GRADUATE SCHOOL OF BUSINESS ADMINISTRATION
KOBE UNIVERSITY
ROKKO KOBE JAPAN

2005・7

Comparative Analysis of Organizational Commitment in Medical Professionals

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Current Management Issues

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Comparative Analysis of Organizational Commitment in Medical Professionals

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I. Introduction

I-1 Motivation for this study

I have been working as a medical doctor for sixteen years, hospital to hospital, in various kinds of medical institutions. Most of them are private hospitals, emergency and primary care, staying at cold night with fear of listening the siren from the ambulance.

In my younger and more vulnerable years spending as a resident, I have working in the educational hospital during the daytime earning money with duty business in such private hospitals. We have to pay attention to nurses in the teaching hospital, but not in private hospital because they are working under the doctor's order. One day, my senior gave me some advise that I've been turning over in my mind ever since. He said, "You cannot work as a doctor if nurses dislike you, just remember that all the nurses in this world have the advantage more that you've had." He did not say any more but I used to buy some souvenirs, such as dessert cake or sushi, whenever we go drinking with my fellows. I understood that he meant a great deal more than that.

Since then, I have a curious feeling to the paramedical staffs, with different nature, looking upon them as another group. "Watch them, as they are not doctors…," and as I grown up, I have realized that they also have such a feeling of " Watch them, they are not nurses", in turn. This is the so-called "chicken and egg situation", but it actually exists some big and tall walls between the professional[1] groups who have license of national qualifications. This feeling of constraint is getting bigger while I move from hospital to hospital and find some differences in nature that they have.

The category of hospital, as public hospital through private hospital, seems to be a major factor that

[1] According to the American Heritage Dictionary of the English Language (Fourth Edition, 2000), the word of "professional" is defined as (i) a person following a profession, (ii) one who earns a living in a given or implied occupation and (iii) a skilled practitioner; an expert. In this study, the third meaning of professional would be applied. Besides, the word of "specialist" is defined as (i) one who is devoted to a particular occupation or branch of study or research. (ii) a physician whose practice is limited to a particular branch of medicine or surgery, especially one who is certified by a board of physicians. Note that the meaning of these two words is different and should be distinguished.

prescribes their natures. As I have been interested in the difference of such feeling between the medical professionals, I would like to make it clear to keep a good relation and utilize them for the hospital management. This is the start point of and the motivation for the current investigation.

I-2 Professional sub-culture in the medical institutions

Professional sub-cultures seen in medical staffs of the hospital, in the sense of autonomy, seem to be necessary for them to have responsibilities to their work. Nevertheless, such sub-groups accompanying tall walls involuntarily make some barrier against total quality management, clinging to their own privileges without a bird's-eye view for their hospitals. Recent report[2], a purposive survey performed in seventeen European Union countries, has shown that there are many health professionals who have only a superficial understanding at best. As medical science progresses, multidisciplinary teamwork is required to perform the complicated health care service with the total quality management.

Besides, the liberty of their own work should be guaranteed in the professional point of view, because intolerable constraints lay them aside to seek another better environment. As to hospital, the medical manpower is definitely necessary in professional organization and career structure is the issue to be considered[3]. Different from other professionals, it is easy for the medical professionals can rather to find their new positions, so called turnover[4]. In that sense, human resource management in medical professionals is rather difficult than others and their satisfaction, rewarded for their work and responsibilities as professionals, seems to be a key factor in the human resource management for medical professionals[5].

I-3 The purpose and research question of the study

The purpose of the current study is to identify the determinants that may impact the organizational commitment of medical professionals after clarifying their features based on the category of the

[2] Hindle (2005)
[3] Vickers (1981)
[4] In common parlance, "turnover" means loss of an employee, voluntary or involuntary termination. Mathematically, turnover is defined as total terminations per unit time divided by the average active number of employees per same unit time.
[5] Savage (2004)

hospitals. Hasenfield[6] has classified organizations as three types corresponding to the three major sectors of the economy: public, non-profit, and for-profit. According to the Japanese Health Law (Article No. 4), the public hospital is defined as the hospitals established by the government, such as national or municipal hospital, in order to secure and support medical treatment in the concerned region. In the present study, the hospitals are classified as follows:

* university hospital that is founded by Ministry of Education[7] for the research and educational purpose that is attached to the university or medical school,
* public hospital that is founded by the government, such as national[8] or city hospital,
* private hospital that is established by the private organization or medical doctor.

The research question of the current study is what is the possible determinant of commitment of the medical professionals who have peculiar characteristics, in order to utilize it in human resource management. It would be investigated with the aspect of hospital categories mentioned above.

I-4 Design of the study

In the process of identification of the factors that may impact the organizational commitment of medical professionals, it has become clear that the medical professionals by themselves have different styles in their commitment. Followed by the review of the previous studies in chapter II, a survey of commitment and self-actualization in medical professionals is conducted in chapter III to investigate the answer for the research question above. Based of the analysis of the study, the theoretical perspectives for the human resource management in medical professionals are discussed followed by the historical and cultural studies in chapter IV. The main interest of the present study is to investigate the possible determinants to satisfy the medical professionals in the different institution. In chapter V, the implicative and theoretical conclusion is to be shown for its practical use in the human resource management of medical professionals.

[6] Hasenfield (1992)
[7] The official name is Ministry of Education, Culture, Sports, Science and Technology.
[8] These are generally founded by Ministry of Health, Labor and Welfare or other public organizations.

II. Literature review for the previous studies

II-1 Human resource management in medical and health care service

Hospital management changes rapidly along with medical environments and has become a principal issue. Many factors are involved, the recent needs to reform of medical service system and the medical malpractices with keen interests of the people. Effective hospital management is facing at another problem, as the government rush to meet the immediate demands of fast growing aged populations who require huge medical and health care cost. Under those circumstances, hospitals now focused in decreased cost to improve profit and maintain their high quality of medical treatment. Nevertheless, hospital managers emphasize not only on the control of hospital costs but effective implementation of human resources. Attitude influences the behaviors of staffs, which directly affect their performance. In medical organizations, staffs with low satisfaction are not able to make good performance. Therefore, it is very important to control their satisfaction of the medical and health care professionals with considering their motivation. Although hospitals are not considered to be commercial enterprises, formulation of the strategic goal under the powerful leadership is required to the hospital management on the basis of the parent of the total management. Especially, deliberate human resource strategies have become getting important in many companies, that is similar situation in hospitals. Strategic human resource management of medical profession has now become the main subject in hospital management.

Human resource management is recognized as the most important factor to be a more productive and competitive medical institution in Japan. The rapid increase of medical staffs requires an effective management of human resources. In consequence, hospitals are giving more attention to the planning and effective management of their human resources, as measured in terms of recruitment and selection, training and development, motivation and reward, retention strategies, and compensation and benefit plan design.

In the former period, most of the Japanese nurses lack a sense of professionalism with consideration

of the low educational levels of the nurses[9]. Based on my experience, it is actually true and Japanese nurses might have been considered, as it were, the housewives of the hospital[10]. But the recent progression as professionals, the roles of nurses have quite enlarged and become specific. To enhance satisfaction in their roles, nurses express a desire for balance in their professional commitment and personal lives by themselves[11]. Besides, questionnaire survey performed in Australia in 1996 has shown that professional satisfaction is the main reason for doctors staying in or leaving rural practice[12]. It has demonstrated that most potentially solvable problems are overwork, forced deskilling and conflict with other healthcare professionals. Indeed, it is no good as a doctor, but doctor is also frail human being, not almighty. Similarly, stress and bullying are commonly seen in doctors choosing research project[13]. Thus, the most important aspect in human resource management in medical professionals, their satisfaction as a professional seems to be a key factor, because a lot of time and efforts have been used to get their current position as professionals.

II-2 Resource-based view in human resource management

Resource-based view is the noteworthy aspect in human resource management in medical professionals. In the late 1980s, the theories of human resource management has grown and broadened as it focused on strategic and business concerns. Wernerfelt[14] has presented the resources approach of exposing a focus on the accumulated ability as a source for the sustainable competitive advantages, especially, human resource is the most typical issue that draw the attention.

In reality, organizations including hospitals have been tried to utilize a variety of approaches in order to distribute human capital[15]. In turns, hospitals often make and buy their human capitals. From this viewpoint, the previous investigations have shown that how various combinations of employment modes, for instance, internalization and externalization, lead to competitive advantage. Barney[16] who

[9] Long (1984)
[10] ibid
[11] Thorpe and Loo (2003)
[12] Kamien (1998)
[13] Stebbing et al (2005)
[14] Wernerfelt (1984)
[15] Davis-Blake and Uzzi (1993)
[16] Barney (1991)

have established the resource-based theory have advocated that the classification of the capitals including human capital in addition to other capital or assets. The view of these theories[17] is grounded on the fact that sustainable competitive advantages are due mainly to resources and capabilities.

Studies conducted at the University of Michigan have looked at whether human resource organizations had been shifting to more strategic focus[18]. This tendency led to the organizational capability[19] become a primary issue of human resources organizations[20] as it began to add value by building a capacity for change, creating organization and increasing financial performance[21]. Ulrich has established the famous conceptual framework about the role of human resources that adds value. Since then, human resources in the most competitive businesses shift on both strategic and operational human resource from the former style of operational and transactional issues. His conceptual framework is based on two dimensions. The horizontal axis reflects the competing demands of future strategic focus and present operational focus. The vertical axis reflects the conflicting demands created by the activities, that one end represents a focus on people and a focus on process, in vise versa. From the juxtaposition of these two dimensions, the four types of roles have been defined as strategic partner, change agent, administrative expert, and employee champion. Researchers in post-Ulrich era have been focused in the study of strategy and practice. Thus, the effective control system is needed to perform the better human resource management[22].

To take a holistic view of human capitals, high commitment and high-involvement work systems would be foster sustainable competitive advantage. In the next part, the organizational commitment of medical professionals is to be discussed.

[17] ibid; Grant (1991); Teece et al. (1997)
[18] The general concept in the following discussion refer to human resource is well discussed in Lepak and Snell (1999). Conceptual and theoretical framework for strategic human resource management is explained by Wright and MacMahan (1992).
[19] The term of “capability” is the capacity for a set of resources to integratively perform a task or an activity. As a source of competitive advantage, a capability has is not to be imitable. Continuous usage makes a capability become stronger and more difficult for competitors to understand and imitate.
[20] Ulrich and Lake (1990)
[21] Ulrich (1996)
[22] Schuler and MacMilan (1984)

II-3 Organizational commitment

Although there are various arguments and thoughts, approach to organizational commitment could be summarized as two major theories[23]. The most thoroughly investigated classical approach is and commitment is the perspective advanced by Mowday, Porter and Steers, who have made major contributions to the study of organizational commitment[24]. They emphasize the employee's affective bond with the organization and their viewpoint[25] is characterized as follows:

* a strong belief and acceptance of the organization's goals and values
* a willingness to exert considerable effort on behalf of the organization
* a strong desire to maintain membership in the organization

Intensive researches as to organizational commitment have been well investigated in organizational behavior and social psychology. The researchers in organizational behavior have been regarded it as the process that a worker makes a goal for the organization and value inside. On the contrary, the researchers in social psychology have been regarded it as the process that the past behavior of individuals restrains themselves in the organization[26]. Mowday and his colleagues have been summarized these former approaches.

Following research utilizing this approach to organizational commitment has revealed an inverse relationship between commitment and turnover intention[27] as well as a positive relationship between commitment and regular employee attendance[28]. In spite of these studies, commitment has historically been found to exert little direct influence on actual performance for the work in itself. Decreased turnover intention and consistent attendance are themselves critically important attitudes and actions in professional organization[29].

Similar approaches to organizational commitment have been assessed a variety of the organizational culture seen within the organization. Gross and Etzioni[30], have classified as three different

[23] Tao (1998) has been advocated to two representative research groups; one is Mowday's and the other is Meyer's.
[24] Mowday et al. (1982)
[25] ibid, p27.
[26] Tao op. cit.
[27] Porter et al. (1974)
[28] Steers (1977)
[29] Mathieu and Zajac (1990)
[30] Gross and Etzioni (1985)

organizational value orientation; have classified as three different organizational value orientation; (i) coercive organizations that uses physical threats, (ii) utilitarian organizations that use material rewards such as salary increases, (iii) normative organizations that utilize symbolic rewards such as employee recognition or access to special opportunities. The feeling of employee involvement, in other words, job satisfaction could maintain a normative as opposed to a utilitarian value approach. In medical professionals, this seems to be the most valuable as discussed in this study later.

The concept of commitment has expanded by Allen and Meyer[31]. In addition to an affective component, they divided an overall attitudinal commitment into continuance and normative commitment. To date, a lot of researches base on the Meyer's approach have shown that the three aspects of commitment is a useful and reliable tool for the structural measurement and understanding of the nature of professional commitment. The study of nurses and nursing students revealed factor analytic evidence, suggesting that all three aspects of this approach yielded distinct factors for professional as well as organizational commitment[32].

II-4 Self-actualization and motivation theories

After the well-known psychologist, Abraham H. Maslow (born in New York in 1908; died in 1970), has developed the concept of self-actualization, a lot of social scientists including the researchers of business administration follow his famous conceptual thinking of Hierarchy of Needs[33], when examining the forces that drive and organize behavior, including motivation of individuals. His way of thinking called five-stage model includes:

i. **Biological and Physiological needs**: air, food, drink, shelter, warmth, sex, sleep, etc.

ii. **Safety needs**: protection from elements, security, order, law, limits, stability, etc.

iii. **Belongingness and Love needs**: work group, family, affection, relationships, etc.

iv. **Esteem needs**: self esteem, achievement, mastery, independence, status, dominance, prestige, managerial responsibility, etc.

[31] Allen and Meyer (1990)
[32] Meyer et al. (1993)
[33] Maslow (1970 second edition [1954 first edition]) has developed this concept to seven and eight later.

v. **Self-actualization needs**: realizing personal potential, self-fulfillment, seeking personal growth and peak experiences.

According to Maslow, deprivation motivation arises from pain and discomfort when one is deprived of the basic elements that are crucial for physiological needs for survival. Growth motivation, which doesn't repair deficits but expands horizons, becomes a significant motivator only when the lower levels of basic needs are met. As the medical professionals are satisfied with the lower level needs, they tend to be develop the higher level of needs: humanistic self-actualization or spiritual enlightenment, redefining priorities, boundaries, and commitments thinking of their primary task as the bearers of meaning and significance. Except for the medical professional working in the battlefield, safety and physiological needs are satisfied, therefore, the latter three of level 3 through level 5 are to be thought to deal with. The current study would focus the latter three components to assess the motivation, as well as commitment, of the medical professionals.

Following after Maslow, Frederick Herzberg (born in Lynn, Massachusetts, in 1923; died in 2000) has advocated "Motivation-Hygiene Theory"[34] identifying two classes of factors that are important to behavior on the work:

i. **Hygiene factors**: policies, supervision, interpersonal relationship, working conditions, security, salary.

ii. **Motivators**: achievement, recognition, work itself, responsibility, advancement, growth.

Later, a behavioral researcher and psychologist David C. McClelland (born in Mt. Vernon, NY, 1917; died in 1998) proposes that three fundamental needs (the need for achievement, affiliation, and power) act as powerful motivators existing in different balances[35]. The needs are classified as follows:

i. **Need for achievement**: the desire to be successful and to excel. Strong need for feedback, sense of accomplishment and progress.

ii. **Need for affiliation**: the desire to maintain close interpersonal relationships and to be liked.

iii. **Need for power**: the desire to influence and make an impact. Strong need to lead and to increase personal status and prestige.

[34] Herzberg (1966)
[35] McClelland (1975); McClelland and Burnham (1976)

In his theory, an individual's specific needs are acquired over time. These needs are learned and socially acquired are shaped by one's life experiences. This theory sometimes is referred to as the three needs theory or as the acquired (learned) needs theory.

Based on these established theories, many recent investigators have branched into different motivational approaches. For example, Qubein[36] believed that is no need to motivate the people, as they are already motivated. Instead, to determine what the motivators are and use them to channel the staff's energy to the right place is thought to be important. In his article of "Ten Principles of Motivation", he notes that "...all people are motivated but that people do things for their own reasons, not yours." In Kennedy's[37] seven elements for motivation, he dealt with human wants. He mentioned the sense of mission, compelling role, personal coaching, the probability of winning, professional growth, financial incentives, and emotional connection. Thomas[38] postulated that the nature of work has changed. He advocates in his book that work does not just provide us with the means of subsistence; it also makes possible all the pleasures and achievements of civilization.

In order to understand the features of medical professionals and to establish the theoretical domain, the conceptualization using three independent facets would be applied in the current study following after the previous studies.

II-5 Fundamental values of medical professionals

The very nature and values of medical professionalism[39] are originally based on the concept of "*Adeptus Medicus*".[40] This Greek word means "adept in medicine", that is, someone having knowledge and skill as well as aptitude in medicine. In another word, this is a medical doctor as a professional who is dazzlingly skilled in medical sciences. The medical profession shares the role of

[36] Free articles by Nido R. Qubein (2002)
[37] Kennedy (2001)
[38] Thomas (2001)
[39] In the present study, the definition of medical professionalism is employed from the most famous definition by Wynia (1999). Briefly, "Three core elements of professionalism each different in nature are necessary for it to work properly. First, professionalism requires a moral commitment to the ethic of medical service which we will call devotion to medical service and its values. This devotion leads naturally to a public, normative act: public profession of this ethic. Public profession of the ethic serves both to maintain professional's devotion to medical service and to assert its values in societal discussions. These discussions lead naturally to engagement in a political process of negotiation, in which professionals advocate for health care values in the context of other important competing societal values. "
[40] A book written by Akutsu in 1995 has the same title of Medical Saint, "Adeptus Medicus."

healer, which has roots extending back to Hippocrates. Under the ancient tenets of the Hippocratic Oath, physicians pledge to uphold the injunction "*primum non noscerei*"(first do no harm). This is an oath traditionally taken by physicians, in which certain ethical guidelines are laid out. For physicians, nurses, and psychologists, ethical issues are often among the greatest challenges in practice. Long after their training, students in training tend to remember and may even be influenced more by experiences rather than factual knowledge, just like the author of this manuscript (viz. me) who have spent his half of life.

To think about the fountainhead of medical professionalism, this oath is very important ethics for us, medical professionals. The Hippocratic Oath has been updated in the Declaration of Geneva, which has been adopted by the General Assembly of the World Medical Association at Geneva in 1948 and amended by the 22nd World Medical Assembly at Sydney in 1968. It is a declaration of physicians' dedication to the humanitarian goals of medicine. As this is quite important concept to think the peculiar professionalism in medical field, I would like to cite the quotable passage as follows[41]:

The Declaration of Geneva reads "At the time of being admitted as a member of the medical profession:

- I solemnly pledge myself to consecrate my life to the service of humanity;
- I will give to my teachers the respect and gratitude which is their due;
- I will practice my profession with conscience and dignity;
- The health of my patient will be my first consideration;
- I will respect the secrets which are confided in me, even after the patient has died;
- I will maintain by all the means in my power, the honor and the noble traditions of the medical profession;
- My colleagues will be my sisters and brothers;
- I will not permit considerations of age, disease or disability, creed, ethnic origin, gender, nationality, political affiliation, race, sexual orientation, or social standing to intervene between my duty and my patient;
- I will maintain the utmost respect for human life from its beginning even under threat and I will not use my medical knowledge contrary to the laws of humanity;
- I make these promises solemnly, freely and upon my honor."

[41] Williams (2005, p18)

Such views on medical professionalism are attracting a great deal of attention, both from doctors and from the general public. It can be thought that there is clearly much overlap between ethics and professionalism, and anyone interested in medical ethics needs to be aware of developments in medical professionalism[42].

Recently, the European Federation of Internal Medicine, the ACP-ASIM Foundation[43], and the ABIM Foundation[44] start together the Medical Professionalism Project (Philadelphia, PA, USA) in late 1999. The three organizations designated members to enroll a set of principles that all medical professionals can and should aspire after. In this project, the fundamental principles are defined as the following three: principle of primacy of patients' welfare, principle of patients' autonomy, principle of social justice.

As the first principle is based on a dedication to serving the interest of the patient, altruism[45] contributes to the trust that is central to the physician–patient relationship. Therefore, it must not be compromised to market forces, societal pressures and administrative exigencies. Moreover, the third principle of social justice, similar to the lawyer, is the most important to understand the facets of medical professionals. It is defined that, "The medical profession must promote justice in the healthcare system, including the fair distribution of healthcare resources. Physicians should work actively to eliminate discrimination in healthcare, whether based on race, gender, socioeconomic status, ethnicity, religion, or any other social category." This spirit is directly linked to the concept of self-actualization that is shown in the forth section of the present chapter. Thus, medical professionals are working not only for themselves, but they remain committed both to patients' welfare and to the basic tenets of social justice[46]. This point of view is essential to understand their curious features, in contrast to other professional occupation.

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[42] This is also discussed in the web site of Ethics Unit, World Medical Association Foundation

[43] American College of Physicians - American Society of Internal Medicine Foundation. Robert Copeland, Southern Cardiopulmonary Associates, LaGrange, GA, USA; Risa Lavizzo-Mourey, Robert Wood Johnson Foundation, Princeton, NJ, USA; and Walter McDonald, American College of Physicians-American Society of Internal Medicine, Philadelphia, PA, USA.

[44] American Board of Internal Medicine. Project Chair is Dr. Troy Brennan, Brigham and Women's Hospital, Boston, MA, USA

[45] This concept is also important to think about the feature of medical professionalism, e.g. independency or cosmopolitan, that would be discussed later.

[46] Medical Professionalism Project op. cit. pp263-264. This concept is described in the section of preamble.

In addition to the form of three fundamental principles, a set of definitive professional responsibilities are also summarized as ten categories: commitment to professional competence; commitment to honesty with patients; commitment to patients' confidentiality; commitment to maintaining appropriate relationships with patients; commitment to improving quality of care; commitment to improving access to care; commitment to a just distribution of finite resources; commitment to scientific knowledge; commitment to maintaining trust by managing conflicts of interest; commitment to professional responsibilities.

Among the above ten categories, there are two commitment to professionalism. In the first category, it is advocated that “the Physicians must be committed to lifelong learning and be responsible for maintaining the medical knowledge and clinical and team skills necessary for the provision of quality care. More broadly, the profession as a whole must strive to see that all of its members are competent and must ensure that appropriate mechanisms are available for physicians to accomplish this goal.” Additionally, in the last category, commitment to professional responsibilities is defined as; “As members of a profession, physicians are expected to work collaboratively to maximize patients' care, be respectful of one another, and participate in the processes of self-regulation, including remediation and discipline of members who have failed to meet professional standards. The profession should also define and organize the educational and standard-setting process for current and future members. Physicians have both individual and collective obligations to participate in these processes. These obligations include engaging in internal assessment and accepting external scrutiny of all aspects of their professional performance.” This attitude is quite implicative to think about the medical professionalism that is reflected to the Hippocratic Oath as previously mentioned. Thus, the medical professionals are claimed to affirm the active dedication to the principles of professionalism, which entails not only their personal commitment to the welfare of their patients but also collective efforts to improve the healthcare system for the welfare of society as a whole. Now, these action agenda for the

profession of medicine that is universal in scope are made in the various medical societies, similar to the guiding precepts of enterprises or visionaries of companies[47].

As professionals, physicians should profess their values[48]. To be successful as professionals, physicians should commit themselves to a program of life-long, self-directed learning, they must be thoughtful, kind and sensitive, must avoid arrogance, dogmatism and negativisms, and be honest, moral, tolerant, trustworthy and above all, humble and compassionate[49]. Without the internal rewards, such as self-actualization and responsibility, neither the amount of pay nor social recognition can suffice. In the next chapter, the important factors of commitment in medical professionals would be investigated with survey study based on the roles of the classification of hospitals.

III. Survey study of motivation and commitment in medical professionals

III-1 Conceptual framework of the study

The critical aspects of human resource management seem to be depended on category of the hospitals. Medical professionals working in the university hospitals are proud of involvement for the innovation of medical sciences and advanced technology. The feeling of pride and self-confidence seem to be contributed to their self-actualization. This Maslow's highest needs are typically seen in the professionals. Medical professionals are not exception to this theory. Therefore, to assess their motivators seems to be essential for the human resource management. In his two-factor hygiene and motivation theory, the former factor would be taking account for the current consideration, because recent theory has shown that people are already motivated[50]. Especially, the medical professionals might be already motivated, indeed, but the proper evaluation might be needed for them. Because every medical professional carries medical professionalism of Hippocratic Oath unconsciously, esteem needs should be also involved. The most required role of the private hospitals is to be friendly and convenient to the common people to access. The of role of public hospitals is to distribute and sustain

[47] The author takes the critical position toward the concept of "Built to Last: Successful Habits of Visionary Companies" written by Collins and Porras (1994).
[48] Wynia et al. (1999)
[49] Duff (2002)
[50] Qubein op. cit.

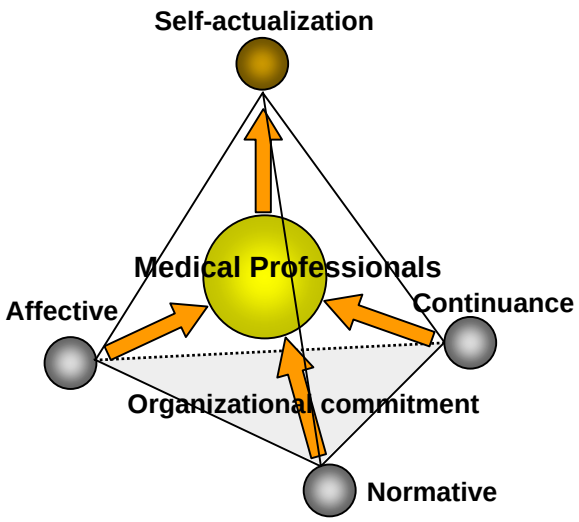
medical standards in the applicable region, therefore, the staffs have strong organizational commitment that is also related to esteem needs and hygiene factors.

Thinking over the facts above mentioned, it might be very important for the human resource management of medical professionals to accumulate knowledge about their motivations, values, and commitments, although we can learn a great deal from the existing body of research knowledge in the various fields. For that purpose, a study to measure the overall commitment in medical professionals is organized based on the category of the hospitals. Main aim of this study is to conduct of the research with the setting of above viewpoints.

III-2 Definition of the model and rationale

Investigation for staff commitment including organizational commitment has emerged as a promising area of research within the study of organizational psychology[51]. At most, interest in this kind of study of has replaced an earlier emphasis on job satisfaction[52]. The latter construct was perceived as a logical correlate to job performance, with a hypothesis being that job performance would increase as staffs became more satisfied with their work[53]. Nevertheless, literature reviews have consistently concluded that the relationship between job performance and job satisfaction is not strong. Despite a lot of studies that have attempted to address the question, researchers have described the relationship between performance and satisfaction as "illusive" [54].

Figure 1. Triangular pyramid model



The model to consider medical professionals is expressed as triangular pyramid. Organizational commitment consisted of three facets (Affective, Continuance, Normative) are forming the base of the pyramid. As self-actualization is important aspect to grasp the feature of medical professionals, it is put into the apex.

[51] This concept is referred to the Report of “Background to the Staff Commitment Research Project” by Research and Statistics Branch, Correctional Service of Canada, 1992.

Thus, the job satisfaction is not the issue to investigate here in this study. Instead, I would like to focus on the commitment by itself, regardless of the work is fun or not.

As explained in the fifth section of chapter II, medical professionalism is strongly based on the spirit of public service. We cannot leave the person in trouble alone. Standing on the Hippocratic spirit of, there are some motivation factors rooted in the category of the institution. In the previous section, it has shown that the correspondence of the organizational category to the commitment factors. However, the relation is not one to one pairs, instead, includes every factor. Nevertheless, it has light and shade of importance, weighing relative importance. Thus, it has been established that the triangular pyramid model as shown in Figure 1. The features of medical professionals and the category of hospitals would be considered using this conceptual model.

III-3 Hypotheses formation

Each category of the hospitals has a part that contains other factors as well. This is very implicative and interpretative because of the following explanation. The medical professionals in university hospitals might have much self-actualization and lesser in organizational commitment. The professionals in private hospitals might have stronger organizational commitment, and that in public hospitals might have both. Based on the above arguments, three hypotheses are set up as follows:

Hypothesis 1:
The medical professionals in university hospitals would have strong self-actualization.

Hypothesis 2:
The medical professionals in public hospitals would have both strong organizational commitment and self-actualization.

Hypothesis 3:
The medical professionals in private hospitals will have strong organizational commitment.

To test the conceptual framework and its derived hypotheses, a survey is to be conducted for the medical professionals in each category of the hospital, using the scale to measure the organizational commitment, motivation test for self-actualization.

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[52] Schneider (1985)
[53] Schwab and Cummings (1970)
[54] Iaffaldano and Muchinsky (1985)

III-4 Data collection procedures

III-4.1 Sample and procedure

Participation in this study was voluntary and anonymous. The participants are full time medical professionals including doctors and nurses in the university hospital, public and private hospitals in Hyogo and Shizuoka prefecture (N= 254). The principal investigators in each hospital asked to the medical professionals to answer the semi-structured questionnaire as is shown below. The individual data sheets were distributed and collected by my acquaintances and colleague doctors. The study was performed in April 2005.

III-4.2 Measures and questionnaire design

III-4.2.1 Organizational Commitment Scales

The Organizational Commitment Questionnaire (OCQ) is a 15-item, 7-point Likert-type scale developed by Mowday et al.[55] to measure an employee's identification with and involvement in a particular organization. Three aspects of involvement and belief are included: belief in and acceptance of the organization's goals and values, willingness to exert considerable effort on behalf of the organization, and desire to continue employment in the organization. Higher OCQ scores indicate higher commitment levels. Previous estimates of internal consistency have ranged from 0.82 to 0.93[56].

According to the line of the research of professional and organizational commitment using samples of teachers conducted by LaMastro[57], Organizational Commitment Scales (OCS) that is consisted of Meyer and Allen's[58] and the famous OCQ by Mowday has been employed in the current study. Briefly, affective commitment to the organization was measured using seven items from Meyer and Allen's affective commitment scale[59] and two items from the OCQ[60]. These items were selected because they seem most clearly to approximate the feelings of liking for, pride in, and valuation of organizational membership assumed to underlie the affective form of organizational commitment. The organizational

[55] Mowdays et al. (1982) op. cit.
[56] Hinds et al. (1998); Mowday et al. (1979)
[57] From the article entitled as "Commitment and perceived organizational support" written by Dr. Valerie LaMastro in Department of Psychology, Rowan University.
[58] Meyer and Allen (1984, 1988), Allen and Meyer (1990)
[59] Meyer and Allen (1984) op. cit.
[60] Mowdays et al. (1979) op. cit.; Porter et al (1974) op. cit.

forms of continuance commitment and normative commitment were measured using the continuance and normative commitment scales developed by Meyer and Allen[61]. One can refer to Allen and Meyer[62] for a full discussion of the development and factor analysis of the affective, continuance and normative commitment scales. So as to pertain to professional rather than organizational membership, the original three commitment scales were reworded by LaMastro. Here in the study, his way of investigation using OCS is to be followed after. All scales utilized a 7-point Likert-type format (strongly disagree to strongly agree). Items from each of the scales are listed in Appendix A-1.

III-4.2.2 Short Index of Self-Actualization

The additional measure to test their self-actualizing tendency was the Short Index of Self-Actualization (SISA), which is a widely used questionnaire with well-established reliability and validity developed by Jones and Crandell[63]. The SISA uses 15 items to which the subject must state agreement on a 7-point Likert scale (strongly disagree to strongly agree).

Maslow's ideas have resulted in attempts to measure self-actualization through self-report. The most widely used of these measures is Personal Orientation Inventory (POI)[64], a 150-item forced-choice inventory that is difficult to fake. Because the POI is fairly lengthy, SISA is used as an easy scale to measure self-actualization that is much shorter but possesses adequate reliability and validity. Among the two tests developed which attempt to tap Maslow's conception of self-actualized people, the simple SISA is integrated into the present study. Items of SISA would be listed in Appendix A-2.

III-4.2.3 Japanese form of for the individual data sheet

To apply these established scales into the current analysis, I have translated them into Japanese language and reformed suitable to survey for the medical professional in the hospitals. It is consisted of from four parts. The first three parts (Part A to C) are from OCS. Those are set in the beginning,

[61] Meyer and Allen (1988) op. cit.
[62] Allen and Meyer (1990) op. cit.
[63] Jones and Crandell (1986)
[64] Shostrom (1964)

because commitment questions are easy to answer, followed by the questions for self-actualization (SISA).

Part A: affective organizational commitment	-----	9 questions
Part B: continuance organizational commitment	-----	7 questions
Part C: normative organizational commitment	-----	6 questions
Sub-total	-----	22 questions
Part D: Short Index of Self-Actualization	-----	15 questions
Total	-----	37 questions

Odd-number questions are printed in black and even-number questions are printed in gray as a visual effect to avoid mistakes. The scale point of the center (neither disagree nor agree) is adjusted to being labeled as zero to avoid mistake marking. The scale point anchors labeled as (-3) strongly disagree (-2) moderately agree (-1) slightly disagree (0) neither disagree nor agree (1) slightly agree: (2) moderately agree: (3) strongly agree. Approximately, it takes five to ten minutes to answer all of the questions.

III-5 Data analysis

III-5.1 Procedures and data distribution

The evaluation version release 13.0 of the Statistical Package for the Social Sciences (SPSS for Windows, 2004, SPSS, Inc.) and student version release 11.0J (SPSS, 2003) were used for the statistical analyses. Continuous variables were entered into the computer as they had been responded to on the questionnaire. As to the category of profession, the majority are medical doctors and nurses, therefore, other professions are categorized as others. Categorical variables such as hospital (1 = University Hospital, 2 = Public Hospital, 3 = Private Hospital) and profession (1 = Doctor, 2 = Nurse, 3 = Others) were coded before they were entered into the computer. The cross-tabulation of the samples are shown in Appendix B-1.

III-5.2 Descriptive statistics and correlation

The descriptive statistics of whole samples is shown in Appendix B-2. During the process of checking the distribution of the data, outliers that were far apart from the main distribution were identified, as seen in Appendix B-3 and B-4. Therefore, data over the three times of standard deviation (±3SD) were defined as outliers, exempted in the later analyses.

The descriptive statistics including sample number, the mean and standard deviation of each category are shown in Appendix B-5. Organizational commitment among doctors, as well as nurses showed low in university hospital and increased in public and more in private hospital. Looking at the components of organizational commitment, affective commitment is similar result in nurses. But interestingly, doctors have strong affective commitment in university hospital and the tendency is reversed among them. Doctors in private hospital and nurses in public hospital showed high continuance commitment. Normative commitment is parallel with organizational commitment. Therefore, in university hospital, doctors have strong affective commitment in spite that their total value of organizational commitment is low. But nurses in university hospital show low affective commitment but high in nurses in private. This results indicates that the category of hospital is important for the medical professionals and the different tendency is to be identified between the profession of doctors and nurses.

Self-actualization among doctors is generally high in all classification of hospitals, although that among nurses is gradually decreased from university hospital to private hospital. These results might be related to that doctors are circulating between university hospital, public and private hospitals in general.

Prior to analysis, correlation matrix of Pearson correlation coefficients was constructed (see Appendix B-6). In the nature of things, organizational commitment and their components (affective, continuance, normative) have shown significant correlations ($p<0.01$). Especially, Strong positive correlations[65] were identified between organizational commitment and “affective” as well as “normative” (r = 0.759, 0.831, respectively). Relatively strong positive correlations were also

[65] In the present study, correlation coefficients over 0.70 is regarded as strong; 0.40 to 0.70 as relatively strong; 0.20 to 0.40 as weak; less than 0.20 as little correlation.

identified between the variables “affective” and “normative” (r = 0.485). Meanwhile, “continuance” showed weak correlation to other factors.

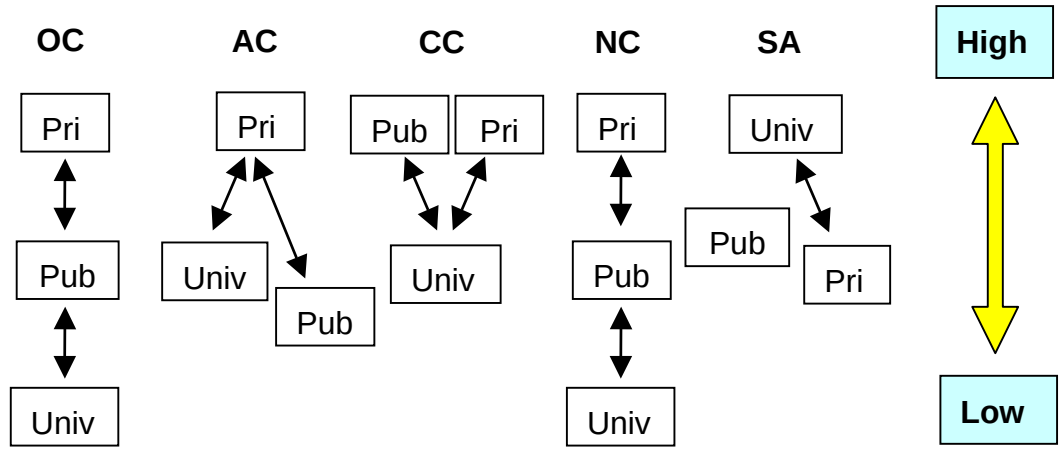
III-5.3 Analysis of variance and multiple comparison

As seen in Appendix B-7, all variables have shown to be significant in analysis of variance with controlling for the category of hospital.

Organizational commitment:	F (2, 248) =	38.224	p<0.01
Affective commitment:	F (2, 248) =	9.131	p<0.01
Continuance commitment:	F (2, 248) =	10.834	p<0.01
Normative commitment:	F (2, 248) =	33.259	p<0.01
Self-actualization:	F (2, 250) =	5.435	p<0.01

Then, multiple comparison using Tukey honestly significant difference has been conducted (Appendix B-8). In organizational commitment, all categories of the hospitals showed significant differences each other. As to affective commitment, private hospital showed the significant differences to others, but there is no difference between university hospital and public hospital. Therefore, we can say that

Figure 2. Summary of multiple comparison in the categories of hospitals



Arrow indicates the significant correlation (p<0.01). Correlation with not significant showed just the position with no arrow. Univ: University hospital, Pub: Public hospital, Pri: Private hospital. OC: organizational commitment, AC: affective commitment, CC: continuance commitment, NC: normative commitment, SA: self-actualization.

affective commitment is strong in private hospital. Similarly, continuance commitment is weak in university hospital, and normative commitment is stronger in public and strongest in private. As the result, the total organizational commitment is significantly strong in private hospital and weak in university hospital over all. Self-actualization is significantly strong in university hospital compared to private hospital but not significant to public. The relation between the categories of hospitals is summarized in Figure 2.

III-5.4 Two-sample *t*-test

Because the sample number in profession category of others is limited (N = 21), two-sample *t*-test has been performed, comparing the two major populations of the profession, doctors and nurses. The detailed is listed in Appendix B-9.

Organizational commitment:	t (228) = 0.059	n.s. (not significant)
Affective commitment:	t (62.32) = 1.952	n.s.
Continuance commitment:	t (228) = 5.374	$p<0.01$
Normative commitment:	t (228) = 1.086	n.s.
Self-actualization:	t (230) = 2.845	$p<0.001$

Thus, in the aspect of the profession, there are significant differences between doctors and nurses in continuance commitment and self-actualization. Thinking together with Appendix B-9A, medical doctors have a tendency of stronger self-actualization and less continuance commitment than nurses.

III-5.5 Multiple linear regression analysis

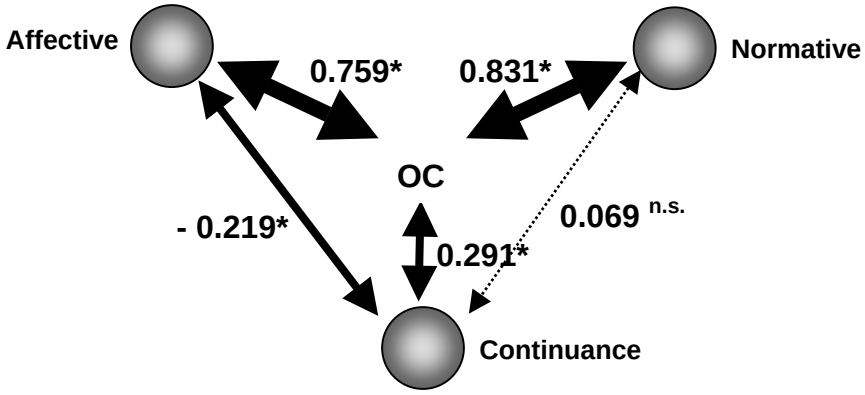
Multiple regression analyses were conducted to determine the relationship between the independent variables of hospital and profession and the each dependent variable of organizational commitment (including affective, continuance and normative) and self-actualization. The results of each multiple regression analysis are summarized in Appendix B-10. The results are to be evaluated in the following section using path diagram.

III-5.6 Path analysis of commitment in medical professionals

III-5.6.1 Correlation within the commitment components

Path analysis, originally developed by Sewall Wright, depicts a mathematical model that is hypothesized to explain the correlations among variables. It has since been adopted by virtually all the behavioral sciences and applied to a large number of studies in social sciences. In the beginning, the correlation between the each commitment has been rearranged as is shown in Figure 3. As the components for organizational commitment, both affective commitment and normative commitment have deep contribution (r = 0.759, 0.831, respectively). Continuance commitment has weak positive correlation with organizational commitment (r = 0.291). Affective commitment showed relatively strong correlations with normative commitment (r = 0.472) and weak negative correlations with continuance commitment (r = -0.219).

Figure 3. Path analysis of correlation in three components of commitment



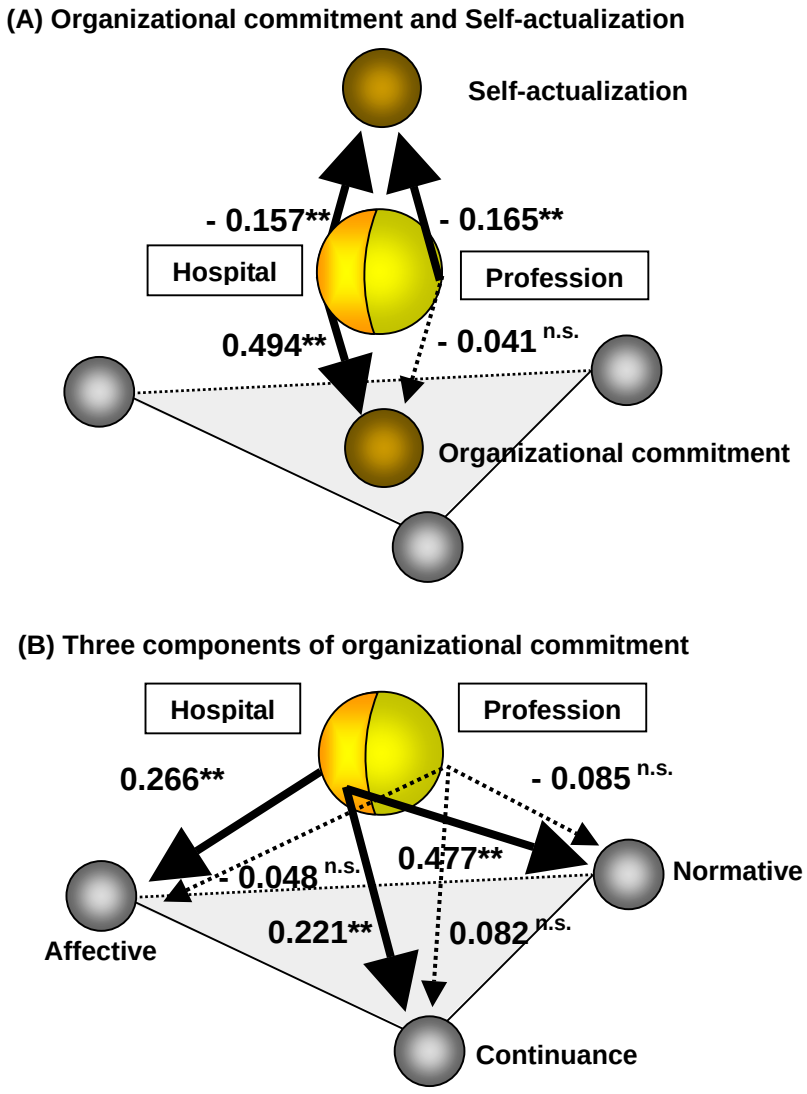
Asterisk indicates significant at the 0.01 level of confidence. The width of the arrow means the degree of correlation: strong (broad), relatively strong (middle), weak (narrow) and no correlation (broken line). OC: organizational commitment.

III-5.6.2 Multivariate regression analysis

To investigate the relation of multiple predictors (hospital and profession) and commitment factors, multivariate regression analysis was conducted followed by multiple linear regression analyses performed for each depable of commitment components. Multivariate regression analysis revealed a positive influence of the category of hospital with respect to organizational commitment (β = 0.494), while profession did not (β = -0.041, n.s.). Concerning the components of organizational commitments,

the category of hospital shows positive effects on all three components of commitments (affective, β = 0.266; continuance, β = 0.221; normative, β = 0.477), while profession did not (affective, β = -0.048, n.s.; continuance, β = 0.082, n.s.; normative, β = -0.085, n.s.). Nevertheless, considering self-actualization, both the category of hospital and profession revealed little effects, indicating that self-actualization is to be independent to these two predictors (β = -0.157, β = -0.165, respectively). For systematic consideration of the results, path diagram applied to the triangular pyramid model has been constructed with two predictors of the categories of hospital and profession (Figure 4).

Figure 4. Path diagram applied to Triangular pyramid model



Statistical significance indicates as solid lines (** p<0.01) and not significant (n.s.) as broken lines.

III-5.7 Findings of the analyses

As independent variables, categorical variables of hospital, categorizing as University Hospital = 1, Public Hospital = 2, Private Hospital = 3, and their profession, as Doctor =1, Nurse = 2, Others = 3, were defined to see the relation with the dependent variables of organizational commitment, and its components, affective commitment, continuance commitment, normative commitment and self-actualization.

Descriptive statistics implicates that organizational commitment is stronger in private hospital and low level of continuance commitment and high self-actualization have been identified in university hospital. As for the profession, affective commitment is strong in nurses and weak in doctors, and this tendency is more obvious in private hospital.

In the analysis of variance, all dependent variables have shown to be significant with controlling for the category of hospital. Multiple comparison has conducted to investigate the difference between the categories of hospital. Private hospital showed significantly strong organizational commitment than public hospital that is also significantly strong than university hospital. As to affective commitment, private hospital showed the significantly high to other two categories of hospital. Meanwhile, continuance commitment is significantly weaker than other two. In public hospital, normative commitment is significantly stronger than university hospital and significantly weaker than private hospital. The difference of self-actualization is significant in university hospital and private hospital.

In the aspect of profession, the difference in doctor and nurse has been investigated because the total number of others is relatively small in the category of profession. Two-sample *t*-test was conducted to compare doctor and nurse, revealing that doctors are significantly low continuance commitment and strong self-actualization than nurses.

To consider the all two predictors of hospital and profession simultaneously, multiple linear regression analysis was conducted. Using path analysis, multivariate regression analysis was conducted followed by multiple linear regression analyses performed for each dependent variable of commitment components to determine the relationship with dependent variables of organizational commitment and its three components and self-actualization. It showed that a positive influence of the

category of hospital with respect to organizational commitment, while profession did not. Concerning the components of organizational commitments, the category of hospital shows positive effects on all three components of commitments, while profession did not. Both the category of hospital and profession revealed little effects on self-actualization, indicating that self-actualization is independent to these two predictors.

In path analysis, the triangular pyramid model with the plane base of organizational commitment (affective, continuance, normative) and apex of self-actualization.

III-6 Verification of hypothesis

In the present section, the hypotheses set up in chapter III-3 is verified based on the results of survey study.

Hypothesis 1: *The medical professionals in university hospitals would have strong self-actualization.* Partially approved. The difference of self-actualization is significant in university hospital and private hospital in multiple comparison. The medical professionals in university hospitals are not significantly stronger than that in public hospital.

Hypothesis 2: *The medical professionals in public hospitals would have both strong organizational commitment and self-actualization.* Totally refuted.

Hypothesis 3: *The medical professionals in private hospitals will have strong organizational commitment.* Approved. Private hospital showed significantly strong organizational commitment than public hospital and university hospital in analysis of variance.

III-7 Practical implications and limitations

The following is a discussion of how findings from the present survey study could be considered by the human resource manager in hospitals to enhance the medical professionals.

First, the relationship between organizational commitment and characteristics in category of hospital is investigated. As shown in Figure 4B using the triangular pyramid model, results from this study indicates that the category of hospital strongly affect all the components of organizational

commitment. Little continuance commitment among doctors might be related that they can open clinic. As nurses cannot become independent, they show strong commitment in the private hospitals.

Next, self-actualization is commonly high in medical professionals, with no involvement of the hospital category and profession. Although the profession has not significant importance of the relationship between organizational commitment and its components, it has significantly shown that no relation with self-actualization as the same as category of the hospital. This is a very interesting finding because the profession they choose is already the consequence of self-actualization, with high education and national license, after the long competition and keen selection. Thus, there is a characteristic features in medical professions, called medical professionalism. In order to manage them, it is inevitably necessary to understand this feature.

As to the limitations of the study, it might be controversial that the generalization using the samples of Hyogo prefecture (most of the hospitals) and Shizuoka (one hospital). Besides, the factor of age might be another important factor. In general, young nurses and doctors are common in university hospital compared to other category of hospital due to the hard work in advanced medication. Meanwhile, the age of the nurses in private hospitals varies. In the future study, the factor of age is to be involved for this kind of study.

Nevertheless, we can say that the classification of hospital is more important factor than profession overall in spite that there is significantly no relation with self-actualization. In the next chapter, this characteristic feature would be discussed from the perspective of medical professionalism, collating with the literature review in chapter II-5.

IV. Theoretical perspectives of medical professionalism

As is shown in the previous chapter, self-actualization is strong in medical professionals regardless the category of the hospital and the profession. The professional education and the following professional training might breed this feature in medical professionals. The professional culture, that enhances strong self-actualization, is another important facets in medical professionals, commonly existed regardless of the organization. In the current chapter, the reason why the independency of

self-actualization is fostered would be attempted with understanding the background of medical professionalism. After the historical and cultural consideration, the actual facets of medical professionalism are to be investigated, having interviews with two representative medical professionals, a doctor and a nurse.

IV-1 Historical cultivation of medical professionalism

IV-1.1 History of medicine

The Greeks were practicing medicine 1000 years before the birth of Christ. In the 'Iliad' by Homer, injured soldiers were treated by doctors and the Greek leader in the tale, Menelaus, was treated for an arrow wound by a doctor-in-arms, Machaon. However, not all Ancient Greeks turned to physicians when ill, many still turned to the gods. The god Apollo was consulted at a temple in Delphi and by the sixth century B.C., many turned to Æsclepius[66], Greek god of healing and the son of Apollo, for help. Places called asclepeia were built for those in poor health, presumably old style of hospitals. These were like temples and here people came to bathe, sleep and meditate. The poor were also allowed to beg for money in these buildings.

Æsculapius, had many followers who used massage and exercise to treat patients. This god is also believed to have used the magical powers of a yellow, nonpoisonous serpent to lick the wounds of surgical patients. Æsculapius was often pictured holding the snake wrapped around his staff; this staff is now a symbol of medicine. Another medical symbol is the caduceus, the staff of the Roman god Mercury, shown as a winged staff with two serpents wrapped around it. When I have worked as a research fellow in Harvard Medical School in Boston, I often seen this symbol of caduceus and understand its meaning. Logo of Medical School in Kobe University also expresses the meaning of caduceus, forming the capital of "K" with a snake and pen (Figure 5).

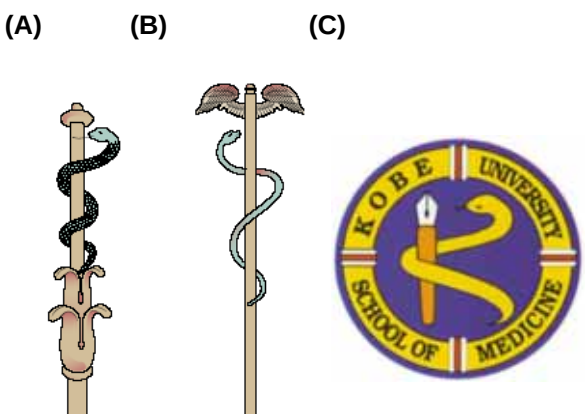
This might be a certain kind of cultural effect from Greek though Western civilization. Around 400 B.C., Hippocrates (circa 460–380 B.C.) practiced medicine and set high behavioral standards for practicing physicians. He is called as the "Father of Medicine" and turned medicine into a science and

[66] According to my knowledge obtained from the book read before, he was a man of doctor and later become God because of his excellent medical skills by the people.

erased the element of mysticism that it once held. He wrote the famous Hippocratic Oath, which is still part of medical school graduation ceremonies and in some hospitals.

In Greco-Roman period, the doctors are thought to be holly saints. They might not have a special common feeling as professionals. Following the Dark Ages and Middle Ages, the Renaissance was a period of enlightenment in all areas of art, science, and education, and it fostered great advances in medicine. Italy was a center of medical science in this era. The advent of the printing press and the establishment of great universities made the practice of medicine more accessible to larger numbers of practitioners. Great minds collaborated to advance medical and scientific theories and perform experiments that led to discoveries of enormous benefit in the fight against disease. Thanks to the following advances in medical sciences, the awareness of medical professionalism is to be formed among the professionals, which would be linked self-actualization as seen today.

Figure 5. Medical symbol of Caduceus



(A) Original Staff of Æsculapius (B) Medical symbol of caduceus with staff of wing and snake. (C) Logo of medical school of Kobe University. Pen and snake form a letter “K”, an initial of Kobe, put in the center of life saving float indicating that the marine city of Kobe.

After Genpaku Sugita, the modern Japanese medicine has been started under the influence of European medicine (switched to German in Meiji era) and then American medicine after the World War II. The medical professionalism in Japan has been developed after the war, with established social status. Therefore, to think about the medical professionalism, the origin of medical professionalism in Western medicine would be discussed in the next section, with the historical perspective of the Hippocratic Oath, called “Father of medicine”

IV-1. 2 Formation of medical professionals

In the aspect of human resource management, this progress in medicine brought an increased population of medical staffs. Not only the total population, but the variety of allied health care

professionals is also increased in addition to doctors and nurses, listed as follows: chiropractor, dietitian, electrocardiograph technician, electroencephalograph technician, emergency medical technician, histologist, infection control officer, laboratory technician, medical assistant, medical coder, medical office assistant, medical transcriptionist, nuclear medical technician, occupational therapist, paramedic, pharmacist, phlebotomist, physical therapist, psychologist, radiographer, respiratory therapist, risk manager, social worker, speech therapist, unit clerk.

Still in Japan, the allied professionals are not so much classified as in Unites States listed above. But soon after, it would be differentiated just as this two decades that I have been watching the process as a doctor. Meanwhile, it is needed to have some kind of ideology to regulate these tremendous medical professionals. Similar to the Declaration of Geneva introduced in Chapter II-5, a lot of carters are now made by many medical organizations and institutions. The reason might be related to the establishment of medical professionalism.

As seen in historical view of development in medicine, it gradually formed the stereotypes for the medical professionals. For the doctors, Hippocrates of Cos has become a model of medical ethics as and Florence Nightingale for the nurses as professionals. Thinking the difference between these two models, we can notify the interesting issue. That is, with the comparative aspect, the model for the doctors is a medical saint and that for nurses is a voluntary servant. This presumably support the current result of survey study that doctors and nurses have different degree in self-actualization.

IV-2 Hippocratic Oath and medical professionalism

IV-2.1 Hippocratic Oath in medical history

There is an evidence of the use of the Hippocratic Oath from its creation through the eighteenth century, though there is not extensive documentation of variations on the Oath. It is thought by some scholars that Galen, who lived at the end of the second century, brought Hippocrates' work to completion.[67] There is also testimony that throughout the early Middle Ages there was mention of

[67] Dorman (1995)

medical oaths.[68] Several ninth century manuscripts from Paris and Charters remind physicians to abide by the Hippocratic Oath. In the tenth and eleventh centuries, which saw the Christian oath take form, there are also manuscripts in Copenhagen pointing to the use of the Hippocratic Oath.[69] The twelfth century saw the creation of the Oath of Maimonides. "With the advent of the universities during the Middle Ages the Oath became a part of the curriculum of medical students. Since incorporation into the rituals of universities… oaths have never fallen into disuse."[70] The first printing of the Oath occurred in Verona in the late fifteenth century. Subsequently, it was frequently printed in Elizabethan England, together with interpretations. To supplement the personal oath, several codes outlining standards of conduct within medical institutions were developed in Europe in the eighteenth century, when there was a growth in the number of physicians and hospitals.[71]

In the early nineteenth century, there increased interest in the ethics of the medical profession expanding on the Hippocratic Oath. In 1803, Thomas Percival, a British physician, published "*Medical Ethics, or a Code of Institutes and Precepts, Adapted to the Professional Conduct of Physicians and Surgeons*."[72] This book has outlined an ethics for the medical community and prescribing a set of duties and responsibilities for the individual doctor.[73]

In the early 1800's, there found a lot of medical professionals in the United States, including midwives, homeopaths, hydropaths, botanic healers, Indian healers, and also quacks. All of them offered their own services to the sick, but often of dubious benefit. Even among physicians there was a wide range of ability since there was a general lack of scientific knowledge. It was at this time in history, when doctors felt threatened by other "practitioners," when an overwhelming public distrust existed, and when conflict among even the allopathic physicians themselves occurred that American doctors organized into the American Medical Association (AMA) and adopted a professional code of ethics, expanding on the Hippocratic Oath. Dale Smith[74] conveys well what took place during this time: He wrote in his book, "The medical profession of the mid-nineteenth century was under assault

[68] Crawshaw (1970)
[69] Macer (1990)
[70] Crawshaw op.cit.
[71] Macer op.cit.
[72] Percival (1803)
[73] Furst (2000)
[74] He is a professor of department of medical history in Uniformed Services University of the Health Sciences

by various social forces, and the AMA, its code of ethics, and perhaps the use of the Hippocratic Oath all served as tools for the defense of the profession."[75]

In the context of the necessity of the Hippocratic Oath, this consideration might hit the mark. After licensing and proper professional regulation were introduced in the 1870's and 1880's, the newly acquired scientific knowledge and other medical contributions slowly improved the public image of the medical profession.[76] During this growth of confidence, with the positive public sentiment of the medical field before the beginning of the 1900's, it seemed as though there was no need for Hippocrates.

However, the medical profession returned to the Hippocratic tradition in the twentieth century. There has been a steady increase in the use of some form of the Hippocratic Oath in the US medical school. In 1928, 19% of graduating medical students took the Hippocratic Oath, in 1959, 74% because of post World War II, in 1969, 92% with high jumping, in 1977, 94%, in 1993, 100% of medical schools in the United States administered the Oath at graduation.[77]

Unfortunately, the Hippocratic Oath is not so much popular in Japan as in the United States. I myself, has not been learned in medial school but studied after the graduation with some medical journals. Although the above numbers illustrate an increase of usage, it does not explain the reason why there was such an increase in the use of the Hippocratic Oath in the twentieth century.

IV-2.2 Request of Hippocratic Oath in medical professionals

As a background, it might correlate to some historical and social changes over the medical professionals. There could be summarized as two major reasons. One is related to a terrible human tragedy of the genocide that occurred in Nazi Germany. The Nuremberg Code was not the only document to be written in response to the medical atrocities committed during the Nazi regime. "The key contribution of Nuremberg was to merge both Hippocratic ethics and the protection of human

[75] Smith (1996)
[76] obid.
[77] Orr et al. (1997)

rights into a single code."[78] Thus, as shown in chapter II-5, the General Assembly of the World Medical Association adopted the Declaration of Geneva, which is another revision of the Hippocratic Oath. This declaration was a pledge to have the greatest respect for human life and not to use medical knowledge contrary to the laws of humanity. The word of "Humanity" is a very important to understand the medical professionalism. As for the nurses, Nightingale is also a symbolic model of humanity although there is some image of dedicative servant.

The other is the social request of a release of medical information, that is, "informed consent," which included patients in the decision-making process. Beginning in the 1960's, there was a general challenge to all established authority by mass media. Thus, the relationship between doctor and patient, as well as between medicine and society, has been altered. I have been thinking that this change of mind (so-called sense of values) would be deeply based on the Vietnam War (1961-1975). In Japan, it was brisk in student movements at that time.

The 1960's through 1970's were the times of cultural struggle with instability. The civil rights movement[79] including the women's rights movement, and the patient's rights movement, all threatened established society and medical society was not the exception to this cultural changes. The powerful scientific and socially established medical authority had been broken again as the same as the critical period of 1800s. Under such a circumstances, a certain kind of core principle for the doctors might be needed to maintain their dignity. Making ironical remarks, the Hippocratic Oath saved the doctors again.

The development of medical ethics in 1971 illustrates an intense acknowledgement of the ideals of Hippocrates. However, as the times were changing in the medical profession, a change in the Hippocratic ideal was needed. The major historical and societal changes would affect the revision of the Hippocratic ideal. These alterations and modifications can be explained by understanding the historical context. When there was self-confidence among the medical profession, the Hippocratic Oath would not be needed, but as social unrest reached to them, it is required that the use of the Hippocratic ideal for the medical professionals.

[78] Schuster (1998)
[79] Martin Luther King was shot dead in 1968.

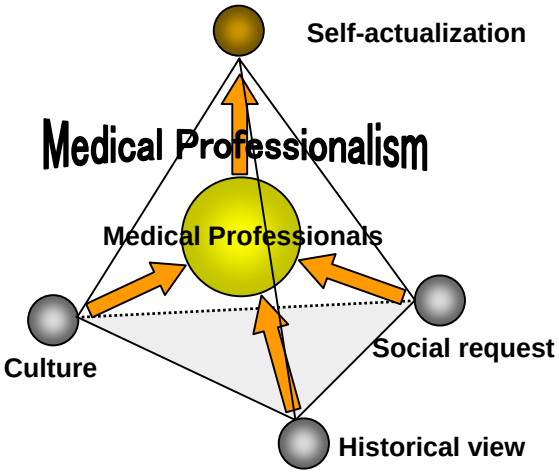
As for the nurse, there is the Florence Nightingale Pledge that is most often recited at graduation/pinning ceremonies for nurses. This is a modified version of Hippocratic Oath, which was composed in 1893 by Mrs. Lystra E. Gretter and a Committee for the Farrand Training School for Nurses, Detroit, Michigan. It was named the Florence Nightingale Pledge in honor of the esteemed founder of modern nursing. The Pledge imprecates allegiance as well as the spirit of medical professionalism. For instance, there is a description in the pledge of the virtue to maintain and elevate the standard of profession.

We can see the essential of medical professionalism in both the Hippocratic Oath and the Florence Nightingale Pledge. During the medical education as professionals, we are unconsciously learned such an attitude of medical professionalism.

IV-3 Insights through historical and cultural approach

In the current section, the brief medical history and the realization of medical professionalism have been thought by historical and cultural studies, using the aspect of Hippocratic Oath and the Florence Nightingale Pledge. Thinking about its application to medical professionals, the social background and the historical points of view are inevitably necessary for the profound understanding of medical professionalism. In general, ethic and visionary ideals are required at the time of crisis for the professionals. As the result, the professionals could keep their dignity and that would be contributed to maintain the self-actualization. In Japan, moral and discipline are now claimed to us, medical professionals. Soon in medical schools, ethics

Figure 6. Role of medical professionalism



The triangular pyramid model has applied to consider medical professionalism. Medical professionals are affected with its background of three facets (culture, historical view, and social request), forming medical professionalism among them, and contribute to composing self-actualization, as is shown at the apex.

such as Hippocratic Oath would be used during the process of the education as in U.S. The feature of self-actualization is to be based on this medical professionalism. This might be the reason of the current result in survey study that self-actualization is high with no involvement of the hospital category and the kind of profession. The relationship of these aspects is summarized using triangular pyramid model in Figure 6.

IV-4 Theoretical perspectives

As seen above discussion, education is the critical issue to foster the medical professionalism. Indeed we studied huge medical and scientific knowledge in medical school and attitude for the patients, but we have learned a lot of things through the senior doctors and other medical professionals. Most of them are, as it were, "hidden curriculum." Dr. Thomas S. Inui writes in his free paper[80] that, "*Since a shift in culture is required to substantially affect education for professionalism in medicine, then no stakeholder in the community of medicine can be uninvolved in the change.*" He also continues that, "*the present intensity of our discourse about professionalism in medicine represents both a flight from commercialism, on the one hand, and a corresponding need to reaffirm our deeper values and reclaim our authenticity as trusted healers, on the other.*" This point of view is quite important for embedding professionalism in medical education.

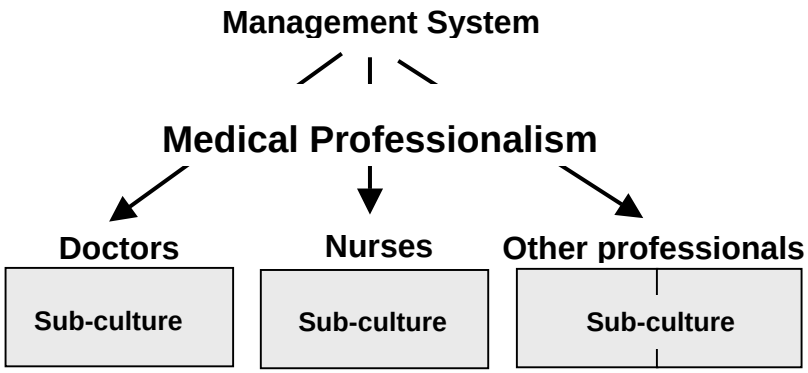
Meanwhile, Eliot Freidson[81] wrote in his book entitled as *Professionalism: The Third Logic*, that, *"The functional value of a body of specialized knowledge and skill is less central to the professional ideology than its attachment to a —transcendent value that gives it meaning…"*

Thinking together, we have to realize that public and personal trust in the medical professionals is a necessary before caring and healing. In another word, those are responsibility and duty that is written in Hippocratic Oath. Nevertheless, based on the results of the survey study indicate that low level of normative commitment in doctors and nurses, especially in those in university and public hospitals. But first of all, we have to define the professionalism clearly. Otherwise, we will loose the public trust,

[80] Inui T.S. (2003) A Flag in the Wind: Educating for professionalism in Medicine, Association of American Medical Colleges.

[81] Freidson (2001)

Figure 7. Role of medical professionalism for the culture management



the most precious treasure as a professional. In the famous classic play of *"The Doctor's Dilemma,"* George Bernard Shaw[82] wrote with a cynical words that, *"All professions are conspiracies against the laity."*

In general, the organizational commitment is rather low in medical professionals overall, there is a need to manage them as a concept of human resource management. The proper culture of medical professionalism, as well as ethics, might be essential for the human resource management. As shown in Chapter I-2, there are sub-cultures among the medical professionals. But with utilization of medical professionalism, those would be unified under the splendid management. The conceptual schema is shown in Figure 7.

As for the management of organizational commitment, the current study indicates that the category of hospital is a significant issue. Thus, the difference of hospital should be taken into account. High self-actualization, the characteristic feature of medical professionals (especially in doctors), is mainly related to the medical professionalism. But as discussed in the current chapter, it might be thought with historical view and social request as well as the culture in hospitals.

Medical professionals are blessed with the opportunity of job-change, so called turnover. Therefore, the essential point of issue for the human resource management is to regulate them through medical professionalism. As seen the interviewee 1, to respect for their professional ability might be a key to

[82] The Doctor's Dilemma was first staged in 1906. Shaw is the only person ever to have won both a Nobel Prize (Literature in 1925) and an Academy Award (Best Screenplay for Pygmalion in 1938).

increase the organizational commitment. As a lot of officers in the hospitals say unanimously, human resource management of medical professionals are rather difficult compared to another field because of the less commitment and easy access to turnover. The most important point would be proper evaluation and recognition as professionals, respecting their medical accountability.

The traditional theory of medical accountability is rooted in a professional model where health care is not a commodity, but a service.[83] Therefore, authority and accountability are two sides of the medical professionalism. Medical professionals are accountable to the patient and also to their specialty. Although physicians are granted privileges by society, it is the medical profession itself that determines authority. Professional authority, in fact, is required for the successful practice of medicine. Medical professionals are charged to make correct medical decisions for the proper reasons, as they are granted the authority to do so.

Talcott Parsons constructed the first theoretical concept directly applicable to medical sociology, by utilizing the parameters of classical sociological theory, such as Max Weber’s work. In Parsons' view, society worked best when each individual unit was fully functional. Because of the esoteric nature of the knowledge base in medicine, society was content to give the profession a self-regulating status that had high social and financial value for physicians. This concept might explain that medical professionalism contributes to form self-actualization within medical professionals.

V. Concluding remarks

In the current study, it has been investigated to understand medical professionals using various approaches, in order to contribute to their human resource management, which is hard to deal with. The findings with the survey study are quite important in the human resource management for medical professionals who can easily move to the new positions. The executive managers in the hospital have to recognize this fact to manage and satisfy their needs. Next, different from organizational commitment, medical professionals have high self-actualization regardless to the category of the hospitals. Thus, it has been shown with historical and cultural studies to investigate the reason of their

[83] Parsons (1951)

high self-actualization, found that this characteristic feature of medical professionals is related to the education and crisis of the society. These results would provide the potential insights to understand the keys in the human resource management for medical professionals.

In addition to these meaningful findings, the importance of this study is to provide the viewpoints to understand medial professionals with two axes. One is organizational commitment consisted of three components, the other is self-actualization reflecting the medical professionalism. To make it easy to grasp the relationship between these factors, the triangular pyramid model has been considered, forming a base with organizational commitment (affective, continuance and normative) and an apex with self-actualization. Similarly, to understand the background of self-actualization, the triangular pyramid model has been applied forming a base of medical professionalism with culture, historical view and social request. This way of thinking is useful to understand the features of medical professionals. Thus, the current results and the triangular pyramid model would render the critical aspect to human resource management for medical professionals.

Profound understanding, using the triangular pyramid model, might be essential in the human resource management for medical professionals. Or it might end in failure to maintain the function of the hospital. Medical services in hospital are strongly depended on the medical professionals, that is, human resource management is the key to perform the efficient hospital management. The executive manager of hospital should be well versed in management skills as well as medical knowledge to provide better medical services for the public patients. Hoping that it would increase the number of researchers who are well versed in medical knowledge and management skill, I would like to contribute to furnish the splendid and better medical services for the public patients with the proper medical professionalism.

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Appendix A Lists of Questionnaire for the Survey

A-1 Items from the Organizational Commitment Scales*

Affective Organizational Commitment

1.* I do not feel like part of a family at (name of hospital).
2. I feel emotionally attached to (name of hospital).
3. Working at (name of hospital) has a great deal of personal meaning for me.
4. I feel a strong sense of belonging to (name of hospital).
5.* (Name of hospital) does not deserve my loyalty.
6. I am proud to tell others that I work at (name of hospital).
7. I would be happy to work at (name of hospital) until I retire.
8. I really feel that any problems faced by (name of hospital) are also my problems.
9. I enjoy discussing (name of hospital) with people outside of it.

Continuance Organizational Commitment

1. I am not concerned about what might happen if I left (name of hospital) without having another position lined up.
2. It would be very hard for me to leave (name of hospital) right now, even if I wanted to.
3. Too much in my life would be disrupted if I decided I wanted to leave (name of hospital) now.
4. It wouldn't be too costly for me to leave (name of hospital) now.
5.* Right now, staying with (name of hospital) is a matter of necessity as much as desire.
6. One of the few, serious consequences of leaving (name of hospital) would be the scarcity of available alternatives.
7. One of the reasons I continue to work for (name of hospital) is that leaving would require considerable sacrifice–another organization may not match the overall benefits I have here.

Normative Organizational Commitment

1.* I do not feel any obligation to remain with (name of hospital).
2. Even if it were to my advantage, I do not feel it would be right to leave (name of hospital) now.
3. I would feel guilty if I left (name of hospital) now.
4. (Name of hospital) deserves my loyalty.
5. It would be wrong to leave (name of hospital) right now because of my obligation to the people in it.
6. I owe a great deal to (name of hospital).

Responses to each item are measured on a 7-point scale with scale point anchors labeled: strongly disagree, moderately disagree, slightly disagree, neither disagree nor agree, slightly agree, moderately agree, and strongly agree. An asterisk (*) denotes a negatively phrased and reverse scored item.

Source: Questionnaire from "Commitment and perceived organizational support" by LaMastro.

A-2 Short Index of Self-Actualization (SISA)

1. I do not feel ashamed of any of my emotions.
2.* I feel I must do what others expect me to do.
3. I believe that people are essentially good and can be trusted.
4. I feel free to be angry at those I love.
5.* It is always necessary that others approve of what I do.
6.* I don't accept my own weaknesses.
7. I can like people without having to approve of them.
8.* I fear failure.
9.* I avoid attempts to analyze and simplify complex domains.

10. It is better to be yourself than to be popular.
11.* I have no mission in life to which I feel especially dedicated.
12. I can express my feelings even when they may result in undesirable consequences.
13.* I do not feel responsible to help anybody.
14.* I am bothered by fears of being inadequate.
15. I am loved because I give love.

* Results for these questions are reverse-scored so that more self-actualizing responses produce higher scores.

Source: Jones, A. and R. Crandall (1986) Short index of self actualization IN: Lester P, E. and L. K. Bishop (2001) Handbook of tests and measurement in education and the social sciences. 2nd ed. Lancaster, PA: Technomic Publishing Co. pp. 280-281. Original publication has been listed in the references.

Appendix B Statistical data of the survey study

B-1 Cross-tabulation of the samples

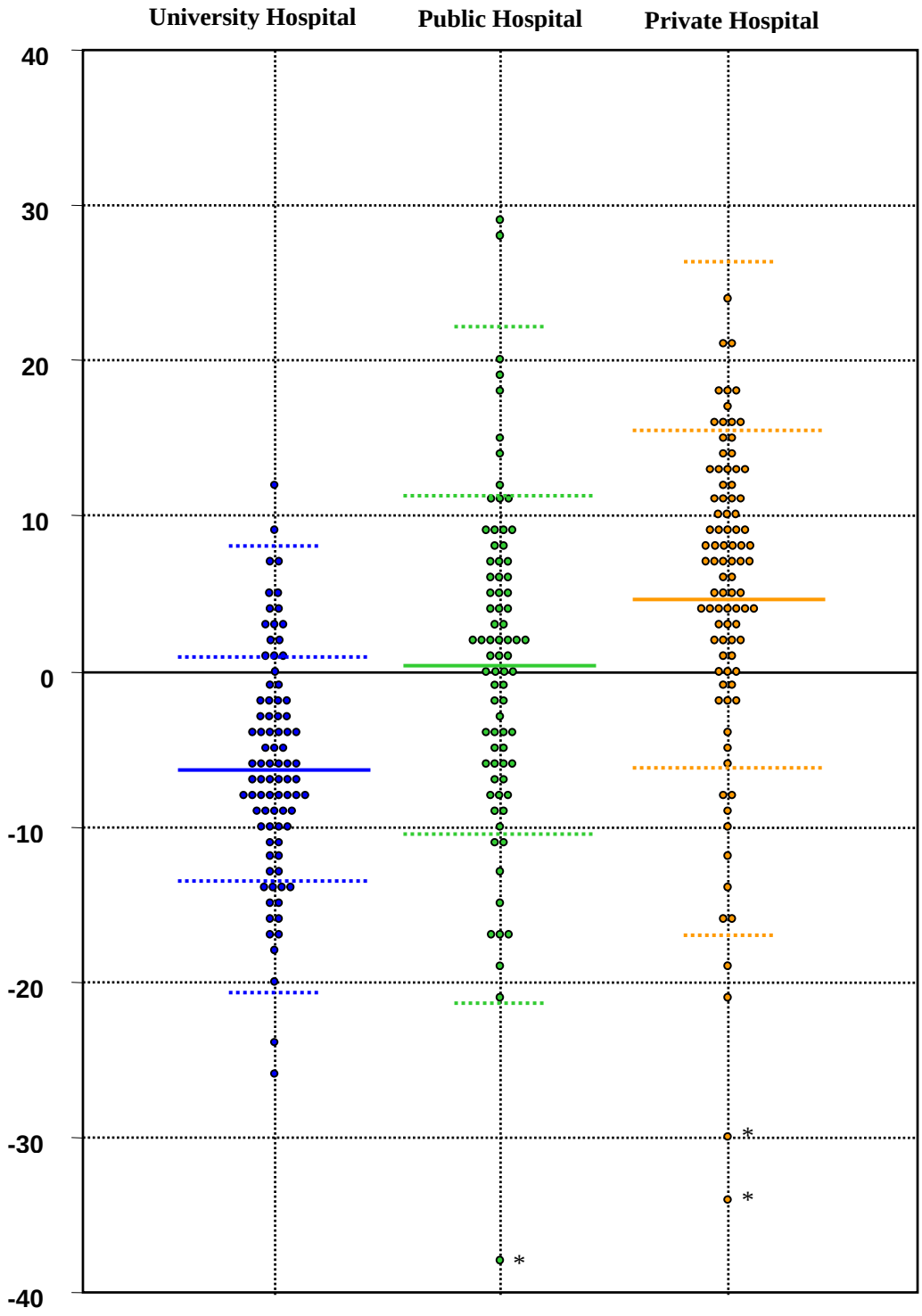
	Doctor	Nurse	Others	Total
University Hospital	22	63	0	85
Public Hospital	21	50	7	78
Private Hospital	6	71	14	91
Total	49	184	21	254

B-2. Descriptive statistics of whole samples

	number	minimum	maximum	mean	Standard deviation
OC	251	-26.00	29.00	0.048	10.056
AC	251	-20.00	17.00	0.339	6.001
CC	251	-9.00	11.00	1.367	3.874
NC	251	-17.00	12.00	-1.657	5.261
SA	253	-10.00	10.00	0.968	3.524

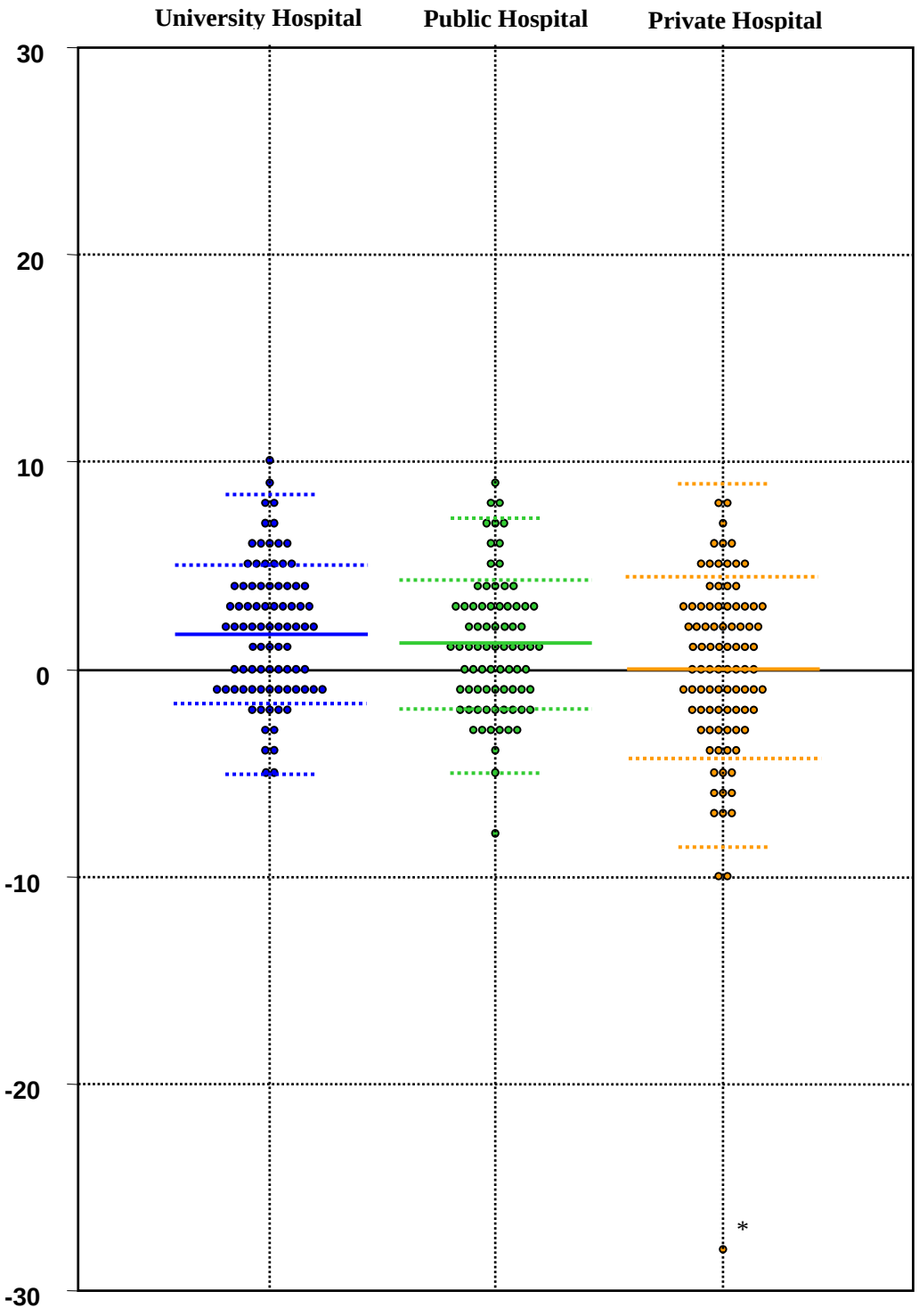
OC: organizational commitment, AC: affective commitment, CC: continuance commitment, NC: normative commitment, SA: self-actualization.

B-3 Frequency distribution of Organizational Commitment Scales



The mean values are indicated as solid lines. Broken lines indicate ±1SD and short broken lines ±2SD. The asterisks indicate outliers that are over three times of standard deviation (±3SD).

B-4 Frequency distribution of Short Index of Self-Actualization



The mean values are indicated as solid lines. Broken lines indicate ±1SD and short broken lines ±2SD. The asterisks indicate outliers that are over three times of standard deviation (±3SD).

B-5 Descriptive statistics of each score

(A) Organizational commitment (OCS)

	University Hospital			Public Hospital			Private Hospital		
	N	mean	SD	N	mean	SD	N	mean	SD
Doctor	22	-3.50	7.29	21	1.76	11.34	6	2.83	11.23
Nurse	63	-7.21	6.96	50	-0.14	8.78	71	5.70	8.77
Others	0	N/A	N/A	7	4.71	13.88	14	5.00	10.63
Total	**85**	**-6.25**	**7.19**	**77**	**0.82**	**10.00**	**89**	**5.39**	**9.16**

Affective commitment

	University Hospital			Public Hospital			Private Hospital		
	N	mean	SD	N	mean	SD	N	mean	SD
Doctor	22	2.59	6.90	21	1.33	6.73	6	-0.83	9.45
Nurse	63	-2.57	4.79	49	-1.63	4.63	69	2.25	4.63
Others	0	N/A	N/A	7	4.14	9.08	14	4.50	7.76
Total	**85**	**1.24**	**5.83**	**77**	**-0.30**	**5.97**	**89**	**2.39**	**5.66**

Continuance commitment

	University Hospital			Public Hospital			Private Hospital		
	N	mean	SD	N	mean	SD	N	mean	SD
Doctor	22	-2.41	3.59	21	-0.86	3.61	6	4.33	3.72
Nurse	63	0.62	3.09	49	4.12	2.90	69	2.29	3.47
Others	0	N/A	N/A	7	-2.29	3.45	14	0.36	4.13
Total	**85**	**-0.16**	**3.47**	**77**	**2.18**	**4.06**	**89**	**2.12**	**3.67**

Normative commitment

	University Hospital			Public Hospital			Private Hospital		
	N	mean	SD	N	mean	SD	N	mean	SD
Doctor	22	-3.68	5.12	21	1.29	4.36	6	-0.67	5.05
Nurse	63	-5.25	3.85	49	-2.63	5.75	69	1.16	3.93
Others	0	N/A	N/A	7	2.86	5.49	14	0.14	4.38
Total	**85**	**-4.85**	**4.24**	**77**	**-1.06**	**5.73**	**89**	**0.88**	**4.07**

(B) Self-actualization (SISA)

	University Hospital			Public Hospital			Private Hospital		
	N	mean	SD	N	mean	SD	N	mean	SD
Doctor	22	2.77	4.34	21	1.86	2.89	6	2.17	2.04
Nurse	63	1.49	2.69	50	0.78	3.42	70	0.13	3.60
Others	0	N/A	N/A	7	0.43	2.95	14	-0.93	5.30
Total	**85**	**1.82**	**3.22**	**78**	**1.04**	**3.24**	**90**	**0.10**	**3.85**

The sample number (N), the means and standard deviation (SD) in each category of the hospitals are shown according the medical professionals. In University hospitals, the samples were collected from doctors and nurses and not available (N/A) from other categories of professionals.

B-6 Pearson correlation coefficients matrix

		OC	AC	CC	NC	SA
OC	r	1	0.759*	0.291*	0.831*	-0.123
	p	.	0.000	0.000	0.000	0.053
	N	251	251	251	251	250
AC	r	0.759*	1	-0.219*	0.472*	-0.013
	p	0.000	.	0.000	0.000	0.834
	N	251	251	251	251	250
CC	r	0.291*	-0.219*	1	0.069	-0.168*
	p	0.000	0.000	.	0.279	0.008
	N	251	251	251	251	250
NC	r	0.831*	0.472*	0.069	1	-0.094
	p	0.000	0.00	0.279	.	0.136
	N	251	251	251	251	250
SA	r	-0.123	-0.013	-0.168*	-0.094	1
	p	0.053	0.834	0.008	0.136	.
	N	250	250	250	250	253

* Correlation is significant at the 0.01 level (two-tailed).

B-7 Analysis of variance table (Controlling for the category of hospitals)

	Df	**SS**	**MS**	**F**	**p**
OC	2	5956.924	2978.462	38.224	0.000
Error	248	19324.502	77.921		
Total	250	25281.426			
AC	2	617.555	308.778	9.131	0.000
Error	248	8386.660	33.817		
Total	250	9004.215			
CC	2	301.490	150.745	10.834	0.000
Error	248	3450.789	13.914		
Total	250	3752.279			
NC	2	1463.206	731.603	33.259	0.000
Error	248	5455.328	21.997		
Total	250	6918.534			
SA	2	130.409	65.205	5.435	0.005
Error	250	2999.338	11.997		
Total	252	3129.747			

B-8 Multiple comparison: Tukey honestly significant difference

Controlling for the category of hospitals

Variables	(I)	(J)	DM (I-J)	SE	p	95% Confidence Interval	
						Lower	Upper
OC	1	2	-7.065*	1.389	0.000	-10.340	-3.791
		3	-11.640*	1.339	0.000	-14.797	-8.484
	2	1	7.065*	1.389	0.000	3.791	10.340
		3	-4.575*	1.374	0.003	-7.815	-1.336
	3	1	11.640*	1.339	0.000	8.484	14.797
		2	4.575*	1.374	0.003	1.336	7.815
AC	1	2	-0.937	0.915	0.563	-3.094	1.221
		3	-3.629*	0.882	0.000	-5.708	-1.549
	2	1	0.937	0.915	0.563	-1.221	3.094
		3	-2.692*	0.905	0.009	-4.826	-0.558
	3	1	3.629*	0.882	0.000	1.549	5.708
		2	2.692*	0.905	0.009	0.558	4.826
CC	1	2	-2.347*	0.587	0.000	-3.730	-0.963
		3	-2.288*	0.566	0.000	-3.622	-0.954
	2	1	2.347*	0.587	0.000	0.963	3.730
		3	0.058	0.581	0.994	-1.311	1.427
	3	1	2.288*	0.566	0.000	0.954	3.622
		2	-0.058	0.581	0.994	-1.427	1.311
NC	1	2	-3.782*	0.738	0.000	-5.522	-2.042
		3	-5.724*	0.711	0.000	-7.401	-4.046
	2	1	3.782*	0.738	0.000	2.042	5.522
		3	-1.941*	0.723	0.023	-3.663	-0.220
	3	1	5.724*	0.711	0.000	4.046	7.401
		2	1.941*	0.730	0.023	0.220	3.663
SA	1	2	0.785	0.543	0.319	-0.495	2.066
		3	1.724*	0.524	0.003	0.488	2.959
	2	1	-0.785	0.543	0.319	-2.066	0.495
		3	0.939	0.536	0.188	-0.325	2.202
	3	1	-1.724*	0.524	0.003	-2.959	-0.488
		2	-0.939	0.536	0.188	-2.202	0.325

Hospitals are categorized as university hospitals (1), public hospitals (2) and private hospitals (3).
DM: difference of mean, SE: standard error, p: significance probability

* The mean difference is significant at the 0.05 level.

B-9 Comparison between doctor and nurse

(A) Descriptive statistics

	Profession	N	mean	SD	SEM
Organizational commitment	1	49	-0.469	9.891	1.413
	2	181	-0.376	9.838	0.731
Affective commitment	1	49	1.633	7.091	1.013
	2	181	-0.481	5.145	0.382
Continuance commitment	1	49	-0.918	4.122	0.589
	2	181	2.204	3.459	0.257
Normative commitment	1	49	-1.184	5.255	0.751
	2	181	-2.099	5.232	0.389
Self-actualization	1	49	2.306	3.513	0.502
	2	183	0.776	3.298	0.244

Profession 1: medical doctor, 2: nurse.
N: number, SD: Standard deviation, SEM: standard error of the mean

(B) Independent sample test between doctor and nurse

		Levene's test		Test of difference of two population means						
									95% CI	
	HV	F	p	t	Df	p	DM	SE	Lower	Upper
OC	yes	0.515	0.474	-0.059	228	0.953	-0.094	1.586	-3.219	3.032
	no			-0.059	75.703	0.953	-0.094	1.591	-3.263	3.075
AC	yes	6.102	0.014	2.339	228	0.020	2.113	0.904	0.333	3.894
	no			1.952	62.321	0.055	2.113	1.083	-0.051	4.277
CC	yes	2.608	0.108	-5.374	228	0.000	-3.123	0.581	-4.268	-1.978
	no			-4.860	67.388	0.000	-3.123	0.646	-4.405	-1.840
NC	yes	0.001	0.977	1.086	228	0.279	0.916	0.843	-0.746	2.576
	no			1.083	75.773	0.282	0.916	0.845	-0.768	2.600
SA	yes	0.454	0.501	2.845	230	0.005	1.530	0.538	0.470	2.590
	no			2.742	72.268	0.008	1.530	0.558	0.418	2.642

HV: homogeneity of variance, p: significance probability, Df: degree of freedom, DM: difference of mean, SE: standard error, CI: confidence interval of the difference.

B-10 Results of multiple regression analyses

(A) Category of hospital and profession predicting organizational commitment

	B	β	t-ratio	p
Hospital	5.952	0.494	8.522	0.000
Profession	-0.806	-0.041	-0.715	0.475

R^2 = 23.4%
adjusted R^2 = 22.8%

Category of hospital and profession predicting affective commitment

	B	β	t-ratio	p
Hospital	1.917	0.266	4.165	0.000
Profession	-0.552	-0.048	-0.743	0.458

R^2 = 6.6%
adjusted R^2 = 5.9%

Category of hospital and profession predicting continuance commitment

	B	β	t-ratio	p
Hospital	1.028	0.221	3.461	0.001
Profession	0.612	0.082	1.278	0.203

R^2 = 6.6%
adjusted R^2 = 5.8%

Category of hospital and profession predicting normative commitment

	B	β	t-ratio	p
Hospital	3.007	0.477	8.112	0.000
Profession	-0.867	-0.085	-1.450	0.148

R^2 = 6.6%
adjusted R^2 = 5.9%

(B) Category of hospital and profession predicting self-actualization

	B	β	t-ratio	p
Hospital	-0.665	-0.157	-2.469	0.014
Profession	-1.129	-0.165	-2.593	0.010

R^2 = 6.7%
adjusted R^2 = 5.9%

B = Unstandardized Coefficients, β =Standardized Coefficients.

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