Diffusion of Ideation and Innovation in the Finnish Primary Health Care Centers: An Action Research

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Abstract- Providing access to care along with delivering good quality services to patients are the main aims of the health care systems in different countries, especially in developed countries. Today innovation in primary health care centers (HCC) is one of the important debates among the governments and academic forums. Although the number of studies in the field of innovation in health care sectors (HCS) has increased greatly over the last 10 years, little is known about the conditions for the successful implementation of innovations in the health care centers (HCC). This article, in the frame of an action research, reviews and assesses the situation of Finnish health care centers from innovation management viewpoint. The work also tries to answer to one of the important questions designed by policy and decision makers titled “How can Finnish health care centers move toward the systems that will continuously improve their innovation and creativity?” Then, an innovative framework presents and describes the main characters and dimensions of the diffusion of ideation and innovation in the HCCs.

I. INTRODUCTION

The main tasks of all public health care systems in different countries are to maintain the access and equity of optimal health care among the citizens. The level and quality of each health care depends on the factors such as population, GDP, governmental budget, health expenditure, and country’s age pyramid [1]. In recent decades, the Finland’s health care system has developed rapidly and stands among the world’s top health care systems with many population indicators placing. However, these successes should not be used as excuses to neglect further development. Concerns and trends such as aging population, shortage of native manpower, advances in medical science, and increasing expectations along with budget limitations exist and threat the successes of the Finnish health care system and make improvement a necessity. For instance, the aging Finnish workforce affects patient demographics and the availability of nurses and clinicians. This means upcoming wave of retiring health care experts will occur at the time when Finland (even other Nordic countries) needs more professionals.

To overcome the named challenges, health care systems should focus on series of strategies and solutions. According to the studies, prevention and incentives strategies among population, technological development in the health care systems, diffusion of integrated IT systems, privatization of the health care systems, increasing the public awareness via social media and etc. are the most important subjects that governments and policy makers have tried to notice in their health care strategies [2].

Innovation in the health care sector (HCS) is also one of the important identified strategies to outreach the systems. Generally, innovation has an important role in value creation and improvement for clients. This is particularly true in the health care systems, where much progress has occurred in various fields of clinical research and medical technology. However, innovation dealing with the organization of care centers and professionals also has great potential to drive improvement in value. This is important because the primary health care centers (HCC) are working directly with almost all the population. In addition, the introduction of innovation in HCS and especially HCCs is widely recognized as a complex process. While innovation is an idea or practice that is perceived as new by a person or other unit of adoption, it is difficult to identify and even understand the creative and innovative ways in the HCCs.

This article in the frame of a case study will review and assess the situation of Finnish health care centers (FHCC) from innovation management viewpoint. However, the aim of this research is not to detail the problems of current health care programs or care processes. The work also tries to answer to one of the important questions designed by policy and decision makers titled “How can FHCCs move toward the systems that will continuously improve their innovation and creativity?” An innovative framework based on an extensive action research presents and describes the main characters and dimensions of the diffusion of innovation in the HCCs.

II. BRIEF REVIEW OF FINNISH HEALTH CARE SYSTEM

The initial preparations to success of Finnish health system were established in the 1960s and 1970s [3]. Heavy investments in building hospitals and creation of the Finnish network of primary health care centers (HCC) are two examples of the progresses. The HCCs have an important role in the Finnish primary HCS with a wide range of services such as GP services, physiotherapy, maternity and child welfare, dental care, school health care, psychologist service. The majority of these services are organized and provided by the municipal health care system. Municipalities are legally required to provide adequate and suitable health services for their residents [4]. Currently about 336 municipalities are working in whole of Finland and provide two thirds of public services. To fund these services, municipalities levy taxes between 16 and 22 percent and receive state subsidies. 20 hospital districts also provide the specialist cares in the municipal system and have one or several hospitals under their supports [3].
addition to the public municipal system, private health care and excluding occupational services account for 6% of total health care expenditure.

In 2009, the total health expenditure (per capita, public and private) in Finland was 3,226 euro which had about 25% growth comparison with 2006 (2,586 euros) [5]. The total health expenditure as a share of GDP was also about 9.2% of GDP in 2009 with 12% growth compared to 2006 (about 8.2%) [5]. Although these statistics show that Finland had a growth in the health expenditures, comparison with OECD average, the situation of Finland among other countries dropped in 2009 (OECD average: 3,233 euro - 9.6% of GDP).

III. CHALLENGES OF HEALTHCARE SECTOR IN FINLAND: IMPORTANCE OF INNOVATION

Although the fair distribution of services as well as costs are the longstanding targets of Finnish health care policy, concerns exist in the health care system especially in the HCCs. Today aging population is a big challenge for Finland from social viewpoint. This brings increasing in costs of health care, decreasing workforce and thereby declines the government’s incomes. Simultaneously, shortage in native manpower and increasing expectations also are two important challenges [6].

On the other hand, because the Finnish health care system is decentralized, national steering is rather weak. As each municipality specifies its own scope of coverage within general limits set by national legislation, the amount of services differ geographically in the HCCs across the municipalities. In other words, significant differences stand across municipalities in resource allocation for health care delivery in the HCCs. These differences are due to the factors including the differing evolutions of the HCCs over time in different regions, financial budgets, availability of health nurses and professionals, and the way in which each population’s health care needs are perceived by municipal decision makers[3].

In response, Finnish policy makers are to be commended to understand these challenges and consider for creating a number of ambitious innovations in the HCS. Therefore same in any field, ideation in structures and process are the keys for innovation improvement in the HCS and HCCs. Despite some successful projects, the evaluations show that the total impact of innovation in the Finland’s HCS has not met expectations [7].

IV. RESEARCH METHOD

This study is part of a national project in which seven research institutes multi scientifically study collaborative innovation management in the Finland’s HCS. The contributions of this article extracted based on an action research done during a period of eight months in two HCCs where are working in two municipalities of Ostrobothnia in the west coast of Finland.

An action research is an evidence-based research that links directly to practice. The method is used in a wide variety of healthcare settings by practitioners, professionals, and researchers who want to understand and undertake their works. Figure 1 illustrates a simple model of the cyclical nature of the typical action research process that was implemented in this article. In this figure each cycle includes four steps: plan, act, observe, and reflect.

![Figure 1. A Simple Action Research Model [8]](image)

To assess and identify the situation of creativity and innovation in the HCCs, two different questioners for nurses, and head of the departments and doctors were defined. In the questioners, the researchers asked respondents to explain their current work and the amount of ideation or innovation that have in their tasks. The importance of ideation and innovation was also asked in their works. Finally, questions related to encouragement schemes in order to appearance of the creative and innovative ideas were asked. The questions are open response and the researchers interviewed directly with all the respondents. The average time of each interview was 30 minutes. A sample of 36 interviews including the nurses, head of the nurses, and doctors was selected among of 78 professionals. In light of the numbers of the professionals who are working in the centers, the number of sample is quite enough.

Since the gathered data are qualitative, to organize and extract the results, NVIVO 9(QSR) software was used [9]. This qualitative data analysis provides the possibility of identifying the key themes in order to diffusion of innovation in the HCCs.

V. DISCUSSION AND ANALYSIS

The analysis of the interviews illustrates that several factors affect, positively or negatively, on the process of innovation in the HCCs. While almost all of the respondents believe that creativity and ideation can play an important role in their work and patient satisfaction, some of them couldn’t
remember the time that even once they used ideation in their tasks. In some cases, they even do not know how the creativity and ideation can be implemented in the HCCs. This proves the complexity of the innovation concepts in the HCS. Our analysis shows that there are determinant factors effect on the innovativeness of the professionals in the HCCs. These factors are essential to design an appropriate and value-based innovation. We categories these factors in three main characters: individual, systematic, and structural.

Figure 2 illustrates the general framework of the ideation and innovation processes in the HCCs extracted from our analysis done by NVIVO 9. Since diffusion of innovation in the HCS is sorted as a strategic decision process, the proposed framework is based on the Rajagopalan et al. (1993) strategic decision making model [10]. Therefore, three aspects of enablers, processes, and outcomes are comprised in our framework. “Enablers” are the characters that effect on the diffusion of innovation within or across work units and departments. In other words, innovation enablers include the efforts that nurses, doctors, managers, and policy makers implement to provide the possibility of the emergence of the creative and innovative ideas and methods in the HCCs (process dimension). The “process” refers to how employees implement the enablers of innovation in their work-related experience and expertise. Several strong research works have been done to consider to this dimension independently [11]. Finally, the “outcomes” dimension reveals the effects of the degree of creativity and innovation management effectively achieved on the health care performance indicators. Following each character of the enablers is reviewed.

**Individual characters**
- Attitude: trust, belief, reciprocity norm
- Perception: creativity and innovation as a power, perceived relative advantage
- Motivation: external and internal motivations
- Personality: openness to experience, emotional stability, agreeableness, extraversion, and conscientiousness
- Biographical factors: age, gender, and tenure
- Job satisfaction

**Systematic characters**
- Communication: internal (personals, units, departments) and external (centers, municipalities)
- Organizational culture: acceptance of new idea, open climate
- Supports: from/of supervisors or managers
- Learning: clear definition of creativity and innovation, implementation of related creativity and innovation techniques
- Bureaucratic process (as a big barrier)

**Structural characters**
- Time: work pressure
- Workforce shortage
- Two-way relationships between patients and centers
- Learning and implementation of related creativity and innovation techniques
- Bureaucratic process (as a big barrier)
- Authority of patients and professionals: i.e., job enrichment and rotation
- Competition in different levels

**Enablers dimension** → **Process dimension** → **Outcome dimension**

Figure 2. A general framework for studying innovation management in the health care sector

a. **Individual characters**

Most researchers agree that the success of creativity and innovation in an organization depends on individual characteristics. Our studies also show that the professional’s attitudes to creativity and innovation (trust, belief, reciprocity norm), perception (importance of innovation as a power, perceived relative advantages), motivation (external or internal motivations such as government supports, job promotion), personality, biographical factors (age, gender, tenure), and job satisfaction are the main important characters affect the level of creativity and innovation in the HCCs [12]. For instance, our study shows that most respondents are not sure about the application of
creativity and innovation in their works. For a government with a high attention to innovation policies, this brings a big gap in targets with realities. In this category, the manifestation barriers of the creativity and innovation can be reviewed from biological, social, psychological, and historical viewpoints.

b. Systematic characters

In this category, the factors related to the organization of the HCCs and formal and informal groups are considered. The analysis of interviews indicates that the possible communication among the professionals, organizational culture, team working, supports from the supervisors or managers, learning and implementation of creativity and innovation techniques, and bureaucratic processes (as a big barrier) are the most important characters that effect on the diffusion of innovation in the HCCs [13]. Especially, an organizational climate which encourages new problem-solving method and creative idea is one of the big identified gaps among the Finnish HCCs. On the other hand, the creativity and innovation techniques are the frameworks which include selected heuristics for directed stimulation of thinking processes. According to the recent survey, about 80% Austrian companies have used creativity techniques at least once, and 69% of them believe they are useful for generating great ideas or solving daily problems [14]. This indicates that the creativity techniques can be as an important part of organizational processes especially in the HCCS.

c. Structural characters

The structural characters discuss about the issues that are further than behavioral aspects. For example, one of the main barriers of creative idea in the Finnish HCCs is the lack of time available for nurses and doctors to think innovatively. The analysis of our interviews shows that almost all of the respondents believe that the workforce shortage is the main barrier for them to think innovatively. As this caused work pressure, it even harms the staff’s motivation. Two-way relationships between patients and centers (individual cares or suggestions for working better) are also characters that can effect on the diffusion of ideation and innovation in the HCCs. The authority of patients (e.g. increasing patient choice to choose centers, or normal and daily checkup) and staff in their tasks (job rotation and enrichment) are also the factors affect in the innovation of the HCCs. Finally, competition in different levels from HCC’s staff to HCCs is an important driver to encourage the centers and professionals to think innovatively.

VI. CONCLUSION

While there is not probably other scopes of activity in which should be more important than HCS, the studies show that the applications of innovation in this sector is usually defective with ambiguity and complexity. On the other hand, aging populations, rising public expectations, progress in medical science and technologies, and other trends are generally increasing the need for changes in the health care systems. This action research tried to answer to one of the important challenges of the Finnish health care systems related to the diffusion of innovation in the HCCs. As discussed, the main enablers of the development of ideation and innovation in the HCCs can be categories in three main categories: individual, systematic, and structural. Each category also includes different themes which provide the successful implementation of innovation management process.

In conclusion, it is necessary for decision makers and researchers debate about the consequences of each factor separately. The importance of each factor or character, and their amount correlation with diffusion of innovation in HCCs (conceptual framework) are two subjects that are suggested by authors for future studies.

VII. REFERENCES