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ASSESSMENT OF CANCER PREVENTION SERVICES IN TEHRAN HOSPITALS IN TERMS OF INTERIOR AND ENVIRONMENTAL DESIGN, SCREENING, COUNSELING, LIFE EXPECTANCY, NUTRITION, AND NOTIFICATION

JALILVAND FARNAZ

Faculty of Fine Arts Department of Industrial Design, Tehran University, Iran -Tehran

E Mail: Farnazjalilvand01@gmail.com; +98-9191148575

ABSTRACT

This paper aims to assess cancer prevention services in Tehran hospitals. In doing so, we investigated the parameters of interior and environmental design, screening, counseling, life expectancy, nutrition, and notification in eight hospitals of Tehran. This is the first paper in Iran to assess cancer prevention services in hospitals. The statistical population consists of 1500 physicians and nurses working in Tehran hospitals. We randomly selected 115 physicians and 185 nurses (making a total of 300) in each hospital using Morgan Table and stratified cluster sampling method. The results indicated that the majority of hospitals (between 30-60%) had acceptable performance in the above said parameters.

Keywords: Cancer prevention, Tehran hospitals, interior and environmental design, screening, counseling unit, life expectancy, nutrition, notification

INTRODUCTION

Annually, over 10 million people are diagnosed with cancer. More than 20 million people are now suffering from cancer (1). In Iran, around 70,000 people are diagnosed with cancer and 30,000 people die of cancer annually. Given that the population is becoming older, cancer is expected to rise considerably in future (2). Cancer not only threats life but also gives rise to anxiety and depression in more than one-third of patients. It also takes considerable economic impacts on families. Cancer clinical care takes a major part of health budget (1).

Approximately 150 types of cancer have been discovered and at least 500 cancer-developing factors identified. Cancer is the product of various factors (3). Only 5-10% of cancers arise from genetic problems (4). 90-95% of cancers are caused by environmental factors and lifestyle. The

major risk factors of cancer are smoking, obesity, alcohol use, infection, sunlight, mental pressures, environmental pollutants, and nutrition (5). Lifestyle is closely associated with social and economic situation of people. It is also influenced by other factors such as roles, activities, work habits, study, entertaining activities, relaxing activities, type of residence, impact of cultural beliefs on nutrition and health, transportation, healthcare behaviors, and health-related activities (including alcohol use, smoking, drug use, and stress levels) (6). In almost all countries, particularly developing countries, health problems such as obesity, cardiovascular diseases, various cancers and addiction are somehow associated with the changed lifestyle (7). Studies suggest that a direct relationship exists between lifestyle and cancer. Lifestyle is the most important factor in many common cancers such as breast, prostate and colon cancers.

Cancer prevention consists of primary prevention (prevention of incidence) and secondary prevention (early discovery of disease). Primary prevention entails the identification of causes and factors involved. The role of lifestyle may be explained by the varied cancer incidence in different nations and the varied incidence before and after immigration. This reveals that modification of lifestyle has a significant role in cancer prevention (9). If effective preventive measures are taken now, 2 million cancer-related deaths will be prevented by 2020 (4). Cancer prevention entails the modification of lifestyle (10). This paper aims to assess Tehran hospitals in terms of screening, counseling, interior and environmental design and nutrition, as well as the efficiency and satisfaction of patients and personnel.

CASE STUDIES

Experience of a German hospital (Irmingard Munich): This hospital is the main national center for cancer prevention in Germany and provides health promotion services. The personnel consist of various physicians, psychologists, nurses and social workers. Health promotion projects consists of ten subprojects including the improvement of acceptance of psychosomatic disorders in community, provision of effective communication methods between physician and patient, education of self-management in hypertension and metabolic syndrome, making arrangements for return of cancer patients to the community, comprehensive quality management, and healthy nutrition of patients (11).

Experience of an Italian hospital (Padua Educational Hospital): This hospital provides health promotion services with a team consisting of epidemiologists, social medicine specialists, cancer prevention

specialists, nurses and social workers. This hospital has defined various projects including drug-free hospital, investigation of occupational risks for health section personnel, improvement of childbirth quality, and healthy nutrition. The director of hospital coordinates the projects between epidemiologists, social medicine ward manager, preventive medicine specialists and director of local office of World Health Organization act as counselor. The projects are financed by governmental resources and contract with physicians and nurses based on their performances (12).

Experience of a hospital in Thailand: This hospital provides health promotion services. The personnel consist of internists (and other specialists if needed), nurses, psychologists and social workers. The main service provision strategies include the commitment of managers in managerial level and the support of hospitals in technical, economic and managerial terms. The projects are financed by governmental resources, NGOs and local communities (13).

Preventive Medicine Center in US: This center provides a wide range of prevention services including screening, counseling and medicinal prevention (14-15). Rather than direct provision of services by physicians, this center provides its services by a team consisting of trained nurses, health instructors and other midlevel personnel. For example, when a 60-year-old woman who has not ever received prevention services approaches the clinic, she first fills out a form based on its age and sex and then receives a list of needed services using a computer program. It should be noted that all services are provided by midlevel personnel. Rather than performing conventional duties, physicians supervise the tasks, design preventive policies, prepare the guidelines, and provide symptom-driven care. Thus, all preventive services are integrated in the clinic (16).

ASSESSMENT PARAMETERS

Environmental elements which psychologically affect cancer patients

In the past, green nature, sunlight and fresh air were used to be considered as the requisites of treatment process. The same was true in Greek and Roman treatment temples, medieval monasteries and big urban hospitals in 17^{th} and 18^{th} centuries (17-19).

In 1859, Florance Nightingale stated in his book "Notes on Hospitals" that interior design, light and ventilation may considerably accelerate the treatment process of cancer patients and reduce their mental pressures in hospitals. With respect to designing hospitalization rooms, he recommended that the rooms should have enough height, big windows and efficient ventilation system (20-21).

In mid 1970s, sociologists addressed the issue of hospital spaces, suggesting that dark and long corridors and sterilized, bad-smelling internal spaces create an unpleasant atmosphere and increase the stress of cancer patients. In 1980s, such discussions led to designing children hospitals with a view to establishing a relation between medicine and patients and developing a pleasant space for cancer patients. This was done by creating non-invasive spaces and attractive environments. Such hospitals use happy colors, natural light, interior spaces decorated by flowers, park benches, water and fountain, art works, cartoon characters, shops and restaurants, in which children enjoy a beautiful atmosphere and pleasant smell (22). These features have been used in a large number of children hospitals.

In 19th and 20th centuries, medical centers in most countries overlooked the role of nature in treatment process. Hospitals were large buildings with international style, in which natural ventilation was replaced by ventilation systems, terrace and balcony were overlooked, and the natural elements were replaced by cars and parking spaces (23-24).

In the early 1990s, the idea of "patient-oriented care" transformed the design of medical centers in western countries. Hospital managers realized the negative reaction of individuals to administrative design. The competition between hospitals led to the increased attention to the needs of cancer patients. Gradually, international design turned into local design and natural features were paid attention in medical centers once again.

The Role of Counseling in Cancer Prevention

Life expectancy is a defined internal force which may enable cancer patients to see a horizon beyond their current painful situation. The lack of life expectancy reduces life quality and develops disappointing beliefs (26). Among the important features of life expectancy are future orientation, positive expectations, rationality, setting goals, and internal communications. In contrast, disappointment is a situation in which no goal is expected to be met. The feeling of disappointment may lead to depression and suicide.

Life expectancy refers to individual's attitude towards the future. Thinking about the possible good things in future may encourage patient to make more effort (7). Psychological interventions play a significant role in stress management and other mental problems among cancer patients. Such interventions may considerably reduce anxiety, stress and depression of cancer patients and improve their interpersonal relations (27). Investigation of people with cancer reveals

that various mental problems such as anxiety, fear, anger and depression may be reduced by psychological methods (28).

The Role of Screening in Cancer Prevention

There are clear evidences that early diagnosis of cancer is one of the most effective ways of reducing cancer-related mortality (29). Screening tests play a significant role in today's medicine because they are easy, cheap and accessible and may considerably reduce the incidence and severity of cancer (30-32).

According to US Cancer Association in 2009, the recommendations of physicians and other healthcare personnel is the most important factor in individual's motivation for undergoing screening test (16). The majority of the elderly avoid such tests due to fear of results and costs. On the other hand, the delayed diagnosis may make treatment process more difficult and costly (32-34).

The Role of Nutrition in Cancer Prevention

Studies indicate that nutrition is the main environmental factor in cancer (35). Nutrition is a major factor in 30-40% of cancers (36). Many nutritional behaviors such as cooking method, amount of calorie and food diversity may play a significant role in cancer incidence (37).

In Iran, Parsa Yekta and coworkers conducted a study during 2005-2007, involving 2500 Tehran citizens, with a view to investigating the role of lifestyle in cancer prevention. They found that 61.3% of the participants suffered from wrong nutritional habits and emphasized the role of nutrition training in cancer prevention (38). They concluded that nutrition training plays a significant role in health promotion programs (39). The findings of 220 researches during 1980-1995 indicated that nutrition training is a major factor in the promotion of nutritional behaviors (40). Parents, particularly mothers, play an important role in the purchase, preparation and distribution of foodstuff in families (41).

The Role of Patient's Awareness about Treatment Process

Informing patient of the disease is one of the major and complicated issues in the treatment of cancer patients. Specialists believe that telling the fact to cancer patients is a major challenge in medical care and nursing (24). Obviously, notification may result in the fear, anxiety and other mental problems in patient and may negatively affect treatment process (43). This has made it difficult for physicians and nurses to notify cancer patients of diagnosis results (44-45). There are varied attitudes towards notification of cancer patients in different cultures. Notification is common in Australia

and Northern Europe, but some eastern and southern European countries act differently (46).

There is a belief in western countries that notification of disease is a fundamental right of patient (47). In these countries, patients have the right to be informed of their disease and to make decision about their problems (48). In eastern countries, on the other hand, families tend to avoid informing cancer patients of diagnosis results (49). In Iran, there is no specific instruction on the notification of cancer diagnosis. For example, studies indicate that many people with cancer do not know that they have cancer (50).

In the recent years, the concept of life quality has been recognized as a parameter for investigating medical results of physical and mental diseases (51). World Health Organization defines life quality as individual's perception of life, values, goals, standards and interests (52). Mental and physical problems may considerably deteriorate life quality of cancer patients (53). One of the objectives in medical care process is to promote life quality (53). Notification of cancer diagnosis may affect the quality of emotional and social life, in which case the patient would need more psychological support in the beginning of treatment process (53).

RESEARCH METHOD

The present research is an applied and descriptive study conducted in 2015, involving public hospitals of Tehran which provide cancer prevention services. The statistical population consists of 1500 physicians and nurses working in the hospitals. We randomly selected 115 physicians and 185 nurses (making a total of 300) in each hospital using Morgan Table and stratified cluster sampling method. The questionnaire is based five-choice Likert spectrum. To establish the validity of questionnaire, we distributed it between five specialists in the field of IT and health information management. After analyzing the results, Cronbach's Alpha of 87 confirmed the validity.

The questionnaire consists of three parts: facilities, efficiency and satisfaction. The valuation is based on 5-choice Likert spectrum. After completing the questionnaires, we analyzed the data using SPSS21.

RESULTS

This paper involves 115 physicians and 185 nurses (making a total of 300) in Tehran hospitals providing cancer prevention services, with mean and standard deviation of work records being 6.4 and 7.1 respectively. Figures 1-7 illustrates the results in terms of the parameters mentioned in the previous part. The means of interior design services provided to cancer patients

indicated that performance of almost half of the hospitals was 30-60% and the performance of 25% of hospitals was more than 60% (Figure 1).

With respect to food services provided to cancer patients, 68.3% of the participants evaluated hospital performance to be more than 60% and 8.1% evaluated the hospitals to have poor performance. 59.6% of the participants evaluated hospital performance in terms of food services to be more than 60% and 5.9% evaluated the performance to be less than 30% (Figure 2).

As you can see in figures 3-4, 46.3% of the participants evaluated hospital performance in terms of counseling services to be more than 60% and 18.9% evaluated it to 0%. 28.7% of the participants evaluated hospital performance to be poor in terms of screening services and 15.9% evaluated the performance to be 30-60%.

Figures 5-7 illustrate the results concerning the satisfaction of participants with their job. The results indicate that over 43% of the participants were satisfied with their job.

As you can see in figures 5-7, 44.3% of the participants believed that the use of cancer prevention system increased their work load, 22% believed that the system did not increase their work load, and 8.6% had no opinion. 54.3% of the participants believed that the use of cancer prevention system did not increase their stress, 10.3% believed that the system increased their stress, and 10.9% had no opinion. 42.3% of the participants believed that the use of cancer prevention system produced successful results, 17.8% believed that the system did not produced successful results, and 14.3% had no opinion.

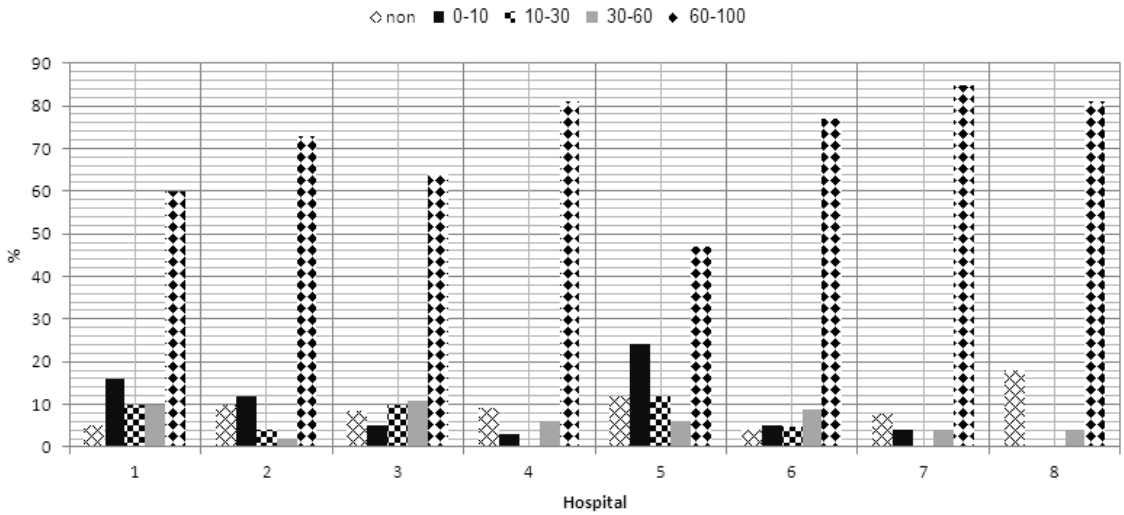

Figure 1: Performance of hospitals in terms of interior design services provided to cancer patients

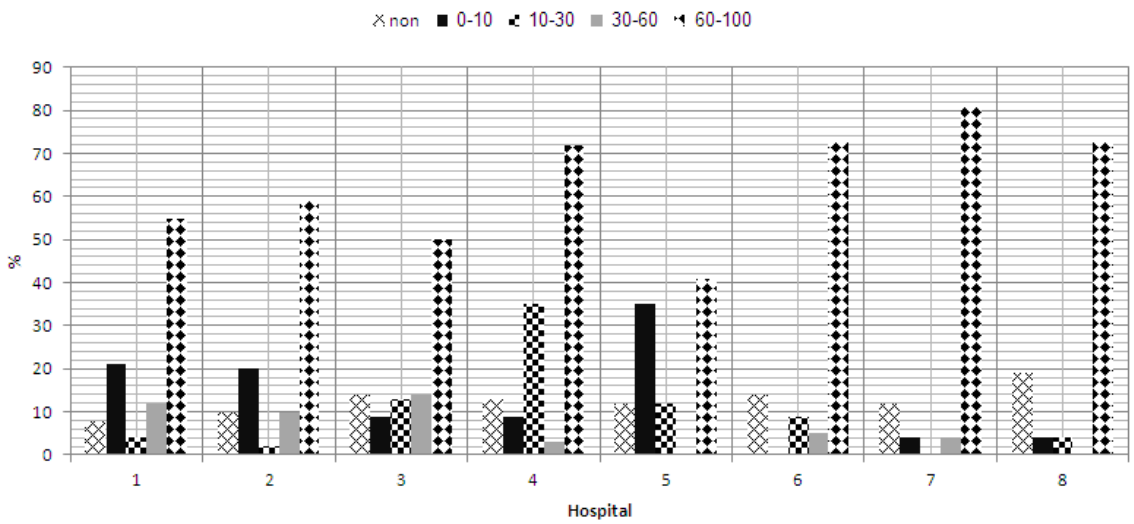

Figure 2: Performance of hospitals in terms of food services provided to cancer patients

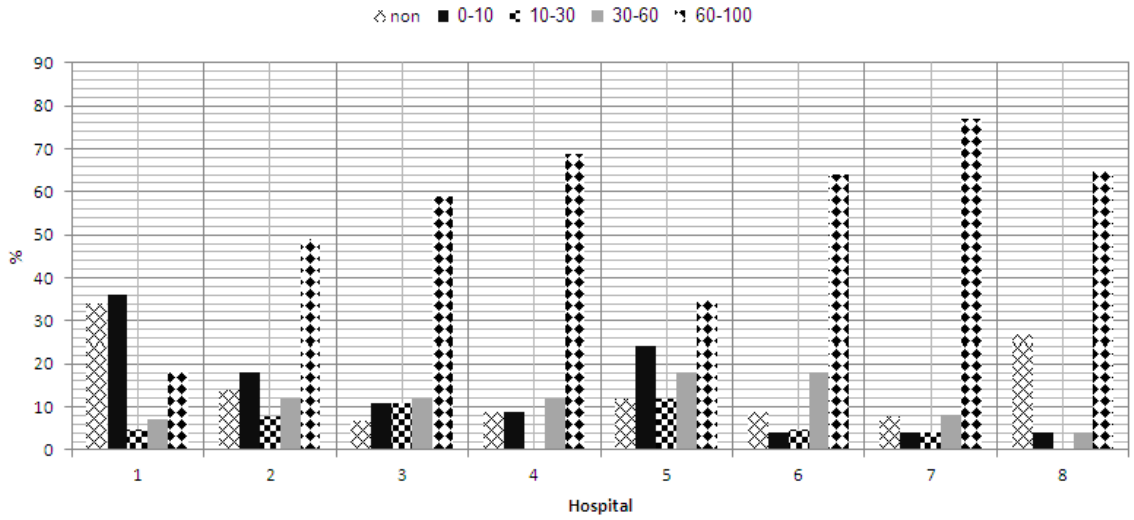

Table 3: Performance of hospitals in terms of counseling services provided to cancer patients

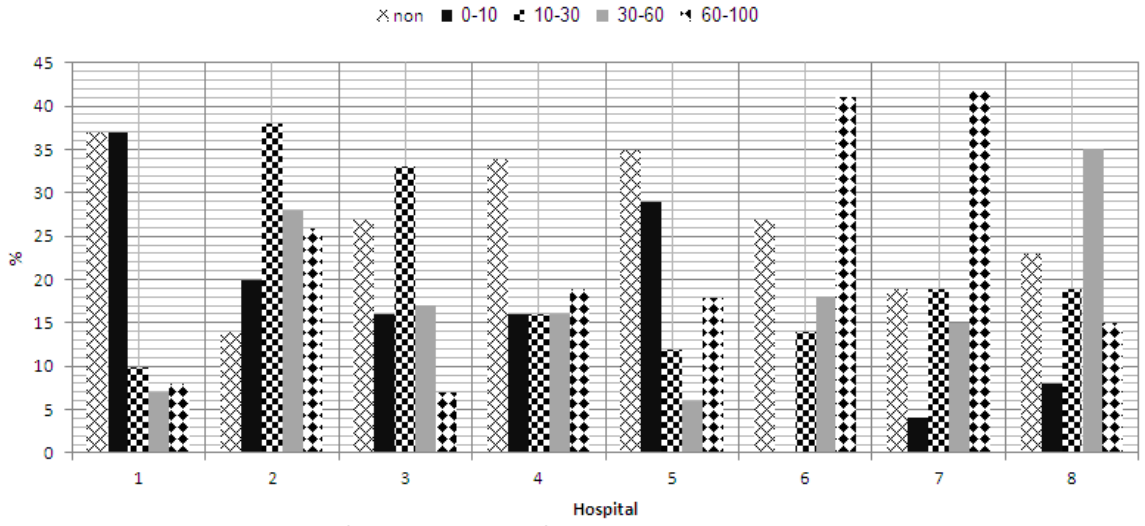

Table 4: Hospital perforamnce in terms of screening services provided to cancer patients

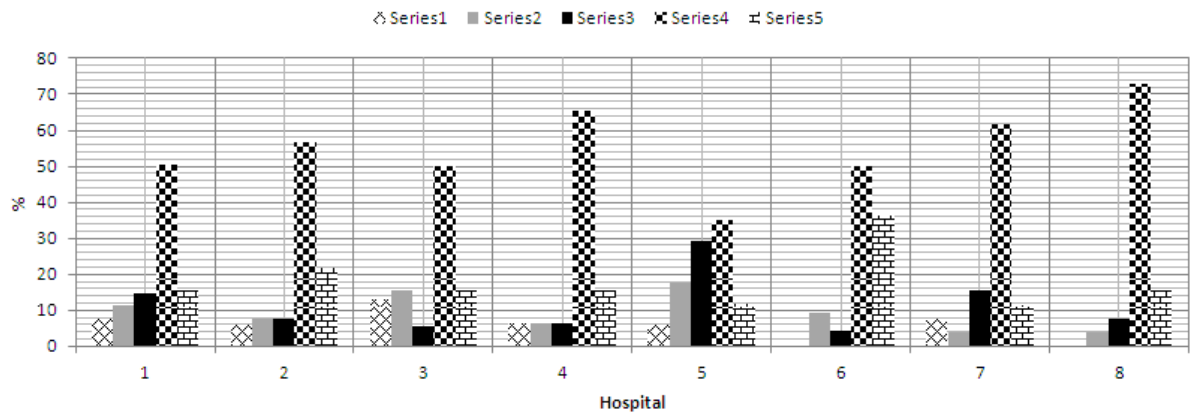

Figure 5: The increased working volume of hospital personnel

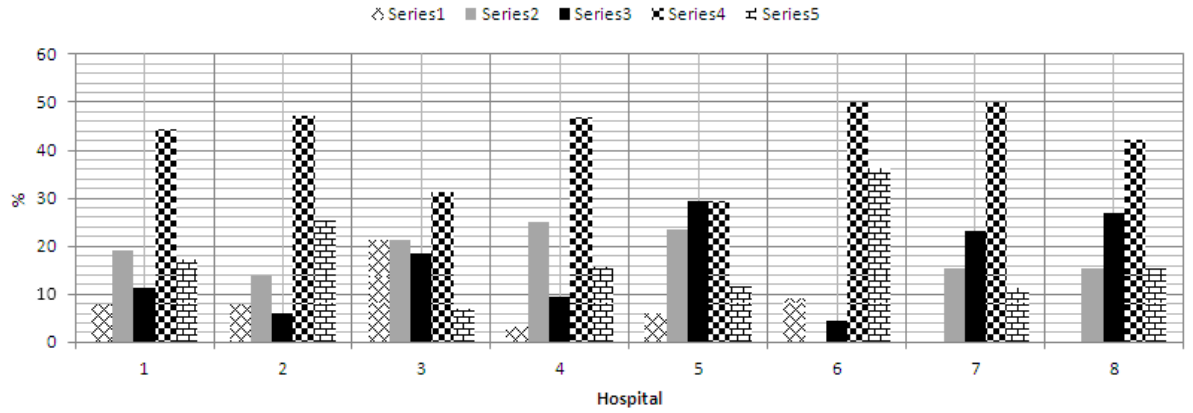

Figure 6: Stress level of hospital personnel

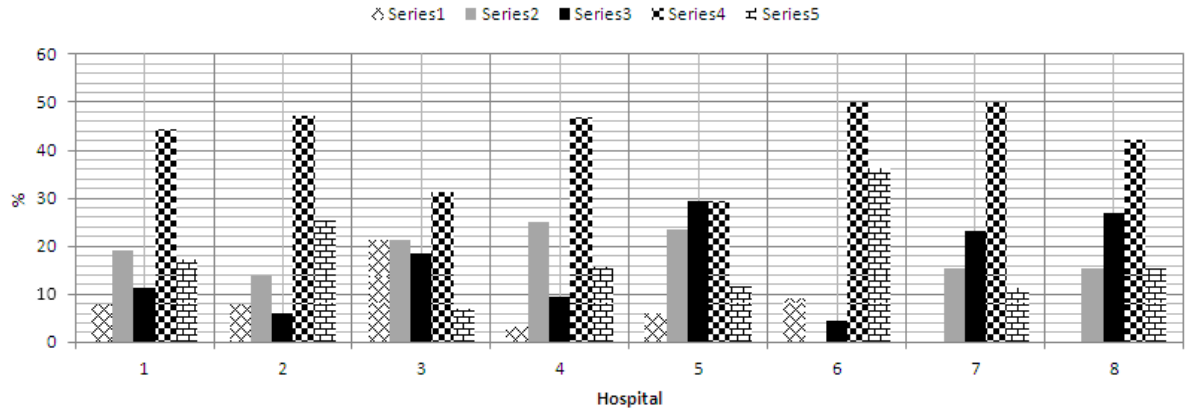

Figure 7: Hospital efficiency in the improvement of cancer patients

DISCUSSION AND CONCLUSION

General Evaluation of Cancer Prevention Services in Tehran Hospital

Health promotion clinics play a significant role in cancer prevention services. In Tehran, only few hospitals provide health promotion services. A few hospitals such as Sina Hospital (Esfahan), Tehran Heart Center and Madani Hospital (Tabriz) provide health promotion services, but there are no documents regarding their projects. In Taleghani hospital, health promotion

services are provided by social medicine experts and few screening services are provided to patients. At present, there is no guidance or guideline for providing these services. The majority of specialists evaluated scientific reliability of the model to be "very good" and its practicality to be "medium". This indicates the necessity of pilot implementation of the model in hospitals. Figure 8 illustrates the evaluation of Tehran hospitals.

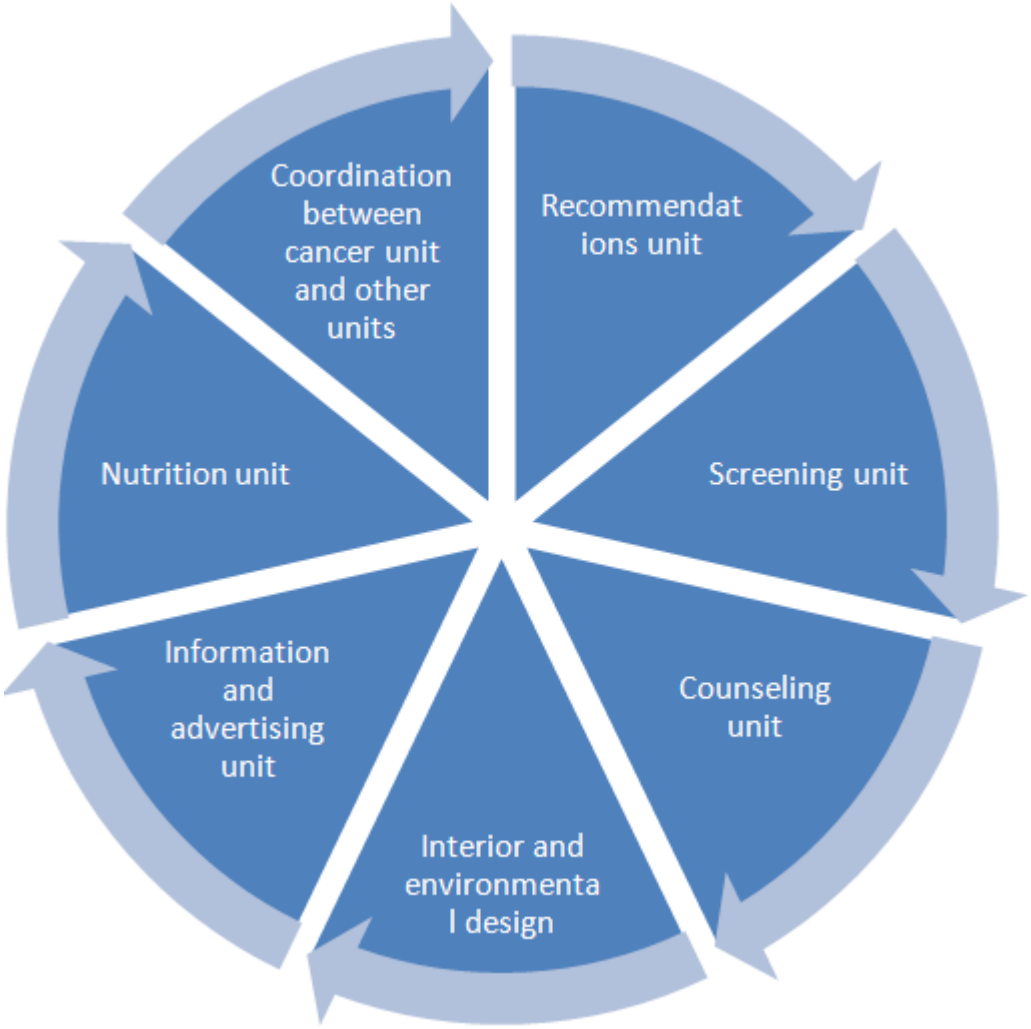

Figure 8: Final model of the present situation of Tehran hospitals

CONCLUSION

During the past decades, many studies have been done about the impact of cancer prevention services on the reduction of cancer-related mortality. According to these studies, the majority of physicians believe that prevention services reduce the incidence and costs of diseases (55). The model proposed in this study provides a primary framework for the provision of prevention services in hospitals. The results revealed that prevention clinic or health promotion office may considerably reduce cancer incidence (56).

An important component in this study is the services provided in cancer prevention clinics (57). Based on the researches conducted in other countries, preventive interventions in health promotion hospitals can be divided into two main groups:

1. Medical interventions: including identification of medical risk factors such as hypertension, immunization and vaccination
2. Behavioral interventions: including modification of lifestyle factors such as smoking, physical exercise, alcohol use, food regime and mental and social support (58-60).

Cancer prevention measures include screening, counseling, recommendations and empowerment of individuals. Other measures are training and rehabilitation programs aimed at empowerment of individuals to manage their diseases (61). Definition of service provision team is another component of this study. Service provision team should have a social medicine specialist, a trained nurse, a psychologist and a social worker. Clinical specialists are also included in the team depending on their specialties.

Yarnal and coworkers reported that a physician providing prevention services has to spend more than 7 hours giving regular recommendations (assuming the average number of patients). Thus, trained nurses, health instructors and other assistants should review cancer patient chart before the physician, whereby contributing to the execution of prevention strategies (62).

With a trained nurse (visit planner), the physician would have more time to design prevention policies, prepare the guidelines, and provide symptom driven care (63). After the first visit and making diagnostic examinations, the patient is followed up and is given recommendations about the required services (64). Recommendations may be given via email, letter, postcard and telephone (65). At present, recommendation card is the only practicable tool. People may be encouraged to use prevention services through websites, posters, information brochures, training courses, videos about screening services, and the most importantly, public media such as Radio and TV (66).

To overcome financial problems as the most important obstacle to the establishment of prevention system, it is recommended to use governmental resources and research grants, conclude performance-based contracts, and use voluntary workforce such as medical students. Presentation of papers and holding seminars are also among efficient measures for the support of prevention services.

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