The effect of mental health literacy training given to primary care family health workers on stigmatization: A randomized controlled trial

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SUMMARY

Objective: There is stigma and a lack of information about individuals with mental illness among primary health care providers worldwide. The objective of this study is to evaluate the impact of a brief online training program on the mental health literacy, beliefs, and attitudes of family health workers who provide primary health care services.

Method: This study has a two-arm, parallel-group, randomized controlled design. The study involves 252 individuals who were randomly assigned to different groups. By the end of the study, 82 individuals in the intervention group and 89 individuals in the control group participated in the evaluation. Measurements: Evaluations were performed twice for both groups via pre-tests and post-tests after 3 months of follow-up following the training. The assessment utilized the Mental Health Literacy, Beliefs About Mental Illnesses, and Community Attitudes Towards Mental Illness Scales. The intervention tool of the study is mental health literacy training designed for family health workers who provide primary care services and implemented online.

Results: Data from 171 family health workers were analyzed. The mental health literacy, belief, and attitude scale scores of the participating family health workers were found to be at a moderate level. The educational intervention significantly improved mental health knowledge (p=0.029) and goodwill scores (p=0.007) in the intervention group, while reducing the perception of danger (p=0.044).

Discussion: The level of post-graduation mental health training among family health workers is low, and a significant portion are unsure whether their duties include the provision of mental health services. Primary care family health workers could benefit from a brief online training program focused on mental health literacy.

Key Words: Community health nursing, Primary health care, Mental health, Mental Health Literacy, Stigma

INTRODUCTION

Mental illness refers to a range of disorders characterized by varying degrees of inconsistencies, inappropriateness, and inadequacy in an individual's emotions, thoughts, and behaviors (1). Recent reports suggest that due to increasing stress and life difficulties in today's world, mental disorders have reached even more serious levels. Despite the existence of effective treatments for mental disorders, over 75% of individuals in low- and middle-income countries do not receive the necessary care. Several barriers impede access to effective treatment, including a lack of information about mental illnesses, limited resources, insufficient trained healthcare providers, unfamiliarity with accessing treatment, and the social stigma associated with mental disorders (2,3). Stigmatization often stems from mental illnesses not being viewed as legitimate health issues akin to physical ailments (4). Numerous studies have demonstrated that increasing awareness about mental health can boost help-seeking behaviors of individuals with mental health problems and reduce stigmatization (2,5).

The concept that heightened awareness about mental illnesses can facilitate early detection and better overall mental health has given rise to the

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notion of mental health literacy (MHL). MHL, first introduced by Jorm in 1996, is defined as the knowledge and beliefs that aid in the recognition, management, or prevention of mental disorders (6).

Healthcare professionals, given their personal and occupational responsibilities, are expected to possess strong mental health literacy. It is imperative for every healthcare provider to be equipped with the knowledge necessary to make informed decisions about health and disease. However, those working in primary healthcare services may not have the same level of current information as their counterparts in mental health. Studies indicate that mental health literacy levels among primary healthcare workers tend to be low or moderate, and they often exhibit stigmatizing behavior (7,8,9).

Yet primary healthcare plays a pivotal role in addressing mental health needs and fostering positive mental well-being. The majority of individuals with mental health issues can readily access primary care services. The World Health Organization's mental health Gap Action Program (mhGAP) and related studies are actively working to integrate mental health services into primary healthcare. Nevertheless, obstacles such as stigmatization and the lack of knowledge among primary care providers about individuals with mental illnesses hinder the success of these initiatives (10). Consequently, there is a pressing need for interventions that enhance MHL and diminish stigmatization among primary care providers (11).

In the Turkish primary care system, family physicians and family health workers (FHWs) collaborate to provide healthcare services. FHWs working in primary care play a vital role in delivering public health services, particularly for maternal and child health. FHWs maintain close ties with the public. Given the high patient load on doctors in countries like Turkey, where physicians have limited time for patient examinations, early detection of mental disorders, monitoring patient adherence to treatment, and offering appropriate counseling can contribute significantly to reducing social stigma towards individuals with mental disorders. However, the training of non-physician healthcare professionals, particularly in primary care, regarding mental illnesses, has been an overlooked issue (12). Moreover, the literature suggests that training programs designed to enhance MHL among healthcare workers lack standardization (13).

In Turkey, healthcare professionals receive basic mental health training during their undergraduate education. However, post-graduation training content aimed at increasing MHL level and reducing stigmatization is notably absent. This study introduced the first training intervention in Turkey to enhance MHL among primary healthcare workers.

The hypothesis of this study posits that a brief online training program will enhance the MHL levels of primary healthcare professionals in Turkey, positively influence their beliefs about mental illnesses, and reduce stigmatization. Specifically, it is assumed that this training program will improve participants' knowledge and beliefs regarding the recognition, management, and prevention of mental disorders, as well as foster more positive attitudes towards individuals with mental illnesses.

The primary objective of this study is to evaluate the impact of a brief online training program on the mental health literacy, beliefs, and attitudes of primary healthcare professionals. As the first educational intervention aimed at improving the mental health literacy of family health workers in Turkey, this study is expected to make a significant contribution to the healthcare education literature in the country. By assessing the effects of short-term online training programs on primary healthcare professionals, this research seeks to provide valuable insights into the effectiveness of such programs and guide the design of future educational interventions. Additionally, it may offer a new perspective to the existing literature in this field.

METHOD

Trial Design

This study utilized a two-arm, parallel-group design and was conducted as a single-blind randomized controlled trial (RCT). The reporting of the study

results adhered to the guidelines outlined in the CONSORT 2010 Statement.

Population and sample

The study population comprised a total of 438 midwives, nurses, and health officers employed at family health centers (FHCs) providing primary healthcare in Kayseri city. These healthcare professionals are commonly referred to as family health workers (FHWs). FHWs who met the inclusion criteria and agreed to participate were randomly assigned to the intervention and control group lists. This random assignment was carried out using the serial numbers in the records maintained by the city health authority. The Excel file containing the list of participants clearly delineated the order of rural and urban family physicians and districts. Computer-assisted randomization was employed to determine group allocation. It is important to note that due to the nature of the intervention, FHWs could not be blinded to their assignment in the RCT. However, to maintain the blinding of the result analysis, an independent statistician provided support.

Inclusion Criteria

1- Being employed as a family health worker in family health centers within the city of Kayseri.

2- Possessing the necessary means to access online education during designated training hours.

3- Maintaining a minimum participation rate of 90% throughout the training program.

4- Consenting to participate in the study.

It is worth noting that there were no age or gender restrictions in our study.

Exclusion Criteria

1- Refusal to participate in training and survey activities for research purposes.

2- Involvement in less than 10% of the training program.

Data collection

The preliminary and final surveys for this study were distributed to the workplaces of FHWs via corporate mail, spanning the period from August 2022 to June 2023. These surveys were subsequently collected through the same corporate mail system. The online training intervention took place in March 2023.

Measurement Tools Used in the Study

Personal Information Form: This survey, developed by the researchers for this study by reviewing the literature (8,14), includes a total of 23 questions related to personal and professional information.

Mental Health Literacy Scale (MHLS): The Turkish version of this scale, originally developed by Jung in 2016, was validated by Göktaş et al. in 2019 (15,16). The scale comprises 22 items and assesses three sub-dimensions: knowledge-oriented, belief-oriented, and resource-oriented MHL. A higher MHLS score indicates a better understanding of mental health disorders and the ability to correctly identify appropriate treatment resources. Lower MHLS scores may signify a lack of awareness about mental health disorder symptoms in oneself or others, delays in seeking professional help, seeking inappropriate help, and prematurely discontinuing treatment. Understanding the mechanisms that underlie the connection between a deficiency in MHL and the health outcomes associated with mental health disorders is essential for the implementation of interventions for individuals facing mental disorders.

Beliefs toward Mental Illness (BMI): The Turkish version of this scale, originally developed by Hirai and Clum in 2000, was validated by Bilge in 2008 (17,18). The scale is designed to assess the positive and negative beliefs held by individuals with varying cultural backgrounds regarding mental illness. It comprises 21 items organized into three subscales: dangerousness, incurability and poor social

and interpersonal skills, and shame. The dangerousness subscale examines perceptions of the danger associated with mental illnesses and patients, while the incurability and poor social and interpersonal skills subscale assesses how mental illnesses impact interpersonal relationships. The shame subscale includes items related to individuals' feelings of embarrassment about mental illnesses. The scale's interpretation considers both total scores and subscale scores, with higher scores indicating more negative beliefs.

Community Attitudes towards the Mentally Ill (CAMI): The Turkish version of this scale, originally developed by Taylor and Dear in 1979, was validated by Bağ and Ekinci in 2006 (19, 20). The scale consists of 21 items organized into three subscales: "Fear/Exclusion," "Community Mental Health Ideology," and "Goodwill." Higher total scores in the Goodwill and Community Mental Health Ideology subscales reflect a positive attitude, while a higher total score in the Fear/Exclusion subscale indicates a negative attitude.

Presentation of Training Content

The training content was developed by faculty members from Erciyes University Faculty of Medicine, encompassing the Department of Psychiatry, Department of Public Health, and Department of Medical Education. The concise training program focused on various aspects of mental health in primary care, including: identifying, assessing, and distinguishing psychiatric disorders; addressing psychiatric emergencies and criti-

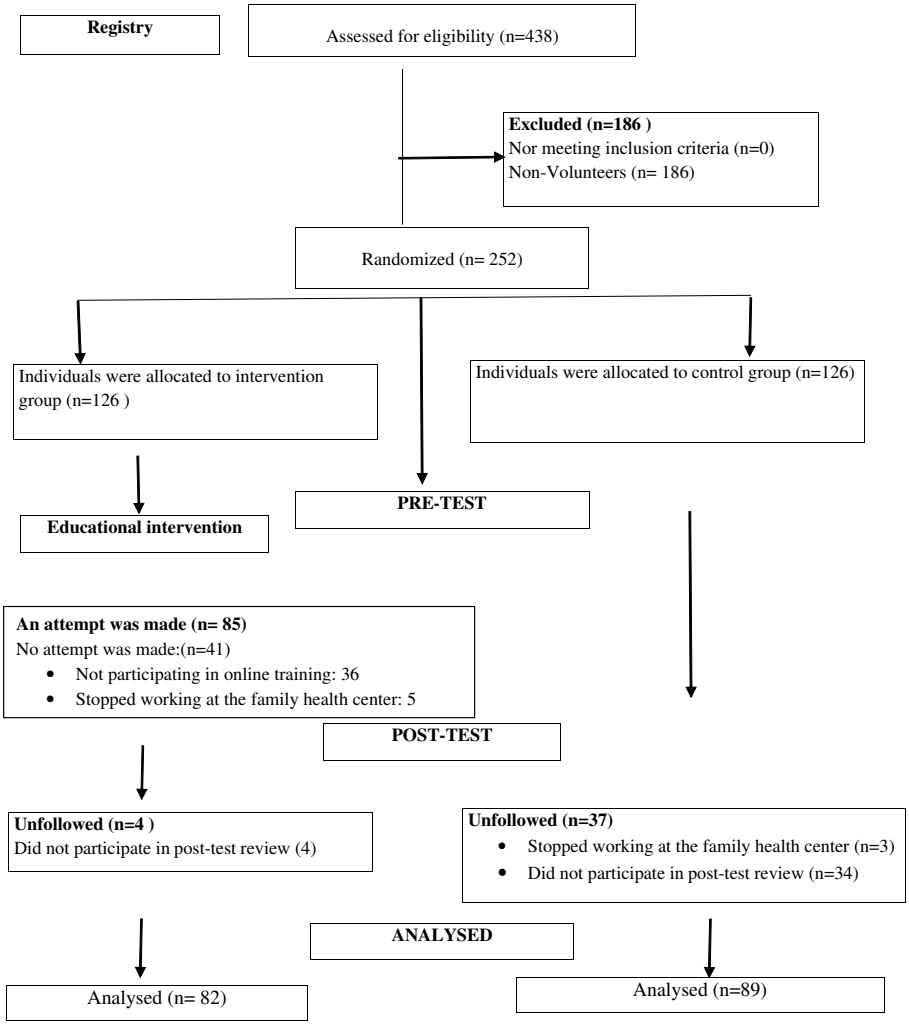

Figure 1. CONSORT flowchart.

Table 1. Demographic characteristics at baseline

	Control group (n=93)		Educational group (n=91)		Total (n=184)		t or x^2	p
Age – SS	40,23 – 5,91		38,14–7,12		39,2–6,6		t=2,143	p=0,054
Professional Year – SS	18,13 – 7,37		16,79 – 7,79		17,49 – 7,58		t=1,157	p=0,249
	n	%	n	%	n	%		
Marital status								0,294
Married	77	86,5	65	79,3	142	83,0	2,453	
Not married	12	13,4	17	20,7	29	17,0		
Family Type								
Nuclear family	82	92,1	74	90,2	156	91,2	1,793	0,616*
Extended family	4	4,5	2	2,4	6	3,5		
Alone	3	3,3	6	7,3	9	5,3		
Income status								
Income = expense	41	46,1	36	43,9	77	45,0	1,814	0,404*
Income < expense	44	49,4	38	46,3	82	48,0		
Income > expense	4	4,5	8	9,8	12	7,0		
Location of the family health center (FHC)								
Urban FHC	74	83,1	69	84,1	143	83,6	0,031	0,863
Rural FHC	15	16,9	13	15,9	28	16,4		
Profession								
Midwife	61	68,5	54	65,9	115	67,3	1,612	0,447*
Nurse	26	29,2	23	28,0	49	28,7		
Other health worker	2	2,2	5	6,1	7	4,0		
Educational status								
High school	5	5,6	10	12,2	15	8,8	5,389	0,145
2-year university	18	20,2	8	9,8	26	15,2		
Bachelor	60	67,4	57	69,5	117	68,4		
Postgraduate	6	6,7	7	8,5	13	7,6		
The situation of having mental health problems in the past								
Have	24	27,0	26	31,7	50	29,2	0,464	0,496
Have not	65	73,0	56	68,3	121	70,8		
The state of being a relative diagnosed with a mental illness								
Have	19	21,3	15	18,3	34	19,9	0,250	0,617
Have not	70	78,7	67	81,7	137	80,1		
The status of receiving primary care mental health education after graduation								
Yes	27	30,3	21	25,6	48	28,1	0,472	0,492
No	62	69,7	61	74,4	123	71,9		
The state of considering preventive mental health services as a duty								
My duty	48	53,9	48	58,5	96	56,1		
Not my duty	7	7,9	4	4,9	11	6,5	0,886	0,829
I doubt it	34	38,2	30	36,5	64	37,4		

*Fisher Test

cal situations; stress recognition and effective stress management.

For the delivery of the training content to the intervention group, the online training platform link and materials were shared with participants one day prior to the training. This information was communicated through the specified channels for those interested in the study. The training sessions were conducted online, with four sessions taking place on the same day. Each training session had an average duration of 35 minutes. Participants were encouraged to ask questions through chat and WhatsApp groups during the online sessions, and a 10-minute break was given after each session. Notably, the training occurred outside of regular working hours and on weekends.

Statistical Analysis

For demographic variables, data were presented using frequency and percentage. To assess differences between independent variables, the chi-square test or Fisher's exact test was applied. The responses to the scale items in both the pre- and post-tests were found not to follow a normal distribution ($p < 0.05$). To compare differences between groups concerning continuous variables, the Mann-Whitney U Test was used. Additionally, the Wilcoxon Matched Two-Sample Test was employed to analyze the pre-test and post-test results for dependent variables. The results were reported within a 95% confidence interval, a p-value < 0.05 was considered statistically significant. The data analysis was conducted using SPSS, version 25.0 (SPSS Inc., Chicago, IL, ABD).

Table 2. Comparison of pre-test/ post-test scales and subscale scores of FPWs in the control and experimental group

Scale	Group	Pre-test					Post-test				
		N	Mean Rank	Median (Min-max)	u	p	N	Mean Rank	Median (Min-max)	u	p
MHLS	Control	89	82,04	15(3-21)	3772,5	0,202	89	79,80	17(6-22)	3231	0,005*
	Experimental	82	90,29	16(8-22)			82	92,73	19(14-22)		
MHLS-1	Control	89	81,88	8(2-10)	3739	0,158	89	78,63	9(2-10)	3832	0,029*
	Experimental	82	90,48	9(2-10)			82	94,00	10(6-10)		
MHLS-2	Control	89	82,48	5(2-8)	3634	0,086	89	85,48	5(2-8)	3537,5	0,068
	Experimental	82	89,82	5(1-8)			82	86,56	6(2-8)		
MHLS-3	Control	89	87,71	2(0-4)	3606,5	0,071	89	75,92	3(0-4)	3605,5	0,053
	Experimental	82	84,15	3(0-4)			82	96,95	3(1-4)		
BTMI	Control	89	82,26	45(9-82)	4217	0,968	89	88,99	46(22-83)	3514,5	0,047*
	Experimental	82	90,05	44(17-76)			82	82,75	41(5-73)		
BTMI-1	Control	89	82,48	21(1-40)	4173	0,871	89	90,65	22(9-37)	3811	0,044*
	Experimental	82	89,82	23(3-38)			82	80,95	17(3-34)		
BTMI-2	Control	89	81,29	23(5-52)	4034	0,584	89	88,21	25(7-44)	3245,5	0,066
	Experimental	82	91,11	26(3-55)			82	83,60	19(7-43)		
BTMI-3	Control	89	85,74	2(1-10)	4074,5	0,651	89	90,04	2(1-7)	4017,5	0,437
	Experimental	82	86,28	2(1-10)			82	81,62	1(1-9)		
CATMHS	Control	89	89,03	51(32-67)	3796,5	0,228	89	80,38	52(36-68)	3811,5	0,233
	Experimental	82	82,71	51(34-64)			82	92,10	52(36-82)		
GCATMHS	Control	89	87,01	21(13-32)	4000,5	0,521	89	75,99	22(13-30)	4118	0,007*
	Experimental	82	84,90	21(13-28)			82	96,86	23(15-34)		
CICATMHS	Control	89	88,66	22(11-35)	3708,5	0,147	89	79,64	22(13-37)	1351	0,726
	Experimental	82	83,12	23(10-34)			82	92,90	23(13-44)		
FCATMHS	Control	89	91,09	6(3-9)	3768,5	0,187	89	98,61	6(5-10)	1811,5	0,091
	Experimental	82	80,48	6(3-10)			82	72,32	6(3-10)		

*p<0,05 / Mann -Whitney U Test. MHLS: Mental Health Literacy Scale(MHLS -1. Knowledge, MHLS-2: Belief, MHLS-3: Resource); BTMI: The Beliefs Toward Mental Illness scale (BTMI -1: Dangerousness, BTMI -2: Incurability and Social Dysfunction, BTMI -3: Embarrassment); CATMHS: Community Attitudes Toward Mental Health Scale (GCATMHS: Goodwill, CICATMHS: Community Mental Health Ideology, FCATMHS: Fear/Exclusion)

Ethical Considerations

The study was conducted in accordance with the World Medical Association Declaration of Helsinki. Permission was obtained with the decision of the Erciyes University Clinical Research Ethics Committee dated 06.10.2021 and numbered 2021/643. This study was derived from the doctoral thesis titled "Mental Health Literacy and Virtual Training Program Pilot Study in Primary Care Health Workers." The clinical trial was registered under the number ACTRN12622001223729.

RESULTS

The study initially included a total of 438 FHWs. However, 186 FHWs opted not to participate in the study, resulting in 252 participants eligible for randomization. Figure 1 illustrates the numerical changes among the participants over the course of the study. The mean age of FHWs who participated in the study was 39.2±6.6 years (control: 40.23±5.91 and intervention: 38.14±7.12). On average, they had 17.49 years of professional experience (control: 18.13±7.37 and intervention: 16.79±7.79). All FHWs included in the study were female, with 67.3% being midwives, 28.7% nurses, and 4.0% emergency medical technicians. A significant portion, 68.4%, held a bachelor's degree, and 83.6% worked in the family health center located in the city center (control: 83.1 and intervention: 84.1). Additional details regarding the demographic characteristics of the family health workers are illustrated in Table 1. The distribution of FHWs into the control and intervention groups was found to be homogenous in terms of demographic characteristics ($p > 0.05$).

In the pre-test, the mean MHLS total score for the participating FHWs was 16.0±3.50 (control: 16.01±3.57 and intervention: 15.99±3.19). The mean pre-test BMI score was 48.56±15.19 (control: 48.12±14.83 and intervention: 49.02±14.64). The mean pre-test CAMI total score was 50.01±8.39 (control: 50.61±7.60 and intervention: 49.40±8.59). According to the pre-test results, the distribution between the intervention and control groups was found to be homogeneous ($p > 0.05$).

No significant differences were observed in the pre-

Table 3. Comparison of pretest-posttest scales and subscale scores of control group FHWs (n=89)

Scales and sub-dimensions	Pre-test Mean/SD	Post-test Mean/SD	Z	Wilcoxson test P
MHLS-1	8,35–1,93	8,76–1,77	-2,051	0,152
MHLS-2	5,04–2,01	5,42–1,36	-1,529	0,126
MHLS-2	2,62–1,45	2,96–1,19	-1,88	0,261
MHLS	16,01–3,57	17,14–2,78	-4,039	0,051
BTMI-1	21,17–7,32	21,51–6,67	-1,313	0,189
BTMI-2	24,33–9,79	24,11–8,62	-1,204	0,228
BTMI-3	2,62–2,96	2,06–1,92	-1,395	0,163
BTMI	48,12–14,83	47,68–14,18	-2,593	0,210
GCATMHS	21,27–3,59	22,01–3,75	-1,36	0,174
CICATMHS	22,71–5,22	22,00–4,71	-1,348	0,178
CICATMHS	6,62–1,26	6,71–1,19	-0,796	0,426
CATMHS	50,61–7,60	50,72–7,01	-0,076	0,939

*p<0,05 / Wilcoxson test. MHLS: Mental Health Literacy Scale(MHLS-1. Knowledge, MHLS-2: Belief, MHLS-3: Resource); BTMI: The Beliefs Toward Mental Illness scale (BTMI-1: Dangerousness, BTMI-2: Incurability and Social Dysfunction, BTMI-3: Embarrassment); CATMHS: Community Attitudes Toward Mental Health Scale (GCATMHS: Goodwill, CICATMHS: Community Mental Health Ideology, FCATMHS: Fear/Exclusion)

Table 4. Comparison of pretest-posttest scales and subscale scores of intervention group FHWs (n=82)

Scales and sub-dimensions	Pre-test Mean/SD	Post-test Mean/SD	Wilcoxson test Z	Wilcoxson test P
MHLS-1	8,58–1,55	9,37–1,04	-4,453	0,001
MHLS-2	5,02–1,95	5,15–2,05	-0,526	0,599
MHLS-2	2,39–1,41	3,46–0,97	-5,187	0,001
MHLS	15,99–3,19	18,0–2,30	-5,502	0,001
BTMI-1	21,82–7,17	20,88–4,66	-1,620	0,025
BTMI-2	24,78–9,56	24,42–8,30	-1,259	0,208
BTMI-3	2,40–3,11	2,28–2,18	-1,538	0,161
BTMI	49,02–14,64	47,58–12,27	-0,548	0,053
GCATMHS	21,07–3,41	23,74–3,5	-4,759	0,001
CICATMHS	22,01–6,19	23,32–4,09	-1,44	0,151
CICATMHS	6,31–1,34	5,63–1,72	-3,143	0,002
CATMHS	49,40–8,59	52,70–6,43	-2,657	0,008

*p<0,05 / Wilcoxson test. MHLS: Mental Health Literacy Scale(MHLS-1. Knowledge, MHLS-2: Belief, MHLS-3: Resource); BTMI: The Beliefs Toward Mental Illness scale (BTMI-1: Dangerousness, BTMI-2: Incurability and Social Dysfunction, BTMI-3: Embarrassment); CATMHS: Community Attitudes Toward Mental Health Scale (GCATMHS: Goodwill, CICATMHS: Community Mental Health Ideology, FCATMHS: Fear/Exclusion)

test and post-test results for MHLS, BMI, CAMI scales, and their respective subscales among the FHWs in the control group ($p < 0.05$) (Table 3).

According to the post-test results of FHWs in the intervention group, there was an increase in the mean total MHLS score ($p=0.001$) and the MHLS sub-dimensions of knowledge ($p=0.001$) and resources ($p=0.001$) compared to the pre-test results, with a statistically significant difference ($p<0.05$). There was no difference between the mean scores of the belief subscale ($p = 0.599$). According to the post-test results of FHWs in the intervention group, there was a difference between the mean scale scores of total BMI ($p = 0.053$) and dangerousness ($p = 0.025$), one of the BMI sub-dimensions ($p < 0.05$). The mean score differences in the incurability and poor social and interpersonal skills ($p=0.208$) and shame ($p=0.161$) subscales were not found to be significant ($p>0.05$). According to the post-test results for the CAMI scale, the change in the mean scores of the total scale ($p=0.008$), goodwill ($p=0.001$), and fear ($p=0.002$) subscales was significant ($p<0.05$). The increase in scores in the ideology sub-dimension ($p=0.151$) was not significant ($p>0.05$).

The mean post-test total MHLS score for FHWs who participated in the study was found to be 17.57±2.67 (control: 17.16±2.78 and intervention: 18.0±2.30). Notably, there were differences between the post-test scores of the total MHLS ($p=0.05$), the knowledge sub-dimension (0.029), and the resource sub-dimension (0.053) of FHWs in the control and intervention groups ($p<0.05$). However, there was no significant difference in the post-test results for the belief sub-dimension ($p=0.068$) mean scores between the control and intervention groups ($p>0.05$). Regarding the BMI scale, the mean post-test total BMI score for FHWs in the study was 47.66±13.15 (control: 47.68±14.18 and intervention: 47.58±12.27). There was no significant difference between the mean scores for the BMI total scale ($p=0.147$), the incurability and poor social and interpersonal skills ($p=0.066$), and the shame ($p=0.537$) subscales ($p>0.05$). However, a difference was observed between the control and intervention groups regarding the dangerousness sub-dimension of this scale ($p = 0.044$). For the CAMI scale, the mean post-test total CAMI score was 51.67±8.95 (control: 50.72±7.01 and intervention: 52.70±6.43). There was no significant difference between the mean scores for the total CAMI ($p=0.233$), the ideology ($p=0.726$), and the fear ($p=0.091$) subscales between the control and intervention groups ($p<0.05$). However, the goodwill sub-dimension of the CAMI scale exhibited a significant increase in the intervention group ($p=0.007$).

DISCUSSION

The mean MHLS, BMI, and CAMI scores for FHWs who participated in this study were found to be at a moderate level compared to the pre-test results. In the MHLS scale, the sub-dimension with the highest mean score was knowledge, while the belief dimension had the lowest mean score. The resource subscale score, which represents help-seeking behavior, is at a moderate level. In Öztaş's study, non-physician healthcare personnel working in hospitals had a moderate level of mental health

literacy. It was noted in the same study that the mean MHLS score of midwives was lower than that of nurses (21). In Uymaz's study, it was reported that the mental health literacy level of midwives was lower than desired (22). Results from different scales measuring MHL among healthcare personel globally have shown varying levels. In some regions, such as China and the Arabian Peninsula, the MHL level of healthcare personnel has been reported to be low (23, 24). Conversely, in South Africa and Zambia, a moderate level of MHL has been reported among primary healthcare workers (25, 26).

In Australia, some undergraduate nursing students indicated that they were not proficient in MHL. They expressed a need for more information about various aspects of mental health, including types of mental illnesses, treatments, stigma reduction, and communication with individuals with mental illnesses (27). However, a study conducted in South Africa found that nursing students generally exhibited a good level of knowledge about mental disorders, continued to seek appropriate help, and held positive attitudes towards mental illness (28).

The first point of contact for individuals with any kind of health issue is primary healthcare facilities. Healthcare personnel are expected to have sufficient knowledge about general mental health, especially considering the groups they primarily serve. A distinct evaluation related to mental health found that the perinatal depression literacy level of health workers providing primary care is at a moderate level (29).

It has been suggested that beliefs can be predictive of behaviors. The beliefs that FHWs hold about mental illnesses can have a profound impact on the counseling, guidance, and care they provide to individuals with mental health issues. For instance, in Israel, it was reported that nurses caring for women with severe postpartum mental illness provided less routine postpartum care due to stigmatization and negative attitudes towards parenting skills (30).

When evaluating the attitudes and beliefs of FHWs who participated in our study, it was found that they held more positive beliefs compared to the results of other studies conducted using the same scale in Turkey (31,32,33,34,35). However, globally, healthcare professionals have been reported to often exhibit rejecting and exclusionary attitudes toward psychiatric patients and their illnesses (36).

Undoubtedly, past experiences have a significant influence on healthcare professionals' attitudes towards mental health issues. Studies have shown that nurses' stigmatizing behaviors can stem from their personal experiences, which can lead to consequences such as their reluctance to work with mental patients. However, these same studies have revealed that increasing mental health knowledge and spending more time with mental patients can reduce stigmatizing behavior (37,38,39).

Our study showed that the training provided to FHWs had a positive impact on the total MHLS score, as well as the knowledge and resource subdimensions. However, its effect on the belief subdimension was relatively low. Numerous studies worldwide have demonstrated that educational interventions using various methods to enhance the mental health literacy of healthcare personnel are effective, which aligns with the results of our study (25,26,27,40).

Similarly, our training intervention was found to positively affect the dangerousness sub-dimension of the BMI scale and the sub-dimensions of goodwill and fear within the CAMI scale. The belief that individuals with mental disorders pose a threat to society and are dangerous is a component of stigmatizing behavior. To foster a positive attitude, it is crucial to accurately convey the idea that mental patients are not dangerous and should not be feared. The increase in scores in the goodwill subdimension is also a favorable outcome, promoting the belief in the right of mental patients to receive treatment. However, the educational intervention was not observed to have a significant impact on the total BMI, incurability and poor social and interpersonal skills, shame, and ideology subdimensions. Consistent with our results, the literature review reveals that brief anti-stigma training interventions may not be sufficient. Relevant studies have reported that short educational interventions have little or no effect, while longer-term edu-

cational interventions that use mixed methods tend to be more effective (38,41,42,43).

In light of theory and research suggesting that beliefs and attitudes are powerful drivers of behavior, changing attitudes can be an effective strategy for behavior change (44). The literature also indicates that, to alter attitudes and beliefs effectively, it can be beneficial to start by addressing or modifying individuals' existing habits (45).

However, changing habitual behaviors, especially those developed in a work environment influenced by colleagues, can be challenging, as healthcare professionals often rely on established routines. To foster positive changes, health authorities must implement in-service training programs that are both consistent with expectations and part of the routine. It is noteworthy that in our study, only 28.1% of FHWs had received postgraduate mental health training, and nearly half of them had a responsibility to provide preventive mental health services. In Turkey, the Ministry of Health offers video-based training content to FHWs on topics like combating domestic violence against women and the psychosocial development of children. However, there is currently no standardized training program to enhance MHL in primary care.

In conclusion, approximately 75% of FHWs lack postgraduate mental health training, and many are unsure about their role in providing preventive mental health services in primary care. The short-term MHLS training program we conducted successfully increased the overall MHLS level among FHWs. However, the impact of this brief educational intervention on the BMI and CAMI levels, particularly in terms of reducing stigmatization, was relatively low. To promote a more positive attitude toward individuals with mental health issues, it is advisable to organize routine in-service and postgraduate training programs that address the issue of stigmatization.

Limitations of the Study

This study specifically targeted FHWs employed in family medicine units within a single city. The research was carried out only with those who agreed to participate in the study. The fact that the participants were volunteers may have led to the participation of people with more positive attitudes, especially regarding beliefs about mental illness and the community attitudes scale. The study is limited to the results of the MHLS, the CAMI, and the BMI Scales together with the subscales of these scales. The education was designed as a pilot study since no exemplary education model was implemented in Turkey. Since the education was conducted online, the listening quality of the participants may differ.

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