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Are Electronic Health Records Beneficial or Not?

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Esra BAYRAKTAR³ 

ABSTRACT

There are numerous studies in the literature assessing the effect of Electronic Health Records (EHRs) on health institutions. Some found that EHRs improve quality, service delivery, and satisfaction, while others claim that EHRs are not helpful in these matters. The conceptual ambiguity in the literature regarding EHRs directly affects research results and might misinterpret those results. The purpose of this study is to examine the literature assessing the effect of EHRs on health care quality in terms of EHRs and related concepts. A comprehensive review was conducted of 702 articles on EHRs published between January 2000 and January 2021 and drawn from the Web of Science. The literature showed that 59.26% of the studies addressing the benefits of EHRs are not directly related to EHRs, but rather to EHR functions. Only 1.28% of all studies found in the search dealt with the benefits of EHRs, such as the ease of access provided by EHRs, a natural advantage of EHRs. This study provides valuable information to make more informed decisions about the definition and use of EHR-related concepts and removes the conceptual ambiguity regarding the benefits of EHRs.

Keywords: Benefit, Electronic Health Records, Electronic Health Record Functions, Medical Informatics, Systematic Review

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INTRODUCTION

Information Technology (IT) in healthcare has increased data volume and enabled data to be stored in a digital environment. Patient health data are kept electronically in patient-based Electronic Health Records (EHRs). Electronic Health Records (EHRs) are among the most advanced tools used in the healthcare industry (Sadoughi, Khodaveisi, and Ahmadi 2019). According to the ISO definition, EHRs are data repositories that can be safely stored and changed in a digital form, and they are accessible by more than one authorized user. EHRs contain retrospective, simultaneous, and prospective information. The primary purpose of EHRs is to provide support for the continuous, efficient, and high-quality provision of health care (Häyrinen et al., 2008)..

EHRs are used to describe practices to direct and process any kind of information contained in electronic systems for the provision of health-related services to a person. A hospital with an EHR is expected to have a better performance. However, in this article the functions of the EHR are being explained, not the EHR itself. EHRs alone are not enough to improve health care delivery and health care quality. EHRs can provide this benefit because of their functions. Based on this, there are examples of some information systems that can impact the improvement of health care and can be considered to be EHRs. For example, electronic orders can be given and reproduced within EHRs. In addition, electronic alerts, clinical decision support systems, and electronic capturing of clinical data can improve health care quality (Lin, et al., 2018).

A study conducted by Linder et al.(2007) examined whether EHR use directly relates to healthcare quality or not . To measure this, 14 out of 17 quality indicators used in outpatient care were utilized. According to the study, no significant difference was found in terms of performance between visits with and without EHR. Poon et al.(2010)'s study showed that higher performance is also achieved when primary care physicians use certain EHR features in certain quality criteria. The impact of EHRs on cost and health care quality was evaluated in Welch et al.(2007)'s study, where they explored the effect of using EHRs for hypertension and hyperlipidemia, diabetes, and coronary artery disease as a measure of quality. They found out that it has a slightly positive effect on hypertension and hyperlipidemia and no significant effect on diabetes and coronary artery disease. Furthermore, in terms of cost, the use of EHRs had

no measurable effect on the short-term cost per department.

All these studies indicate that there is a conceptual confusion regarding EHRs. The concepts and information systems that we frequently encounter in studies on EHR are:

Clinical Decision Support System: CDSS is defined as software designed to assist physicians in clinical decision-making directly. Here, patient-specific characteristics of the patient are matched with a computerized clinical knowledge base. Then, the physician is presented with patient-specific evaluations or recommendations for the physician to decide (Sim et al., 2001).

Computerized Physician Order Entry: CPOE is defined as an electronic application used by physicians to order prescriptions, diagnostic tests, and consultations (Wolfstadt et al., 2008).

Electronic Patient Record: There is no universal definition in the literature (Jensen and Aanestad, 2007), but it is generally defined as a Computerized Recording System (Uslu and Stausberg, 2008).

Electronic Medical Record: EMRs are defined as a computerized system in which physicians record information such as patient information, medical histories, consultation notes, patient complaints, allergies, vaccines, vital signs, and prescriptions (Raymond et al., 2015).

Closed-Loop Medication Administration: CLMA is a system applied with automatic identification technologies such as RFID or barcode. It is applied with five right rules (right patient, right medicine, right dose, right route of administration, and right time). It is based on the application of patient identification, and the product is used bedside with cross-checking via RFID or a barcode reader (Hwang et al., 2007).

Electronic Medication Administration Record: EMAR helps nurses review drug administration, drug order and document information about drugs with the five right rules (right patient, right medication, right dose, right route, and right time) (Moreland et al., 2012).

Meaningful Use of Electronic Health Record: EHRs have essential potential to improve patient care, increase quality, provide data, and improve coding accuracy. This potential also shows the importance of EHR implementation. Hence, using EHRs by entering the correct data increases the quality and reliability of the obtained data and provides the opportunity to make improvement. Incorrect

data entry reduces the accuracy and reliability of the data obtained from EHRs (A. Van Winkle et al., 2009).

HiTech ATC: HITECH is a financial incentive for physicians and hospitals to use EHRs in ways expected to increase the safety, effectiveness, and efficiency of care known as a meaningful use criteria (Adler-Milstein et al., 2015).

These concepts describe functions related to EHRs. However, when the studies on EHR are examined, it is found that the advantages and disadvantages of the concepts described above are discussed. Still, the EHR is mentioned as the main subject. It seems that the researchers who talked about the benefits and positive effects of the EHR on health care discuss the benefits and positive aspects of the EHR functions.

The conceptual ambiguity in the literature regarding EHRs directly affects the research results and leads to misinterpretation. In this study, to eliminate this conceptual confusion, a detailed review of EHR-related literature was conducted on the Web of Science. A comprehensive review of 702 articles between January 2000 and January 2021 was conducted.

The purpose of this study is to examine the studies in the literature that deals with the effect of EHRs on health care quality and evaluate EHRs and related concepts in terms of their effects on health care quality. Findings and conclusions are included in the ongoing parts of the study.

RESEARCH METHODOLOGY

This study uses the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method to eliminate the conceptual ambiguity related to EHRs and reveal that the studies related to the usefulness of EHRs are related to the functions of EHRs, a comprehensive review of all relevant articles was done by focusing on well-defined research questions. Applying the PRISMA methodology in this study; three stages were followed: literature review, search strategy, and article selection. Due to the use of the Prisma method, a literature review was made on a single database. Using a single database is one of the limitations of the study.

Ethical approval is not required as the study is “review”.

Literature Search

This research aims to examine the literature on the effect of EHRs and related concepts on health care quality. Therefore, inclusion and exclusion criteria for studies were determined first to do a comprehensive literature review. Studies outside the scope of the study were excluded. Web of Science was searched between January 2000 and January 2021 to provide a comprehensive bibliography of relevant research articles. This study includes articles written/ studied in all languages regarding EHRs between the specified dates. Other types of articles such as systematic reviews, books and e-books, standards, meta-analysis, narrative review, letters to the editor, and sectoral studies were excluded. The focus of this study is studies that address the benefits of EHRs.

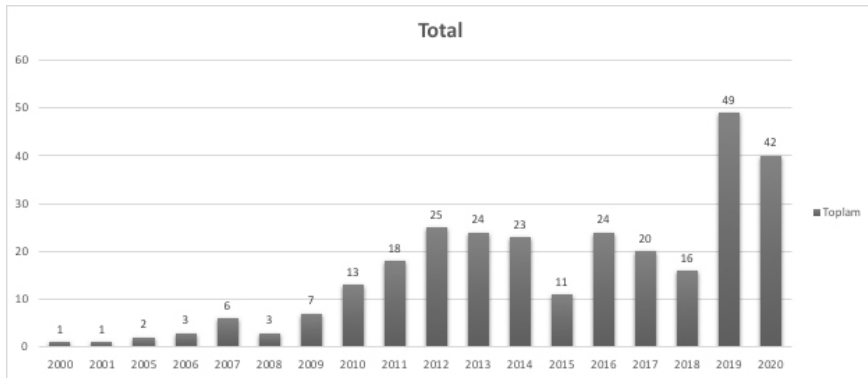


Figure 1: Distribution of Selected Studies by Year (January 2000- January 2021)

In the distribution by years, similar annual studies on EHRs were conducted between 2011-2018. The year with the most work is 2019. The number of publications published in 2020 seems close to the number of publications made in 2019.

Searching Strategy

A searching strategy was determined to do a comprehensive search and not to miss related studies at the same time. First, keywords suitable for the research methodology of the study were determined. These keywords were defined as “EHR, Electronic Health Record, Benefit”. In this stage, essential topics such as Health Care Science, Medical Informatics, Computer Science,

etc., were considered to search these databases. In addition, an asterisk (*) was added to the end of the terms to find synonyms associated with these terms, and the search was performed by placing quotation marks around the words to make sure that search engines recognized the full term.

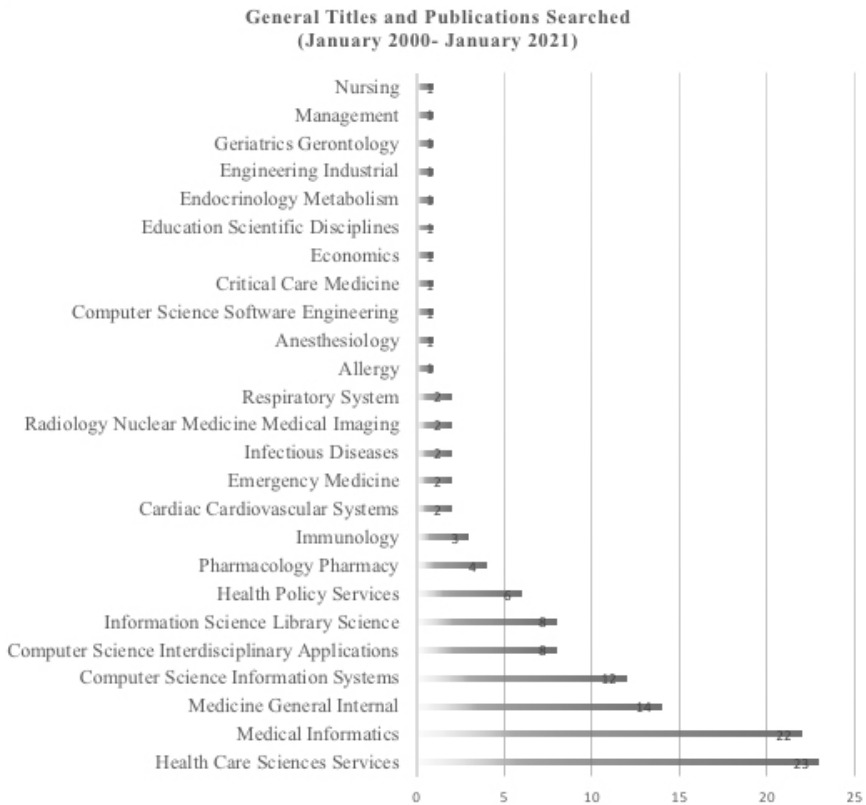


Figure 2: General Titles and Numbers of Publications Searched between 2000-2020

A total of 702 studies were found, but 64 publications related to EHRs were included in the study after the screening and selection process. This shows 121 publications because some publications appear under more than one title (Figure 2). Based on the screening results, studies on EHRs seem to focus on Health Care Sciences Services, Medical Informatics, Internal Medicine, Computer Science Information System, Computer Science Interdisciplinary Applications, and Information Science Library Science. Studies conducted under these headings constitute 2.95% of the total work done. It seems that the title with the most studies is “Health Care Services (23)”.

Selection of Article

To select articles, first of all, eliminating the publications that deal with EHRs and EHR functions was determined as a strategy. Then, the determined keywords (EHR, Electronic Health Record, Benefit) and the basic titles given in (Figure 2) were searched. Then, three stages were followed depending on this screening. These stages are shown in (Figure-3). In the first stage, the searched articles were screened according to their titles. In the second stage, the remaining articles were evaluated based on their abstracts. Finally, the full texts of the remaining articles were reviewed. Based on the purpose of the research and the research question, all articles were reviewed so that irrelevant articles were not included. Initially, a comprehensive review of 702 articles was conducted. Each article was examined according to the concepts used and measured results, and at the last stage, 286 articles were determined. Nine studies directly addressing the EHR and 55 studies addressing the functions of the EHR were found.

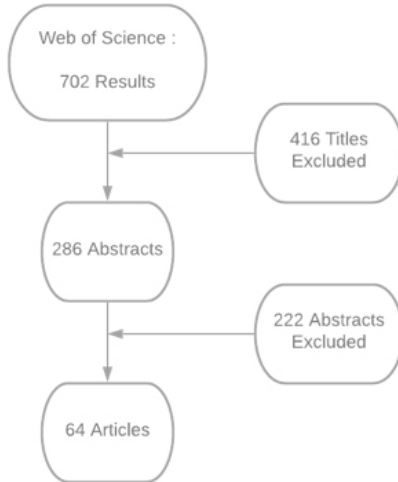


Figure 3: Flow diagram of the article selection process

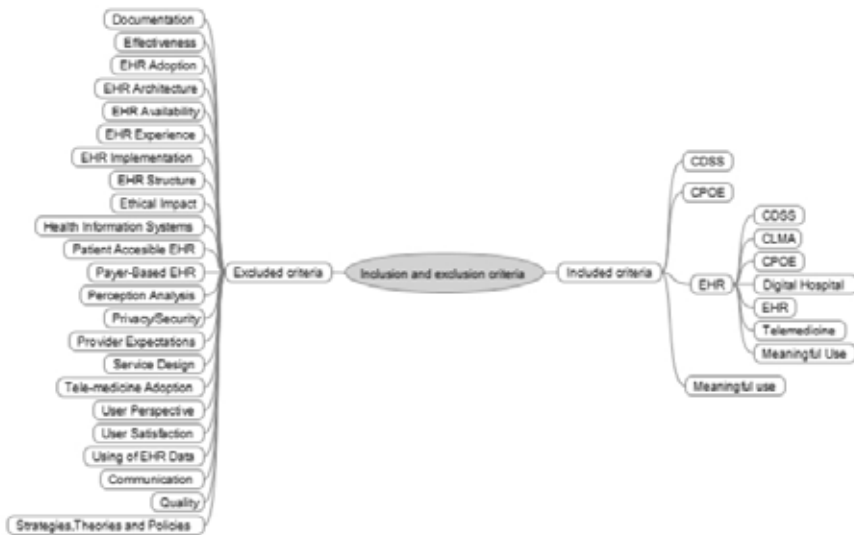


Figure 4: Search Strategy and Include/Exclude Criteria

Inclusion and exclusion criteria were determined for 286 publications due to the initial search after the first title-based screening. These criteria are given in (Figure 4). The inclusion criteria for the publications are that the main subject or the subject they put forward is related to EHRs and EHR functions. EHR functions are specified as CDSS, CPOE, EHR, and Meaningful Use. Exclusion criteria are that the main subject and the issue raised are not directly related to EHRs or EHR functions. A direct relationship was not found with the EHR or EHR functions of 416 studies obtained by using these criteria. For this reason, these studies were not included in the scope of the research. After this screening, 286 studies were evaluated according to their titles, and 64 studies directly related to the purpose of the literature review were included in the study.

RESULTS

A total of 64 studies directly related to EHRs and EHR functions were evaluated in terms of their main subject, the subject they put forward, and their outputs. There are detailed tables regarding these evaluations in the findings section. In addition, the names of the publications and the number of publications on the relevant subject are also included. The framework of the study is the functions of the EHR. Therefore, only the components of the EHR are included in the tables.

Table 1: Include Status of Publications with CDSS as the Main Subject

Main Subject	Highlighted Subject	Outcomes	Total Number
CDSS	CDSS	Adoption of CDSS	3
		Cost Efficiency, False Positive Rate (+)	1
		Designing a CDSS (Optimize antimicrobial prescribing for uncomplicated UTIs)	1
		Increase in the appropriateness of orders	1
		Interactive Provider Alerts (+)	1
		Medication Management	1
		Predictive Analysis	2
		Primary Palliative Care Quality, Integration of CDSS	1
	Usage of Template	1	
Telemedicine	Collection and Storage of EHR Data	1	
Total			13

A total of 13 publications with CDSS as the main subject was obtained. Although the main subject of one of these publications is CDSS, the subject it put forward is Telemedicine. The title with the most output seems to be Predictive Analysis. As can be understood here, CDSS is a function used within the scope of EHRs. It is not directly related to EHRs. These studies conducted within the scope of CDSS evaluate CDSS as a function of EHR.

Table 2: Include Status of Publications with CPOE as the Main Subject

Main Subject	Highlighted Subject	Outcomes	Total Number
CPOE	CPOE	Drug Safety, Medication Errors (+)	1
		Effectiveness	1
		Increased Indication Quality	1
		Medication Errors (+)	1
Total			4

A total of four publications with CPOE as the main subject was obtained. The subject that each of these publications also put forward is CPOE. However, the outputs obtained from the publications are different from each other. The title with the most output appears to be Medication Errors. CPOE is a function used under EHRs. Publications about CPOE address CPOE as a function of EHRs, not EHRs.

Table 3: Include Status of Publications Addressing CDSS, Main Subject of which is EHR

Main Subject	Highlighted Subject	Outcomes	Total Number
EHR	CDSS	Adoption of EHR	1
		CDSS Data Integration Decrease time for anamnesis (+)	1
		Designing a CDSS (Chronic Pain Treatment Tracker)	1
		Developing an EHR order set, Patient Care (+)	1
		Drug Safety (+)	2
		EHR-based CDSS algorithm-software	1
		Follow-up Time (+), Prediction Analyses(+),	1
		Increase in precision medicine research (+)	1
		Integration of Laboratory Data	1
		Patient Care Quality (+)	1
		Patient Care Quality (+)	1
		Predictive Analysis	5
		Usage of EHR	1
		Structuring and/or coding patient history	1
		Drug Safety, Medication Errors	1
Total			24

A total of 21 publications had the main subject of EHR but a focus on CDSS. In these publications, the existence or non-existence of EHR benefits is mentioned. However, the article put forward in the publications is CDSS,

which is a function of EHRs. As a result of the studies, the title with the most output is Predictive Analysis. This situation shows that the publications made mention the benefits of CDSS.

Table 4: Include Status of Publications Addressing CLMA, Main Subject of which is EHR

Main Subject	Highlighted Subject	Outcomes	Total Number
EHR	CLMA	Decrease in medication error (+), Predictive Analysis	1
		EHR Integration	1
		Predictive Analysis	1
		Prescribing Medications (+)	1
Total			4

Four publications had a primary subject of EHRs, but a focus on CLMA was obtained. In these publications, the existence or non-existence of EHR benefits is mentioned. However, the article put forward in the publications is CLMA, which is a function of EHRs. As a result of the studies, it seems that the title with the most output is Predictive Analysis. This situation shows that the publications made mention the benefits of CLMA.

Table 5: Include Status of Publications Addressing CPOE, Main Subject of which is EHR

Main Subject	Highlighted Subject	Outcomes	Total Number
EHR	CPOE	Decrease Medication Errors (+)	1
		Increase in lab orders (-)	1
		Medication Management	1
		Process innovation	1
		Safety, hospitalization (+), cost of care (+)	1
		Usability of structured templates by comparing data entry times, User Experience	1
Total			6

A total of six publications had the main subject of EHR but a focus on CPOE. In these publications, the existence or non-existence of EHR benefits is mentioned. However, the article put forward in the publications is CPOE, which is a function of EHRs. Based on the studies, it seems that outputs were obtained under more than one heading. This situation shows that the publications made mention the benefits of CPOE.

Table 6: Include Status of Publications Addressing Digital Hospital, Main Subject of which is EHR

Main Subject	Highlighted Subject	Outcomes	Total Number
EHR	Digital Hospital	Adoption of EHR	2
		Clinical Workflow Researches (+), Designing EHR Systems	1
Total			2

A total of three publications had the main subject of EHRs, but a focus on Digital Hospital. In these publications, the existence or non-existence of EHR benefits is mentioned. However, Digital Hospital refers to a broader area than EHRs. One of the conditions of being a Digital Hospital is the use of EHRs. The outputs of all three publications are different from each other. Publications that claim to have dealt with EHRs dealt with Digital Hospital. This situation shows that the publications made mention the benefits of Digital Hospital.

Table 7: Include Status of Publications Addressing EHR, Main Subject of EHR

Main Subject	Highlighted Subject	Outcomes	Total Number
EHR	EHR	Clinical Data Quality	2
		Physician-Patient Communication	3
		Predictive Analysis	2
		Visits and Hospitalizations (+)	2
Total			9

A total of nine publications had a main subject of EHRs and claimed to focus on EHRs. These studies also constitute the focus of our work. As a result of the searching made to follow the research strategy, out of 702 publications obtained from the scans, 286 publications on EHRs were obtained. Of these, 64 publications were directly related to EHRs and EHR functions. Of the 64, only nine were directly based on EHRs. As given in the tables above, all of the other included publications claim that they are about EHRs, but actually, they focus on the functions of EHRs. Making positive/negative evaluations about EHRs by looking at the outputs of these publications can produce confusion. When looking at the outputs of the publications on EHRs, it is seen that the outputs are obtained under the titles of Clinical Data Quality (2), Physician-Patient Communication (3), Predictive Analysis (2), and Visits and Hospitalizations (+) (2). This shows that only 1.8% of the publications that claimed to be related to EHRs are directly related to EHRs. Therefore, concluding the usefulness of EHRs based on these publications can lead to misunderstandings.

Table 8: Include Status of Publications Addressing Meaningful Use, Main Subject of which is EHR

Main Subject	Highlighted Subject	Outcomes	Total Number
EHR	Meaningful Use	Adoption of EHR	1
		Quality of Care	1
Total			2

Two publications had the main subject of EHRs, but the focus was on Meaningful Use. In these publications, the existence or non-existence of EHR benefits is mentioned. However, the subject put forward in the publications is Meaningful Use, a function of EHRs. As a result of the publications, it seems that output has been obtained under more than one heading. This situation shows that the publications made mention the benefits of Meaningful Use.

Table 9: Include Status of Publications Addressing Telemedicine, Main Subject of which is EHR

Main Subject	Highlighted Subject	Outcomes	Total Number
EHR	Telemedicine	Health Information Integration	1
Total			1

One publication had the main subject as EHRs but focused on Telemedicine. This publication mentions the existence or non-existence of EHR benefits. However, the subject put forward in the publication is Telemedicine, which is a function of EHRs. As a result of the study, it is seen that the output has been obtained under the title of Health Information Integration. This situation shows that the publications made mention the benefits of Telemedicine.

Table 10: Include Status of Publications with Meaningful Use as Main Subject

Main Subject	Highlighted Subject	Outcomes	Total Number
Meaningful Use	Meaningful Use	Adoption of Meaningful Use	1
Total			1

On publication with the main subject, Meaningful Use was obtained. The subject that this study put forward was also Meaningful Use. As a result of the publication, it is seen that the output was obtained under the title of Adoption of Meaningful Use. Meaningful Use gives an idea of how meaningful EHRs are used. The primary aim here is to use the EHR for its purpose by rich data content. If this condition of use is not met, it will not be possible to talk about meaningful use of the data obtained from EHRs. Therefore, to declare an idea that EHRs are useful or not based on Meaningful Use will confuse.

Table 11: General Evaluation of the Publications Based on the Study

Main Subject	Highlighted Subject	Include	Total Number
CDSS	CDSS	12	13
Telemedicine 1			
CPOE	CPOE	4	4
EHR	CDSS	21	46
	CLMA	4	
	CPOE	6	
	Digital Hospital	3	
	EHR	9	
	Meaningful Use	2	
	Telemedicine	1	
Meaningful Use	Meaningful Use	1	1
Total Number			64

In the literature, 59.26% of the studies dealing with the benefits of EHRs are not directly related to EHRs, but they discuss the benefits of EHR functions. The natural advantages of attributes are mentioned in the 1.28% of the studies that deal with such things as the benefits of EHRs, the ease of access provided by EHRs, etc. These findings show that EHRs do not have a direct and distinct effect on health care quality, but the functions built on EHRs (CDSS, CLMA, e-order, etc.) do have an enhancing effect on health care quality.

DISCUSSION

The literature review given studies reflecting our research methodology have been discussed, and similar and different aspects of the study have been revealed. When we look at the literature, our aim to deal with all these studies is to show that EHRs are meaningful when used with EHR functions. There are many studies in the literature about the benefit of EHRs on health care quality, but a complex situation arises when we examine them. While some studies reveal that EHRs do not benefit health care quality at all, some argue that it is very beneficial. To eliminate this ambiguity, the literature was searched within the scope of our study, and the conceptual confusion was tried to be removed by considering related studies. We tried to reveal whether EHRs are beneficial on their own or when considered together with EHR functions. Thus, a literature review was obtained on what kind of benefits EHRs and EHR functions provide for health care quality.

In a study by Pevnick et al.(2015)"ISSN": "1558349X", "abstract": "Purpose: The effect of computerized physician order entry (CPOE) conducted on CPOE, its effect on radiology requests was discussed. As a result, it has been observed that CPOE increases communication between physicians and reduces unnecessary requests. All these studies indicate that CPOE makes EHR functional if used actively.

In a study by Lorschbach et al.(2020)as well as reforms in emergency medical care, is currently part of political debate in Germany. Currently, no data are available of how emergency departments could benefit from an ePA or NFD in Germany. The aim of this study was to determine if a patient's medical history has an influence on diagnostic and therapeutic decisions in the emergency department. Methodology: To answer this question, a descriptive observational study was conducted in an interdisciplinary emergency department with a study population of n = 96. Results: For 55 patients (59%, the use of EHRs and CDSS in Emergency Departments was discussed. Here, it was seen that treatment and diagnosis decisions could be made more reliably using EHR and CCDS warnings. It has been concluded that the time taken to record medical history in emergency services can be reduced with the implementation of EHRs and CDSS. Finally, in a study by Ben-Assuli and Leshno (2016), to predict a specific risk factor related to the hospitalization period of the errors

in the intensive care unit, they evaluated the effect of EHRs on the diagnosis and acceptance decisions of emergency physicians using the Bayes Method. As a result, it has been observed that the use of CDSS shortened the length of stay and significantly reduced the stress conditions associated with hospitalization.

The findings obtained within the scope of the research are consistent with the models measuring the adoption of EHRs. For example, in HIMSS EMRAM (Lin, K. Jha, and Adler-Milstein, 2018), while the adoption/maturity models developed by EHRs accept the existence of EHRs as the lowest level in their models, they see the proliferation of functions built on EHRs as a sign of EHR adoption.

In addition, within the scope of the literature review, it has been observed that the studies addressing the benefits of EHRs address EHR functions. Among these studies, it is seen that in the case of CDSS in EHRs, physicians can make quicker decisions and diagnoses, reduce drug application risk factors, shorten the patient length of stay, and shorten the physician's response time to consultation requests. As a result of all these studies, it is mentioned that EHRs are beneficial. In fact, these studies talk about the benefits of CDSS. All studies addressing the use of CDSS in EHRs show that EHRs are beneficial not when used alone but also in conjunction with CDSS.

Contrary to the results we obtained, studies addressing the negative effects of EHR use suggest that communication between physicians increases positively during periods when EHR use is low. Additionally, there is an increase in the number of tests ordered and unnecessary requests for tests during periods of intense EHR use. However, the existence of EHRs ensures that the tests ordered, and the procedures requested or planned are recorded. This situation protects healthcare workers against malpractice cases and, most importantly, ensures patient safety. The point to note here is that the use of EHR alone is not evaluated. It is the evaluation of whether EHR provides benefits or not by considering its functions.

The findings from this study provide valuable information to make more informed decisions about the definitions and use of EHR-related concepts and eliminate the conceptual ambiguity regarding the benefits of EHRs. It also sheds light on other studies to be conducted in this context.

CONCLUSION

In the literature, it has been observed that 59.26% of the studies dealing with the benefits of EHRs are not directly related to EHRs, but they discuss the beneficial condition of EHR functions. 1.8% of all studies included in this study that focused on the benefits of EHRs, not EHRs, were seen as a natural advantage. When these data are taken into consideration, it shows that most publications that seem to deal with the benefits of EHRs are focused on EHR functions instead. EHRs are not seen to provide benefit when evaluated independently of EHR functions.

In this study, we tried to provide valuable information to make more informed decisions about the definitions and usage of the concepts related to EHRs. Also, we tried to eliminate the conceptual ambiguity about the benefits of EHRs. We found that the presence or current use of EHRs does not affect the quality of health care alone but does affect when used together with EHR functions. When the studies are examined, it is seen that EHRs have many functions, including CDSS, CLMA, CPOE, Meaningful Use, Digital Hospital, and Telemedicine. All these factors are EHR functions. In addition, EHRs cannot be considered independent of the EHR Systems modules they contain, such as Radiology Information System, Cardiology Information System, Chronic Disease Management System, Laboratory Information System, and Pharmacy Information System, etc. These are the systems included in EHRs and that affects EHRs. Figure-5 shows the relationship between EHRs, EHR Systems, and EHR Functions.

When the studies selected within the scope of the research are examined, it is seen that the studies claiming that EHRs are not useful only to deal with the existence of EHRs. It isn't able to benefit if used without EHR functions. Therefore, the most considerable point of this study is the content and scope of the studies dealing with EHRs. This situation also shows that EHRs do not directly and significantly affect health care quality, but EHR functions (CDSS, CLMA, e-order, etc.) do have an enhancing effect on health care quality.

This study also sheds light on other studies to be conducted in this context. Subsequent studies that will address the benefits of EHRs will also allow this concept confusion to be avoided. One of the limitations of this study is the inability to reach the full text of some studies. These studies had to be excluded

for this reason. In addition, the limited number of studies that are compatible with our research methodology both constitute a research constraint and reveal the original value of the study. This situation also clearly shows the contribution of the study to the literature.

Ethical Approval: Ethical approval was not required as the study was “review”.

Authors’ Contributions: İlker KÖSE (%50), Sinem CECE (%30), Esra BAYRAKTAR (%20)

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A Qualitative Study: What Are the Psychosocial Experiences of the Turkish Doctors During the COVID-19 Pandemic?

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İlayda ULAŞ² 

ABSTRACT

The present qualitative and exploratory study aimed to determine the ideas, feelings, behaviors, and changes in the working and family lives of actively working Turkish doctors during the Covid-19 pandemic. The researchers tried to understand the social and work-related problems of the doctors. Therefore, this study may be considered as a starting point for future studies.

The participants (61 doctors) filled out a questionnaire that consisted of demographic information and 17 open-ended questions. 49.3 % of them were actively working in specialized pandemics hospitals. In the present qualitative research, non-numerical data were collected to understand the psychosocial experiences of the doctors, and their most crucial quotations were categorized and reported, - as it is essential to report the quotations and the narratives in the descriptive analyses of the qualitative research. The researchers' aim was to gather in-depth insights into their experiences and then generate new ideas for future quantitative research. The researchers used two of the nonprobability sampling types, i.e., snowball sampling and convenience sampling because of

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the difficulty of the accessibility to the doctors as participants.

The doctors associated the COVID-19 pandemic with some concepts such as “anxiety” and “stress”. All the doctors argued that there would be a lot of psychological problems at the end of the pandemic. Some of the doctors believed that there would be no change after the end of the pandemic, because they thought everything would be forgotten. Some others believed that people would learn from their experiences, and they had a quasi-hopeful future perspective for humanity.

They predicted an increase in individualism and social isolation and a number of online platforms. The reasons for these and other findings were discussed and explained.

Keywords: COVID-19, Pandemic, Qualitative Research, Psychological Effects, Turkish Doctors

INTRODUCTION

The first-line interventions for all pandemics are behavioral methods and vaccinations to reduce mortality and disease. Unfortunately, vaccinations cannot be easily available, just as in the case of COVID-19. On the other hand, behavioral methods are easy to practise, because they include hygiene (e.g., handwashing with soap, wearing face masks) and social distance (e.g., quarantine of infected persons, school closure, remaining at home).

The science of psychology gives us the essential tools to avoid emotional problems such as fear, stress, and anxiety, and behavioral problems such as not following the general rules. Psychological reactions to pandemics play a crucial role in the spread of the disease because emotional distress may cause social disorder in different ways. In fact, people react differently when they are threatened by infection. It is important to cope with the threat of pandemic influenza, e.g., the possibility of losing family members, having financial problems, losing jobs, and so on. Therefore, psychology has a crucial role for managing societal problems. Furthermore, psychology serves to manage maladaptive defensive reactions because when people are threatened with infection, there may be increases in xenophobia and stigmatization (Taylor, 2019).

Healthcare systems are particularly important to care for patients. The workers in these systems are crucial to struggle against the pandemic. They

(doctors, nurses, etc.) are a part of the great system in a country and are the frontline workers in the struggle against pandemics. In this qualitative research, the researchers conducted a study with actively working Turkish doctors during the ongoing pandemic, COVID-19.

Social networks serve to spread beliefs and fears about infection through some specific channels. Firstly, information can be transmitted by mass media and/or rumors. Secondly, observational learning can be another channel, i.e., by observing other people giving different responses to stimuli. The third channel can be direct personal experiences, for example, traumatic experiences.

The spread of fear is a kind of emotional interaction. When we talk about observational learning, we should mention the social learning theory of Albert Bandura. Bandura Taylor, (2019) argued that emotions spread through observational learning. Therefore, fearful emotions and reactions can be acquired via communicating with people who express their fears about pandemics. According to Aronson (1994), who emphasized the importance of emotional appeals, “the impact of fear appeals is context-specific” (p. 90). He gives some examples from the health literature. In summary, pandemic-related fear can be experienced because of both observational learning and information transmission. Rumors, true or false, and media reports are important determinants in the transmission of information.

The news media are criticized for exaggerating different situations by manipulating emotions, for example, by using emotional language or by making ‘excessive’ comparisons in order to appeal to the sensations of people (e.g., using dreadful metaphors in order to describe infection).

People share information through social media, as well. Social media users generally utilize dramatic and emotional tones of language to disseminate what they want to say. However, social media can disseminate not only information, but also misinformation, and thus there is the risk of an increase in excessive fear.

When people feel at risk, they cannot turn attitudes into action. In the case of an epidemic, “terror, blame, rumors and conspiracy theories, distrust of the authorities, and panic can all come together” (Quick and Fryer, 2018). Therefore, attitudes do not always turn into behavior (Kağıtçıbaşı, 2003). Even though the health authorities remind people to wash their hands, for example,

some of them may still not follow the basic hygiene rules. Was Freud (1961) right when he argued that “all living matter aspires to return to its inorganic state”? Is it about ‘death instinct’, i.e., do some people ‘unconsciously’ want to spread the virus?

Excessive fear or no fear at all? Balance is essential to cope with a problem, in this case, the COVID-19 pandemic. It should be the duty of all the members of society to protect each other and the ‘soldiers’ of this struggle, i.e., the doctors, by following the rules and regulations of society. That is the process of socialization: Socialization is the process during which the members of society learn to follow social norms and values in society (Bilton et al., 2008). We have responsibilities towards each other.

There is a branch of psychology called ‘Health Psychology’, which is mostly related to behavioral medicine, clinical psychology, and psychiatry. Health psychologists focus on various models to study health-related topics. The essential model is called the ‘biopsychosocial model’ because it emphasizes the connection among biological factors (e.g., viruses), psychological factors (e.g., behavior, stress), and social factors (e.g., education) (Albery and Munafò, 2008). Generally, concerning the models in health psychology, one social input in the models is always general health. So, health psychology can be seen as a branch of psychology that connects to medicine.

METHODOLOGY

This study was initiated after obtaining the ethics committee approval from Altınbaş University Scientific Research and Publication Ethics Committee with the decision dated 06.12.2021 and numbered 21054.

The present exploratory study aimed to determine the ideas, feelings, behaviors, and changes in working life and family life of actively working Turkish doctors during the COVID-19 pandemic. In this qualitative exploratory study, the narratives of the doctors were reported in quotations because in qualitative research narrative, public health is important “in offering audience critical tools for navigating and decoding pandemic storytelling” (Davis and Lohm, 2020).

The psychological health of the doctors affects public health because they are the frontline ‘soldiers’ in this war of humanity against the present virus. They should learn to cope with stressful situations. COVID-19 will not be the

last pandemic, so we should take precautions against future pandemics. Therefore, the coping mechanisms of the doctors should be bettered.

The researchers of the current study tried to understand the social and work-related problems of the doctors. Therefore, this study may be considered as a starting point for future studies, because it is essential to diagnose the problems before struggling against them.

The participants consisted of 61 doctors in the specialized branches of anesthesia and reanimation, gynecology, obstetrics, cardiovascular surgery, physiotherapy, furthermore family doctors, dentists, general practitioners, infectious diseases specialists, and others. Thirty-two (52.5 %) were male and 29 (47.5 %) were female. The age range was between 23 and 68 with a mean of 41.4. Thirty-six (59 %) were married, and 21 (34.42 %) were single, and 4 of them (6.58 %) stated another relationship status. Thirty-nine (63.9 %) had children with a mean age of 16.2 and 22 (36.1%) did not.

Procedure

Because of the intense working hours of the doctors- of whom 49.3 % were actively working in specialized pandemic hospitals during the COVID-19 pandemic, convenience sampling and snowball sampling were preferred to reach them. The convenience and the snowball sampling are two of the nonprobability sampling types, and they are used when the accessibility to the sample is difficult.

The participants filled out a questionnaire that consisted of demographic information and 17 open-ended questions. It was possible to fill out the questionnaire in approximately twenty minutes. The open-ended questions gave participants a chance to write down their answers in a narrative format, as well.

Demographic information consisted of questions on age, gender, marital status, specialization, number of children, and so on.

The questionnaire consisted of 17 open-ended questions, prepared after a pilot study between August and October 2021 with 15 participants, and scrutiny of some books about the psychology and history of pandemics (Davis and Lohm, 2020; Snowden, 2019; Taylor, 2019). Furthermore, some questions (e.g., questions about books and films) were asked to examine their connection to the general and social culture during the pandemic. The questionnaire was revised based on the results of the pilot study.

After getting the ethical committee's approval on December 6, 2021, the questionnaire was administered to the participants by the researchers via sending an electronic link. First, it was adapted into the format of a Google form (G-Forms). The participants were assured of the anonymity and confidentiality of their responses. Before starting to answer the questions, they marked a confirmation page. On the instruction page, the researchers gave an e-mail address (pandemiarastirma@gmail.com) to the participants in order to respond to them if they have any questions about the research and to give a debriefing after the completion of the research. The questionnaire was available online from December 7, 2021, until December 20, 2021, for after the "satisfaction level" of the qualitative research, it was no longer possible to get any new data through convenience sampling or snowball sampling.

RESULTS

The narratives and the quotations are crucial for qualitative research. In qualitative research, the data obtained at the end of the research are always observed, selected, reduced, and summarized in an organized manner. Qualitative data can be analyzed in some steps, and one of these steps is descriptive analysis, which is the one used in the present study. In future research, with larger sample size, the researchers plan to conduct a qualitative analysis by using a qualitative software program, such as NVivo, Atlas.ti, Maxqda, and HyperRESEARCH. Furthermore, a quantitative study may be conducted with a questionnaire based on the answers from the present qualitative study. The present study is an exploratory study, i.e., it aims at exploring issues which have not previously been asked. Exploratory studies are generally qualitative in nature, but if the sample size is a large one, it can also be quantitative.

The researchers asked: "During the pandemic, while performing your profession, if you want to express what you are experiencing with a single word, what would be that word?" Most of the participants gave the common answers of "anxiety", "difficulty", "stress" and "uneasiness". Some of them gave the answers of "tiredness", "fear", "patience", "precaution" and "sadness".

One of the most important social support mechanisms is family, which is a dynamic concept, and is affected by social changes. Family and home life create a social support environment. In addition, social support has a positive

impact on health. It has a therapeutic role, and it decreases the probability of developing mental illness (Özbay et al., 2021). To understand how their lives had changed, the researchers asked the participants two different questions about how their lives had changed inside and outside the home.

Mostly, doctors who worked during the pandemic did not have the chance to stay at home and feel safe. The biggest fear was of bringing the virus into the home and infecting their family members. Four participants stated that they separated their rooms and toilets, and one participant was staying in different hotels, not at home. Doctors who had children stated that they wanted to hug their children, but they did not even after they disinfected themselves. Some doctors emphasized the importance of the home as a 'shelter'. However, they experienced social isolation and some related problems more than others. Almost all of them stated that they did not have a social life anymore.

"My home is my shelter and I do not want to leave it. At home, I can wander without a mask."

"We lived distant with my children. We experienced compulsory separations."

In addition, the researchers asked the participants whether they experienced any problems with their patients and the patients' relatives or not, with two different questions. Nine participants claimed that they did not experience any kind of problem. On the other hand, all the other doctors experienced problems with their patients. The most outstanding answer was about the patients who did not want to wear a face mask or who did not wear it properly.

One of the questions in the questionnaire was about the equipment the doctors were using while treating their patients. Almost all of them expressed the difficulties of working with protective equipment such as face masks and gloves. Some of them, especially the dentists, stated that they were accustomed to working with face masks.

The most difficult experience of working with a lot of equipment was breathing. Almost all the doctors argued that they could not breathe, and they had communication problems, as well. In fact, wearing face masks may have an unintended consequence because it may increase anxiety by reminding one of health-related threats (Taylor, 2019).

“N95 face mask and face shield render the communication with the patient more difficult. Especially, while working with child patients, it becomes more difficult to communicate with them and to convince them.”

They experienced headaches, movement problems and dermatological problems, as well.

“I feel suffocated after a while. Among a lot of things to do, I was annoyed with continuously changing the equipment. My overalls, because of the hot weather, are transforming in such a manner that you cannot wear them again after only five minutes. The gloves make my hands crimson, with a lot of wounds.”

In addition, because they experienced problems with their motor skills under the equipment, the demands of the work caused an increase in their stress level.

“Hot, not moving at ease, breathing your own breath under the mask and therefore feeling a kind of hunger for oxygen, feeling always stress while working.”

“No oxygen, no movement, always sweating and therefore always and easily tired. Problematic, very problematic. That is what I experienced.”

The researchers determined that the participants had a very busy work life and worked seven days a week. Most of them had sleep problems. As Freud (1955) stated, “a dream is the fulfillment of a wish”. In fact, a doctor with two children stated: “In my dream I saw the Minister of National Education. He told me that he would not open schools.” Furthermore, Freud (1955) argued that “dreams showed a clear preference for the impressions of the preceding days” p. 187. In fact, some of the doctors had dreams about the events that they had recently experienced.

“I had a conflict with my manager because he was not fair. So, I had a dream about this.”

“I see people without face masks outside, and then I see people without face masks in my dreams, and I am so much worried...”

“In my dream, I see my colleagues. Two or three days ago, in my dream, my assistant was promoted to manager and fired me.”

The participants, who watched films and read books, generally mentioned comedy in their answers. It can be concluded that they needed more pleasure at the end of their busy and stressful working hours. As argued by Freud (2016), “the laughter in humor is a sign of pleasure”.

In this research, the doctors were asked about the environmental reactions because of their work. Most of them talked about the anxiety of their relatives, and the respect and pity of their neighbors. They talked about fear: their relatives and their neighbors were afraid of them because of their work.

“Because I am a healthcare worker, they are looking at me with a deep fear.”

“They treated me as if I had leprosy.”

“They escaped from us as if had the plague; however, they demanded information by telephone calls.”

“My neighbors treat me as if I am the virus itself. Yesterday, one of them ran towards the elevator.”

The researchers asked this question to the doctors: “When the pandemic ends, what will change in people’s lives?” And the doctors made some predictions for the so-called ‘new lives’ and ‘new world’ after the COVID-19 pandemic.

The answers can be grouped into two categories. The first category is composed of the doctors who believe there will be no change after the end of the pandemic, because they think everything will be forgotten even though there will be some psychological problems.

“I expect no radical change...Only the process of psychological recovery.”

“They will forget... Memory loss...”

“If the pandemic ends, everyone will forget everything. People will forget the importance of health. They will go back to consuming. They will forget the importance of nature and the value of doctors. After forgetting all these things, they will go back to their old lives.”

“Psychological problems will remain. For example, there will be a lot of depressed and anxious people.”

The second group is composed of doctors who believed that people would learn from what they experienced as social beings. They had a quasi-hopeful future perspective for humanity, even though they thought that there would be some psychological problems. They predicted an increase in individualism and social isolation, and a number of online platforms as well.

“No one will be like before!”

“New world order... Maybe more social isolation...”

“They will learn the importance of health.”

“People will learn hygiene, they will better control themselves, they will

learn how to pass time alone, there will be more digital platforms, more individualism.”

“Psychological problems, but new rules in order to cope with unspoken new pandemics...”

DISCUSSION AND CONCLUSION

The World Health Organization (WHO) has the primary role of directing international health within the global system and leading countries in health responses, i.e., it has responsibility for international public health. The organization holds media briefings on the COVID-19 on a regular basis. Because of the high levels of circulation of the Omicron variant, on February 17 and then on March 2, 2022, it gave a briefing on quarantine rules and contact tracing policies because of the need for recent adjustments (World Health Organization, 2022).

The present qualitative study was conducted with 61 doctors during their struggle against the pandemic. A pilot study was carried out to test the functioning of the questionnaire, and the questionnaire was revised based on the results of the pilot study. It was difficult to conduct research with the doctors during the pandemic process because of their intense working hours, even if the questionnaire was an online one. Therefore, convenience sampling and snowball sampling were preferred to reach them. They filled out a questionnaire that consisted of demographic information and 17 open-ended questions. Thanks to these open-ended questions, the researchers obtained important quotations and narratives from the participants. By definition, this kind of data is crucial for descriptive analyses in qualitative research, especially when it is an exploratory study.

The aim was to determine the ideas, feelings, behaviors, and changes in working life and family life of actively working Turkish doctors during the COVID-19 pandemic. The researchers tried to understand the social and work-related problems of the doctors. Therefore, this study may be considered a starting point for future studies, because it is essential to diagnose the problems before struggling against them.

The participants associated the COVID-19 pandemic with the concepts of “anxiety”, “difficulty”, “stress”, “uneasiness”, “tiredness”, “fear”, “patience”,

“precaution” and “sadness”. The most difficult experience of working with a lot of equipment was breathing. Almost all the doctors mentioned that they could not breathe, and they had communication problems. They experienced headaches, movement problems and dermatological problems, as well.

In the literature on the COVID-19 pandemic, it is possible to see a lot of studies concerning the different aspects of pandemics. For instance, one piece of research focuses on the cyberloafing behaviors of students in health programmes of various universities in Turkey during distance education (Özdemir et al., 2021). There are other recent studies about the relationship between the vaccination process and stress (Akkuş et al., 2021) and, outpatient care and emergency services (Khalil, 2021). In addition, in line with the present study, there is a study focusing on the psychosocial problems of nurses during the COVID-19, due to their increased responsibilities (Yeşilyurt and Vaizoğlu, 2021). In conclusion, there is a great need for effective strategies to prevent psychosocial problems in healthcare workers. The present study may be further developed and may shed light on future research.

The last question was about the hopes after the COVID-19 pandemic. Some of the doctors believe there will be no change after the end of the pandemic, because they thought everything would be forgotten even though there will remain some psychological problems. Some others believed that people would learn from what they experienced, and they had a quasi-hopeful future perspective for humanity even though they thought that there would be some psychological problems. They predicted an increase in individualism and social isolation, and social isolation and a number of online platforms as well. Even though they had different kinds of explanations about the life after the pandemic, there was a very important common point: the emphasis they placed on the importance of the science of psychology.

Ethical Approval: This study was initiated after obtaining ethics committee approval from Altınbaş University Scientific Research and Publication Ethics Committee with a decision dated 06.12.2021 and numbered 21054.

Authors’ Contributions: The first author Safiye Neslihan Ercan coordinated the whole study, prepared the questionnaire, found the participants, summarized and categorized all the qualitative data by making descriptive analyses, found some essential reference books and articles, wrote the whole

study, and made the required revisions. The second author, İlayda Ulaş, turned the questionnaire into a Google form, found the participants, and got some important reference books.

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A Study on Demographic Characteristics, Job Satisfaction and Organizational Commitment of Opticians

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ABSTRACT

The concepts of organizational commitment and job satisfaction have been previously studied in different sectors for quite a long time. However, limited to our literature search, we couldn't find other research on this subject in the optical sector. For this purpose, the demographic characteristics of optical sector employees, and their relationship to organizational commitment and job satisfaction were examined in this study. The population of the research was determined as 8557 optician employees registered to the Turkish Opticians Association, according to the data of 2021 in Turkey. The sample consists of 320 opticians, responsible managers, and other personnel working in opticianry who participated voluntarily in the study. A total of 52 questions were constructed in the questionnaire using "Demographic Characteristics": "Allen Meyer Organizational Commitment Scale" and "Minnesota Job Satisfaction Scale" as data collection tools. An online questionnaire was used as a data col-

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This study is derived from the thesis named "A Study on Demographic Characteristics, Job Satisfaction and Organizational Commitment of Opticianry Employees".

lection method in the study. A survey link was sent to 22 chamber managers registered in the Turkish Opticians Union via e-mail, and the survey link was sent to their members by message method. In addition, it was shared on sectoral pages on all social media. Due to the fact that it was based on volunteerism, 320 employees returned to the survey. Data is analyzed with SPSS v 23.0. Mann Whitney U test and the Kruskal Wallis H test were applied for the comparisons of the study groups that did not comply with the normal distribution. As a result of the research, it was observed that the sum of organizational commitment, affective commitment, continuance commitment, and normative commitment were at average values. There is a statistically significant positive correlation between all values of organizational commitment and all values of job satisfaction. The average total job satisfaction score was moderate and internal satisfaction was found to be high in the averages of the sub-factors. A significant relationship was found between demographic factors such as gender, age, marital status, education, title, income levels, working time in the profession, and job satisfaction and organizational commitment.

Keywords: Opticians, Optics Industry, Opticianry, Organizational Commitment, Job Satisfaction

INTRODUCTION

Optical Sector: Prescriptions are given to patients diagnosed with eye diseases and refractive errors by ophthalmologists in the world and in our country. The prescriptions of these patients are made specifically for the individual, and they may include optical glass (lens), optical frame, contact lens, telescopic and prismatic glasses, etc. It is a health sector established for the purpose of providing and delivering such devices to the patients. Those who perform these procedures are opticians who are health technicians (Demir and Fırat, 2017).

Definitions and Duties of Opticians/Lens Makers: After 1940, lens makers continued their profession by obtaining the title of optician with the license they received as a result of the exams organized by the Ministry of Health, as well as their professional experience qualifications. Opticians, on the other hand, are the professional titles obtained by individuals who graduated from the optician associate degree programs that were first opened in 1992. In the optics industry, these two titles are authorized to open their establishments and work

as responsible managers in different organizations (Özdemir and Çakar, 2018).

When we look at the job descriptions of opticians; they read the prescription written by the ophthalmologist, assemble the frame and lens suitable for the prescription, select the appropriate contact lens, make adjustments, and repair and control of the glasses or lenses. Moreover, they have the authority to make sales in accordance with the legislation, ethical values and marketing principles by establishing effective verbal and written communication, and paying attention to patient and employee safety (Özdemir and Çakar, 2018).

It is very important to evaluate the organizational commitment and job satisfaction levels of the opticians/lens makers towards the business and their profession since the opticians/lens makers are the ones who are most interested in patients and who spend time with the patients, and who come to the optics establishment. Considering that most of the daily lives of the employees are spent in the institution where they work, it is thought that meeting their material and moral expectations from the business they work for makes the employees happier, and this situation also affects their work performance and harmony with their colleagues.

Organizational Commitment: It is the emotional expression of the social instinct that exists in all areas of society (O'Reilly, 1989). Commitment is a psychological feeling felt intensely towards the organization (Bodjreonu et al., 2019). It is very important to ensure the continuity of the employee in the organization and to be committed to the purpose and values of the organization. The state of being loyal seems to represent the idea of commitment in the older days (Çöl, 2004). Like a soldier devoted to his homeland, an officer devoted to his duty, a loyal slave to his master. It tells us that we are connected with an extreme feeling towards a person, a thought, an institution, or any situation that we think is bigger and stronger than us and the responsibility we have to do (Çöl, 2004).

According to Balay (1999), while organizational commitment emphasizes the idea that it is a common product of internal and external, individual and organizational factors, this situation makes us think that it is correct to see organizational attitudes and behaviors primarily as loyalty-based reactions. In the studies on the concept of organizational commitment, five reasons are mentioned in order to explain the critical importance of the concept for organizations;

- Employees leaving the job, looking for alternative job opportunities, withdrawing from work, not coming to work on time and regularly,
- Employee ownership, job satisfaction, perceived and felt dignity, job insecurity, job stress, morale and motivation, fairness, conscious structure, and feelings,
- Professional efficiency and productivity of the employee, individual autonomy of the employee and responsibility towards the work,
- Demographic characteristics such as education level, age, gender, working hours, promotion opportunities, management position, years of service in the employee's position,
- Finally, it can be listed as the close relationship between the personal characteristics of the employee's commitment to the organization and the investments made for the workplace (Balay, 1999).

In the early phases of the studies conducted by Allen and Meyer, the organizational commitment was examined under two headings as affective and continuance commitment. In later studies, the normative commitment approach, which addressed the moral dimension, was added and a three-dimensional model was developed. (Meyer et al., 2002). Considering the sub-dimensions of organizational commitment, these three dimensions can play a role in the continuity of the existence of the employee in the organization by affecting the relationship between individuals and the organization (Meyer et al., 1993). At the same time, it can affect individuals' desire to stay in the institution in different ways according to the three-dimensional model (Esmer and Yüksel, 2017).

Affective Commitment: People with this commitment stay in the organization because they feel a sense of belonging to the organization and establish an emotional bond with the organization in line with their wishes.

Continuance Commitment: Some employees cannot afford to leave the organization considering the potential loss of their investments and workforce, and other employees cannot afford to leave the organization because they think they cannot find a better option (Kaplan and Kaplan, 2018). Employees generally think that they have a lot of investment in the organization and that there are no better alternatives and stay in the organization in line with their needs (Allen and Meyer, 1990).

Normative Commitment: Employees maintain their continuity in the organization because they feel responsible for the organization, think that they have responsibilities and fulfill these responsibilities (Hıdıroğlu Özkan, 2021).

Factors Affecting Organizational Commitment: Organizational commitment is mostly innate (working time, age, gender, marital status, education level, seniority, etc.) personal factors. It is understood that it is affected by factors such as work and business (wage, business culture, nature of the work, career opportunities, physical characteristics of the business, the management style of the enterprise, etc.) that we encounter in business life (Ünlü, 2019).

It shows that organizational commitment has an effect on both positive and negative behaviors, as the age of the individual will affect the individual's attitude, behavior, needs and expectations towards the organization and his profession, as well as affect the organizational commitment behavior of the individual (Çetin, 2019). Many studies have been conducted on whether the gender factor has an effect on organizational commitment, and different results have emerged. In these studies, it is suggested that the perception of commitment changes according to the reasons they are affected by men or women (Akkuş, 2020). Education is one of the important factors that affect the perspectives of working individuals on working life and their expectations from working life. As the education level of the employees' increases, the meaning they attach to their working life and their work increases. In addition, their expectations from business life are also increasing (Sığmaz, 2017). Marital status can positively affect organizational commitment. Since married employees have more responsibilities and the number of people they are responsible for, their organizational commitment may be higher than those of single employees (Kuyulu, 2020). In most of the studies on the working time of individuals in the enterprise, it is observed that the age of the employee and the working time in the workplace are examined and evaluated together (Et Oltulu, 2021).

In the research, it has been observed that one of the most important factors affecting the commitment of individuals to the enterprise they work for is the wage policy of the enterprise. The wage received is an important factor that determines the position of the individual in business or social life (Yalçınkaya, 2021). No matter how broad the nature of the job is, it is the responsibilities undertaken by the employee that are important to the employees. It is thought that there is

a relationship between these responsibilities undertaken by the employee and organizational commitment and affect organizational commitment. According to this situation, it is thought that as the responsibility of the employee increases his commitment to the organization increases parallelly (Gümüş, 1995). While career opportunities are a tool for the employee to reach their goals in life, the possibility of advancement in the career of the employee also increases the level of organizational commitment (İşcan and Sayın, 2010). Another factor affecting organizational commitment is defined as the working conditions and environment of the enterprise (Kılıç, 2021). This factor examines whether the conditions in the business environment are comfortable or not (Robbins and Judge, 2012).

Job Satisfaction: In many studies, researchers have defined the concept of job satisfaction as the financial gain of the employee in return for the job, the satisfaction with the job, and the happiness resulting from the product or service provided to the customer (Avşaroğlu et al., 2005).

Many researchers consider the importance of and need for more research on job satisfaction (Landy, 1989). There are many reasons to support the desirability of job satisfaction. One of these reasons is values. The concept of work or study is very important in people's lives and covers most of their time. It forms the material basis of the preferred life. On the other hand, for most people, it is partly at the center of self-perception in terms of job, career, or professional identification (Baron, 1996). If individuals working in an institution feel that they are treated equally in proportion to their contributions to the institution, it becomes easier to obtain satisfaction (Şimşek et al., 2001).

Institutions that cannot provide job satisfaction can also face many problems. For example, problems such as falling in organizational commitment, leaving the job, absenteeism, stress, thoughts of a strike, alienation, anger at the institution, misuse and damage of work machines, increase in workplace theft, and decrease in physical and mental health may begin to occur. In addition, it is thought that job satisfaction has a significant effect on success, and it has been observed that job satisfaction affects the success and vice versa. As a result of all these evaluations, job satisfaction is examined from three perspectives. These are Employee, Manager, and Organizational (Erol, 1998).

Looking at the dimensions of job satisfaction, it has been observed in studies that job satisfaction has two separate sub-dimensions, intrinsic satisfaction

and extrinsic satisfaction (Kalkızoğlu, 2018).

Intrinsic Satisfaction: The level of satisfaction that employees experience while doing their job is expressed as personal satisfaction. This includes the intrinsic properties of the employees (İspir, 2019).

Extrinsic Satisfaction: It refers to the employee's level of satisfaction with the results achieved during or after the job. This is usually expressed in terms of the physical size of the organization or the benefits such as status and salary that are provided by the organization (Kosovalı, 2017).

Factors Affecting Job Satisfaction: Job satisfaction may vary according to the qualifications and personal characteristics of the employee. Factors such as marital status, education level, gender, age, professional position and seniority of the employees and years of service can be listed as examples. The organizational factors affecting job satisfaction can be listed as the nature of the job, the salary received, promotion opportunities, working conditions, the management style of the enterprise, the safety of the employee and his colleagues (Tengelimoğlu, 2018).

The age of the employee is one of the important factors affecting his working life, decisions, behaviors and perceptions. In this situation, it can be seen that people's attitudes and thoughts about work may vary according to age (Nergiz and Yılmaz 2016). The gender of the employee is one of the factors affecting job satisfaction because the different expectation levels between men and women cause different satisfaction levels (Acar, 2020). In particular, it has been determined that there is a difference in job satisfaction levels according to the conditions of the job (Şen, 2008). There are opinions that job satisfaction increases as education levels increase. In various studies, it has been observed that there is an inverse relationship between education and job satisfaction. As the level of education increases, job satisfaction decreases (Gün Eroğlu, 2009). In studies to determine the effect of the marital status of the employee on job satisfaction, it has been determined that there is a relationship between marital status and job satisfaction (Güner, 2007). People who are new to business life and have little work experience can often have unrealistic expectations. In this case, new employees may think that they will have higher job expectations and working conditions than former employees (Ergün, 2003).

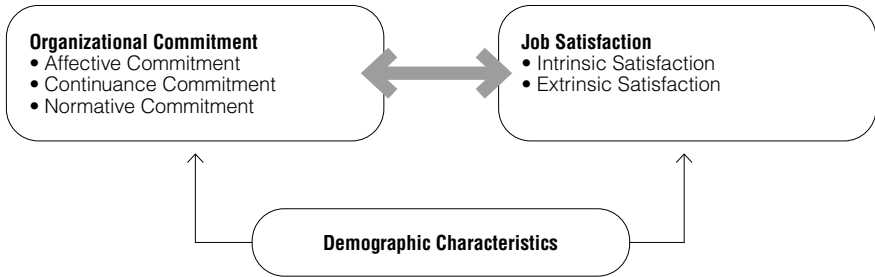
Studies also suggest that factors such as salary, promotion, and rewards

received by employees in return for performance are associated with the effect of job satisfaction (Guven et al., 2018). Employees believe that working in places where there are not sufficient conditions is one of the important factors affecting productivity and job satisfaction. Thus, while bad working conditions decrease job satisfaction, good working conditions increase job satisfaction (Kuzulugil, 2012). Employees' ability to use their talents, the diversity of their work, their ability to use their creativity, and the difficulty of goals are the factors affecting job satisfaction. Detailed information of the definitions of the work and duties of the employees and the factors such as the tools, equipment, and materials used should be provided (Mitchell and Larson, 1987). The behavior that the employee sees from an employer or supervisor is reflected in his work and determines the level of job satisfaction or dissatisfaction. In some studies, it has been observed that when employees feel that their managers are sufficient, their job satisfaction increases, and when they feel that they are inadequate, their job satisfaction decreases (Uyar, 2013). It has been observed that when employees establish positive relationships with their colleagues, such as helping each other while doing the job, matching thoughts, and speaking the same language, they are happy, relaxed, more willing to go to work, and their job satisfaction increases (Sıgır & Gürbüz, 2014).

Purpose and Importance of the Study: Attitudes and behaviors of opticians in the optical sector are among the most important factors affecting job performance and patient satisfaction. Service quality in opticianry depends on the attitude of the staff. The staff working in the institution is the group with the highest communication with the incoming patient. For this reason, the job satisfaction and organizational commitment of the employees of the opticianry directly affect the service efficiency.

Although organizational commitment and job satisfaction scales are used in many different occupational groups in research, according to our literature review, it has not been studied for opticians, and the results have not been tested until today. This research is important as it is considered a first in its field.

The aim of this research is to determine the relationship between job satisfaction and organizational commitment of opticians; and whether there is a relationship between organizational commitment and job satisfaction levels according to demographic characteristics such as age, gender, marital status, wage, education.



Model and Hypotheses of the Research: Organizational commitment emphasizes the bond that the individual establishes with the organization and is very important in terms of creating positive results for the employees and the organization by evaluating the opportunities and benefits offered by the institution which they prefer as a workplace. The importance of individuals who want to be successful, who are experienced, educated, productive, compatible and committed to organizational goals is an indisputable fact. Another concept is the concept of job satisfaction. Job satisfaction is a concept that is emphasized by many sectors. It is an important concept for the employees to love their job, to get efficiency from work done and to satisfy the individuals under their responsibilities as much as they do. At this point, the importance of the effects of job satisfaction and organizational commitment comes to the fore. In many sectors, the relations between demographic characteristics, organizational commitment, job satisfaction and its sub-dimensions have been tried to be examined. Although research has been done on the relationship between demographic characteristics, organizational commitment and job satisfaction in other sectors, this study is important because it has not been done before for opticians in the optical sector. Therefore, it was determined as research to examine the relationship between job satisfaction, organizational commitment and demographic characteristics of individuals working in optician institutions.

The model of the research can be seen in Figure 1, below.

Figure 1. Model of the Research

The hypotheses of the research are as follows;

H1: There is a significant relationship between the job satisfaction of optician employees and their organizational commitment and sub-dimensions.

H2: There is a significant relationship between the organizational commitment, job satisfaction and sub-dimensions of optician employees according to their gender.

H3: There is a significant relationship between organizational commitment, job satisfaction and sub-dimensions of optician employees according to age distribution.

H4: There is a significant relationship between organizational commitment, job satisfaction and sub-dimensions of optician employees according to their marital status.

H5: There is a significant relationship between organizational commitment, job satisfaction and sub-dimensions of optician employees according to their education levels.

H6: There is a significant relationship between the organizational commitment, job satisfaction and sub-dimensions of optician employees according to their titles.

H7: There is a significant relationship between organizational commitment, job satisfaction and sub-dimensions of optician employees according to their income status.

H8: There is a significant relationship between the organizational commitment, job satisfaction and sub-dimensions of optician employees according to their professional years.

H9: There is a significant relationship between organizational commitment, job satisfaction and sub-dimensions of optician employees according to their own establishment status.

H10: There is a significant relationship between the desire to open their own establishment according to the gender of the optician employees.

H11: There is a significant relationship between the organizational commitment, job satisfaction and sub-dimensions of optician employees according to the institution's position.

H12: There is a significant relationship between the organizational commit-

ment, job satisfaction and sub-dimensions among opticians by gender.

H13: There is a significant relationship between the organizational commitment, job satisfaction and sub-dimensions of responsible managers by gender.

Population and Sample: The sample of the study is opticians, responsible managers, or other personnel working in opticianry. The online questionnaire was directed to participants by social media and by the Turkish Opticians and Lens Makers Union. The universe of the research was determined as reaching the highest number of participants among the opticians registered to the Opticians – Lens Makers Union across Turkey. However, since it was based on volunteerism, 320 employees returned to the survey study.

Data Collection Method and Tools: In this study, which aims to determine the relationship between the demographic characteristics of the employees, their job satisfaction and their organizational commitment, the survey method, which is one of the quantitative research methods, was used as the data collection method. The survey study, which consists of 52 questions in total, consists of 3 parts. In the first part, demographic questions and one open-ended question (whether the employees have a desire to open an optician's business in the future) were asked. In the second part, the "Allen Meyer Organizational Commitment Scale" was used. In the third part, the "Minnesota Job Satisfaction Scale" was used and demographic characteristics were associated with job satisfaction and organizational commitment.

Minnesota Job Satisfaction Scale: Developed by Weiss et al. (1967). It was adapted into Turkish by Ashl Baycan (1985). It consists of 5-point Likert-type and 20-item questions that reveal both intrinsic and extrinsic satisfaction factors. Each item expresses the degree of satisfaction that the employee feels about his job. The participant chooses one of the 5 five options being 5 - very satisfied, 4 - satisfied, 3 - undecided, 2 - dissatisfied, and 1 - not at all satisfied, and the result is calculated by taking the average of the scale. High scores indicate high job satisfaction (Ergeneli and Eryiğit, 2001).

Organizational Commitment Scale: It was developed by Meyer et al. (1990). It was revised by Meyer et al. (1993), and questions consisting of 6 items in total, consisting of 3 dimensions, were formed (Özdemir, 2021). The translation of the scale into Turkish and its reliability and validity studies were performed by Dağlı et al. (2018). Dağlı et al. (2018) arranged it as a 5-point

Likert type (1- Strongly Disagree, 2- Disagree, 3- Undecided, 4- Agree, and 5- Completely Agree) by including affective, continuance, and normative commitment dimensions in accordance with the scale (Darama, 2021).

Statistical Analysis: The analyzes of the study were performed in the SPSS (IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.) program. In the study, the conformity of continuous variables to the normal distribution was examined using the Shapiro-Wilk test. If the variables do not conform to the normal distribution, they are expressed with median (minimum: maximum) values. Mann Whitney U test was used in case of non-conformity to normal distribution in the comparison of continuous variables between two groups. Comparisons of more than two groups that did not comply with the normal distribution between study groups were made using the Kruskal Wallis H test. Relationships between Organizational Commitment Scale and Minnesota Job Satisfaction Scale scores were analyzed by correlation analysis and calculated with the Spearman correlation coefficient. In statistical comparisons, the type I error rate was accepted as 5%.

RESULTS

320 people working in opticianrys participated in the study. In the demographic findings section, general information about the employees working in the optician establishment is given in Table 1. The demographic information used in the study is shown as frequency (n) and percentage (%) values.

Table 1: Demographic Findings

Variables		n	%
Gender	Female	190	59,4
	Male	130	40,6
Age	18-24	86	26,9
	25-34	110	34,4
	35-44	74	23,1
	45-54	42	13,1
	55 and over	8	2,5
Marital Status	Single	196	61,3
	Married	124	38,7

Number of Kids	0	190	59,4
	1	72	22,5
	2	54	16,9
	3	4	1,3
Education	Primary	4	1,3
	High School	44	13,8
	Associate	164	51,2
	Under Graduate	82	25,6
	Graduate	26	8,1
Location of Business	Shopping Mall Store	34	10,6
	Boutique/Local Store	68	21,3
	Market Store	78	24,4
	Chain Store	28	8,8
	Hospital Store	82	25,6
	Other	30	9,4
Status	Optician	144	45,0
	Responsible Manager	104	32,5
	Other Personnel	72	22,5
Number of Employees	1-5	232	72,5
	6-10	42	13,1
	11-20	24	7,5
	21 and over	22	6,9
Income Type	Salary	180	56,3
	Bonus	10	3,1
	Salary + Bonus	130	40,6
Income	0-4500 TL	118	36,9
	4501-8000 TL	158	49,4
	8001-12000 TL	28	8,8
	12000 and over	14	5,0
Experience in the Establishment (Years)	1-5	228	71,3
	6-10	58	18,1
	11-15	24	7,5
	16-20	8	2,5
	21 and over	2	0,6

Experience at Work	1-5	166	51,9
	6-10	74	23,1
	11-15	36	11,3
	16-20	22	6,9
	21 and over	22	6,9
Will to Open a Business	Yes	126	39,4
	No	194	60,6

When the participants were analyzed by gender, it was seen that 190 female employees participated: thus, the rate of the female employees is higher than male employees. In the age distribution, it has been observed that the ages of 25-34 with 110 people are the highest number, and the second is the age range of 18-34 with 86 participants. The marital status of the employees is mostly single with 196 participants. When we looked at the number of children, it was determined that 190 participants did not have children. In this study aimed at optician employees, it was seen that 164 of the participants were associate degree graduates.

Opticians can be named differently according to their location. When the participants of the study were examined according to the location of the institution they worked, it was observed that they worked mostly in front of the hospital with 82 participants and in the institutions called bazaar stores with 78 participants. When we look at the titles of the participants in the study, it was determined that opticians were the most common with 144 people and the responsible managers participated in second place with 104 people.

When we look at the salary definitions of the participants, we observe that they receive the highest salary with 180 participants, and 130 participants receive a salary + bonus. When considering the income levels of the employees, it is observed that they receive a salary or salary + bonus in the range of 4501-8000 TL with a maximum of 158 participants.

When the working period of the participants is examined, it is seen that 228 participants have worked in the same company where they worked between 1 and 5 years. The number of long-term work in the same business is very small. When looking at the years of employment of the same participants, it has been determined that 166 people are new to the profession and they have been in this sector for 1 to 5 years.

One of the hypotheses of the study, when the Opticians employees were asked to open their own business, it was seen that 194 people said no.

In Table 2, descriptive statistics of the organizational commitment and job satisfaction levels of the employees in the optician establishment are given.

Table 2: Descriptive Statistics of Organizational Commitment and Job Satisfaction Levels of Opticians Employees

	n		SS	Min	Max.	Skewness	Kurtosis
Organizational commitment	320	58,04	10,14	34	90	0,334	0,364
Emotional Commitment	320	19,15	3,41	12	30	-0,224	1,041
Continuing Commitment	320	19,78	4,17	9	30	-0,028	0,077
Normative Commitment	320	19,12	4,23	7	30	0,334	-0,382
Job Satisfaction Total	320	3,40	0,81	1,04	5	-0,602	0,238
Extrinsic Job Satisfaction	320	3,29	0,90	1,00	5	-0,544	-0,010
Intrinsic Job Satisfaction	320	3,52	0,79	1,08	5	0,655	0,418

When Table 2 is examined, the total score of the organizational commitment scale is 58.04 ± 10.14 , and the sub-factors of organizational commitment are affective commitment 19.15 ± 3.41 , continuance commitment 19.78 ± 4.17 , normative commitment 19.12 ± 4 . It has an average of 23. The mean continuance commitment of the employees in the optician establishment was found to be higher than the other sub-factors ($\bar{x} = 19.78$). The average job satisfaction score was moderate, and the average of the sub-factors was found to be high ($\bar{x} = 3.52$).

There is a statistically significant positive correlation between all values of organizational commitment and all values of job satisfaction ($p < 0.05$). Among the comparisons, the highest correlation ($r_s = 0.481$) is seen between organizational commitment and external satisfaction.

The aim of this research is to examine the demographic characteristics, organizational commitment and job satisfaction of opticians in the optics sector, to reveal the relationship between them in terms of cause and effect and to determine the relationship between the mentioned variables and demographic characteristics.

Efficient and effective work of an employee in his/her job is possible with continuous organizational commitment and job satisfaction. The factors that can provide

this situation in the study are working conditions, wages, awards, promotion and career, qualifications of the job, the job itself, colleagues, work experience, working hours in the sector, and management style. A business can benefit from the knowledge, skills and abilities of its employees and all their potential strengths, as long as it can meet the expectations of the employees regarding these factors that have an impact on organizational commitment and job satisfaction. Otherwise, a decrease in organizational commitment and job dissatisfaction may occur.

When the relationship between the demographic variables of the participants in the research and organizational commitment, and job satisfaction is examined; It was determined that the organizational, affective and continuance commitment of male participants were higher. There was no significant relationship between job satisfaction and its sub-dimensions and gender. When we look at the studies, Bülbül (2016) also concluded that the organizational commitment and job satisfaction among men are high. In addition, in the study conducted by Şen (2008), it was determined that the intrinsic satisfaction rates of men were higher. Considering the studies carried out, it can be argued that male employees have higher job satisfaction and organizational commitment than female employees, and because female employees are more involved in their non-working home and family lives their levels are lower than males.

In the age distribution, it was observed that the participants were in the 25-34 age range at most. As a result of the paired comparisons, the organizational commitment, continuance commitment and normative commitment of employees aged 35-44 were found to be the highest. When job satisfaction is compared with the age range, it has been observed that the job satisfaction of the 35-44 age group employees is higher than their sub-dimensions, intrinsic and extrinsic satisfaction.

Uyanık (2021) found out that the organizational commitment and continuance commitment of employees over the age of 45 is high, and their affective commitment is high between the ages of 30-34. In addition, Nalbantoğlu (2012) stated that age distribution has no effect on organizational commitment, affective and continuance commitment, and the scores of the participants in the 40-49 age range are high in normative commitment, job satisfaction, and intrinsic satisfaction. It has been observed that external satisfaction is higher in the 20-29 age group.

The marital status of the employees is mostly single (196 participants). It has been observed that the organizational commitment, continuance commitment and normative commitment of the married employees, as well as the intrinsic and extrinsic satisfaction, which are the sub-dimensions of job satisfaction, are higher than the singles. In other studies, Atlı (2021) and Bıyıklı (2021) stated that there was no significant relationship between their marital status and organizational commitment, but when the sub-dimensions of Bıyıklı (2021) were examined, it was observed that married people had more continuance commitment. In a different study, Karaoğlu (2021) stated that the organizational commitment and all sub-dimensions of married people are higher. At the same time, in the literature research on the relationship between job satisfaction and marital status, Şen (2008) and Oksay (2011) suggested in their research that there is no significant relationship between marital status and job satisfaction.

When we look at the salary ranges of the participants, we observe that they receive salary followed by salary + bonus at most. It has been observed that the highest level of these payments is a salary or salary + bonus in the range of 4501-8000 TL. In the second place is the range of 0-4500 TL, and they receive a minimum wage based on the amount. Again, it was determined that the salary ranges, job satisfaction and organizational commitment of the participants were low, and as the income level increased (12001 TL and above), their organizational commitment, continuance commitment, normative commitment, affective commitment and extrinsic satisfaction increased.

Emre (2016)'s research, resembles the study we have done. In this study conducted on logistics company employees, it was observed that as the income level increases, the organizational commitment and commitment levels in its sub-dimension also increase. In the same study, it was seen that there is a significant relationship between job satisfaction and internal satisfaction as the income level increases. The working hours of the participants were also analyzed, and it showed that 228 participants have been working in a company where they are between 1 and 5 years. When we look at the years of employment of the same participants, it has been determined that 166 people are new to the profession; and they have been in this sector for 1 to 5 years. When the relationship between organizational commitment and job satisfaction is examined according to the years of employment in their profession, it is observed that affective com-

mitment, which is one of the organizational sub-factors, is high in employees between 11-15 years, and normative commitment in employees between 11-20 years. In job satisfaction, it was found that the job satisfaction and sub-dimension internal satisfaction of employees between 16-20 years were high.

In Samadov (2006) and Önal (2021), when the working hours of the participants were examined, it was observed that the organizational commitment and job satisfaction of the participants with long working hours were high, and the participants with short working hours were low.

When the relationship between the title and organizational commitment is examined, it has been observed that the organizational commitment, continuance commitment and normative commitment of opticians are lower than other titles. No significant difference was found in terms of job satisfaction.

Since it is obligatory to have an associate degree to be an optician, it can be predicted that the majority of the participants with associate degree graduates are opticians, and when the organizational commitment results are examined, we can conclude that the organizational commitment of opticians is low and confirmed by both variables.

Since we didn't come across a similar study in the field of optics, its similarity with a different sector has been compared. In Özkan (2019), it was observed that the affective commitment and organizational commitment of associate degree graduates are higher according to their educational status, and there are differences in organizational commitment and sub-factors of employees according to their field of duty. In the same study, no significant relationship was found between job satisfaction and its sub-dimensions.

Önal (2021), in his research on bank employees, did not find a significant relationship between job satisfaction and organizational commitment according to job positions.

Opticians can be named differently according to the type of store. When the participants of the study were examined according to the location of the institution they worked, it was observed that the majority, 82 participants, worked in the institutions called the bazaar store and the second highest was 78 participants who worked in stores in front of the hospital. When the organizational commitment of the participants according to the location of the institution they work in, it was determined that the employees of the shopping malls had the

highest affective commitment. In the relationship between job satisfaction, it has been observed that the job satisfaction and external satisfaction of the employees in the shopping mall are the highest, and the employees in the shopping mall store and the boutique/neighborhood store have the same score in internal satisfaction. It has been observed that the employees of the opposite hospital and bazaar stores who participated in the research the most have lower job satisfaction and organizational commitment scores than the shopping mall store employees.

When the will of optician employees to open their establishments, which is one of the open-ended hypotheses in the demographic questions section, is examined, it was seen that the answer of 194 people was no, and it was determined that the organizational commitment and sub-factor scores of those who said no, were higher. No significant difference was found in the comparison in terms of job satisfaction. It was observed that the participants who said no to this open-ended question generally said no because of financial concerns.

Another hypothesis, when examining the organizational commitment and job satisfaction of opticians by gender, it was observed that there was no significant difference in the relationship between organizational commitment, continuance commitment, affective commitment, job satisfaction, intrinsic satisfaction and extrinsic satisfaction. There was only a significant relationship in normative commitment, and it was observed that female opticians had a higher normative commitment.

In addition, when the relationship between organizational commitment and job satisfaction was questioned, based on gender differences of the responsible managers: it was determined that the organizational commitment, continuance commitment, and normative commitment scores of the male responsible managers were higher. Likewise, it can be said that male responsible managers have higher job satisfaction, internal satisfaction and external satisfaction rates than women.

Summary of Research Results: Based on the participants in the study, it has been observed that the organizational commitment of men working in the optician stores is higher and that employees over the age of 30 have higher organizational commitment and job satisfaction. In this case, considering the literature research, aging is effective in bringing professional experience and expectations to real life levels. Although the majority of the individuals partici-

pating in the survey are single, their organizational commitment and job satisfaction are higher than those who are married. It has been observed that as the rate of employees' salary increases, their job satisfaction and organizational commitment also increases. It has been observed that the number of long-term work in the same enterprise is very low.

It has been observed that the organizational commitment of associate degree graduates and opticians is low. The organizational commitment and job satisfaction of the shopping mall store employees are high, and the employees of the opticians do not have any thoughts of opening their own businesses. The organizational commitment and job satisfaction of male responsible managers are also high. In addition, there was no significant relationship between organizational commitment and job satisfaction in the gender variable among opticians.

Based on the findings of the study, the authors suggest that organizational commitment and job satisfaction measurement surveys should be conducted periodically throughout the sector by the Turkish Opticians Association or by the managers within the institution, and solutions should be developed for the issues that the employees are dissatisfied with. Secondly, the participation of employees should always be ensured in order to identify the problems that may be encountered and to propose solutions. In this way, a positive contribution will be made to both the job satisfaction levels of the employees and their level of commitment to the organization. Thirdly, qualitative research methods could be applied in further studies. This might provide in depth information from the opticians. Also, cross cultural studies should be conducted in order to understand the cultural differences among the findings. Lastly, more participants could give a better understanding of the results. The industry should encourage and support more scientific studies in this field.

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