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Factors associated with Indonesian family physicians' knowledge of depression: A cross-sectional study

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Abstract

Introduction: Depression is a common mental disorder in primary care settings both globally and locally. Even with considerable impacts on patients' quality of life and public healthcare costs, most people with depression do not receive evidence-based treatment. Integrating mental healthcare services into primary care is essential to address the treatment gap for depression. As counsellors and care coordinators, family physicians have a vital role in providing primary mental healthcare services. This study aims to assess Indonesian family physicians' knowledge of depression and identify the associated factors.

Methods: This cross-sectional observational study included a total of 83 family physicians from the Association of Indonesian Family Physicians. Data were collected using online questionnaires, including demographic and knowledge assessment instruments and the Care Coordinator Scale (CCS). Descriptive and multiple linear regression analyses were performed.

Results: The knowledge of depression, particularly in terms of prevention, diagnosis, pharmacological treatment, and post-referral treatment, was insufficient among the family physicians. The medication education (P=0.006) and follow-up care plan (P=0.04) domains of the CCS were associated with the family physicians' knowledge of the management of depression in the linear regression analysis (R^2=0.077).

Conclusion: Interventions to improve Indonesian family physicians' knowledge of depression, focusing on medication/pharmacological treatment and considering them as care coordinators, are essential.

Introduction

Depression is estimated to become the second most common disorder worldwide by 2030.[1] According to the Basic Health Research (*Riskesdas*) in Indonesia, 6.1% of the population above 15 years old has experienced mental disorders with symptoms of depression.[2] However, the treatment rate for depression in Indonesia is merely 9%, which may be attributed to various factors, such as the low government funding for mental health and the low availability of mental healthcare professionals.[3] This evidence shows that 91% of people with depression do not receive medical treatment.[2] In addition to the lack of healthcare service, especially in rural areas, stigma is prevalent; patients are often initially brought to spiritual leaders rather than to mental healthcare professionals.[3] Owing to the high prevalence of depression, large treatment gap and high prevalence of comorbidities with physical conditions, a strategy for treating depression requires integrating mental healthcare into primary care as part of the solution. Mental healthcare services in Indonesia are more commonly found in secondary care settings, either in general or specialised psychiatric hospitals; only 21.07% of public primary health centres (known as *puskesmas*) provide mental healthcare services.[4] The primary care facilities where general practitioners work usually identify and diagnose patients for their mental health conditions and refer them to psychiatrists or clinical psychologists for management. In this context, gatekeeping and shared care between primary care practitioners and mental healthcare professionals are not common; mental healthcare is predominantly built and operated around a secondary or tertiary care setting.[5] A patient can choose an out-of-pocket scheme and gain direct access to mental healthcare professionals, with a consultation cost of approximately 25–33

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USD or 350,000–500,000 IDR per visit in the Jakarta Capital Region,[6] with some upper and lower variations among providers, to our knowledge. However, this scheme is not feasible for most of the population. Simultaneously, the community's social resource of mental health has not been well developed; patient advocate organisations are still growing,[7] and the service of local community health volunteers or cadre, which is increasingly recognised as an important component of health, only recently began to be involved more in the context of mental health.[8,9]

Family physicians play two essential roles in primary mental healthcare: a care coordinator and a mental health counsellor. Given their unique position, family physicians are pivotal in integrating primary care and mental health.[3,4] According to the Indonesian Medical Council, a family physician is a doctor who has received advanced postgraduate training on par with other hospital specialist colleagues and consistently practices family medicine principles, mainly in the community. The council expects a family physician to diagnose and treat mild-to-moderate depression comprehensively as an expert generalist.[10] These relatively recent improvement and implementation of local standards since 2019 follow the global standard issued by WONCA (Core Competencies for Primary Mental Health), with the mission to reduce significant treatment gap challenges.[11] In primary care settings, the prevalence of depression is around 5–20%, and family physicians' detection rate for depression is considerably low.[12,13] Therefore, it becomes essential to assess Indonesian family physicians' current knowledge of depression and the associated factors to ensure that task sharing is a viable option.

A few studies conducted in other countries have attempted to identify the factors associated with a family physician's knowledge of depression management. At least eight factors have been identified in those studies: age, sex, postgraduate training/continuing medical education (CME) in psychiatry, postgraduate training/CME in family medicine, duration of practice, care coordination (measured using the Care Coordinator Scale [CCS]), personal or family history of depression and number of depression cases in practice each month.[14–19] We hypothesised that these factors are associated with the knowledge of depression management of Indonesian family physicians, particularly those from the Association of Indonesian Family Physicians (PDKI). The PDKI is the professional association where all Indonesian family physicians are registered. Hence, the aim of this study is to assess the knowledge of depression of family physicians who work as gatekeepers in primary care settings and its associated factors.

Methods

Study design and population

This cross-sectional study was conducted among PDKI members; at the time of data collection, the PDKI had about 400 members. The study participants consisted of consenting family physicians registered as PDKI members. Family physicians who were no longer practicing clinical medicine and had no active email correspondence were excluded from the study. The respondents were recruited using convenience sampling from 10 September to 10 October 2020 by disseminating an online questionnaire through email.

Sample size determination

The sample size was calculated using a single sample correlation coefficient formula at a confidence interval of 95%, r-value of 0.4,[20] power of 80% and α level of 5%. This selection approach was used considering that the main aim was to assess the correlation between the performance in the CCS and level of knowledge about depression. The total number of respondents needed was 80 after considering a non-response rate of 10%.

Study instrument

Three instruments were utilised to measure knowledge and the associated factors: demographic questionnaire, knowledge of depression questionnaire and the CCS. The knowledge of depression questionnaire was developed on the basis of the data reported by Gabriel and Violato and WHO mhGAP multiple-choice questions,[21,22] which subsequently underwent content validation by local expert panels consisting of family physicians and psychiatrists. Instrument validation was performed using corrected item-total correlation methods. The questionnaire consisted of 16 questions across five domains, with a Cronbach's α of 0.74 and

an r-value for each item ranging between 0.30 and 0.62. The five domains in the knowledge of depression questionnaire were prevention, diagnosis, pharmacological treatment, non-pharmacological treatment and post-referral treatment. The last instrument used was the CCS, which measured the family physicians' capacity to perform care coordination. The CCS was developed by Werdhani et al., which consists of 11 domains and 33 questions, with a Cronbach's α of 0.94.[23] The domains or subscales of the CCS are as follows: biopsychosocial, functional, organisation, cooperation, patient-oriented, empathy, medication education, prevention education, follow-up, medical information and self-awareness. All study questionnaires were provided to the respondents in Bahasa Indonesia.

Data analysis

The data were analysed using the IBM Statistical Package for the Social Sciences (SPSS) for Windows, version 20 (IBM Corp., Armonk, N.Y., USA). The knowledge of depression was the dependent variable, while age, duration of practice, CCS score, number of depression cases each month, sex, postgraduate psychiatric training, postgraduate family medicine training and history of depression were the independent variables. The knowledge of depression questionnaire was used to assess the family physicians' knowledge of depression, including prevention, diagnosis, pharmacological and non-pharmacological treatments and post-referral treatment. All questions were answered with either yes or no. The total score was measured and presented by calculating the percentage of the correct answer. The CCS uses a 4-point Likert scale to measure 11 different factors that were correlated with one of the functions of a doctor in primary care settings – care coordinator. The value for each factor is obtained by adding up the scores of the three specific items mentioned in the instrument. The total score is calculated by adding the score of the 11 items and dividing it by 11. The results are categorised into three different groups according to the total score:

high (7.70–9.00), moderate (6.0–7.69) and low (≤6.0). Categorical data, such as sex, training experience and personal experience of depression, were presented as frequencies and percentages (**Table 1**). Continuous data were presented descriptively as means and standard deviations when the distribution was normal and as medians and ranges when the distribution was skewed. An independent t-test was used to compare the means, as the categorical variables were normally distributed. Numerical variables were tested using the Pearson correlation test when the distribution was normal and the Spearman correlation test when the distribution was skewed. All numerical variables, including the subscales of the CCS, were included in the multivariate (multiple linear regression using a backward model) analysis regardless of the significance in the bivariate analysis owing to the potential uncontrolled confounder commonly occurring in a community-based study.[24] The test for significance was two-tailed, and a P-value of <0.05 was considered significant at a 95% confidence interval.

Ethical considerations

The Ethical Committee of the Faculty of Medicine of Universitas Indonesia approved this research (KET-1271/UN2.F1/ETIK/PPM.00.02/2019).

Results

A total of 85 family physicians participated by filling out the online questionnaire. Two respondents were excluded owing to incomplete form submissions. The respondents' demographic profiles are presented in **Table 1**. The average age of the participants was 48.1 years. Most participants were women (62.4%), had no postgraduate psychiatric training/CME (68.7%), had postgraduate family medicine training/CME (90.7%) and had neither personal nor family history of depression (90.4%). On average, the respondents had practiced medicine for more than 20 years, handled two depression cases per month and a moderate level of care coordination capacity (CCS score of 6.0–7.69).

Table 1. Demographic characteristics (N=83).

Variable	Value
Age	48.11±8.44 years
Sex	
Men	31 (37.6%)
Women	52 (62.4%)
Postgraduate psychiatric training/CME	
Yes	26 (31.3%)
No	57 (68.7%)
Postgraduate family medicine training/CME	
Yes	75 (90.7%)
No	8 (9.6%)
Duration of practice	20.77±8.861 years
Number of depression cases each month	2 (0–10)
CCS score	7.54 (3–9)
History of depression (personal and family)	
Yes	8 (9.6%)
No	75 (90.4%)
Knowledge of the management of depression	51.65±17.98 (full score: 100)

*CME = Continuing Medical Education

Using an arbitrary cut-off score of 60% for determining performance, we found that the domains in the knowledge of depression questionnaire with scores below the cut-off point were prevention (median: 0%), diagnosis (median: 50%), pharmacological treatment (median: 40%) and post-referral treatment (median: 50%) as shown in **Table 2**. **Table 3** displays the results of the correlational analysis between knowledge and other numerical variables. None of the numerical variables were significant in the bivariate analysis. Similarly, the results were non-significant for the categorical variables as shown in **Table 4**.

Table 2. Knowledge of depression questionnaire scores according to the domain.

Domain	Median	Range
Prevention	0	0–100
Diagnosis	50	0–100
Pharmacological treatment	40	0–100
Non-pharmacological treatment	75	0–100
Post-referral treatment	50	0–100

Table 3. Correlation of age, duration of practice, CCS score and number of depression cases with knowledge of depression.

Variable	Correlation
Age	–0.15 (P=0.15)
Duration of practice	–0.06 (P=0.56)
CCS score	0.11 (P=0.31)
Biopsychosocial	–0.041 (P=0.713)
Functional aspect	0.05 (P=0.651)
Organisation	0.144 (P=0.194)
Cooperation	0.189 (P=0.087)
Patient-oriented	–0.096 (P=0.389)
Empathy	–0.044 (P=0.692)
Medication education	0.02 (P=0.828)
Prevention education	0.083 (P=0.456)
Follow-up	0.169 (P=0.127)
Medical information	0.110 (P=0.321)
Self-awareness	0.132 (P=0.234)
Number of depression cases each month	0.001 (P=0.99)

Table 4. Knowledge of depression according to sex, psychiatric training, family medicine training and history of depression.

Variable	Mean score	P-value
Sex		
Male (n=31)	56.65±18.32	0.05*
Female (n=52)	48.67±17.25	
Postgraduate psychiatric training/CME		
Yes (n=26)	53.12±17.43	0.61*
No (n=57)	50.98±18.32	
Postgraduate family medicine training/CME		
Yes (n=75)	51.66±18.38	0.98*
No (n=8)	51.56±14.46	
History of depression (personal and/or family)		
Yes (n=8)	60.15±22.14	0.16*
No (n=75)	50.75±17.40	

*Independent t-test

In the backward multiple linear regression analysis, the factors with the most robust association with the knowledge of depression were the medication education (B=4.42, CI=1.87–10.70) and follow-up domains (B=–4.46, CI=–7.12–0.10) of the CCS (**Table 5**). Based on the regression model, both factors contributed as much as 7.7% to the knowledge of depression questionnaire score (R^2=7.7%).

Table 5. Univariate and multivariate linear regression analysis results.

	Univariate analysis		Multivariate analysis				
	Standardised beta coefficients	P-value	Standardised beta coefficients	95.0% Confidence interval			
				SE	Lower	Upper	P-value
Biopsychosocial	0.145	0.519					
Functional	0.086	0.722					
Organisation	0.080	0.652					
Cooperation	–0.286	0.088					
Patient-oriented	0.024	0.929					
Empathy	–0.110	0.647					
Medication education	0.781	0.008	4.419	2.15	1.87	10.7	0.006
Follow-up	–0.401	0.091	–4.463	1.73	–7.12	–0.012	0.044
Medical information	0.171	0.361					
Self-awareness	–0.203	0.401					
Age	–0.380	0.074					
Duration of practice	0.284	0.178					
CCS score	–2.426	0.281					
Number of depression cases each month	–0.064	0.600					

R^2=0.077

Discussion

To our knowledge, this is the first study to assess Indonesian family physicians' knowledge of depression. We found that the family physicians' knowledge of managing depression needed improvement. The domains requiring attention were prevention, diagnosis, pharmacological treatment, and post-referral treatment. Our finding is in line with that of an earlier study on the mental health literacy of primary care professionals in five provinces in Indonesia, suggesting a need for strengthening the effort for capacity building for primary care personnel.[25]

Age and duration of practice did not appear to be associated with the knowledge of depression in our study. This age-related

finding differs from a previous report that a younger age group tends to have a better knowledge of depression.[15] Ndetei et.al. reported that their participants who practiced longer tended to perceive themselves as having better knowledge of depression.[26] On the other hand, James et.al found that practice duration was not a significant factor in predicting knowledge of depression.[27] This may be explained by the finding by Liu et al., that age might be moderated by other variables, such as substantial medical curriculum changes that improve mental health teaching.[15]

Sex was not also associated with the knowledge of depression in this study. While Richards et.al and Andersson et.al reported that female family physicians have a better attitude towards depression, there has been limited evidence showing that sex influences the knowledge of depression.[14,28] For example, Ndetei et.al and Liu et.al showed no significant difference in the knowledge of depression between male and female doctors.[15,17] These findings suggest that attitude towards depression might not be associated with better or more accurate knowledge of depression, which needs further investigation.

In this study, postgraduate training/CME did not also appear to be significantly associated with the knowledge of depression. This finding must be interpreted prudently, as our questionnaire did not detail when and how participants received their training. Ayano et al. and Yani et.al. demonstrated that WHO Mental Health Gap (mhGAP) based-training interventions significantly improved the knowledge of depression.[13,29] Furthermore, Anjara et.al, who conducted a non-inferiority trial in Indonesia, showed that primary care doctors who received training and supervision could provide care comparable to that of mental healthcare professionals in terms of patient outcomes in the treatment of common mental disorders.[30] With respect to training methods, Coppens et.al found that proactive, adult-learning and peer-group involvement training methods were more effective in increasing the knowledge of depression.[23] They also found that an increase in the knowledge level from a single education session was not sustainable after 3- and 6-month follow-ups, suggesting the need to strengthen the current CME system design and provide long-term supervision.[25,26] Thus,

our study findings might be related to when and how our participants engaged in the related training.

Expectedly, the number of cases per month was not significantly associated with the knowledge of depression, which might be attributed to the relatively low depression caseload. This finding might partly reflect a low case identification of depression in primary care settings, consistent with our participants' low score in the knowledge about depression diagnosis. Regarding the result about personal/family history of depression, our finding is inconsistent with the previous report by Andersson et al.[31] One possible explanation is that the knowledge gained from experience, whether personal or external, not necessarily follows the current evidence-based knowledge. With that, we acknowledge that the current findings on the knowledge of depression, including the current diagnostic criteria, are imperfect and subject to further research, including insights from cultural and other non-specialistic care settings (e.g. primary care settings).[32,33]

We found that the care coordination performance of the family physicians, as measured using the CCS, was associated with the knowledge of depression in the multiple regression model. The medication education domain of the CCS positively predicted the knowledge of depression. This domain is related to the knowledge of the pathophysiology of a disease/disorder, mechanism of action of the pharmacological treatment and skills to empower patients and their families to manage their medication plans cooperatively.[23] These data suggest that an intervention to improve Indonesian family physicians' knowledge of the pharmacological treatment of depression is essential. This could be achieved by investing more on CME and integrating a significant amount of mental health components into the recently starting family medicine residency programme in Indonesia. Meanwhile, the follow-up domain of the CCS negatively predicted the knowledge of depression herein. This domain is related to family physicians' referral and post-specialistic monitoring function. Taken together, the results of these two domains of the CCS indicated that a family physician with better knowledge of pharmacological treatment (for more comprehensive care at the primary care level) has better knowledge of depression. This

explanation is in line with earlier reports by Ormel and Tiemens, and Dowrick et.al,[34,35] that family physicians need to be engaged at the treatment level and not merely as a case identifier for better care of depression in primary care settings. This is also in line with the view that family physicians are coordinators and navigators instead of gatekeepers.[36]

There are a few limitations to this study. First, there is a potential social desirability bias regarding the self-rated CCS. Second, a non-response sampling bias may also exist, as our response rate would be 20.75% if we expect all 400 family physicians in the registry to participate. Our survey was conducted between September and October 2020, just precisely before the peak of the first wave of the COVID-19 pandemic in Indonesia. The government of Indonesia announced the first COVID-19 case in March 2020, and by that time, most family physicians were expected to be overwhelmed by the clinical burden posed by the pandemic.

Conclusion

The knowledge of depression of Indonesian family physicians needs improvement, particularly in terms of prevention, diagnosis, and pharmacological treatment. The medication education and follow-up domains of the CCS are identified as factors associated with the knowledge of depression of family physicians. Further studies are needed to better understand the contributing factors of improved knowledge of depression and its relationship to attitude, practice and patient outcomes. Changes must be made in the educational system to integrate more mental health components. The orientation of mental health training must consider family physicians as care coordinators who are engaged in the comprehensive management of patients with depression.

Author contributions
Darien Alfa Cipta (study design, data collection and analysis, publication write up)

Irmia Kusumadewi (study design, publication write up)

Kristiana Siste (study design, publication write up)

Retno Asti Werdhani (study design, data analysis, publication write up)

Hervita Diatri (study design, data analysis, publication write up)

Ethical approval
This study has obtained ethical approval from the Ethical Committee of the Faculty of Medicine Universitas Indonesia (KET-1271/UN2.F1/ETIK/PPM.00.02/2019).

Conflicts of interest
We declare that all authors have no conflict of interest related to this study.

Data sharing statement
The raw data used in this study are available upon request to the corresponding author.

How does this paper make a difference in general practice?

- Depression is a distressing and disabling condition, which is prevalent in primary care practice; unfortunately, only a few patients receive evidence-based treatment.
- Improvement of the knowledge of depression of family physicians could be explicitly targeted at the preventive, diagnostic, pharmacological and post-referral treatment domains.
- The medication education and follow-up domains of the Care Coordinator Scale could predict the knowledge of depression.
- Shared care between family physicians and mental healthcare specialists aimed at strengthening primary care service is essential.
- The findings may serve as a basis for future intervention studies on primary mental healthcare topics.

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