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Factors Affecting Physicians' Responses to Patient Demands, Stress Perceptions and Coping Styles

Hekimlerin Hasta Taleplerine Yanıtlarını, Stres Algılarını ve Başa Çıkma Tarzlarını Etkileyen Faktörler

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Abstract

Physicians are trying to cope with patients' potentially inappropriate demands in addition to their intensive work environments. The objectives of this study were to determine physicians' points of view regarding patient demands, such as requests for inappropriate medical tests, prescription medications, or disability, and to what extent these demands affect physicians. This survey study was completed by conducting face-to-face interviews with the physicians, to determine the knowledge, attitudes, and behaviors of the 196 physicians working in our institution toward patient demands. Physicians reported that disability-related requests were the most prevalent patient demand (71.4%; n=140). A total of 2.6% (n=5) of the physicians performed laboratory tests that they considered unsuitable, 4.1% (n=8) described inappropriate prescription medication requests, and 2.6% (n=5) reported receiving disability requests from patients that they considered to be inappropriate. It was found that knowing patients formerly or being their health workers significantly altered physician behavior and increased rates of meeting inappropriate demand (*strong correlation*; r=0.809, p<0.001). The average score of the physicians showing their knowledge of the non-compliance of the patient requests was 60.99±10.46 (min-max 30-87.5 points), while the average score of the physicians' attitudes towards the demands they considered inappropriate was 44.73±10.23 (min-max 15-72.5 points). Knowledge and attitude scores were statistically higher in those working time under 10 years, as knowledge scores were statistically higher in those working in the internal medicine branches. In terms of behavior scores, there was no significant difference between working times and branches. In our study, the personality type of the physician was not significant in terms of meeting the patient demand. The job satisfaction of the physicians had no effect on the physician's informed, attitude, and behavior. In terms of stress coping style, the lack of difference in the sub-size of the scale of the subjugation approach was considered to be remarkable. As a consequence, acting for the benefit of the patient in clinical decision making is necessary. It is important to remember that any unnecessary examinations, prescribed medications, or disability requests lead to additional costs, loss of labor, and added workload in addition to posing a health risk for the patient.

Keywords: Disability request, Drug request, Inappropriate requests, Patient demands, Unnecessary test.

Özet

Hekimler, yoğun çalışma koşullarının yanı sıra hastaların potansiyel olarak uygun olmayan talepleriyle de baş etmeye çalışmaktadır. Bu araştırmanın amacı, hastaların uygun olmayan tıbbi test, reçeteli ilaç, istirahat raporu gibi taleplerine hekimlerin bakış açısını ve bu taleplerin hekimleri ne ölçüde etkilediğini değerlendirmektir. Kurumumuzda çalışmakta olan 196 hekimin hasta talepleri karşısındaki bilgi, tutum ve davranışlarını belirlemek amacıyla yapılan bu anket çalışması hekimlerle yüz yüze görüşülerek tamamlandı. Hekimler tarafından bildirilen en yaygın (%71.4; n=140) uygun olmayan hasta talebinin istirahat raporu istekleri olduğu belirlendi. Hekimlerin %2.6'sı (n=5) uygun bulmadıkları laboratuvar test istemlerini, %4.1'i (n=8) uygun olmayan reçeteli ilaç taleplerini ve %2.6'sı (n=5) hastalardan gelen uygun görmediklerini istirahat raporu isteklerini karşıladıklarını bildirdiler. Hastaları daha önceden tanıyor olmanın veya hastaların sağlık çalışanı olmasının hekim davranışını önemli ölçüde değiştirdiği ve uygunsuz talepleri karşılama oranlarını artırdığı saptandı (*güçlü korelasyon*; r=0.809, p<0.001). Hasta isteklerine uymama konusunda bilgi sahibi olduğu görülen hekimlerin puan ortalaması 60.99±10.46 (min-maks 30-87.5 puan) iken, hekimlerin uygun bulmadıkları taleplere yönelik tutum puan ortalaması 44.73±10.23 (minimum-maksimum 15-72.5 puan) olarak bulundu. Bilgi ve tutum puanları 10 yıldan daha kısa süredir çalışan hekimlerde istatistiksel olarak daha yüksekti, benzer şekilde bilgi puanları dahili branşlarda görev yapan hekimlerde anlamlı derecede daha yüksekti. Davranış puanları açısından çalışma süreleri ve branşlar arasında anlamlı bir fark bulunmadı. Çalışmamızda hekimin kişilik tipi hasta talebini karşılama açısından anlamlı bir farklılığa sahip değildi. Hekimlerin iş doyumunun bilgi, tutum ve davranışları üzerinde herhangi bir etkisi olmadığı sonucuna varıldı. Stresle başa çıkma tarzı açısından boyun eğici davranışlar ölçeği alt boyutunda farklılık olmaması dikkat çekici bulunmuştur. Netice itibariyle, klinik karar vermede hastanın yararına hareket etmek gerekmekte, gereksiz muayenelerin, reçete edilen ilaçların veya istirahat raporu taleplerinin hasta için sağlık riski oluşturmasının yanı sıra ek maliyetlere, iş gücü kaybına ve ek iş yüküne yol açtığını unutmamak ayrıca önem arz etmektedir.

Anahtar Kelimeler: İstirahat raporu isteği, İlaç isteği, Uygun olmayan talepler, Hasta talepleri, Gereksiz test.

Introduction

The intent of the medical profession includes protecting public and individual health and developing and providing treatments in the event of illness. Within the patient-physician relationship, the diagnosis and treatment choices of the physician do not always coincide with patients' expectation of treatment [1,2].

Patients may have realistic or unrealistic expectations or even expectations of illegal activity performed by a physician that develop as a result of their social interactions, the media (e.g., the internet, health-related visual media, etc.), and their previous experiences with diagnosis and treatment. These expectations can consist of various demands from patients, including the prescription of medications that they believe will benefit their condition, laboratory, and imaging tests that they believe are necessary, requests for a medical leave letter, or even hospitalization [3].

The physician is required to present the diagnosis and patient's treatment options in an informative manner. Failure to meet the patient's expectations despite the provision of this relevant information can lead to a deterioration of patient-physician communication and even result in violence against medical professionals [4–6].

The physician must decide whether to meet these patient requests while using their knowledge and experience and performing a clinical evaluation of the patient. If the demands in question might impact the treatment process or if they are considered medically unnecessary or potentially harmful to the patient, they must be denied [3].

However, it is crucial to establish how certain factors may result in a physician fulfilling the inappropriate demands of a patient, even when it goes against their treatment recommendations. These factors include the workload of the physician, the high priority of patient satisfaction in a medical institution, patients who are high-level government officials or otherwise privileged, and a physician's concern about violence from a patient or their relatives. One must also assess the effects of physician-related factors, such as the physician's personality, level of experience,

stress level, and coping style. Hence, it is important to investigate under which conditions physicians meet patients' inappropriate demands and which behavioral patterns they develop to deal with both meeting and refusing such demands.

Patients' health-related demands affect all medical practices and healthcare stakeholders. Every unnecessary prescription increases the risk of drug-related side effects and drug resistance, especially in the case of antibiotics. Every unnecessary examination increases workload and cost. Every unnecessary medical leave causes a loss of labor and productivity. Every unnecessary hospitalization increases the risk of hospital-associated infections and translates into increased costs and competition with patients who actually require hospitalization [7–9].

Rates in usage of health services in our country (bed occupancy rates, laboratory requests, drug prescribing) is constantly increasing [10,11]. The increase in drug resistance, hospital infections, ever-increasing laboratory requests, and the workload and increasing costs of physicians, as well as increasing negative statements, could be seen as an important factor in the share of unnecessary health practices. For example, unnecessary test prompts are shown as the main reason for the increase in laboratory use [12]. Physicians have to take these factors into account, which may cause serious adverse events in both diagnosis and follow-up of the patient.

The study aims to investigate the extent to which inappropriate health service demands affect physicians, the effects of physician-related factors (the physician's personality and job satisfaction) on determining the rejection or satisfaction of these demands, and the impact of this process on physicians' perception of stress and their coping mechanisms.

Material and Method

Study design and participants

This study was approved by the Ethical Committee of University of Health Science (2018/7-decision no: 18/135). The study was conducted in volunteer physicians who provide outpatient services at Gulhane Training and Research Hospital between September 2018 and March 2019. All participants gave informed consent to participate in our study. The participants completed a questionnaire that was developed by the researchers after a comprehensive literature review.

The survey consisted of three sections. The first section included the descriptive features of the participants (age, gender, number of years as a physician, branch, and title). To determine whether the experiences and branches of physicians affect their approach to inappropriate patient demands, the study times and branches of physicians were added to the prepared questionnaire. The participants were divided into two groups according to the number of years they had spent working as a physician (<10 years or ≥10 years). They were also divided into two groups according to their specialty (internal medicine branches or surgery branches).

The second section included a form that investigated the participants' knowledge, attitudes, and behavior regarding patients' health service demands. Physicians ' own assessments were based on the impropriety of requests from patients. Each section is composed of ten 5-point Likert-type questions. The items that are scored over 5 are combined and evaluated over 100 overall. The mean score for each section was calculated, and a high score indicated that the physicians think patient demands are inappropriate. To compare physicians who assessed patient requests as inappropriate with those who evaluated them as normal with the factors that affected it, physicians were grouped due to their knowledge, attitude, and behavior score averages. Participants were then divided into 3 groups according to their scores: those in the ±25% percentile, those above the 75% percentile, and those in the lowest 25% percentile.

The third section investigated physician-related factors (personality, job satisfaction, stress level, and way of coping with stress) and their effects on physician attitudes and behavior through the use of four validated and reliable scales, as described below.

The scales used in the study

Friedman and Rosenman's Personality Inventory: Friedman and Rosenman developed a personality assessment scale based on their observation that people exhibit two distinct patterns of behaviors in the face of certain events and that these patterns are largely based on personality. This inventory consists of seven items that have polar opposite response options. Participants are asked to grade 7 items from 1 to 8 according to the response that they feel is most suitable. The total score is then multiplied by 3. The total possible score ranges between 21 and 168. A score of ≥100 indicates a type A personality, and a score of <100 indicates a type B personality [13].

Minnesota Satisfaction Questionnaire (MSQ): This questionnaire was developed to measure an individual's level of job satisfaction. In this study, the 20-item short form of the MSQ was used. The MSQ is a five-point Likert-type scale scored over 5 as follows: 1=Not Satisfied, 2=Somewhat Satisfied, 3=Satisfied, 4=Very Satisfied, 5=Extremely Satisfied. The sum of the 20 items is added up to obtain a total score. The Minnesota Satisfaction Questionnaire consists of 2 factors that determine internal, external, and overall satisfaction levels. A high score indicates high job satisfaction [14].

Perceived Stress Scale (PSS): This scale consists of 14 items and was developed to measure an individual's perception of stress in a given situation in their life. PSS is a five-point Likert-type scale scored between 0 (never) and 4 (very often). Of the 14 items, 7 contain positive statements and are inversely scored. The scale is scored out of a total of 56. A high score indicates a high perception of stress [15,16].

Ways of Coping Inventory (WCI): This scale aims to determine people's methods of dealing with the problems and stress factors in their lives. This 30-item scale has two dimensions: problem-focused/active and emotion-focused/passive. The problem-focused dimension consists of a Self-Confidence Approach (SCA), an Optimistic Approach (OA), and a Seeking for Social Support Approach (SSSA) subgroups. The emotion-focused approach consists of two subgroups, a Helpless Approach (HA) and a Submissive Approach (SA). The scale is evaluated and scored between 0-3 (0=0%, 1=30%, 2=70%, 3=100%). Items 1 and 9 are inversely scored, and separate scores are calculated for each subscale. A high score obtained from the subscales indicates that that specific approach is the individual's preferred method of coping with stress [17].

Statistical analysis

The data were analyzed using IBM SPSS Statistics for Windows, version 18.0 (SPSS Inc., Chicago, IL., USA). The quantitative data were expressed as means and standard deviations, and categorical data were expressed as numbers and percentages. Categorical variables were comparatively analyzed using the chi-square test. Quantitative data were tested for normality of distribution. Student's t-test was used for the pairwise comparison of normally distributed independent variables. Non-normally distributed parameters were evaluated using the nonparametric t-test. Pearson's correlation coefficient was used to evaluate the correlation between variables, and p value <0.05 was considered statistically significant.

Results

A total of 196 physicians, 148 from the internal medicine clinics and 48 from the surgical clinics, were included in the study. The mean age of the participants was 34.18±6.8 years. The mean ages of physicians working in the internal medicine clinics and surgical clinics were 34.44±7.0 (min-max; 23-57 years) and 33.37±6.1 (min-max; 25-48 years), respectively. The majority (75.7%; n=112) of the physicians working in internal medicine clinics and 83.3% (n=40) of physicians working in surgical clinics were male. There was no statistically significant difference between the physicians in the two clinics in terms of age or gender (p=0.347 and p=0.269, respectively). When examining the physicians' working years, the median was found to be eight years (see Table 1).

When we examined patient demands that were viewed as inappropriate by physicians, it was found that the most common inappropriate request in both the internal medicine and surgical clinics was the demand for disability (71.4%;

n=140). When the two clinics were compared, the demand for examinations was higher in the patients who were seen in the internal medicine clinics, and the demand for reviewing their results was higher in the surgical clinics. However, there was no statistically significant difference between the clinics and the types of demands received (p>0.05; see Table 2 and Figure 1).

Table 1. Descriptive data of the participants.

Variables		IS (n=148)		SS (n=48)		Total (n=196)		p*
Age	Mean	34.44		33.37		34.18		>0.05
	SD	7.01		6.08		6.79		
	Median	33.50		33.00		33.00		
	Minimum - Maximum	23 - 57		25 - 48		23 - 57		
Year of service	Mean	9.84		9.08		9.66		>0.05
	SD	6.96		6.11		6.76		
	Median	8.00		8.50		8.00		
	Minimum - Maximum	1 - 31		1 - 26		1 - 31		
Gender		n	%	n	%	n	%	p**
	Male	112	75.7	40	83.3	152	77.6	>0.05
	Female	36	24.3	8	16.7	44	22.4	

*Student's t- test. **Chi-squared test. IS; Internal Sciences. SD; Standard Deviation. SS; Surgical Sciences.

Table 2. The demands of patients that were viewed as inappropriate by physicians.

Inappropriate demands of patients from physicians		IS (n=148)		SS (n=48)		Total (n=196)	
		n	%	n	%	n	%
Request to prescribe the drug in its own mind	No	50	33.8	16	33.3	66	33.7
	Yes	98	66.2	32	66.7	130	66.3
Request a medical test in its own mind	No	45	30.4	20	41.7	65	33.2
	Yes	103	69.6	28	58.3	131	66.8
Request for inpatient treatment	No	74	50.0	26	54.2	100	51.0
	Yes	74	50.0	22	45.8	96	49.0
Disability request	No	44	29.7	12	25.0	56	28.6
	Yes	104	70.3	36	75.0	140	71.4
Request to show previous medical test results	No	120	81.1	34	70.8	154	78.6
	Yes	28	18.9	14	29.2	42	21.4

IS; Internal Sciences. SD; Standard Deviation. SS; Surgical Sciences.

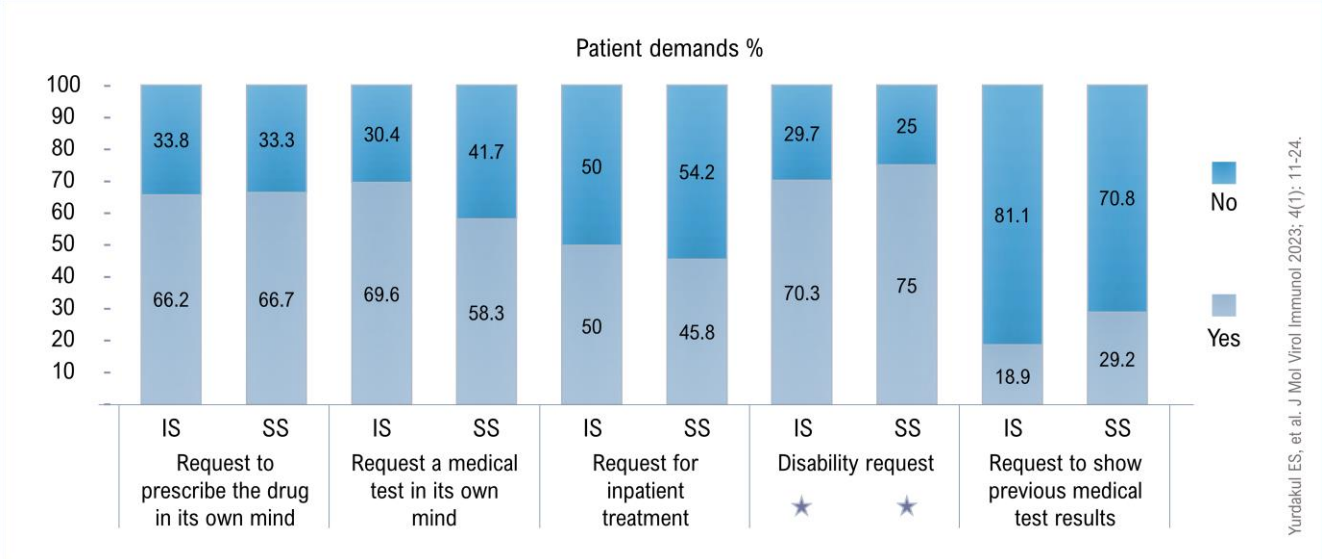

Figure 1. The demands of patients who were seen as inappropriate by physicians. *The most common inappropriate request in both clinics (IS and SS) was the demand for disability. (IS; Internal Sciences. SS; Surgical Sciences.)

According to the data and based on the average scores of physician-based knowledge, attitudes and behaviors, the physicians were separated into three groups: <25% percentile (Group 1), 50%-75% (Group 2), and the >75% percentile (Group 3). The numbers of physicians found in this study to belong in Groups 1, 2 and 3 were 23, 163, and 10 for knowledge; 14, 171, and 11 for attitudes; and 15, 164, and 17 for behavior, respectively. While the mean score of the physicians indicating that they did not comply with the patients' demands was found to be 60.99±10.46 (min-max; 30-87.5 points), the number of physicians with a score above the mean value was 102 (52.0%). The mean score of the physicians' attitudes toward patient inappropriate demands was 44.73±10.23 (min-max; 15-72.5 points), and the number of physicians with a score above the mean value was 96 (49.0%). The outcomes of patient requests are shown in Table 3.

Table 3. The effect of the patient requests in meeting the inappropriate patient demand by the physicians.

Variables		n	%
What is your attitude when the patient requests a medical test?	I agree	5	2.6
	Indecisive	43	21.9
	I do not accept	107	54.6
	I absolutely do not accept	41	20.9
If the patient is familiar, what is your attitude when the patient requests a medical test?	I absolutely agree	2	1.0
	I agree	33	16.8
	Indecisive	67	34.2
	I do not accept	78	39.8
	I absolutely do not accept	16	8.2
If the patient is healthcare professional, what is your attitude when the patient requests a medical test?	I absolutely agree	6	3.1
	I agree	48	24.5
	Indecisive	75	38.3
	I do not accept	51	26.0
	I absolutely do not accept	16	8.2
What is your attitude when the patient requests a drug prescription?	I agree	8	4.1
	Indecisive	33	16.8
	I do not accept	107	54.6
	I absolutely do not accept	48	24.5
If the patient is familiar, what is your attitude when the patient requests a drug prescription?	I absolutely agree	1	0.5
	I agree	24	12.2
	Indecisive	55	28.1
	I do not accept	83	42.3
	I absolutely do not accept	33	16.8
If the patient is healthcare professional, what is your attitude when the patient requests a drug prescription?	I absolutely agree	2	1.0
	I agree	31	15.8
	Indecisive	51	26.0
	I do not accept	79	40.3
	I absolutely do not accept	33	16.8
What is your attitude when the patient requests disability?	I agree	5	2.6
	Indecisive	35	17.9
	I do not accept	104	53.1
	I absolutely do not accept	52	26.5
If the patient is familiar, what is your attitude when the patient wants disability?	I absolutely agree	2	1.0
	I agree	19	9.7
	Indecisive	73	37.2
	I do not accept	74	37.8
	I absolutely do not accept	28	14.3
If the patient is healthcare professional, what is your attitude when the patient wants disability?	I absolutely agree	3	1.5
	I agree	23	11.7
	Indecisive	71	36.2
	I do not accept	69	35.2
	I absolutely do not accept	30	15.3

The physicians stated that they accepted 2.6% (n=5) of the examination requests from patients, even if they thought the demands were inappropriate. In patients with more medical knowledge, this rate increased to 17.9% (n=35), and it increased to 27.6% (n=54) when he/she was a healthcare worker. While the physicians accepted 4.1% (n=8) of the requests for inappropriate prescription drugs from patients, the rate of acceptance of the request was 12.8% (n=25) when the patient was an acquaintance of the physician and 16.8% when the patient was a healthcare worker (n=33). The rate of meeting disability demands was normally 2.6% (n=5), although it reached up to 10.7% (n=21) in acquaintances and up to 13.3% (n=26) in healthcare workers. The mean score for behaviors of the physicians toward the demands of the patients was 65.79±15.47 (min-max; 22.5-100.0), and the number of physicians whose behavior level was above the average value was 94 (48.0%). The mean score was 70.34±13.08 (min-max; 20.85-100.0) when we excluded both familiar patients and healthcare workers in the behavior assessment. It was found that the presence of familiar patients or healthcare workers changed the behavior of the examiner in a statistically significant manner and increased the approval rates of inappropriate test requests. A strong correlation between these parameters ($r=0.809$, $p<0.001$) was found.

Knowledge and attitude scores were significantly higher in physicians who had been practicing for less than 10 years ($p=0.001$ and $p=0.005$, respectively). There was no statistically significant difference in terms of behavior scores for service year comparison. In knowledge comparison, attitudes, and behavior scores for the branches, a statistically significant increase was found only among the employees working in the internal medicine clinics in terms of the mean knowledge level scores ($p=0.013$). There was no significant difference between the branches in terms of attitudes and behavior (see Table 4).

Table 4. Comparison of physicians' working years and branches with knowledge, attitude, and behavior scores.

Group Statistics		Variables	n	mean	SD	p*
Years of working	The average knowledge score	Group 1	117	63.05	10.01	0.001
		Group 2	79	57.94	10.41	
	The average attitude score	Group 1	117	46.41	10.01	0.005
		Group 2	79	42.25	10.11	
	The average behavior score	Group 1	117	65.08	15.29	0.439
		Group 2	79	66.83	15.76	
Branches	The average knowledge score	IS	148	62.04	10.13	0.013
		SS	48	57.76	10.88	
	The average attitude score	IS	148	45.35	10.58	0.135
		SS	48	42.81	8.89	
	The average behavior score	IS	148	54.84	11.43	0.571
		SS	48	55.92	11.52	

*Student's t- test. Group 1; <10 years of working. Group 2; >10 years of working. IS; Internal Sciences. SD; Standard Deviation. SS; Surgical Sciences.

In the comparison of the factors that may affect physician knowledge, attitudes, and behavior, only in the sub-categories of "problem-oriented self-confident approach" and "problem-oriented optimistic approach" on the coping with stress scale was a significant increase found in the employees who had been practicing for over 10 years ($p=0.004$ and 0.003, respectively). There was no statistically significant difference between practice duration, personality type, job satisfaction, perceived stress, and the "emotion-oriented helpless approach", "emotion-oriented submissive approach", and "social support seeking approach" subcategories (see Table 5). After comparing specialties (internal medicine sciences or surgical sciences) with respect to the factors that may affect the knowledge, attitudes, and behavior of the physician, no statistically

significant difference was found between the groups in terms of personality type, job satisfaction, or styles of coping with stress and perceived stress (see Table 5). When the personality traits of the physicians were examined, the mean score was 105.86±17.76 (min-max; 63-168). When we categorized the scores, we found that 113 physicians had a type A personality, and 83 physicians had a type B personality (57.7% and 42.3%, respectively). When we compared the knowledge, attitudes, and behaviors of physicians according to personality types, no statistically significant difference was found between the groups (p>0.05; see Figure 2).

Table 5. Comparison of factors evaluated by scale that can affect physician's knowledge, attitude, and behavior according to working time.

Scale scores	Year of work	n	mean ± SD	median	min - max	p*
Fried and Rosenman's Personality Inventory	Group 1	117	104.92 ± 17.15	102	69.00 - 168.00	0.372
	Group 2	79	107.24 ± 18.66	105	63.00 - 141.00	
MSQ**	Group 1	116	2.04 ± 0.59	2.00	0.00 - 4.64	0.235
	Group 2	79	1.96 ± 0.38	1.86	12.18 - 3.27	
MSQ Internal satisfaction**	Group 1	116	1.93 ± 0.70	1.93	0.00 - 6.36	0.239
	Group 2	79	1.82 ± 0.49	1.78	0.86 - 3.14	
MSQ External satisfaction	Group 1	117	2.25 ± 0.91	2.12	0.00 - 8.88	0.584
	Group 2	79	2.19 ± 0.37	2.12	0.88 - 3.50	
PSS	Group 1	117	31.58 ± 4.10	31	20.00 - 44.00	0.345
	Group 2	79	31.00 ± 4.38	31	16.00 - 43.00	
SCSS Intrinsically safe approach**	Group 1	116	13.05 ± 3.89	13	3.00 - 21.00	0.004
	Group 2	79	14.67 ± 3.78	15	3.00 - 21.00	
SCSS Helpless approach**	Group 1	116	9.18 ± 4.02	9	0.00 - 23.00	0.059
	Group 2	79	8.10 ± 3.73	8	1.00 - 17.00	
SCSS Optimistic approach**	Group 1	116	8.64 ± 2.51	9	3.00 - 15.00	0.003
	Group 2	79	9.81 ± 2.80	10	3.00 - 15.00	
SCSS Submissive approach**	Group 1	116	6.31 ± 3.27	6	0.00 - 15.00	0.546
	Group 2	79	6.61 ± 3.51	6	1.00 - 27.00	
SCSS Social support approach**	Group 1	116	6.90 ± 1.79	7	3.00 - 12.00	0.831
	Group 2	79	6.85 ± 1.87	7	3.00 - 12.00	

*Student's t-test. **The analysis was completed on 195 physicians because one of them had missing data. Group 1 ≤10 years and Group 2 ≥10 years of working. MSQ; Minnesota Satisfaction Questionnaire.; PSS; Perceived Stress Scale. SCSS; Stress Coping Styles Scale.

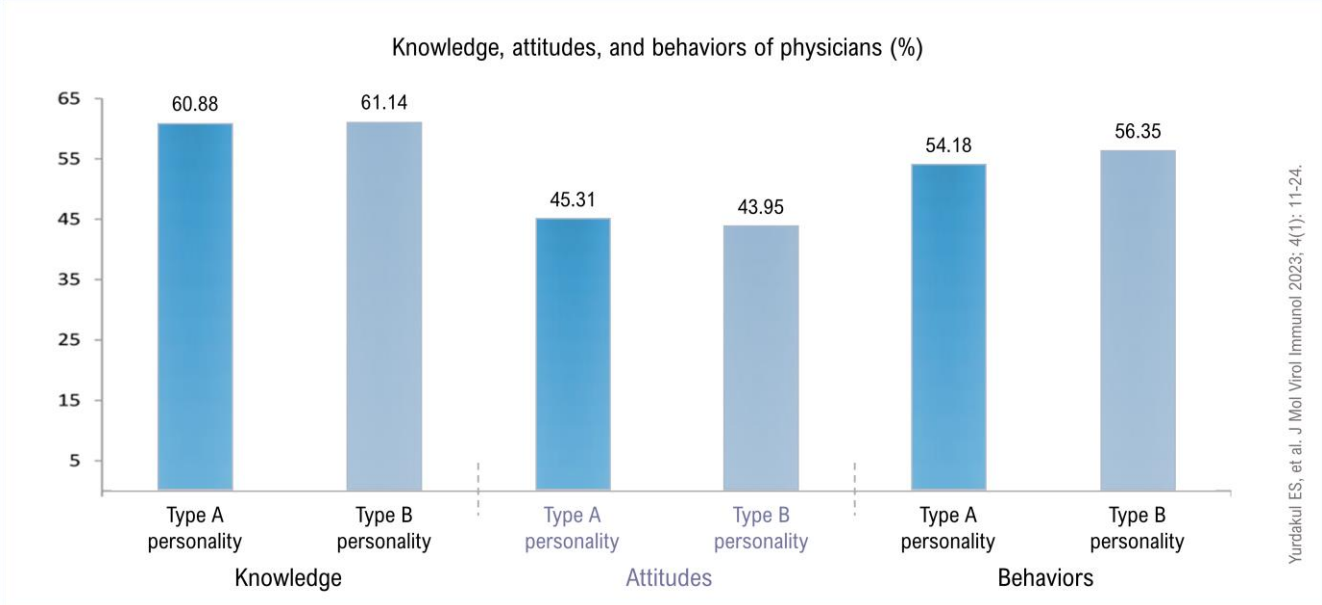

Figure 2. Comparison of knowledge, attitudes, and behaviors of physicians according to personality types.

Table 6 shows the findings of the comparisons of personality type, job satisfaction, perceived stress, and coping styles of the physicians with triple grouping based on the mean scores of information, attitudes, and behaviors of the patients. Accordingly, no statistically significant difference was found between groups in terms of personality types and job satisfaction scores. Perceived stress scale scores were significantly higher in Group 1 (p<0.001).

Table 6. Comparison of personality type, job satisfaction, stress perception, and coping styles according to the branches of physicians.

Scale scores	Branches	n	mean ± SD	median	min – max	p*
Fried and Rosenman's Personality Inventory	IS	148	104.88 ± 17.66	102.00	63 – 141	0.176
	SS	48	108.88 ± 17.92	106.00	81 – 168	
MSQ**	IS	147	2.01 ± 0.52	1.91	1.05 – 4.64	0.955
	SS	48	2.01 ± 0.52	2.00	0.00 – 3.50	
MSQ Internal satisfaction**	IS	147	1.88 ± 0.64	1.78	0.86 – 6.36	0.871
	SS	48	1.89 ± 0.58	1.89	0.00 – 3.43	
MSQ External satisfaction	IS	148	2.23 ± 0.79	2.12	0.88 – 8.88	0.896
	SS	48	2.22 ± 0.54	2.25	0.00 – 3.63	
PSS	IS	148	31.11 ± 4.16	31.00	16.00 – 43.00	0.164
	SS	48	32.08 ± 4.35	31.50	25.00 – 44.00	
SCSS Intrinsically Safe Approach**	IS	148	13.87 ± 3.94	14.00	4.00 – 21.00	0.302
	SS	47	13.19 ± 3.85	14.00	3.00 – 21.00	
SCSS Helpless Approach**	IS	148	8.60 ± 3.87	8.00	0.00 – 23.00	0.371
	SS	47	9.19 ± 4.13	8.00	2.00 – 17.00	
SCSS Optimistic Approach**	IS	148	9.19 ± 2.80	9.00	3.00 – 15.00	0.483
	SS	47	8.87 ± 2.31	9.00	3.00 – 13.00	
SCSS Submissive Approach**	IS	148	6.36 ± 3.53	6.00	0.00 – 27.00	0.594
	SS	47	6.66 ± 2.79	6.00	1.00 – 13.00	
SCSS Social Support Approach**	IS	148	6.91 ± 1.89	7.00	3.00 – 12.00	0.684
	SS	47	6.79 ± 1.61	6.00	4.00 – 11.00	

*Student's t-test. **The analysis was completed on 195 physicians because one of them had missing data. IS; Internal Sciences. MSQ; Minnesota Satisfaction Questionnaire. PSS; Perceived Stress Scale. SCSS; Stress Coping Styles Scale. SD; Standard Deviation; SS, Surgical Sciences.

There was no statistically significant difference between the perceived stress scores in terms of knowledge and behavior groups. A significant difference was found between the information score groups and the "problem-oriented social support seeking" subscale of coping with stress. This difference was higher in Group 3 than in Groups 1 and 2 (p=0.034). There was a statistically significant difference between the "emotion-oriented helpless approach" and the "emotion-oriented submissive approach" subscale scores of coping with stress (p=0.008 and 0.001, respectively). This difference was higher in Group 3 than in Groups 1 and 2 (p=0.034). There was a significant difference between the "emotion-oriented helpless approach" and the "emotion-oriented submissive approach" subscale scores of coping with stress (p=0.008 and 0.001, respectively) (see Table 7). Linear regression analysis showed a linear relationship between Minnesota extrinsic score and age and title variables in positive direction and year of service in negative direction (corrected R2=0.043, p=0.026).

Table 7. Comparison of the groups categorized according to knowledge attitude and behavior scores and factors evaluated with scale that can affect physician's knowledge, attitude, and behavior.

Scales		Group	Knowledge					Attitude					Behavior				
			n	mean ± SD	med.	min-max	p*	n	mean ± SD	med.	min-max	p*	n	mean ±SD	med.	min-max	p*
Fried and Rosenman's Personality Inventory		Group1	23	111.3±19.94	111.0	75-168	0.471	14	105.6±19.38	99.0	78-138	0.530	15	111.2±16.91	117.0	81-135	0.479
		Group2	163	105.2±17.60	105.0	63-141		171	105.4±17.46	105.0	63-168		164	105.4±17.34	103.50	66-168	
		Group3	10	103.8±14.23	102.0	87-135		11	112.6±20.71	114.0	81-141		17	105.5±22.48	102.0	63-135	
MSQ	General	Group1	23	2.13±0.60	2.0	1.50-4.27	0.213	14	1.96±0.46	1.86	1.55-3.27	0.682	15	1.94±0.40	1.82	1.36-2.64	0.624
		Group2	163	1.98±0.50	1.91	0.0-4.64		171	2.01±0.52	1.98	0.0-4.64		164	2.02±0.53	2.0	0.0-4.64	
		Group3	10	2.23±0.49	2.32	1.50-3.09		11	2.01±0.53	2.04	1.05-3.09		17	1.95±0.44	1.95	1.32-3.09	
	Internal satisfaction	Group1	23	1.87±0.47	1.78	1.21-3.43	0.320	14	1.70±0.58	1.57	1.14-3.14	0.233	15	1.84±0.48	1.71	1.14-2.50	0.576
		Group2	163	1.87±0.64	1.78	0.0-6.36		171	1.89±0.63	1.82	0.0-6.36		164	1.89±0.63	1.78	0.0-6.36	
		Group3	10	2.19±0.67	2.28	1.29-3.29		11	1.99±0.61	1.92	1.14-3.29		17	1.81±0.69	1.64	0.86-3.43	
	External satisfaction	Group1	23	2.58±1.43	2.25	1.75-8.88	0.247	14	2.41±0.49	2.25	1.88-3.50	0.223	15	2.11±0.34	2.0	1.63-2.88	0.627
		Group2	163	2.17±0.59	2.12	0.0-7.50		171	2.22±0.77	2.12	0.0-8.88		164	2.24±0.79	2.12	0.0-8.88	
		Group3	10	2.29±0.34	2.31	1.88-2.75		11	2.06±0.51	2.12	0.88-2.75		17	2.20±0.41	2.12	1.75-3.25	
PSS		Group1	23	31.83±5.46	31.0	25.0-44.0	0.757	14	35.86±3.57	35.0	32.0-44.0	<0.001	15	30.40±4.35	31.0	22.0-41.0	0.489
		Group2	163	31.24±4.07	31.0	16.0-44.0		171	31.09±4.03	31.0	16.0-44.0		164	31.40±3.71	31.0	21.0-44.0	
		Group3	10	32.0±3.62	32.50	25.0-37.0		11	29.45±4.50	31.0	22.0-35.0		17	31.65 ±7.68	34.0	16.0-44.0	
SCSS	Intrinsically safe approach	Group1	23	14.04±4.38	15.0	3.0-21.0	0.866	14	15.50±4.70	16.50	3.0-21.0	0.174	15	13.73±3.73	13.0	5.0-20.0	0.026
		Group2	163	13.68±3.79	14.0	3.0-21.0		171	13.56±3.88	14.0	3.0-21.0		164	13.48±3.79	14.0	3.0-21.0	
		Group3	10	13.40±5.21	15.50	4.0-19.0		11	13.73±3.23	14.0	9.0-19.0		17	15.88±4.85	18.0	4.0-21.0	
	Helpless approach	Group1	23	8.39±3.87	8.0	3.0-17.0	0.688	14	7.21±3.89	7.50	0.0-15.0	0.008	15	10.07±3.49	9.0	5.0-17.0	0.020
		Group2	163	8.77±3.79	9.0	0.0-17.0		171	8.63±3.79	8.0	0.0-17.0		164	8.86±3.93	9.0	0.0-23.0	
		Group3	10	9.10±6.15	8.0	2.0-23.0		11	12.45±4.37	12.0	8.0-23.0		17	6.47±3.59	7.0	0.0-14.0	
	Optimistic approach	Group1	23	9.61±2.90	9.0	3.0-14.0	0.112	14	9.86±3.13	9.50	3.0-14.0	0.073	15	9.47±3.07	10.0	3.0-15.0	0.048
		Group2	163	9.13±2.66	9.0	3.0-15.0		171	8.95±2.64	9.0	3.0-15.0		164	8.91±2.55	9.0	3.0-15.0	
		Group3	10	7.60±2.27	6.50	5.0-12.0		11	10.73±2.37	10.0	7.0-15.0		17	10.76±3.13	10.0	5.0-15.0	
	Submissive approach	Group1	23	7.0±3.27	7.0	0.0-13.0	0.342	14	8.14±6.58	7.50	0.0-27.0	0.001	15	7.60±3.11	8.0	3.0-12.0	0.238
		Group2	163	6.40±3.30	6.0	0.0-27.0		171	6.06±2.83	6.0	0.0-14.0		164	6.25±2.91	6.0	0.0-15.0	
		Group3	10	5.60±4.57	4.0	0.0-15.0		11	9.91±2.77	10.0	4.0-15.0		17	7.12±6.38	7.0	0.0-27.0	
	Social support approach	Group1	23	6.04±1.58	6.0	3.0-9.0	0.034	14	6.21±1.31	6.0	3.0-8.0	0.324	15	6.53±2.03	7.0	3.0-10.0	0.046
		Group2	163	6.96±1.82	7.0	3.0-12.0		171	6.94±1.87	7.0	3.0-12.0		164	7.01±1.79	7.0	3.0-12.0	
		Group3	10	7.50±1.96	7.50	4.0-10.0		11	6.82±1.54	7.0	4.0-9.0		17	5.94±1.67	6.0	3.0-10.0	

*One-way Anova test. MSQ; Minnesota Satisfaction Questionnaire. PSS; Perceived Stress Scale. SCSS; Stress Coping Styles Scale. med.; median

Discussion

It is noteworthy that in our study, approximately two-thirds of all health service demands were deemed inappropriate by the participating physicians. The most common inappropriate health service demand was found to be requesting a letter of medical leave (71.4%, n =140). Although the physicians were careful to address these demands in a professional manner, they indicated that they satisfied these demands at certain rates. In our study, physicians met 2.6% of inappropriate examination requests,

4.1% of requests for inappropriate prescriptions, and 2.6% of inappropriate medical leave letter requests. We also determined that the fulfillment of inappropriate health service demands significantly increased if the patient was a relative or acquaintance of the healthcare professional.

Primum non nocere or "First, do not harm!" is one of the basic principles of medicine. There is a risk of harm to the patient if every step of clinical decision-making for the patient's health is not performed correctly. To this end, every medical intervention performed by physicians should be evidence-based and performed for a proper indication [18].

These days, most of the people who present to hospitals confront physicians with information about their complaints originating from the media, the internet, or from their environment. Based on the information they have learned, patients may make inappropriate requests of their physicians because they cannot predict the next step of the treatment process or cannot fully analyze the relevance of their requests to other factors that will guide the physician's plan for treatment. In our study, when we examined the demands that physicians deem unnecessary, most related to patients demanding disability (71.4%), followed by requests for unnecessary examinations (66.8%) and prescription medications (66.3%).

The workers of today are mostly adults, and the idea that rest allows an illness to be overcome more quickly is a common opinion in society. Item 107 of the Civil Servants' Law Number 657 outlines the authority of physicians to report illnesses [19]. However, it is difficult to define a standard approach in this regard because the decision of whether to be provided disability by a physician requires consideration of the general condition of the patient and varies from physician to physician.

Providing an unnecessary disability means a loss of labor for the state's economy and contradicts ethical values; however, legal arrangements should be made by administrators in official institutions regarding the permissions required by employees, rather than by healthcare providers. In our study, the demand for disability was the most common inappropriate demand faced by physicians (comprising 71.4% of all inappropriate demands), which provides an indication of the dimensions of such a demand.

Test requests and the desire to prescribe medications are standard approaches that are relatively limited with respect to this demand and can be decided by considering the appropriate indication. Even in meeting these demands, there are differences in attitudes and behaviors of physicians due to various factors.

The main purpose of laboratory tests is to obtain information that will help the clinician in clinical diagnosis and reduce clinical uncertainty [20]. However, since the sensitivity and specificity of the tests that are frequently requested during routine outpatient services, especially for screening tests, are not 100% accurate, every claim without an appropriate indication increases the probability of encountering false positive results. It has been reported that the probability of a laboratory test being outside of the reference range (excluding the 5% standard deviation) is at least 5%, and this rate increases as the number of tests requested increases [21,22]. In a study conducted in our country, it was determined that 15.6% of the tests were the result of unnecessary requests according to the International Classification of Diseases (ICD) 10 diagnostic codes [23]. In our study, 66.8% (n=131) of physicians reported being faced with requests for inappropriate tests, and some of these demands are met as a result of various influences, such as whether the patients making the requests are acquaintances or healthcare workers. Any unnecessary testing due to false positive results leads to more tests, and as a result, a vicious cycle begins that imposes an unnecessary workload on healthcare workers, unnecessary costs to the state, and anxiety to the patient: "Is there a serious disease underneath?" [24].

It is common for patients to request that physicians prescribe the drug of their (physician's) choice. In one study, it was found that 44% of the participants had asked physicians to write their own prescriptions, and this demand was higher in the elderly and in those with low education or low income [8]. In another study, this rate was 68.4% [9]. In one qualitative study, it was stated that

the majority of physicians consider the demands of patients to prescribe drugs as a problem, although this was not indicated in the current study [25]. In our study, the rate of drug prescribing demands from patients was 66.3%. Data from the literature show that various factors, such as level of education, income, and health literacy may be related to such demands [5,25,26].

Another common type of demand is the desire for inpatient treatment. Nearly half (49%) of the physicians participating in our study stated that they had encountered this demand while performing their medical duties. Any unnecessary hospitalization poses a risk of hospital-acquired infections for patients and imposes significant additional costs. Hospital settings and intensive care units, especially, pose high risks for infections that may develop due to multiple drug-resistant bacteria and yeast species. Restuccia et al. examined the causes of unnecessary hospitalizations and found that hospital-acquired factors resulted in 75%, environmental factors made up 13%, and patient or family factors played a role in 4% [27].

Empowering physicians to help patients take responsibility for their own health rather than undergoing unnecessary examinations or requesting unnecessary prescription drugs would improve patients' care [28]. Patients develop a number of beliefs that contribute to the improvement of their complaints through the influence of various factors, such as their experiences from people with similar complaints in their environment and their research on the Internet. These beliefs and attitudes do not necessarily overlap with the physicians' perceptions of health and can be corrected within the framework of a patient-physician relationship by recommending health counseling and increasing trust to increase health literacy [29].

In our study, it was seen that physicians working in internal medicine clinics and physicians with less than 10 years of experience felt more uncomfortable when faced with inappropriate patient demands. However, we found that working in either internal medicine or surgical clinics for over 10 years did not affect physician behaviors toward patient demands. This result shows that, although physicians are disturbed by patient demands, it does not affect their professional decision making.

Whiting et al. presented a comprehensive review of the different factors discussed in the literature, such as factors related to diagnosis and treatment (including inclusion, exclusion, and decision-making for appropriate treatment), patient-related factors (such as patient demand and demographic characteristics), physician-related factors (such as clinical experience and cognitive bias), and factors relevant to policy and organizations (such as large numbers of patients, short return time of tests, and ease of access to the laboratory) [30]. Some of these factors have been investigated in the literature, such as by Kc and Terwiesch stated that physicians who have difficulty diagnosing a problem are more likely to request more medical tests [31]. However, these tests may not be necessary in the judgment of the physician, and the impact of a patient's request was unclear. Shye et al. suggested that time limitations and excess patient load were possible reasons for these test requests [32].

Factors such as the personality traits of the physician, their daily responsibilities, the patient's point of view, the physician's love of the profession, job satisfaction and level of exhaustion can be listed as factors determining the effect of the physician in the patient-physician relationship and thus may affect their decision-making [33]. Other factors, such as daily work hours, professional experience, workload, gender, age, marital status, and expectations for the future affect both the job satisfaction and burnout levels of physicians, which can therefore influence the physician-patient relationship [34,35]. In several studies, it was found that long working hours, excessive workloads, and professional inexperience increase the level of exhaustion. Long working hours, a strenuous work environment, not being able to devote sufficient time to care for themselves or their patients, and not being able to participate in social activities have been found to decrease physicians' quality of life [36]. In our study, we found that the personality type of the physician was not statistically significant in terms of meeting patient demands.

Job satisfaction was not found to have an effect on physicians' attitudes or behavior, and it was observed that greater problem-oriented self-confidence and optimistic perspectives were achieved as physicians' experience increased. Another issue that affected physician behavior towards the demands of patients appeared to correlate with physicians' ability to cope with stress. According to these scales, no difference was found between groups in terms of showing a submissive approach. It was important for physicians to note that these demands could be met at certain rates, although they paid attention to general considerations regarding a professional approach to appropriate demands from patients. In the present study, physicians stated that they accepted 2.6% of inappropriate examination requests, 4.1% of inappropriate drug prescription requests and 2.6% of disability requests. These findings may be due to the idea that health literacy is higher among healthcare workers. In recent years, there has been increasing concern regarding the increasing and potentially unnecessary use of diagnostic medical tests that may not only increase medical care costs but may also be detrimental to patients [7].

Conclusion

It is essential to act for the benefit of the patient in every decision regarding their health, and it is important to remember that any unnecessary examinations or medications may pose a health risk to the patient, as well as additional costs, loss of labor, and added workload. The current study presents unique data in terms of revealing physician behaviors and the factors that affect patients' requests for diagnostics and treatments. This study also revealed that if the patient was a healthcare worker or an acquaintance of the physician, the rate of physician acceptance of inappropriate requests increased.

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References

1. Çakıt MO, Arslan I, Sarı O, Çelik M. Hasta ile uyum/Anlaşma. In: Saatçi E (ed), Rakel Aile Hekimliği. 2019, Güneş Tıp Kitabevleri, Ayrıntı Basım Yayın ve Matbaacılık, Ankara. pp: 141-56.

2. Oğuz NY. Physician-Patient Relationship in Clinical Practice. T Klin J Med Ethics 1995; 3(2): 59-65.

3. Glasziou P. Why is evidence-based medicine important? Evid Based Med 2006; 11(5): 133-5. [Crossref] [PubMed]

4. Aydın E, Ersoy N. Clinical-Ethical Decision-Making Process. T Klin J Med Ethics 1995; 3(1): 12-6.

5. Peerson A, Saunders M. Health literacy revisited: what do we mean and why does it matter? Health Promot Int 2009; 24(3): 285-96. [Crossref] [PubMed]

6. Şahiner A, Ak R, Aygün K, Turan C, Cimilli Öztürk T, Yurdakul ES, et al. Analysis of White Codes due to Violence in Fatih Sultan Mehmet Education and Research Hospital. Bosphorus Med J 2018; 5(1): 11-6. [Crossref]

7. Akdeniz M, Kavukçu E. Quaternary prevention: First, do not harm. Turkish Journal of Family Practice 2017; 21(2): 74-81. [Crossref]

8. İlhan M, Aydemir Ö, Çakır M, Aycan S. A study in three districts of Ankara of behaviors associated with irrational use of drugs. Turk J Public Health 2014; 12(3): 188-200. [Crossref]

9. Ilhan MN, Durukan E, Ilhan SO, Aksakal FN, Ozkan S, Bumin MA. Self-medication with antibiotics: questionnaire survey among primary care center attendants. Pharmacoepidemiol Drug Saf 2009; 18(12): 1150-7. [Crossref] [PubMed]

10. Bolat A, Arslan M, Balamtekin N, Zeybek C, Aydoğmuş YH, Ünay B. Current Epidemiological Data on Community Acquired Pneumonia in Children After Improvements in the Health System and Socioeconomic Changes in Turkiye. J Mol Virol Immunol 2022; 3(3): 150-8. [Crossref]

11. Gürsoy K. An Overview of Turkish Healthcare System after Health Transformation Program: Main Successes, Performance Assessment, Further Challenges, and Policy Options. Sosyal Güvence 2015; 7: 83-112.

12. Khalifa M, Khalid P. Reducing Unnecessary Laboratory Testing Using Health Informatics Applications: A Case Study on a Tertiary Care Hospital. Procedia Computer Science 2014; 37: 253-60. [Crossref]

13. Friedman M, Rosenman R (eds). Type a Behavior and Your Heart. 1974, Harper and Row, New York.

14. Weiss DJ, Dawis RV, England GW. Manual for the Minnesota Satisfaction Questionnaire. Minnesota Studies in Vocational Rehabilitation 1967; 22: 120.

15. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. J Health Soc Behav 1983; 24(4): 385-96. [PubMed]

16. Eskin M, Harlak H, Demirkıran F, Dereboy C. The Adaptation of the Perceived Stress Scale Into Turkish: A Reliability and Validity Analysis. New/Yeni Symposium Journal 2013; 51(3): 132-40.

17. Sahin NH, Durak A. Stresle basa cıkma tarzları ölceği: Universite ögrencileri icin uyarlanması. Turk Psikoloji Dergisi 1995; 10(34): 56-73.

18. Smith CM. Origin and uses of primum non nocere--above all, do no harm! J Clin Pharmacol 2005; 45(4): 371-7. [Crossref] [PubMed]

19. Türkiye Cumhuriyeti Resmi Gazete. Devlet Memurları Kanunu 23/7/1965. Resmi Gazete. 1967: 4179–4290. Available at: https://www.mevzuat.gov.tr/MevzuatMetin/1.5.657.pdf [Accessed July 18, 2022].

20. Sikaris KA. Enhancing the Clinical Value of Medical Laboratory Testing. Clin Biochem Rev 2017; 38(3): 107-14. [PubMed]

21. Hickner J, Graham DG, Elder NC, Brandt E, Emsermann CB, Dovey S, et al. Testing process errors and their harms and consequences reported from family medicine practices: a study of the American Academy of Family Physicians National Research Network. Qual Saf Health Care 2008; 17(3): 194-200. [Crossref] [PubMed]

22. Kocatürk E, Ağgül C, Alataş O. Investigation of Unnecessary Laboratory Testing by Using fPSA and Serum Lipids Turk Klinik Biyokimya Derg 2015; 13(3): 101-6.

23. Aksoy GA, Zeytinoğlu A. Evaluation of unnecessary test requests from clinical virology-serology laboratory. Ege Journal of Medicine 2012; 51(3): 157-61.

24. Hofmann B. Medicalization and overdiagnosis: different but alike. Med Health Care Philos 2016; 19(2): 253-64. [Crossref] [PubMed]

25. Doğan E, Hıdıroğlu S, Karavuş M. A qualitative study to evaluate common problems of primary health care physicians about patients. Jour Turk Fam Phy 2017; 8(1): 2-10. [Crossref]

26. Ishikawa H, Yano E, Fujimori S, Kinoshita M, Yamanouchi T, Yoshikawa M, et al. Patient health literacy and patient-physician information exchange during a visit. Fam Pract 2009; 26(6): 517-23. [Crossref] [PubMed]

27. Restuccia JD, Payne SM, Lenhart G, Constantine HP, Fulton JP. Assessing the appropriateness of hospital utilization to improve efficiency and competitive position. Health Care Manage Rev 1987; 12(3): 17-27. [Crossref] [PubMed]

28. Wagner H. Quaternary Prevention and the Challenges to Develop a Good Practice Comment on "Quaternary Prevention, an Answer of Family Doctors to Overmedicalization". Int J Health Policy Manag 2015; 4(8): 557-8. [Crossref] [PubMed]

29. Jones CJ, Smith H, Llewellyn C. Evaluating the effectiveness of health belief model interventions in improving adherence: a systematic review. Health Psychol Rev 2014; 8(3): 253-69. [Crossref] [PubMed]

30. Whiting P, Toerien M, de Salis I, Sterne JA, Dieppe P, Egger M, Fahey T. A review identifies and classifies reasons for ordering diagnostic tests. J Clin Epidemiol 2007; 60(10): 981-9. [Crossref] [PubMed]

31. Kc D, Terwiesch C. Impact of Workload on Service Time and Patient Safety: An Econometric Analysis of Hospital Operations. Management Science 2009; 55(9): 1486-98. [Crossref]

32. Shye D, Freeborn DK, Romeo J, Eraker S. Understanding physicians' imaging test use in low back pain care: the role of focus groups. Int J Qual Health Care 1998; 10(2): 83-91. [Crossref] [PubMed]

33. Finset A. "I am worried, Doctor!" Emotions in the doctor-patient relationship. Patient Educ Couns 2012; 88(3): 359-63. [Crossref] [PubMed]

34. Ozyurt A, Hayran O, Sur H. Predictors of burnout and job satisfaction among Turkish physicians. QJM 2006; 99(3): 161-9. [Crossref] [PubMed]

35. Shanafelt TD, Boone S, Tan L, Dyrbye LN, Sotile W, Satele D, et al. Burnout and satisfaction with work-life balance among US physicians relative to the general US population. Arch Intern Med 2012; 172(18): 1377-85. [Crossref] [PubMed]

36. Pulcrano M, Evans SR, Sosin M. Quality of Life and Burnout Rates Across Surgical Specialties: A Systematic Review. JAMA Surg 2016; 151(10): 970-8. [Crossref] [PubMed]