts and leads to agreement. Besides evidence, decision-making at different levels of health system is affected by the decision makers' value framework. The effects of values, especially at macro-level of health-care decision-making (policy-making), get so important that judgment about good or bad, acceptable or unacceptable, desirable or undesirable, prioritized or un-prioritized, and sufficient or insufficient in health macropolicies is influenced more by value judgments than being a function of scientific evidence.^[10] Therefore, at microlevel of decision-making as clinical decision -making, the evidence-based medicine and value-based medicine are complementary. By the same token in macro -level, value-based policy-making and evidence-based policy-making are complementary.^[14] However, countries are more likely to differ in the value frameworks they are governing in their policy-making. Hence, they differ in the criteria they use for decision-making including the allocation of resources and in selecting data and information for the evidence-based policy-making. The role of values in policy-making goes back to the first decade of 2000s. Policy advisors in the United States and Canada have been engaged in developing a clear value framework for health-care reforms.^[15] Despite wide recognition of values' importance of input of policy-making process, health-care decision makers and stakeholders fundamentally disagree about the nature of values.^[15] Some individuals believe that values are ethical principles like equity and autonomy. And others interpret values as preferences. Furthermore, some interpret values as collective beliefs and as personal beliefs. Most people take value for granted in their subjective assumptions without understanding the principal concept and use it as their guidelines. It, therefore, could be claimed that the main reason of uncertainty in policy-making decisions is mainly due to the lack of transparency or differences in value systems of decision makers.^[15] Hence, this study aims to provide a model of value-based policy-making and to explain the concept of value and how it affects policy-making.

Methods

To develop the model of value-based policy-making, different concepts of an issue recombine with each other. Therefore, some conceptual innovations and synthesis are required to achieve this, and critical review was used. The critical review aims to show the wideness of research on a specific issue and to critically assess it; the main emphasis

of critical review is on the conceptual share of studies. It includes some degrees of conceptual analysis and innovation to identify important issues.

This research reviewed literature by using developed Carnwell and Daly approach.^[16] In addition to criticizing the research, the knowledge gap in this field has also been proposed by researchers. The resulted model may be a synthesis of current models or a new interpretation of available data. But mentioning methods of search, synthesis, and analysis is not necessary,^[17] and specialized keywords related to values in the PubMed, Google Scholar, Embase, Elsevier, Emerald, Scopus, Iran Medex, and SID databases as well as Google until 2020. Initially, a comprehensive and high sensitive search was conducted via Google, and then each database was searched using its own search methods. To increase validity of samples, a series of value-related keywords, including value framework, principle, criteria, attitudes, and belief, were used. In addition, reference list of papers and books were searched by using these keywords. In order to expand the search process, another set of keywords, including health system, health policy, health sector, and health-care system, were added to the search strategy.

To perform the primary screening, search results were screened by one of the reviewers based on the topics and abstracts. Second reviewer independently reviewed the study and in cases that there was no consensus, consensus was achieved. First time, 743 studies were evaluated. Literatures that had more rich literature (if they mentioned to the definition and interpretations of the value and other related concepts, concepts that are close to it or contrast concepts, and similar constructs), new references, prestigiousity of journal or database, and citing to valid references were used and references which investigated the concept of values in other fields were removed and finally 111 studies were selected and evaluated at the second step. At the third step, based on inclusion (studies that mentioned to more constructs, better explained them, and elaborated their links better) and exclusion (be related to the economic aspects of value and our study about concept of value in health policy) criteria, more related studies were selected and prioritized. Based on the qualitative study approach, the selected studies were analyzed using content analysis method and the review process was continued to the saturation point.^[18] Accordingly, to perform the critical review, at the third step 11 studies were selected and criticized. Selected studies were reviewed independently by reviewers, and using critical review main concepts were extracted. Then, these concepts were criticized to describe the concept of value as well as its dimensions, underlying, and role in the process of policy-making. They were presented in a group where authors of the current study were a part. Then, based on the finding of the Shams *et al.*, the initial model was developed.^[19] Finally, through focus group discussion (two 2-h sessions)

consisting of health system experts including theorists and policy makers, value-based policy model was developed.

Findings

Different studies are conducted on the concept of value and its dimensions, but few investigated the role of value in health-related policy-making and provided a model on its impact on the process of health-related policy-making. Therefore, in this section, it is attempted to criticize the main related studies [Table 1], which discussed about the value in policy-making, and then based on the findings of the reviewed studies, a value-based policy-making model is developed.

Concept of value

Values are subsets of beliefs.^[27] Some studies acknowledge that values are abstract, internal, and subjective concepts^[28-31] which help us, like a map, to find the right path.^[27,30,32-36] Some values indicate the final results and outcomes of policy-making and are called terminal values.^[36-38] Other values

play an intermediary role in realizing terminal values and are called instrumental values^[35-37] [Table 2]. These values are usually incorporated in strategies of the health system.^[19]

Terminal values are rooted in different ethical theories of each country's policy-making system,^[1,39] and value-based policy-making is contingent upon the realization of terminal values.^[19] Ethical ideologies are also shaped by terminal values [Table 2].

Instrumental values may also be interpreted in the form of reformative strategies (such as strategies of efficiency promotion, quality improvement, and access development) or may be considered as control knobs of the health system. These reformative strategies or control knobs can assist in the early selection of policy options.^[40]

From values set to value system

Value system refers to a set of terminal values taken by a person or society and the interrelationships values have

Table 1: Critique the selected studies

Author(s)	Criticize
Sutcliffe and Court ^[20]	Although in defining the concept of value, the authors noted that it is an influential driving force on policy-making, even as they emphasized more on evidence, so that evidence are considered as the core of the model. On the other hand, the association between different elements is not described
Roberts <i>et al.</i> ^[11]	The authors well mentioned that ethics influence the whole process of policy-making, but they did not note that whether they mean important issues in each ethical criteria, which are using as the base of decision-making, or principles and value? And how and from what ways these influence policy-making process
Jacobs <i>et al.</i> ^[21] and Satterfield <i>et al.</i> ^[22]	Instead of mentioning to the reference values that lead to the formation of ethical ideology, this study mentioned to the social values, whilst, based on the opinion of the authors of the current study, ethical ideologies should guide the social values, rather than direct social values in the health system
Canadian health service research foundation ^[10]	The role of values and evidences in decision-making process in different levels is well described. In other words, complementarity of these two factors is mentioned. As the concept of social values or values of policy-makers of the health system or even developed value framework of country is not clear, it was better to define values
Bromell ^[23]	This study criticized the evidence-based aspect of policy-makings and explained that social and cultural environments have influence on using evidences. The factors that are noted in the study are ideologies or reality, preferences, and values
Huang ^[24]	The author considered values as the core of policy-making. Still, a precise definition of the value concept is not provided. It is not clear that value is equal to social values or individual's preferences or ethical ideologies
Goetghebeur <i>et al.</i> ^[25]	Although values are mentioned, a precise definition of values is not provided and this pattern is more using in microlevel decision-makings. Microlevels are in the health system, which includes minor decisions by downstream managers and experts
Bromell ^[23]	The role of evidence, ideology, and values in policy-making is well described and the author acknowledged that evidences do not have a central role in decision-making. But a precise definition of values is not provided, and it seems that values are considered equal to feelings of stakeholder groups, not values that comprise the dominant ideology of the country
Bennett and Gibson ^[26]	The role of values in decision-making is well described and it is noted that values with higher priority influence the decision-making, rather than a list of values. Then, the value ladder (values priority) must be defined The author pointed that stakeholders influence the decision-making, while the author of the current study believe that each system should prioritize values based on the ideological base of that country, not only based on the stakeholders views or their interests
Banks ^[27]	It is acknowledged that evidence-based policy-making is a way to abandon the ideology-based decision-making. While a clear definition of ideology is not provided, it seems that conventional wisdom and intuition are preferences and values of policy-makers or even the researcher, whereas in evidence-based policy-making also, preferences and experiences of the researcher or policy-maker can influence the policy orientation. On the other hand, the role of ethical ideologies in each country and reference values is not described, while evidences have a value aspect that can be the social, and individualistic values, or even be based on the dominant ideology of the country. Of course, the dominant ideology of each country can influence other values

which leads to the formation of an ethical ideology. The focus of value system is on different types of relations between terminal values. The value system affects people and societies' perception and definition of goodness, rightness, or fairness of issues and consequently determines their orientations.^[38] Schwartz^[36] showed that sometimes values are at in conflict with each other and we will be forced to choose one value at the expense of losing the other.^[38,39] In some other cases, the relations among values can be explained in a hierarchical system. The model of value relations in a hierarchical system could be analogous to a value ladder. In this ladder, each value is considered as long as it is not in conflict with the higher rung values [Figure 1].^[40]

Religious values are rooted in ethical ideology, and the values set forth in national belief are called national values. Universal ethical values are moral values that are common in the world. Ethnic values are related to the specific ethnicity that is specific to the same ethnicity. Conventional is an adjective for things that are normal, ordinary, and following the accepted way. This word describes what is typical and ordinary and that which follows accepted standards of behavior or taste. Esthetic value is the value that an object, event, or state of affairs (most paradigmatically an art work or the natural environment) possesses in virtue of its capacity to elicit pleasure (positive value) or displeasure (negative value) when appreciated or experienced esthetically.^[40]

In the above value ladder, national values are respected as long as they are not at conflict with religious values.

Table 2: Relationships between ethical theories and values in health policy-making

Ethical theories	Instrumental values	Terminal values
Objective utilitarian	Efficiency, clinical quality	Health
Subjective utilitarian	Patient-centeredness, service quality	Satisfaction
Egalitarian liberal	Accessibility, affordability	Equity

Besides, universal ethical values are taken into account as long as they are not at in conflict with the national and religious values. Ethnic values are observed as long as they are not in conflict with universal ethical values and national and religious values. This kind of relations is referred to as “sacrifice relation” because when it is not possible to realize different rung values simultaneously. Lower level rung values will be sacrificed in order to realize the higher level rung values. In general, ideology, ethics, and values may be brought into play when it is not possible to realize all of the goals and noble objectives at the same time. Besides, when there is a strategy for simultaneous realization of all goals and aspirations, ethical and ideological debates will come to an end.^[41,42]

In most of the cases, the relationship among the different values is not “sacrifice relationship.” Usually values cannot be certainly put in different rungs of the ladder. If values are put in one rung of the value ladder, the realization of values may be tradable with each other. This form of relationship among values is referred to as “compromise relationship.” The following value ladder depicts the relationship between ethnic values and universal ethical values as a compromise relationship [Figure 2].^[40]

Criteria system

Since values are generally considered abstract concepts^[43] and there linkage with decision-making process is usually problematic, criteria are selected as less abstract intermediary concepts between values and decision-making. Values are thought of as the most important sources of determination of criteria in policy-making. Nevertheless, other sources of values (such as higher order laws and governing political atmosphere) might affect the determination of the criteria. Criteria are measurable concepts and worthy of value judgments used as the basis for decision-making.^[32] In other words, value judgments about different policy-making choices are based on scores each of these choices obtains against different criteria.^[40]

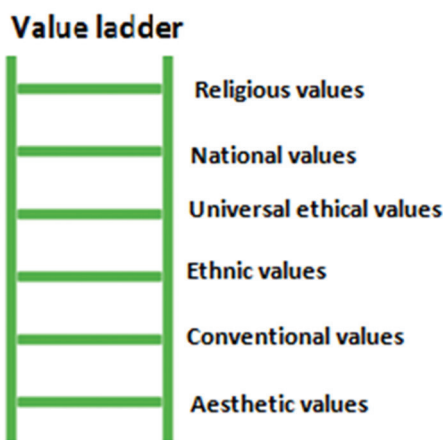


Figure 1: Value ladder (developed by authors)

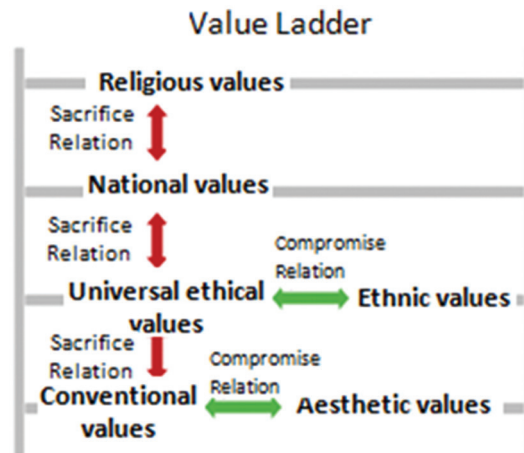


Figure 2: Type of relationship between values (developed by authors)

Criteria are intermediaries of content values and policies. As values are linked with value systems, the relationship of criteria and value systems is also explained by criteria system. This system defines how values of criteria for different decision-making choices lead to scoring and selection of choices. When the compromise relation is at work, the criteria system usually follows a linear model:

$$\text{Weighted summation} = \sum w_i C_{ij} \tag{1}$$

where j is the decision-making choice, i is the criterion, w_i is the weight of i th criterion, and C_{ij} is the value of i th criterion for j th choice.

In the linear model, the score of each policy-making choice is calculated as weighted summation of criteria's values for the specified choice. When the score is calculated in this way, the choice can compensate its low score of some criteria with its high score of another criterion. However, this does not mean that none of the criteria is of vetoing importance. When a part of the values' relation is of sacrificed, the criteria system follows the multiplicative model. For calculating the score of policy-making choices in this model, at least one of the vetoing criteria is taken out of the linear model and the remaining linear model multiplies its value:

$$\text{Weighted summation} = C_v \sum w_i C_{ij} \tag{2}$$

where C_v is the vetoing criteria, j is the decision-making choice, i is the criterion, w_i is the weight of i th criterion, and C_{ij} is the value of i th criterion for j th choice.

In the multiplicative model, when the value of the "vetoing criterion" is low for a choice, high value of the other criteria cannot compensate and the final score of choices will be low. Therefore, the multiplier model confirms the relationship between the victim of values with one-sided and consistent with the principles of multicriteria decision-making.^[44]

Furthermore, there is a relation between evidence and criteria in the policy-making process. Evidence in policy-making is the quantity or quality attributable to different criteria for different policy choices. Because of difference in the governing value frameworks, countries employ different criteria in priority setting and service selection processes. Consequently, there will be different data and information input for the evidence-based policy-making. Thus, value-free evidence has basically no meaning and value-laden evidence remains meaningful [Figure 3].^[35]

Value-based policy-making

Value-based policy-making is a form of policy-making where the relationship of values with policy options and option appraisal mechanisms are completely transparent and well defined.^[25,45,46] This may be possible through explaining and linking the value system with criteria system. Value-based policy-making is not in conflict with evidence-based policy-making; rather they are complementary.^[25] The process of evidence-based policy-making is not straightforward. One possible problem that may be encountered in the process of evidence-based policy-making is ambiguity, preference in choosing, and in weighting the criteria at the stage of critiquing policy-making choices.^[47] However, reference to value systems could be able to clear the ambiguity in choosing the criteria and type of relationship between them. Some developed countries such as the United States,^[48] United Kingdom, the Netherlands, and Austria,^[49] which claim evidence-based policy-making, use different criteria for priority setting and service selection. This is because of difference in the governing value frameworks. As a result, they employ different data and information as an input for the evidence-based policy-making.

Effects of values on policy-making process

Value-based policy-making is not only limited to policy options and how they are chosen, but also during the

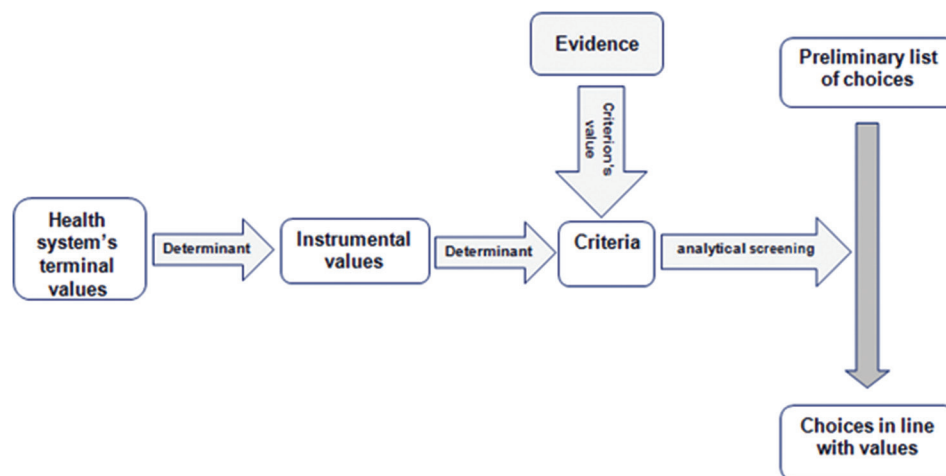


Figure 3: Relation between values, evidence, and criteria (developed by authors)

policy-making process, the agreed values must be respected. According to the utilitarian and Machiavellistic view, once the best policy is chosen, the policymakers spare no instrument to make their policy approved and implemented. In contrast, the fundamentalist approach of the Islamic religion recommends always following virtuous ethical principles because the end does not justify the means. Therefore, the process of policy-making and policy implementation (and as a result, taking political strategies) is affected by the value frameworks.^[50]

Furthermore, both terminal and instrumental values are considered content values and their realization should be sought in the implementation of policy options.^[51] That is, a successful development, approval, and implementation of policies require initially instrumental values and then terminal values are required for their realization. On the other hand, the realization of process values is meaningful only during the process of policy-making^[51] or policy implementation. Paying attention to the policy-making process values guarantees successful development and approval of policies. Besides, focusing on the implementation process values guarantees successful implementation of the policies.^[40]

On the other hand, higher order values affect the content and process values. Health system is a complex and a subsystem of a larger system. Therefore, the values influencing the larger system are higher order values for the health system. Examples of higher order values include ideological values of a country or values underscored by the constitution but are not limited to these [Figure 4].^[40]

Role of principles and policy in value-based policy-making

The final decision in policy-making process is affected by values, evidence, as well as other factors such as principles and political pressure.^[52] Principles are fixed, objective, external, directional, self-evident, and self-validating truths. They always show the direction like a compass.^[19] In terms

of objectivity, principles lie somewhere between variables and content values and criteria [Figure 5]. Principles also act as rules of thumb for a policymaker during the policy-making process. The sources of principles can be different. For example, scientific principles originate from fixed patterns of nature, juridical principles originate from laws and regulations, and moral principles originate from instrumental values.^[40] Unlike values that affect decisions through a criterion system and in an analytical framework, the effects of principles on decisions are usually direct and nonanalytic. In other words, paying attention to principles might lead to early removal of some policy options from likely options and other options complying with the principles might be assessed against the criterion system.^[40]

According to this model, the value systems affect policy-making in three ways: direct effect of value systems on policy content through moral principles, indirect effect of value system on policy content through mediatory criterion system, and direct effect of value system on policy-making process and thereby on policy content through the political framework [Figure 6].^[40]

Policymakers around the world are subject to influence of political pressures.^[1,52] In most cases, the influence of political pressures on decisions is informal and the process of value-based policy-making may fail, while there is a situation when the same political pressure may turn from a threat into an opportunity. Directing political pressures on the right path requires proper analysis of the political climate. The 4P model, consisting of “political players,” their “position,” “perception,” and “power,” is often used for analyzing political climate.^[1] Once we are aware of the state of political climate, we should choose appropriate political strategies for guiding the political climate to support the best option. The strategies may include reforms in players’ attitude and views, activation of impartial groups, weakening of opposing groups, and supporting allied groups.^[1]

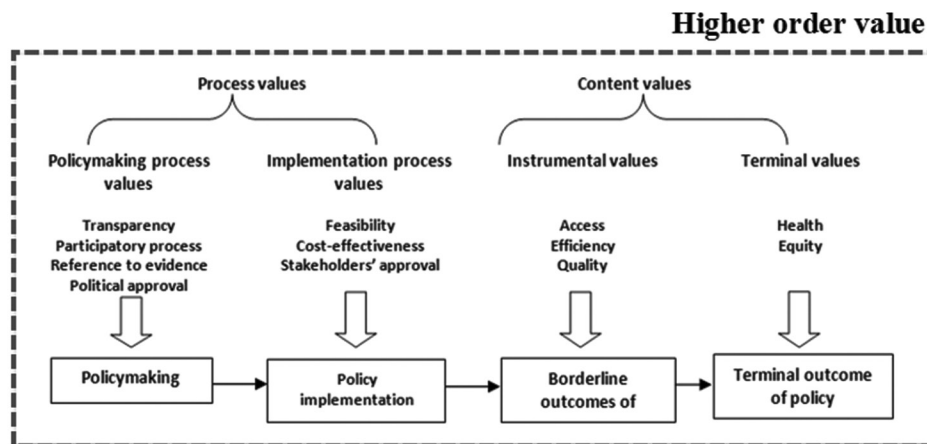


Figure 4: Classification of value in health policy (developed by authors)

Therefore, policy option that is in line with the principles governing the policy environment is selected (preliminary screening), then alternatives are aligned with the system of analytical screening (analytical screening), and finally, while the possibility of implementing policy options that the policy option adapt with to prevailing political climate (political screening) [Figure 6].^[40]

Discussion

The health system of any country always faces with new policies or revised policies in order to meet the changing needs of society, to improve health outcomes, or to promote equity.^[5,6] Various factors including access to resources, stakeholders' experience, political pressures, customs, and available evidence affect new policy-making or revision of existing policies.^[20] Policymakers, in the best possible scenario, may solely resort to available scientific evidence and follow the experience of other countries to make policies based on available resources. However, policy-making should be based on the value systems that

govern the health system of a country. This does not mean that evidence-based policy-making and value-based policy-making are in conflict with each other; rather it means the value framework and the evidence could together improve the effectiveness of policy-making^[14] because in the absence of reference value framework or ethical ideology, reference values of other countries could be used as a reference for policy-making. Adherence to the value framework is an integral part of policy-making in any country, so that in the absence of a reference value framework, the policy will be diverted as the individual values of policymakers or the mere inclusion of evidence are the underlying pillar of health policy. Therefore, it is necessary to formulate a value system governed by health system policies in the governance agenda. Robert Veatch argues that deviation from the value framework would turn any goal setting, planning, and value judgment about health-related issues into a matter of preference. Thus, in practice, decision makers' value framework would be the basis for reforming and rebuilding the health system and ultimately this would lead to instability, continuous, and arbitrary changes of health policies.^[53]

The focus on values explains why USA is the only western country where public access to health care does not exist while the USA, Canada, and many other Western European countries are somehow similar in terms of culture, customs, and democratic features such as age, welfare, income distribution, and human workforce of the health sector, structure of the education system, and technologies. They also quickly share high-quality research information. The

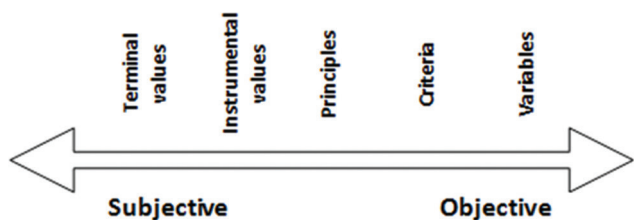


Figure 5: From objectivity to subjectivity in value-based policy-making (developed by authors)

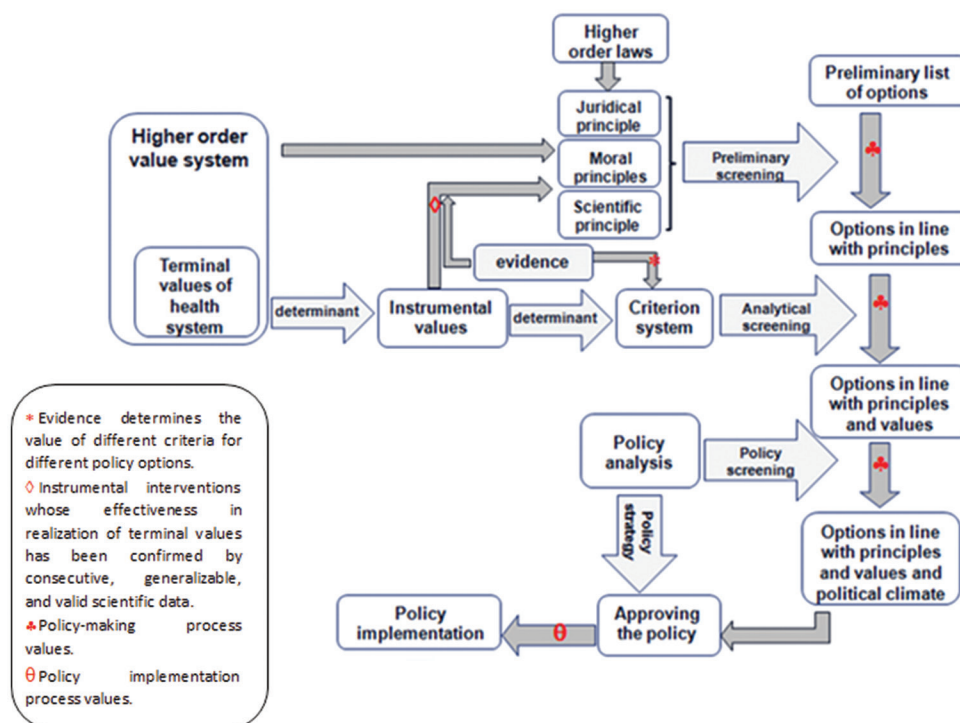


Figure 6: Value-based policy-making model (developed by authors)

reason why public access to health-care services does not exist in the USA could be related to difference in value system. Accordingly, it could be interpreted that the fundamental reference values of the USA are different from those of other countries.^[53]

Various studies have pointed out the importance of value in decision-making^[30,34,43,54-59] Diane *et al.* acknowledge that in the previous decades emphasis on policy-making was on the “decade of greed” or “decade of meanness,” while in the current era the question is that what values can effectively guide policy-making.^[38] This idea points out on one hand the importance of values and on the other hand the existence of ambiguity in the concept of value in policy-making.^[33] Furthermore, Giacomini *et al.* address reference values in Canada’s policy documents and reforms and show that the concept of values is widely different in these documents.^[15] Priester points out the value framework governing US health policy-making system.^[53] Goetghebeur *et al.* present EVIDEM framework for developing transparent and efficient decisions through systematic assessment and combining evidence and reference values into decision-making. Besides, this framework can be used to compare different interventions for different diseases and in priority setting of the interventions.^[25] However, in using the EVIDEM framework, attention should be paid to the nature of the context. For example, in the process of prioritizing interventions, it is important to consider that different criteria are the basis for practice in different environments and contexts.^[25] Researchers have been stressing in the complementary role of evidence and value in decision-making.^[33,55,58] Thus, some have addressed different aspects of the concept of value in policy-making^[29,50] and others argue that policies are authoritative allocation of values and values can be complementary or in conflict with other values.^[25,27] Although this study has been able to illustrate the role of values in policy-making for the first time, its emphasis is on providing policy options for implementation and on the role of values in other policy-making stages, including legitimization, policy implementation, and policy evaluation which has paid less. Another limitation of the model is that it is more theoretical, and it is necessary to identify the relationship between the terminal and instrumental values and criteria based on different ethical ideologies to guide policymakers.

Conclusions

This study attempted to present a model of value-based policy-making in the health system. This model identifies how reference values affect the choice of the best policy option and the relationship between values and evidence, values and criterion has been well demonstrated. It is therefore suggested that policymakers first define the terminal value framework (the relationship of values to each other and their priorities to each other), and then, as

the importance of the terminal values, determine relation of the instrumental values to the realization of terminal values. Finally, the criterion system will determine the best policy option (the relationship between the criterion and their importance to each other is determined). If the path is well managed, one can be sure that the reference value framework has been the basis of policy-making and that the policies have departed from experiences, individual values, evidence free values, and preferences.

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Conflicts of interest

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