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An Investigation into The Occupational Perceptions of Healthcare Professionals: The Covid-19 Pandemic

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Abstract

Psychological needs, uncomfortable when not met, are explained by our expectations of achievement, relationship, autonomy, and dominance. Since work life is an important determinant in meeting directly (or indirectly) the tangible and intangible needs of individuals, work-related experiences are very effective in individuals' occupational perceptions. Also, occupational preferences are based on reasons: conscious selection, environmental pressure, financial security, prestige and social benefit. In order to test this connection (and the sources of the differences), the pandemic period constitutes the justification for the sample design of the study, especially as it includes challenging working conditions for healthcare professionals. Accordingly, the main purpose of the study is to discuss the relationship between the occupational preferences of healthcare professions and their psychological needs, with the determinant of their specific working conditions. Mixed (pluralist) research method is used in the design of the study. While the perceptions of the respondents about the working conditions are determined through the socio-demographic information form and open-ended questions, the occupational preferences inventory and the new psychological needs assessment scale are used to evaluate the occupational perceptions of healthcare professions. The study sample consists of a total of 378 respondents selected from doctors, pharmacists, and nurses. The study points to important findings regarding the connection between the occupational preferences of health professionals and their psychological needs. In addition, occupational groups (doctor, pharmacist, nurse) differ from each other in terms of occupational preferences and working conditions.

Keywords: *Occupational Preference, Psychological Needs, Healthcare Professions, COVID-19.*

Öz

Psikolojik ihtiyaçlar karşılanmadığında rahatsızlık veren, karşılanmasına yönelik motive olduğumuz, başarma, ilişki kurma, özerklik ve güç elde etme gibi beklentilerimiz ile açıklanmaktadır. İş yaşamı, bireylerin direkt ve dolaylı yoldan gerek maddi gerekse manevi ihtiyaçlarını karşılaması bakımından önemli bir belirleyici olduğundan dolayı işle ilgili deneyimler bireylerin mesleki algılarında oldukça etkilidir. Ayrıca, mesleki tercihler alan yazında bilinçli seçim, çevre baskısı, finansal güvenlik, prestij ve sosyal fayda sağlama gibi gerekçelere dayandırmaktadır. Bu bağlantıyı ve farklılıkların kaynaklarını sınamak üzere pandemi dönemi bilhassa sağlık çalışanları için zorlayıcı çalışma koşulları içermesi bakımından çalışmanın örneklem tasarımının gerekçesini oluşturmaktadır. Buna göre sağlık çalışanlarının mesleki tercihleri ile psikolojik ihtiyaçları arasındaki ilişkiyi, özgün çalışma koşullarının belirleyiciliği ile tartışmak çalışmanın temel amacıdır. Çalışmanın tasarımında karma (çoğulcu) araştırma yöntemi kullanılmaktadır. Örneklemde yer alan katılımcıların çalışma koşullarına ilişkin algıları sosyo-demografik bilgi formu ve açık uçlu sorular aracılığıyla belirlenirken, sağlık çalışanlarının mesleki algılarını değerlendirmek için mesleki tercihler envanteri ve yeni psikolojik ihtiyaç değerlendirme ölçeğinden faydalanılmaktadır. Çalışma örneklemi doktorlar, eczacılar ve hemşireler arasından seçilen toplam 378 katılımcıdan oluşmaktadır. Çalışma, sağlık profesyonellerinin mesleki tercihleri ile psikolojik ihtiyaçları arasındaki bağlantıya ilişkin önemli bulgulara işaret etmektedir. Ayrıca meslek grupları (doktor, eczacı, hemşire) meslek tercihleri ve çalışma koşulları açısından birbirinden farklılık göstermektedir.

Anahtar Kelimeler: *Meslek Tercihi, Psikolojik Ihtiyaçlar, Sağlık Çalışanları, COVID-19.*

Introduction

Employees fill almost half their day (sometimes more) with work-related issues, so the profession is not only a means of earning money, but also an element that largely shapes one's view of life and identity. In addition, the perspective of the people who practice that profession also shapes the assumptions of that profession. However, while the choice of occupation is sometimes conscious, some practitioners have to perform the duties the profession subjects them to at random or due to circumstances. For whatever reason, our expectations from the profession are more than just earning money; they include meeting social needs like success, power, building relationships, and autonomy. Studies on the relationship between work and motivation were among the first questions of organizational behavior to be answered, and famous theories offer important data to support this relationship, such as Maslow's Hierarchy of Needs, Herzberg's Motivation/Hygiene Theory, McGregor's X-Y Theories and McClelland's Need for Assessment Theory (see Pardee's 1990 study).

However, it is not as easy as it seems to be highly motivated to do your job in all circumstances, and in fact, the COVID-19 pandemic has brought many difficulties for all employees (and especially for healthcare professionals) and has been highlighted- both in scientific (Sperling, 2020; Sulaiman et al., 2021; Tovmasyan, & Minasyan, 2020; Wolor et al., 2020) and non-scientific publications. Certain motivational activities have come to the fore, as they attempt to demonstrate social awareness. This study is also intended to provide support to the unnamed heroes of the COVID-19 pandemic by elaborating on the current situation and by evaluating the experiences of health professionals at work during this period.

In this respect, it is necessary to consider occupational preference as a critical instrument that both meets individual needs and responds to the expectations of institutions and society. It is crucial to perform the profession that is compatible with one's own personal characteristics and expectations, both in order to avoid undesired individual results, such as stress, burnout, or low performance, and to achieve desired results, like overcoming difficulties, dedication to work, and a high-performance level. At the same time, institutional and social outputs will be affected by these processes.

One of the primary aims of this study is to emphasize that the reasons for choosing the healthcare profession and the psychological needs of the job (which are the less studied concepts in the literature) are important in determining the motivation and coping skills of both employees and institutions. Accordingly, it aims to draw attention to the consideration of these issues when choosing or recruiting professionals in such critical sectors: especially with regard to positive reactions to difficult situations, a consideration of the reasons for choosing the profession based on conscious choice and including provided benefits to society. In addition, the study aims to contribute to determining the psychological needs of the employees and their aspirations of their job experience, particularly in terms of providing suggestions to the relevant institutions on how to support their employees through stressful conditions. This study will also discuss how and why this process reflects the differences in the perception of the profession for the occupation groups (nurse, pharmacist and doctor), all of which represent the health sector professions.

The study consists of the literature review section, which discusses the findings of previous studies in the relevant literature, a statement of the hypotheses, and the method section- where the design of the study, sampling, and measurement tools are explained. It continues with the analysis and findings section where the statistical analyses of the data are summarized, and last, a discussion and conclusion section.

Psychological Needs of the Profession

Need is a cycle that begins with a feeling of inadequacy directed at the person to a certain behavior, and when this need is met, relaxation occurs, as a result (Eysenck, Arnold, & Meili, 1972 cited in Kesici, 2008). As proposed by Murray's (1938) theory of human needs, social needs are generally categorized as achievement, affiliation, autonomy, and dominance; additionally, some of

these social needs focus on measurement (first of all, Steers and Braunstein (1976) manifest needs questionnaire and then Heckert et al., (2000) needs assessment questionnaire). In this study, psychological needs are defined within these dimensions, and in fact, many theorists have contributed to describing basic needs (exp. Maslow 1954; McCelland, 1960). Self-determination theory also explains the connection between motivational factors and the basic psychological needs behind them, defining autonomy, competence, and relatedness as the basic needs of intrinsic motivation (Deci & Ryan, 2000). In addition, extrinsic motivation is defined within three dimensions—external (reward/punishment), introjected (because of negative feelings), and identified (because it is based on the individual's values and consistent with them) (Van den Broeck, 2016).

In addition to research on what psychological needs are, different disciplines study the ways in which human beings attempt to meet them. Findings that exist in the relevant literature demonstrate that the profession itself is a good tool to meet psychological needs. For instance, in Elchardus & Smiths's (2008) study, profession is described as an effective factor in self-realization, individual development, self-recognition and making oneself visible in the social structure. Also, some studies focus on particular professions and psychological needs. For instance, in a study examining healthcare professionals within the scope of basic needs theory, competence emerged as the most important basic need compared to autonomy and relatedness (Bernard et al., 2014). In a three-stage study using a sample of teachers, satisfaction of the need for relatedness was found to be positively associated with positive emotions and engagement (Klassen et al., 2012).

In the scope of motivation theories, psychological needs have also been used by many theorists to determine job motivation and job satisfaction (Dysvik et al., 2013, Deci and Ryan, 2014, Olafsen et al., 2018). Theorists have stated that employees will show superior performance when provided with personal satisfaction, and with tools that are specific elements learned in the developmental process (Deci and Ryan, 2014).

Accordingly, not everyone is motivated to be a leader since power is not a universally important need. Many studies show a high correlation between motivation at work and the degree to which psychological needs are satisfied (Shuck et al.,2015; Olafsen et al., 2018; Kim et al., 2021).

Occupational Preference

In the 1950s, career choice, a concept that many theorists studied, made important contributions to the related literature as "career development theory." In addition to the existence of strengths and weaknesses relative to each other, it is clear that each theory is a source of inspiration for future studies under different conditions. The best known of these theories were classified by Osipow (1968): (1) Roe's personality theory- 1957, (2) Holland's career typology theory- 1959, (3) Ginzberg, Ginsburg, Axelrod, and Herma's Theory- 1951, (4) Psychoanalytic conceptions, (5) Super's developmental self-concept theory -1963, (6) Other personality theories, and (7) Social system theories. While Vroom pointed out the difference between career choice (expectation) and career preference (behavior) in 1964, Mitchell (1974) focused on the relationship between expectation theory, career choice, and employee /job satisfaction. Also, Holland (1997) showed that there is a high correlation between personality and occupational preference in occupations where the job duties fit the individual's interests. Anderson (1974) stated that the existing theories (e.g., Roe, 1957; Holland, 1959) generally demonstrate that occupational choices are made within environmental, psychological, and informational parameters. In addition, the point that most of them agree on is that career choice and even career planning are shaped long before childhood by personal tendencies, role models, or the orientation of family/environment (Ginzberg, 1951; Isaacson, 1967). Research indicates that career preferences are mainly based on economic factors, and, therefore, people's career preferences differ from their real interests (Behymer & Cockriel, 2005; Kniveton, 2004).

In addition, numerous studies support the idea that "fit" is important for the job: supervisor,

organization, and general profession, as it affects job satisfaction and motivation (Kristof-Brown et al. 2005). In parallel, many studies show that person-organization and person-environment fit, and compatibility, are important determinants of both happiness at work and performance (Furnham et al. 1995; Furnham, 2001). Also, vocation and job have been differentiated from each other as "fit" dimensions, and while person-vocation fit is defined as the existence of the skills and needs expected from an occupation, the person-job fit is mostly related to the position at work (Vogel and Feldman, 2009). Therefore, in the literature, occupational preference has been studied with expected job outcomes and moods related to the job, which are frequently discussed in the scope of self-determination theory. For example, in a meta-analysis by Nye et al. (2012), 60 studies and 568 relationships were examined, and it was found that interest and especially fit between individuals and their environment had a consistently high correlation with successful performance in business life. Thus, theoretical studies indicate that the reason for choosing the profession and expectations from the job are critical, with regard to the effort made on the job and in dealing with the challenges of that profession. Therefore, employees who know precisely what is expected by the profession, and in situations where job-person fit is achieved, will exhibit a more stable attitude both in realizing the anticipated gains from the job and in acting with energy and motivation towards the work, and finally, they will be more successful employees.

Psychological Needs and Occupational Preference

Studies frequently focus on occupational preference (similarly, career choice) and psychological needs in samples of adolescents (Exp. Baltacı et al., 2020). However, very few studies have been found in which occupational choice is associated with the psychological needs of working groups. In earlier studies, Menninger (1957) discussed the strong correlations between mental health and work integration (the love of work) in the context of choosing the medical profession. However, the Jones & Gottfried (1966)

study, which attempted to determine the differences between the psychological needs of those who prefer to teach exceptional children and those who prefer to teach in normal classrooms, did not produce statistically strong results. In another study, work needs, work attitudes (internal and external satisfaction, organizational and professional commitment), and professional preferences were compared in a sample of male accountants at different career stages, and significant differences were obtained (Adler & Aranya, 1984). In a similar context, psychological needs were associated with variables such as career commitment (Baluku et al., 2020) and work values (Busque-Carrier et al., 2021).

Perceptions of Working Conditions

The health professions are the sector facing the greatest difficulties in terms of working conditions and which took on the greatest burden during the COVID-19 pandemic. By 2020, the effects of the COVID-19 pandemic on the healthcare professions had been frequently discussed in both national and international literature. Similar studies have focused on the changing routines of healthcare professionals, for example, working in protective clothing, enduring long working hours, and sometimes living in isolation to protect their family/environment. Many healthcare professionals reported that the increase in social distancing by the population at large, living with fear, and taking the precautions this period necessitated seriously affected them, both mentally and psychologically (Ornell et al., 2020; Galbraith et al., 2020). In addition, it has been suggested that precautions taken to increase their psychological capital may have increased their coping skills during this process (Bahar et al., 2020); also, adjustments in sleep and working hours may be effective in increasing their psychological resilience (Bozdağ and Ergün, 2020). Hacimusalar et al. (2020) compared the levels of anxiety and hopelessness of healthcare professionals, both between workgroups in the healthcare sector and with employees in other sectors and point out significant differences. Similarly, Çelmeçe and Menekay (2020) stated that stress, burnout, and anxiety negatively affected their quality of life in

the pandemic. However, there has not yet been a comprehensive evaluation examining how perceptions of the professions were affected by the sacrifices made in their private lives due to the pandemic, particularly when the performance of their job put them at risk in terms of health.

This study examines the health sector professions using the following framework: (1) the reason for choosing the profession, (2) the psychological needs and (3) working conditions, to explain the general situation of an employee who must work with serious risks presented by extraordinary situations, such as a pandemic. Using theoretical background as a basis, it will examine four basic hypotheses about the occupational perceptions of health sector professionals during the Covid-19 pandemic.

H1: There is a statistically significant relationship between the occupational preference inventory sub-dimensions of health sector workers and their scores on the new psychological needs assessment scale sub-dimensions.

H2: There is a statistically significant difference in the scores of nurses, pharmacists, and doctors in the occupational preference inventory sub-dimensions.

H3: There is a statistically significant difference in the scores of nurses, pharmacists, and doctors in the new psychological needs assessment scale sub-dimensions.

H4: There is a statistically significant difference in terms of working conditions for nurses, pharmacists, and doctors.

Method

The Research Design and Sample:

The questionnaire form, using a mixed research design, was prepared in order to obtain data to reveal the occupational perceptions of health sector employees using the scales and open-ended questions explained below. An informed consent form was included. Istanbul Medipol University Social Sciences Scientific Research Ethics Committee approved the study's ethics committee report, decision number 102, dated 07.10.2021.

In determining the research sample, respondents were chosen by the guided sampling method to represent employees in the health sector. Accordingly, the most typical segment representing the universe is included in the sample (Sencer & Sencer, 1978). Professional groups of doctors, nurses and pharmacists were chosen as typical examples of the universe of health sector employees who had experienced the pandemic under similar conditions. In addition, to strengthen the representation, the sample is limited to the health sector employees who have at least one year of experience and are between the ages of 24-65. It was decided to include the relevant professions in the sample at similar rates and to randomly select these people within the framework of accessibility.

The questionnaire was sent to the HR departments of hospitals in and around Istanbul to obtain permission, and the respondents were contacted by forms hand-delivered to the hospitals, health centers and pharmacies. Only the respondents who volunteered for the study filled out the questionnaire, and the data collection period was completed in about two months (December-January 2021). Three hundred seventy-eight employees in healthcare professions working in hospitals/pharmacies/health centers in and around Istanbul formed the sample. Because each category was represented by 30 samples for multiple analyses (Sekaran 2003) and the main sample population included a large number of employees (Krejcie & Morgan, 1970), a theoretically sufficient level of representation was reached.

Measurement

The institutional Personal Information and Perceptions on Working Conditions: The first part of the questionnaire is a personal information form (SDIF) and includes questions on demographics (age, gender, marital status, occupation, salary range) and experience with COVID-19, as well as open-ended questions. The purpose of including the relevant questions in the questionnaire was to obtain general information about financial gain, the difficulties caused by the pandemic, and

society's perception of the profession, which is thought to have an impact on the working conditions of healthcare professionals. The SDIF and open-ended questions were prepared by the researcher. In this section, the question "How is your workday in general?" is adapted from the study by Akduman & Dündar (2017).

The second part includes scales for evaluating occupational perceptions. Permissions were obtained via e-mail from the researchers who developed the relevant scales, and the development of the scale studies is summarized below with information about the number of variables, including dimensions, validity, and reliability scores for the scales.

Occupational Preference Inventory: Original questionnaire on professional preferences aimed at teachers was created by Övet (2006). In the first stage, an open-ended question paper was distributed to the students studying in the teaching departments, asking why they preferred the teaching profession, by randomly forming groups of 15 students from each department. By evaluating the findings, a 31-question form was created. In the second stage, questionnaire form was applied. The sample used was for 262 pre-service teachers of first and fourth grades. As a result of the analyzes made in the related study, the Cronbach's alpha coefficient for the total number of items was calculated at = 0.8640, and Övet (2006) stated in his thesis that the sample represented 20 items and 4 dimensions (TEV=61.187, factor loading >0.50) in explanatory factor analysis. The dimensions obtained in the study were named as consciousness, assurance, ideal and influence.

Scale Adaptation: The scale prepared for the teachers in the related study (Övet, 2016) was adapted by the researcher as a scale for general employees. Necessary permissions were obtained from the researcher for adaptation, and the final version of the scale shared with him and the thesis advisor. During the adaptation phase, input was sought from two academicians who are experts in the field; questions that needed to be rearranged for general employees were determined, suggestions regarding the general aim of the study were made, and items 7, 8, 15, 21, 25 and 31 were edited, while item 30 was removed from the scale,

as the statement, "I love children very much," is not a suitable expression for every profession.

In the pilot study, 20 academicians were asked to respond to the questions; the final occupational preference inventory consisted of 30 questions and five dimensions. The dimensions named as: (1) Conscious selection, (2) Environmental pressure, (3) Financial security, (4) Prestige & Social Benefit, and (5) Necessity (no choice).

Needs Assessment Questionnaire (NAQ): This scale, which was developed by Heckert et al. (2000), and consists of 20 questions and four dimensions (namely, achievement-affiliation-autonomy-dominance), is called the "New Psychological Needs Assessment Scale" in Turkish (Kesici, 2008). For the validity and reliability of the original scale, first, Cronbach's alpha coefficients of the dimensions were calculated (achievement: 0.81, affiliation: 0.77, autonomy: 0.60, and dominance: 0.77), then CFA analysis and fit indices $\chi2=333.03$ (df=165, p=0. 01), AGFI=0.82 and GFI=0.86. In the next step, the criterion-related validity of the NAQ, the PRF test of true-false type measuring personal preferences, and the Habits and Preferences Questionnaire were used, and significant correlations were found with the dimensions. Test-retest reliability of the scale was checked and found significant relationship among them [success (r= .87, p<.01), affiliation (r= .47, p<.01), autonomy (r= .66, p<.001) and dominance (r= .67, p<.01) dimensions found] (cited in Kesici, 2008).

Scale Adaptation: Kesici (2008) adapted the scale to the Turkish environment with student groups in the faculty of education. The four stages included are language validity, construct validity, criterion-related validity, and test-retest reliability. Fit index values [$\chi2=5636,877$ (sd=170, p<0.01), ($\chi2$/sd) =3.15, RMSEA=0.10, RMS=0.11, GFI=0.76, and AGFI=0.70] provided results close to the original scale, Cronbach's alpha coefficients (achievement was calculated as 0.77, affiliation 0.62, autonomy 0.72, and dominance sub-dimension 0.77, holistically calculated as 0.80). The dimensions were represented in the relevant sample as in the original and criterion-related validity and test-retest reliability gave significant results.

For the analysis of the data, hypotheses were tested with the relationship and difference tests using the SPSS Statistics 25 packaged program. In order to show the occupational perceptions of healthcare professionals, first of all, the data obtained through descriptive statistics were interpreted, and the above-mentioned hypotheses were tested with Correlation, MANOVA and Logistic Regression analyses. The findings are summarized in the next section.

Analysis and Findings

Demographic Properties: To summarize the population, information regarding the SDIF is as follows: Respondents were slightly younger than the general population (the mean age calculated was 33.7) and females were dominant (with 33.6% male, 65.7% female and 0.8% not specifying gender). In addition, 46.9% of the sample were single, 52.1% were married and 0.6% were in the divorced/widowed category. When evaluated in terms of education levels, 14% were graduates with master's / doctorate degrees, 68.7% of the respondents held undergraduate degrees, and 16.5% of the sample had graduated from vocational school or high school.

Perceptions of Working Conditions: The open-ended questions, which were designed to evaluate working conditions, utilized content analysis. First of all, the theme and coding of the data was entered into Excel, then descriptive analyses were done in SPSS. The SDIF questions were converted to variables by category; the data generated for the dimensions below represent the perceptions of healthcare professionals on working conditions.

1.   Perception of financial gain: Salary range and "Do you find your financial gain from this job sufficient for your effort?"

First, income was classified into three categories; up to twice the minimum wage was defined as low income (40%), two to three times the minimum wage was ranked as medium level income (34.9%) and more than three times the minimum wage was classified high-level income (22%). The related open-ended question (shortened to income satisfaction) was also coded in relation to satisfaction level: 58.7% of

respondents reported they were dissatisfied, 35.1% stated that they were fully satisfied and 6.2% of respondents replied they were partially satisfied (based on the working conditions and compared to others who found their income acceptable).

2.   Perception of the social importance of the profession: "How would you evaluate the importance of the profession in society (opinions of other people regarding this profession)?"

Respondents coded the profession as "being respected" (or not); 46.1% judged their occupation as respected, 3.3% implied it had become respected with the pandemic and 50.6% stated it was not respected.

3.   Perception of risks to health: Questions related to the COVID-19 experience

Questions related to COVID-19 examined experiences related to health risk. The vast majority (90.5%) had no chronic disease. The respondents living alone or with at least one adult constituted 37.4% of the sample, the rest lived with individuals from the risk group (elderly, chronically ill, children). In addition, 56.3% of the respondents had personal experience with COVID-19 (in other words, either they or someone in their household was infected by COVID-19). When all variables were evaluated together, those with at least one category of COVID risk /experience constituted 82.5% of the respondents.

4.   Perception of the difficulty of the profession: "How is your workday in general?" and "How does it feel to do this job during the pandemic?"

When asked about their workday experience (How is your workday in general?), 42.8% stated that they came to their jobs willingly, while the rest evaluated their feelings negatively. Experiences working in a pandemic (How does it feel to do this job during the pandemic?) were also categorized as positive or negative emotion. Accordingly, 10.1% implied it was manageable, 24% of respondents said that it was a question of honor, and some said they felt like a hero; the rest (65.9%) found it difficult, stressful, and uncomfortable.

Validity, Reliability and Normality of the Scales

SPSS factor analysis was performed with Principal Component Analysis via Varimax rotation to obtain the factor dimensions of the variables included in the study. The Occupational Preference variable was represented by five factors, as in the original, with factor loadings in the range of 0.714- 0.517. Total explained variance 60.084, KMO=0.877 (df= 231, p=0.00). The Needs Assessment variable was represented by three factors, unlike the original, and the affiliation dimension was not used. Factor loads varied between 0.819 - 0.583. Total explained variance 59.040, KMO=0.815 (df= 55, p=0.00). Accordingly, factors of the scales were accepted as valid.

When the Cronbach alpha coefficients calculated for the measurement of reliability are examined, coefficients vary between 0.858-0.663 (indicated in brackets in Table 1); the coefficients of some dimensions are below 0.70, but in many studies in social sciences such a low rate is accepted (eg. Taber, 2018). Therefore, all the factors of the questionnaires were accepted as reliable.

Before deciding on hypothesis tests to determine whether the sample showed a normal distribution, the Q-Q plot method, which is recommended by theorists like Tabachnick and Fidell (2013), was used in cases where the sample was large. The graphs showed normal distribution for all variables.

Hypotheses Testing

Correlation Analysis

For the first hypothesis, correlation analysis was run, and findings are summarized in Table 1 as follows. Comparing the scale dimensions with each other, conscious selection and the prestige and social benefit dimensions have significant positive correlation with achievement and autonomy; environmental pressure is associated with autonomy and dominance. While financial security has no significant correlation with any dimensions of needs assessment, necessity (no choice) has a negative correlation with achievement. The dimensions with the highest correlation to each other are conscious selection

and prestige and social benefit (r=0.718**) and autonomy and dominance (r=0.506**), and the highest negative correlation is between conscious selection and necessity (-0.471**). In the scope of this information, H1 is supported.

Table 1. Description and Correlation Scores of Variables

Variables	Mean / Std. Dev.	1	2	3	4	5	6	7	8
(1) Conscious selection	3.5978 (0.91527)	1(0.858)							
(2) Environmental pressure	2.1867 (1.02934)	0.066	1(0.782)						
(3) Necessity (no choice)	1.8083 (0.84090)	-0.471**	0.154**	1(0.663)					
(4) Financial security	3.2406 (0.89479)	0.031	0.131*	0.133*	1(0.673)				
(5) Prestige & Social Benefit	3.6638 (0.89952)	0.718**	0.088	-0.327**	0.074	1(0.776)			
(6) Achievement	4.4969 (0.47571)	0.238**	0.022	-0.253**	0.060	0.304**	1(0.625)		
(7) Autonomy	3.8072 (0.78638)	-0.051	0.108*	0.045	0.083	0.058	0.229**	1(0.744)	
(8) Dominance	3.6473 (0.86320)	0.172**	0.148**	-0.019	0.027	0.264**	0.358**	0.506**	1(0.756)

**p<0.05, *p<0.01, (Cronbach alpha), Std. Dev.= Standard Deviation

MANOVA Analysis

In order to test hypotheses H2 and H3, a MANOVA analysis was conducted. According to the assumptions of the MANOVA, the sample is random; dependent variables have normal distribution (as a source to multivariate normality); independent variables are categorical and dependents are scale variables; and there is no multicollinearity (as seen in Table 1, correlation among dependent variables is below 0.90).

In the analyses performed on the first model (H2, occupational preference) the conditions of homogeneity of variance—Levene's Test p>0.05—and equality of variance-covariance—Box's test p>0.05— could not be met. Box's values were M= 98.778, F= 3.216, p=0.00, and for some factors Levene's test p values are below 0.005 (conscious selection p= 0.001, necessity (no choice) p=0.00). For the second model (H3, new psychological needs), Box's M= 19.292, F= 1.586, p=0.088, and

Levene's test p value for the factors are above 0.05 except for the achievement factor with a p value of 0.042 <0.05. Various sources state that both the criticism of Levene's test as an indicator (Huberty and Morris, 1989) and the sensitivity of Box's test of sample size and score differences (Warner, 2008) can be misleading. However, since the homogeneity of variance could not be achieved and the groups were not equal, Pillai's Trace was preferred as the MANOVA test statistic. Since the difference depends on more than one variable, it is the strongest test for this sample (Tabachnick and Fidell, 2007).

Although MANOVA models are analyzed separately, they are summarized in a single table (Table 2). The size effect of the first model was calculated as 12.9%, and the independent variables explain the change in the dependent variable by 12.9%. The relevant model is meaningful (Bonferroni correction is done, all significant cases p values are 0.00). On the other hand, in the second model the size effect and the model are statistically insignificant. All dimensions differ according to profession, except for environmental pressure in the occupational preference dimensions; in this case our H2 null hypothesis was rejected. However, the dimensions of new psychological needs do not indicate a statistically significant difference and the H3 null hypothesis was not rejected.

Table 2. MANOVA Scores

Source: Profession Dependent Variables	Type III Sum of Squares	df	Mean Square	F *sig.	Partial Eta
(1) Conscious selection	40.326	2	20.163	27.699**	0.134
(2) Environmental pressure	0.203	2	0.102	0.096	0.001
(3) Necessity (no choice)	26.511	2	13.255	21.089**	0.105
(4) Financial security	19.346	2	9.673	12.770**	0.066
(5) Prestige & Social Benefit	13.888	2	6.944	9.007**	0.048
Pillai's Trace: 0.257		F: 10.521		p: 0.00 / Partial Eta: 0.129	
(6) Achievement	0.232	2	0.116	0.511	0.003
(7) Autonomy	0.083	2	0.042	0.066	0.000
(8) Dominance	3.199	2	1.599	2.159	0.012
Pillai's Trace: 0.017		F: 1.058		p: 0.386 / Partial Eta: 0.009	

**p<0.05, *p<0.01

In addition, to see the source of differences between groups, the mean values (shown in brackets), mean differences and standard errors

are summarized, and professions are coded as Dr. (1) Doctor, Phr. (2) Pharmacist and Nr. (3) Nurse in Table 3. Environmental pressure is not included in the table because it does not have a statistically significant p value. None of the three occupational groups differ from each other in this respect. Conscious selection indicates that there is a significant and negative difference for nurses when compared to both doctors and pharmacists. Nurses show a positive and significant difference from the other groups with regard to necessity. In terms of financial security, pharmacists differ from the others. However, doctors have the highest percentage of positive and significant scores in the financial security dimension. In the prestige and social benefit dimension, nurses report a statistically significant negative difference from the other two groups.

Table 3. Comparisons of Occupational Preferences

Dependent Variable	(I) Profession	(J) Profession	Mean Difference (I-J)	Std. Error
Conscious selection	Dr. (3.845)	2	-0.118	0.127
		3	0.632**	0.099
	Phr. (3.963)	1	0.118	0.127
		3	0.749**	0.125
	Nr. (3.213)	1	-0.632**	0.099
		2	-0.749**	0.125
Necessity (no choice)	Dr. (1.523)	2	-0.145	0.118
		3	-0.584**	0.092
	Phr. (1.668)	1	0.145	0.118
		3	-0.439**	0.116
	Nr. (2.107)	1	0.584**	0.092
		2	0.439**	0.116
Financial security	Dr. (3.436)	2	0.653**	0.129
		3	0.204*	0.101
	Phr. (2.784)	1	-0.653**	0.129
		3	-0.449**	0.127
	Nr. (3.232)	1	-0.204*	0.101
		2	0.449**	0.127
Prestige & Social Benefit	Dr. (3.787)	2	-0.153	0.130
		3	0.331*	0.102
	Phr. (3.940)	1	0.153	0.130
		3	0.484**	0.129
	Nr. (3.456)	1	-0.331*	0.102
		2	-0.484**	0.129

**p<0.05, *p<0.01

Binary Logistic Regression: H4 dependent variables examine the perceptions of working conditions and consist of a set of open-ended and categorical questions. Because of the large number of question groups for evaluating working conditions, the questions (explained in detail in the analysis and findings section) were assigned

binary categories for the analyses in order to make the evaluation understandable. Within the related hypothesis, in Binary Logistic regression, six different models were established according to occupational groups for six dependent variables, and the summary table is given below. Binary logistic regression assumptions focus on multicollinearity and outliers. To check for these assumptions, leverage values were checked, as well as correlation coefficients. For each model, the leverage values are presented in the columns (COO_1, LEV_1, DFBO_1, ZRE_1); all are within the acceptable limits. In Table 4, where all models are summarized together (based on the Chi-square p values), all models are significant. To examine this in detail, the scores relating to the perceptions of working conditions according to occupational groups are summarized as follows.

Table 4. Binary Logistic Regression Scores

Variable	B coefficient	SD	Lower-Upper	Odds Ratio	P value
Constant	-1.500	0.205		0.223	0.000
Doctor	3.389	0.326	15.650-56.121	29.636	0.000
Pharmacist	4.606	0.625	29.419-340.698	100.115	0.000

Dep. Salary Range (1-low / 2- medium or high)
X^2 : 213.726, p= 0.00, df=2 / Cox & Snell R^2= 0.442, Nagelkerke R^2= 0.596 / Overall % = 86.3

Variable	B coefficient	SD	Lower-Upper	Odds Ratio	P value
Constant	-1.564	0.212		0.209	0.000
Doctor	1.690	0.270	3.193- 9.199	5.420	0.000
Pharmacist	2.460	0.339	6.018- 22.766	11.706	0.000

Dep. Income Satisfaction (1-no / 2- yes)
X^2 : 74.469, p= 0.00, df=2 / Cox & Snell R^2= 0.183, Nagelkerke R^2= 0.247 / Overall % = 69

Variable	B coefficient	SD	Lower-Upper	Odds Ratio	P value
Constant	0.476	0.166		1.610	0.004
Doctor	-0.696	0.239	0.312- 0.796	0.498	0.004
Pharmacist	-0.979	0.299	0.209- 0.674	0.376	0.001

Dep. Social Importance (1- respected / 2- not respected)
X^2 : 14.327, p= 0.01, df=2 / Cox & Snell R^2= 0.039, Nagelkerke R^2= 0.052 / Overall % = 59.4

Variable	B coefficient	SD	Lower-Upper	Odds Ratio	P value
Constant	1.175	0.186		3.237	0.000
Doctor	0.674	0.304	1.081- 3.559	1.962	0.027
Pharmacist	0.873	0.419	1.053- 5.443	2.394	0.037

Dep. Risk to Health (0- no chronic illness + no at-risk household + no COVID experience / 1- one of them is yes)
X^2 : 7.464, p= 0.024, df=2 / Cox & Snell R^2= 0.020, Nagelkerke R^2= 0.032 / Overall % = 82.5

Variable	B coefficient	SD	Lower-Upper	Odds Ratio	P value
Constant	-0.693	0.168		0.500	0.000
Doctor	-0.516	0.236	0.376- 0.948	0.597	0.029
Pharmacist	-1.039	0.295	0.198- 0.631	0.354	0.000

Dep. Workday experience (1- positive / 2- negative)
X^2 : 7.464, p= 0.024, df=2 / Cox & Snell R^2= 0.020, Nagelkerke R^2= 0.032 / Overall % = 82.5

Variable	B coefficient	SD	Lower-Upper	Odds Ratio	P value
Constant	0.156	0.162		1.169	0.334
Doctor	1.128	0.259	1.859- 5.139	3.091	0.000
Pharmacist	0.537	0.302	0.946- 3.094	1.711	0.076

Dep. Experience working in pandemic (1- positive / 2- negative)
X^2 : 20.062, p= 0.00, df=2 / Cox & Snell R^2= 0.053, Nagelkerke R^2= 0.074 / Overall % = 65.8

The logistic regression models summarized above show that almost all p values are significant for all variables (except "experience working in a pandemic" for nurses and pharmacists). In other words, occupational groups differ in terms of their perception of working conditions, so H4 is accepted at this stage. Model 1 analyzes perception of financial gain (salary range) and Model 2, income satisfaction. The odds ratio in Model 1 shows that doctors and pharmacists enjoy a higher salary range than nurses, especially the pharmacists. While income satisfaction in Model 2 is highest with pharmacists, both doctors and pharmacists differ from nurses in this model as well. Perception of the social importance of the profession is evaluated in Model 3. The perception of their profession's prestige differs statistically between pharmacists (albeit with a higher rate) and doctors, and the odds ratio shows that nurses feel that they are less respected. In Model 4, the perception of risk to health was calculated as a result of evaluating all situations together in the table related to COVID-19. Nurses, who are the reference category, have a higher odds ratio than the others, and pharmacists and doctors, respectively, differ significantly with a lower coefficient. Finally, the last evaluation category, the perception of the profession's difficulty, was evaluated using Model 5 and Model 6. Although pharmacists were the least likely to express negative feelings about the "workday experiences," the odds ratios of doctors and nurses were also low. The p value differs only for doctors, who expressed negative emotions for the variable "experience of working in a pandemic;" for others the difference is statistically insignificant.

Discussion

As explained above, the main purpose of this study is to reveal the difficulties faced by healthcare professionals from different occupational groups during the COVID-19 pandemic, as well as aspects of their occupational perceptions, for which the analysis included the reason for choosing their profession, their psychological needs for the job and their working conditions.

Occupational preferences are mostly based on monetary factors- according to previous literature

(exp. Behymer & Cockriel, 2005). However, the general averages indicate that the majority of the respondents made their choice of profession consciously (mean= 3.5978) and with the aim of obtaining prestige or social benefit (3.6638). The least important reason for choosing a profession was necessity (mean= 1.8083). Besides, the strongest psychological need expressed by the respondents was achievement (mean= 4.4969). Findings are parallel with the similar studies that defined competence as the most important need for healthcare professionals (Bernard et al., 2014). Since the other dimensions had mean values above 3.5, it was clear that psychological needs received high scores from respondents. According to Chen et al., (2015), when safety satisfaction increase, the desire for psychological needs decrease. Taken from the opposite, the finding can justify the high psychological needs for healthcare professions in environmental or work-related conditions that would be considered risky. In addition, while conscious selection and prestige or social benefit appear as interrelated reasons, necessity has a negative correlation. In the psychological needs scale, the affiliation dimension did not occur within the scope of the study; autonomy and dominance are highly correlated with each other. When the findings are examined, they are seen as meaningful justifications for those working in such a critical field. When comparing the groups by profession, doctors and pharmacists have chosen their profession for prestige or social benefit, while nurses have made their choice primarily because of necessity. Doctors (at a higher rate) and nurses also mentioned the monetary angle. In terms of environmental factors, there is no difference based on occupation. Nor is there any difference in psychological needs by profession.

Although there was no study directly supporting this relationship, in parallel with the indirect studies summarized in the literature (one of leading study; Bohn,1966), the relationship between the reason for choosing the profession (occupational preference inventory) and the psychological needs for the job (new psychological needs assessment scale) is significant. Analysis of the autonomy and dominance variables, which are related dimensions, show a relationship to environmental pressure in the choice of occupation. Conscious selection and prestige or social benefit are positively related to achievement and dominance; necessity is negatively related to achievement; and financial security is not related to psychological needs. However, from different perspectives, studies indicate that financial security is found to be an indirect antecedent for psychological needs (Howell, Kurai & Tam, 2013). Still, the findings are also meaningful in a more general context. We can conclude that the preferences of the respondents towards choice of occupation are decided consciously, as these occupations tend to bring prestige - and other benefits. Respondents are also aware of associating their psychological needs with their occupation.

Some of the variables were predicted to determine perceptions of working conditions; they are also discussed within the scope of the study in order to present a holistic perspective and to evaluate the general situation of health sector workers, especially during the Coronavirus-19 pandemic. These variables include information about the perception of financial gain, the perception of the social importance of the profession, the perception of risks to health, and the perception of difficulties encountered in the profession. Perceptions of working conditions were defined both by general descriptive statistics and associated with occupational groups in the relevant hypotheses.

While less than half (40%) of the respondents reported low income, 58.7% expressed dissatisfaction with their level of income in the open-ended question asking them to compare their effort with their income. Nearly half of the respondents (49.4%) stated that their profession commands respect, while the rest stated that they suffer from society's point of view, and this situation demotivates them. In the evaluation of health risk, we see that the majority of the respondents had negative experiences (82.5%). Difficulties faced in the profession had parallel results based on both open-ended questions. In the two questions assessing emotional difficulties, more than half of the respondents expressed negative feelings (experiences of the workday, 52.7%, experience working in a pandemic 65.9%).

The results show a fifty-fifty distribution in the areas of work-related perceptions, except for health risk. Occupational differences are important to understand the full extent of the situation. To summarize briefly, in the area of financial gain, doctors and pharmacists demonstrated medium and high salary ranges and satisfaction with this level of income, and the opposite for nurses. Nurses also had the most negative responses regarding the social perception of their profession, while the other groups did not think that society lacked respect for their profession. All occupational groups differ from each other in terms of COVID risk: nurses represent the group at highest risk. Pharmacists had the fewest negative emotions regarding the general workday. Doctors perceived the most difficulty in working during a pandemic, while the others did not show a significant difference. All these findings are consistent with our predictions for occupational perceptions by the professions. It is probable that the underlying reason for the negative reactions to be lower than expected is because practitioners had chosen their professions consciously and/or because these professions are socially beneficial and prestigious (to a large extent). In addition, it is likely that achievement was the main motivation in all three occupational groups. Based on the findings, it appears that professional differences largely determine working conditions, and that is one of the reasons for experiencing the COVID process differently.

Conclusion, Recommendation and Limitations

Based on the above, it is evident that the reason for choosing a profession should be taken into account in career selection and recruitment processes, and it is an important variable in terms of motivation and the capacity to cope with difficulties. In addition, the workplace is an area where, rather than just earning money, psychological needs should be met, and the findings of this study support this. For this reason, it is not sufficient for employees to focus only on financial returns or for those who are in decision-making positions in the workplace to rely on financial instruments to motivate employees. Especially when economic conditions do not allow employees to be fully satisfied financially, or when working conditions require risks to health or employees to sacrifice their private life, the employee must have a reason to continue working, and the employer needs a tool to support productivity. And this is primarily related to psychological resources. In this way, as the respondents stated, the situation can become one where they can continue to exert effort and feel like a "hero."

In addition, the effect of the segment of society that receives the services, which we can term the third party, should not be ignored. What most demotivated the respondents was the perception of their work as "worthless" by others and the lack of respect they suffered, rather than the financial gain or health risk.

More studies are needed on these variables. By taking into account the antecedent effect of the variables on the employees at the organizational level, effects on the employee and for the organization can be modeled. In addition, occupational preference inventories should be considered together with the relevant theories, and comprehensive studies on occupational preference should continue for different professions. The determination of psychological needs and their relationship to motivation are additional issues that need to be studied using models that can be created in the workflow. Psychological needs can be addressed through comparative studies with different occupational groups. On the other hand, criteria should be developed for the issues that need to be evaluated for working conditions and a homogeneous measurement tool should be developed. Because uncertainty is an inevitable part of today's business world, providing an effective and productive working environment under all circumstances will continue to be a critical element for both small and large enterprises.

Finally, with regard to the adequacy of the scales used in this study, the ability to correctly represent the responses of the respondents in the sample, our assumptions about the ability of the individuals to self-evaluate, and the methods and hypotheses used constitute the main limitations of the study.

References

Adler, S., & Aranya, N. (1984). A comparison of the work needs, attitudes, and preferences of professional accountants at different career stages. *Journal of Vocational Behavior, 25*(1), 45-57. https://doi.org/10.1016/0001-8791%2884%2990035-6.

Akduman, G., & Dündar, G. İ. (2017). Çalışan mutluluğunun işe ilişkin duyuşsal iyilik algısı ile ilişkisi ve kuşaklar arasındaki farklılıkların incelenmesi. *Nişantaşı Üniversitesi Sosyal Bilimler Dergisi, 5*(2), 29-49.

Anderson, F. B. (1974). *An analysis of relationships between variables in the vocational choice process of educable mentally retarded work-study students*. The University of Iowa ProQuest Dissertations Publishing. 7421866.

Baltacı, U. B., Öztemel, K., & Traş, Z. (2020). Investigation of the relationship between adolescents' career indecision, and social support perception and basic psychological needs. *International Education Studies, 13*(10), 113-123.https://doi.org/10.5539/ies.v13n10p113.

Baluku, M. M., Balikoowa, R., Bantu, E., & Otto, K. (2020). Applying self-determination theory to explaining differences in career commitment between self-employed and salaried employees: The role of basic psychological needs. *Journal of Entrepreneurship in Emerging Economies, 12*(5), 93-619. https://doi.org/10.1108/JEEE-05-2019-0051.

Behymer, J., & Cockriel, I. W. (1988). Career choice conflict. *Journal of Career Development, 15*(2), 134-140. https://doi.org/10.1177/089484538801500206.

Bernard, D., Martin, J. J., & Kulik, N. (2014). Self-determination theory and well-being in the health care profession. *Journal of Applied Biobehavioral Research, 19*(3), 157-170. http://dx.doi.org/10.1111/jabr.12023.

Bohn Jr, M. J. (1966). Psychological needs related to vocational personality types. *Journal of Counseling Psychology, 13*(3), 306.

Bozdağ, F., & Ergün, N. (2020). Psychological resilience of healthcare professionals during COVID-19 pandemic. *Psychological Reports, 124*(6), 2567–2586. https://doi.org/10.1177/0033294120965477.

Busque-Carrier, M., Ratelle, C. F., & Le Corff, Y. (2021). Work values and job satisfaction: The mediating role of basic psychological needs at work. *Journal of Career Development,0*(0) 1–16.https://doi.org/10.1177/08948453211043878.

Chen, B., Van Assche, J., Vansteenkiste, M., Soenens, B., & Beyers, W. (2015). Does psychological need satisfaction matter when environmental or financial safety are at risk?. *Journal of Happiness Studies, 16*(3), 745-766. https://doi.org/10.1007/S10902-014-9532-5.

Çelmeçe, N., & Menekay, M. (2020). The effect of stress, anxiety and burnout levels of healthcare professionals caring for COVID-19 patients on their quality of life. *Frontiers in Psychology, 11*, 1-7. https://doi.org/10.3389/fpsyg.2020.597624.

Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227-268. http://dx.doi.org/10.1207/S15327965PLI1104_01.

Deci, E. L., & Ryan, R. M. (2014). The importance of universal psychological needs for understanding motivation in the workplace. In Nathan, P.E. (Ed.). *Oxford handbook of work engagement, motivation and self-determination theory*. (p.13-32). Oxford. https://doi.org/10.1093/oxfordhb/9780199794911.013.003.

Dysvik, A., Kuvaas, B., & Gagné, M. (2013). An investigation of the unique, synergistic and balanced relationships between basic psychological needs and intrinsic motivation. *Journal of Applied Social Psychology, 43*(5), 1050-1064. https://doi.org/10.1111/jasp.12068.

Elchardus, M. and Smits, W. (2008). The vanishing flexible: Ambition, self-realization and flexibility in the career perspectives of young Belgian adults. *Work, Employment and Society, 22*(2), 243-262.https://doi.org/10.1177/0950017008089103.

Furnham, A. (2001). Vocational preference and P–O fit: Reflections on Holland's theory of

vocational choice. *Applied Psychology, 50*(1), 5-29. https://doi.org/10.1111/1464-0597.00046.

Furnham, A., Toop, A., Lewis, C., & Fisher, A. (1995). PE fit and job satisfaction: A failure to support Holland's theory in three British samples. *Personality and individual differences, 19*(5), 677-690. https://doi.org/10.1016/0191-8869%2895%2900091-J .

Ginzberg, E., Ginsberg, S. W., Axelrad, S., & Herma, J. L. (1951). *Occupational choice: an approach to a general theory*. Columbia University Press. https://doi.org/10.1086/257129.

Hacimusalar, Y., Kahve, A. C., Yasar, A. B., & Aydin, M. S. (2020). Anxiety and hopelessness levels in COVID-19 pandemic: A comparative study of healthcare professionals and other community sample in Turkey. *Journal of psychiatric research, 129,* 181-188. https://doi.org/10.1016/j.jpsychires.2020.07.024.

Heckert, T. M., Cuneio, G., Hannah, A. P., Adams, P. J., Droste, H. E., Mueller, M. A., & Roberts, L. L. (2000). Creation of a new needs assessment questionnaire. *Journal of Social Behavior and Personality, 15*(1), 121. https://doi.org/10.1037/e413782005-409.

Holland, J. L. (1959). A theory of vocational choice. *Journal of Counseling Psychology, 6,* 35-45. https://www.doi.org/10.1037/H0040767.

Howell, R. T., Kurai, M., & Tam, L. (2013). Money buys financial security and psychological need satisfaction: Testing need theory in affluence. *Social Indicators Research, 110*(1), 17-29. https://doi.org/10.1007/S11205-010-9774-5.

Hubert, C., & Morris, J. (1989). Multivariate versus multiple univariate analysis. *Psychological Bulletin, 105,* 302-308. https://doi.org/10.1037/0033-2909.105.2.302.

Jones, R. L., & Gottfried, N. W. (1966). Psychological needs and preferences for teaching exceptional children. *Exceptional Children, 32*(5), 313-324. https://doi.org/10.1177/001440296603200505.

Kesici, Ş. (2008). Yeni psikolojik ihtiyaç değerlendirme ölçeğinin türkçe formunun geçerlik ve güvenirlik çalişmasi: Doğrulayıcı faktör analizi sonuçlari. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 20,* 493-500.

Kim, S., Youn, S., & Moon, J. (2021). The impact of basic psychological needs satisfaction on the

performance of the franchisee. *Journal of Distribution Science, 19*(1), 17-26. http://dx.doi.org/10.15722/jds.19.1.202101.17.

Klassen, R. M., Perry, N. E., & Frenzel, A. C. (2012). Teachers' relatedness with students: An underemphasized component of teachers' basic psychological needs. *Journal of Educational Psychology, 104*(1), 150. https://doi.org/10.1037/A0026253.

Kniveton, B. H. (2004). The influences and motivations on which students base their choice of career. *Research in Education, 72,* 47-57. https://doi.org/10.7227/RIE.72.4.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement, 30*(3), 607-610. https://doi.org/10.1177/001316447003000308.

Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals' fit at work: A meta-analysis of person–job, person–organization, person–group, and person–supervisor fit. *Personnel psychology, 58*(2), 281-342.http://dx.doi.org/10.1111/j.1744-6570.2005.00672.x.

Menninger, K. (1957). Psychological factors in the choice of medicine as a profession. *Bulletin of the Menninger Clinic, 21*(2), 51. PMID: 13413452.

Mitchell, T. R. (1974). Expectancy models of job satisfaction, occupational preference and effort: A theoretical, methodological, and empirical appraisal. *Psychological Bulletin, 81*(12), 1053. http://dx.doi.org/10.1037/h0037495.

Nye, C. D., Su, R., Rounds, J., & Drasgow, F. (2012). Vocational interests and performance: A quantitative summary of over 60 years of research. *Perspectives on Psychological Science, 7*(4), 384-403. http://dx.doi.org/10.1177/1745691612449021 .

Olafsen, A. H., Deci, E. L., & Halvari, H. (2018). Basic psychological needs and work motivation: A longitudinal test of directionality. *Motivation and Emotion, 42*(2), 178-189. https://doi.org/10.1007/s11031-017-9646-2.

Ornell, F., Halpern, S. C., Kessler, F. H. P., & Narvaez, J. C. D. M. (2020). The impact of the COVID-19 pandemic on the mental health of healthcare professionals. *Cadernos de saude*

publica, 36, 1-6. https://doi.org/10.1093/qjmed/hcaa207 .

Osipow, S. H. (1968). *Theories of career development: A comparison of the theories.* Appleton-Century-Crofts.

Övet, O. (2006). *Eğitim fakültesi öğrencilerinin öğretmenlik mesleğini tercih etmelerinde etkili olan faktörlerin belirlenmesi* (Determination of the factors that influenced the occupational choice of students of education faculty), Master Thesis, Yeditepe University, Istanbul.

Pardee, R. L. (1990). *Motivation theories of Maslow, Herzberg, McGregor & McClelland: A literature review of selected theories dealing with job satisfaction and motivation.* EDRS.

Roe, Anne (1957). Early determinants of vocational choice. *Journal of Counseling Psychology, 4,* 212-217. https://doi.org/10.1037/H0045950.

Sekaran, U. (2003). *Research methods for business: A skill building approach* (4th ed.). John Wiley & Sons, New York.

Sencer, M., & Sencer, Y. (1978). *Toplumsal araştırmalarda yöntem bilim* 'TODAİE. Ankara.

Shuck, B., Zigarmi, D., & Owen, J. (2015). Psychological needs, engagement, and work intentions: A Bayesian multi-measurement mediation approach and implications for HRD. *European Journal of Training and Development, 39*(1), 2-21. https://doi.org/10.1108/EJTD-08-2014-0061.

Sperling, D. (2021). Ethical dilemmas, perceived risk, and motivation among nurses during the COVID-19 pandemic. *Nursing Ethics, 28*(1), 9-22. https://doi.org/10.1177/0969733020956376.

Sulaiman, T., Ibrahim, A., Motevalli, S., Wong, K. Y., & Hakim, M. N. (2021). Effect of e-evaluation on work motivation among teachers during the movement control order in COVID-19: The mediating role of stress. *Interactive Technology and Smart Education, 18*(3), 435-

449.https://doi.org/10.1108/ITSE-05-2020-0066.

Super, D. E. (1963). Self-concepts in vocational development. In Super, D. E., et al., *Career development: self-concept theory.* CEEB Research Monograph

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics (5th ed.).* Allyn & Bacon / Pearson Education.

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in science education, 48*(6), 1273-1296. https://doi.org/10.1007/S11165-016-9602-2.

Tovmasyan, G., & Minasyan, D. (2020). The impact of motivation on work efficiency for both employers and employees also during COVID-19 pandemic: Case study from Armenia. *Business Ethics and Leadership, 4*(3), 25-35. https://doi.org/10.21272/10.21272%2Fbel.4%283%29.25-35.2020.

Vogel, R. M., & Feldman, D. C. (2009). Integrating the levels of person-environment fit: The roles of vocational fit and group fit. *Journal of Vocational Behavior, 75*(1), 68-81. https://doi.org/10.1016/J.JVB.2009.03.007.

Vroom, V. H. (1964). *Work and motivation,* Wiley.

Warner, R. M. (2008). *Applied statistics: From bivariate through multivariate techniques.* Sage Publications, Inc.

Wolor, C. W., Susita, D., & Martono, S. (2020). How to maintain employee motivation amid the Covid-19 virus pandemic. *International Journal of Economics & Business Administration (IJEBA), 8*(4), 78-86. http://dx.doi.org/10.35808/ijeba/570.