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Effectiveness of Mental Health Training Module Gap Action Programme (mhGAP) in Increasing Knowledge and Skills of Primary Care Physicians in Diagnosing Depression Disorders in the Gunungkidul District

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ABSTRACT

Background: Depression occurs in 3-8% of the population of the world and ranks fourth in the world's most prevalent diseases. Based on data from *Riskesdas* 2013 (Basic Health Research from Ministry of Health Republic of Indonesia), the rate of mental disorders (depression and anxiety) reached 6% for ages 15 and older. The mental disorder most prevalent in primary care is the depressive disorder (10%), but the diagnosis of depression by general practitioners in primary care is only 1%. Coverage of mental health in primary care is low, partly because primary care physicians who are in Community and Primary Health Care Centers (*Puskesmas*) are still experiencing difficulties in diagnosing mental disorders, especially depression. **Objectives:** To determine the effectiveness of mhGAP training in improving the knowledge and skills of primary care physicians in diagnosing and treating depression in Gunungkidul. **Research Methods:** This study was a quasi-experimental research with pretest-posttest design with one group, in order to find a causal relationship involving one treatment group. **Results:** The knowledge of the primary care physician improved about diagnosis of depression before and after intervention training modules, p=0.000. Patients with depression mostly suffered in the female group ages 19-60 years old. An increase in the diagnosis of depression after training mhGAP with validation by a psychiatric specialist was at 49.41%. **Conclusions:** Training with modules mhGAP improved education for physicians in the diagnosis of depression and improved referralrates of depression cases from community health centers to district hospitals in Wonosari.

Keywords: *depression disorder, mental health training, mhGAP module, primary care*

BACKGROUND

Depression is one of the most frequent psychiatric disorders in society. Depression occurs in 3-8% of the population of the world and ranks fourth in the world's most prevalent diseases. It is estimated that, in 2020 the number of patients with depression will increase up to second place among the world diseases[1].

In Indonesia, the prevalence of depression cannot be known with certainty. Based on data from *Riskesdas* 2013, the rate of mental disorders (depression and anxiety) reached 6% for ages 15 and older. *Riskesdas* also showed that DIY (*Daerah Istimewa Yogyakarta*/Special Region of Yogyakarta) has the highest prevalence of severe mental disorders (3 persons in every 1,000 residents in DIY)[2].

The main consequences of depression that general practitioners must aware of is potential risk of suicide. One study mentioned that 5.4% of people with depression had thought about suicide[3]. In Gunungkidul, Yogyakarta from 2009 and 2013 the numbers of suicide were 28, 27, 28, 30, and 25, respectively. The majority of suicides are committed by older people over the age of 60 years (59%)[4].

General practitioners as well as the staff at the community health centers have an important role in the process of shifting/takeover of psychiatrists' role in handling problems of mental disorders[5]. Unfortunately, there are many general practitioners who do not have adequate ability in the management of mental disorders[6]. Some research also suggests that many general practitioners do not have the confidence to make diagnosis and recommend treatment of mental disorders[7]. Gunungkidul Regency program preparation in cases of mental illness are also not maximized, as seen in 2014 when there was less than 1% of cases who visited the health center[8]. This condition eventually caused the number of people with mental disorders to be underdiagnosed and undertreated[9].

Some of the needed methods are never trained directly to general practitioners in primary care to address gaps in knowledge and skills in diagnosing and dealing with cases of mental illness. One of the solutions is the Mental Health Gap Action Programme (mhGAP). This program was launched by the World Health Organization (WHO) in 2008 to address the lack of care, especially in low- and middle-income countries, for people suffering from mental, nervous and chemical disorders. mhGAP intervention guidelines include guidance on evidence-based interventions to identify and deal with a number of priority conditions. These priority conditions include depression and self-harm or suicide. This program has proved quite easy to be implemented by non-specialists[10].

Limited training needed to be done and then the assessment was done of the effectiveness to determine whether the mhGAP was able to improve knowledge and skills of primary care physicians in Gunungkidul Regency in diagnosing and increasing mental health coverage.

RESEARCH METHODS

This research used quantitative data analysis in a quasi-experimental study with pretest-posttest with one group design. The population in this study were general practitioners who served in the outpatient clinics in all districts at Gunungkidul, as many as 30 doctors from 30 health centers (*Puskesmas*) in Gunungkidul who met the inclusion criteria.

The inclusion criteria for the sample were: willing to become respondents, general practitioner practice in health centers in the Gunungkidul region, has never participated in a previous training, and willing to follow training to the end. Exclusion criteria were: already attended training on the management of depression, will retire in the study period, and was or planned to have absence during the study period. Criteria for drop out was if the sample did not follow the course of the study to the end.

RESULTS

Subjects in this study were general practitioners from 30 health centers in the district of Gunungkidul, Yogyakarta. Subjects who met the inclusion criteria and in accordance with the policy of Gunungkidul District Health Office of Yogyakarta and for the smooth service at the clinic, each health center could only send one person as a subject to the training, and this policy obtained as many as 30 people spread across 30 health centers.

Intervention Training Module Management of depression based on mhGAP - WHO Intervention Guide for General Practitioners was held in September 2016 in the Hall Pharmacy of the Health Department in Gunungkidul. Time allocation was a module-based training for one day with six hours of lessons. Training materials were submitted in accordance with the WHO training module.

Characteristics of research subjects in this study the majority of respondents were female 63.3%, aged between 25-40 years at 70.0%, which is the productive time for someone with years of mostly between 6-10 years at 60.0%.

Statistical test used the non-parametric Wilcoxon because data distribution was not normal, namely the pre-test Mean (9.77) Median ≠ (10,00) ≠ Mode (13.00) and post-test Mean (17.97) ≠ Median (19.50) ≠ mode (20) in order to obtain the results of the Wilcoxon test p value of 0.000, which means there were significant differences in the knowledge of the primary care physician in diagnosing of depression before and after intervention training modules.

Table 1. Knowledge distribution of the subjects based on cut-off point pre-test and post-test

	Amount	%
Pre-test: < 12	18	60.0
> 12	12	40.0
Post-test: < 12	1	3.3
> 12	29	96.7

Based on the Chi square statistical test measuring the correlation between working period with the values of the pretest and posttest about the understanding of training materials, the result showed no correlation between working period with the pre-test value of research subjects (p=0.082) and post-test (p=0.299). Concerning the participants' age and the pre-test and post-test values about the understanding of the training material, the result showed a correlation between age and the value of the pre-test (p=0.003), and no correlation in the posttest results between age and the posttest value (p=0.120) on the understanding of training materials management

depression based on mhGAP intervention guide from the WHO.

Total referrals of depression per month from *Puskesmas* to Wonosari District General Hospital have increased from before to after the depression management training based

Table 2. Bivariate analysis of the correlation between pre-test and post-test valueson the understanding of training materials with work and age

Variable		*Cut-off point*		Total	*p*
		< 60%	≥ 60%		
Working period vs :					
Value	**Pre test**				
	0-5 th	2	1	3	0.082
	6-10 th	8	1	18	
	> 10 th	8	1	9	
Value	**Post test**				
	0-5 th	0	3	3	0.299
	6-10 th	0	18	18	
	> 10 th	1	8	9	
Age vs :					
Value	**Pre test**				
	25-40 th	9	12	21	0.003
	41-60 th	9	0	9	
Value	**Post test**				
	25-40 th	0	21	21	0.120
	41-60 th	1	8	9	

on mhGAP Intervention Guide - WHO Year 2016 as follows:

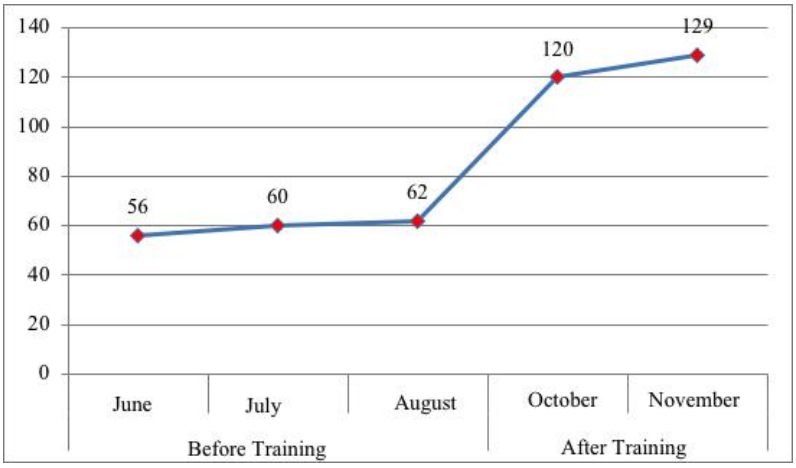

Figure 1. Total referrals of depression cases per month before and after training

The results using parametric statistical Paired t tests for normal distribution of data (p>0.05) obtained p value of 0.024, which means there is a significant difference in the number of cases of depression which were referred to the General Hospital of Wonosari before and after the training of the management of depression by mhGAP Intervention Guide - WHO 2016.

Table 3. Distribution of the number of depression cases referred to the general hospital ofthe Wonosari area by age group

Month	Result	Age Group (year)								
		13-18		19-60		> 60		Amount		*p*
		n	%	n	%	n	%	n	%	0.429
June*		3	5.4	43	76.8	10	17.8	56	100	
July*		5	8.3	44	73.3	11	18.4	60	100	
August*		5	8.1	46	74.2	11	17.7	62	100	
Mean		**4**	**6.8**	**44**	**74.6**	**11**	**18.6**	**59**	**100**	
October**		11	9.2	95	79.2	14	11.6	120	100	
November**		12	9.3	102	79.1	15	11.6	129	100	
Mean		**11**	**8.8**	**99**	**79.2**	**15**	**12.0**	**125**	**100**	

Statistical test results using parametric Paired t tests for normal distribution of data obtained *p* value of 0.429, which means there was no difference in the number of cases of depression referred to the General Hospital of Wonosari by age group with validation results from specialists before and after the training management of depression by mhGAP Intervention Guide - WHO 2016, showing most were in the age 19-60 years which is the productive age.

Table 4. Distribution of the number of depression cases referred to the general hospital of the Wonosari area

Month / Result	Sex						
	Male		Female		Amount		*p*
	n	%	N	%	n	%	0.078
June*	16	28.6	40	71.4	56	100	
July*	20	33.3	40	66.7	60	100	
August*	11	17.7	51	82.3	62	100	
Mean	**16**	**28.6**	**43**	**71.4**	**59**	**100**	
October**	32	26.7	88	73.3	120	100	
November**	34	26.4	95	73.6	129	100	
Mean	**33**	**26.4**	**92**	**73.6**	**125**	**100**	

Statistical test results using parametric Paired t tests for normal distribution of data ($p>0.05$) obtained *p* value of 0.078, which means there was no difference in the number of cases of depression referred to the General Hospital of Wonosari based on validation results by psychiatrists before and after the training management of depression by mhGAP Intervention Guide -WHO 2016.

Table 5. Distribution of number of depression cases referred to the general hospital of Wonosarithat were validated by psychiatrists.

Month / Result	Validation Result by Psychiatrist at General Hospital of Wonosari				Referral data of Depression (F32) from Community Health Center		*p*
	F32		F40		Total		
	n	%	n	%	N	%	0.411
June*	48	85.7	8	14.3	56	100	
July*	51	85.0	9	15.0	60	100	
August*	57	91.9	5	8.1	62	100	
Mean	**52**	**88.1**	**7**	**11.9**	**59**	**100**	
October**	100	83.3	20	16.7	120	100	
November**	111	86.1	18	13.9	129	100	
Mean	**106**	**84.8**	**19**	**15.2**	**125**	**100**	

Statistical test results using parametric Paired t tests for normal distribution of data ($p>0.05$) obtained *p* value of 0.411, which means there was no difference in the number of cases of depression referred to the General Hospital of Wonosari based on group diagnosis of psychiatrists with validation results before and after training the management of depression by mhGAP Intervention Guide - WHO 2016.

DISCUSSIONS

The number of cases of depression referred by primary care physicians increased significantly but cases of depression validated by a psychiatrist in the general hospital of Wonosari were not significantly different. There is still a difficulty for primary care physicians who had undergone training mhGAP to diagnose depression because the diagnosis is less accurate, since it was still not in line with the diagnosis of anxiety disorders F 40 as many as 15.2%. In anxiety disorders, many patients have difficulty starting sleep, whereas patients with depression disorder tend to fall asleep more quickly, but more often or quickly awaken[11]. Some of the obstacles in diagnosing mental disorders including depression involve some specific factors. Factors derived from the patient include a lack of awareness and knowledge of the course of the disease and the symptoms of depression so that they can seek treatment from their doctors. Another factor is the clinical complaint and the presence of comorbid conditions with other diseases that make diagnosis of mental disorders difficult. Patients also feel embarrassed to admit their physical complaints associated with depression and their fear of the stigma attached to mental illness[12].

Factors from primary care physician include the lack of confidence in diagnosing and treating mental illnesses such as anxiety and depression. Other obstacles are the stigmatization of the patient, less coordination between segments of mental health and health services in primary care, and health workers in primary care who have not all received continuing education on mental disorders. In this study the achievements of the number of diagnosis of depression increased after undergoing training, although it was considered not significant after being validated by

a psychiatrist.

Referral cases of depression to the general hospital of Wonosari with a diagnosis of depression using mhGAP increased, as shown by statistically significant the increase in the number of referrals for depression to the clinic at the hospital after training. This is caused by the mhGAP providing templates which are easy to understand and easy to complete in the current healthcare system. In Nigeria, the use mhGAP is very successful in suppressing the use of alcohol, drug abuse and treatment of mental disorders have become more comprehensive[10].

The mhGAP program deals with the notion that the increase in mental health does not require expensive and sophisticated technology, but some mental disorders, neurological, and substance abuse can be handled by non-specialist health workers. Therefore, the key mhGAP strategy is improving the primary health care system for integrated services with the training, support and supervision[13]. Submission of evidence-based interventions associated with mhGAP for non-specialist health services are facilitated by the mhGAP Intervention Guide (mhGAP-IG).

Most patients diagnosed with depression in the age group 19-60 years are female. Research in the US showed female patients with a diagnosis of depression in primary care at 57% and the mean age was 52 years. Women are 1.38 times more at risk for major depression than men (OR 1.38, p=<0.001; 95% CI: 1.33 to 1.44)[14]. Other studies have shown depression prevalence 20% higher in women than men. According to the WHO[15], depression can cause disabilities in both men and women, but the burden of depression is greater than 50% in women than men. Depression is a cause of an increasing health burden for women both in countries with high income, and medium or low.

The duration of the training, active participants, the degree of integration of new knowledge of trainees and local aspects that affect interest in the training are the important factors that determine the effectiveness of training[16]. In order to improve skills after the training, evaluation of the results of the training should be held periodically in order to know the tendency of improvement or decline in performance after training. Follow-up measures, among others to provide feedback to the trainees are needed periodically through supervision and on the job training by psychiatrists[17]. The training done over a long time with the supervision of a psychiatrist proves better at improving skills and changing the behavior of trainees compared to short trainings without the supervision of a psychiatrist[18]. Further studies should be done with an experimental design in order to be done with a more solid scientific basis using the mhGAP complete module which does not only focus on the diagnosis so that the effectiveness of mhGAP modules can be assessed thoroughly. There should also be an effort to maintain the continuity of the training program periodically, as a means of monitoring and evaluation of the recording and reporting of actual performance of health centers so that the results of this study can be used as the basis for the implementation of the policy recommendations for improved mental health services in primary care.

CONCLUSIONS

There is a difference of knowledge among the primary care physicians in diagnosing of depression before and after the training intervention mhGAP module. In addition, this study also found that there was an increase in coverage and differences in referral numbers for depression after being validated by psychiatric assessment from the health centers to the General Hospital of Wonosari after physicians were given mhGAP training modules.

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Ethical Approval and Informed Consent

This study was approved by The Medical and Health Research Ethical Committee (MHREC) from the Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta with reference number KE/FK/1313/EC/2016.

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Availability of Data and Materials

Please contact the author for the availability of data and material through the author's correspondence.

Conflict of Interest

None.

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