

## **THE EFFECT OF COMMUNICATION PROCESSES IN THE RADIOLOGY DEPARTMENT OF HEALTHCARE ORGANIZATIONS ON DEPARTMENTAL COMMITMENT**

Salih Kasap<sup>1</sup>, M.Süheyl Pozanti <sup>2</sup>

### **Abstract**

In hospitals and healthcare organizations, communication is very important for the processes related to patients and between them. In a department where technology is intensively used, such as radiology, smooth functioning of the patient-related processes is directly related to the success of communication. In addition to the importance of communication processes, workers' organizational and departmental commitment is key to medium and long-term planning. Workers' productivity and compliance with the organizational culture are the main indicators of department success. In this study which is the subject of this article, the examination of the communication processes between the radiology department workers and the effects of the communication levels on the workers' departmental commitment was performed. The study was carried out with the participation of radiology department workers in different healthcare organizations. Two different surveys were conducted on communication and departmental commitment. The data were analyzed independently and comparatively. Demographic features of the participants and information about working conditions were learned, and different analyses and comparisons were made with these data.

### **Keywords:**

Radiology, Communication in Healthcare, Organizational (Departmental) Commitment

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<sup>1</sup> Özel Afiyet Hospital, Head of Radiology Unit, Master's Degree in Beykent University, Department of Hospital and Healthcare Management, [salihkasap37@gmail.com](mailto:salihkasap37@gmail.com)

<sup>2</sup> Asst. Prof. Dr., Beykent University, School of Health Sciences, [sppozanti@yahoo.com](mailto:sppozanti@yahoo.com)



### **Introduction**

Communication is shown as the most prominent concept today for success and efficiency in hospitals and similar healthcare organizations. When communication in healthcare organizations is mentioned, communication with patients and their relatives is understood, but the communication process between the workers of the organization should also function smoothly for the success of this process. In addition to successful communication, this situation is expected to be long-term and to be identified with the organizational structure. The concept of organizational commitment appears at this stage. Organizational commitment or long-term relationship between workers and organizations will ensure that communication processes will both improve and prevent problems that may arise from differences.

The importance of correct communication will be better understood by considering that procedures in radiology are carried out with a device and patients are alone at this stage. Communication between the department workers is very intense with the effects of technology-based works and different job descriptions. Even if there is a similarity in the level of education and experience of workers, the workers need a significant adaptation period due to device differences and functions in the department. Consequently, it is aimed that the workers identified with the department as a result of a certain effort have a commitment on an organizational or departmental basis and maintain their job for a long time.

Nowadays, the way to compete is to seek ways to avoid losing successful workers. It is very clear that the most important investment is human resources. In this study, the departmental communication processes and the effects of these processes on departmental commitment are examined.

### **RADIOLOGY DEPARTMENT**

**Structure and Features of the Radiology Department:** Radiology is defined as the department where technology is most intensively used. The basis of radiology is the images obtained by using X-rays. The images, also directly called radiograph, are now used as the primary diagnostic method. A more advanced device in the same system is called Computerized Tomography. Other systems that work with X-rays are Mammography, Angiography, Fluoroscopy, and Mobile X-ray devices. MRI and Ultrasonography devices work with magnetic systems and sound waves, respectively. Apart from interpreting the images, interventional procedures are also used for diagnosis in radiology. Interventional radiology procedures are also applied in the field of treatment. The radiology department

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works very closely and cooperates with the departments of Nuclear Medicine and Radiotherapy in different diagnostic and treatment processes, especially PET/CT. Although radiological procedures are carried out mainly within the department, service is provided in different parts of the hospital with intraoperative MRI in the operating room and with mobile x-ray for hospitalized patients. Close cooperation with patients is required before and during the examination with devices using different technologies such as X-ray devices and MRI. The success of physicians, technicians, and nurses in managing processes such as posture, function, and perception depends on successful communication. Similarly, intensive cooperation and communication in the department and between the departments are also necessary for appointment, registration, patient preparation, imaging, and reporting processes.

### **Features of radiology department workers**

Different professional groups work together in radiology. The procedures carried out only by radiology technicians in previous years are now carried out by a team of radiology specialists, radiology technicians, nurses, rapporteurs, registrars, patient consulting staff, assistant staff and cleaning staff. Workers of the department show a rich diversity in terms of education and quality. The prerequisite for their ability to work in harmony is primarily the correct communication between them.

### **Units with which the radiology department communicates within the hospital:**

Workers of the department primarily communicate with biomedical, information processing, human resources, quality, patient rights, archive, pharmacy, medical equipment and consumables warehouse, technical support units, telephone central workers during the day. Nurses and technicians working in clinical units such as operating rooms, intensive care units, emergency, and inpatient units are also healthcare workers who are in intensive communication with radiology. With image transfer, radiologists and clinical physicians can also access the images outside the radiology department. Image transfer can also be performed out of the organization if necessary. Although this situation has reduced the face-to-face communication of physicians with radiology workers, communication continues by telephone and other technological methods.

### **Institutions and organizations with which the radiology department communicates outside the hospital:**

Radiology workers are also in contact with certain people outside the hospital. These mainly include electronic and biomedical engineers and technicians related to the devices in the department. Radiology devices have different features today, so different engineers are responsible for the devices. This situation can reduce communication between the department and the device company directly to the communication between the related technician and engineer. Furthermore, image storage



and transfer are carried out by different companies, where it is a necessity to work in communication with both device manufacturers and department workers. Intensive communication is provided with the workers of device companies, not only in the case of failures but also during the device installation, updating, routine maintenance, and renewal stages. In addition, it is necessary to communicate with contrast material companies that help to obtain images. In this way, the department works continue without interruption or with minimal interruption. The radiology department is in intensive communication with TAEK. Device installation and audits are carried out with this communication and cooperation.

**Communication features of the radiology department:**

**Communication Processes:** In the radiology department, communication is carried out mainly in two processes. The first one is communication between the department workers, and the second one is communication between the department workers and patients. The communication of radiology workers with other workers of the organization and with external workers should be considered within the scope of communication between the workers. The subject of the study is the examination of the communication processes within the department. The effective and efficient functioning of this process will naturally affect communication with the patient positively. In the radiology department, it is assumed that communication between patient relatives and workers is lower than the other departments of the healthcare organization. This is caused by the fact that no person other than the patient should be present in the same environment due to radiation or magnetic field during imaging, examination or operation. Communication of the department workers with medical companies, engineers and workers of institutions such as TAEK, which are in contact with the radiology department, is defined as non-departmental communication.

**Communication Channels:** Radiology department communication channels can be examined in three groups as formal, informal and external communication channels. Formal communication is a type of communication within the unit and the department as well as between the statuses. It is examined in two main structures as vertical and horizontal communication. Vertical communication establishes a connection between the staff at the lowest level and the director at the highest level. In line with the hierarchical organizational structure, vertical communication from top to bottom and from bottom to top is carried out. The process is carried out by telephone, Intranet, e-mail, face to face and similar methods. Instructions, announcements, performance notices, suggestions and wishes are communicated by vertical communication. There may be disruptions in the vertical communication processes in both directions due to individual and environmental obstacles. Horizontal communication is the communication between people who are not in the superior-subordinate relationship with each other. Horizontal communication is imperative for works to continue. When we look at the hierarchical structure of the radiology

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department, it is observed that horizontal communication is intensive. Another intensive communication process in the radiology department is Cross Functional or Diagonal communication. Diagonal communication, also meaning complex, is a type of communication between people in different departments and at different levels (Kocabaş, 2005). When examined in terms of radiology, doctors in different fields can share their opinions and suggestions by exchanging information about patients' images and reports. On the other hand, for example, an orthopedist can call the radiology unit to request a radiograph in bed for a hospitalized patient in the service, and the same specialist can request that the report of an emergency patient be written by the medical secretary. By examining the other examples, the doctor or nurse in charge of the operating room may request that a radiology technician be assigned to the operating room during the day, depending on the operation of that day. Again, the intensive care doctor or nurse can call the radiology department and request a mobile x-ray. The hierarchical structure was not taken into consideration looking at all of these examples, and the information was exchanged, and the work was requested by direct contact. There is no inconvenience in the exchange of information on specific subjects and the establishment of diagonal communication based on work between the departments. The process may cause irregularities in the organization if the department head and director, apart from the exchange of information, turn the communication into a form of ordering another department worker or if there is an unnecessary discussion. For this reason, unless required, organizations avoid using the diagonal communication channel in principle (Ada et al., 2008).

**Open Communication:** It is defined as Open Communication to provide communication in a healthy manner from bottom to top and from top to bottom. It may be necessary to communicate with people from different departments and positions at the same time within the organization (Dindaroğlu, 2007). If workers in an organization can easily share their thoughts and opinions, then there is open communication in that organization. In the organization where there is open communication, an organizational climate with low tension and high confidence, peace, and efficiency is created (Ekinci, 2006). There is clear and versatile communication in the radiology department. The department has to communicate with more than one unit, institution, organization, and individual. This process is required for the continuity of the department.

**Informative (Educative and Instructive) Communication:** The purpose of informative, educative and instructive communication is to transform the wide range of information into an appropriate form, to simplify and to convey it to the worker or customer. In the radiology department, the healthy imaging process and the duration of the examination are related to the patient's behavior. What needs to be done here is to inform the patient clearly and definitively about what should and should not be done before the examination. For example,



it is necessary to inform patients by giving information about the noises that may come from the device, that the imaging will be extended due to the slightest movement, and that the technician will observe him/her continuously.

It is also an informing method to show the patient what he/she needs to do in the form of a rehearsal, for example, the demonstration of how to apply the “take a deep breath and hold it” instruction. Apart from those mentioned, Evaluative (judgmental) communication, Influential (convincing) communication, Opinion and suggestion communication can be listed as other methods.

**Informal communication:** It is an informal and hierarchical communication method. It is an integral part of organizational communication processes, and many issues are discussed with this method.

**External communication** is examined as the communication between medical companies, engineers and institutions such as TAEK which are in contact with the radiology unit. It functions through social media as well as through individual channels. For this purpose, tools such as blogs, web pages, Facebook can be used.

**Communication among Healthcare Workers:** Concepts such as personal communication, communication in healthcare and empathy have come to the fore in recent years. As in every organization, special attention started to be paid to communication in healthcare in order to improve the quality of services in healthcare organizations. In order to provide a quality health service, workers need to have a high level of communication skills. With the desired quality of communication between healthcare workers, the desired level is expected to be reached in communication with the patient who is the main target. The communication of healthcare workers with the patient can be examined under the main headings of physicians, nurses, technicians, and assistants.

**Physician-patient communication:** It is a very important dimension of diagnosis and treatment. This communication process, which is established one-to-one and is compulsory in clinical medicine branches, is conducted differently in the radiology department. One-to-one communication in radiology is also experienced during ultrasonography and interventional procedures. In this communication, explanations of the physician to satisfy the patient's feelings, thoughts and curiosities will lead to the establishment of cooperation between the patient and the physician and to achieve healthier results (Voyvoda and Taşdemir, 2012).

**Nurse-patient communication:** An assistance relationship is established in nurse-patient communication, and communication techniques are used in defining problems and coping with stress. The most important factor that forms, shapes and directs care in nursing is

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assistive communication (Tuna, 2014: 14). In the radiology department, the effect of vascular access which the nurse will open in the patient, the way he/she is affected by the procedure, information given about its level and its results can be shown as an example of relaxing communication.

**Technician-Patient Communication:** The radiology technician takes part in all examinations and procedures except for ultrasonography. He/she helps the physician in interventional procedures, and directly performs the procedure in other procedures. After the completion of the registration process of patients, the process is carried out with technicians, and during this period, continuous communication is carried out on the issues such as information about the procedure, posture, desired movements, procedure duration, and interactions. Radiology can be defined as the department where patients are communicating intensively with technicians.

**Communication Between the Patient and the Administrative and Assistant Staff:** Patients communicate with workers who perform different tasks in the processes such as registration, queue, direction to the procedure area and, if necessary, carrying. The importance of these workers in communication processes will be better understood by considering the mental situations of patients such as anxiety and fear.

**Communication with Patient Relatives:** There is constant two-way communication between patients and their relatives and hospital workers. Satisfaction of the patient also causes the relatives of the patient to be satisfied.

**Communication Between the Hospital Management and the Patient and Patient Relatives:** In addition to adequate technological devices, modern physical conditions, and a clean appearance, it is observed that quick access at the time of need is also important for the satisfaction of patients and their relatives. Therefore, interest, courtesy, respect, smiling face, reliability, communication, competence, flexibility and accessibility increase the satisfaction of patients and their relatives in a healthcare organization (Şahin, 2005). Patient satisfaction is recognized as a very important concept, and organizational studies are carried out in this respect.

**Behavior Attributes in Communication Between the Patient and Patient Relatives and Healthcare Workers:** Some common concepts were defined in this process. The main headings can be listed as Interest, Patience, Smiling Face, Tolerance, Respect, Equal treatment, Gaining trust, Reducing stress, Helping, Empathy, Unprejudicedness, Non-discrimination, and Image. As can be understood from the meanings of the concepts, relieving the worries and fears of patients and their relatives, and gaining their trust in the



organization and its workers are the main themes of the communication processes in this field.

**Patient Rights and Occupational Ethics:** When the rights of patients are observed in terms of patient rights, laws, regulations and occupational code of ethics, communication is carried out smoothly, and patient satisfaction is positively affected by this situation.

### **Organizational (Departmental) Commitment Features**

**Organizational (Departmental) Commitment** means that individuals come together voluntarily to achieve a goal and target, and desire to become a permanent worker of the organization (department) in order to achieve this goal or target (Başyigit, 2006). The concept of organizational commitment and its understanding are the way of expressing the feelings of social instinct that exist in every place where there is a sense of society. In other words, although it shows the psychological approach of the worker towards the department, it is an expression of the psychological situation that affects the decision to work in the organization (Aygün Tüzün, 2013). Organizational commitment is the harmony between the individual and the organization. Organizational commitment means the identification of the worker with the organization or department. The worker's view of himself/herself as a part of the organization or department means that he/she does more for the organization, makes more sacrifices, and does not want to leave the organization or department (Erkmen and Çerik, 2007). According to Meyer and Allen, organizational commitment expresses the psychological behavior of the individual towards the organization. It is a psychological behavior that reflects the relationship between the individual and the organization and directs the decision to continue working in the organization (Çöl, 2004). The definitions made in the literature summarize the definition of the concept of organizational commitment as follows: Workers' wish to remain committed to the organization, the total efficiency of the organization, the identification with its success and interests, the individual's attitude towards the organization, and the self-sacrifice for the success of the department or organization (Aygün Tüzün, 2013).

**The importance and benefit of organizational (departmental) commitment:** It is possible to explain the importance of organizational commitment in terms of workers. Workers devote more time and effort to turn their tasks and goals into action as their degree of departmental commitment increases. They remain committed to the organization and tend to establish a positive relationship with their organization. The benefits of workers' organizational or departmental commitment can be summarized as follows. Adoption of their department where they work will enable them to climb up career steps and reach their desired goal in a shorter time. The directors of the organization give privilege to successful workers in salary increases, promotions, advancement, bonuses, and premiums. These

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privileges and rewards further increase the departmental commitment and motivation of the worker (Gökçe and Parsehyan, 2014).

**Classification of organizational (departmental) commitment:** The concept of organizational commitment shows some differences according to demographic features. Becker and Salancik's approaches reveal these reasons. It was emphasized in Becker's approach that leaving the organization would have a cost, while Salancik explained that organizational commitment was a result of the behaviors of the individual. Buchanan, Allen, and Mayer classified the concepts of organizational commitment differently. These concepts are defined as commitment to job or occupation, commitment to work and colleagues, loyalty and obedience.

#### **Classification of Factors Affecting Organizational (Departmental) Commitment**

Many factors affect departmental commitment. Factors such as individual features, demographic features, age, gender, marital status and working time of the worker can be effective.

**Individual and Demographic Factors:** In the examination of individual and demographic features, it is observed that the features such as educational level, age, marital status, gender, working time in the organization are effective. Age and working time, gender and marital status and educational level are defined as the main headings.

**Organizational (departmental) – Functional Factors:** These factors include role uncertainty, role conflict, superior-subordinate relationship, and the nature of the work.

**External Factors:** Competitors are one of the external factors. They are examined under the main headings of alternative job opportunities, specialty, and experience.

**Organizational management factors:** Management factors include wages policy, organizational justice, organization size, organizational teamwork, organizational culture.

**Psychological factors affecting organizational (departmental) commitment:** The way of perceiving the working conditions of the department and the fair or unfair treatment of workers in the working environment is called a psychological factor. This psychological factor affects a worker's departmental commitment. In the studies on this subject, a positive relationship was found between justice and departmental commitment (Özdevecioğlu, 2003). If the worker believes that the promotion, salary, compensation and social rights are not distributed fairly by the management, the performance of the person decreases. As a result, a tendency to leave the department emerges. In the decision-making processes of directors, it is of great importance that workers think that the decisions are taken fairly. It



is very important that workers are given the right to objection and the opportunity to declare their opinion in the decisions taken. The cases mentioned may positively affect the workers' departmental commitment (Aygün Tüzün, 2013).

### **Relationship Between Organizational (Departmental) Commitment and Communication**

The establishment of healthy communication within the department strengthens the sense of departmental unity and ensures that all workers feel themselves a part of the department. Thus, the commitment of all workers to the department is positively affected. Furthermore, organization information sharing is of utmost importance for workers to be identified with the organization. A comprehensive and descriptive communication program is an important force for the organization. In this way, workers know not only the current developments in the organization or department but also how the future work of the organization will affect their careers. Information sharing should not only be related to organization information or departmental structure but should also include technical information for the specialization. Monitoring technological developments and sharing information about the department are very important for the future of the organization (Çöllü and Summak, 2010). The adoption of a participatory and informative style by the management and the application of open communication in the superior-subordinate relationships increase the motivation of workers. Due to this positive communication process, workers become more efficient and perform better. As a result, the worker will become happier, he/she will be friendly to the patient, and his/her departmental commitment will increase (Ekinçi, 2006).

### **Purpose**

In the previous chapters, communication processes between all healthcare organization workers and radiology department workers were examined. These processes vary in comparison to the other departments due to the structural features of the radiology department and the differences in the worker profile. Technology-intensive work and radioactivity are seen as the prominent differences. Based on the fact that the radiology department has a unique structure due to the features mentioned, it is assumed that the organizational commitment of workers is also important. This study was conducted with the assumption that this commitment has a direct relation to the communication processes described previously.

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## Method

**Study Design:** The study was designed as a “screening model.” The screening model is a research method that aims to show a situation that has occurred in the past or is still in progress as it is.

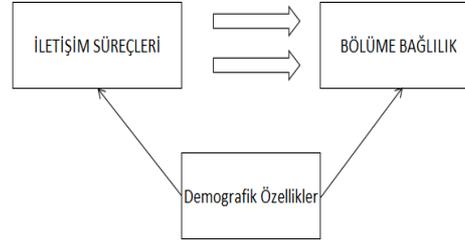


Figure 1. Study

Design

**Study Hypotheses:** Three hypotheses described below were investigated.

**H1:** In the radiology department, communication processes have a variable effect on departmental commitment.

**H2:** In the radiology department, communication processes differ significantly according to demographic features.

**H3:** The rates of departmental commitment in the radiology department differ significantly according to demographic features.

### Data Collection Tool

Communication Process Assessment Scale: There is a defined scale for the assessment of the communication processes, which is specific to the radiology department and of which literature reliability and validity are identified (Baş, 2001). The scale for the assessment of communication processes in the radiology department was developed by the researcher. When designing a Likert-type scale, firstly it is appropriate to perform a literature review and then to receive an expert opinion. The literature on the assessment of communication processes was reviewed, and an item pool of 31 propositions suitable for the radiology department was formed, and expert opinion was received. Reliability and validity studies were performed for the scale.

The exploratory factor analysis method was used to determine the structural validity of the scale. As a result of the test, it was determined that the sample size was sufficient to apply factor analysis. In the factor analysis application, it was ensured that the relationship structure between the factors remained the same by selecting the varimax method. As a result of the factor analysis, variables were grouped under 3 factors defined by Communication Quality, Attention in Communication, and Openness of Communication Channels. The “Cronbach’s alpha,” the internal consistency coefficient, was calculated to assess the reliability of the 20 items in the communication process assessment scale. The overall reliability of the scale was found to be very high with the Cronbach’s alpha = 0.918. According to the alpha related to reliability and the variance value explained, it



was understood that the communication process assessment scale is a valid and reliable tool. The factor structure of the scale is presented below.

**Departmental Commitment Scale:** Allen and Meyer's organizational commitment scale was used to measure departmental commitment. The scale consists of 18 questions; the first 6 questions are related to emotional commitment, questions 7-12 are related to the continuity commitment, and questions 13-18 are related to normative commitment. In this study, the reliability of the commitment scale was found to be high with the Cronbach's alpha = 0.859.

### **Statistical Analysis of Data**

The data obtained from the study were analyzed by using SPSS program. Number, percentage, mean and standard deviation were used as descriptive statistical methods. Scores of the scale dimensions were evaluated between 1 and 5. In order to calculate the distribution range, the formula of the distribution range = largest value - smallest value/number of degrees was used. The t-test was used to compare the quantitative data between two independent groups, and the one-way ANOVA test was used to compare the quantitative data between two independent groups.

## **Results and Discussion**

A total of 267 radiology department workers participated in the study. In this section, there are the results of the analysis of the data collected through the scales from the workers who participated in the study in order to solve the research problem. Explanations and comments were made based on the results.

### **Distribution of Descriptive Features**

**Distribution of Demographic Features:** The participants were examined according to the variables such as "Duty, Age, Gender, Working time in the occupation, Educational status, Working time in the organization, Number of different organizations served and Educational status on the communication in healthcare."

**Opinions about Communication:** In this section, the opinions of the participants about the five different variables were received. These variables are defined as the "Interpersonal Effective Communication Method, Devices Used, Incorrect Examination Due to Communication Failure, First Person Communicated in case of an Unknown Examination, Problems with the PACS (Image Transfer System) in the Organization."

## Communication Process Assessment and Departmental Commitment Mean Scores

**Communication Process Assessment Mean Scores:** The levels of the workers who participated in the study regarding the “Communication Quality, Attention in Communication, Openness of Communication Channels and General Communication Process Assessment” were determined to be high.

**Departmental Commitment Mean Scores:** The levels of the workers who participated in the study regarding the “Emotional commitment, continuity commitment, normative commitment, and general departmental commitment” were determined to be **medium**.

### Correlation Analysis Between the Communication Process Assessment and the Departmental Commitment Scores:

Table 1. Correlation Analysis

		Communication Quality	Attention in Communication	Openness of Communication Channels	General Communication Process Assessment	Emotional Commitment	Continuity Commitment	Normative Commitment	General Departmental Commitment
Communication Quality	R	1.000							
	P	0.000							
Attention in Communication	R	0.590**	1.000						
	P	0.000	0.000						
Openness of Communication Channels	R	0.552**	0.422**	1.000					
	P	0.000	0.000	0.000					
General Communication Process Assessment	R	0.919**	0.827**	0.694**	1.000				
	P	0.000	0.000	0.000	0.000				
Emotional Commitment	R	0.282**	0.237**	0.336**	0.326**	1.000			
	P	0.000	0.000	0.000	0.000	0.000			
Continuity Commitment	R	0.146*	0.092	0.108	0.142*	0.160**	1.000		
	P	0.017	0.135	0.078	0.020	0.009	0.000		
Normative Commitment	R	0.230**	-0.035	0.287**	0.176**	0.339**	0.434**	1.000	
	P	0.000	0.567	0.000	0.004	0.000	0.000	0.000	
General Departmental Commitment	R	0.299**	0.135*	0.331**	0.293**	0.683**	0.724**	0.798**	1.000
	P	0.000	0.027	0.000	0.000	0.000	0.000	0.000	0.000

\* $<0.05$ ; \*\* $<0.01$

**The Effect of the Communication Process on the “General Departmental Commitment”:** Regression analysis was found to be statistically significant. It was observed that the explanatory power of the relationship between the level of general departmental commitment and the variables of the general communication process assessment was weak. The level of the general communication process assessment of workers increases the level of general departmental commitment.

**The Effect of the Communication Process Sub-Dimensions on the Dependent Variable of “General Departmental Commitment”:** Regression analysis was found to be



statistically significant in determining the cause and effect relationship between communication quality, attention in communication, openness of communication channels and general departmental commitment. As a determinant of the level of general departmental commitment, it was observed that its relationship (explanatory power) with the variables of communication quality, attention in communication, openness of communication channels was weak. The level of the communication quality of workers increases the level of general departmental commitment. The level of attention in communication of workers does not affect the level of general departmental commitment. The level of the openness of communication channels of workers increases the level of general departmental commitment.

**The Effect of the Communication Process Sub-Dimensions on “Emotional Commitment”:** Regression analysis was found to be statistically significant in determining the cause and effect relationship between communication quality, attention in communication, openness of communication channels and emotional commitment. As a determinant of the level of emotional commitment, it was observed that its relationship (explanatory power) with the variables of communication quality, attention in communication, openness of communication channels was weak. The level of the communication quality and attention in communication of workers does not affect the level of emotional commitment. The level of the openness of communication channels of workers increases the level of emotional commitment.

**The Effect of the Communication Process Sub-Dimensions on the “Continuity Commitment”:** It was found to be insignificant.

**The Effect of the Communication Process Sub-Dimensions on “Normative Commitment”:** Regression analysis was found to be statistically significant in determining the cause and effect relationship between communication quality, attention in communication, openness of communication channels and normative commitment. As a determinant of the level of normative commitment, it was observed that its relationship (explanatory power) with the variables of communication quality, attention in communication, openness of communication channels was weak. The level of the communication quality of workers increases the level of normative commitment. The level of attention in communication of workers does not affect the level of normative commitment. The level of the openness of communication channels of workers increases the level of normative commitment.

**Table 2. Comparison of the Communication Process Assessment According to Descriptive Features** (communication quality, attention in communication, openness of communication channels and general communication process assessment)

	Group	N	Mean	Sd	F	p	Difference
2.1. The mean score of the communication process assessment according to the educational status was not found to be significant	Secondary Education and Lower	58	3.832	0.711	0.967	0.409	
	Associate Degree	130	3.864	0.721			
	Undergraduate Education	58	3.760	0.634			
	Postgraduate Education	21	4.052	0.508			
2.2. The mean score of the communication process assessment according to the duty was not found to be significant	Radiology Specialist	16	3.878	0.686	0.627	0.679	
	Technician	170	3.828	0.666			
	Nurse	14	3.707	0.721			
	Rapporteur	14	4.125	0.685			
	Consulting and Assistant Staff	45	3.881	0.779			
	Head of the Administrative Affairs Department	8	3.831	0.581			
2.3. The mean score of the communication process assessment according to the working time in the organization was not found to be significant	Less than 1 Year	44	3.931	0.877	0.941	0.441	
	Between 1-5 Years	115	3.866	0.655			
	Between 6-10 Years	45	3.713	0.591			
	Between 11-15 Years	33	3.953	0.664			
	16 Years and More	30	3.755	0.648			
2.4.1. The mean score of the communication process assessment according to the working time in occupation was found to be significant in terms of <b>the quality of communication</b>	Less than 1 Year	31	4.129	0.744	2.426	<b>0.048</b>	<b>1&gt;4</b> <b>1&gt;5</b>
	Between 1-5 Years	82	3.854	0.738			
	Between 6-10 Years	54	3.794	0.841			
	Between 11-15 Years	39	3.595	0.728			
	16 Years and More	61	3.715	0.763			
2.4.2. The mean score of the communication process assessment according to the working time in occupation was not found to be significant	Less than 1 Year	31	4.129	0.720	2.097	0.082	
	Between 1-5 Years	82	3.866	0.672			
	Between 6-10 Years	54	3.843	0.716			
	Between 11-15 Years	39	3.664	0.663			
	16 Years and More	61	3.808	0.652			
2.5. The mean score of the communication process assessment according to the educational status on the communication in healthcare was not found to be significant	No, I didn't	66	3.864	0.665	1.437	0.232	
	I participated in organizational training	151	3.863	0.687			
	I received a certificate	25	3.976	0.675			
	I took it as a course at the university	25	3.598	0.732			
2.6. The mean score of the communication process assessment according to the age was not found to be significant	18-25	49	3.886	0.747	0.235	0.791	
	26-40	140	3.822	0.663			
	Above 40	78	3.875	0.696			
2.7. The mean score of the communication process assessment according to the healthcare organization served was not found to be significant	Private hospital	85	3.957	0.643	1.477	0.197	
	State hospital	81	3.809	0.598			
	Training and Research Hospital	54	3.681	0.701			
	University Hospital	20	3.793	0.926			
	Private Imaging Center	20	3.980	0.776			
	Medical Center	7	4.086	0.900			



2.8. The mean score of the communication process assessment according to the gender was not found to be significant	Female	162	3.860	0.705	0.328	0.743
	Male	105	3.832	0.660		
2.9. The mean score of the communication process assessment according to the number of different organizations served was not found to be significant	1-3	208	3.866	0.671	0.772	0.441
	4 and more	59	3.788	0.742		

**The Mean Scores of the Communication Process Assessment According to the “Working Time in the Occupation”:**

As a result of the one-way analysis of variance (ANOVA) performed to determine whether the mean communication quality scores of the workers participating in the study showed a significant difference according to the working time in the occupation, the difference between the group mean scores was statistically significant. A complementary post-hoc analysis was conducted to determine the sources of differences. The communication quality scores of those with less than 1 year of working time in the occupation were found to be higher than the communication quality scores of those with 11-15 years. The communication quality scores of those with less than 1 year of working time in the occupation were found to be higher than those of those with 16 years or more.

As a result of the one-way analysis of variance (ANOVA) performed to determine whether the mean scores of attention in communication, openness of communication channels and general communication assessment of the workers participating in the study showed a significant difference according to the working time in the occupation, the difference between the mean scores of the groups was not statistically significant.

**Table 3. Comparison of Departmental Commitment According to Descriptive Features**  
(emotional commitment, continuity commitment, normative commitment, general departmental commitment)

	Group	N	Mean	Sd	F	p	Difference
3.1. The mean score of departmental commitment according to the educational status was not found to be significant	Secondary Education and Lower	58	3.226	0.563	0.417	0.741	
	Associate Degree	130	3.186	0.584			
	Undergraduate Education	58	3.147	0.541			
	Postgraduate Education	21	3.296	0.675			
3.2. The mean score of departmental commitment according to the duty was not found to be significant	Radiology Specialist	16	3.354	0.671	1.539	0.178	
	Technician	170	3.183	0.547			
	Nurse	14	3.095	0.606			
	Rapporteur	14	3.540	0.587			
	Consulting and Assistant Staff	45	3.122	0.624			
	Head of the Administrative Affairs Department	8	3.111	0.544			
3.3. The mean score of departmental commitment according to the working time in the organization was not found to be significant	Less than 1 Year	44	3.253	0.603	1.932	0.106	
	Between 1-5 Years	115	3.132	0.594			
	Between 6-10 Years	45	3.126	0.559			
	Between 11-15 Years	33	3.423	0.576			
	16 Years and More	30	3.204	0.439			
3.4.1. The mean score of departmental commitment according to the working time in occupation was found to be significant in terms of <b>emotional commitment</b>	Less than 1 Year	31	3.344	0.844	4.392	<b>0.002</b>	1>2 3>2 5>2 5>4
	Between 1-5 Years	82	2.986	0.716			
	Between 6-10 Years	54	3.380	0.734			
	Between 11-15 Years	39	3.158	0.823			
	16 Years and More	61	3.484	0.820			
	Between 1-5 Years	82	2.890	0.769			
	Between 6-10 Years	54	3.025	0.735			
	Between 11-15 Years	39	2.897	0.772			
3.4.2. The mean score of departmental commitment according to the working time in occupation was not found to be significant	Less than 1 Year	31	3.283	0.578	1.649	0.162	
Between 1-5 Years	82	3.061	0.600				
Between 6-10 Years	54	3.262	0.545				
Between 11-15 Years	39	3.246	0.559				
16 Years and More	61	3.237	0.568				
3.5. The mean score of departmental commitment according to the educational status on the communication in healthcare was not found to be significant	No, I didn't	66	3.109	0.578	1.639	0.181	
	I participated in organizational training	151	3.213	0.562			
	I received a certificate	25	3.389	0.597			
	I took it as a course at the university	25	3.120	0.611			
3.6.1. The mean score of departmental commitment according to the age was found to be significant in terms of <b>emotional commitment</b>	18-25	49	3.095	0.795	9.810	<b>0.000</b>	3>1 3>2
	26-40	140	3.118	0.770			
	Above 40	78	3.571	0.753			
3.6.2. The mean score of departmental commitment according to the age was found to be significant in terms of <b>departmental commitment</b>	18-25	49	3.081	0.592	6.404	<b>0.002</b>	3>1 3>2
	26-40	140	3.129	0.576			
	Above 40	78	3.385	0.526			



3.7. The mean score of departmental commitment according to the healthcare organization served was not found to be significant	Private hospital	85	3.233	0.565	0.879	0.496
	State hospital	81	3.153	0.530		
	Training and Research Hospital	54	3.107	0.584		
	University Hospital	20	3.319	0.478		
	Private Imaging Center	20	3.342	0.769		
	Medical Center	7	3.119	0.809		
3.8. The mean score of departmental commitment according to the gender was not found to be significant	Female	162	3.146	0.573	-1.733	0.084
	Male	105	3.270	0.575		
3.9. The mean score of departmental commitment according to the number of different organizations served was not found to be significant	1-3	208	3.199	0.534	0.239	0.839
	4 and more	59	3.179	0.710		

**The Mean Scores of Departmental Commitment According to the “Working Time in the Occupation”:** As a result of the one-way analysis of variance (ANOVA), the difference between the emotional commitment scores was statistically significant. The emotional commitment scores of those with less than 1 year of working time in the occupation were found to be higher than those with 1-5 years. The emotional commitment scores of those with a working time of 6-10 years were found to be higher than those with 1-5 years. The emotional commitment scores of those with a working time of 16 years and more were found to be higher than those with 1-5 years. The emotional commitment scores of those with a working time of 16 years and more were found to be higher than those with 11-15 years.

The difference between the mean scores of continuity commitment, normative commitment, and general departmental commitment was not statistically significant.

**The Mean Scores of Departmental Commitment According to “Age”:** As a result of the one-way analysis of variance (ANOVA), the difference between the Emotional Commitment and General Departmental Commitment scores was statistically significant. The emotional commitment and general departmental commitment scores of those over 40 years of age were found to be higher than those between 18-25 years of age. The emotional commitment and general departmental commitment scores of those over 40 years of age were found to be higher than those between 26-40 years of age. The difference between the mean scores of continuity commitment and general normative commitment was not statistically significant.

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## Conclusion

In this study, the communication processes in the Radiology department, which is a department with intensive communication processes in hospitals and healthcare organizations, and the effects of these processes on departmental commitment were examined. Not only the communication processes of the radiology department workers with patients but also the departmental and organizational communication processes they carry out are important. The communication skills of the department workers as well as their organizational commitment and skills were evaluated. At this point, communication also gains importance in terms of organizational commitment.

267 individuals participated in the study. The participants were distributed as 162 females (60.7%) and 105 males (39.3%). These results show that females constitute the majority among the radiology department workers. According to demographic features, the majority ratios are distributed as follows. It is observed that technicians constitute the majority with 63.7% in the distribution of tasks, the age range of 26-40 with 52.4%, the working time of 1-5 years in the organization with 43.1%, and those with an associate degree constitute the majority with 48.7% in the educational status. The number of different organizations served was found to be 1-3 with 77.9%, the ratio of those who received training on communication in healthcare was 56.6%, and the ratio of those who did not receive training on communication in healthcare was 24.7%, which was quite high. This situation suggests that more organizational communication training should be provided. The preferences of the participants in interpersonal communication were determined as face to face communication with 95.9%.

In the answers to the questions about the devices, the question of used devices was answered as “all” with 65.2%, and this shows that the radiology department workers can work mostly on all devices. Although the question of incorrect examination entries was answered as “no” with 39.0%, it was observed that there was an incorrect examination entry ratio of 28.1%, which should be underestimated. It is understood that entries should be made more carefully. The question about the first person communicated in case of an unknown examination was answered as a responsible technician with 34.5% and as a radiology specialist with 33%. There was also an answer of “searching on Google” with 1%. The question about the problems with the pacs system in the organization was answered as 52.4%, and this situation shows a seriously high ratio.

A striking finding on the data obtained from the workers who participated in the study is that the participants' perceptions of communication quality, attention in communication, openness of communication channels, and general communication process assessment are “extremely high.” On the other hand, another noteworthy issue in the study was that the levels of emotional, continuity and normative commitment were evaluated as “average” in terms of the participants' organizational commitment. In other words, it is observed that the participants are in a state of uncertainty in terms of their organizational commitment.



When the effects of the communication process sub-dimensions on the general departmental commitment are examined, it is observed that the communication quality levels of workers and the openness of the communication channels in the organization increase the levels of the departmental commitment of workers. When the effect of the communication process sub-dimensions on emotional commitment is evaluated, it is observed that increasing the level of the openness of communication channels by themselves increases the level of emotional and normative commitment of workers. According to this, it is of great importance that participants increase their communication skills in the process and especially the openness of communication channels, in order to feel emotional commitment to their organizations.

The communication quality scores of those with less than 1 year of working time in the occupation were found to be higher compared to both groups with a working time of 11-15 years and above 16 years. Because of the fact that these workers are new in the sector, it is assumed that they pay attention to communication because they are inexperienced but have high expectations.

When the general communication process assessment ratios (communication quality, attention in communication, openness of communication channels) were examined, the scores of the workers who participated in the study were found to be high. Considering the reasons for the high scores, it should not be neglected that the communication training and organization training received by the person have an effect. Furthermore, it is thought that there are effects such as the intensity of internal and external audits, performance evaluations of communication and promotions related to it.

The general departmental commitment scores (emotional commitment, continuity commitment, normative commitment) were determined as average. Upon looking at the reasons for the average departmental commitment scores, it is possible to say that workers do not plan to do this in the long term and have different future plans.

When the effects of the communication process on the general departmental commitment were examined, it was found out that its relationship (explanatory power) with the variables of the general communication process assessment was weak. It is observed that the level of the general communication process assessment of workers increases the level of general departmental commitment.

When the effects of the communication process sub-dimensions on the “level of general departmental commitment” were examined, it was determined that its relationship (explanatory power) with the variables of communication quality, attention in communication and openness of communication channels was weak. It was observed that the level of the communication quality of workers increased the level of general departmental commitment, the level of attention in

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communication did not affect the level of general departmental commitment, and the level of the openness of communication channels increased the level of general departmental commitment.

According to the descriptive features of the communication process (according to the educational status, distribution of tasks, working time in the organization, education on communication in healthcare, age, gender, organization and the number of organizations served), the difference between the group mean scores was not statistically significant.

When the mean scores of workers' departmental commitment are evaluated according to their ages, it is observed that the workers aged 40 and older have higher scores in terms of emotional, continuity and normative commitment. Accordingly, these workers are now able to consider organizational commitment in all dimensions as a result of their experiences in both individual life and professional life.

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