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Mental Health Literacy in Individuals Diagnosed with Diabetes

Diyabet Tanısı Alan Bireylerde Ruh Sağlığı Okuryazarlığı

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ABSTRACT

Objective: This study was conducted to determine the mental health literacy levels of individuals diagnosed with diabetes and the factors affecting this level.

Materials and Methods: The study was conducted with 211 people who applied to the diabetes outpatient clinic of a training and research hospital between June and August 2022 and were previously diagnosed with diabetes. "Personal Information Form" and "Mental Health Literacy Scale" were used for data.

Results: In the study, the knowledge-based literacy sub-dimension mean score of individuals diagnosed with diabetes was 6.53±2.67, the belief-based literacy sub-dimension mean score was 3.62±1.95, the resource-oriented literacy sub-dimension mean score was 1.54±1.41 and The mean MHLS total score was 11.68±4.33. The patients' age, education level, marital status, perceived income status, and the time elapsed since the diagnosis changed their mental health literacy levels ($p<0.05$).

Conclusion: This study observed that the patient's mental health literacy levels were above the average score. Making it easier for patients to adapt to treatment may also contribute to minimizing the mental health problems experienced by patients. In order to improve the mental health literacy levels of individuals diagnosed with diabetes, it is recommended to conduct awareness-raising training programs.

Keywords: Diabetes, mental health, mental health literacy

ÖZ

Amaç: Bu çalışma diyabet tanısı alan bireylerin ruh sağlığı okuryazarlığı düzeylerini ve bu düzeyi etkileyen faktörleri belirlemek amacıyla yapılmıştır.

Materyal ve Metot: Araştırma Haziran-Ağustos 2022 tarihleri arasında bir eğitim araştırma hastanesinin diyabet polikliniğine başvuran ve daha önce diyabet tanısı almış 211 kişiyle yürütülmüştür. Veriler için "Kişisel Bilgi Formu" ve "Ruh Sağlığı Okuryazarlığı Ölçeği" kullanılmıştır.

Bulgular: Araştırmada diyabet tanısı alan bireylerin "Bilgi Odaklı Okuryazarlık" alt boyut puan ortalamasının 6,53±2,67, "İnanç Odaklı Okuryazarlık" alt boyutu puan ortalamasının 3,62±1,95, "Kaynak Odaklı Okuryazarlık" alt boyutu puan ortalamasının 1,54±1,41 ve MHLS toplam puan ortalamasının 11,68±4,33 olduğu görülmüştür. Hastaların yaş, eğitim durumu, medeni durum, algıladıkları gelir durumu, tanı aldıklarından bu yana geçen süreye ruh sağlığı okuryazarlık düzeyleri değişmektedir ($p<0,05$).

Sonuç: Bu çalışmada diyabet tanısı alan bireylerin ruh sağlığı okuryazarlık düzeylerinin orta değerin üzerinde olduğu görülmüştür. Hastaların tedaviye uyumlarının kolay hale gelmesi, hastaların yaşadıkları ruh sağlığı sorunlarının da en aza indirilmesine katkı sağlayabilir. Diyabet tanısı alan bireylerin ruh sağlığı okuryazarlığı düzeylerinin geliştirilmesi için farkındalık artırmaya yönelik eğitim programlarının yapılması önerilmektedir.

Anahtar Kelimeler: Diyabet, ruh sağlığı, ruh sağlığı okur-yazarlığı

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INTRODUCTION

The increase in sedentary lifestyles in recent years has paved the way for an increase in health problems. Health problems arising from a sedentary lifestyle not only threaten the general health of people, but also increase the health expenditures of countries.[1] Diabetes arises due to a sedentary lifestyle,[2] Diabetes; It is a metabolic and endocrine system disease in which chronic hypoglycemia is seen, which occurs due to the absence or insufficiency of insulin hormone, and causes some disorders in protein, fat and carbohydrate metabolism.[3] It is stated that the prevalence of diabetes is increasing. It t is seen that diabetes can adversely affect mental health as in other chronic diseases. In the studies in the literature, it is emphasized that diabetes affects the psychological structure negatively and paves the way for the deterioration of mental health.[4-5]

It is known that one of the most important elements of preventive mental health services is to increase the mental health literacy level of individuals. There is a positive relationship between individuals' help-seeking behavior and mental health literacy.[6] It is expected that the mental health literacy levels of diabetic patients should be developed so that they are affected by the mental health problems they encounter as low as possible. When considered conceptually, mental health literacy; It is defined as "*social and cognitive skills that determine the power of people to access, understand and use information about health*".[7] Although there are studies examining health literacy in diabetes patients in the literature,[8-9] it is seen that studies addressing mental health literacy in diabetes patients are limited.[10]

This study was conducted to determine the mental health literacy levels of diabetic patients and the factors affecting this level.

MATERIALS AND METHODS

***Research and Publication Ethics*:** Ethics committee permission was obtained from the University of Health Sciences, Training and Research Hospital Clinical Research Ethics Committee, Ankara-Türkiye (Date:18/05/2022, decision no: E-22-991) and also institutional permissions (Date: 19.04.2022) were obtained for the implementation of the study. Permission to use the MHLS Scale, which is one of the data collection tools, was obtained from the authors who conducted the Turkish validity and reliability study. The purpose of the study was explained to the participants and their voluntary consent was obtained. The study was conducted in accordance with the Declaration of Helsinki.

***Process**:* This study is of a cross-sectional type and was conducted in the diabetes outpatient clinic of a training and research hospital between June and August 2022. The population of the study consisted of patients who applied to the diabetes polyclinic of a training and research hospital between June and August 2022. In the study, it was aimed to reach all patients who met the criteria for inclusion in the study between June and August 2022 without choosing a sample. Inclusion criteria for the study; being followed up with a diagnosis of diabetes in the diabetes outpatient clinic, being between the ages of 18 -65, not being diagnosed with diabetes for the first time, not having a health problem that would prevent reading, understanding and answering the questions in the data collection tools, and agreeing to participate in the research. Accordingly, the sample of the study consisted of 211 outpatients followed in the diabetes outpatient clinic.

***Data Collection Tools*:** In the process of collecting the research data, the "Personal Information Form" and "Mental Health Literacy Scale (MHLS)" created by the researchers were used.

Personal Information Form: Includes data on age, gender, marital status, monthly income level, and the number of years treated.

Mental Health Literacy Scale (MHLS): Turkish validity and reliability study Göktaş et al. consists of 22 items. The MHLS Scale has three sub-dimensions: knowledge-based literacy, belief-based literacy, and resource-oriented literacy. The score that can be obtained from the scale varies between 0 -22. It is accepted that the higher the score in each sub-domain, the higher the MHLS level. The Cronbach's alpha coefficient of the scale was found to be 0.71.[7] In this study, the Cronbach's alpha coefficient of the scale was determined as 0.79.

***Data Collection*:** Ethics committee permission and institutional permission were obtained from the institution where the research would be conducted before starting the research. Before the data collection tools were applied, the participants were informed about the research and their consent was obtained. Data collection tools were applied face-to-face to the participants and took approximately 7-10 minutes.

***Statistical Analysis*:** Comparative analyzes were used in the SPSS 25.0 program in the data analysis process of the research, and the level of compliance of the data with the normal distribution was tested with the Kolmogorov Smirnov test in the first stage of the data analysis process (Table 1). When the K-S test results are examined, it is seen that the data are not suitable for normal distribution ($p<0.05$). Percentage, min-max, standard deviation and interquartile range were used to evaluate the data. Non-parametric analyzes were used because the data were not normally distributed. The Kruskal Wallis H test was used to compare the scale scores according to the variables of age, education level, marital sta-

Table 1. Reliability Analysis of MHLS Scale Scores and One Sample Kolmogorov-Smirnov (K-S) Normality Analysis.

Scale-Subsclae	Cronbach's Alpha (a)	K-S (p)
Knowledge Based	0.799	0.000
Belief Based	0.649	0.000
Resourse Oriented	0.729	0.000
Total Score	0.794	0.004

tus, perceived income status, and time since diagnosis, and Mann Whitney U analysis was used for the gender variable comparison. The statistical significance level was determined as 0.05.

RESULTS

It was observed that 36.5% of the participants were between the ages of 50-59 and 58.8% were women. It has been determined that 46% of them are primary school graduates, 81.5% are married, and 44.1% of them have income equal to their expenses. In addition, when the duration of the participants since their diagnosis is examined, it is seen that 49.3% of them are between 1-5 years (Table 2).

The knowledge-oriented literacy level mean score of the participants was 6.53±2.67; The mean score of belief-based literacy level was 3.62±1.95 and the mean score of resource-oriented literacy level was 1.54±1.41; It is seen that the mean total score of the MHLS scale is 11.68±4.33 (Table 3).

The knowledge and resource-oriented literacy levels of the participants aged 59 and over were lower than the others ($p<0.05$), the information and resource-oriented literacy levels of the participants in the 30-39 age group were significantly higher than the participants in the 50-59 age group level was found to be higher ($p<0.05$). It was determined that the mental health literacy level of the participants in the 20-29 age group, 30-39 age group, 40-49 age group and 50-59 age group was higher than the participants aged 59 and over ($p<0.05$) (Table 4).

It was found that the knowledge-based, resource-oriented and total literacy levels of the participants who graduated from primary, high school, university and above were significantly higher than the illiterate participants ($p<0.05$); The knowledge based, resource-oriented and total literacy levels of the participants who graduated from high school and university or higher were significantly higher than the participants who graduated from primary education

Table 2. Frequency and percentage distribution of the Demographic Information of the participants.

Variable	Sub variable	n (%)
Age	20-29	9(4.2)
	30-39	24(11.4)
	40-49	39(18.5)
	50-59	77(36.5)
	59-65	62(29.4)
Gender	Male	87(41.2)
	Female	124(58.8)
Status of education	Illiterate	34(16.1)
	Primary education	97(46.0)
	High school	48(22.7)
	University and above	32(15.2)
Marital status	Married	172(81.5)
	Single	20(9.5)
	Widow	19(9.0)
Perceived income status	Income less than expenses	89(42.2)
	Income more than expenses	29(13.7)
	Income equals expense	93(44.1)
Time since diagnosis	1-5 year	104(49.3)
	6-10 year	41(19.4)
	11-15 year	30(14.2)
	15+ year	36(17.1)

Table 3. Descriptive statistics on the MHLS Scale Scores of the participants.

Subscale	n	Min-Max.	IQR**	Mean±SD
Knowledge Based	211	0-10	7	6.53±2.67
Belief Based	211	0-8	4	3.62±1.95
Resourse Oriented	211	0-5	1	1.54±1.41
Total Score	211	1-20	20	11.68±4.33

*IQR: interquartil range; **SD: standard deviation.

(p<0.05); In addition, it was found that the knowledge based, resource-oriented and total literacy levels of the participants who graduated from university or higher were significantly higher than the participants who graduated from high school (p<0.05) (Table 4). The knowledge-based literacy levels of the single participants were significantly higher than the married participants (p<0.05); resource-oriented and total literacy levels were found to be significantly higher than the married or widowed participants (p<0.05). It was found that the belief-based literacy levels of the participants whose income was equivalent to their expenses were higher than those whose income was less than their expenses (p<0.05). It has been determined that the resource-oriented and total literacy levels of the participants whose income is more than their expenses or whose income is equal to their expenses are significantly higher than those whose income is less than their expenses (p<0.05). On the other hand, the median scores of the knowledge-based and total literacy levels of the participants whose time elapsed between 1-5 years since the diagnosis of the disease were higher than the participants who were between 11-15 years (p<0.05). It was found that the resource-oriented literacy levels of the participants who have passed 1-5 years after the diagnosis of the disease are significantly higher than those of the participants who have passed 11-15 years or 15+ years (p<0.05); It is seen that the literacy levels of the participants who have passed 6-10 years are significantly higher than the participants who have passed 11-15 years after the diagnosis of the disease (p<0.05) (Table 4).

Table 4. MHLS total score and subscale scores according to the personal information of the participants.

Variables		MHLS Total Score		Knowledge Based Subscale Total Score		Belief Based Subscale Total Score		Resource Oriented Subscale Total Score	
		Min-Max	**IQR***	**Min-Max**	**IQR***	**Min-Max**	**IQR***	**Min-Max**	**IQR***
Age	20-29	9-19	15	5-10	9	0-6	4	0-4	2
	30-39	6-20	14	1-10	9	0-6	3.5	0-4	2.5
	40-49	4-20	13	1-10	9	0-7	4	0-4	2
	50-59	2-20	12	2-10	7	2-10	4	0-5	1
	59+	1-19	9.5	0-10	5	0-8	4	0-4	0
		X^2=20.1 **p= 0.001**		X^2=25.4 **p= 0.001**		X^2=3.7 p= 0.443		X^2=32.6 **p= 0.001**	
Gender	Male	1-20	12	0-10	6	0-7	4	0-4	1
	Female	4-20	12	1-10	4	0-8	4	0-5	1
		X^2=5281.0 p= 0.795		X^2=4841.0 p= 0.202		X^2=5098.0 p= 0.492		X^2=5315.0 p= 0.852	
Status of education	Illiterate	3-17	7	0-10	4	0-8	4	0-3	0
	Primary education	1-20	11	1-10	6	0-7	4	0-5	1
	High school	6-20	13	3-10	7	0-6	4	0-4	2
	University and above	8-20	15	5-10	5	0-7	5	1-4	3
		X^2=59.7 **p= 0.001**		X^2=48.6 **p= 0.001**		X^2=6.2 p= 0.102		X^2=67.6 **p= 0.001**	
Marital status	Married	1-20	11.5	**0-10**	**7**	0-8	4	0-5	1
	Single	5-19	16	3-10	8.5	0-6	4.5	0-4	2.5
	Widow	4-18	13	2-10	6	0-6	4	0-4	1
		X^2=11.4 **p= 0.003**		X^2=7.3 **p= 0.026**		X^2=3.00 p= 0.221		X^2=11.6 **p= 0.003**	
Perceived income status	Income less than expenses	1-19	10	0-10	7	0-6	3	0-4	1
	Income more than expenses	5-20	13	2-10	7	0-7	4	0-4	2
	Income equals expense	2-20	13	1-10	7	0-8	4	0-5	1
		X^2=17.2 **p= 0.001**		X^2=4.8 p= 0.089		X^2=12.5 **p= 0.002**		X^2=19.7 **p= 0.001**	
Time since diagnosis	1-5 year	1-20	13	1-10	7	0-7	4	0-4	1
	6-10 year	4-20	12	1-10	7	0-7	4	0-4	1
	11-15 year	2-16	10	1-10	5	0-8	3	0-4	0
	15+ year	4-20	10	0-10	6.5	0-7	4	0-5	1
		X^2=9.6 **p= 0.022**		X^2=10.7 **p= 0.014**		X^2=1.0 p= 0.791		X^2=13.2 **p= 0.004**	

*IQR: Interquartil range.

DISCUSSION AND CONCLUSION

This study was conducted to evaluate the mental health literacy level of individuals with diabetes. Emotional reactions and adjustment difficulties are among the most common problems in these patients.[11] Psychological factors also play an important role in maintaining healthy glycemic control.[12] Although the mental health literacy levels of the diabetic patients participating in the study were not very high, it was observed that they were above the medium score. When the sub-dimension scores of the MHLS Scale were examined, it was determined that the knowledge-based literacy levels of diabetes patients were above the medium score, while the belief-based and resource-oriented literacy levels were below the medium score. Guner et al. in a study examining health literacy in individuals with diabetes; it has been stated that the health literacy of the patients is at a low level.[8] Evaluation of mental health literacy may be useful in planning initiatives to improve community mental health.[13] Increasing mental health literacy can encourage people to realize the mental problems they experience, seek help and get support from a health professional when necessary.[14] As it is known, individuals with a mental disorder may be seen by the society as dangerous, to be avoided, and unpredictable, and this may cause them to stay away from society due to their stigma.[15] It is known that individuals with mental disorders due to fear and anxiety of stigma avoid seeking psychiatric help and this situation affects their mental health more negatively[16.]

Kavak and Aktürk examined the effect of disease perception on anxiety and depression in diabetic patients. In the study, it was stated that 32% of the diabetic patients scored above the threshold in the anxiety sub-dimension and 49% in the depression sub-dimension, and these patients' perceptions of the disease were negative.[17] Karimpour Vazifehkhorani et al. stated that psychoeducation applied to diabetic patients was effective in increasing the level of mental health literacy and adaptation to the disease.[10] Considering that diabetes is a chronic disease; It is thought that increasing the mental health literacy of these individuals will contribute to the prevention of the development of mental disorders by positively affecting their mental health. It was observed that the knowledge-based and resource-oriented literacy sub-dimensions and total MHLS levels of the participants aged 59 years and over were lower than the participants in the other age groups. Knowledge-based literacy includes information about mental health, and resource-based literacy includes questions about the resources that can be accessed for mental health services and support.[7] This result suggests that individuals aged 59 and over may be more disadvantaged in accessing information compared to the younger group. Today, accessing information has become easier and faster with technology. However, age is also an important factor in using technology effectively. An important factor in this regard is thought to be the level of education. It was observed that as the education level of the diabetes patients participating in the study increased, the MHLS levels and the levels of knowledge-based and resource-oriented literacy sub-dimensions increased. In the study of Öztaş and Aydoğan, MHLS-Scale total score averages, knowledge-based subscale mean scores, and belief-based subscale mean scores of health professionals with undergraduate, master's and doctorate degrees were found to be higher than those of high school graduate health professionals.[18] Among the single participants, MHLS levels and knowledge-based and resource-oriented literacy levels were found to be higher than those of married and widowed participants. Studies examining the level of mental health literacy in diabetic patients are limited.[10] On the other hand, in Öz's study in which he examined mental health literacy among individuals living in a city centre, it was observed that the mental health literacy levels of the participants did not change according to their marital status.[19] It can be thought that single individuals may have relatively less responsibilities than those who are married or widowed. Thus, they can have more time to take initiative to improve themselves and increase their level of knowledge.

It has been determined that diabetes patients with low perceived income levels have lower MHLS levels and resource-oriented literacy levels compared to others. In the study of Güner et al., in which they examined health literacy and rational drug use in individuals with diabetes, it was stated that the health literacy levels of the participants with higher income levels were higher.[19] This finding is similar to our results.

In the study, it was observed that the participants whose time elapsed since the diagnosis of diabetes were low had higher MHLS levels, knowledge-based and resource-oriented literacy levels. In the study conducted by Güner et al. on individuals with diabetes, it was stated that the health literacy of participants with a diagnosis period of 5 years or less was higher than those with a longer diagnosis period.[8] This suggests that newly diagnosed individuals should read more on this subject in order to learn about the disease, prognosis, treatment options, and effects on mental health.

The results of this study can only be generalized to this sample group. Among the limitations of the study is the fact that the participants in the study were not evaluated for having an additional disease.

In conclusion, the mental health literacy levels of individuals diagnosed with diabetes and the effects

of this level were evaluated. It is striking that studies in the literature generally examine health literacy in diabetes patients, and studies on mental health literacy in diabetes patients are limited. In this study, it was observed that the mental health literacy levels of individuals diagnosed with diabetes were above the medium score. Studies in this area have indicated that health literacy can positively affect the symptoms of the disease and that patients' adherence to treatment can be facilitated. Facilitating the compliance of the patients with the treatment can minimize the mental health problems they experience; Improving mental health literacy levels will also contribute to the reduction of mental health problems that occur during the disease process or to seek appropriate help in a short time. In order to improve the mental health literacy levels of individuals diagnosed with diabetes, it is recommended to conduct awareness-raising training programs.

Ethics Committee Approval: The study was approved by the Ethics Committee permission was obtained from the University of Health Sciences Training and Research Hospital Clinical Research Ethics Committee, Ankara-Türkiye (Date:18/05/2022, decision no: E-22-991). And institutional permissions (Date: 19.04.2022) were obtained. In line with the Helsinki Declaration, the participants were informed about the study, and their informed consent was obtained. After obtaining consent from the participant who volunteered to participate in the study, they were included in the study.

Conflict of Interest: No conflict of interest was declared by the authors.

Author Contributions: Concept – GS; Supervision- GS; Materials – EU; Data Collection and/or Processing- GS, EU; Analysis and/or Interpretation –GS; Writing – GS, EU.

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