

Chronic Disease Management in Primary Care: A Cross-Sectional Study in Türkiye

Birinci Basamakta Kronik Hastalık Yönetimi: Türkiye’de Kesitsel Bir Çalışma

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ABSTRACT

Objective: The aim of our study was to evaluate the chronic disease management of family physicians and family health workers and to examine their views on the Disease Management Platform (DMP) and the usability of this platform.

Material and Methods: This study is a descriptive cross-sectional type of study. The universe of the study consisted of family physicians and family health workers working in family health centers (FHC) in our country. Sociodemographic data, chronic disease management practices, questions about DMP, System Usability Scale (SUS) were asked.

Results: Of the participants 19.0% can make using the DMP system a part of their routine work. The percentage of those who thought that the biggest obstacle to the use of the DMP was the waste of time was 79.4%. The SUS scores of the participants who knew the number of obese, diabetic and hypertensive patients registered in their unit were also significantly higher ($p<0.05$). SUS scores of those who performed HPV and FOBT screenings were also significantly higher ($p<0.05$).

Conclusion: There is a need for interventions that will increase the implementation of preventive health services and the use of DMP. Since the time issue is reported as an obstacle to a large extent, regulations are also required on time management.

ÖZET

Amaç: Çalışmamızın amacı, aile hekimleri ve aile sağlığı çalışanlarının kronik hastalık yönetimini değerlendirmek ve Hastalık Yönetim Platformu (HYP) ve bu platformun kullanılabilirliği hakkındaki görüşlerini incelemektir.

Gereç ve Yöntem: Bu çalışma tanımlayıcı kesitsel tipte bir çalışmadır. Çalışmanın evrenini ülkemizdeki aile sağlığı merkezlerinde (ASM) görev yapan aile hekimleri ve aile sağlığı çalışanları oluşturmaktadır. Sosyodemografik veriler, kronik hastalık yönetimi uygulamaları, HYP ile ilgili sorular, Sistem Kullanılabilirlik Ölçeği (SKS) sorulmuştur.

Bulgular: Katılımcıların %19,0’ı HYP sistemini kullanmayı rutin işlerinin bir parçası haline getirebilmektedir. HYP kullanımının önündeki en büyük engelin zaman kaybı olduğunu düşünenlerin oranı %79,4’ü. Biriminde kayıtlı obez, diyabetik ve hipertansif hasta sayısını bilen katılımcıların SKS puanları da anlamlı derecede yüksekti ($p<0,05$). HPV ve GGK taramalarını yapanların SKS puanları da anlamlı olarak daha yüksekti ($p<0,05$).

Sonuç: Koruyucu sağlık hizmetlerinin uygulanmasını ve HYP kullanımını artıracak müdahalelere ihtiyaç vardır. Zaman sorunu büyük ölçüde bir engel olarak bildirildiği için zaman yönetimi konusunda da düzenlemeler gerekmektedir.

Keywords:

Chronic disease
Disease management
Family physician
Screening
System usability

Anahtar Kelimeler:

Kronik hastalık
Hastalık yönetimi
Aile hekimi
Tarama
Sistem kullanılabilirliği

INTRODUCTION

Chronic diseases are one of the most important public health problems today as they cause high mortality and morbidity. The prevalence of chronic diseases has increased in recent years (1,2). Prevention and control of chronic diseases are of utmost importance, because of the premature mortality and the burden related to these diseases. Responding effectively to chronic diseases necessitates the inclusion of fundamental aspects such as the diagnosis, screening, and treatment of chronic illnesses (3,4).

Family medicine, as the cornerstone of primary healthcare,

encompasses elements of healthcare system organization through its emphasis on the overall well-being of the community (5,6). The evaluation and management of chronic diseases primarily by primary health care services has an important place in the health policies of our country. For this purpose, a disease management platform (DMP) was established to standardize the follow-up of chronic diseases and encourage their management in primary care. Such tools assist patients and clinicians in enhancing patient follow-up procedures (7,8). With the use of DMP, it is aimed to control the symptoms and signs of diseases by ensuring early diagnosis of chronic diseases

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and appropriate treatment with periodic follow-ups, and to prevent individuals from experiencing loss of function and becoming disabled through complication monitoring. In this platform, hypertension screening, diabetes screening, screening of elderly population, cardiovascular risk and obesity screenings are performed (9,10).

The aim of our study was to evaluate the chronic disease management of family physicians and family health workers and to examine their views on the Disease Management Platform and the usability of this platform by primary care workers.

MATERIAL AND METHODS

Study Design and Participants

This study is a descriptive cross-sectional type of study. The universe of the study consisted of family physicians and family health workers working in family health centers (FHC) in our country. Since the convenience sampling method was used, no sample calculation was made. An online questionnaire was used as a data collection tool. In order for the participants to fill out the questionnaire, links were shared online from communication groups.

Measures

In the first part of the questionnaire, sociodemographic data, control over the number of patients registered to the unit, and chronic disease management practices were asked. In the second part, 5-point likert-type questions about healthy living and disease management platform were asked. The last part of the questionnaire included the System Usability Scale (SUS) to measure the usability of the disease management system. This scale is a 5-point likert scale and consists of 10 questions (11). The scale was developed by Brook in 1996 (12) and validated in Turkish (11). Each item in the scale takes a value between 1 and 5 (1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree). While the singular items in the scale consist of positive items, the items with even numbers are composed of negative items. The scores of each item answered by users ranges from 0 to 4. The sum of the scores is multiplied by 2.5 to find total score. Total scores range between 0 and 100. According to this score, systems or interfaces can be evaluated in terms of usability. Higher scores indicate more usability (11).

Statistics

SPSS (Statistical Package for Social Sciences for Windows 25.0 program was used for data analysis and recording. Median, minimum, maximum values, number (n) and percentages (%) were used for descriptive data. The conformity of continuous variables to normal distribution was examined visually (histograms and probability plots) and analytically (Kolmogorov-Smirnov/ Shapiro-Wilk tests). Mann Whitney U test was used to compare continuous variables that did not conform to normal distribution. Spearman correlation analysis was used to compare two continuous variables that were not normally distributed.

Ethics

Ethics committee approval was obtained from Istanbul Medipol University Non-Interventional Clinical Research Ethics Committee with the decision number 872 on 13/10/2022 for the study.

Table 1: The sociodemographic characteristics and features of the participants.

		Median (min-max)
Age (years)		41.0 (23.0-68.0)
Time in the profession (years)		16.0 (0.1-40.0)
Time in the FHC (years)		10.0 (0.1-136.0)
		n (%)
Gender	Female	382 (50.9)
	Male	369 (49.6)
Profession	Family physician	603 (80.3)
	Family health worker	148 (19.7)
Presence of chronic disease	No	553 (73.6)
	Yes	198 (26.4)
To know the number of obese patients	No	500 (66.6)
	Yes	251 (33.4)
To know the number of patients with diabetes	No	447 (59.5)
	Yes	304 (40.5)
To know the number of patients with hypertension	No	458 (61.0)
	Yes	293 (39.0)
HPV screening in this year	No	142 (18.9)
	Yes	609 (81.1)
FOBT screening in this year	No	174 (23.2)
	Yes	577 (76.8)

FHC: Family Health Center,
HPV: Human Papilloma Virus,
FOBT: Fecal occult blood test

Table 2: Data of trainings about disease management and Disease Management Platform.

		n	%
Receiving chronic disease management training	No	465	61.9
	Yes	286	38.1
Receiving DMP training	No	572	76.2
	Yes	179	23.8
DMP use	No	332	44.2
	Yes	419	55.8
Follow up and screening of patients with chronic disease	Yes-with DMP	339	45.1
	Yes-without DMP	246	32.8
	No	166	22.1

DMP: Disease Management Platform

RESULTS

In the study, totally 751 family physicians and family health workers completed the questionnaire. 80.3% (n=603) were family physicians and 19.7% (n=148) were family health workers. Median age was 41.0 (23.0-68.0) years. Of the participants, 50.9% (n=382) were women. 26.4% (n=198) of the participants had a chronic disease. In the year of the study, 81.1% (n=609) and 76.8% (n=577) had performed HPV (Human Papilloma Virus) screening and Fecal occult blood test (FOBT), respectively. The percentages of those who knew how many obese, diabetic and hypertensive patients registered in their FHC unit were 33.4% (n=251), 40.5% (n=304) and 76.8% (n=577), respectively (Table 1).

38.1% (n=286) of the participants had previously received training on chronic disease management. The percentage of participants who received DMP training was 23.8% (n=179). The percentage of participants using the DMP was 55.8% (n=419). 22.1% (n=166) of the participants were unable to screen and follow-up their patients with chronic diseases (Table 2).

Participants were asked questions to evaluate their views and experiences about the DMP. They were asked to answer these questions on a 5-point likert scale (totally disagree, disagree, undecided, agree, completely agree). 75.6% (n=568) of the participants thought that it was necessary to screen the patients registered in their unit for chronic diseases. The percentage of those who thought that the incidence of chronic diseases would decrease with the use of the DMP was 36.4% (n=274). The percentage of those who thought that the biggest obstacle to the use

of the DMP was the waste of time (79.4%, n=597). Of the participants %19.0 (n=143) can make using the DMP system a part of their routine work (Table 3).

System Usability Scale scores and related factors of the participants were evaluated for the DMP. The median score of the SUS was 42.5 (0-100). Participants without chronic disease had a significantly higher DMP score than those with chronic disease (p=0.024). The SUS scores of the participants who knew the number of obese, diabetic and hypertensive patients registered in their unit were also significantly higher (p<0.001, 0.018, 0.008, respectively). SUS scores of those who performed HPV and FOBT screenings were also significantly higher (p<0.001 and p=0.002, respectively). The SUS scores of those who used the DMP were significantly higher than those who did not (p<0.001) (Table 4).

System Usability Scale scores and other variables that may be related to SUS scores were evaluated with Spearman correlation analysis. There was a statistically significant negative correlation between age, time in profession, working time in FHC and SUS scores (r:-0.107, p=0.003; r:-0.107, p=0.003, and r:-0.125, p=0.001, respectively). There was also a significant positive correlation between thinking it is necessary to screen patients with chronic disease and SUS score (r:0.293, p<0.001). There was also a significant positive correlation between the thought that the incidence of chronic diseases could be reduced by use of DMP and the SUS score (r:0.391, p<0.001) (Table 5).

DISCUSSION

Primary health care services is at the key point in the provision of health promoting and disease preventive

Table 3: Questions about the views of the participants about the Disease Management Platform.

	Totally disagree/ Disagree n (%)	Undecided n (%)	Totally agree/ Agree n (%)
I find it necessary to screen patients registered in my unit for chronic diseases.	90 (12.0)	93 (12.4)	568 (75.6)
I think I will reduce the incidence of chronic diseases by using DMP.	294 (39.1)	183 (24.4)	274 (36.4)
I think using DMP is a waste of time.	330 (44.0)	199 (26.5)	222 (29.6)
DMP is a system that can only be used by low population units.	127 (16.9)	105 (14.0)	519 (69.1)
DMP is a user-friendly system.	380 (50.6)	226 (30.1)	145 (19.4)
Using DMP provides more professional satisfaction.	322 (42.9)	196 (26.1)	233 (31.0)
The biggest obstacle to using DMP is lack of time.	77 (10.3)	77 (10.3)	597 (79.4)
I find the positive payment system for DMP logical.	300 (40.0)	139 (18.5)	312 (41.6)
DMP is meaningless without a referral system.	95 (12.7)	150 (20.0)	506 (67.3)
I find the integration of DMP between modules successful.	338 (45.0)	255 (34.0)	158 (21.0)
I find the integration of DMP with other software systems successful.	345 (46.0)	245 (32.6)	161 (21.5)
DMP has been prepared by taking field dynamics into consideration.	487 (64.9)	187 (24.9)	77 (10.2)
I can make using the DMP system a part of my routine work.	418 (55.7)	190 (25.3)	143 (19.0)

FHC: Family Health Center,

HPV: Human Papilloma Virus,

FOBT: Fecal occult blood test,

DMP: Disease Management Platform, SUS: System Usability Scale

Table 4: Variables related with System Usability Scale scores.

		SUS score	P value
		Median (min-max)	
Gender	Female	42.5 (0-95.0)	0.610
	Male	45.0 (0-100.0)	
Profession	Family physician	42.5 (0-100.0)	0.451
	Family health worker	42.5 (0-95.0)	
Presence of chronic disease	No	45.0 (0-100.0)	0.024
	Yes	40.0 (0-95.0)	
To know the number of obese patients	No	42.5 (0-95.0)	<0.001
	Yes	47.5 (0-100.0)	
To know the number of patients with diabetes	No	42.5 (0-95.0)	0.018
	Yes	45.0 (0-100.0)	
To know the number of patients with hypertension	No	42.5 (0-95.0)	0.008
	Yes	47.5 (0-100.0)	
HPV* screening in this year	No	35.0 (0-90.0)	<0.001
	Yes	45.0 (0-100.0)	
FOBT* screening in this year	No	40.0 (0-90.0)	0.002
	Yes	45.0 (0-100.0)	
Receiving chronic disease management training	No	42.5 (0-100.0)	0.716
	Yes	42.5 (0-100.0)	
Receiving DMP training	No	42.5 (0-100.0)	0.330
	Yes	45.0 (0-100.0)	
DMP use	No	30.0 (0-92.5)	<0.001
	Yes	50.0 (0-100.0)	

FHC: Family Health Center,
 HPV: Human Papilloma Virus,
 FOBT: Fecal occult blood test,
 DMP: Disease Management Platform,
 SUS: System Usability Scale

health services. Cancer screening is at the forefront of preventive health services. The percentages of HPV screening for cervical cancer and FOBT for colon cancer among family physicians and family health workers in our study were 81.1% and 76.8%, respectively. In our study, the coverage rate for cancer screenings was not presented, but the high rate of those who do not screen for cancer among family physicians and family health workers is worrying. There is a need for interventions that will increase the level of knowledge and awareness about counseling on cancer screening among healthcare professionals. In a study conducted in our country, the increase in cancer screening rates with activities to

Table 5: Correlations between System Usability Scale and other variables.

		SUS score
Age (years)	Correlation	-0.107
	Coefficient	
	P value	0.003
Time in the profession (years)	Correlation	-0.107
	Coefficient	
	P value	0.003
Time in the FHC (years)	Correlation	-0.125
	Coefficient	
	P value	0.001
I find it necessary to screen patients registered in my unit for chronic diseases. (scores between 1-5)*	Correlation	0.293
	Coefficient	
	P value	<0.001
I think I will reduce the incidence of chronic diseases by using DMP. (scores between 1-5)*	Correlation	0.391
	Coefficient	
	P value	<0.001

Spearman correlation test was used for ordinal questions having scores ranged between 1-5, FHC: Family Health Center, DMP: Disease Management Platform, SUS: System Usability Scale

increase the awareness of the population registered in the family medicine unit and health workers emphasizes that the interventions to be made in this area will have positive results (13). In addition, qualitative studies can be planned in this area in order to understand what are the obstacles to the implementation of screening programs.

Unfortunately, the rate of use of DMP (55.8%), which was developed in order to ensure standardization of preventive health services in FHCs and to provide practicality in terms of implementation, was low compared to our study. Training on the use of DMP may have been effective on this situation because the rate of those who received training on DMP was only 23.8%. Similarly, the rate of those who received training on chronic disease management in our study was low (38.1%). There is a need to expand trainings for preventive health service providers. Before the trainings, in which fields there are difficulties and obstacles can be determined, and field-specific and target-oriented trainings can be planned. 22.1% of participants did not follow up and screen their patients with chronic diseases. Similarly according to the results of a study conducted in family medicine offices, clinicians recognized a tripartite mission involving the delivery of acute care, the handling of chronic issues, and preventive measures, yet only a few prioritized prevention (14).

In our study, of the participants only 19.0% can make using the DMP system a part of their routine work. The percentage of those who thought that the biggest obstacle to the use of the DMP was the waste of time was 79.4%. In a study conducted in the literature, it was reported that a significant amount of time is required for the management of chronic diseases in primary health care institutions. In the same study, it was reported that providing care for the top 10 chronic diseases, assuming the disease remains

stable and well-controlled, a total of 828 hours annually or an average of 3.5 hours per day is necessary (15). Because of factors such as the constrained time during clinic visits, clinicians frequently found themselves prioritizing and triaging among the numerous social needs of patients, concentrating on the most evident, pressing, and quickly manageable issues within the limited time of a clinic visit (16). Time management is extremely important for the follow-up of chronic diseases as well as outpatient services. In terms of the provision of preventive health services, which require significant time, ease of implementation should be provided with platforms such as DMP. The views and experiences of the users should be evaluated periodically and in this context, improvements and updates should be made on the platforms such as DMP.

The SUS scores of the participants were evaluated to determine the usability of this platform. The SUS scores of the participants who knew the number of obese, diabetic and hypertensive patients registered in their unit and those who performed HPV and FOBT screenings were significantly higher. According to the literature, compliance with the guidelines on the prevention of cardiovascular diseases has been associated with physician awareness in this regard (17). In our study, knowing the number of obese, diabetic and hypertensive patients registered in their unit probably indicate the high awareness on follow up and screening of patients with chronic diseases. We can infer that healthcare workers with a high level of awareness are capable of providing a greater number of preventive health services, and they utilize DMP for these implementations. Thus, they find DMP more usable. Moreover, the SUS scores of those who used the DMP were significantly higher than those who did not. It is expected that those who use DMP will find DMP more usable according to their SUS scores than those who do not. For those who think that the DMP program is not usable, qualitative studies should be planned and the aspects that need to be developed can be understood and DMP can be made more user-friendly and widespread.

There was a statistically significant negative correlation between age, time in profession, working time in FHC and

SUS scores. Time in profession and working time in FHC are both age-related variables. According to the literature, since younger ages are associated higher digital literacy (18); in our study, it is expected that younger people would find DMP more usable according to their SUS scores. There was also a significant positive correlation between thinking it is necessary to screen patients with chronic disease and SUS score. There was also a significant positive correlation between the thought that the incidence of chronic diseases could be reduced by use of DMP and the SUS score. This shows that the positive thoughts and perceptions of the participants about chronic disease management and DMP use are effective in evaluating the DMP system as more usable.

Limitations and Strengths

Our study aimed to present country-wide data and the applied questionnaire was delivered to a large number of participants throughout the country. However, the use of convenience sampling, one of the nonprobability sampling methods, creates a limitation in terms of the representative power of the study. In addition, this study is the first study on the usability of a nationwide platform system. Thus, the evaluation of the views on the use of DMP in family health centers and the provision of preventive health services together makes a significant contribution to the literature with a broad perspective in this field.

CONCLUSION

Increasing the provision and coverage of preventive health services is extremely important in the management of many health problems, especially chronic diseases and cancer. In our study, when we evaluated the views of family physicians and family health workers about preventive health services and DMP, we found that approximately 1 out of 5 participants did not follow up on chronic diseases and nearly half did not use DMP. The rate of those who stated that the most important obstacle regarding the use of DMP was the time problem was also high. The median SUS score for DMP was found to be low, so the platform should be made more usable. There is a need for interventions that will increase the implementation of preventive health services and the use of DMP.

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Ethics: Ethics committee approval was obtained from Istanbul Medipol University Non-Interventional Clinical Research Ethics Committee with the decision number 872 on 13/10/2022 for the study.

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