

DOI

EVALUATION OF ERROR TYPES AND RISK ANALYSIS OF EFFICIENCY IN LONG NURSING APPLICATIONS

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The aim of this study is to determine whether the efficiency of nurses working in private hospitals is assessed by error types and risk analysis and their attitudes towards productivity in terms of socio-demographic characteristics. Between 01.02.2017 and 18.02.2017 the nurses working in Bursa Private Medicabil Hospital have created the universe of the research. All of the 100 nurses forming the universe were sampled and no sample selection was made. Nurses' Attitude Towards Efficiency was used as data collection tool in the research. The data collection instrument used in the study evaluated the attitudes to productivity and the grades of participation in 39 behaviors related to 5 sub-dimensions

In the descriptive study, participants' demographics and responses to the scale questionnaire were objectively analyzed. The Statistical Package for the Social Sciences (SPSS 23.0) program was used for statistical analysis of the data. The Kolmogorov Smirnov Test was applied to the data to determine whether the data were parametric or non-parametric. Non-parametric test methods were used because the test values were less than 0.05. Chi-square, Mann-Whitney U and Kruskal-Wallis H tests were used for comparison between groups.

As a result, it was observed that the evaluation of the efficiency of nurses in lean nursing practices by types of errors and risk analysis did not differ according to how they assessed gender, working age, socio-economic status, age, marital status, child ownership, education, .

Keywords: Efficiency, Nursing, Attitude, Labor Productivity

YALIN HEMŞİRELİK UYGULAMALARINDA VERİMLİLİĞİN HATA TÜRLERİ VE RİSK ANALİZLERİ İLE DEĞERLENDİRİLMESİ

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Bu çalışmanın amacı özel hastanelerde çalışan hemşirelerin yalın hemşirelik uygulamalarında verimliliklerinin hata türleri ve risk analizleri ile değerlendirilmesi ve verimliliğe ilişkin tutumlarının sosyo-demografik özellikler açısından farklılık gösterip göstermediğinin tespit edilmesidir. Araştırmanın evrenini 01.02.2017-18.02.2017 tarihleri arasında Bursa Özel Medicabil Hastanesi'nde çalışan hemşireler oluşturmuştur. Evreni oluşturan 100 hemşirenin tamamı örnekleme alınmış olup ayrıca örneklem seçimine gidilmemiştir. Araştırmada veri toplama aracı olarak Hemşirelerin Verimliliğe İlişkin Tutumu Ölçeği kullanılmıştır. Araştırmada kullanılan veri toplama aracı ile verimliliğe ilişkin tutum ile ilgili 5 alt boyut ile ilgili 39 davranışa katılma dereceleri değerlendirilmiştir

Tanımlayıcı olarak yapılan araştırmada katılımcıların demografik özellikler ve ölçekli anket sorularına verdikleri yanıtlar objektif olarak analiz edilmiştir. Verilerin istatistiksel analizinde Statistical Package for the Social Sciences (SPSS 23.0) programı kullanılmıştır. Verilerin parametrik veya parametrik olmadığını belirlemek için verilere Kolmogorov Smirnov Testi uygulanmıştır. Test değerleri 0,05'den küçük olduğu için parametrik olmayan test yöntemleri kullanılmıştır. Gruplar arası karşılaştırma için Ki-kare, Mann-Whitney U ve Kruskal-Wallis H testleri kullanılmıştır.

Sonuç olarak, hemşirelerin yalın hemşirelik uygulamalarında verimliliklerinin hata türleri ve risk analizleri ile değerlendirilmesinin cinsiyete, çalışılan birime, sosyo-ekonomik durumlarını nasıl değerlendirdiklerine göre farklılık göstermediği, yaş, medeni durum, çocuk sahibi olma, eğitim, meslekte ve kurumda çalışma sürelerine göre farklılık gösterdiği görülmüştür.

Anahtar kelimeler: Verimlilik, Hemşirelik, Tutum, İşgücü Verimliliği

INTRODUCTION

Choice of Study: Different definitions about productivity concept in social science literature such as economics, labor economics, political science, sociology, business administration, public administration or different professions are different approaches to productivity concept. Productivity is the ratio between the output produced by the production or service sector and the input used to generate this output. It is understood that the definitions of productivity have changed in content when examined in historical order. The concept of productivity reflects the idea

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that present-day definitions include some social elements, while early-term definitions include reaching the most output with the least input / input and making more numerical thought. In the first term productivity definitions, we talked about producing goods, but later we started to talk about service production, followed by concepts like performance, humanistic working conditions which added quality of production. Throughout history, mankind has struggled to survive and lead a better life. Efficiency has also become one of the indispensable concepts in the management field which has been the main problem of the states and companies for many years due to its effect on economic and social development. It is possible to talk about the concept of productivity in every field of life and it is mentioned. The main goal of productivity is to answer this search for a person who is constantly looking for a better quality of life.

In reducing poverty, increasing employment, raising working standards, productivity is the main means of ensuring the development of countries. For this reason, the importance can not be denied. The productivity issue that is important in this day and age is also discussed for healthcare enterprises. In recent years, the question "how to define and interpret efficiency for health services that differ from other service sectors" has become one of the debated topics in this industry. The increase in the education levels of the societies leads to the increase of the information, needs and demands about the presentation of the health services as in every area. In addition to this, the reasons such as the technology used in health services and the cost of labor are required to meet these services at a certain quality and cost. It increases. The most important factors determining the level of productivity in health services are; labor productivity, technology efficiency and material productivity. There are a number of studies related to the efficiency of health services in the literature. These studies have been seen to focus on issues such as measuring more productivity, labor productivity, quality, performance, technology and material productivity. Productivity can be perceived and identified in different ways by different professionals (physicians, nurses, health technicians, health economists, hospital managers) who provide health services. Many motives

such as job, social aspect, place in society, working style, gender and age affect not only money but also the emotions, attitudes and attitudes related to work and therefore productivity. Labor productivity in nursing services is one of the important issues in the presentation of health services. When it comes to productivity, which is so important, when asked the question "What are employees thinking, what is the attitude?", We have a very limited number of studies on the subject. Due to their professional roles, their role in the team, and their high number of health services, the number of studies examining the attitudes of the nurses towards productivity is very important.

The attitudes of the nurses, which are the most basic members of the university hospitals, which are part of the health services differing from the other service sectors and which differ from some other characteristics of the hospitalized hospitals, aroused curiosity. Therefore, "Attitudes of the Nurses to Efficiency" was determined as the subject of study.

Purpose of Study: The aim of this study is to determine whether the attitudes of the nurses working at university hospitals to their productivity differ in terms of socio-demographic characteristics. In this context, attitudes related to productivity should be evaluated by age, gender, marital status, children's ownership, level of education, working time in the profession and institution, unit and position studied, type of study, voluntary choice of occupation, evaluation of individual socio-economic situation, in-service trainings. In this study, it was aimed to draw attention to the situations which cause differences in the attitudes towards productivity, which have the greatest effect on nurses' attitudes towards productivity, and to suggest suggestions for improvement and correction of these factors.

The Significance of Working: It is a matter to be considered and important to consider in terms of labor productivity in health services, because labor force as an input is very important as an input in the presentation of health services, physically and mentally participates in production and creates one of the most important

costs. Nurses in health care services constitute an important place in terms of number of cost increases, as well as increase production, and nurses are also an important output source at the same time. For this reason, the efficiency of the nurses is a consideration in the efficiency of the health services. It is important that the worker has a positive attitude for productivity and a positive attitude. There are many factors that affect the attitude of the worker to productivity. Nursing profession working conditions, such as demands for work conditions are a heavy profession to increase these factors. It is thought that this study will be helpful in evaluating nurses' attitudes towards productivity, evaluating the factors that affect these attitudes, developing solution proposals and contributing to the literature.

CONCEPT OF EFFICIENCY

Efficiency has been one of the main objectives of states and companies for years with the effect of economic and social development. Therefore, efficiency is one of the indispensable concepts of management field. "The answer to the question of when the word" productivity "was used for the first time in a sense close to today is researched by a French scientist, Jean Fourastie. According to the results of this research, productivity was first used by George Bauer in the 16th century. In 1776, an article written by Quensay mentions productivity. More than a century later, in 1883, Litre defined this as 'the ability to produce.' At the beginning of the twentieth century, the word became more precise as 'the relationship between the output and the instruments assigned to produce these outputs'. " (Kurt, 2012: 4).

The concept of productivity began to develop in practice and in theory due to innovations in production activities with the Industrial Revolution. In addition, one of the most important reasons for the increase in concept and productivity in the twentieth century was the rapid recovery of the countries that were defeated in the Second World War and the economies were damaged. Today, the concept of productivity is often encountered by many individuals in the field. "Some of the developments in today's world also play a role in bringing forward the concept of productivity. The importance of these can be listed as follows:

The fact that the favorable and favorable conditions of 1950 and 1960 (high demand, advantages of scale economies, possibilities of intensive use of new resources etc.) do not continue today,

Having functional discomfort and confusion in the world economy and national economies,

In many areas, as a result of accelerated technological development, the increase in technological practices that use less capital and less labor (which can be interpreted as a more efficient use of capital and labor), as a result of encountering the growing labor strain of paradoxically developed countries, the capital intensive technology choice in some areas, the lack of capital and the massive unemployment problem make the current use of human resources more developmental and encourage the creation of new jobs "(Tural, 2009: 14).

In addition to these developments, many other reasons also keep productivity up to date. There are different approaches to the concept of productivity. "When productivity is regarded as an individual, organizational or social purpose, it seems that people who adopt this intention have different meanings to the term of productivity, depending on their own interests and positions. An economist approaching the concept of productivity at a societal level, an entrepreneur thinking in the performance and profitability of his own operation, or an engineer dealing with the measurement of direct work, differ in their perception of productivity because they deal with this concept from different angles "(Pekel, 2001: 67).

However, productivity is unevaluated, universal, objective, testable, and scientific knowledge-based. There are many definitions related to productivity. Definitions made by some organizations include:

According to ILO, productivity is defined as the ratio of products to elements such as land, capital, labor and entrepreneurs. According to EPA (European Productivity Agency): (1) Efficiency is the effective use of each production item. (2) Efficiency

is, above all, a way of thinking and always tries to improve what is there. (3) It is a concept based on the principle that everything is better than the present day. It is a concrete effort for mankind's progress. "(Diken, 2006: 39).

A general definition of efficiency can be made by going out from all definitions. "Efficiency is the relationship between the output produced by a production or service system and the input used to create this output. For this reason, productivity is defined as the use of resources in the production of various goods and services- labor, capital, land, materials, energy, and knowledge. "(Prokopenko, 2011: 19).

Here are the system outputs; physical tone, meter, etc. while at the macro and micro level, it is divided into two. These;

- Macro level: Gross national product, gross domestic product, net national welfare, value added, etc.
- At Micro Level: Sales, total earnings, value added, production value, etc. .

System inputs are;

- Labor: It can be expressed physically, such as the number of workers and working hours, in terms of money and labor.
- Capital: It is divided into operating capital and fixed capital. The enterprise capital consists of the returning assets. These are cash receivables, stocks, stocks and treasuries. Fixed capital can be expressed as machine number and machine time.
- Raw Materials and Materials: Raw materials and materials can be handled in three groups.
- Raw materials; It is the input material that enters into the structure of the product of production of the business and constitutes its basis.
- Auxiliary Materials and Materials; It is the material that constitutes the detail of the product as it enters into the production structure of the business.

- Business Material; It is necessary for the operator not to enter into the structure of the production subject matter but to realize the production process.

Are the substances.

- Other Inputs: Advertising inputs, various taxes, energy and fuel, etc. they are entered "(Tor, 2011: 10).

A numerical interpretation is that if the increase in output is greater than the increase in input, increase in productivity; it can be said that the increase in input is more than the increase in output, not the decrease in efficiency. Efficiency shows how well inputs are used to produce an output, and how productive it is. It is noticed that when the productivity definitions are reviewed in historical order, they are starting to show no change in the content. The concept of productivity reflects the idea that present-day definitions include some social elements, while early-term definitions include reaching the most output with the least input / input and making more numerical thought. The desired output has left its place to the desired result, and more service production has begun to be addressed than product production. In addition, the definition of productivity, which is based on the human, not only dependent on production, but on the basis of those who work at every level of the enterprise, is almost synonymous with the concept of performance. In the early twentieth century, focus on productivity has been on production. After the Second World War, producing more quality with the same resources has begun to gain importance as well. In the 1970s, not only quality production but also humanitarian working conditions were included in the concept of productivity. In the recent past, where environmental pollution is a threat, productivity has widened considerably and more and more quality goods and services have been produced without compromising the environment with humane working conditions. The greatest illusion regarding the concept of productivity is the perception of the quantitative dimension (cost, output, product, profit) of economic concept as the priority. "The

concept of productivity also depends on the quality of the workforce, management and working conditions" (Özbek, 2007: 5).

MATERIALS AND METHODS

Purpose of the research

The purpose of this study is to determine whether the efficiency of nurses working in private hospitals is assessed by error types and risk analyzes and their attitudes towards productivity in terms of socio-demographic characteristics.

The Universe of Research and Sampling

Between 01.02.2017 and 02.02.2017, the nurses working in Bursa Private Medicabil Hospital have created the universe of the research. All of the 100 nurses forming the universe were sampled and no sample was selected.

Data Collection Tool in Research

The Nurses' Attitude Toward Efficiency Scale was used. The data collection instrument used in the study evaluated the attitudes to productivity and the grades of participation in 39 behaviors related to 5 sub-dimensions.

Method

In the descriptive study, participants' demographics and responses to the scale survey questions were objectively analyzed. The Statistical Package for the Social Sciences (SPSS 23.0) program was used for statistical analysis of the data. The Kolmogorov Smirnov Test was applied to the data to determine whether the data were parametric or nonparametric. Since the test values are less than 0.05, nonparametric test methods are used. Chi-square, Mann-Whitney U and Kruskal-Wallis H tests were used for intergroup comparisons.

FINDINGS

Table 1: Normality Test of Nurses' Productivity Attitude Scale

| Nurses' efficiency attitude scale features | Kolmogorov-Smirnov | |
|--|--------------------|-------|
| | Statistics | p |
| | 1,374 | 0,046 |

*p<0.05

The results of the normality test are shown in Table 1. The Kolmogorov-Smirnov test showed that the data were normal. Accordingly, it has been determined that the data do not conform to the normal distribution. Therefore, nonparametric test methods are used in comparison tests to be performed in the study. This section contains general information of the nurses covered by the research and evaluated as valid data collection tool. The demographic characteristics of the survey participants were analyzed by frequency analysis. The findings are shown in Table 2. (N = 400)

Table 2: Demographic Characteristics of Nurses

| Feature | | n | % |
|----------------------------------|-------------------------------|----|------|
| Age | 30 and below | 71 | 71,0 |
| | 31-39 | 17 | 17,0 |
| | 40 and over | 11 | 11,0 |
| Gender | Woman | 73 | 73,7 |
| | Male | 26 | 26,3 |
| Your marital status | The married | 38 | 38,4 |
| | Single | 61 | 61,6 |
| section | Operating room | 15 | 15,2 |
| | Emergency | 14 | 14,1 |
| | Clinic / services | 46 | 46,5 |
| | Policlinic | 3 | 3,0 |
| | Intensive care | 15 | 15,2 |
| | Other | 6 | 6,1 |
| Total time you worked as a nurse | 1-10 years | 95 | 94,7 |
| | 11-20 years | 3 | 4,0 |
| | 11-30 years | 1 | 1,3 |
| Your education level | Health vocational high school | 63 | 63,6 |
| | Associate Degree | 15 | 15,2 |
| | License | 14 | 14,1 |
| | Graduate | 1 | 1,0 |
| | Other | 4 | 4,0 |
| your position | Head nurse | 4 | 4,0 |
| | Clinic / Service Nurse | 58 | 58,6 |
| | Responsible Nurse | 12 | 12,1 |
| | Other | 25 | 25,3 |

As can be understood from Table 2, most of the nurses are 30 and below. It can be said that nurses in this age may have a certain professional experience and attitudes towards the profession. When the table is examined, it is seen that the majority of the nurses participating in the research are women. It is possible to say that although the male members join the profession from here, the majority of the women in your profession are still occupations. It is observed that the majority of the nurses consist of the caretakers. From the educational standpoint, it seems that the vocational high school graduates have the majority of the nurses. It can be considered that the hospital administration chooses the vocational high school graduates to recruit nurses or nurses within the scope of nursing education develop themselves as vocational ones and start their education to license level. Clinic / Service Nurses are more involved.

Table 3. Age-Related Attributes of Nurses Efficiency Examination of differentiation and differentiation

| Variable | Age | Standard Average | Kruskal-Wallis H Test | p |
|-----------------------------------|--------------|------------------|-----------------------|------|
| Productivity attitude scale total | 30 and below | 213,95 | 10,925 | ,004 |
| | 31-39 | 176,23 | | |
| | 40 and over | 166,41 | | |
| Loyalty to the profession | 30 and below | 203,44 | 2,372 | ,305 |
| | 31-39 | 186,91 | | |
| | 40 and over | 218,39 | | |
| Working conditions | 30 and below | 213,01 | 10,065 | ,007 |
| | 31-39 | 180,61 | | |
| | 40 and over | 160,56 | | |
| Request for work | 30 and below | 208,14 | 3,505 | ,173 |
| | 31-39 | 184,57 | | |
| | 40 and over | 187,62 | | |
| Lead member relations | 30 and below | 212,65 | 10,781 | ,005 |
| | 31-39 | 184,39 | | |
| | 40 and over | 151,89 | | |
| Rewarding | 30 and below | 204,28 | ,864 | ,649 |
| | 31-39 | 193,47 | | |
| | 40 and over | 191,56 | | |

When the sub-dimension of occupational commitment in the table is examined; Since p value is greater than 0.05, it can be said that there is not a statistically significant difference between the mean age group scores in the occupational commitment subscale. However, it is noteworthy that the average age of 31-39 age group nursing dependency subscale is lower than the other age group nurses. This may be due to the fact that the nurses under 30 years of age are new to the

profession, the occupational expectations are higher, the nurses 40 years and over have more life and professional experience, and the awareness of profession gains is increased. In addition, it may be due to the fact that the second screening of the work due to some situations related to special life (marriage, child raising, property ownership, social life, etc.) in the 31-39 age group is low in this group.

When the working conditions sub-dimension is examined; Since p value is smaller than 0.05, it can be said that there is a statistically significant difference between the average points of age groups in working conditions sub-dimension. When the averages of the working conditions subscale scores of the age groups are examined, it is notable that the average scores of the working conditions subscale decrease as the age of the nurses increases. This may be due to a decrease in material and spiritual expectations due to the age of the profession, the increase in the number of years spent in the profession, the acceptance of certain facts of the profession, and a more positive attitude in working conditions and the younger nurses being more new.

There is no significant difference between the mean scores of the age groups of the nurses in the job subscale. ($p > 0,05$) When age groups are examined, it is seen that 30 and under age group have the highest average score. From this, it can be said that this age group nurses have more negative attitudes towards job demands. This may be due to the fact that these group nurses are new to their career, do not overlap with the conditions in which they apply, and there may be conflicts. It is seen that there is a statistically significant difference between the average scores of age groups in the subscale of leader member associations. ($P < 0.05$)

The opinions and thoughts of nurses regarding the factor of leading member associations differ according to age. When age group average scores of leader member associations are examined, it is seen that as nurses' age increases, average of leader member associations subscale scores decreases. In addition to the years of professional work, the ability to relate experience, professional self-confidence, information about organizational structure, duties and responsibilities to the

theoretical framework and practice is also increasing. Therefore, the expectations of the nurses about the managerial and leadership qualities of the managers are also increasing. As the age increases, the leading member associations may be attributed to the change of the average of the subscale scores in the negative direction. For this reason, manager nurses should develop themselves in the field of management and leadership and reflect these developments into practice. In the subscale of leader member associations, it is seen that the average of the highest score is 30 and nursing age group of nurses. This may be because the nurses in this age group are more dependent on their supervisors because of their limited experience, and for these reasons they may have to admit them as an authority.

There is no significant difference between the average scores of age groups of nurses in the rewarding sub-dimension. ($p > 0,05$) However, when the table is examined, it is noteworthy that in the rewarding sub-dimension, as the age of the nurses increases, the average of the scores decreases even at a small amount. When the nurses' attitudes towards productivity differed according to age, p value was found to be less than 0.05, which means that there was a statistically significant difference in terms of productivity score between different age group nurses. Nurses' attitudes towards productivity differ according to age. When the scale point average of age groups is examined, it is seen that as the age increases, the score decreases. From here it can be said that the attitudes of the nurses towards the productivity increase as the age increases. Furthermore, it is noteworthy that the average score scale of 30 years and younger is significantly higher. From this, it can be said that this age group nurses have more positive attitudes towards productivity.

RESULTS

In this study, it was aimed to measure the attitude of nurses towards productivity and to examine the demographic factors affecting this attitude. In order to measure the attitude of nurses towards productivity, The Nurses' Efficiency Related Attitudes Scale developed by Baykal and Göktepe in 2010 was used. The scale was

applied to 400 nurses working at Adnan Menderes University Practice and Research Hospital. Also, in order to determine the demographic characteristics, an Information Form composed of 14 questions was prepared according to literature knowledge. When the sample of the research is examined; it is seen that the majority of the nurses are between the ages of 31-39 and women. In addition, most of the participants in the research are single and nursing nurses. From the educational standpoint, more than half of the participants were trained at the undergraduate level. When examining the total working hours in the profession; It has been seen that the majority of the nurses have a working period of 21-25 years. In addition, the majority of the nurses participating in the survey have been working in the institution for only 5 years and under. When working units were examined, it was seen that most of the nurses worked in bed services and most of the nurses worked as service nurses. The vast majority of the nurses participating in the research work in the institution as 8 hours day-16 hours night shift. When the surveyed group was examined, it was seen that nurses who voluntarily selected the profession constituted the majority. They evaluated moderately socio-economic levels of more than half of the nurses. The vast majority of nurses in the study indicated that regular in-service training programs were regularly implemented in the unit they were working in. They also expressed that the vast majority of nurses are increasing the efficiency of scientific activities.

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