



Public Participation in the Process of Local Public Health Policy, Using Policy Network Analysis

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Objectives: To assess the current public participation in local health policy and its implications through the analysis of policy networks in health center programs.

Methods: We examined the decision-making process in sub-health center installations and the implementation process in metabolic syndrome management program cases in two districts ('gu's) of Seoul. Participants of the policy network were selected by the snowballing method and completed self-administered questionnaires. Actors, the interactions among actors, and the characteristics of the network were analyzed by Netminer.

Results: The results showed that the public is not yet actively participating in the local public health policy processes of decision-making and implementation. In the decision-making process, most of the network actors were in the public sector, while the private sector was a minor actor and participated in only a limited number of issues after the major decisions were made. In the implementation process, the program was led by the health center, while other actors participated passively.

Conclusions: Public participation in Korean public health policy is not yet well activated. Preliminary discussions with various stakeholders, including civil society, are needed before making important local public health policy decisions. In addition, efforts to include local institutions and residents in the implementation process with the public officials are necessary to improve the situation.

Key words: Public participation, Policy network, Social network analysis, Local public health policy, Policy process

INTRODUCTION

Public policies have direct and indirect effects in the area and population of their jurisdiction in a democratic political system,

and citizens should be able to participate freely in the political process to voice their demands and preferences [1,2]. There are two aspects of the recent emphasis on participation in the public policy process worthy of review. One is the value aspect, in which participation in a process that can influence one's own life is a fundamental right, and the other is the instrumental aspect, which includes the quality of decision making and improvement in policy compliance from a policy-goal achievement perspective. Participation has many levels and is difficult to illustrate within a simple framework. More narrowly speaking, participation in the policy-making process by the general public, not public officials, can be defined as ordinary citizens sharing the authority and the responsibility, that were exclusive

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to the government in the past, toward the establishment of a cooperative relationship in the development and implementation of healthcare policies [3-5].

The participation of citizens in public health policies is important. Beyond patient-doctor relationships and individual actions, it is a well-known fact that social determinants based on systems and policies have a considerable influence on health. In other words, people have the right to participate in all processes related to their individual health. In particular, the citizens' desire to participate in health policies have been elevated as many health policy-related problems, including health resources allocation, the underprivileged, and interests between classes, have surfaced [6]. In addition, for Korean society, the public sector, including the Korean Health Insurance Corporation, the Korean Health Insurance Review and Assessment Service, public health citizen groups, and the private sector have continuously engaged in efforts for many years to establish a forum for hearings and discussions on policies involving citizen participation. However, how much is actually being done relative to the heightened awareness is still in question, and empirical studies on the subject are lacking.

Previous studies on citizen participation in the health policy process include studies on local healthcare planning and decision-making processes for a fluoride in tap water project [7-9], and, in terms of enforcement, there have been studies on participation patterns and influencing factors related to public health promotion programs for public health centers [10,11]. However, in reality, despite the policy process involving complex interactions of formal and informal relationships between various participants, existing studies are limited to one-dimensional examinations centered on literature reviews. Although there have been attempts to address these shortcomings through qualitative studies, including interviews [8,9], such efforts were not enough to capture the overall aspects of the policy process and the shape of the general public's participation within it. However, the policy-network analysis method has the advantages of visualization and quantification, which allow intuitive understanding of participants in the policy process and their interactions.

The primary objective of this study was to determine the state of citizen participation that is taking place in public health policy processes in South Korea. In particular, the focus was on local level, not the central government level, policy process; a local community represents the actual field where people are affected by endless encounters with problems and resolutions,

including health issues [12]. In terms of examinations of local level public health policies using policy-network analysis, no other studies, except one by Paik and Kim [13], were found. Even that study was on the analysis of project structure and exploration of development directions and did not cover public participation. Therefore, the present study aimed to identify the pattern of participation in both the public and private sectors by using a policy-network analysis at the community level, which is closely tied to the daily routines of residents, the actual subjects of healthcare, and thereby explored the state of citizen participation and its potential.

METHODS

Study Subjects

To study the network for community health policy processes, agenda setting, and decision-making stages, the process of establishing an urban sub-health center was examined; for studying the policy implementation stage, a metabolic syndrome management program was examined. The purpose of establishing the urban sub-health center was to provide a healthcare safety net and guarantee healthcare access for a vulnerable population. The function of the center was not simply diagnosis and treatment, but also health improvement and health problem prevention and management. Accordingly, the opinions of the local residents were necessary to project planning, implementation, and evaluation. Mutual understanding of the purpose of the sub-health center and the scope of the project was important, and it was expected that cooperation and communication between the public and private sectors were necessary to the implementation of the project plan. Moreover, the evaluation criteria for the establishment plan required community participation and association planning.

The goal of the metabolic syndrome management program extends beyond those who are admitted to the health centers to all community residents for continued early detection and management, and the relationship to other community resources was essential to the program. Therefore, both cases were suitable for examining how policy networks operate at the decision-making and implementation stages. At the time of this study (2012), four districts that had completed the establishment of urban sub-health centers within Seoul, the operational status of the metabolic syndrome management programs, and survey accessibility were considered. This resulted in the final selection of two districts, which included four poli-

cy-networks, consisting of establishment of an urban sub-health center to examine the policy decision processes and a metabolic syndrome management program to examine the policy implementation process from each of the two districts within Seoul, for the survey.

The decision-making process for the establishment of the center, which covered the agenda setting and decision-making processes, were chosen for study; this was between 2008 and 2009 for district A and between 2009 and 2010 for district B. For the metabolic syndrome management program, it covered past one year from the survey. The survey was conducted in July and August 2012. The policy-network analysis consisted of examining the interactions and relationship structures of administrators involved in the policy promotion process in the studied cases. The analysis was at the organization level; study participants included all agencies, groups, or organizations (collectively referred to as "agencies" hereafter) from both the public and private sectors that participated or were still participating in each of the policies under study. However, to better suit the study topic, these were limited to agencies under the jurisdiction of respective districts and, if there were no special reasons for inclusion, networks inside of the health center and the district office were excluded. The three elements of policy-network examined were the composition and characteristics of study participants, interactions and relationships between the participants, and the structure of the whole network. The proportion of participation by the public and private sectors including those individuals or organizations playing a central role were also identified.

Survey Contents and Procedures

For the policy-network analysis, the focus was on egocentric network data collection; therefore, data used in previous policy-network studies were referenced, and a survey that fit the study objectives and cases was constructed [13]. The survey was evaluated through a pilot study and internal meetings of researchers; following these actions, it was distributed to agency representatives or workers responsible for case policies from the agencies identified as participants. The survey consisted of three sections: 1) network participants: the general classification under which the agency belonged, awareness of policy participation, and agencies associated with the policy process; 2) network characteristics: content of exchange between associated agencies (information, resources, and route of exchange), strength, reliability, frequency, and nature (cooperation or con-

flict); and 3) network formation: reasons for participating in the policy, reasons for exchange between associated agencies, and agencies with influence during the policy participation process.

The survey was conducted via snowball sampling. First, the most readily accessible person in charge of each of the two policy cases from each district was surveyed as a representative of the corresponding health center. A list of agencies that had primary connections to the health center was obtained, and these agencies were surveyed. Then the agencies with connections to agencies on the first list were identified. This process was repeated until no new agencies were identified [14]. The survey was emailed or hand-delivered to all participants and the responses were returned to the researcher. Any unclear responses were immediately reconfirmed or through follow up telephone calls.

Analysis Methods

For the general characteristics and awareness of the agencies, frequency analysis, *t*-tests, and Wilcoxon rank-sum tests were performed, and for policy-network analysis, social network analysis was used. A social network analysis consists of visualization and analysis of structural properties; visualization, which is considered to have an advantage over other methods of analysis, intuitively displays the connection between the activity performers that exists as numeric data, which may be difficult to understand [15]. The indices used in network analysis were the network's size and density, degree, closeness, and betweenness centrality and centralization. In network analysis, the goal of central structure analysis is to identify which activity performers are the most important among all activity performers and to determine the degree of centrality, that is to what degree the network structure is centralized to the activity performers identified as most important. Three types of centrality values, which determine the importance of each activity performer, were analyzed. Degree centrality measures the size of direct influence; closeness centrality measures the immediacy, which indicates how quickly information is sent and received between activity performers; and betweenness centrality measures the influence that is generated during the information or influence "delivery process," in other words, the level of control on the flow of information or resources.

A similar index, centralization, indicates the central concentration of the entire network, rather than showing levels of individual activity performers. In addition, directionality should be considered in looking at the relationships between activity

performers. Directionality includes “in-degree,” which refers to the activity performer acting as the reference for the flow of information, resources receiving such information, or resources from another activity performer, and “out-degree,” which refers to the referenced activity performer sending these to other activity performers. Therefore, in-degree looks at the level of influence possessed by the activity performer and out-degree is interpreted by the activity performer’s sociability or the structure’s expandability [16]. The program used for network analysis was Netminer 4.0, and for other analyses, Stata/SE version 12.0 (Stata Corp., College Station, TX, USA) was used.

RESULTS

The organizations ultimately selected for the analysis were 8 and 9 agencies from districts A and B, respectively, for the urban sub-health center establishment process, and 30 and 32 agencies from districts A and B, respectively, for the metabolic syndrome management program. In the process of the urban sub-health center’s establishment, the participating agencies were 6 out of 8 (75%) from district A and 6 out of 9 (66.7%) from district B. There was a greater participation rate from the public sector with a pattern of involvement by few private agencies centered on health centers and the district head office. As for metabolic syndrome management program, the distinction between public and private sectors was not particularly meaningful, as most of the interacting agencies were generated from interactions by the health centers from conducting the “outreach health consultation”. In terms of the level of awareness by the participating agencies with respect to the influence of the general public on community health policy process, for each case and stage, distributions of 4.6 points (minimum) to 6.2 points (maximum) were seen. There were no significant differences observed the comparisons of public sector to private sector and decision process to implementation process.

Policy Decision Network and Citizen Participation: The Establishment of the Urban Sub-health Center Process

The eight agencies from district A identified as participants in the establishment of the urban sub-health center decision process were analyzed. The public sector included the department in charge of the establishment of the sub-health center process (hereinafter “health center”), the family welfare division, the head of district from the district head office, and the

community center and its sub-department in charge of neighborhood management programs. The private sector consisted of the citizens’ community committee and a functional organization (a medical association).

Figure 1 shows the schematic diagram of the network of the policy-making process for establishment of the urban sub-health center in district A. The shape of the nodes represents whether the participating agencies belonged to the public or private sector, the thickness of the arrows indicates the strength of the relationship, and the shape of the arrows indicate the properties of the interaction.

Due to the geographical characteristics of district A, there were complaints from residents in a section of the district that access to the health center was inconvenient and that repairs and improvements to the existing sub-health centers, based on public health and welfare promises made by the district head for “installation of regional sub-health centers”, had not been completed. Therefore, the establishment of the urban sub-health center was initiated, with the public health division to be set at the center of the process. The urban sub-health center was planned for the same location as an existing sub-health center, by expanding the use of the building from one to four floors. During this process, problems with relocation of the youth cultural center and neighborhood management programs’ offices, which were already operating at the planned expansion site, were encountered. The residents utilizing the programs opposed the relocation; this opposition was relayed by the head of the neighborhood management program (also a community autonomy board member). The community center in charge and the corresponding district division engaged in negotiations. As a result, the youth cultural center was relocated and a decision was made to operate the neighborhood management program in its original location with different operating hours than the sub-health center.

Among the nine agencies participating in the establishment of the urban sub-health center establishment decision process from district B, the public sector consisted of the department in charge of the entire sub-health center establishment process (hereinafter “health center”) and the head of district, the district council, district office (A), and the division in charge of veterans’ organizations. The private sector consisted of the citizens’ community committee and its board, along with two veterans’ organizations (Figure 1).

In district B, the person who acted as the starting point and played a decisive role in the establishment of the urban sub-

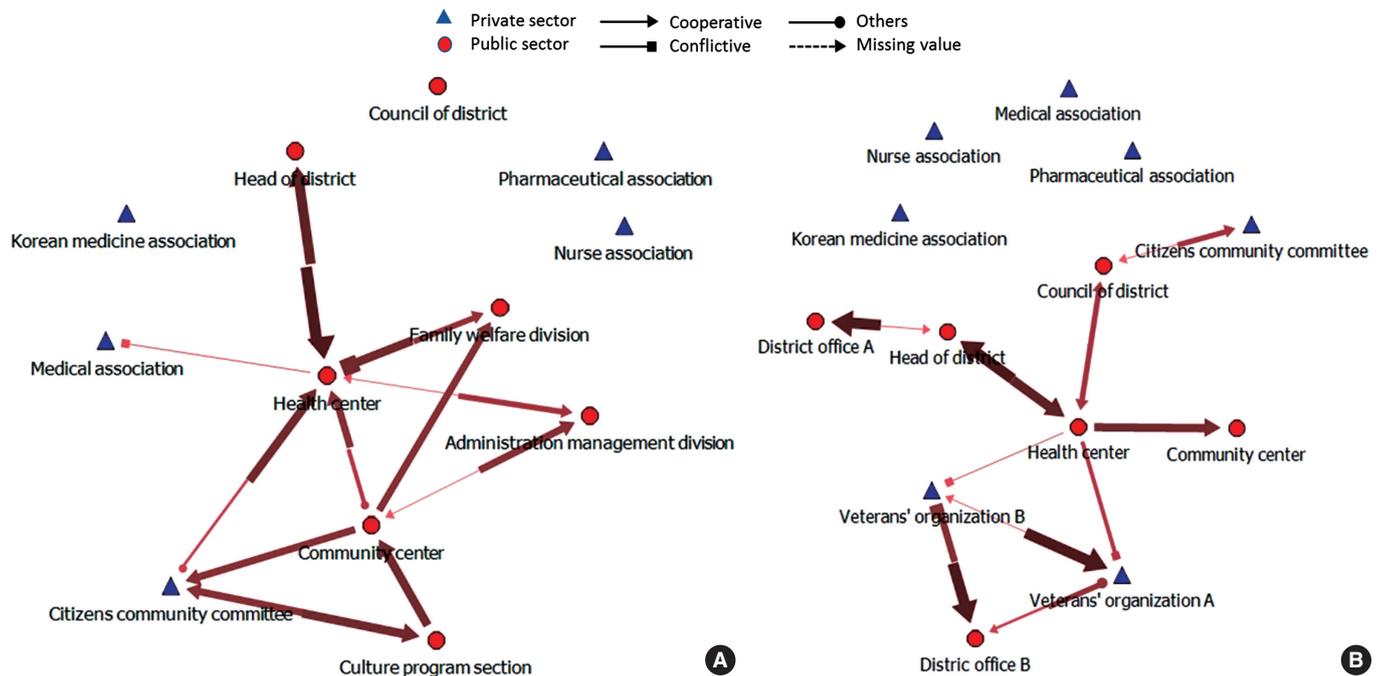


Figure 1. Network of the policy-making process for establishment of the urban sub-health center. (A) District A and (B) district B.

health center process was the head of district. The head of district requested information from various district departments about budget, land procurement, construction, and human resources, and delegated the work to the head of health center and the department in charge within the health center. Because the district office and health center were sub-divisions of the regional autonomous municipality, referred as district B, acting with full acceptance of the will of and instructions from the head of district can be understood. The health center frequently attended board meetings, at the request of the district council, to explain the establishment of the urban sub-health center and its necessity, as well as to report on the process, thereby forming a close relationship. The health center sent information to the corresponding community center in the neighborhood where the urban sub-health center was to be established, but during the site selection process, conflicts arose with two veterans' organizations already situated at the site. The site selection process required negotiations with the corresponding department within the district office and the establishment of the sub-health center experienced delays.

In both cases, there were no direct connections with health-care functional organizations. In particular, medical associations did not participate in the actual decision-making process, although it appears these groups participated in post-decision discussion on cooperation. Although the mechanisms of public

and private sectors appear to be similar, the process in district B was a more public-centric hierarchical structure, centered on the health center, district office, and district council, than the process in district A was.

The most basic indices used to examine policy-network characteristics are size and density. In district A, density, which is the relationship of possible connections to actual connections within a network, was 32.1%, which represented 18 out of 56 possible connections. District B's density was 23.6%, which represented 17 out of 72 possible connections. District B, compared to district A, had a relatively larger network size, but density, indicative of the level of connection, was lower. In relationship to the schematic diagram, the relationships in district B were hierarchical rather than mutually horizontal. This can be interpreted as a similar pattern of information and resources flowing to each department.

The network centrality and centralization values from the two districts are presented in Table 1. In terms of centrality and centralization values from district A, the health center took the highest positions for both in and out degree, appearing to have the largest influence; particularly in the out-degree, which is the aspect of providing information and resources that actually drives the policy decision process, the health center had the most active and important role. For centrality and centralization values from district B, the two veterans' organizations

Table 1. Centrality and centralization score of the network of establishment of the urban sub-health center

	In-degree	Out-degree	In-closeness	Out-closeness	Node-betweenness
District A					
Centralization	52.4%	71.4%	51.9%	59.7%	53.1%
Centrality					
Health center	0.71	0.86	0.73	0.88	0.57
Community center	0.43	0.57	0.57	0.70	0.12
Citizens community committee	0.43	0.29	0.57	0.58	0.15
Family welfare division	0.29	0.14	0.51	0.50	0.00
Administration management division	0.29	0.29	0.51	0.54	0.00
Head of district	0.14	0.14	0.43	0.50	0.00
Culture program section	0.14	0.29	0.37	0.50	0.01
Medical association	0.14	0.00	0.50	0.00	0.00
District B					
Centralization	17.9%	50.0%	36.7%	70.9%	37.3%
Centrality					
Veterans' organization A	0.38	0.25	0.47	0.25	0.04
Veterans' organization B	0.38	0.25	0.47	0.25	0.04
Health center	0.25	0.63	0.33	0.73	0.43
Head of district	0.25	0.25	0.29	0.50	0.18
Council of district	0.25	0.25	0.29	0.50	0.18
District office B	0.25	0.25	0.34	0.25	0.00
District office A	0.13	0.13	0.20	0.35	0.00
Citizens community committee	0.13	0.13	0.20	0.35	0.00
Community center	0.13	0.00	0.28	0.00	0.00

showed high in-degree values for connection centrality and closeness centrality. The interpretation of this is that the veterans' organizations took a relatively high position in the power relationship within the series of small networks surrounding the issue of site selection and had fewer overall nodes. As the health center showed the highest values for betweenness centrality and all types of out-degree centrality, the results were not much different from district A. In the network of the policy-making process for establishment of the urban sub-health center, district B, in comparison to district A, had relatively low in-degree centralization, and out-degree centralization was relatively low in connection centralization and relatively high in closeness centralization. Unlike district A, which showed con-

nectivity strongly centered on health center, district B showed more of a hierarchical relationship (head of district–district office–health center) and presence of connection networks surrounding the veterans' organizations, which may have weakened the centralization tendencies. Despite this, it can be seen from the out-degree closeness centralization value that health center still played an important role.

In the evaluation of inter-departmental relationships, districts A and B reported negative mutual exchanges of 18.8% and 14.3%, respectively. The reasons given were that not all departments shared the same interests and they were unable to cooperate well; such evaluations came primarily from the conflict during the site selection process.

Policy Implementation Network and Citizen Participation: Metabolic Syndrome Management Program Case

The metabolic syndrome management program in district A was centered on the health center as a complete star shape. In looking at the figure, the health center formed one-on-one associations with individual agencies and groups, which did not continue on to further connections and only isolated associations were added (Figure 2).

District B's schematic diagram of metabolic syndrome management program showed an overall star shape, but the presence of some links is seen between the interacting agencies. One was the link that originated from community center, which played the role of introducing the program and making connections to nearby agencies and other functional groups within its jurisdiction, including the youth leaders council, defense council, sub-district council, community credit co-op, and others. Another link was centered around neighborhood coalition, care center, and self-support center; of these, neighborhood coalition, organized approximately ten years ago as a civil activity group, was at the center. The health center attempted to expand this link to approximately 10 other civic organizations. Besides these, a link had formed between high school D and primary school A, with the schools in close geographical proximity to each other (Figure 2).

The network density of district A's metabolic syndrome management program implementation process was 6.4%, representing 56 connections out of 870 possible connections, which, when compared to the network of policy-making process for establishment of urban sub-health center, was very low. The network density of district B was 7.1%, representing 70 connec-

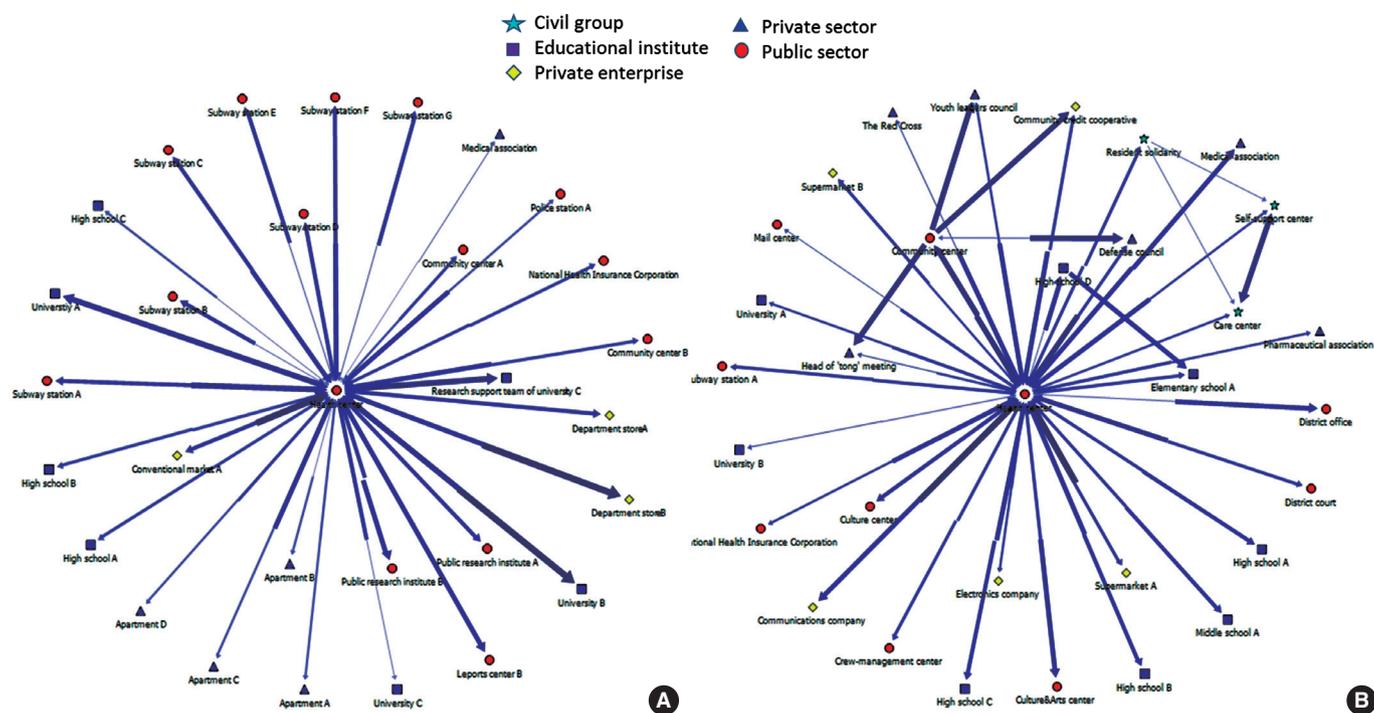


Figure 2. Network of the policy-implementation process for the metabolic syndrome management program. (A) District A and (B) district B.

tions out of 992 possible connections, which appeared slightly higher than district A, but indicated almost no difference.

The centrality and centralization values from the networks of the two districts are shown in Table 2. As can be surmised from the schematic diagram, for all types of centrality from both districts A and B, the health center appeared the highest, and in particular, betweenness centrality for all types of agencies was close to zero, except for the health center. This type of case indicated that the network structure was very fragile and, if the health center organization disappears, the network will experience a complete breakdown and will be difficult to maintain further; even if the person in charge is replaced or changes in resources for the central agency occur, the network still may not function properly. In addition, considering the material and immaterial resources needed for forming and maintaining the network, this type can also be viewed as being highly ineffective. However, despite the fact that both districts showed the same pattern of being heavily concentrated on the health centers, the differences between the two districts were seen in the questions regarding network formation. Regarding the reasons for participating in the metabolic syndrome management program network in district A, 36% responded it was due to official or unofficial requests and/or because of public duty; 55% re-

sponded that it was because they thought it would help improve health in the region or the agencies within the district. In district B, the responses were 28.5% due to official or unofficial requests and/or because of public duty; and 71.4% responded that it was because they thought it would help improve health in the region or the agencies within the district. Thus, a more proactive aspect was present in district B. In terms of reasons for mutual agency exchange, 11.1% of community agencies in district A responded that the health center's good reputation and trust was the reason; in comparison, 28% in district B made this response, a value that was twice as high.

In terms of mutual exchange in inter-agency relationships, districts A and B had negative evaluations of 14.3% and 9.7%, respectively, and both districts noted inadequate conditions, differences in interests, lack of interest, and discord were responsible.

DISCUSSION

According to the study results, in the community health programs policy-making processes, citizen participation still appeared to be lacking at the decision-making and implementation stages. A previous study on citizen participation attributed

Table 2. Centrality and centralization score of the network about the metabolic syndrome management program

	In-degree	Out-degree	In-closeness	Out-closeness	Node-betweenness
District A					
Centralization	92.9%	100.0%	92.7%	93.2%	93.1%
Centrality					
Health center	0.93	1.00	0.93	1.00	0.93
Department store A	0.03	0.03	0.47	0.51	0.00
Supermarket B	0.03	0.03	0.47	0.51	0.00
University A-C	0.03	0.03	0.47	0.51	0.00
Public research institute A	0.03	0.00	0.49	0.00	0.00
Public research institute B	0.03	0.03	0.47	0.51	0.00
Leports center B	0.03	0.03	0.47	0.51	0.00
Apartment A-D	0.03	0.03	0.47	0.51	0.00
High school A-C	0.03	0.03	0.47	0.51	0.00
Conventional market A	0.03	0.03	0.47	0.51	0.00
Subway station A-G	0.03	0.03	0.47	0.51	0.00
Medical association	0.03	0.03	0.47	0.51	0.00
Police station	0.03	0.03	0.47	0.51	0.00
Community center A, B	0.03	0.03	0.47	0.51	0.00
National Health Insurance Corporation	0.03	0.03	0.47	0.51	0.00
Research support team of university C	0.03	0.00	0.49	0.00	0.00
District B					
Centralization	92.3%	99.1%	91.3%	97.3%	95.4%
Centrality					
Health center	0.94	1.00	0.94	1.00	0.96
Self-support center	0.10	0.06	0.51	0.52	0.03
Care center	0.10	0.03	0.51	0.34	0.00
Head of 'tong' meeting	0.06	0.03	0.49	0.51	0.00
Defense council	0.06	0.06	0.49	0.52	0.00
Community center	0.06	0.16	0.49	0.54	0.00
Youth leaders council	0.06	0.03	0.49	0.51	0.00
Community credit cooperative	0.06	0.03	0.49	0.51	0.00
Elementary school A	0.06	0.00	0.51	0.00	0.00
Public institution A-G	0.03	0.03	0.48	0.51	0.00
High school A-C	0.03	0.03	0.48	0.51	0.00
Middle school A	0.03	0.03	0.48	0.51	0.00
Supermarket A, B	0.03	0.03	0.48	0.51	0.00
Electronics company	0.03	0.03	0.48	0.51	0.00
Communications company	0.03	0.03	0.48	0.51	0.00
University A, B	0.03	0.03	0.48	0.51	0.00
Subway station A	0.03	0.03	0.48	0.51	0.00
The Red Cross	0.03	0.03	0.48	0.51	0.00
High school D	0.03	0.06	0.48	0.52	0.00
Resident solidarity	0.03	0.10	0.48	0.53	0.00
Medical association	0.03	0.03	0.48	0.51	0.00
Pharmaceutical association	0.03	0.03	0.48	0.51	0.00

these results to low awareness by citizens regarding participation, constraints in effort and costs associated with citizen participation, the operation of the citizen participation system as a formality, passive information disclosure by the administrative department, a negative perception and attitude by the local government towards citizen participation, and lack of feedback for citizen participation [17]. The present study also found poor conditions for participation, lack of interest, and conflict of interest as causes, and, although not appearing directly through the study results, constraints in effort, costs associated with participation, and lack of incentive were also mentioned during the survey process as causes that made participation difficult.

For the establishment of the urban sub-health center decision process, the network schematic diagram and central structure showed similar patterns in both districts. The components of participating agencies show public sector-centered structure, and, for key issues, most of the work was conducted in the public sector, represented by the district office and health center, and the private sector was involved only when it came to secondary issues, such as site selection. For functional organizations, such as civic groups and medical associations, information was passed to them only after all key issues had been decided, which inhibited a priori discussions; hence, the chances of conflict afterwards were inevitably high. Reaching a consensus through sufficient prior discussions with related groups, instead of unilaterally enforcing the plan, is a method that guarantees the effectiveness of the policy [18]. A survey asked citizens about their willingness to participate in city's administrative affairs, to which 40% said they would not participate because, even when suggestions were submitted, these were not reflected in the outcome [19]. This shows that when public sentiment is treated as more than simply advisory and is actually reflected in the decision-making, more participation can occur [20]. When citizen participation is used only for justification or proceeds simply as a formality, it can result in the loss of trust. However, this is not simply a public sector problem; Kim [8] analyzed the awareness of citizen participation in the implementation stage of community health planning through an interview process and found that awareness of the purpose and main subject of participation were absent in public health centers, heads of health groups, and citizen representatives; thereby, social awareness of citizen participation is necessary, not just the development of a possible system.

For the community health policy implementation process, using the case of metabolic syndrome management program, the

two districts showed slight differences, but overall, they were both unable to escape the starshape network. The original purpose of metabolic syndrome management program was for the health center to build a service system with local private resources to provide high quality service by concentrating the scattered health programs [21]. The "outreach health consultation," in which the employees from health centers visited residents outside the health center to perform metabolic syndrome examinations and consultations, was for not only admitted patients but also was intended to reach various areas of the community with poor accessibility. In other words, the existing networks of the community and health centers needed to be fully utilized to effectively reach the original goals, but, at present, an organic method of jointly using the networks among the various agencies, besides the health centers, is not being used. Instead, forming one-on-one relationships between the health center and community agencies has stopped. Because of this, the efforts required to maintain the network are high and this results in low network dynamics and ripple effects. The network utilization outside district B's health center and the trust shown by the associated agencies for health centers demonstrate the possibilities for an active network, but, based on the current centrality values, this is unfortunately not enough. In a similar vein, Paik and Kim [13] conducted a network study on "safety doctor system" for the Songpa district (Seoul, Korea) and reported that health centers had the highest centrality, but the degree centralization value was 65%, less than in this case. In their project, the head of the Songpa district health center was seen as the central figure from the analysis of the decision-influencing network, and the centrally focused network centered on the Songpa district health center was observed. The authors found that if the Songpa district health center was excluded from the entire network, the degree of connection dropped, partnerships between members could not extend to the entire network, and the structure weakened into fragmented sub-groups. Therefore, the strength of arrangements with medical associations or childcare organizations was weakened and, in actuality, the arrangements are not well implemented. It has been pointed out that in many cases, associations were not formed properly if someone other than the person in charge and who recognizes the necessity of association is put in charge of association work. In the present study, despite the fact that the field administrator was personally responsible for associations, the association network did not form successfully [22]. There are probably several reasons, but the most important one might be that the admin-

istrative evaluation index consisted only of number of screenings and the rate of re-screening, which was unable to properly evaluate the quality aspects of association. Even though properly forming community associations consumes much time and administrative efforts, not enough support is given to this aspect. Moreover, community associations should not be presented only through an evaluation index; what is needed during the process should be identified to arrive at a detailed plan that can be of real assistance and develop motivation. In a system similar to the current one, the performance outcome represented by a results index cannot be ignored and, without empathy and sympathy for the network necessity, it would be difficult to raise the level of quality. Therefore, enhanced awareness spanning the entire social and organizational levels, along with construction of a system to support a continuous and stable network, is needed.

Because the present study conducted analysis at organizational level, the results are limited because they do not reflect individual level of participation. Although it can be interpreted that the low response rate itself reflects the weakness of the policy network, not all participating agencies were surveyed that there is also the risk of bias from missing participants who were not cooperative. To devise a plan to have citizen participation in action, instead of being stuck at the level of moral dimension and systematic formality, as it is now, systematic or procedural considerations or evaluations based on administrative numbers must be overcome. Instead, mechanisms related to how a certain process is proceeding and why it is the way it is should be examined. The present study focused on determining the actual conditions for network formation, but only general questions were asked; thus, through future studies focused on network formation and dynamics, more realistic plans should be derived.

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CONFLICT OF INTEREST

The authors have no conflicts of interest with the material presented in this paper.

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