Research on the Application of Competency Model in Medical and Health Field

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Abstract. The competency model has become a hot topic in human resource researches, and its research theory and methods have gradually become mature in many fields. In recent years, there have been many applications and researches on the competency model in the field of health care both at home and abroad. This paper summarized and discussed the application of competency model in medical and health field, and classified them mainly into five parts, including researches on the competency model of the nursing staff, researches on the competency model of the clinicians, researches on competency model of public health personnel, researches on competency model of managers in medical institutions, and researches on competency model of medical education. Through the analysis, we could also see that the competency model applied in medical and health field is also popular.

1. Introduction

The competency model is a combination of competency elements for a particular position or role. It is an important foundation for a series of human resource management and development practices, such as job analysis, recruitment, selection, training and development, performance management, etc. According to the different scholars' concept and research point of view, the definition and establishment of competency model also had some differences. At present, the two widely accepted competency theory models are the iceberg model (McClelland, 1973 and Spencer, 1993) and the onion model (Boaz, 1995).

Through the relevant literatures, we can see the competency research and practice originated in the United States. After the 1980s, there had been a large number of applications of the competency model in the western countries. And some other countries have also begun to research and explore the application of competency model, and establish a series of competency model library and measurement scale.

The research on the competency model in China has begun from the 1990s, and the main object is the senior managers of the enterprise. The application of competency model is mainly for the human resource management, including job analysis, job qualification analysis, recruitment and selection, training and development, performance appraisal, compensation mechanism management and so on. Through the relevant literatures, we could see the competency model is mainly applied in the research of quality characteristics (competencies) of general managers at home and abroad. With the development of competency research, the application of the competency model in general managers have been more and more doubtful. Therefore, the researches and application of the...
competency model in recent years have gradually shifted to specific industry and specific positions, such as financial officials, high-tech entrepreneurs, primary and secondary school teachers, marketing personnel, IT experts, and personnel in public sector and so on. And they have been verified their roles by cases in human resource management, including job analysis, recruitment, training, performance improvement and so on.

In the last twenty years, there have been many applications and researches on the competency model in the field of health care both at home and abroad. Some of them focus on the managers in the medical field, and some focus on the professionals in the medical field. They could be summarized mainly in the following areas:

Researches on the Competency Model of the Nursing Staff

Sherman constructed the competency model of nursing managers by the method of interview, which paid attention to six aspects including personal control, interpersonal relationship, financial management, human resource management, carefulness and systematic thinking. Ming Liu and some scholars of Tsinghua University established a set of competency assessment tools for nurses through the research on the characteristics of nursing staff [1]. Bonnie and some scholars analyzed 140 papers on the nursing manager competency from 2000 to 2004, and summed up the competency ranking of the nursing managers they should have. Fisher MJ and some scholars constructed a four-factor competency model by investigating 1,000 critical care nurses with a questionnaire of the competency standards in Australian College of Critical Care Nurses (ACCCN) [2]. Casterline GL evaluated the abilities of nurses to take care of patients with the competency model [3]. Meretoja R and Koponen L compared the best abilities and the practical abilities of the nurses with competency models [4]. Levi A and some scholars have researched on the competence of midwives [5].

2. Researches on the Competency Model of the Clinicians

Norman concluded the five major areas of the surgeon's competency with the generic competency model, which are clinical skills, knowledge and understanding, interpersonal characteristics, problem solving and clinical judgment, and professional and technical skills. Maatsch determined the key factors in the competency of the surgeon with the psychometric analysis and established a competency model that could be used to predict job performance. Patterson F and some scholars have also established the competency models for interns and clinical residents in obstetrics and gynecology, anesthesiology, pediatrics, and verified the obvious differences of the main competencies among the three professions with the questionnaires [6]. Hamoda HM et al. have researched five competencies that psychiatric residents should have [7]. Xianji Wang, Xinpeng Zhang, etc. introduced the WONCA tree model, described the application value of general practitioner’s competency model in general medical human resources planning, general education and training, recruitment and introduction, assessment and promotion, and so on. And then they pointed out the problems that should be paid attention to when the model were applying [8]. In addition, there were also a lot of domestic researches on competency model of emergency physicians, anesthesiologists and other clinical physician.
3. **Researches on Competency Model of Public Health Personnel**

Lihua Fan, Tonggang Zhao and some scholars discussed the competency model and quality evaluation system applied in human resource management of health supervisors [9]. Tao Sun, Tong Zhao and some scholars explored the competencies of health supervisors through literature, work analysis, questionnaires and behavioral event interviews, and constructed a competency model for health supervisors [10]. Peizhi Xing, Lei Liao and some scholars analyzed the characteristics of the human resources of the disease prevention and control system, and suggested that the competency model should be introduced into the disease control industry [11].

4. **Researches on Competency Model of Managers in Medical Institutions**

The "Research on Competency Model of Managers in Medical Institutions" published by Feng Li, Suzhen Fang and some scholars is the most representative research to introduce the competency theory in the field of health, which established the managers competency model in four types of institutions, including the president of the hospital, the director of the center for disease control and prevention, the director of the community health service center and the dean of the township health center [12]. Ji Li established a theoretical model based on the research of the competency of managers in community health service institutions of Shanghai, and established four application models of the identification standards and general standards for the post competencies of senior and junior personnel respectively in community health service institutions of Shanghai [13]. Juan Jin and Shaoxian Chen established the competency model for the dean of health clinics in towns composed of 11 characteristic items of three dimensions, which were knowledge, skills, personality attitudes and values, through the petition survey of 132 deans and vice deans of health clinics in towns of 21 cities in Guangdong province [14]. Ai-tian Yin, Feng LI and some scholars established the competence model for the presidents of hospitals through the researches on 30 presidents of hospitals in Shandong and Jiangsu provinces [15]. Zhifang Zheng established the competency model for the administrative personnel in hospitals with the method of the behavioral event interview, and researched on the evaluation methods of the administrative personnel in hospitals based on it [16]. Professor Lihua Yi put forward the competencies of the department directors composed of three dimensions, including their own quality, department management behavior and team building through the research on the management abilities of the department directors [17]. Sherman RO, Conley SB and some scholars have researched on the development of the competency model for nursing managers [18-19]. Supamanee T and some scholars have researched the competencies of nursing staff managers in Thailand [20].

5. **Researches on Competency Model of Medical Education**

Piryani RM and some scholars applied the competency model on the evaluation of physician examination skills (PES) [21], Yang FY and some scholars applied the core competency model on abilities research of Chinese nursing graduates to promote the reform of nursing education [22]. Coffie SD and some scholars researched on the clinical competencies for clinical nurse specialist students [23]. Kamarudin G and some scholars researched on the impact of educational intervention on the improvement of educational methods through the competency model [24]. Ablah E and some scholars recommended that we should apply the competency model and developed the appropriate standards to improve the level of global health education [25].
Through the analysis above, we could see that the competency model has become a hot topic in human resources research, and its research theory and methods have gradually become mature in related fields.

In addition, competency models have been now used in some other areas. For example, Schor KW and some scholars applied the competency model on the post-disaster health service capacity research [26]. Park HS and some scholars applied the competency model on rehabilitation of core competencies of young people with Internet addiction [27]. Garman A and some scholars applied the competency model on the research of the quality of medical services [28]. Redmond E had researched the staff's perception and response to the competency model [29]. Stone TH and some scholars had verified the practicability of competency model [30]. Rodolfo et al. applied the competency model on the practice of psychology [31]. Rey-Casserly C et al. applied the competency models on the clinical neuropsychological researches [32]. Molinari V applied the competency models on the older psychology researches [33]. Jackson Y and some scholars applied the competency model on the research of children's psychology [34]. Madan-Swain A and some scholars analyzed the doctor's research abilities through the competency model [35]. Wang et al. researched the main curriculum of medical colleges based on competency model [36]. Lee TS and some scholars researched the application of the competency model in project implementation and management [37]. Besides that, some scholars have researched the method of competency, including the analysis of the application needs of competency model [38-39], an action research of the competency-based model [40], verifying the scientific nature of the competency model [41-43], and so on.

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7. References


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