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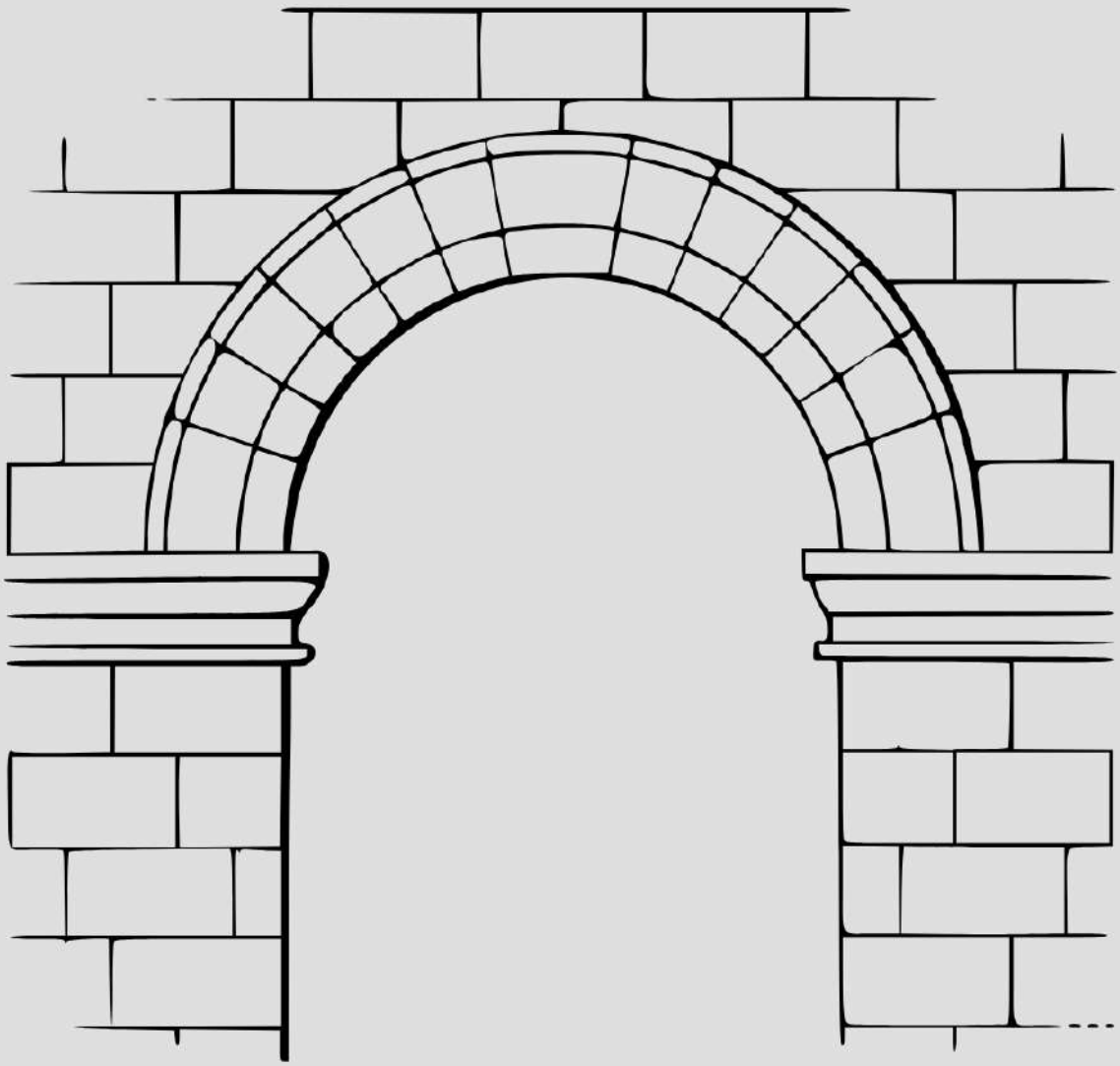

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Research Article
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Examination of the Effect of Perceived Social Exclusion on Hopelessness in Elderly Individuals with Chronic Diseases

Kronik Hastalığı Olan Yaşlı Bireylerde Algılanan Sosyal Dışlanmanın Umutsuzluk Üzerine Etkisinin İncelenmesi

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ABSTRACT
Purpose: The research was conducted as a descriptive study to determine the relationship between the perceived social exclusion levels of individuals with chronic diseases in old age and the sense of hopelessness they feel.
Materials and Methods: The research was conducted between November 2022 and January 2023 with 147 patients over the age of 65 who were treated for their chronic diseases in the internal medicine intensive care clinic of a training and research hospital. Data were collected with the Personal Information Form, Beck Hopelessness Scale (BHS), Social Exclusion Scale (SDS) and frequency, percentage, t test and ANOVA methods were evaluated.
Results: It was determined that 53.1% of the elderly individuals participating in the study were male, 49.7% were married, and the average length of hospitalisation was 8.30 ± 5.32 days. The average BHS total score of the elderly was 3.80±3.164 and the SES total score average was 64.17 ± 17.903.
Conclusion: As a result of the study, it was determined that the level of social exclusion perceived by elderly individuals with chronic diseases was at a moderate level and they felt a moderate level of hopelessness. It was also determined that there was a significant relationship between the level of social exclusion and felt hopelessness.
Keywords: Chronic illness, elderly, social exclusion, hopelessness

ÖZET
Amaç: Araştırma, yaşlılık dönemindeki kronik hastalığı olan bireylerin algıladıkları sosyal dışlanma düzeyleri ile hissettikleri umutsuzluk duygusu arasındaki ilişkiyi tespit etmek amacıyla tanımlayıcı olarak yapılmıştır.
Gereç ve Yöntem: Araştırma, bir eğitim ve araştırma hastanesinin dahiliye yoğun bakım kliniğinde kronik hastalıkları nedeniyle tedavi alan 65 yaş üstü 147 hasta ile Kasım 2022-Ocak 2023 tarihleri arasında yapılmıştır. Veriler, Kişisel Bilgi Formu, Beck Umutsuzluk Ölçeği (BUÖ), Sosyal Dışlanma Ölçeği (SDÖ) ile toplanmıştır ve frekans, yüzde, t testi ve ANOVA yöntemleri değerlendirilmiştir.
Bulgular: Araştırmaya katılan yaşlı bireylerin %53.1'inin erkek olduğu, %49.7'nin evli olduğu, yatış süresi ortalaması ise 8.30 ± 5.32 gün belirlenmiştir. Yaşlıların BUÖ toplam puan ortalaması 3.80±3.164 ve SDÖ toplam puan ortalaması 64.17 ± 17.903 tespit edilmiştir.
Sonuç: Çalışma sonucunda kronik rahatsızlığı olan yaşlı bireylerin algıladıkları sosyal dışlanma düzeyinin orta düzeyde olduğu ve orta düzeyde umutsuzluk hissettikleri tespit edilmiştir. Ayrıca sosyal dışlanma düzeyi ile hissedilen umutsuzluk arasında da anlamlı bir ilişki olduğu belirlenmiştir.
Anahtar Kelimeler: Kronik hastalık, yaşlılık, sosyal dışlanma, umutsuzluk.

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INTRODUCTION

In today's world, the elderly population is gradually increasing with the increase in quality of life, medical and technological developments, decrease in infectious diseases, prolongation of life with chronic diseases and decrease in mortality rates (Santrock, 2015). As in the whole world, the elderly population is gradually increasing in our country. Old age is a period in which changes are experienced at various levels in biological, psychological, mental and social areas (Townsend, 2016). In this period, the decrease in the functional capacity of the body and the presence of accompanying chronic diseases cause emotional and social changes in the elderly (Beğer and Yavuzer, 2012; Kislaya, Santos and Gil, 2013).

With these developing and changing characteristics, elderly individuals are excluded from many areas such as economy, labour market, social, housing and health areas due to their difficulties in performing normal activities (Genç and Dalkılıç, 2013; Görgün, 2016). The excluded elderly individual is a multidimensional situation that includes different attitudes, perceptions, judgements, prejudices, behaviours and actions as a result of the decrease or loss of their abilities and competencies due to their age (Akdemir, Çınar and Görgülü, 2007; Cilingiroğlu and Demirel 2004).

The physical changes that occur as a result of aging and the features of the elderly losing their functionality also remove them from the labour market. Elderly people who cannot make a living with their pension or who cannot have a pension experience economic difficulties due to the society's perspective on old age, even though they do not experience loss of labour force. As a result of this, the elderly will have difficulties in meeting their basic needs and this situation will reduce the quality of life of the individual. As a result of the economic exclusion of the elderly, it can be expected that the society will be deprived of all resources (Genç and Dalkılıç, 2013; Feng, Jones and Wang, 2015).

With these social exclusion, the elderly individual loses his/her communication with others, the environment, relatives and society from time to time. In this process, it may be at an abstract level in the form of decreased support and interest of family members or interpreted in this way by the person, or it may be at a concrete level in the form of death of the spouse, separation of children from home (Bahar, 2005; Coşkun, 1998).

With the social exclusion and deteriorated communication experienced by the elderly individuals, they begin to question whether their lives are meaningful or not, with the thought that their lives are not good enough and that there are many things they cannot do, and with the thought of impending death. With these thoughts of the elderly, hopelessness emerges in

elderly individuals (Beck, Rawlins and Williams, 1984; Frisch and Frisch, 2002). When considered in this context, the individual falls into hopelessness with the social exclusion perceived by elderly individuals. In our study, the effect of perceived social exclusion on hopelessness in elderly individuals with chronic diseases will be examined within this framework.

MATERIALS AND METHODS

Purpose and Type of Research

The research was conducted as a descriptive study in order to determine the effect of perceived social exclusion on hopelessness of elderly individuals with chronic illnesses.

Population and Sample of the Research

The population of the study consists of patients hospitalized in the internal medicine intensive care unit of a training and research hospital. The sample of the study consists of patients with chronic illnesses who were hospitalized between 25.12.2022 and 30.01.2023, who are 65 years of age and above, who can communicate and who volunteer to participate in the study. The research includes 147 patients.

Research Inclusion / Exclusion Criteria

Inclusion Criteria

• Patients aged 65 and over with chronic illnesses who were hospitalized in the internal medicine intensive care unit of the relevant hospital at the time the research was conducted,

• Do not have any hearing, speaking or understanding problems that would prevent communication when filling out the data collection tools,

• Individuals who volunteered to participate in the study were included in the study.

Exclusion Criteria

• Patients who were not hospitalized in the internal medicine intensive care unit of the relevant hospital at the time the research was conducted,

• Patients who are not 65 years of age or older,

• Does not have a chronic disease,

• Those who have hearing, speaking and understanding problems that would prevent communication from filling out the data collection tools,

• Individuals who did not volunteer for the research were not included in the study.

Data Collection

After interviewing the participants face to face and informing them about the purpose of the research, the data were collected using the "Sociodemographic Data Collection Form", the "Social Exclusion Scale (YSDS)" to determine the levels of social exclusion, and the "Beck Hopelessness Scale (BUS)" to determine the hopelessness levels and tendencies of social exclusion. was collected by applying It took approximately 20-25 minutes to collect the surveys.

Data Collection Forms

Personal Information Form: The form, created by the researcher by reviewing the literature, includes questions aimed at identifying sociodemographic characteristics of individuals such as age, gender, educational status, marital status and economic status.

Beck Hopelessness Scale (BHS): Beck et al. developed by. Validity in our countryand the reliability study by Seber et al. it was made by and the individual's future ıdentifying negative expectations about it is used for. Later Durak scale worked on it; validity of the scale, more about its reliability and factor structure.Detailed information was obtained. BUO 20 consisting of items scored between 0 and 1 is the scale. When the scores received are high the hopelessness of the individual is high is assumed (Durak and Palabıyıkoğlu, 1994; Savaşır and Şahin, 1997)

Social Exclusion Scale (SES): Social Exclusion Scale in the Elderly is a valid and reliable measurement tool to understand the social exclusion processes of the elderly. This scale consists of 22 items and 4 subscales. These dimensions; material deprivation, lack of informal social support, transportation and financial services, and environmental exclusion. The scale consists of 5-point Likert type items. Total score can be obtained from the scale, but evaluation can also be made by taking the average of the dimensions. The sum of the four sub-dimensions gives the "total score of social exclusion in the elderly". As the score increases, social exclusion also increases in the elderly. The reliability and validity study of the scale was conducted with data from 584 elderly individuals. Exploratory and confirmatory factor analyzes were used to determine the construct validity of the scale. Cronbach Alpha coefficients calculated to determine the reliability coefficients of the sub-dimensions of the scale vary between .71 and .89. In this study, which was conducted to understand the social

exclusion processes of the elderly living in rural areas, the Cronbach Alpha reliability coefficient of YSDS was calculated as (Apak and Apak, 2020).

Evaluation of Data

While evaluating the data obtained in the study, descriptive statistical methods (Mean, Standard deviation) as well as Anova and t test were used for comparison between groups. Additionally, correlation analysis was performed for the relationship between concepts. Significance for the results was evaluated at the $p<0.05$ level.

Ethical Principles of Research

After the research was planned, ethics committee and relevant institution permissions were obtained.

RESULTS

As a result of the analyses, data on some sociodemographic and personal characteristics are included in Table 1. It was revealed that 57.1% of the elderly who participated in the study were between the ages of 75-84 and were 8.30 ± 5.32 during the hospitalization period. It was determined that 53.1% of the elderly included in the research were male and 53.7% had a medium level economic status. It was determined that 21.8% of the elderly in the study had chronic diseases such as COPD and 50.3% would be treated healthily every three months. It was determined that 59.9% showed improvement during the treatment compliance process and 77.6% perceived their health to be at a moderate level.

Table 1: Elderly Individuals Distribution of Socio-Demographic Characteristics

Demographic Characteristics	Min. - Max	Mean±Sd
Number of children	0 - 17	7.16 ± 3.93
Duration of the medical treatment in hopital	2 - 28	8.30 ± 5.32
	Categories	**S**
Age	65-74	45
	75-84	84
	85 and above	18
Education	Illiterate	30
	Primary education	107
	High school	10
Gender	Woman	69
	Man	78

Financial status	Poor	32
	Middle	79
	Good	36
People with living	Alone	30
	Partner	47
	Wife and child	25
	With children	38
	Organisation	7
Chronic disease	DM	26
	HT	28
	Coroner Arter Dis	29
	Chronic Kidney Dis.	19
	COPD	32
	Prostate	13
Frequency of visiting the hospital	Once in a month	57
	Quarterly	74
	Once in a six month	19
Treatment adaptation	Adaptated	88
	Not ad aptated	59
Perception of own health	Poor	3
	Middle	114
	Good	30

As a result of the analysis, the scores obtained by the participants from the scale and subscale scores are shown in Table 2. It was determined that the SES total score of the elderly individuals participating in the study was 64.17 ± 17.903 and the BUS total score average was 3.80 ± 3.164. It was observed that the average scores of elderly individuals were at the border.

Table 2: Mean of YSDS and BHS in Elderly Individuals with Chronic Diseases

Scales	X±SD	Max and Min Points of Participants	Median
SES	64.17 ± 17.903	28- 102	62.00
BHS	3.80±3.164	0 – 15	3.00

The correlation analyzes performed are given in Table 3. According to the correlation analysis, it was determined that the relationship between the social exclusion perceived by elderly individuals with chronic diseases and the loneliness they felt was statistically significant. Accordingly, as the social exclusion individuals perceive increases, the hopelessness they feel also increases.

Table 3: Relationship Between SES and BHS

	SES
BHS	0,278** **p=0,000**

In line with the analyses, information about the relationship between some characteristics of elderly individuals and the BHS and SES scales is given in Table 4. As a result of the analysis, it was determined that women, those with poor economic conditions, those who were not compliant with treatment, and those who lived in an institution rather than with their family felt more hopeless and excluded.

Table 4: Charecteristic of Elderly People with Chronic Diseases Relationship with Total Scores with SES and BHS

Variables	Categories	Total SES ±SD	p	Total BHS ±SD	p
Gender	Male	68.16 ± 18.62		2.75 ± 2.53	
	Female	60.64 ± 16.52	**p=0.011**	4.73 ± 3.38	**p=0.000**
Age	65-74	64.73±20,03		4.27± 3.58	
	75-85	63.15±17.12	p=0.629	3.75± 3.04	p=0.289
	85 and above	67.50±16.27		2.89±2.44	
Education	Illiterate	61.57±14.44		3.80± 2.36	
	Primary education	65.84±18.58	p=0.189	3.62±3.18	p=0.113
	High school	56.20±18.49		5.80±4.44	
Financial Status	Poor	76.53±17.03		3.13± 2.49	
	Middle	65.92±16.08	**p=0.000**	3.51± 2.94	**p=0.019**
	Good	49.33±11.42		5.06±3.82	
Chronic disease	DM	63.77±18.07		3.58± 2.75	
	HT	65.68±18.85		4.00± 2.89	
	Coroner Arter Dis	68.79±18.33	p=0.566	3.86±2.93	p=0.975
	Chronic Kidney Dis.	60.79±10.86		3.37±3.76	
	COPD	62.97±21.03		3.84±3,71	
	Prostate	59.31±14.48		4.23 ±3.05	
Frequency of visiting the hospital	Once in a month	62.98±15.94		3.41± 2.64	
	Quarterly	67.18±18.05	**p=0.039**	3.32± 2.76	**p=0.000**
	Once in a six month	55.84±20.38		6.79±4.34	
Treatment adaptation	Adaptated	61.43 ±18.02		4.27 ± 3.5	
	Not ad aptated	68.25 ±17.07	**p=0.023**	3.1 ± 2.44	**p=0.027**
People with living	Alone	63.83±17.30		3.57± 2.80	
	Partner	65.32±16.81	**p=0.014**	3.72± 3.38	**p=0.008**
	Wife and child	56.64±19.65		5.64±3.51	
	With children	64.55±17.30		3.32±2.71	
	Organisation	82.71±11.91		1.43±.78	

Perception of own health	Poor	57.67±19.03	**p=0.026**	10.67± 7.50	**p=0.000**
	Middle	62.31±17.07		3.88± 2.92	
	Good	71.90±19.30		2.83±2.69	

DISCUSSION

Loneliness, recognised as a serious public health issue globally can be described as an unpleasant feeling arising out of a mismatch between the levels of social connectedness that an individual desires and what individual has (Sarin, Sethi and Nagar, 2016). As a public health issue, it is associated with various suicidal behaviours such as depression and hopelessness and its' prevalence ranges between 28 and 63% among elderly adults in high income countries from a report by the United Kingdom (Sarin, Sethi and Nagar, 2016). Elderly individuals feel a sense of hopelessness and social exclusion as they are not able to continue their socially interactive roles. From our findings there is a strong correlation between perceived social exclusion among elderly individuals with chronic diseases and the hopelessness the feel. This suggests a link between social exclusion, loneliness, and feelings of hopelessness among elderly individuals with chronic diseases as espoused by the Social Identity Theory. Role replacement (Yılmaz, Calikoglu and Kosan, 2019) is the description given to explain this state of life for the elderly. Chronic diseases among elderly individuals serve as a barrier toward social interaction, as their health inhibits them from active socialisation. Elderly individuals with physical limitations and chronic restrictions are unable to participate in social engagement giving rise to social alienation (Yılmaz, Calikoglu and Kosan, 2019). Social engagement, the basis of social relationships provides a sense of bonding. However, these elderly individuals resort to solitary lives as they are unable to socialise. The aftermath of this is depression and other mental health conditions. The institutionalisation of elderly homes, a concept that seeks to change one's residence makes the elderly feel "uprooted" (Huen, Ip, Ho and Yip, 2015) from their original homes exacerbating this feeling of hopelessness and exclusion as they lose touch with their children and grandchildren. Again, concomitant challenges such as different life style pattern, surroundings and environment at their new home, is a source of stress.

Changes in family structure and the social culture of filial piety have weakened adult children's sense of obligation to provide family support to older people (Biggs, Brough and Drummond, 2017). This modern practice turns to put a lot of psychological stress on the elderly. For instance, research has revealed that about 25.94% of physically ill elderly residents of nursing home have substantially higher levels of depression compared with their counterparts living at home (Huen, Ip, Ho and Yip, 2015). This is because they are forced to

adapt to a new environment. Nursing home environment appears to reinforce passive, apathetic, and dependent behaviour, which lead to motivational and affective problems (Huen, Ip, Ho and Yip, 2015). The studies of Asiamah (Niu et al.,2020) state that permanent residence influences the elders to remain more socially engaged since they have continuous support from the peer members. So the home that has been established for the elderly denies them from this family support leading to hopelessness. Hopelessness is defined by Beck et al. as a system of negative cognitive expectancies concerning oneself and one's future life (Gum, Shiovitz-Ezra and Ayalon, 2017). Hopelessness is related to adverse health outcomes for older people including cardiovascular morbidity and mortality. As a stronger predictor of suicide, hopelessness is a strong predictor of suicidal intent (Zhang, Liu, Tang ve Dong, 2018). Social support, especially from family, is essential for helping elderly individuals with chronic diseases achieve wellness. Positive support from persons closer them, such as a spouse, can reduce depression among elderly individuals with chronic conditions (Yılmaz, Calikoglu and Kosan, 2019). Notwithstanding the burden on family members, older adults with chronic diseases need assistance from a family caregiver.

It's also been established that the kind of relationship shared or established also impacts the individual at the old age homes. Those with positive relations tend to be less affected by the challenges of daily problems and they have a greater sense of control. Those without become isolated, ignored and depressed (Huen, Ip, Ho and Yip, 2015). Older people who remain connected with others and have strong relationships are likely to have a better quality of life, be more satisfied with their life, and have a lower risk of dementia and mental decline. Elderly people tend to have friendships largely with those in the same age group, but as they advance in age, they are more likely to lose their friendship (Niu et al., 2020). As a result of ill-health, constrain in mobility due to aging related pains, they are unable to continue with the frequent interactions with their pals and so lose out on their social relations.

Their inability to attend such events like wedding, funerals, parties due to mobility challenges make it impossible to have fun and hence they are likely to go into depression. This is because Social engagement is the basis of social relationships that provides a sense of bondin (Bahtiar, Sahar and Wiarsih, 2020). Therefore elderly who have been socially disengaged at this time of their lives invariably misses out on socialisation. A study undertaken by Singh and Misra on loneliness, depression and sociability in old age explains the family and social networks of the elderly. It is further noted that many elders experience an increased amount of loneliness as a result of lonely living, reduced family ties and social connectivity (Niu et al., 2020). Beneficial health outcomes are often associated with meaningful social

engagement for elderly adults and social integration within acquaintances that have similar social activities help in ameliorating loneliness.

Economic conditions also contribute to the well-being of elderly adults. Those who are able to engage in some form of economic ventures benefits from the tantrums of loneliness; additionally, they also earn some little income to sustain themselves. This takes the financial stress off their minds putting them in sound mind frame. They do not therefore relay on their children and families for financial support to cater for their health bills and daily expenses. There was a statistically significant difference in both socioeconomic status and levels of hopelessness between participants who have adapted to treatment and those who have not, implying that treatment adaptation may play a role in influencing both socioeconomic status and levels of hopelessness among the participants. The finding suggests that individuals who have successfully adapted to treatment may experience better socioeconomic outcomes and lower levels of hopelessness compared to those who have not. This espouses the importance of considering not only the efficacy of medical treatments but also the ability of individuals to adapt to and adhere to these treatments in achieving positive health outcomes and well-being.

Old age is a stage in life where all those who are privileged to attain, faces the challenges associated with that stage of life. However, certain remedial measures can be taken to reduce the severity of these challenges and still help the older individuals to feel a sense of well-being. Not every older adult feels the sense of community in the institutionalised homes and as such families should be minded when taking a decision to send older adults there. Psychological education such as meditation and mindfulness training can be given to these older individuals to help cope with emotional and psychological aspects of aging. However, those who still have some little energy in them can be provided some economic activities which does not only provide a sense of purpose but maintain a healthy mind. Overall, implementing all these measure will pave the way for optimum functionality of the older adult until his last day on earth.

Limitations of the Research

Patients aged 65 and over with chronic diseases who were hospitalized in the internal medicine intensive care unit of a training and research hospital were included in the study. The strength of this study is that the patients participating in the study answered all questions and answered sincerely. A limitation of the study is that the results cannot be generalized to

all people aged 65 and over with chronic diseases, as it was conducted only in one clinic of the hospital.

CONCLUSION AND RECOMMODATIONS

As a result of the study, it was determined that the hopelessness levels and social withdrawal levels of elderly individuals with chronic diseases were significantly related. In addition, it has been determined that the elderly's gender, economic status, frequency of hospitalization, treatment compliance, people/place they live with and the way they perceive their health are important indicators of both social withdrawal and hopelessness levels. In this context, elderly people with chronic diseases;

- Conducting psychosocial evaluations during treatment,
- Determining areas of need and
- It is thought that it is important to plan and implement interventions specific to these needs.

Research Statement

Ethical Aproval: The study does not require ethical approval.

Conflict of Interest: The authors declare that there is no conflict of interest for the study.

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Use of Artificial Intelligence in Psychiatric Nursing and Ethics

Psikiyatri Hemşireliğinde Yapay Zekanın Kullanımı ve Etik

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ABSTRACT
Artificial intelligence is a technology that can fulfill tasks that require human intelligence, providing significant developments in various fields such as health. While the use of Artificial intelligence in medical applications offers advantages such as early diagnosis and personalized treatment plans, it also brings ethical issues such as data security and privacy violations. The integration of Artificial intelligence in the field of psychiatric nursing improves nurses' therapeutic relationships with patients, while at the same time supporting their clinical decision-making processes. However, for the effective use of Artificial intelligence in this field, nurses should be trained in Artificial intelligence technology and ethical guidelines should be established. Integration of Artificial intelligence into mental health services can improve the healing process of patients by supporting the personal skills of nurses. In conclusion, the use of Artificial intelligence in psychiatric nursing in a broader and ethical framework may improve the quality of mental health services.
Keywords: Psychiatric nursing, Artificial intelligence, Ethics, Review

ÖZET
Yapay zeka, insan zekası gerektiren görevleri yerine getirebilen, sağlık gibi çeşitli alanlarda önemli gelişmeler sağlayan bir teknolojidir. Yapay zekanın tıbbi uygulamalarda kullanımı, erken teşhis ve kişiselleştirilmiş tedavi planları gibi avantajlar sunarken, veri güvenliği ve mahremiyet ihlalleri gibi etik sorunları da beraberinde getirmektedir. Psikiyatri hemşireliği alanında Yapay zekanın entegrasyonu, hemşirelerin hastalarla terapötik ilişkilerini geliştirirken, aynı zamanda klinik kararlar verme süreçlerini desteklemektedir. Bununla birlikte, Yapay zekanın bu alanda etkin kullanımı için hemşirelerin Yapay zeka teknolojisi konusunda eğitim almaları ve etik rehberler oluşturulması gerekmektedir. Yapay zekanın ruh sağlığı hizmetlerine entegrasyonu, hemşirelerin kişisel becerilerini destekleyerek hastaların iyileşme sürecini iyileştirebilir. Sonuç olarak, Yapay zekanın psikiyatri hemşireliğinde daha geniş ve etik bir çerçevede kullanımı, ruh sağlığı hizmetlerinin kalitesini artırabilir.
Anahtar Kelimeler: Psikiyatri hemşireliği, Yapay Zeka, Etik, Derleme

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INTRODUCTION

Artificial intelligence (AI) is an application that aims to develop computer systems that can fulfil tasks that require human intelligence such as learning, reasoning, problem-solving and perception (Aslan and Subaşı, 2022; Ülker and Akkan, 2023). These systems use learning and adaptive algorithms to fulfil functions such as generating thoughts on a specific theme, making decisions, making risk predictions and providing support for extraordinary situations (Lee et all., 2021). The usability of AI in various fields reveals the importance and potential of this technology. AI applications provide significant advances in disciplines such as medicine, finance, education and engineering and offer different approaches to achieve human-like performance (Sayar, 2023). For example, detecting changes in a patient's behaviour or speech structure can provide earlier intervention for a health crisis that may arise as a result of dangerous situations (Özel and Aba, 2023). In this context, the development and application of artificial intelligence are of great importance both theoretically and practically.

AI, which is actively used in many fields, is widely used in the field of medicine, especially in the protection of physical health and detection of possible problems (Sayar, 2023). Monitoring of pulse and physical activities, use of radiological images, medication monitoring can be given as examples. AI has great potential in protecting the mental health of the individual, detecting possible problems and making necessary interventions (Ray et all., 2022). Methods such as analysis of voice and facial expressions for early detection of mood disorders, mobile applications for monitoring current and visible indicators, and natural language processing for correcting possible errors in therapy sessions can be actively used in the field of mental health (Ülker and Akkan, 2023; Fareeq et all., 2023). In this context, mental health professionals (nurses, psychiatrists, etc.) should support the integration of AI into mental health services, protection and treatment of mental health.

The use of AI in psychiatric nursing, which has an important role in mental health services, is increasing day by day. Therefore, a psychiatric nurse should have a certain level of knowledge about AI. In addition, they should actively use AI in providing emotional support to individuals and developing coping mechanisms for patients and their families. They should identify individual ethical risks related to trust, privacy and autonomy that may arise with the use of AI (Fiske et all., 2019). They should develop personal skills that promote trust with human connection, establish therapeutic relationships, and support the

management of mental illness and recovery (Fiske et all., 2019; Nashwan et all., 2023). In addition, it is necessary to identify the deficiencies of psychiatric nurses in this field and to provide these skills from the undergraduate period. In this context, the research will make recommendations on AI-supported psychiatric nursing and ethical issues.

Artificial Intelligence and Mental Health

Artificial Intelligence (AI) is an application that is created by combining various data and contains human characteristics such as reasoning, learning, planning and creativity (Aslan and Subaşı, 2022). It contains a large pool in its structure with machine learning, deep learning and storage of data (Lee et all., 2021). This situation provides an active use in disciplines such as health, finance, education and engineering (Sayar, 2023). Its use in many fields contributes to the expansion of these applications and the benefit of many people. Medical imaging and diagnosis, personalized treatment, agricultural management, autonomous vehicles, and personalized shopping experience are examples of these areas (Aslan and Subaşı, 2022; Lee et all., 2021). It will be possible to discuss the impact, potential advantages and disadvantages of AI only by recognizing and taking part in these applications.

The use of AI in health services, health promotion, early diagnosis, management of the treatment process and care, and its use as an innovative approach in order to make appropriate and accurate decisions is a subject of discussion. By analyzing treatment images such as X-ray, Magnetic Resonance Imaging (MRI), and positron emission tomography (PET) scans, cancer, tumours and other diseases can be detected at early stages (Lee et all., 2021). Performing such applications on physical health is very important for the health of the individual. However, studies to be carried out only for a certain aspect of the human being, which is a whole in physical, mental and social aspects, will cause difficulties in terms of protecting the health of the individual. Therefore, biopsychosocial evaluation of the individual and the use of AI in health should be addressed with all its dimensions.

Mental health is the state of internal balance in which the individual can realize his/her potential, cope with stress factors, and be productive and efficient in society (Okcu, 2020; Ülker and Akkan, 2023). Based on this definition, mental health professionals use individual-specific approaches by using skills such as establishing a therapeutic relationship

with the patient and observing the patient's emotions and behaviours. The fact that the relationship between the patient and the clinician is sensitive in this process between the individual with between the individual undergoing a mental health evaluation and the clinician makes the process important. Carrying out this process by using AI may cause difficulties in the sensitive relationship between the individual and the clinician, especially in the transfer of emotions and detection of behaviours. In this context, mental health professionals need to find the necessary solutions by making a correct determination and planning in order to realise these skills by using AI.

Integration of Artificial Intelligence into Psychiatric Nursing and its Future

Psychiatric nursing is a speciality based on knowledge and practice that provides comprehensive care and support to individuals with mental health problems (Fareeq et all., 2024; Yılmaz and Özcan, 2016). Nurses working in this field play an active role in improving patients' mental problems and increasing their social functionality by using their knowledge and skills. In addition, psychiatric nurses can make targeted psychosocial interventions in high-risk individuals and try to minimize the risk by providing counselling and educational resources according to the needs of the individual. Psychiatric nurses have certain roles and responsibilities (Yılmaz and Özcan, 2016). They perform diagnosis and evaluation, treatment planning, medication management, psychotherapy and counselling for individuals with mental problems with roles such as manager, clinical practitioner, researcher and programme evaluator (Fareeq et all., 2024; Yılmaz and Özcan, 2016).

Developments in technology have brought significant changes in mental health services. This change has also affected psychiatric nursing, and the integration of AI into mental health services has led to some changes in the roles and responsibilities of nursing. For example, with personalized treatment approaches, AI algorithms can develop treatment plans by analyzing data such as genetic profiles, treatment history and response to treatment (Nashwan et all., 2023; Briganti, 2023). When the literature is examined, it is seen that nurses and nurse educators in the USA and some European countries have started to recognize these applications and started to include them in the nursing care process (Aslan and Subaşı, 2022). However, it is thought that the use of AI in psychiatric nursing has not been fully realized in many countries due to incomplete knowledge, lack of infrastructure and economic reasons. It is very important to eliminate the deficiency of psychiatric nurses who actively deal with

individuals with mental problems and to integrate AI. In this context, psychiatric nurses who will actively use AI are recommended to implement the following items:

- Guidelines should be established for the correct use of AI in psychiatric nursing, ethical procedures should be regulated, and these guidelines should be updated as the literature is updated (Fiske, 2019).
- Certification studies on subjects such as virtual psychotherapies, telehealth and patient monitoring should be planned and implemented for psychiatric nurses actively working in the field in order to use AI in care and treatment (Ray et all., 2022; Naswhan et all., 2023).
- A curriculum should be developed for the use of AI in psychiatric nursing courses by following the current literature from the undergraduate period, and students should be guided about the applications they can make (Woodnutt, 2024).
- Psychosocial effects in various treatment methods of AI should be addressed, and care should be shaped according to the needs of individuals by collaborating with interdisciplinary teams (Briganti, 2023).
- Research on diagnosis and evaluation, treatment planning, drug management, psychotherapy and counselling should be conducted using AI and therapeutic interventions should be applied to patients (Nashwan et all., 2023).
- Patients should be informed about the use of AI and the positive and negative effects that it may leave on the patient should be evaluated. In addition, measures should be taken for negative effects (Aslan and Subaşı, 2022).

These suggestions for the integration of AI in psychiatric nursing require serious work and patience. It is of great importance for nurses to make the necessary efforts to adapt to the developing and changing health system and to be more active in the field by increasing their numerical informational power. The use of AI in psychiatric nursing will increase the quality of care with the studies that can be carried out. In this context, some sample applications are given below to organize and realize the care and treatment processes of AI in psychiatric nursing:

- **Mental Health Diagnosis and Screening**

IBM Watson: Analyzes patient notes and other health data using natural language processing (NLP) and machine learning. This analysis can be used in the early diagnosis of depression, anxiety and other mental health problems. (Strickland, 2019)

***Eleos Health**:* Uses AI to analyze therapy sessions and provides feedback to therapists about the effectiveness of sessions. This can help psychiatric nurses improve their interactions with patients. (Sadeh-Sharvit and Hollon, 2020).

- **Personalized Treatment Plans**

Quartet Health: Integrates patients' medical and behavioural health data using AI and provides personalized treatment recommendations. This can help psychiatric nurses create optimal treatment plans for patients. (Castenhammar and Mohammed, 2020).

Ginger: Ginger is an AI-powered platform that provides users with 24/7 accessible mental health support. The platform offers personalized therapy and guidance based on individual needs. (Waheed et all., 2023).

- **Patient Monitoring and Tracking**

Mindstrong: Monitoring patients' behavioural health through smartphone use. AI algorithms assess users' mental health status from their phone interactions and provide continuous feedback to psychiatric nurses. (Kostopoulos, 2018).

Woebot: It is an AI-based chatbot that monitors users' emotional states and intervenes when necessary. This can help nurses monitor the mental health status of their patients. (Sudha, 2024).

- **Training and Support**

Simcoach: Offers virtual simulation training for psychiatric nurses. This platform helps nurses improve their skills related to various mental health conditions. (Rizzo e all., 2011).

Kognito: It is an AI-powered training platform that trains healthcare professionals on challenging patient interactions. This enhances nurses' patient communication and intervention skills. (Fiske et all., 2019).

Disadvantages and Ethical Aspects of Artificial Intelligence

AI has tremendous potential in understanding, diagnosing and providing solutions for mental disorders (Nashwan et all., 2023; Briganti, 2023). An application for Post Traumatic Stress Disorder can determine cognition, emotion and communication by following the patient's speech (Ülker and Akkan, 2023). In addition, applications that can increase students' communication skills, self-confidence and self-efficacy by simulating

various clinical scenarios with virtual patient applications are used (Nashwan et all., 2023). However, this potential also brings some negative situations and ethical problems. For example, misuse of data collected by AI with unauthorised access is an important problem in terms of patient privacy and confidentiality. In addition, algorithms that are not configured correctly may cause misdiagnosis and inappropriate treatments. Such situations decrease the reliability of AI and affect the privacy and autonomy of the individual (Fiske et all., 2019; Solaiman et all., 2023). Despite its potential, the fact that it also causes ethical problems negatively affects the integration of AI into mental health services and its use in the treatment of patients. In this context, psychiatric nurses' identification of ethical problems related to the use of AI and taking necessary interventions will ensure that AI can be applied more effectively in this field.

CONCLUSION AND RECOMMENDATIONS

Psychiatric nursing is a field that promotes trust with human connection to individuals with mental illnesses, establishes therapeutic relationships and uses personal skills in the management of mental illnesses and support of recovery with knowledge and practice-based roles (Nashwan et all., 2023). With the development of mental health services and the integration of AI into this field, the positive, negative and ethical aspects of AI affect psychiatric nursing. In this context, in the realisation of the integration of AI into psychiatric nursing;

- Developing and implementing guidelines for the use of AI in psychiatric nursing from the undergraduate education period,
- Researching the short and long-term effects of AI on individuals with mental diagnoses (schizophrenia, depression, anxiety, etc.),
- Ethically sound experimental evidence for the use of AI should be reported and further decisions made on how to safely incorporate AI into care,
- It is recommended to develop new perspectives and reach wider groups with studies on AI applications by acting in cooperation with other disciplines.

Research Statement

Ethical Aproval: The study does not require ethical approval.

Conflict of Interest: The authors declare that there is no conflict of interest for the study.

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Siberkondrinin Diş Hekimi Korkusu Üzerindeki Etkisinin İncelenmesi

Examining the Effect of Cyberchondria on Fear of the Dentist

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ÖZET

Çalışmanın amacı dijital teknoloji sorunu olan siberkondrinin diş hekimi korkusu üzerindeki etkisini belirlemektir. Çalışmanın evrenini herhangi bir Ağız ve Diş Sağlığı Hastanesinden hizmet alan Yozgat Bozok Üniversitesi İktisadi ve İdari Bilimler Fakültesi Sağlık Yönetimi Bölümü öğrencileri oluşturmaktadır. Çalışmanın örneklem seçiminde olasılıklı örnekleme yöntemlerinden rastgele örnekleme yöntemi kullanılmıştır. Çalışmanın örneklemini anketi doldurmayı kabul eden 200 birey oluşturmaktadır. Çalışmanın verileri üç kısımdan oluşan anket formu ile toplanmıştır. Anket formunun ilk kısmında sosyo demografik ait bilgi formu, ikinci kısımda dental kaygı ve korku ölçeği (IDAF – 4C+) üçüncü kısımda ise siberkondri ölçeği yer almaktadır. Verilerin analizinde tanımlayıcı istatistikler, güvenilirlik analizi, korelasyon analizi, regresyon analizi ve fark analizleri (Mann-Whitney U, Kruskal Wallis) kullanılmıştır. Çalışmada siberkondrinin IDAF-4C+ üzerinde pozitif yönlü etkisi olduğu tespit edilmiştir. Ayrıca siberkondri ile IDAF-4C+ ve alt boyutları arasında pozitif yönlü anlamlı ilişki olduğu belirlenmiştir. Sonuç olarak yüksek düzeyde siberkondri sergileyen bireyler, diş hekimi ziyaretleri ve prosedürleriyle ilgili yüksek düzeyde korku ve endişe bildirme eğilimine girebilir. Bu durum, çevrimiçi sağlık bilgisi aramanın zihinsel sağlık üzerindeki zararlı etkisinin altını çizmektedir. Ayrıca üniversite öğrencileri arasında siberkondri kaynaklı dişhekimliği korkusunu gidermek için hedefe yönelik müdahalelere ihtiyaç duyulmaktadır.

Anahtar Kelimeler: siberkondri, diş hekimi korkusu, dental kaygı, IDAF-4C+

ABSTRACT

The aim of the study is to determine the effect of cyberchondria, a digital technology problem, on dentist fear. The population of the study consists of students from Yozgat Bozok University, Faculty of Economics and Administrative Sciences, Department of Health Management, who receive service from any Oral and Dental Health Hospital. The random sampling method, one of the probability sampling methods, was used in the sample selection of the study. The sample of the study consists of 200 individuals who agreed to fill out the survey. The data of the study was collected with a survey form consisting of three parts. The first part of the survey form includes the socio-demographic information form, the second part includes the dental anxiety and fear scale (IDAF – 4C+), and the third part includes the cyberchondria scale. Descriptive statistics, reliability analysis, correlation analysis, regression analysis and difference analyzes (Mann-Whitney U, Kruskal Wallis) were used to analyze the data. In the study, it was determined that cyberchondria had a positive effect on IDAF-4C+. In addition, it was determined that there was a positive significant relationship between cyberchondria and IDAF-4C+ and its subscales. As a result, individuals who exhibit high levels of cyberchondria may tend to report high levels of fear and anxiety regarding dental visits and procedures. This highlights the detrimental impact of seeking health information online on mental health. Additionally, targeted interventions are needed to address cyberchondria-induced dental fear among college students.

Keywords: cyberchondria, fear of dentist, dental anxiety, IDAF-4C+

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GİRİŞ

Gelişen ve değişen dünyada internet ile ilgili teknolojilerin yaygınlığı arttıkça 'internet bağımlılığı', 'teknoloji bağımlılığı' gibi kavramlar da git gide önemini arttırmaktadır (Starcevıc ve Aboujaoude, 2015). 2022 istatistiklerine göre, dünya nüfusunun yaklaşık %67,9'u internet kullanmaktadır (Internet World Stats, 2023). Türkiye İstatistik Kurumu (TÜİK) tarafından yapılan 2023 yılı Hanehalkı Bilişim Teknolojileri (BT) Kullanım Araştırması'na göre evden internete erişim imkanı olan hanelerin oranı %95,5; 16-74 yaş grubundaki bireylerde internet kullanım oranı, %87,1'dir. Cinsiyet açısında internet kullanım oranı; erkeklerde %90,9, kadınlarda %83,3 olarak tespit edilmiştir (TÜİK, 2023).

İnternetin yaygınlaşmasıyla birlikte, bireylerin sağlık bilgilerine erişimi de daha kolay hale gelmiştir. Sağlıklarıyla ilgili endişeleri olan insanlar, teşhis koymak veya kendilerini güvence altına almak amacıyla internete erişebilmektedirler (McMullan ve diğerleri, 2019). Böylelikle siberkondri adı verilen ve çağın hastalığı olarak adlandırılan kavram ortaya çıkmıştır (Turan, 2022). Sağlıkla ilgili bilgilerin internette aşırı ve tekrarlı bir biçimde aranmasıyla oluşan sağlık kaygısı ve sıkıntısına siberkondri adı verilmektedir (McMullan ve diğerleri, 2019). Siberkondri hastaları, destek almak yerine genellikle çevrimiçi olarak keşfettikleri bilgileri kullanırlar. Bu nedenle de korku ve endişelerini tetiklemiş olurlar. İnternet aracılığıyla edinilen bilgiler her zaman doğru ve güvenilir bilgiyi veremeyeceğinden, çevrimiçi sağlık aramaları bireyin sağlığıyla ilgili belirsizliği arttırabilir ve bireyin ruhsal ya da fiziksel sağlığının olumsuz yönde etkilenmesine ayrıca korku ve stres durumu yaşamasına sebep olabilir (Starcevıc ve Aboujaoude, 2015). Mevcut araştırmalar da siberkondri ile sağlık anksiyetesi (Yalçın ve diğerleri, 2024; Göde ve Öztürk, 2023; Mestre-Bach ve Potenza, 2023; Özyıldız ve Alkan, 2022; Akgül ve Atalan Ergin, 2021), stres (Durmuş ve diğerleri, 2022; Han ve diğerleri, 2021; Shailaja ve diğerleri, 2020), COVID-19 korkusu (Belli, 2022; Boysan ve diğerleri, 2022; Durmuş ve diğerleri, 2022; Wu ve diğerleri, 2021), COVID-19 risk algısı ve COVID-19 aşısı yaptırma niyeti (Cheng ve Espanha, 2024; Ahorsu ve diğerleri, 2022) gibi bir çok davranışsal konu ile ilişki olduğu görülmektedir.

Bireylerin bedenen ve ruhsal olarak kendilerini tehlikede görmesi, yaşadıkları huzursuzluk duygusuyla birlikte korku ve kaygıları ortaya çıkarabilir (Şahin, 2019). Korku, insanların beklenmedik ve öngörülemeyen durumlarla yüzleşirken içlerinde oluşan derin ve yoğun bir duygudur. Frank Furedi'nin perspektifinden bakıldığında, korku, bu tür durumlarla karşılaşan bireylerin zihninde beliren ve korkuyla ilgili düşüncelere odaklanmalarını sağlayan bir mekanizmadır (Furedi, 2001:8). Korku biyolojik ve fiziksel olduğu kadar psikolojik ve ruhsal alanları da kapsayan çok boyutlu bir kavramdır. Biyolojik durum,

korkuyla ilişkili fiziksel reaksiyonları (bireyin gözbebeklerinin genişlemesi, adrenalin salgılanması vb.) içerir. Psikolojik alanda korku daha çok bir "duygu" olarak görülmektedir (Svendsen, 2017). Mannoni (1992) korkuyu iki farklı düzeyde tartışmaktadır: psikolojik düzey ve fizyolojik düzey. Psikolojik düzeyde birey korkuyla karşı karşıya kaldığı tehlikeli durumdan kaçmaya ve kendini kurtarmaya çalışır; Fizyolojik düzeyde, birey korkuyla karşılaştığında fizyolojik tepkiler (örneğin soğuk ter) gösterir. Dolayısıyla korku, tepkilere neden olmaz, bunun yerine tepkilerin bir sonucu olarak ortaya çıkar (LeDoux ve Hofmann, 2017).

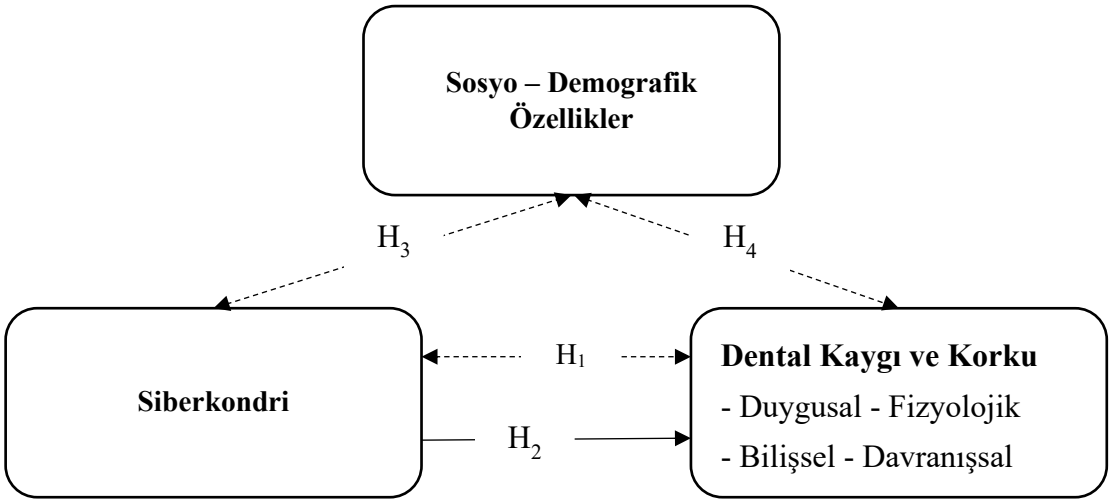
Diş hekimliği alanında, korku genellikle iki farklı kategoride incelenir: Dental korku ve dental anksiyete. Amerikan Psikoloji Derneği'nin (American Physiological Association [APA]) açıklamasına göre, diş hekimi korkusu genellikle bir tür fobi olarak sınıflandırılır ve çeşitli durumlarda kişilerin yaşamlarını etkileyen önemli olaylar olarak tanımlanır (Regier, First ve Marshall, 2002). Dental anksiyete, diş tedavisiyle ilişkili korku ve kaygı duygularını ifade eder. Dental korku, huzursuzluk tarafından tetiklenen ve gerçek uyarıcılara dayanan bir tepki iken, anksiyete ise mevcut bir tehlike olmadığında aniden gelişmeyen bir duygusal tepkidir (Jaakkola ve diğerleri, 2009; Fırat, Tunç ve Sarı, 2006).

Diş hekimi korkusuyla mücadele eden bireyler, ağız sağlığı üzerinde olumsuz etkiler yaşayabilirler. Bu etkiler arasında fiziksel semptomların yanı sıra psikolojik problemler de yer alabilir. Örneğin, diş hekimi ziyaretinden kaçınma nedeniyle diş çürükleri veya diğer ağız hastalıklarının ilerlemesi gibi fiziksel problemler ortaya çıkabilir. Bununla birlikte, ruhsal olarak da etkilenebilirler; sosyal izolasyon, düşük özgüven, hatta depresyon gibi durumlarla karşılaşabilirler. Ayrıca, günlük yaşam aktivitelerinden kaçınma, yeme alışkanlıklarında değişiklik, hatta iş veya okul performansında düşüş gibi sonuçlar da görülebilir (Vaizoğlu ve diğerleri, 2004). Kayaaltı Yüksek ve Beşiroğlu'nun (2021) çalışmasında, diş hekimine tedavi veya kontrol amacıyla başvuran bireylerin dental anksiyete düzeylerini belirlemek, dental korkuya etki eden faktörleri incelemek ve dental korkunun ağız hijyen alışkanlıkları ile yaşam kalitesine olan etkisini değerlendirmek amaçlanmıştır. Çalışmada daha önce diş hekimine başvurup olumsuz bir dental tedavi deneyimi yaşamış olan hastaların dental anksiyete düzeylerinin, diğerlerine kıyasla daha yüksek olduğunu bulmuşlardır. Ayrıca, düşük dental anksiyeteye sahip olan hastaların düzenli diş fırçalama alışkanlıklarının daha iyi olduğunu tespit etmişlerdir.

Bu çalışmanın önemi, siberkondrinin diş hekimi korkusu üzerindeki potansiyel etkilerini inceleyerek, dijital sağlık kaynaklarının bu korkuyu artırma veya azaltma üzerindeki rolünü anlamamıza yardımcı olabilecek olmasıdır. Ayrıca siberkondrinin diş

hekimi korkusu üzerindeki etkisini anlamamıza ve bu konuda bilinçli müdahaleler geliştirmemize olanak tanıyabilir. Bu kapsamda dijital teknoloji sorunu olan siberkondrinin diş hekimi korkusu üzerindeki etkisini belirlemek ve bu korkuyu üniversite öğrencileri üzerinde nasıl etkilediğini araştırmak çalışmanın amacını oluşturmaktadır.

Şekilde 1'de çalışmanın amacına ilişkin model yer almaktadır.



Şekil 1. Çalışmanın Modeli

Çalışmanın modeline uygun biçimde hipotezler geliştirilmiştir.

H_1: Siberkondri ile Dental kaygı ve korku arasında ilişki vardır.

H_2: Siberkondrinin Dental kaygı ve korku üzerinde etkisi vardır.

H_3: Siberkondri ile sosyo – demografik özellikler arasında farklılıklar vardır.

H_4: Dental kaygı ve korku ile sosyo – demografik özellikler arasında farklılıklar vardır.

H_{4a}: Duygusal - Fizyolojik ile sosyo – demografik özellikler arasında farklılıklar vardır.

H_{4b}: Bilişsel – Davranışsal ile sosyo – demografik özellikler arasında farklılıklar vardır.

YÖNTEM

Çalışmanın Evreni ve Örneklemi

Çalışmanın evrenini herhangi bir Ağız ve Diş Sağlığı Hastanesinden hizmet alan Yozgat Bozok Üniversitesi İktisadi ve İdari Bilimler Fakültesi Sağlık Yönetimi Bölümü öğrencileri oluşturmaktadır. Çalışmanın örneklem seçiminde olasılıklı örnekleme

yöntemlerinden rastgele örnekleme yöntemi kullanılmıştır. Çalışmanın örneklemini anketi doldurmayı kabul eden 200 birey oluşturmaktadır.

Veri Toplama Aracı

Çalışmanın verileri üç kısımdan oluşan anket formu ile toplanmıştır. Anket formunun ilk kısmında sosyo demografik ait bilgi formu, ikinci kısımda dental kaygı ve korku ölçeği (IDAF – 4C+) üçüncü kısımda ise siberkondri ölçeği yer almaktadır.

Sosyo – Demografik Özellikler

Bu kısımda, bireylerin cinsiyeti, ne kadar sıklıkla dişlerini fırçaladıkları, sigarı kullanımları, diş hekimine gitme sıklıkları, diş hekimine gitme nedenleri ve hizmetten memnun olmadıkları için daha önce diş hekimlerini değiştirip değiştirmediklerini ifade eden bilgiler sorulmaktadır.

Dental Kaygı ve Korku Ölçeği (IDAF – 4C+)

Ölçek Armfield (2010) tarafından geliştirilmiş olup, Boz (2017) tarafından Türkçe'ye uyarlanmıştır. Ölçeğin orjinali 8 ifade ve 4 alt boyuttan (bilişsel, davranışsal, duygusal ve fizyolojik) oluşmaktadır. Türkçe uyarlama çalışmasında ölçek 8 ifadeden oluşmakta olup, *Duygusal – Fizyolojik* ve *Bilişsel - Davranışsal* olmak üzere iki alt boyutta toplanmıştır. İfadeler 5'li likert (1 -Kesinlikle Katılmıyorum, 5 – Kesinlikle Katılıyorum) şeklinde hazırlanmıştır.

Kısa Siberkondri Ölçeği

Ölçek, Jokić-Begić ve meslektaşları tarafından 2019 yılında geliştirilmiştir. Dört ifadeden (örnek ifade, koronavirüs ile ilgili sağlık bilgisini araştırdıktan sonra korkarım) oluşmaktadır. Türkçe geçerlilik ve güvenilirlik çalışması Durmuş ve diğerleri, 2022 tarafından yapılmıştır. Ölçek 5'li Likert yapıda tasarlanmış olup; 1 kesinlikle katılmıyorum – 5 kesinlikle katılıyorum şeklinde düzenlenmiştir.

Katılımcılardan anket formunda bulunan seçeneklerden en uygun olanı işaretlemeleri istenmiştir.

Verilen Analizi

Araştırmadan elde edilen veriler SPSS yazılımı kullanılarak analiz edilmiştir. Veriler, tanımlayıcı istatistikler, güvenilirlik analizi, korelasyon analizi, regresyon analizi ve fark

analizleri (Mann-Whitney U, Kruskal Wallis) kullanılarak analiz edildi. Veriler %95 güven aralığıyla analiz edildi.

BULGULAR

Katılımcıların sosyo demografik bulgularının yer aldığı Tablo 1'e göre; katılımcıların %61'i kadın %39'u erkektir. Katılımcıların %65,5'i günde 3 defa dişlerini fırçalamaktadır. %59,5'i sigara kullanmamaktadır. İhtiayacı olduğunda diş hekimine giden katılımcıların sayısı 109 ve 6 ayda bir gidenlerin sayısı 41 dir. Diş hekiminde memnun olmadığı için diş hekimini değiştiren katılımcıların sayısı 125'tir. Katılımcıların diş hekimine gitme nedenleri ise sırasıyla; muayene kontrol (%30), dolgu (%26), ağrı (%15), diş çektirme (%7), cerrahi işlem (%5,5), diş eti şikayeti (%5) ve protez (%2,5) dir.

Tablo 1. Sosyo Demografik Değikenlere Ait Bulgular (n=200)

Değişkenler		Sayı	Yüzde
Cinsiyet	Erkek	78	39,0
	Kadın	122	61,0
Ne Kadar Sıklıkla Dişlerinizi Fırçalarsınız?	Günde 1 Defa	40	20,0
	Günde 2 Defa	24	12,0
	Günde 3 Defa	131	65,5
	Haftada 1 Defa	4	2,0
	Aklıma Gelince	1	,5
Sigara Kullanır mısınız?	Kullanmam	119	59,5
	Yarım Paketten Az	31	15,5
	Yarım Paket	24	12,0
	1 Paket	17	8,5
	1 Paketten Fazla	9	4,5
Toplam		**200**	**100,0**
Diş Hekimine Hangi Sıklıkla Gidersiniz?	6 Ayda 1	41	20,5
	Yılda 1	16	8,0
	1 Yıldan Fazla Ralıklarla	16	8,0
	İhtiyacım Olduğunda	109	54,5

En Son Diş Hekimine Gitmenizin Nedeni Nedir?	Muayene Kontrol	60	30,0
	Dolgu	52	26,0
	Ağrı	30	15,0
	Diş Çektirme	14	7,0
	Cerrahi İşlem	11	5,5
	Diş Eti Şikayeti	10	5,0
	Protez	5	2,5
Hizmetten Memnun Olmadığınız İçin Daha Önce Diş Hekiminizi Değiştirdiniz mi?	Evet	57	28,5
	Hayır	125	62,5
Toplam		**182**	**91,0**

Çalışmada kullanılan ölçeklerin güvenilirlik, ortalama ve standart sapma değerlerine ilişkin bulgular Tablo 2'de yer almaktadır. Buna göre, Siberkondri ölçeğinin cronbach's alpha değeri 0,929, IDAF – 4C+'nin cronbach's alpha değeri 0,942, IDAF – 4C+'nin alt boyutlarından Duygusal Fiziksel boyutunun cronbach's alpha değeri 0,942 ve Bilişsel Davranışsal boyutunun cronbach's alpha değeri 0,840'dır. Jokić-Begić ve meslektaşları (2019) Siberkondri ölçeğine ilişkin cronbach's alpha değerini 0,77, Durmuş ve diğerleri, (2022) çalışmasında Siberkondri'nin cronbach's alpha değerini 0,94 bulmuştur. Armfield (2010) çalışmasında IDAF – 4C+'nin cronbach's alpha değerini 0,94 ve Boz (2017) genel güvenirliği 0,842 bulmuştur. Çalışma kullanılan ölçeklerin cronbach's alpha değerleri orijinal ve Türkçe uyarlama çalışma ile benzerlik göstermektedir. Ayrıca cronbach's alpha değerlerinin 0.80 ve üzerinde olması (Karagöz, 2019) öçeklerin yüksek derecede güvenilir olduğunu göstermektedir.

Öçeklerin ortalama değerlerini incelediğimizde ortalamaların 2,5'un altında değerlere sahip olduğunu görmekteyiz (Tablo 2). Buna göre katılımcıların siberkondri ve korku davranışı sergileme düzeylerinin oratalamanın altında kaldığını ifade edebiliriz.

Tablo 2. Değişkenlere Ait Ortalama ve Güvenilirlik Bulguları

	Cronbac's Alpha	Ortalama	Std. Sapma
Duygusal Fiziksel	0,942	2,43	1,14
Bilişsel Davranışsal	0,840	2,13	0,98

IDAF-4C+	0,942	2,32	1,02
Siberkondri	0,929	2,41	1,05

IDAF-4C+ ve altı boyutları ile Siberkondri arasındaki ilişkiyi incelemek için korelasyon analizi yapılmıştır. Analiz sonuçları Tablo 3'de görüldüğü gibidir. Buna göre, Siberkondri ile IDAF-4C+, Duygusal Fiziksel boyut ve Bilişsel Davranışsal boyut arasında pozitif yönlü anlamlı ilişki bulunmaktadır (H_1 kabul).

Tablo 3. Değişkenler Arasındaki Korelasyon Bulguları

	1	2	3	4
Duygusal Fiziksel (1)	1			
Bilişsel Davranışsal (2)	0,777**	1		
IDAF-4C+ (3)	0,974**	0,900**	1	
Siberkondri (4)	0,758**	0,756**	0,798**	1

**. 0.01 düzeyinde anlamlı korelasyon vardır.

Tablo 4'teki sonuçlar incelendiğinde kurulan modelin istatistiksel olarak anlamlı ve kullanılabilir olduğu görülmektedir (F=347,561; p=0,000). Modelin ilişki katsayısı 0,80'dür ve siberkondrinin IDAF-4C+'yi yordama etkisi %64'tür. Modele göre siberkondri IDAF-4C+'yi pozitif yönde etkilemektedir (H_2 kabul).

Tablo 4. Siberkondrinin Dental Kaygı ve Korku Üzerindeki Etkisine Ait Bulguları

Bağımlı Değişken	Bağımsız Değişken	Standartlaştırılmamış Değerler		Standartlaştırılmış Değerler	t	p
		B	Std. Hata	Beta		
IDAF – 4C+	(Sabit)	0,447	0,110		4,079	0,000
	Siberkondri	0,777	0,042	0,798	18,643	0,000
F= 347,561; **p**=0,00; **R**=0.80; **R^2**=0,64						

Değişkenler ile Sosyo Demografik Değişkenler Arasındaki Farklılığa Bulgular

Araştırmada veriler analiz edilmeden önce verilerin normal dağılıp dağılmadığı incelenmiştir. Verilerin çarpıklık (skewness) ve basıklık (kurtosis) değerleri hesaplandı. "-2,0 ile +2,0" arasındaki çarpıklık ve basıklık değerleri verilerin normal dağıldığını gösterir

(George ve Mallery, 2010). Çalışmadaki verilerin normal dağılım göstermediği bundan dolayı nonparametrik analizlerden yararlanılmıştır.

Bu kısımda, sosyo-demografik değişkenler ile Siberkondri, IDAF-4C+, Duygusal Fiziksel boyut ve Bilişsel Davranışsal boyut arasındaki farklılığı belirlemek amacıyla Mann-Whitney U ve Kruskal Wallis gerçekleştirilmiştir. Analiz sonucunda, farklılık bulunmayan demografik değişkenler tablolara konulmamıştır.

Katılımcıların cinsiyetleri ile Bilişsel Davranışsal alt boyutu arasında istatistiksel olarak anlamlı farklılık olup olmadığını incelemek amacıyla Mann-Whitney U testi kullanılmıştır (Tablo 5). Analiz sonuçlarına bakıldığında Bilişsel Davranışsal alt boyutunda cinsiyetin, erkekler lehine istatistiksel olarak anlamlı bir farklılık oluşturduğu görülmektedir.

Tablo 5. Katılımcıların Cinsiyetlerine Göre Fark Analizi

Cinsiyet		**N**	**Sıra Ortalaması**	**Mann-Whitney U**	**p**
Bilişsel Davranışsal	Erkek	78	110,84	3951,500	0,041
	Kadın	122	93,89		

Katılımcıların diş hekimine gitme sıklıkları ile ölçekler arasındaki farklılıklığı tespit etmek için Kruskal Wallis analizi gerçekleştirilmiştir. Analiz sonuçları Tablo 6'da görüldüğü gibidir. Buna göre; Duygusal Fiziksel alt boyutundaki farklılık 6 ayda bir diş hekimine giden ile ihtiyacı olduğuna diş hekimine giden arasında; IDAF-4C+ deki farklılık 6 ayda bir diş hekimine giden ile ihtiyacı olduğuna diş hekimine giden arasında; Siberkondri'deki farklılık ise hem 6 ayda bir diş hekimine giden ile ihtiyacı olduğuna diş hekimine giden hem de yılda bir diş hekimine giden ile ihtiyacı olduğuna diş hekimine giden arasından kaynaklanmaktadır.

Tablo 6. Katılımcıların Diş Hekimine Gitme Sıklıklarına Göre Fark Analizi

Diş Hekimine Hangi Sıklıkla Gidersiniz?		**N**	**Sıra Ortalaması**	**X^2**	**p**	**Fark**
Duygusal Fiziksel	6 Ayda Bir[1]	41	76,05	8,247	,041	1-4, p=0,01
	Yılda Bir[2]	16	78,72			
	1 Yıldan Fazla Aralıklarla[3]	16	82,59			
	İhtiyacım Olduğunda[4]	109	100,50			

IDAF-4C+	6 Ayda Bir[1]	41	75,45	8,064	,045	1-4, p=0,02
	Yılda Bir[2]	16	79,84			
	1 Yıldan Fazla Aralıklarla[3]	16	83,97			
	İhtiyacım Olduğunda[4]	109	100,35			
Siberkondri	6 Ayda Bir[1]	41	77,94	8,514	,037	1-4, p=0,04; 2-4, p=0,03
	Yılda Bir[2]	16	70,34			
	1 Yıldan Fazla Aralıklarla[3]	16	87,75			
	İhtiyacım Olduğunda[4]	109	100,26			

Yukarıdaki fark analizi sonuçlarına göre; diş hekimine gitme sıklığı ile siberkondri arasındaki farklılık dışında H_3 hipotezi reddedilmiştir. IDAF-4C+ ile diş hekimine gitme sıklığı arasındaki farklılık dışında H_4 hipotezi reddedilmiştir. Ayrıca Duygusal Fiziksel alt boyutu ile diş hekimine gitme sıklığı arasındaki farklılık dışında H_{4a} hipotezi ve Bilişsel Davranışsal alt boyut ile cinsiyet arasındaki farklılık dışında H_{4b} hipotezi reddedilmiştir.

TARTIŞMA

Siberkondrinin diş hekimi korkusu üzerindeki etkisini belirlemek ve bu korkuyu üniversite öğrencileri üzerinde nasıl etkilediğini incelemek amacıyla gerçekleştirdiğimiz çalışmanın bulguları siberkondri, diş hekimi korkusu ve bunların üniversite öğrencileri üzerindeki etkileri arasındaki karmaşık ilişkiye ışık tutmaktadır. Siberkondri ile ilgili davranışlar ve IDAF-4C+ düzeylerinin kapsamlı bir incelemesi, bu iki konunun hem klinik hem akademik ortamlarda ele alınmasının önemini vurgulayan önemli ilişkiler ortaya koymuştur. Bu bulgularla doğrudan ilişkili çalışmalar literatürde yer almamaktadır. Fakat litaratürdeki siberkondri ile sağlık anksiyeti ve korku arasındaki ilişkiye dair çalışmalarla (Göde ve Öztürk, 2023; Tuna ve diğerleri, 2023; Yücel ve diğerleri, 2023; Kumchenko ve diğerleri, 2021; Kurcer ve diğerleri, 2021; Jungmann ve Witthöft, 2020; Shailaja ve diğerleri, 2020; Bati ve diğerleri, 2018; Doherty-Torstrick ve diğerleri, 2016) benzerlik göstermektedir. Buna göre sağlıkla ilgili aşırı internet araması ve kendi kendine teşhis koyma ile karakterize edilen siberkondri, üniversite öğrencileri arasında artan dişhekimliği korkusunun önemli bir

belirleyicisi olduğunu söyleyebiliriz. Ayrıca çevrimiçi sağlık bilgilerine erişimin kolaylığı asılsız korkuları ve diş bakımıyla ilgili endişeleri artırarak riskler oluşturabilir.

Çalışmanın amacına ilişkin bir diğer bulgu ise siberkondrinin IDAF-4C+ üzerinde pozitif yönlü etkisinin olmasıdır. Konuyle doğrudan ilişkili herhangi bir çalışma olmmasına rağmen Doğanyiğit ve Keçeligil'in (2022) çalışmaları da benzer bir sonuca varmış, siberkondrinin sağlık kaygısı üzerinde pozitif yönlü bir etkisi olduğunu ortaya koymuştur. Ayrıca, Newby ve McElroy'un (2020) bulguları da, bireylerin internetten hastalık arama davranışlarının artmasıyla birlikte sağlık anksiyetesinin de arttığını desteklemektedir. Satyarup ve diğerleri (2023) çalışmalarında, diş hekimine gitme konusunda korku ve kaygı duyan kişilerin siberkondri davranışı prevelansını daha yüksek bulmuşlardır. Özellikle COVID-19 pandemisi sırasında, aşırı internet kullanımının sağlık kaygısı, sağlık anksiyetesi ve sağlık korkusu gibi davranışları artırdığına dair birçok çalışma bulunmaktadır. Örneğin; Yam ve diğerleri (2021), Hashemi ve diğerleri (2020), Jokic-Begic ve diğerleri (2020), Oniszczenko (2021), Rahme ve diğerleri (2021), Shailaja ve diğerleri (2020) çalışmalarında siberkondrinin Covid-19 korkusunun üzerinde pozitif yönlü etkisisinin olduğunu belirlemişlerdir. Yapılan araştırmalar siberkondrinin IDAF -4C+ üzerinde etkili olduğunu ortaya koymaktadır.

Kısıtlılıklar

Çalışmanın örneklemi yalnızca Yozgat Bozok Üniversitesi İktisadi ve İdari Bilimler Fakültesi Sağlık Yönetimi Bölümü öğrencilerinden oluştuğundan, elde edilen sonuçların diğer coğrafi bölgelerdeki veya farklı üniversitelerdeki öğrenciler için genellenebilirliği sınırlıdır. Bu durum araştırmanın kısıtlılığını oluşturmaktadır.

SONUÇ VE ÖNERİLER

Siberkondri, internet ve dijital teknolojileri yoğun olarak kullanan üniversite öğrencileri arasında artan bir gösterge olarak ortaya çıkmaktadır. Bu durum, IDAF -4C+ ile değerlendirildiğinde, siberkondrinin üniversite öğrencileri arasında önemli bir etkiye sahip olduğunu göstermektedir. İnternet kaynaklarının çoğalması, sağlık bilgilerine benzeri görülmemiş bir erişim sunarken, aynı zamanda asılsız korkuları daha da artırmaktadır ve diş bakımıyla ilgili yanlış kanıların devam etmesine neden olmaktadır. Bu durum, siberkondrinin ruh sağlığı ve refahı üzerindeki olumsuz etkilerini ortadan kaldırmak için üniversite

popülasyonları arasında dijital sağlık okuryazarlığını ve eleştirel değerlendirme becerilerini teşvik etmenin önemini vurgulamaktadır.

Sonuç olarak yüksek düzeyde siberkondri sergileyen bireyler, diş hekimi ziyaretleri ve prosedürleriyle ilgili yüksek düzeyde korku ve endişe bildirme eğilimine girebilir. Bu durum, çevrimiçi sağlık bilgisi aramanın zihinsel sağlık üzerindeki zararlı etkisinin altını çizmektedir. Ayrıca üniversite öğrencileri arasında siberkondri kaynaklı dişhekimliği korkusunu gidermek için hedefe yönelik müdahalelere ihtiyaç duyulmaktadır.

Bu bulguların ışığında, sağlık uygulayıcıları, eğitimciler ve politika yapıcılar, diş bakımıyla ilgili siberkondri kaynaklı korku ve kaygıları gidermek için proaktif önlemler almaya teşvik edilmektedir. Kanıta dayalı sağlık bilgisi okuryazarlığını teşvik ederek ve kaygı yönetimine yenilikçi yaklaşımlar uygulayarak, üniversite öğrencilerinin ağız sağlıkları hakkında bilinçli kararlar vermelerini ve diş tedavisine başvurmanın önündeki engelleri aşmalarını sağlayabiliriz. Özetle, bu çalışma üniversite öğrencileri arasında siberkondri kaynaklı dişhekimliği korkusunu gidermek için disiplinler arası işbirliğine ve bütünsel yaklaşımlara ihtiyaç vardır. Böylelikle, korku ve kaygının temel nedenlerini ele alarak, proaktif bir ağız sağlığı yönetimi kültürünü geliştirebilir ve üniversite topluluklarının genel refahını artırabiliriz.

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Hemşirelik Öğrencilerinin Meme Kanseri Korku Düzeyleri ve Etkileyen Faktörlerin İncelenmesi

Examination of Nursing Students' Breast Cancer Fear Levels and Affecting Factors

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ÖZET

Giriş: Meme kanseri korkusu ve bu korkuyu etkileyen faktörler meme kanseri erken tanı davranışlarında etkilidir.
Amaç: Çalışma hemşirelik öğrencilerinin meme kanseri korku düzeyleri ve etkileyen faktörlerin incelenmek amacıyla yapılmıştır.
Yöntem:Çalışma bir üniversitenin hemşirelik bölümü öğrencilerinde, Ocak-Mart 2018 tarihleri arasında gerçekleştirilmiştir. Örneklemi 205 hemşirelik öğrencisi oluşturmuştur. Veriler tanımlayıcı bilgi formu ve meme kanseri korku ölçeği ile toplanmıştır. Verileri analiz etmek için tanımlayıcı istatistiklerden sayı, yüzde, ortalama değerler alınmıştır. Ayrıca Varyans Analizi, Kruskall Wallis Analizi, Mann-Whitney U Testi, bağımsız gruplarda t testi yapılmıştır. Çalışma için etik kuruldan, kurumdan ve katılımcılardan izinler alınmıştır.
Bulgular:Çalışmada hemşirelik öğrencilerinin meme kanseri korku düzeyleri 38.61±6.87 bulunmuştur. Öğrencilerin sınıflarının, gelir durumlarının, aile tipinin, ailede meme kanseri öyküsü olma durumlarının, KKMM yapma sıklıklarının meme kanseri korku düzeyini etkilemediği ($p>0.05$), kendi kendine meme muayenesi yapma durumunun meme kanseri korku düzeyini etkilediği saptanmıştır ($p<0.05$).
Sonuç: Sonuç olarak meme kanseri kokusunun yüksek olduğu, korkunun kendi kendine meme muayenesi yapma durumdan etkilendiği saptanmıştır. Girişimsel hemşirelik çalışmaları önerilmektedir.
Anahtar Kelimeler: Meme Kanseri Korkusu, Meme Kanseri.

ABSTRACT
Introduction: Fear of breast cancer and factors affecting this fear are effective in breast cancer early diagnosis behaviors.
Objective: The study was conducted to examine nursing students' breast cancer fear levels and affecting factors.
Method: The study was conducted among students in the nursing department of a university between January and March 2018.
The sample consisted of 205 nursing students. Data were collected with a descriptive information form and breast cancer fear scale. Independent samples t test, Mann-Whitney U Test, Analysis of Variance, Kruskall Wallis Analysis were used to analyze the data. Permissions for the study were obtained from the ethics committee, institution and participants.
Results: In the study, the breast cancer fear level of nursing students was found to be 38.61±6.87. There was no significant difference between the students' breast cancer fear scale total score averages according to their grades, income levels, family types, family history of breast cancer, and frequency of BSE ($p<0.05$). A significant difference was found between the breast cancer fear scale total score averages according to self-breast examination status ($p<0.05$).
Conclusion: As a result, it was determined that the smell of breast cancer was high and fear was affected by self-breast examination. Interventional nursing studies are recommended.
Keywords: Fear of Breast Cancer, Breast Cancer.

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GİRİŞ

Meme kanseri dünyada en sık görülen kanserler içinde yer almakta olup erken tanı konulduğunda tedavi şansı yüksek olan bir kanserdir (Yılmaz et al., 2022). Meme kanserinin tamamen ortadan kaldırılması mümkün değildir. Bu nedenle erken tanılanması ve zamanında tedaviye başlanması önemlidir (Shakery et al., 2021).

Meme kanseri erken tanısında kendi kendine meme muayenesi (KKMM) oldukça önemlidir. Kadının meme dokusundaki değişikliklerin erken dönemde saptamasına yardımcı olur (Yılmaz et al., 2022). Ülkemizde genç bireylerde meme kanserinin görülme sıklığı giderek artmaktadır. Bu nedenle gençlerin bu konuda bilgilendirilmesinin, farkındalık oluşturulmasının önemi gün geçtikçe artmaktadır (Şişman Et al., 2022). Yapılan çalışmalarda hemşirelik öğrencilerinin KKMM'si yapma oranlarının düşük olduğu görülmektedir (Doğan Yüksekol et al., 2022; Kılıç et al., 2006).

Günümüz koşullarında kanser yaşamı tehdit eden bir hastalık olarak algılanmaktadır. Kanser tedavisindeki çok önemli gelişmelere rağmen hala çok korkulan bir hastalık olarak görülmektedir (Oflaz, 2002). Bu korku nedeniyle bireyler meme kanseri erken tanı davranışlarını gerçekleştirmemektedir (Büyükkaya Duman et al., 2015; Sohbet ve Karasu, 2017). Meme kanseri korku düzeyini etkileyen birçok faktör bulunmaktadır. Yapılan bir çalışmada okur yazar olan, sağlık güvencesi olmayan, bekar olan kadınların meme kanseri korku düzeylerinin yüksek olduğu saptanmıştır (Polat and Ersin, 2017). Ayrıca araştırmalar gençlerin meme kanseri konusunda yeterli bilgiye sahip olmadıklarını göstermektedir. Bu durum da meme kanseri korku düzeyini etkilemektedir (Beydağ ve Karaoğlan, 2007; Kwok et al., 2005). Meme kanseri tanısı alma korkusu en sık bahsedilen korku olup kadınların tarama davranışlarını gerçekleştirmelerinde önemli engellerden bir tanesidir (Borravo et al., 2005; Kıssal et al., 2018; Lamyian et al., 2007; Ogedegbe et al., 2005; Polat and Ersin 2017; Young and Severson, 2005). Ancak yapılan bazı çalışmalarda korkunun kolaylaştırıcı olarak tartışıldığı da görülmektedir (Beydağ ve Karaoğlan, 2007; Ogedegbe et al., 2005; Polat and Ersin 2017). Bu nedenle gençlerin meme kanseri ile ilgili bilgilerini arttırmak, öğrendiklerini uygulamaya geçirmelerini sağlamak, sağlığı geliştirme davranışlarını kazanmaları için çaba harcamak, meme kanseri korku düzeylerini azaltmak önem taşımaktadır. Ayrıca gençlerin farkındalık düzeylerinin arttırılması, sağlıklı bireylerin oluşmasına katkı sağlayacaktır. Hemşire adaylarının toplumun sağlığının korunması ve geliştirilmesinde önemli sorumlulukları bulunmaktadır (Aydın Avcı et al., 2008; Doğan Yüksekol et al., 2022). Bu

nedenle özellikle hemşirelik öğrencilerinin topluma hizmet sunumunda rol model olmaları açısından erken tanı davranışlarını geliştirmeleri önemlidir.

YÖNTEM

Araştırmanın Amacı/Tipi

Hemşirelik öğrencilerinin meme kanseri korku düzeylerini ve etkileyen faktörler belirlemektir. Araştırma tanımlayıcı tiptedir.

Evren-Örneklem

Araştırmada Hemşirelik Bölümü'nde öğrenim gören kız öğrencilerin tamamına (355 öğrenci) ulaşılması hedeflenmiştir. Herhangi bir örnekleme yöntemine gidilmemiş olup gönüllü 205 öğrenci örneklemi oluşturmuştur.

Veri Toplama Süreci

Çalışma bir Üniversitenin Sağlık Bilimleri Fakültesi Hemşirelik Bölümü'nde Ocak-Mart 2018 tarihleri arasında gerçekleştirilmiştir.

Veri Toplama Araçları

Veriler tanıtıcı bilgi formu ve Meme Kanseri Korku Ölçeği ile toplanmıştır. Tanıtıcı bilgi formu 7 soru içermektedir. Meme Kanseri Korku Ölçeği, 2004 yılında Champion ve arkadaşları tarafından geliştirilmiştir (Champion et al., 2004). Ölçeğin ülkemizde geçerlik güvenirlik çalışması 2012 yılında Seçginli tarafından yapılmıştır. Cronbach Alpha katsayısı .90'dır. Ölçekten alınacak puan minimum 8, maksimum 40'dır. Ölçek 'kesinlikle katılmıyorum-1 puan', 'kesinlikle katılıyorum-5 puan' şeklinde puanlanmaktadır. Ölçek puanları düşük düzey korku:8-15 puan arası, orta düzey korku:16-23 puan arası, yüksek düzey korku:24-40 puan olarak sınıflandırılmaktadır (Champion et al., 2004; Secginli, 2012). Bu çalışmada ölçeğin chronbach alpha değeri .93'tür.

Araştırmanın Değişkenleri

Çalışmanın bağımlı değişkenleri Meme Kanseri Korku Ölçeği puan ortalamalarıdır. Bağımsız değişkenleri ise öğrencilerin yaşı, gelir durumu, aile tipi, ailede meme kanseri öyküsü, KKMM yapma durumu ve yapma sıklığıdır.

Verilerin Değerlendirilmesi

Verileri değerlendirmek için SPSS 16.0 paket programı kullanılmış. Verileri analiz etmek için tanımlayıcı istatistiklerden sayı, yüzde, ortalama değerler alınmıştır. Ayrıca Varyans analizi, Kruskall Wallis Analizi, Mann-Whitney U Testi, bağımsız gruplarda t testi yapılmıştır. Normallik analizinde çarpıklık ve basıklık değerleri dikkate alınmıştır.

Araştırmanın Etik Boyutu

Çalışmanın yapılabilmesi için ilgili kurumdan, bir Üniversitenin Tıp Fakültesi Etik Kurulu'ndan (04.01.2018 tarih, 20 nolu karar), çalışmaya katılacak olan bireylerden ve ölçek yazarından izinler alınmıştır.

BULGULAR

Katılımcıların yaş ortalaması 22.21±1.68 olup, %24.4'ü 3. sınıftır. Öğrencilerin %59'u gelir durumunu orta düzeyde algıladığını, %63.9'u çekirdek aileye sahip olduğunu, %21'i ailesinde meme kanseri öyküsü olduğunu, %72.7'si KKMM'si yaptığını, KKMM'si yapanların %15.4'ü her ay düzenli KKMM'si yaptığını ifade etmiştir (Tablo 1).

Tablo 1. Öğrencilerin Tanıtıcı Özelliklerinin Dağılımı (n=205)

Değişkenler	**$\bar{X}$ ± SS**	
Yaş	22.21±1.68	
Sınıf	**Sayı (n)**	**Yüzde (%)**
1.Sınıf	47	22.9
2.Sınıf	62	30.3
3.Sınıf	50	24.4
4.Sınıf	46	22.4

Gelir Durumu		
Düşük	45	22.0
Orta	121	59.0
Yüksek	39	19.0
Aile Tipi		
Çekirdek	131	63.9
Geniş	69	33.7
Parçalanmış	5	2.4
Ailede Meme Kanseri Öyküsü		
Evet	43	21.0
Hayır	162	79.0
Kendi Kendine Meme Muayenesi Yapma Durumu		
Evet	149	72.7
Hayır	56	27.3
Kendi Kendine Meme Muayenesi Yapma Sıklığı (149)		
Ara sıra	126	84.6
Her ay düzenli	23	15.4

Öğrencilerin meme kanseri korku ölçeği puan ortalaması 38.61±6.87 bulunmuştur (Tablo 2).

Tablo 2. Hemşirelik Öğrencilerinin Meme Kanseri Korku Ölçeği Puan Ortalamalarının Dağılımı

Ölçek	**$\bar{X}$ ± SS**	**Min-Max Puan**
Meme Kanseri Korku Ölçeği	38.61±6.87	8-38

Öğrencilerin sınıflarına, gelir durumlarına, aile tiplerine, ailede meme kanseri öyküsü olma durumlarına, KKMM yapma sıklıklarına göre meme kanseri korku ölçeği toplam puan ortalamaları ile karşılaştırıldığında aralarında anlamlı bir fark bulunmamıştır ($p>0.05$). KKMM'si yapma durumuna göre meme kanseri korku ölçeği toplam puan ortalamaları arasında ise anlamlı bir fark saptanmıştır ($p<0.05$) (Tablo 3).

Tablo 3. Hemşirelik Öğrencilerinin Tanıtıcı Özelliklerine Göre Meme Kanseri Korku Ölçeği Puan Ortalamalarının Dağlığımı

Değişkenler	**Meme Kanseri Korku Ölçeği**	
Sınıf	**$\bar{X}$ ± SS**	**İstatistiksel Değer**
1.Sınıf	18.91 ± 8.15	F=2.612
2.Sınıf	22.93 ± 8.96	p=.053
3.Sınıf	19.86 ± 7.42	
4.Sınıf	19.93 ± 7.70	
Gelir Durumu		
Düşük	20.35 ± 8.44	F=2.096
Orta	21.40 ± 8.24	p=.126
Yüksek	18.33 ± 7.73	
Aile Tipi		
Çekirdek	21.35 ± 8.16	KW=3.488
Geniş	19.36 ± 8.29	p=.175
Parçalanmış	17.40 ± 7.92	
Ailede Meme Kanseri Öyküsü		
Evet	22.67 ± 7.99	t=1.878
Hayır	20.03 ± 8.23	p=.062

Kendi Kendine Meme Muayenesi Yapma Durumu		
Evet	21.87 ± 8.11	t=3.771
Hayır	17.16 ± 7.60	p=.000
Kendi Kendine Meme Muayenesi Yapma Sıklığı		
Ara sıra	22.13 ± 8.24	U=1253.500
Her ay düzenli	20.47 ± 7.38	p=.304

TARTIŞMA

Çalışmada hemşirelik öğrencilerinin meme kanseri korku düzeylerini ve etkileyen faktörleri belirlemek hedeflenmiştir.

Bireylerin sağlık ve hastalık kavramına ilişkin inanç ve tutumları, içinde yaşadıkları kültüre göre şekillenmekte, insanların sağlığa ve hastalığa yaklaşımları ve iyileşme biçimleri de değişmektedir (Çal et al., 2018). Hastalıkların erken tespit edilmesi tedavi aşamasında oldukça önemlidir. Bu nedenle bireylerin erken tanıya yönelik davranışları önem taşımaktadır. Bu çalışmada öğrencilerin yarısından fazlasının (%72.7) KKMM yaptığı saptanmıştır. Ancak öğrencilerin çoğu (%84.6) ara sıra KKMM'si yaptığını ifade etmiş çok az bir bölümü (%15.4) her ay düzenli KKMM yaptığını belirtmiştir. Yapılan bir çalışmada öğrencilerin KKMM'si yapma durumlarının %84.9, her ay düzenli KKMM yapanların oranı ise %51.9 saptanmıştır (Aytekin et al., 2021). Farklı bir çalışmada da öğrencilerin %48.4'ü KKMM'si yaptığını belirtmiştir (Mavi Aydoğdu ve Karapelit, 2017). Hemşirelik öğrencilerinin çoğunun KKMM yapması beklenen bir sonuçtur. Ancak öğrencilerin çok azının her ay düzenli KKMM yapıyor olması erken tanı yöntemleri hakkında yeterli düzeyde farkındalıklarının olmadığını düşündürmektedir.

Meme kanseri yaygın bir sorundur ve meme kanserine yönelik farkındalığı artıran ve erken tanı davranışlarına yön veren inanışların anlaşılması önemlidir (Çal et al., 2018). Bu çalışmada öğrencilerin meme kanseri korku düzeyleri yüksek çıkmıştır (38.61±6.87). Öğrencilerde yapılan bir çalışmada meme kanseri korku ölçeği puan ortalaması 25.00±7.49 bulunmuştur (Aytekin et al., 2021). Hemşirelik öğrencilerinde yapılan farklı bir çalışmada da meme kanseri korku düzeyi 26.11 ± 6.58 olarak belirtilmiştir (Çal et al., 2018). Günümüzde kanser düşüncesi çoğu insanda korkuya neden olur (Çal et al., 2018). Bunun yanında literatürde KKMM yapma sıklığının meme kanseri korkusunu etkilediği

belirtilmektedir (Aytekin et al., 2021; Çal et al., 2018). Ancak bu çalışmada KKMM sıklığının meme kanseri korku düzeyini etkilemediği görülmektedir. Çalışmada öğrencilerin %84.6'sı ara sıra KKMM'si yaptığını ifade etmiştir. Öğrencilerin çoğunun ara sıra KKMM'si yapması da meme kanseri korku düzeylerinin yükselmesine neden olmuş olabilir.

Bu çalışmada öğrencilerin sınıfının, gelir durumunun, aile tipinin, ailede meme kanseri öyküsü varlığının meme kanseri korku düzeyini etkilemediği görülmektedir. Yapılan bir çalışmada bu çalışmaya benzer olarak gelir durumunun, aile tipinin, ailede meme kanseri öyküsü varlığının meme kanseri korku düzeyini etkilemediği görülmüştür (Aytekin et al., 2021).

KKMM yapan öğrencilerin meme kanseri korku düzeyleri anlamlı bir şekilde yüksek çıkmıştır. Korku bazı durumlarda bireyleri davranışa yönlendirebilir. Literatürde bireylerin meme kanseri korkusunun erken tanı davranışlarını hem olumlu hem de olumsuz yönde etkileyebileceği belirtilmiştir (Shakery et al., 2021). Bu nedenle çalışmada KKMM yapan öğrencilerin meme kanseri korku düzeylerinin daha yüksek olması beklenen bir sonuçtur.

Araştırmanın Sınırlılıkları

Çalışmada örneklemin çoğuna ulaşılamamış olması önemli bir sınırlılıktır.

SONUÇ VE ÖNERİLER

Sonuç olarak çalışmada hemşirelik öğrencilerinin meme kanseri korku düzeylerinin yüksek olduğu ve KKMM yapma durumunun meme kanseri korku düzeyini etkilediği saptanmıştır.

Hemşirelik öğrencilerinin meme kanseri korkusuna neden olan faktörleri belirlemek için kalitatif çalışmaların yapılması, elde edilen sonuçlar doğrultusunda daha geniş örneklemde girişimsel hemşirelik çalışmalarının planlanması yararlı olacaktır.

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The Impact of Architectural Workspaces Supported by Artificial Intelligence on Psychological Productivity

Yapay Zekâ ile Desteklenen Mimari Çalışma Mekânlarının Psikolojik Verimlilik Üzerindeki Etkisi

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ABSTRACT
This study comprehensively addresses the effects of artificial intelligence (AI)-enhanced architectural work environments on psychological productivity. Artificial intelligence allows workspaces to be dynamically optimized according to their physical and psychological needs and has positive effects on stress management, motivation, creativity and cognitive performance. Studies in this field reveal that AI-optimized work environments reduce individuals' stress levels and thus have a positive impact on focus, creativity and job satisfaction. AI's ability to adjust environmental factors such as lighting, noise management and thermal comfort according to individual needs enhances cognitive performance and increases the overall productivity of individuals. The flexibility offered by AI technology enables greater flexibility and efficiency in business processes by quickly adapting work environments to the immediate needs of users. In the future, it is envisaged that AI has the potential to personalize spaces with more advanced algorithms to respond not only to physical but also to emotional and mental needs. Experimentally testing the long-term effects, examining the applicability in different sectors and developing more sensitive AI systems according to the personal characteristics of individuals are among the important recommendations for future studies.
Keywords: Artificial Intelligence, Architectural Design, Workspacess, Psychological Productivity.

ÖZET
Bu çalışma, yapay zekâ (AI) ile geliştirilmiş mimari çalışma ortamlarının psikolojik üretkenlik üzerindeki etkilerini kapsamlı bir şekilde ele almaktadır. Yapay zekâ, çalışma alanlarının fiziksel ve psikolojik ihtiyaçlarına göre dinamik olarak optimize edilmesine olanak tanımakta ve stres yönetimi, motivasyon, yaratıcılık, bilişsel performans üzerinde olumlu etkiler yaratmaktadır. Bu alanda yapılan çalışmalar, yapay zekâ ile optimize edilmiş çalışma ortamlarının bireylerin stres düzeylerini azalttığını ve böylece odaklanma, yaratıcılık ve iş tatmini üzerinde olumlu bir etkiye sahip olduğunu ortaya koymaktadır. YZ'nin aydınlatma, gürültü yönetimi ve termal konfor gibi çevresel faktörleri bireysel ihtiyaçlara göre ayarlama yeteneği, bilişsel performansı geliştirir ve bireylerin genel üretkenliğini artırır. Yapay zekâ teknolojisinin sunduğu esneklik, çalışma ortamlarını kullanıcıların anlık ihtiyaçlarına hızlı bir şekilde uyarlayarak iş süreçlerinde daha fazla esneklik ve verimlilik sağlar. Gelecekte, YZ'nin yalnızca fiziksel değil, aynı zamanda duygusal ve zihinsel ihtiyaçlara da yanıt vermek için daha gelişmiş algoritmalarla alanları kişiselleştirme potansiyeline sahip olduğu öngörülmektedir. Uzun vadeli etkilerinin deneysel olarak test edilmesi, farklı sektörlerde uygulanabilirliğinin incelenmesi ve bireylerin kişisel özelliklerine göre daha hassas YZ sistemlerinin geliştirilmesi gelecek çalışmalar için önemli öneriler arasında yer almaktadır.
Anahtar Kelimeler: Yapay Zekâ, Mimari Tasarım, Çalışma Mekânları, Psikolojik Üretkenlik.

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INTRODUCTION

Artificial intelligence (AI) has become an important tool that has reshaped architectural design processes in recent years. While traditional architectural processes are limited by their structure based on long-term human labor and offering fixed solutions, artificial intelligence is used as a powerful tool to accelerate these processes and solve complex problems (Matter and Gado, 2024). AI offers optimized solutions by taking into account previously overlooked factors in design processes. For example, AI algorithms minimize the environmental impact of building designs by taking into account factors such as energy efficiency, use of natural light, and environmental sustainability (Garcia at all, 2023).

One of the most important contributions of AI in architectural design is its capacity to produce user-centered designs. By optimizing factors such as ergonomics, lighting, temperature and acoustic regulations in work environments, artificial intelligence can create spaces that adapt to the needs of individuals (Fukumura at all., 2021). This not only increases work efficiency, but also helps reduce stress and promote psychological well-being (Oladimeji at all., 2023). In addition, architectural designs supported by artificial intelligence offer new opportunities in terms of aesthetics and functionality, while creating positive effects on psychological well-being (Melikoğlu, 2024). The development of artificial intelligence in this field will contribute to the creation of more efficient, sustainable and user-oriented living spaces in the future (Almaz at all., 2024).

In the modern era, the impact of work environments on the psychological productivity of individuals has also been one of the ongoing research topics. The physical environment can have a direct impact on individuals' mood, motivation and performance. A well-designed work environment can reduce employees' stress levels and increase focus and job satisfaction (Shammout, 2022). For example, adequate levels of natural light in the work environment regulate individuals' biological rhythms and increase their energy levels, thus positively affecting cognitive performance (Shishegar and Boubekri, 2016).

Optimizing ergonomic arrangements also plays a critical role in enhancing psychological productivity. A comfortable workspace helps to prevent physical discomfort, while at the same time reducing distraction and prolonging individuals' focusing time (Oguns, 2023). Furthermore, the design of quiet workspaces can improve employee concentration and reduce mental fatigue by controlling the noise level (Haapakangas at all., 2018).

Psychological efficiency not only increases the productivity of individuals, but can also prevent negative consequences such as burnout syndrome and job dissatisfaction in the long run. A well-designed work environment supports the psychological well-being of employees by minimizing workplace stressors (Veitch, 2011). Therefore, the impact of work environments on psychological productivity is too important to ignore.

Traditional architectural designs often fail to respond to the changing needs of users with their fixed and static structures. Since the design of work environments is often built on fixed arrangements determined at the beginning, it cannot respond to the changing needs of individuals over time. These static designs cannot contribute to the solution of physical and psychological problems that individuals may encounter in the workplace in the long term (Alsibaai and Özcan, 2022). Especially in working environments, more flexible and dynamic solutions are needed as the needs of individuals change over time. Fixed space arrangements can negatively affect the productivity of individuals, leading to job dissatisfaction and increased stress levels (Ray and Pana-Cryan, 2021).

Dynamic and personalized architectural designs supported by artificial intelligence (AI) offer a great opportunity to solve this situation. By analyzing users' immediate needs, AI enables work environments to be continuously optimized. For example, an AI-equipped workspace can adjust lighting according to users' biological rhythms, optimize temperature levels according to personal preferences, and increase individuals' focus time by keeping noise levels under control (Avarez-Garcia, at all., 2024). Such dynamic arrangements can improve workplace performance by adapting to the changing needs of individuals.

In terms of psychological efficiency, spaces designed with artificial intelligence have a high potential to reduce individuals' stress levels and increase their motivation. Research shows that in environments with high stress levels, employee productivity decreases and turnover rates increase in the long term (Saleh and Shahidan, 2023). Spaces optimized with artificial intelligence minimize these stress factors and enable employees to work in a more comfortable environment. In addition, the elements that increase motivation can be personalized according to the needs of individuals thanks to artificial intelligence. For example, ergonomic furniture supported by artificial intelligence increases the physical comfort of employees by providing comfortable and long-lasting workspaces, thus supporting their psychological well-being (Rožman at all., 2023). As a result, dynamic and personalized work environments designed with artificial intelligence have the potential to significantly increase psychological productivity by reducing stress levels while increasing individuals' motivation. Therefore, moving away from traditional fixed designs, flexible

solutions supported by artificial intelligence should become an important element of architectural designs in the future.

The findings of this study will provide important insights into how workspaces can be made more efficient, user-friendly and psychologically supportive in the future. The contribution of AI-supported architectural designs to the mental health of individuals is critical for creating more sustainable and motivating environments in workplaces. Artificial intelligence can play an important role not only on functionality and aesthetics in design processes, but also on the mental and emotional well-being of individuals. At this intersection of architecture and psychological health, this study will make an important contribution in both academic and practical fields by revealing the future potential of artificial intelligence.

ARTIFICIAL INTELLIGENCE AND PSYCHOLOGICAL PRODUCTIVITY: THEORETICAL FRAMEWORK

Current research on the use of artificial intelligence (AI) in work environments reveals its potential to increase work efficiency and optimize employee satisfaction. Integrating AI-enabled systems into business processes reduces the repetitive and monotonous workload on employees, allowing them to spend more time on creativity and innovation. These systems also make significant contributions in areas such as monitoring individual performance in work environments, improving collaboration processes, and providing personalized support for employees. In particular, it is stated that AI-based feedback mechanisms support the psychological well-being of employees and positively affect their productivity (Babu at all., 2024).

In addition, the use of AI in workplaces should be designed without ignoring the emotional needs of employees. In particular, the implementation of artificial intelligence systems in harmony with human values has a positive effect on employees' psychological productivity levels (Farhan, 2023). Studies emphasize that employees need support during the adaptation process of artificial intelligence and that they can use artificial intelligence technologies more efficiently with an effective training program (Morandini at all., 2023). In this context, the integration of artificial intelligence into business processes both increases employees' job satisfaction and supports psychological well-being in the workplace.

- The Concept of Psychological Productivity: Psychological productivity refers to individuals' psychological well-being and their ability to use their cognitive and emotional capacities at the highest level in the work environment. This concept is directly related to optimizing individuals' work performance, managing work stress,

increasing motivation, and improving cognitive performance (Vo at all., 2022). Employees' psychological productivity can lead to significant changes in job performance depending on their stress management skills. For example, employees with high workload may exhibit higher psychological productivity when they are successful in stress management (Akintunde-Adayi at all., 2023).

- Stress Management and Productivity Relationship: Stress is one of the most important factors that directly affect psychological productivity. While stressors in the work environment can negatively affect individuals' performance, effective stress management strategies can increase productivity (Jamil at all., 2023). It has been reported that individuals working under high stress cannot use their cognitive resources efficiently and experience distraction and loss of motivation. At this point, the use of artificial intelligence-based stress monitoring and management systems can increase the psychological productivity of individuals by reducing their stress levels (Babu et al., 2024).
- Motivation and Psychological Productivity: Motivation plays a decisive role in psychological productivity. In particular, individuals with high intrinsic motivation are more productive at work than individuals with low motivation (Uka and Prendi, 2021). The ability of artificial intelligence to provide personalized feedback in the workplace increases the motivation of individuals and thus positively affects their psychological productivity. Moreover, since motivated individuals have higher stress resilience, their work productivity and overall performance levels increase (Luhana at all., 2023).
- Cognitive Performance and AI-Assisted Productivity: Cognitive performance is related to an individual's ability to use their mental capacity effectively and is an important component of psychological productivity. In the work environment, AI-enabled systems reduce the cognitive load of employees, accelerate their decision-making processes and increase their problem-solving abilities (Gandhi at all., 2023). For example, AI systems automate repetitive tasks, allowing employees to focus on more creative and cognitively challenging tasks (Morandini at all., 2023). This increases individuals' cognitive productivity and supports their psychological well-being.

THE ROLE OF WORK ENVIRONMENTS ON PSYCHOLOGICAL HEALTH

Work environments are among the important factors that affect individuals' psychological well-being as well as their physical health. These environments include many

different elements, from ergonomic arrangements to lighting, sound and thermal conditions. The layout and characteristics of workspaces can directly affect individuals' stress levels, motivation, ability to focus and overall psychological health. Improving elements such as ergonomic designs, appropriate lighting, noise management and thermal comfort can increase employees' job performance and satisfaction, while protecting their mental health in the long run.

- Ergonomic Arrangements: Ergonomics is defined as the optimization of designs to maximize the physical comfort and functionality of users in work environments. Research has shown that workspaces without appropriate ergonomic conditions cause employees to experience physical discomfort and as a result, productivity decreases (Koirala and Nepal, 2022). Poorly designed furniture and inappropriate work surfaces, especially for individuals who work sitting for long periods of time, can cause discomfort such as back and neck pain, which can increase stress levels and lead to general job dissatisfaction. Ergonomic furniture and adjustable work surfaces both provide physical comfort and positively affect individuals' cognitive performance by increasing focus (Terek at all, 2013).
- Lighting: Natural and artificial lighting plays an important role in work environments and directly affects individuals' biological rhythms and psychological states. Inadequate or excessively bright lighting can cause eye strain, headaches and increased stress levels over time (Katabaro and Yan, 2019). Research shows that exposure to natural light increases individuals' energy levels, improves mood and reduces symptoms of depression (Wang at all., 2023). Therefore, optimizing natural light sources in work environments is critical for employees' mental health. In addition, carefully regulating the color temperature and brightness of artificial lighting can improve workers' attention levels and cognitive performance (Küller at all., 2006).
- Sound and Noise Management: Noise is an often overlooked stressor in work environments. Constant background noise or sudden loud noises can negatively impact productivity by making it difficult for individuals to focus (Jafari at all., 2019). Noise pollution not only prevents individuals from focusing, but also increases their stress levels, negatively affecting their psychological well-being. High noise levels, especially in open office arrangements, make it difficult for employees to concentrate and reduce job satisfaction (Jahncke at all., 2011). Controlling noise levels and optimizing acoustic arrangements can create a more productive and calm atmosphere

in work environments. Making such arrangements using sound insulation and noise-canceling materials plays a major role in protecting the mental health of employees.

- The Holistic Impact of Work Environments on Psychological Wellbeing: The combination of all these elements constitutes the holistic impact of work environments on individuals' psychological well-being. A well-designed, ergonomic, quiet and thermally comfortable work environment supports employees' mental health and prevents negative consequences such as burnout syndrome in the long term (Colenberg at all., 2019). On the other hand, poorly designed and uncomfortable work environments increase stress levels and negatively affect turnover rates and productivity. Therefore, designing work environments to positively support individuals' psychological health increases not only individual productivity but also organizational success.

Psychological productivity is a multidimensional concept that affects both the individual performance of employees and the overall level of productivity in the workplace. Numerous studies have shown that factors such as stress reduction, motivation enhancement, focus and cognitive performance interact with each other and directly affect psychological productivity.

- Stress Reduction and Psychological Productivity: Stress management is a critical factor in increasing psychological productivity. Research shows that high levels of stress in the work environment negatively affect employees' ability to focus, leading to decreases in cognitive performance (Lukasik at all., 2019). However, stress-reducing interventions have been reported to help employees utilize their cognitive resources more effectively by providing more focus. AI-supported stress management tools monitor employees' individual stress levels and provide instant feedback and solutions, which increases psychological productivity in the workplace (Al-Atawi et al., 2023).
- Motivation Enhancement and Psychological Productivity: The impact of motivation on psychological productivity is particularly evident in employees with high intrinsic motivation. According to the Self-Determination Theory developed by Deci and Ryan (1985), when individuals are intrinsically motivated, they exhibit higher productivity and commitment in work processes. Studies show that artificial intelligence-based personalized feedback systems in the work environment increase the motivation of employees and increase their interest in their work and performance (Li et al., 2021).

This suggests that motivation supports not only individual performance but also psychological well-being.

- The Relationship between Focus and Cognitive Performance: Cognitive performance is directly related to individuals' capacity to fulfill challenging tasks and their effectiveness in decision-making processes. Focus is at the center of these processes and is considered to be a key factor affecting productivity in the work environment (Layer et al., 2009). Research has shown that the use of AI-supported tools in the work environment increases the focusing time of employees, which positively affects cognitive performance (Babu et al., 2024). The fact that AI alleviates the routine workload allows employees to focus on more complex and creative tasks, which increases cognitive performance and overall productivity.

Studies have confirmed that psychological productivity is closely related to key factors such as stress management, motivation, focus and cognitive performance. The integration of AI technologies in the workplace plays an important role in increasing individuals' work productivity by optimizing these factors. Reducing stress, increasing motivation and balancing cognitive load not only makes employees more productive, but also increases job satisfaction and overall psychological well-being

CHARACTERISTICS OF ARCHITECTURAL WORKSPACES SUPPORTED BY ARTIFICIAL INTELLIGENCE

Architectural workspaces powered by artificial intelligence (AI) offer personalized environments that can be dynamically adapted to the physical and psychological needs of individuals. In such spaces, various environmental factors are continuously monitored and adjusted by integrating AI technology to increase employee productivity and optimize comfort levels. This personalization offered by AI directly contributes to the psychological well-being as well as the physical needs of individuals in the work environment.

Personalized Spaces and Artificial Intelligence Integration

In AI-enabled workspaces, it is possible to personalize the environment according to each individual's preferences. For example, AI systems can automatically optimize light levels, temperature and volume control in workspaces based on employees' daily habits and preferred environmental conditions (Fukumura et al, 2021). In this way, each individual can create their own personal environment to ensure maximum comfort and focus. In particular, AI-based lighting systems can regulate light intensity throughout the day by tracking the user's biological rhythm. When workers require different light levels at certain times of the day, these

systems can make appropriate adjustments to increase their capacity to focus (Pereira et al., 2022).

- Temperature and Ventilation Systems: AI can also manage temperature and ventilation systems in a personalized way. By learning each user's ideal temperature preferences, systems continuously optimize the temperature and humidity levels of the environment to support individuals' physical and psychological productivity (Ghahramani et al., 2020). By measuring the physiological responses of individuals during work (e.g., sweating or skin temperature changes), AI can adjust the ambient temperature based on this data. This provides both energy efficiency and increases the comfort level of workers.
- Sound Control and Noise Management: Another important feature is the sound control and noise management systems integrated with artificial intelligence. In particular, employees' ability to focus in open office spaces or environments with high noise levels can be significantly affected. AI-supported noise control systems can automatically adjust the sound level in the workspace, taking individual preferences into account (Madahana et al., 2024). Some systems provide appropriate background sounds or white noise to support users' focus, while others actively block out distracting sounds.
- Contribution to Psychological and Physical Well-being: These AI-supported personalized work environments are designed to support individuals' physical and psychological well-being. For example, personalized lighting and temperature conditions for individuals can enhance their cognitive performance while reducing stress levels (Fukumura at all., 2021). Additionally, effective noise management in the workspace positively contributes to job satisfaction by improving focus and overall productivity. AI continuously monitors and adjusts these spaces according to individuals' needs, making work environments dynamic and highly efficient.

Dynamic and Flexible Spacess: AI’s Abilityto Adjust Spaces Based on Usage Habits

AI-supported spaces offer flexible work environments that can be dynamically reconfigured according to the usage habits of individuals and groups. These spaces optimize the user experience by adjusting environmental elements to different modes of use, such as meetings, focus, or relaxation. AI’s capability to meet users’ real-time needs aims to enhance both physical and psychological productivity.

- Adjusting AI-Supported Spaces Based on Usage Habits: AI analyzes how users utilize the space and facilitates its reorganization according to specific functions. For example, in an office setting, when switching to meeting mode, AI can create a suitable environment for the meeting by dimming the lights, increasing air circulation, and activating noise-canceling technologies (Fukumura at all., 2021). Additionally, physical elements such as desks can be adjusted with automated mechanisms compatible with AI systems to create a layout that fits the meeting format. This dynamic system allows for rapid changes to the environment without disrupting the workflow, resulting in increased productivity.
- Focus Mode: Focus mode is another use case where AI optimizes environmental elements to help individuals work more efficiently and enter deep thinking processes. In this mode, AI adjusts the lighting, noise level, and airflow to minimize all elements that might distract the user (Ogundiran et al, 2024). For example, when focus mode is activated, AI can deploy noise-canceling systems to reduce distracting sounds, slightly dim the light based on personal preferences, or allow more natural light to enter. Additionally, other environmental factors like temperature can be automatically adjusted to personal comfort levels. Such an environment helps workers maintain deep focus for longer periods.
- Rest Mode: AI-supported spaces can also adjust the environment during short breaks or moments of rest. When rest mode is activated, AI softens the lighting, sets the temperature and air quality to ideal levels, and offers suitable background sounds or light music to help reduce stress (Leonidis et al, 2021). These dynamic adjustments contribute to both the psychological and physical renewal of workers, enhancing their overall job performance in the long term. Rest mode is not only effective for individual use but also provides a solution in social spaces designed for relaxation.
- Meeting and Collaboration Modes: One of the most notable applications of AI is its ability to provide flexibility for meeting and collaboration modes. In this mode, the space is reconfigured to best suit teamwork and collaboration. For example, in meeting mode, AI can adjust the lighting based on the number of participants and the type of activity, activate projection or screen technologies, and manage sound systems to ensure optimal acoustics for the meeting (Russa and Lax, 2022). Additionally, in collaboration mode, furniture can be automatically reconfigured to provide flexibility that enhances group interactions. Such dynamic environments allow individuals and teams to work more efficiently, fostering creative thinking.

- AI-Enabled Continuously Learning Spaces: These dynamic and flexible AI-supported spaces have the capability to continuously learn and adapt to users' preferences. Users' habits are updated based on their preferences, making the optimization of the environment increasingly effective over time (Pesovski et al., 2024). Through this learning ability, AI can anticipate individual needs for future use cases and quickly make appropriate adjustments. These dynamic and flexible workspaces, therefore, offer an environment that continuously adapts to the physical and psychological needs of workers, supporting their productivity.

AI-SUPPORTED STRATEGIES FOR OPTIMIZING COGNITIVE PERFORMANCE AND PSYCHOLOGICAL WELL-BEING IN WORKSPACES

AI-supported designs provide solutions aimed at reducing mental fatigue and enhancing employees' cognitive performance. AI optimizes environmental factors such as natural light usage, noise-reducing designs, and the integration of natural elements, supporting individuals' physical and mental health. These intelligent spaces are designed to minimize mental fatigue while increasing creativity and focus capacity.

- Natural Light Usage and Reducing Mental Fatigue: Natural light is one of the most important factors affecting employees' cognitive performance. AI-supported spaces can use daylight optimally to balance employees' biological rhythms and moods. Research shows that individuals working in spaces with natural light experience less mental fatigue and have a higher focus capacity (Porras Álvarez, 2020). AI can analyze external conditions and dynamically adjust indoor lighting throughout the day, providing users with more suitable visual comfort. Especially, aligning artificial lighting with the biological clock can prevent cognitive exhaustion during long work periods and minimize distractions.
- Noise-Reducing Designs and Acoustic Optimization: Noise is a significant factor that negatively impacts employees' cognitive performance. In particular, in open office environments or spaces with high noise levels, employees' ability to focus may weaken, and mental fatigue may increase (Sander et al., 2021). AI-supported noise control systems can dynamically adjust the environment by sensing ambient sounds based on individual sound needs. Noise-canceling technologies help isolate individuals from auditory stimuli, thereby supporting focus processes. Additionally, AI can optimize the placement of acoustic panels in such spaces to prevent echoing

and improve overall work productivity. This reduces mental strain, allowing employees to work efficiently for longer periods without feeling fatigued.

- Cognitive Renewal Through the Integration of Natural Elements: The integration of natural elements (such as plants, water features, and natural materials) is another strategy to reduce mental fatigue in work environments. AI-supported spaces use biophilic design principles to support users' cognitive renewal processes. Research shows that the integration of natural elements into indoor spaces reduces individuals' stress levels and promotes faster mental recovery (Jha and Behera, 2022). AI can manage the placement and maintenance of these natural elements, helping users feel more relaxed and energized. For example, AI systems can optimize areas with plants to improve indoor air quality while also enhancing employees' aesthetic satisfaction.
- Optimization Based on Personal Needs with AI: Artificial intelligence can analyze individuals' personal needs and optimize these elements accordingly. Dynamically adjusting spaces based on users' biological rhythms, attention levels, and psychological states minimizes mental fatigue. For instance, AI can increase natural light levels to enhance productivity at certain times of the day, reduce noise, or direct users to areas where natural elements are more visible during moments of rest (Lee et al., 2021). In this way, spaces transform into environments that are not only functional but also support psychological well-being and cognitive performance.

AI-SUPPORTED STRESS MANAGEMENT AND COGNITIVE ENHANCEMENT STRATEGIES IN WORKSPACES

Artificial intelligence can detect individuals' stress levels through various biometric and behavioral indicators and dynamically adjust environmental factors during stressful moments. AI systems equipped with technologies such as facial recognition, heart rate sensors, or cameras monitoring posture and movement can identify whether an individual is under stress (Li and Liu, 2020). For example, when signs of high stress are detected, AI can reduce the light level, adjust the temperature, or activate acoustic panels to lower noise in the work environment. These interventions help individuals relax and mentally recover, thereby enhancing work spaces. Noise during stressful moments is a factor that negatively impacts employees' focus and productivity. AI-supported workspaces can sense this and control the sound level of the environment, activating noise reduction when needed (Jahncke at all., 2011). For instance, when the noise level is high or signs of high stress are detected in an

individual, the AI system can automatically lower the sound in the room. It can achieve this by activating noise-canceling technologies or providing natural sounds or white noise in the environment. A quiet environment reduces mental fatigue and balances stress levels, leading to improved psychological productivity.

Lighting plays a significant role in stress management. AI-supported workspaces can create a calming effect by altering lighting conditions when an individual's stress levels rise (Mostafavi et al., 2024). Instead of harsh, direct lighting, AI-powered systems can illuminate the environment in a soothing way, improving the mood of employees. For example, AI can adjust light intensity according to different times of the day using natural light simulations or diffuse soft-toned lighting to support mental relaxation. The correct use of lighting during stressful moments helps individuals relax, allowing them to continue work processes more positively (Menardo et al., 2022).

AI can optimize not only work-focused spaces but also relaxation areas for stress management. To ensure employees' mental and physical rejuvenation during short breaks, AI dynamically adjusts these areas to contribute to more efficient rest. In relaxation areas, AI can provide soft music, natural sounds, or calming visuals based on individuals' stress levels (Picking and Cunningham, 2011). Additionally, AI optimizes the temperature and airflow in the environment, helping employees relax during short breaks. These dynamic interventions reduce stress and enhance psychological productivity.
AI can meet individuals' stress management needs in a personalized manner. Based on users' past data and biometric information, AI systems develop the most suitable stress management strategies for each individual (Kargarandehkordi et al., 2024). For example, if a user experiences stress at specific times of the day, AI can anticipate these situations and optimize silence, lighting, and airflow in the environment as stress-preventive factors. Such personalized approaches help employees feel more at ease and support more sustainable job performance in the long term.

Motivation and Creaitivity: AI's Ability to Optimize Elements That Enhance Individuals Motivation

AI-supported workspaces have the ability to dynamically optimize environmental elements to increase individuals' motivation and foster creativity. Elements such as color, shape, and light are particularly important factors that directly affect individuals' mood, motivation, and creativity. AI can adjust these elements according to individuals' personal preferences and needs, making the work environment more motivating and creative.

The effect of colors on individuals' psychological states has long been known. Research shows that certain color tones have a strong impact on mood and motivation (Wright., 2009). For instance, shades of blue and green are known to promote creativity and calmness, while warm colors like red and orange are believed to increase energy and attention levels. AI-supported spaces can dynamically change these color palettes depending on the user's mood and the type of work. When a user is working on a project requiring creativity, AI can fill the space with colors that stimulate creative thinking; similarly, during tasks that require focus, color combinations that enhance attention can be employed (Elfar and Dawood, 2023).

AI can also optimize spatial arrangements and shape elements to support employees' creativity. Organic, flowing forms and flexible workspaces that encourage creativity allow individuals to feel freer and develop innovative ideas. AI can dynamically adjust the arrangement of physical elements such as furniture and decorations to enhance creativity. For example, modular furniture and flexible office layouts can be reconfigured by AI according to the needs of employees, promoting collaboration and creative thinking processes (Farjami et al., 2014).

Light is another important environmental factor that directly affects both motivation and creativity. AI-supported lighting systems can boost motivation by adjusting light levels according to the user's biological clock and the nature of the task. Simulating natural light, in particular, helps maintain high energy levels, leading to greater productivity. Warmer and softer tones of light in creative projects can make individuals feel more relaxed and creative, while brighter and whiter light for tasks requiring focus can enhance attention levels (Lan et al., 2020). AI's ability to make these dynamic lighting adjustments enables employees to be more motivated and creative across different types of work.

Reducing Mental Fatigue: How AI Enhances Cognitive Performance by Making Montonous Work Environments Dynamic and Flexible

Artificial intelligence can enhance cognitive performance by transforming monotonous work environments into more dynamic and flexible spaces. Monotonous work environments can lead to mental fatigue, decreased motivation, and reduced productivity. AI plays a crucial role in reducing cognitive fatigue by dynamically transforming such environments.

AI continuously monitors the work environment and can dynamically adjust it according to individuals' needs. In monotonous work processes, AI can introduce small

changes to provide variety and help maintain high levels of attention and cognitive performance. For example, AI can change the light levels at different times of the day, optimize sound and airflow, or refresh the visual elements of the environment to keep individuals engaged (Su and Mokmin., 2024). These dynamic adjustments help individuals feel less fatigued during work and stay focused on their tasks.

To make monotonous work environments flexible and dynamic, AI can continuously optimize the arrangement and functionality of physical spaces. These systems, which change the layout and purpose of spaces based on employees' needs, allow individuals to transition easily between different work modes. For instance, when switching from a meeting to a focus mode, AI can reconfigure the arrangement of tables, seating, and other physical elements. This flexibility reduces the sense of monotony and prevents mental fatigue by creating a continuous perception of novelty.

AI can optimize environmental factors in the workspace to reduce cognitive load. Elements such as noise, excessive brightness, or poor air circulation can increase mental fatigue and lower performance. AI monitors these environmental factors and makes real-time adjustments to suit individuals' needs, making the workspace more comfortable. When noise levels are reduced or the environment becomes more comfortable, individuals' cognitive load decreases, allowing them to continue working more efficiently.

ERGONOMIC DESIGN OF AI-SUPPORTED SPACES

AI-supported spaces are built on ergonomic design principles to enhance individuals' physical comfort and productivity. Ergonomics ensures that workspaces are adapted to individuals' physiological and psychological needs, preventing long-term health issues and increasing work efficiency. AI enables these workspaces to dynamically adapt to ergonomic requirements, offering personalized solutions based on individual physical needs. One of AI's most significant contributions in this area is its ability to adjust work tools like desks, chairs, and equipment according to users' body measurements, posture, and movement patterns.

AI-supported ergonomic designs can make personalized adjustments based on individuals' physical characteristics and work habits to maximize physical comfort in work environments. AI can analyze employees' physical movements, posture, and body responses, allowing for automatic adjustments of desks, chairs, and other equipment (Donisi et al., 2022).

For instance, desk height can be automatically adjusted to support the ideal posture of the worker. Similarly, the tilt of the chair's backrest, lumbar support, or the height of the

armrests can be continuously optimized by AI according to the individual's sitting position. This minimizes the negative impact on the musculoskeletal system that may arise during work. Studies show that ergonomically optimized workspaces reduce physical discomfort in the workplace and increase productivity (Robertson et al., 2008).

AI can also offer adjustable standing desks to balance sitting and standing times, reducing the health risks associated with prolonged sitting. For example, when AI detects that the user has been sitting for an extended period, it can automatically adjust the desk to a standing position. This supports circulation and helps employees maintain higher energy levels, leading to more productive work. AI-supported ergonomic designs not only enhance individual physical comfort but also foster creativity and collaboration in the workplace. One of the key innovations of AI is its ability to provide flexible and reconfigurable workspaces with movable and modular environments, allowing users to quickly adapt to different work modes and team collaborations.

These spaces can respond dynamically to individuals' changing needs during work. For instance, during a meeting, AI can rearrange the layout of desks and chairs to create a more efficient group interaction environment. Similarly, when switching to an individual work mode, AI can reconfigure these elements to provide a more focused work environment (Morandini at all., 2023). This flexibility not only helps employees quickly adapt to their tasks but also facilitates the free flow of creative thinking processes.

Modular furniture and spaces, optimized by AI, allow users to easily shape their work environments according to their preferences. Physical freedom of movement is essential for fostering creativity, whether for individuals or teams. AI-supported movable furniture can create flexible layouts based on the user's needs, promoting more spontaneous collaborations. Such workspaces increase both physical and mental mobility by preventing employees from staying in the same position for extended periods. At the same time, they create more open, interactive spaces that encourage collaboration and teamwork (Rolfö, 2018).

DISCUSSION

The rapid advancement of artificial intelligence (AI) technologies is increasingly enhancing the potential to offer more sophisticated and personalized solutions in the design and management of architectural spaces. Today, AI not only optimizes workspaces based on individuals' physical needs but also manages factors such as stress, motivation, and creativity to enhance psychological productivity. However, future developments suggest that AI will

create more integrated and responsive spaces that can cater not only to physical parameters but also to individuals' emotional and mental needs more deeply.

With the development of AI algorithms, the personalization of spaces may reach more advanced levels. In the future, it will be possible for AI to make more precise adjustments based on individuals' personal data, biometric, and behavioral analyses. For instance, AI could instantly detect a user's mood, stress levels, and cognitive state and automatically optimize the environment accordingly. This would mean not only adjusting basic environmental factors like lighting, temperature, and noise but also adapting spatial layout and even color palettes according to the individual's psychological state (Khare et al., 2024). Moreover, as AI becomes more capable of learning in the future, spaces are expected to evolve into systems that can adapt themselves based on users' long-term behavior and needs. This will result in dynamic and flexible environments that require less intervention, automatically adjusting according to individuals' daily work rhythms.

The potential developments of AI in architectural space design are moving towards creating environments that not only meet physical needs but also respond to emotional and mental demands. Today, AI is quite effective in stress management and creating relaxing environments; however, in the future, systems that can respond to more complex emotional and mental states are expected to be developed. This evolution of AI could manifest in its ability to design spaces that are more sensitive to users' real-time emotional states (Huang et al., 2024). For example, during moments of emotional fatigue, AI-supported spaces could offer more personalized solutions to reduce stress and mental load. Spaces that optimize emotional and mental health could integrate elements like artistic features, natural elements, or sensory relaxation techniques to enhance the user's mental relaxation and motivation. Such environments will enable individuals to not only increase their productivity but also enjoy a healthier work experience.

In the future, the integration of AI with biophilic design principles may create spaces that connect more deeply with nature, balance individuals' moods, and support their overall well-being. Elements such as natural light, green plants, and water features could be adjusted in real-time by AI based on instant feedback. Additionally, with emotional feedback mechanisms, AI could continuously monitor individuals' mental health and use this data to create a more suitable environmental experience (Olawade et al, 2024).

These advanced spaces, which can respond to individuals' sensory needs, could be optimized to make more detailed adjustments based on users' personal work rhythms and

energy levels throughout the day. This would enable AI to contribute not only to individuals' productivity but also to their overall psychological well-being

CONCLUSION AND SUGGESTIONS

The contributions of AI-supported architectural workspaces to psychological productivity significantly enable individuals to have a healthier, more motivated, and productive experience in their professional lives. By optimizing environmental factors according to individuals' real-time physical and psychological needs, AI delivers positive outcomes in areas such as stress management, motivation, creativity, and cognitive performance. AI systems that create flexible and dynamic spaces, capable of responding to both individuals' physical comfort and emotional states, make work environments more efficient. This study has demonstrated the positive effects of AI on psychological factors such as ergonomics, stress management, creativity, and motivation, revealing the transformative potential of AI-supported spaces in the business world.

The dynamic and customizable nature of AI enhances individuals' adaptation to work environments and offers a significant advantage in terms of productivity. The dynamic adjustment of environmental conditions based on individuals' mental states not only increases productivity but also has positive effects on job satisfaction and overall psychological well-being. It is anticipated that with the evolving algorithms of AI, workspaces in the future will respond more sensitively to not only physical but also emotional and mental needs.

Although research on the psychological effects of AI-supported architectural spaces has yielded positive results, it is necessary to deepen and explore this field more extensively. In this regard, several recommendations for future research are as follows:

- **Experimental Testing of Long-Term Effects**: The long-term effects of AI-supported spaces on individuals need to be tested. While the short-term effects on productivity and psychological well-being are promising, it is essential to examine in more detail how long-term use of these spaces impacts individuals' work efficiency, mental health, and emotional balance. Such experimental studies could reveal AI's potential to provide sustainability and long-term improvements in work environments.
- **Exploring Applicability in Different Sectors**: Although AI-supported spaces have primarily been applied in office environments so far, their effects in other sectors have not yet been fully explored. Investigating the applicability and impacts of these spaces in different industries, such as healthcare, education, and manufacturing, could provide a broader understanding of how AI can transform the general working world. For

instance, studies could be conducted on AI's effects on stress management and healthcare personnel's work efficiency in hospitals or its potential to enhance students' motivation in educational environments.

- **Development of AI Systems Aligned with Personalization and Human Values**: Future research should focus on the development of algorithms that enable AI to offer more personalized solutions and ensure that these systems align with human values. Particularly with ethical and security concerns in mind, developing AI systems sensitive to individuals' emotional and mental states could result in more effective outcomes in enhancing psychological productivity.
- **Considering Individual Differences**: The effects of AI-supported spaces may vary according to individuals' personal characteristics and needs. Therefore, future studies should examine the experiences of different demographic groups (age, gender, culture, etc.) with AI-supported spaces, helping to develop more personalized and comprehensive solutions.

Research Statement

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