



Relationship between Primary Care Physicians' Perception of Their Services and Quality: A Case Report Using the Korean Primary Care Provider Survey

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Dear Editor-in-Chief

Primary care is a key element that plays a critical role in healthcare system. Primary care serves as the first contact point and gatekeeper in the healthcare delivery system, and is the foundation that performs the coordination, comprehensiveness, and continuity functions of healthcare services (1). The OECD recently recommended strengthening primary care and redesigning the healthcare system in South Korea (2). Moreover, the Korean government has implemented the "Community Primary Health Care Pilot Project" as a national task in 2014. The project aimed to strengthen the role of primary care and to lay the foundation for community-based primary care. This study was conducted in primary care physicians to measure their perception on the primary care effects and quality provided by them. In particular, it was conducted in physicians who participated in the project to investigate the effects of primary care services on patient outcomes, before and after participation in the pilot project, and to investigate the relationship between the effects of primary care services and quality.

In the present study, a research model was constructed with three items: input, intermediate outcome, and final outcome to measure the ser-

vice effects and the changes in primary care quality among physicians who participated in the project (3). First, the "input" included care plans and services performed by the physicians. Next, the service effects, as the "intermediate outcome," consisted of patients' changes and improvement in doctor-patient relationships. Lastly, the "final outcome" was improvement to primary care quality. This study involved primary care physicians from 162 clinics who participated in the pilot project from 2014 to 2017, and we surveyed participants during that time. A structured questionnaire was developed to measure how the services provided by physicians participating in the project change the primary care quality. This questionnaire was adapted from the Primary Care Performance Measurement (PCPM) which is a primary care performance measurement tool for Ontario State, Canada (4). It consists of two categories: the effects of primary care service (intermediate outcome) and quality (final outcome). The category for assessing the effects of service consists of 3 domains with 14 items, including 6 on disease management, 4 on health promotion, and 4 on doctor-patient relationship. And the category of quality contains 3 domains with 8 items, 2 on comprehensiveness, 1 on coordina-



tion and 5 on holistic care. The effects of service were rated on a 4-point scale, and the primary care quality was rated on a 5-point scale.

The general characteristics of the participants showed that males (81.3%) were more common than females (18.8%), and those in their 50s were the most (60.4%). In terms of the working area, the proportion of those working in Jungrang-gu, Seoul, as urban type area, was the highest with 45.8%, whereas the proportion of those working in Muju-gun, Jeonbuk, as rural type area, was the lowest with 4.2%. In specialty, the proportion of internal medicine was the highest with 64.6%, followed by family medicine with 20.8% and general practitioners with 6.3%.

A correlation analysis was performed to explore the relationship between the service effects, as the intermediate outcome, and the quality of primary care, as the final outcome. All the intermediate outcome variables showed statistically significant positive correlations with comprehen-

siveness among the primary care quality assessment domains (correlation coefficient 0.47–0.59, $P < 0.001$). The correlation between all the intermediate outcome variables and coordination was somewhat weaker (correlation coefficient 0.30–0.43), but all the intermediate outcome variables were found to be statistically significant. However, there was no significant correlation between all the immediate outcome variables and holistic care.

The providers' perception of the primary service might affect primary care quality, which can be interpreted that primary care quality is improved when the service effects are enhanced. In addition, such results were significantly improved after participation in the project, suggesting that strengthening the role of primary care physicians can enhance the effects of primary care service, and thereby improve the quality (Table 1).

Table 1: Relationship between service effects and primary care quality

<i>Domain</i>	<i>Effect 1^{a)}</i>	<i>Effect 2^{b)}</i>	<i>Effect 3^{c)}</i>	<i>Effect total</i>	<i>Quality 1^{d)}</i>	<i>Quality 2^{e)}</i>	<i>Quality 3^{f)}</i>	<i>Quality total</i>
Effect 1	1.00							
Effect 2	0.78 (<0.001)	1.00						
Effect 3	0.69 (<0.001)	0.67 (<0.001)	1.00					
Effect total	0.90 (<0.001)	0.92 (<0.001)	0.87 (<0.001)	1.00				
Quality 1	0.58 (<0.001)	0.47 (<0.001)	0.54 (<0.001)	0.59 (<0.001)	1.00			
Quality 2	0.37 (0.009)	0.30 (0.041)	0.43 (0.002)	0.40 (0.005)	0.42 (0.003)	1.00		
Quality 3	0.07 (0.636)	0.06 (0.695)	0.17 (0.248)	0.11 (0.461)	0.22 (0.138)	0.08 (0.583)	1.00	
Quality total	0.41 (0.004)	0.33 (0.022)	0.48 (<0.001)	0.45 (0.001)	0.67 (<0.001)	0.64 (<0.001)	0.76 (<0.001)	1.00

- a) Service effects domain 1, change in Disease Management
- b) Service effects domain 2, change in Health Promotion
- c) Service effects domain 3, change in Doctor–Patient Relationship
- d) Quality domain 1, change in Comprehensiveness
- e) Quality domain 2, change in Coordination
- f) Quality domain 3, change in Holistic Care

Conflict of interest

The authors declare that there is no conflict of interest

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