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## Help-seeking intentions and actions in Chinese primary care patients with depressive symptoms – A 12-month cohort study

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# ABSTRACT

**Objectives:** To examine where primary care patients go for psychological care in Hong Kong and the relationship between help-seeking attitudes and behaviours in patients with depressive symptoms.

Design: Cross-sectional followed by 12-month longitudinal cohort observational study.

Setting and participants: 10,179 adult patients were recruited from the waiting rooms of 59 primary care clinics across Hong Kong to complete a questionnaire which screened for depression. Doctors provided information on clinical diagnosis and management. 4358 subjects were telephoned at 3, 6 and 12 months to monitor subsequent health service use.

## Primary and secondary outcomes

PHQ-9 was used to screen for depression. Help-seeking intention was based on a question, "Where would you seek help if you thought you had depression?" Past helpseeking actions were based on a question, "Where have you received psychological care in the past?" Subsequent help-seeking actions were based on patients' selfreported service use in the past 3 months.

**Results:** 69.6% of baseline respondents reported they would seek help if depressed. preferring friends and family (46.5%) to a psychiatrist (24.9%), psychologist (22.8%) or GP (19.9%). Past help-seeking was the strongest predictor for help-seeking intention whilst presence of depressive symptoms had no effect. In PHQ-9 positive subjects, although 47.3% expressed an intention to seek help from a healthcare professional, over 12 months, only 24.3% reported a help-seeking action. Doctordiagnosis was the greatest predictor for subsequent action whilst baseline helpseeking intention and depression severity had no effect.

**Conclusion:** Over one year, only one in four depressed primary care patients received care for their mental health with more seeking help from a psychiatrist than a GP. Diagnosis of depression by a doctor appears to be more influential than help-seeking intentions in enabling patients to receive care. Our findings suggest that the GP's role in depression care is under-utilized and under-recognized in Hong Kong.

# ARTICLE SUMMARY

# Article focus

- Despite having access to a doctor, many primary care patients experiencing depressive symptoms do not seek help for their mental health from the GP and consequentially fail to be diagnosed or to receive appropriate care
- Knowledge about patients' help-seeking attitudes and patterns of behavior can contribute to a better understanding of why patients may not seek help for their mental health from their GP

# Key messages

- In Hong Kong, only one in four depressed primary care patients receive professional care for their mental health over one year, with more seeking help from a psychiatrist than a GP.
- Diagnosis of depression by a doctor appears to be more influential than the patient's own help-seeking attitudes in enabling them to receive care.
- The potential for the primary care doctor to play a role in depression care appears to be under-recognized and under-utilized

# Strengths and limitations of the study

- Key strengths: subjects were recruited from a wide variety of primary care settings, reflecting the delivery of primary care in Hong Kong, and were monitored prospectively to examine the correlations between reported intention and actual behaviour.
- Main limitations: we relied on the patient's self-report for collection of information on help-seeking actions. It is possible that GPs or other providers may have provided psychological care as part of a general consultation, but that patients did not perceive this as receiving a mental health treatment which would result in an under-reporting of help-seeking actions

## **INTRODUCTION**

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Depression is a common condition affecting quality of life and contributing to the global burden of disease.<sup>1</sup> In many countries, depression is mainly managed in primary care and GPs are well placed to detect, initiate and coordinate care<sup>2</sup>. Unfortunately, many adults experiencing a depressive episode will not seek help immediately, and worldwide, delays or complete failure in seeking treatment for depression are common.<sup>3</sup> Studies have shown that in those reporting an intention to seek help to overcome depression, most would prefer to receive support from within their social network than from a healthcare provider.<sup>4</sup> As a consequence, even in the primary care setting where patients already have access to a clinician, many may not disclose their mood symptoms and subsequently fail to be diagnosed by the doctor or to receive appropriate care.<sup>5</sup>

The decision whether or not to seek help, and who to seek help from, may be influenced by culture, demography, service accessibility, symptom severity and personal attitudes towards mental illness such as the individual's understanding of the illness, their perceived usefulness of treatment and their impressions of their past help-seeking experiences <sup>6-8</sup>. It has been found Chinese underutilize mental health services: however low service demand does not necessarily reflect low service need<sup>9</sup>. Using Ajzen's theory of planned behavior<sup>10</sup>, barriers to help-seeking for depression in Chinese<sup>9</sup> can be considered as follows:

(1) Personal beliefs. Many Chinese perceive depression to be due to a personality weakness or inability to solve problems, rather than an illness warranting medical attention<sup>9</sup>. Similarly many believe that treatments for mental problems are ineffective or can cause harm, and will avoid help-seeking due to concerns about being medicated or because they do not believe that counselling can help<sup>9</sup>. Furthermore, avoidance is a commonly used coping mechanism and many Chinese simply deny the need for help<sup>9</sup>.

(2) Societal attitudes. Chinese are often concerned about how others perceive them, and the concept of "keeping face" is entrenched in culture. As a result, concerns regarding the potential impact of stigma on themselves or their families is a significant barrier to help-seeking<sup>9</sup>.

(3) Practical barriers. Many Chinese do not know where to go, or how to access help for psychological problems. They may perceive that mental health services as too expensive, too time consuming, or something that they would not consider taking time off work <sup>89</sup>

Despite living in a relatively westernized society, the health beliefs and behaviors of most Hong Kong Chinese are still strongly influenced by traditional cultural values where emotional problems may not be perceived as an illness and strong stigmatizing attitudes towards mental illness are highly prevalent <sup>711</sup>. Aside from personal attitudinal and socio-cultural barriers, there are also many practical barriers to receiving help for mental health. Detection rates for depression are relatively low in

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To gain a better understanding about the help-seeking behaviours of Chinese patients, the aims of this study were to explore where patients go for psychological care; to identify the determinants of help-seeking intention (HSI) and help-seeking action (HSA); and to examine the relationship between help-seeking intention and subsequent action in patients suffering from depressive symptoms.

We had three hypotheses:

(1) Patient's help-seeking intentions can predict action and patients with positive intentions are more likely to receive care.

(2) Help-seeking intention is affected by mental health status and patients with depression are less likely to report positive intentions.

(3) Patients with more severe depression are more likely to receive care.

# METHOD

This was a cross-sectional followed by a 12-month cohort observational study. It was conducted as part of a larger epidemiological study to examine the naturalistic outcomes of depressive disorders in Hong Kong's primary care.

# Subjects & Sampling

Patients were recruited from the waiting rooms of 59 primary care clinicians across Hong Kong and consisted of doctors working in the private sector, public sector and NGOs to reflect the delivery of primary care services in our setting. The doctors were identified through the mailing list of the Hong Kong College of Family Physicians and joined our study as part of a mental health primary care practice-based research network.

All eligible adult patients consulting the study doctor on one randomized day each month over 12 months were consecutively recruited to complete a baseline questionnaire. Subjects who consented were subsequently followed by telephone at 3, 6 and 12 months. Patients were excluded if they were aged <18 years, unable to communicate in English, Cantonese or Mandarin, or unable to complete the questionnaire due to cognitive difficulties.

The full study protocol including sample size calculations has been previously published.  $^{\rm 16}$ 

# **Study Instruments**

*The Patient Health Questionnaire-9* (PHQ-9) is a nine item questionnaire used to screen, monitor, diagnose and measure the severity of depressive symptoms. <sup>17 18</sup> A

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cut-off score >9 was used to define a case of screened-positive depression ('PHQ+ve').<sup>18</sup> The Chinese version of the PHQ-9 has been validated in Hong Kong amongst 357 adult subjects from 14 primary care clinics using the Chinese Hamilton Depression Scale (CHDS) as the gold standard. Using a cut-off point >9 the PHQ-9 was found to have a sensitivity of 80% and specificity of 92%.<sup>19</sup>

*Questions on socio-demography and co-morbidity* were adapted from previously used health services research surveys on the Hong Kong primary care population.<sup>20</sup>

*Help seeking intention (HSI) and help-seeking actions (HSA).* To examine patient help-seeking attitudes and past behaviours, two items were included in the baseline questionnaire to examine help-seeking intention and previous help-seeking actions (**Figure 1**). Subjects were asked where they would go for help if they thought they may have depression, and if they had ever received help to cope with their mental health previously. Response options included a list of places and people categorized as 'self-help' and 'help from others'. 'Help from others' included: informal sources (friends and family); the health-care sector (GP, psychiatrist, psychologist, social worker); as well as alternative sources (traditional Chinese medicine practitioner, community services, religious organizations, telephone hotline). This study focused primarily on responses to the items on health-care sector use.

A positive help-seeking intention (HSI) was defined as a checked response to any of the options listed under 'help from others'. A 'professional help-seeking intention' (professional HSI) was defined as checked response to the GP, psychiatrist or psychologist options. A past help-seeking action (past HSA) was defined as any self-reported previous use of a GP, psychiatrist or psychologist for help to cope with mental health.

In the cohort study, a help-seeking action was defined as a self-report of receiving professional psychological treatment or counselling from a GP, psychiatrist, psychologist, social worker, or other professionals in the previous 3 months and was asked at 3, 6 and 12 months (**Figure 1**).

*Doctor's case report form.* Study doctors, blinded to their patient's PHQ-9 screening scores, were asked to report at baseline whether or not they thought their patient had depression. This was used to examine detection rates for depression.

## Analysis

 Using a PHQ-9 cut-off score of >9 to define a screened positive case, the prevalence of depression was estimated with a 95% confidence interval taking into account the clustering effect by study doctor.

Proportional differences in help-seeking attempts between the patient subgroups that screened PHQ-9 positive and negative were examined using Chi-square tests of independence.

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Multiple logistic regression analyses were conducted to inspect the predictive significance of each patient demographic variables and self-reported clinical characteristics towards (i) the presence of intention to seek professional help reported at baseline, (ii) the presence of previously sought professional help reported at baseline, and (iii) the presence of health service use for psychological support during the 12-month follow-up period among the subset of follow-up cohort who screened PHQ-9 positive at baseline. In view of the relatively large sample size and possible data distortion with using missing data treatments, complete-case analysis was adopted for all regression models. All patient variables were entered in a single block and all were retained in the final model since the purpose of this study is not to build the most parsimonious predictive models. Nevertheless, the Hosmer and Lemeshow test statistics were reported to show how well each model fit the data, with a non-significant Chi-square goodness of fit at p > 0.05 to indicate an adequate model fit. The statistical software SPSS v.21 was used for all quantitative analysis.

This study received approvals by the Institutional Review Board of the University of Hong Kong/ Hospital Authority Hong Kong West Cluster and all relevant regional and institutional ethics review boards<sup>21</sup>.

## RESULTS

A total of 10,179 patients completed the baseline survey (response rate of 81.0%). Respondents were recruited from public settings (26.0%) and private settings (74.0%) in alignment with the overall delivery of primary care services in Hong Kong.<sup>22</sup> 4358 baseline subjects consented to participate in the longitudinal study (response rate of 42.8%). The demographic characteristics of the cross-sectional and cohort participants stratified by their PHQ-9 screening outcome are shown in **Table 1**.

## Prevalence and detection of depression

The cross-sectional prevalence of PHQ+ve screening was 10.69% (95% C.I. 9.71%-11.67%). Amongst the PHQ+ve subjects, study doctors identified 23.1% as having depression. The prevalence of patient self-reported past history of depression diagnosed by a doctor was 6.64%.

## Help seeking preferences for depression

At baseline, 69.6% (n=7080) reported an intention to seek 'help from others' if they thought they were depressed preferring friends and family (46.5%) to a psychiatrist (24.9%), psychologist (22.8%) or a primary care physician (19.9%) (**Table 2**).

Factors associated with professional HSI were identified by a logistic regression analysis (**Table 3**). The most significant factor was the presence of a past HSA. Demographic factors associated with greater likelihood of professional HSI included: higher household income; and family history of mental illness. Factors associated with lower likelihood of professional HSI included: being male; being aged >55 years (compared with being aged 18-34 years); lower educational levels; and being

unmarried (single, divorced, or widowed). PHQ-9 score had no effect on professional HSI, however PHQ+ve patients were more likely to report that they would seek help from informal sources (family and friends) and alternative sources (Traditional Chinese Medicine practitioners).

## Self-reported previous help-seeking behaviours

 Amongst all baseline respondents, 54.1% (n=5503) reported at least one past HSA. Amongst those who were PHQ+ve, 65.6% reported at least one past HSA (**Table 1**). A multiple logistic regression was performed to identify characteristics of patients reporting a past HSA from a psychiatrist, psychologist or GP (**Table 4**). Patients with a previous diagnosis of depression or other mental illness were most likely to report a past HSA from a GP, psychiatrist or psychologist. Patients most likely to report a past GP HSA lived on Hong Kong Island (relative to living in the New Territories & Outlying Islands), had attended a private sector clinic, or had one or more medical comorbidities. Patients who screened PHQ+ve at baseline were also more likely to report a past GP HSA.

# Predictors of help-seeking actions over 1 year in patients with depressive symptoms

Amongst the cohort sample that screened PHQ+ve at baseline (N=518), 24.3% (n=126) reported at least one HSA from a healthcare professional during the subsequent 12-month follow-up. Cumulatively over the 12-month follow-up period, 21.7% reported having consulted a psychiatrist or psychiatric clinic, 11.6% reported to have received psychological treatment or counselling from their doctor, and 3.6% from a psychologist. A multiple logistic regression was performed to identify the predictors of 12-month HSA as shown in **Table 5**. Predictors of 12-month HSA included: previous doctor-diagnosed depression or other mental illness; identified as being depressed at baseline by the study doctor; attended a public sector clinic; reported a past HSA. Baseline HSI was not a predictor of 12-month HSA.

Characteristics of patients most likely to report at least one GP HSA over 12 months included: lived on Hong Kong Island (relative to living in the New Territories & Outlying Islands); and had a past history of doctor-diagnosed depression or other mental illness. Unexpectedly, detection of depression by the study doctor at baseline was not a predictor for a subsequent GP HSA (**Table 5**).

Patients most likely to report at least one psychiatrist HSA over 12 months included: had a past history of doctor-diagnosed depression or other mental illness; had depression detected by the study doctor at baseline; and attended a public sector clinic (**Table 5**).

Parallel analysis of HSA from a psychologist could not be reliably estimated due to small group size and incomplete data.

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## DISCUSSION

The purpose of this study was to explore where Chinese primary care patients seek help for depression in an attempt to better understand why many do not seek help from their GP. By using a cohort design we were able to test the relationship between help-seeking intention and subsequent action to provide information on which components of planned behaviour are more important in enabling patients to receive care in our setting.

#### **Help-seeking preferences**

Unsurprisingly, most patients reported a preference to seek help from informal sources over a healthcare professional. For most individuals, seeking help from within their close social network is less threatening and more readily accessible. Furthermore, Chinese often seek the opinions of family and friends to confirm their own concerns about illness and will seek their family's endorsement before turning to outside help<sup>7</sup>, acting as de-facto gatekeepers to accessing mental health care.

After friends and family, most patients preferred to seek the help of a psychiatrist to a GP. The WHO recommends that common mental illness should be treated in primary care and specialist psychiatric services reserved for more severely ill patients.<sup>23</sup> In Hong Kong however, the role of the primary care doctor is poorly delineated, and patients often directly consult specialists in the private sector without a GP referral.<sup>14</sup> This has significant service implications as patients by-pass the gate-keeping function of the primary care doctor causing further burden to an already stretched specialist psychiatric service sector.<sup>24</sup> In 2005 the population to specialist ratio for psychiatrists in Hong Kong was 1:44,202, far higher than the UK where the ratio was 1:6,836.<sup>24</sup> Of these, only a small proportion practice in the private sector.<sup>25</sup>

In a qualitative study conducted in Hong Kong, Wun et al explored reasons why people may seek the help of a psychiatrist instead of their GP for depression. Reasons identified included severity of symptoms, lack of confidence in primary care doctors for treating depression, perceived quicker access to specialist treatments, and to avoid the need to pay two doctors (the GP and the psychiatrist) for one condition<sup>14</sup>. In the same study, a telephone survey was conducted on the Hong Kong general population. Amongst the 1,647 telephone respondents, although 68.8% reported to have a regular doctor, only 49.0% reported that they would go to them for depression<sup>14</sup>. One possible explanation is that many people may not be aware that GPs' can play a role in delivering mental health services. On the other hand, some doctors may not exhibit sufficient empathy or make efforts to explore patients' psychological cues, making patients less likely to disclose any emotional problems.<sup>14</sup>

## **Determinants of help-seeking intention**

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Our examination of the factors influencing HSI identified that patients with past HSA were the most likely to report an intention to seek help from a healthcare professional. Previous studies have found that patients with prior help-seeking experience are likely to be less worried about treatment-related issues, however may still have other concerns regarding privacy and loss of emotional control<sup>5</sup>. Other demographic characteristics associated with professional HSI such as women, younger patients, and higher socio-economic and educational statuses were consistent with those reported in other settings. <sup>26</sup> Unlike other studies however, presence of depressive symptoms had no effect on HSI. On one hand, depression can diminish self-efficacy and make individuals question their ability to accomplish tasks, such as booking a doctor's appointment<sup>5</sup>. On the other hand, depression can cause impairment to quality of life motivating people to seek help to alleviate distress. In our study sample, PHO-9 status had no significant effect on help-seeking intention. This was similar to a previous study conducted in Hong Kong which found no significant effect of mental health status on help-seeking intention<sup>11</sup>. One possibility is that the social stigma associated with mental illness may be so strong in Chinese culture, that socio-cultural factors have a greater influence on help-seeking intention than actual service need.<sup>11</sup>

Although only a small number of subjects reported that they would seek help from a Traditional Chinese Medicine (TCM) practitioner if they were depressed, presence of depressive symptoms did have an effect. As many patients in our setting use both western and Chinese medicine, greater exploration is needed to understand the role of TCM in the delivery of depression care.

#### Predictors for help-seeking action

Ajzen's theory of planned behaviour is a commonly used model to explore mental health help-seeking behaviours<sup>6</sup>. Using this model the health behaviours of an individual can be influenced by their own personal beliefs (patient's own attitudes), subjective norms (the social norms) and control beliefs (perceived practical barriers)<sup>6</sup> <sup>10</sup>. In our study, the patient's own attitudes reported as their help-seeking intention was an insignificant contributor to subsequent help-seeking action. Conversely, diagnosis of depression by a doctor was a very strong predictor for subsequent action. The implication of our findings is that detection of depression or being told that you have depression by a doctor is a key enabler for patients in our setting to receive mental health treatments. One explanation is that doctor detection can help patients gain better insight and awareness regarding the need for intervention and are subsequently more open to being treated. Another possibility is that doctor detection facilitates access to care by overcoming some of the practical barriers to treatment such as knowing where to go. A wider exploration of what interventions may help to promote prompt detection, better patient attribution and subsequent acceptance and initiation of treatment for patients with depression is needed on a local and global level to help reduce the burden of depression.

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Unfortunately, severity of symptoms was not a predictor for actual HSA as hypothesized. Our findings suggests that patients with moderate to severe levels of depressive symptoms and who potentially could benefit the most from mental health interventions are not more likely to receive the care they need. Further exploration about how to address this problem is urgently needed.

### Strengths and Weaknesses

This was the first wide scale epidemiological study examining depressive disorders in the Hong Kong's primary care. A major strength of this study was our success in enlisting a large number of primary care doctors to collaborate. Our wide sampling of practice types is reflective of the diverse service options available to patients seeking primary care in Hong Kong.

Our study has a number of notable limitations. First, we relied on the patient's selfreport for collection of information on help-seeking actions. It is possible that GPs or other providers may have provided psychological care as part of a general consultation, but that patients did not perceive this as receiving a mental health treatment. Second, identification of patients with depression was based on a selfreported screening instrument and was not confirmed by a clinical diagnostic interview which would be the gold standard. Third, the cohort sample was selfselected which incurs a risk of self-selection bias. Fourth, our study was restricted to patients recruited through a primary care research network in Hong Kong, and may not be generalizable to other primary care settings. Finally our results may not necessarily represent the causal effect of help-seeking intention on actual behaviours because unobserved variables may confound the longitudinal relationship between perceived intention and subsequent help-seeking.

## CONCLUSION

Although much has been written about what influences mental health help-seeking attitudes, much less is known about what influences actual behaviour. Of particular interest to mental health service research is how we can help people who experience mental health problems but who do not receive appropriate care. In Hong Kong, it appears that the potential role for the primary care doctor in depression care is under-recognized and under-utilized. We need to seek ways for GPs to maximize the opportunities to enhance mental health during their daily patient encounters and to develop an evidence base of what may be effective in promoting early diagnosis and initiation of treatment for primary care patients suffering from depression.

## REFERENCES

- 1. Murray C, Vos T, Lozano R, et al. Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet 2012;**380**(9859):2197 223.
- 2. Miller BF, Druss B. The Role of Family Physicians in Mental Health Care Delivery in the United States: Implications for Health Reform. The Journal of the American Board of Family Medicine 2013;**26**(2):111-13.
- 3. Wang PS, Angermeyer M, Borges G, et al. Delay and failure in treatment seeking after first onset of mental disorders in the World Health Organization's World Mental Health Survey Initiative. World psychiatry : official journal of the World Psychiatric Association 2007;**6**(3):177-85.
- 4. Oliver MI, Pearson N, Coe N, et al. Help-seeking behaviour in men and women with common mental health problems: cross-sectional study. The British Journal of Psychiatry 2005;**186**(4):297-301.
- 5. Bell RA, Franks P, Duberstein PR, et al. Suffering in silence: reasons for not disclosing depression in primary care. Ann Fam Med 2011;**9**(5):439-46.
- 6. Schomerus G, Matschinger H, Angermeyer M. Attitudes that determine willingness to seek psychiatric help for depression: a representative population survey applying the Theory of Planned Behaviour. Psychol Med 2009;**39**(11):1855.
- 7. Hui A, Wong P, Fu K-w. Building a model for encouraging help-seeking for depression: a qualitative study in a Chinese society. BMC Psychology 2014;**2**(1):9.
- 8. Coppens E, Van Audenhove C, Scheerder G, et al. Public attitudes toward depression and help-seeking in four European countries baseline survey prior to the OSPI-Europe intervention. J Affect Disord 2013;**150**(2):320-9.
- Kung WW. Cultural and practical barriers to seeking mental health treatment for Chinese Americans. Journal of Community Psychology 2004;32(1):27-43.
- 10. Ajzen I. The theory of planned behavior. Organ Behav Hum Decis Process 1991;**50**(2):179 211.
- 11. Mo PKH, Mak WWS. Help-seeking for mental health problems among Chinese. The application and extension of the theory of planned behavior. Social Psychiatry and Psychiatric Epidemiology 2009;**44**(8):675-84.
- 12. Chin W, Chan K, Lam C, et al. Detection and management of depression in adult primary care patients in Hong Kong: a cross-sectional survey conducted by a primary care practice-based research network. BMC Family Practice 2014;**15**(1):30.
- Barbui C, Tansella M. Identification and management of depression in primary care settings. A meta-review of evidence. Epidemiol Psichiatr Soc 2006;15(4):276-83.
- 14. Wun YT, Lam TP, Goldberg D, et al. Reasons for preferring a primary care physician for care if depressed. Fam Med 2011;**43**(5):344-50.
- 15. Lee S. Mental health problems in transition: challenges for psychiatry in Hong Kong. Hong Kong medical journal = Xianggang yi xue za zhi / Hong Kong Academy of Medicine 1999;**5**(1):6-8.

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- 16. Chin W, Lam C, Wong S, et al. The epidemiology and natural history of depressive disorders in Hong Kong's primary care. BMC Family Practice 2011;**12**(1):129.
- 17. Spitzer RL, Kroenke K, Williams JBW. Validation and utility of a self-report version of PRIME-MD: The PHQ Primary Care Study. JAMA 1999;**282**(18):1737-44.
- 18. Kroenke K, Spitzer R, Williams J. The PHQ-9: validity of a brief depression severity measure. J Gen Intern Med 2001;**16**(9):606 13.
- 19. Yu X, Tam WWS, Wong PTK, et al. The Patient Health Questionnaire-9 for measuring depressive symptoms among the general population in Hong Kong. Compr Psychiatry 2012;**53**:95-102.
- 20. Lo Y, Lam C, Lam T, et al. Hong Kong primary care morbidity Survey 2007-2008. Hong Kong Practitioner 2010;**32**(1):17-26.
- 21. Chin W, Lam C, Wong S, et al. The epidemiology and natural history of depressive disorders in Hong Kong's primary care. BMC Family Practice 2012;**12**(1):129.
- 22. Food and Health Bureau. My Health My Choice: Healthcare Reform Second Stage Consultation Document. Hong Kong SAR: Government Logistics Department, 2010.
- 23. World Health Organization. mhGAP intervention guide for mental, neurologicaland substance use disorders in non-specialized health settings 2010. Secondary mhGAP intervention guide for mental, neurologicaland substance use disorders in non-specialized health settings 2010.

http://whqlibdoc.who.int/publications/2010/9789241548069 eng.pdf.

- 24. Hong Kong College of Psychiatrists. Submission of the Hong Kong College of Psychiatrists to the Panel on Health Services of the Legislative Council on mental health policy in Hong Kong. Legislative Council Paper No. CB(2)373/07-08(05). Hong Kong, 2007.
- 25. Cheung E, Lam L, Hung S. Hong Kong. In: Ghodse H, ed. International Perspectives on Mental Health. London: RCPsych Publications, 2011.
- 26. Mojtabai R, Olfson M, Mechanic D. Perceived need and help-seeking in adults with mood, anxiety, or substance use disorders. Arch Gen Psychiatry 2002;**59**(1):77-84.

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## Contributors

CL initially conceived the study. CL, TPL and WYC collectively designed and drafted the study protocol and sought funding and ethical approving. EW led on statistical analyses and contributed to the drafting of the manuscript. CL, TPL, and KC contributed to recruitment and data collection. KC was the project coordinator, recruited and trained the fieldworkers, assisted with recruitment of study doctors, coordinated the data collection, and contributed to the drafting of the manuscript. WYC is PI of the funding application, coordinated the research network and research team, and drafted the manuscript. All authors have read the draft critically and approved the final manuscript.

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Competing interests: None

**Data sharing statement**: Dataset is available on request by emailing the corresponding author at <u>chinwy@hku.hk</u>

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a. your doctor?

b. psychologists?

c. social workers?

d. other people?

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At baseline					
Have you tried any of the fo	llowing	to help you cope with	your men	tal health?	
a) self-help techniques (May o	choose n	nore than one. For the c	ption "othe	er" please state)	
1. books		2.exercise		3.meditations	
4. prayer		5.internet		6.Other:	
b) help from others (May choo	ose more	than one. For the optio	n "other" p	lease state)	
1.friends/family		2.religious organizatio (church/temple)	n 🗌	3.traditional Chinese medicine practitioner	
4.community service		5.GP		6.psychiatrist	
7.psychologist		8.social worker		9.telephone hotline	
10.Other					
Given a choice, if you had	doproce	ion which of the follo	wing wou	ld you profor to sook b	oln
from?	depress	ion, which of the fold	wing woo	na you prefer to seek in	cih
a) self-help techniques (May o	choose n	nore than one. For the c	ption "othe	er" please state)	
1.books		2.exercise		3.meditations	
4.prayer		5.internet		6.Other:	
b) help from others (May choo	ose more	than one. For the optio	n "other" p	lease state)	
1.friends/family		2.religious organizatio (church/temple)	n 🗆	3.traditional Chinese medicine practitioner	
4.community service		5.GP		6.psychiatrist	
7.psychologist		8.social worker		9.telephone hotline	
10.Other:					
At 12, 20 and 52 weeks			1		
At 12, 26 and 52 weeks			Vac	No Don't know	
			162	NO DOI I KIOW	
1. During the last three month	hs, have	you consulted a	□ 1		
psychiatrist or a psychiatric	c clinic?	you roopiyed			
professional psychological	treatme	nt or counseling from			

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Table 1. Demographic variables of baseline and follow-up of	cohort samples
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	Baseline PHQ+ve	Baseline PHQ-ve	Cohort PHQ+ve	Cohort PHQ+ve
	(n=1079)	(n=8791)	(n=518)	(n=3769)
Gender * <sup>†</sup>				
Female	702 (67.6%)	4896 (56.8%)	353 (68.9%)	2135 (56.9%)
Male	336 (32.4%)	3721 (43.2%)	159 (31.1%)	1620 (43.1%)
Age Group * <sup>†</sup>				
18-34 yrs	316 (31.1%)	2200 (26.0%)	147 (29.0%)	860 (23.1%)
35-54 yrs	371 (36.5%)	3045 (35.9%)	197 (38.9%)	1336 (35.9%)
55+ yrs	329 (32.4%)	3232 (38.1%)	163 (32.1%)	1527 (41.0%)
Education				
Secondary or above	772 (75.0%)	6513 (75.9%)	391 (75.9%)	2834 (75.4%)
Primary or below	258 (25.0%)	2069 (24.1%)	124 (24.1%)	924 (24.6%)
Marital Status * <sup>†</sup>				
Married	354 (34.3%)	2292 (26.7%)	168 (32.7%)	900 (23.9%)
All others (single, divorced, widow)	677 (65.7%)	6289 (73.3%)	346 (67.3%)	2860 (76.1%)
Working Status * <sup>†</sup>				
Employed	583 (57.6%)	5394 (63.5%)	293 (57.9%)	2337 (62.7%)
All others (unemployed, retired, house-maker, student)	430 (42.4%)	3096 (36.5%)	213 (42.1%)	1391 (37.3%)
Household monthly income **				
HKD30,000 (USD3800) or below	676 (75.4%)	4539 (60.6%)	346 (73.9%)	2062 (60.0%)
More than HKD30,000	220 (24.6%)	2950 (39.4%)	122 (26.1%)	1372 (40.0%)
District of residence				
Hong Kong Island	431 (41.9%)	3554 (41.7%)	230 (44.6%)	1618 (43.1%)
Kowloon	227 (220%)	1969 (23.1%)	118 (22.9%)	899 (24.0%)
New Territories & Outlying Islands	372 (36.1%)	3010 (35.3%)	168 (32.6%)	1236 (32.9%)
Service sector *				
Private	761 (70.5%)	6559 (74.6%)	354 (68.3%)	2659 (70.5%)
Public	318 (29.5%)	2232 (25.4%)	164 (31.7%)	1110 (29.5%)
Presence of HSI				
None	256 (25.5%)	2286 (27.0%)	123 (24.3%)	843 (22.7%)
At least one	746 (74.5%)	6176 (73.0%)	383 (75.7%)	2867 (77.3%)
Presence of Professional HSI				
None	492 (49.1%)	4263 (50.4%)	226 (44.7%)	1680 (45.3%)
At least one	510 (50.9%)	4199 (49.6%)	280 (55.3%)	2030 (54.7%)
Presence of past HSA * <sup>†</sup>		. ,		
None	367 (36.1%)	3671 (43.7%)	175 (34.4%)	1542 (41.8%)
At least one	650 (63.9%)	4734 (56.3%)	334 (65.6%)	2143 (58.2%)
Presence of HSA during follow-ups <sup>1</sup>	ŕ			
None	1	/	323 (71.9%)	3191 (93.4%)
At least one	/	/	126 (28.1%)	227 (6.6%)

Note. Missing value categories are omitted. HSI = help-seeking intention; HSA = help-seeking action.

\* Proportionately different at p<0.05 between Baseline PHQ+ve & Baseline PHQ-ve by Chi-square test.

<sup>+</sup> Proportionately different at *p*<0.05 between Cohort PHQ+ve & Cohort PHQ-ve by Chi-square test.

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	Overall		Subgroup	
	(n=10179)	PHQ+ve (n=1079)	PHQ-ve (n=8791)	<i>p</i> -value
Friends and family	4738 (46.5%)	444 (41.1%)	4200 (47.8%)	0.001*
Religious organization	852 (8.4%)	90 (8.3%)	740 (8.3%)	0.802
Social worker	1026 (10.1%)	116 (10.8%)	890 (10.1%)	0.304
General practitioner	2023 (19.9%)	216 (20.0%)	1754 (20.0%)	0.541
Community service	313 (3.1%)	41 (3.8%)	267 (3.0%)	0.114
Psychiatrist	2530 (24.9%)	277 (25.7%)	2195 (25.0%)	0.245
Psychologist	2325 (22.8%)	261 (24.2%)	2021 (23.0%)	0.130
Telephone hotline	230 (2.3%)	29 (2.7%)	196 (2.2%)	0.256
Traditional Chinese medicine practitioner	307 (3.9%)	46 (4.3%)	252 (2.9%)	0.006*
Others	81 (0.8%)	6 (0.6%)	74 (0.8%)	0.367

Note. PHQ+ve = PHQ-9 screening score >9; PHQ-ve = PHQ-9 screening score ≤9.

by Ch \* Statistically significant at p < 0.05 between groups by Chi-square test.

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Gender (Female)		
Male	0.820*	0.743 - 0.905
Age group (18-34 years old)		
35 – 54 years old	1.095	0.958 - 1.250
55 years old and above	0.679*	0.570 - 0.809
Education (Secondary and above)		
Primary or no formal education	0.657*	0.568 - 0.760
Marital status (Married)		
Being single, divorced, or widow	0.862*	0.770 - 0.965
Employment status (Employed)		
Being unemployed, retired, house-maker, or student	0.935	0.826 - 1.059
Household monthly income (≤HKD30,000)		
>HKD30,000	1.342*	1.206 - 1.492
District of residence (Hong Kong Island)		
Kowloon	0.995	0.875 - 1.130
New Territories & Outlying Islands	1.068	0.951 - 1.200
Physical co-morbidities (None)		
At least one	1.094	0.973 - 1.230
Family history of mental illness (No)		
íes i i i i i i i i i i i i i i i i i i i	1.457*	1.230 - 1.727
Self-reported doctor diagnosed depression (No)		
/es	0.944	0.739 - 1.206
Self-reported doctor diagnosed other MI (No)		
(es	0.824	0.596 - 1.138
Presence of past help-seeking action from professional (None)		
At least one	3.400*	2.590 - 4.463
PHO-9 score at baseline (<9)	000	
	0 888	0 754 - 1 047
Service sector (Private)	0.000	0.754 - 1.047
	1 020	0 800 1 178
Note. Hosmer and Lemeshow Test suggested adequate model fit, $\chi^2$ 's Statistically significant at $p < 0.05$ .	=7.549, <i>p</i> = 0.4	79.

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Table 4. Factors associated with at least one past help-seeking action from professional among
the entire baseline sample

Variable	General		
	Practitioner	Psychiatrist	Psychologist
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Gender (Female)			
Male	1.08 (0.80-1.47)	1.30 (0.83-2.04)	0.79 (0.52-1.21)
Age group (18-34 years old)			
35 – 54 years old	0.94 (0.64-1.38)	1.04 (0.60-1.79)	0.76 (0.48-1.20)
55 years old and above	0.93 (0.56-1.53)	0.81 (0.39-1.66)	0.22 (0.09-0.52)*
Education (Secondary and above)			
Primary or no formal education	0.96 (0.63-1.48)	0.71 (0.39-1.30)	0.32 (0.11-0.96)*
Marital status (Married)			
All others <sup>a</sup>	1.32 (0.96-1.81)	1.44 (0.92-2.24)	1.72 (1.10-2.67)*
Employment status (Employed)			
All others <sup>b</sup>	0.96 (0.67-1.37)	1.32 (0.81-2.16)	1.01 (0.61-1.67)
Household monthly income (≤HKD30,000)			
>HKD30,000	1.06 (0.77-1.46)	1.01 (0.63-1.62)	1.73 (1.14-2.62)*
District of residence (Hong Kong Island)			
Kowloon	0.68 (0.47-0.99)*	1.04 (0.62-1.74)	0.80 (0.47-1.35)
New Territories & Outlying Islands	0.59 (0.42-0.83)*	0.74 (0.45-1.23)	0.83 (0.53-1.30)
Physical comorbidities (None)			
At least one	1.51 (1.08-2.12)*	0.67 (0.41-1.09)	1.11 (0.71-1.75)
Family history of mental illness (No)			
Yes	1.42 (0.96-2.09)	1.23 (0.73-2.07)	1.01 (0.58-1.74)
Self-reported diagnosed depression (No)			
Yes	7.45 (5.28-10.52)*	43.85 (27.32-70.38)	* 7.34 (4.43-12.18)*
Self-reported diagnosed other MI (No)			
Yes	4.25 (2.77-6.52)*	6.88 (4.21-11.26)*	5.32 (3.02-9.35)*
PHQ-9 score at baseline (≤9)			
>9	2.24 (1.59-3.15)*	1.22 (0.75-1.97)	1.00 (0.58-1.72)
Service sector (Public)			
Private	0.47 (0.31-0.71)*	1.27 (0.75-2.18)	0.88 (0.46-1.67)

Note. OR = Odds ratio. Hosmer and Lemeshow Tests suggested adequate model fit for all three models: GP,  $\chi^2$  = 9.973, *p* = 0.267; Psychiatrist,  $\chi^2$  = 10.092, *p* = 0.259; Psychologist,  $\chi^2$  = 4.138, *p* = 0.844.

<sup>a</sup> 'All others' in marital status includes being single, divorced, or widow,

<sup>b</sup> 'All others' in employment status includes *being unemployed, retired, house-maker, or student.* 

\* Statistically significant at *p* < 0.05.

Table 5. Factors associated with presence of at least one help-seeking action in subsequent 12 months among the follow-up cohort who screened PHQ-9 positive at baseline

2.21)       1.44 (0.51-4.02)         2.25)       0.88 (0.22-3.55)         7.67)       1.26 (0.27-5.85)         1.11)       0.60 (0.19-1.83)         1.99)       1.00 (0.36-2.76)         2.97)       0.88 (0.31-2.46)         3.18)       0.65 (0.18-2.36)         1.63)       0.93 (0.26 3.27)	2.35 (0.92-6.05) 0.77 (0.22-2.63) 1.39 (0.34-5.72) 0.44 (0.14-1.36) 0.91 (0.35-2.36) 0.80 (0.30-2.11) 0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
<ul> <li>2.21) 1.44 (0.51-4.02)</li> <li>2.25) 0.88 (0.22-3.55)</li> <li>7.67) 1.26 (0.27-5.85)</li> <li>1.11) 0.60 (0.19-1.83)</li> <li>1.99) 1.00 (0.36-2.76)</li> <li>2.97) 0.88 (0.31-2.46)</li> <li>3.18) 0.65 (0.18-2.36)</li> <li>1.63) 0.93 (0.26 3.27)</li> </ul>	2.35 (0.92-6.05) 0.77 (0.22-2.63) 1.39 (0.34-5.72) 0.44 (0.14-1.36) 0.91 (0.35-2.36) 0.80 (0.30-2.11) 0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
2.25)       0.88 (0.22-3.55)         7.67)       1.26 (0.27-5.85)         1.11)       0.60 (0.19-1.83)         1.99)       1.00 (0.36-2.76)         2.97)       0.88 (0.31-2.46)         3.18)       0.65 (0.18-2.36)         1.63)       0.93 (0.26.3.27)	0.77 (0.22-2.63) 1.39 (0.34-5.72) 0.44 (0.14-1.36) 0.91 (0.35-2.36) 0.80 (0.30-2.11) 0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
2.25)       0.88 (0.22-3.55)         7.67)       1.26 (0.27-5.85)         1.11)       0.60 (0.19-1.83)         1.99)       1.00 (0.36-2.76)         2.97)       0.88 (0.31-2.46)         3.18)       0.65 (0.18-2.36)         1.63)       0.93 (0.26.3.27)	0.77 (0.22-2.63) 1.39 (0.34-5.72) 0.44 (0.14-1.36) 0.91 (0.35-2.36) 0.80 (0.30-2.11) 0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
<ul> <li>7.67) 1.26 (0.27-5.85)</li> <li>1.11) 0.60 (0.19-1.83)</li> <li>1.99) 1.00 (0.36-2.76)</li> <li>2.97) 0.88 (0.31-2.46)</li> <li>3.18) 0.65 (0.18-2.36)</li> <li>1.63) 0.93 (0.26 3.27)</li> </ul>	1.39 (0.34-5.72) 0.44 (0.14-1.36) 0.91 (0.35-2.36) 0.80 (0.30-2.11) 0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
1.11)       0.60 (0.19-1.83)         1.99)       1.00 (0.36-2.76)         2.97)       0.88 (0.31-2.46)         3.18)       0.65 (0.18-2.36)         1.63)       0.93 (0.26 3.27)	0.44 (0.14-1.36) 0.91 (0.35-2.36) 0.80 (0.30-2.11) 0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
<ol> <li>1.11) 0.60 (0.19-1.83)</li> <li>1.99) 1.00 (0.36-2.76)</li> <li>2.97) 0.88 (0.31-2.46)</li> <li>3.18) 0.65 (0.18-2.36)</li> <li>1.63) 0.93 (0.26 3.27)</li> </ol>	0.44 (0.14-1.36) 0.91 (0.35-2.36) 0.80 (0.30-2.11) 0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
1.99)       1.00 (0.36-2.76)         2.97)       0.88 (0.31-2.46)         3.18)       0.65 (0.18-2.36)         1.63)       0.93 (0.26.3.27)	0.91 (0.35-2.36) 0.80 (0.30-2.11) 0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
<ol> <li>1.99)</li> <li>1.00 (0.36-2.76)</li> <li>2.97)</li> <li>0.88 (0.31-2.46)</li> <li>3.18)</li> <li>0.65 (0.18-2.36)</li> <li>1.63)</li> <li>0.93 (0.26 3.27)</li> </ol>	0.91 (0.35-2.36) 0.80 (0.30-2.11) 0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
2.97)       0.88 (0.31-2.46)         3.18)       0.65 (0.18-2.36)         1.63)       0.93 (0.26.3.27)	0.80 (0.30-2.11) 0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
2.97)       0.88 (0.31-2.46)         3.18)       0.65 (0.18-2.36)         1.63)       0.93 (0.26.3.27)	0.80 (0.30-2.11) 0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
3.18) 0.65 (0.18-2.36) 1.63) 0.93 (0.26.3.27)	0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
3.18)       0.65 (0.18-2.36)         1.63)       0.93 (0.26.3.27)	0.50 (0.16-1.56) 2.17 (0.68-6.95) 1.65 (0.59-4.57)
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1 63) 0 93 (0 26 3 27)	2.17 (0.68-6.95) 1.65 (0.59-4.57)
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4.59) 0.93 (0.28-3.15)	0.91 (0.27-3.05)
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40.01)* 8.86 (3.38-23.22)*	<sup>*</sup> 17.86 (6.63-48.12) <sup>*</sup>
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(2.05-24.50)* 7.08	* 18.99 (4.66-77.49) <sup>;</sup>
11.93) 1.13 (0.44-2.89)	1.80 (0.74-4.39)
5.04) 2.84 (0.96-8.41)	2.83 (1.07-7.53)*
3.90) 4.02 (1.52-10.62)*	* 2.85 (1.08-7.49)*
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6.61) 1.28 (0.52-3.14)	
	11.93)       1.13 (0.44-2.89)         -5.04)       2.84 (0.96-8.41)         -3.90)       4.02 (1.52-10.62)*         -6.61)       1.28 (0.52-3.14)

Note. OR = Odds ratio. Hosmer and Lemeshow Tests suggested adequate model fit for all three models. For the GP model,  $\chi 2 = 10.269$ , p = 0.247; Psychiatrist,  $\chi 2 = 6.369$ , p = 0.606; Any professional,  $\chi 2 = 7.691$ , p = 0.464. <sup>a</sup> 'All others' in marital status includes *being single, divorced, or widow*,

<sup>b</sup> 'All others' in employment status includes *being unemployed, retired, house-maker, or student.* 

† Includes GP, psychiatrist, psychologist, social worker, and other professional.

\* Statistically significant at p < 0.05.

# STROBE 2007 (v4) checklist of items to be included in reports of observational studies in epidemiology\* Checklist for cohort, case-control, and cross-sectional studies (combined)

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	2
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4
Objectives	3	State specific objectives, including any pre-specified hypotheses	5
Methods			
Study design	4	Present key elements of study design early in the paper	5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5
Participants	6	<ul> <li>(a) Cohort study—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up</li> <li>Case-control study—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls</li> <li>Cross-sectional study—Give the eligibility criteria, and the sources and methods of selection of participants</li> </ul>	5
		(b) Cohort study—For matched studies, give matching criteria and number of exposed and unexposed Case-control study—For matched studies, give matching criteria and the number of controls per case	
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	6
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	6
Bias	9	Describe any efforts to address potential sources of bias	7
Study size	10	Explain how the study size was arrived at	5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6-7
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	6-7
		(b) Describe any methods used to examine subgroups and interactions	6-7
		(c) Explain how missing data were addressed	6-7
		(d) Cohort study—If applicable, explain how loss to follow-up was addressed Case-control study—If applicable, explain how matching of cases and controls was addressed	6-7

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		Cross-sectional study—If applicable, describe analytical methods taking account of sampling strategy	
		(e) Describe any sensitivity analyses	
Results	•		
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	7
		(b) Give reasons for non-participation at each stage	
		(c) Consider use of a flow diagram	
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	17
		(b) Indicate number of participants with missing data for each variable of interest	
		(c) Cohort study—Summarise follow-up time (eg, average and total amount)	
Outcome data	15*	Cohort study—Report numbers of outcome events or summary measures over time	7, 17
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	
		Cross-sectional study—Report numbers of outcome events or summary measures	
Main results	16	( <i>a</i> ) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	7-8, 17-21
		(b) Report category boundaries when continuous variables were categorized	7-8, 17-21
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	7-8, 17-21
Discussion			
Key results	18	Summarise key results with reference to study objectives	9-10
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	10
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	9-11
Generalisability	21	Discuss the generalisability (external validity) of the study results	11
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	14

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies. **Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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## Help-seeking intentions and subsequent 12-month mental health service use in Chinese primary care patients with depressive symptoms

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## ABSTRACT (Max 300 words)

**Objectives:** To examine where primary care patients go for psychological care in Hong Kong and the predictors for 12-month mental health service use in patients with depressive symptoms

Design: Cross-sectional followed by 12-month cohort study.

**Setting and participants**: 10,179 adult patients were recruited from the waiting rooms of 59 primary care clinics across Hong Kong to complete a questionnaire which screened for depression. Doctors provided information on clinical diagnosis and management. 4358 subjects were telephoned at 3, 6 and 12 months to monitor subsequent mental health service use.

## Primary and secondary outcomes

- Patient Health Questionnaire-9 (PHQ-9)
- Past help-seeking actions
- Help-seeking preferences
- Intention to seek help from a health care professional
- 12-month mental health service use

## **Results:**

At baseline, 6.9% overall and 17.5% of respondents with depressive symptoms reported to have received mental health services in the past. In those who reported that they would seek help from somebody if they thought they were depressed, most preferred using friends and family (46.5%) over a psychiatrist (24.9%), psychologist (22.8%) or GP (19.9%). Presence of depressive symptoms was associated with a lower likelihood of intending to seek help from family and friend, however had no effect on intention to seek help from a healthcare professional. In the cohort study, although 55.3% of subjects with depressive symptoms reported an intention to seek help from a healthcare professional, over 12months, only 24.3% received mental health services. Positive intention to seek help and severity of depression was not a predictor for 12-month mental health service use.

**Conclusion:** Only one in four primary care patients who screened positive for depression receive mental health services over 12 months. Having a positive intention to seek help or having more severe symptoms of depression did not increase the likelihood that patients would receive a mental health treatment over 12 months.

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# ARTICLE SUMMARY

## Article focus

- Despite having access to a doctor, many primary care patients experiencing depressive symptoms do not seek professional help for their mental health and fail to be diagnosed or to receive appropriate interventions
- Knowledge about patients' help-seeking attitudes and patterns of behavior can contribute to a better understanding of where patients prefer to seek help for their mental health and who is more willing to seek mental health care.

## Key messages

- In Hong Kong, only one in four primary care patients experiencing depression receives mental health services over one year
- Psychiatrists are used more often than GPs for depression
- Detection of depression by a doctor appears to be more important than the patient's own attitudes towards seeking help in enabling them to receive mental healthcare services

## Strengths and limitations of the study

- Key strengths: subjects were recruited from a wide variety of primary care settings, reflecting the delivery of primary care in Hong Kong, and were monitored prospectively to examine the correlations between intention and subsequent actual behaviour.
- Main limitations: we relied on the patient's self-report for collection of information on help-seeking actions. It is possible that GPs or other providers may have provided psychological care as part of a general consultation, but that patients did not perceive this as receiving a mental health treatment resulting in an under-reporting of mental health service use.



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## INTRODUCTION

Depression is a common condition affecting quality of life and contributing to the global burden of disease.<sup>1</sup> In many countries, depression is mainly managed in the primary care setting and primary care clinicians are well placed to detect, initiate and coordinate care.<sup>2</sup> Unfortunately, many adults experiencing a depressive episode will not seek help immediately, and worldwide, delays or complete failure in seeking treatment for depression are common.<sup>3</sup> Studies have shown that in those reporting an intention to seek help to overcome depression, most would prefer to receive support from within their social network than from a healthcare provider.<sup>4</sup> As a consequence, even in the primary care setting where patients already have access to a clinician, many patients may not disclose their mood symptoms and subsequently fail to be identified by the doctor as having depression or to receive appropriate medical care.<sup>5</sup>

The decision whether or not to seek help, and who to seek help from, may be influenced by culture, demography, service accessibility, symptom severity and personal attitudes towards mental illness such as the individual's understanding of the illness, their perceived usefulness of treatments and impressions from their own past help-seeking experiences. <sup>6-8</sup> It has been identified that Chinese underutilize mental health services; however low service demand does not necessarily reflect low service need. <sup>9 10</sup>Despite living in a relatively westernized society, the health beliefs and behaviours of most Hong Kong Chinese are strongly influenced by traditional cultural values where emotional problems may not be perceived as an illness and strong stigmatizing attitudes towards mental illness are highly prevalent. <sup>7 11</sup> Aside from personal attitudinal and socio-cultural barriers, there are also many practical barriers to receiving help for mental health. Detection rates for depression are relatively low in primary care <sup>12 13</sup> and access to psycho-social services is difficult due to the user-pay system in the private sector<sup>14</sup>, and long waiting times in the public sector.<sup>11 15</sup>

To gain a better understanding about the help-seeking behaviours of Chinese primary care patients, the objectives of this study were to explore where patients prefer to go for psychological care; to identify the factors associated with a positive intention to seek help from a healthcare professional; and to examine the predictors for 12-month mental health service use.

Our three hypotheses were:

 Patients experiencing depressive symptoms are less likely to report a positive intention to seek help from a healthcare professional for their mental health;
 In patients experiencing depressive symptoms, a positive intention to seek professional help for mental health is a predictor for subsequent 12-month mental health service use.

(3) Severity of depressive symptoms is a predictor for subsequent 12-month mental health service use.

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# METHOD

This was a cross-sectional followed by a 12-month cohort observational study (Figure 1). It was conducted as part of a larger epidemiological study to examine the naturalistic outcomes of depressive disorders in Hong Kong's primary care.

# Subjects & Sampling

Patients were recruited from the waiting rooms of 59 primary care clinicians across Hong Kong and consisted of patients from the private sector, public sector and NGOs reflecting the delivery of primary care services in our setting. The doctors were identified through the mailing list of the Hong Kong College of Family Physicians and joined our study as part of a mental health primary care practice-based research network.

All eligible adult patients consulting the study doctor on one randomized day each month over 12 months were consecutively recruited to complete a baseline questionnaire. Subjects who consented were subsequently followed by telephone at 3, 6 and 12 months. Patients were excluded if they were aged <18 years, unable to communicate in English, Cantonese or Mandarin, or unable to complete the questionnaire due to cognitive difficulties.

The full study protocol including sample size calculations has been previously published.

# Study Instruments

*The Patient Health Questionnaire-9* (PHQ-9): is a nine item questionnaire used to screen, monitor, diagnose and measure the severity of depressive symptoms. A cut-off score >9 was used to define a case of screened-positive depression ('PHQ+ve'). The Chinese version of the PHQ-9 has been validated in Hong Kong amongst 357 adult subjects from 14 primary care clinics using the Chinese Hamilton Depression Scale (CHDS) as the gold standard. Using a cut-off point >9 the PHQ-9 was found to have a sensitivity of 80% and specificity of 92%.

*Items on socio-demography and co-morbidity:* were adapted from previously used health services research surveys on the Hong Kong primary care population. <sup>16</sup>

*Help from others in the past:* To examine past help-seeking behaviours, respondents were asked: "Have you tried any of the following to help you cope with your mental health?" Response options included: friends/family; religious organization; traditional Chinese medicine (TCM) practitioner; community services; GP; psychiatrist; psychologist; social worker; telephone hotline; other (please explain). Respondents were permitted to choose more than one option.

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 *Past help-seeking actions:* was defined as a patient's self-report of having received a mental health service from a healthcare professional in the past and was identified by a checked response to the GP, psychiatrist, psychologist or social worker options in the item on 'help from others in the past'.

*Help-seeking preferences.* To examine help-seeking preferences, respondents were asked: "Given a choice, if you had depression, which of the following would you prefer to seek help from?" Response options included: friends/family; religious organization; traditional Chinese medicine (TCM) practitioner; community services; GP; psychiatrist; psychologist; social worker; telephone hotline; other (please explain). Respondents were permitted to choose more than one option.

*Intention to seek help from a healthcare professional* was defined as a patient's selfreported intention to seek help from a health care professional if they thought they were depressed and was identified as checked response to the GP, psychiatrist, psychologist or social worker options in the item on 'help-seeking preferences'.

Subsequent 12-month mental health service use. Subjects who consented to longitudinal follow up were telephoned at 12, 26 and 52 weeks to monitor for subsequent mental health service use. Respondents were asked to report whether they had received a mental health treatment or psychological counselling from a psychiatrist, GP, psychologist or social worker in the previous 3 months. The subset of the cohort sample who had screened positive for depression at baseline was used to identify predictors for 12-month mental health service use.

*Doctor's case report form.* At baseline, study doctors blinded to their patient's PHQ-9 screening scores were asked to report whether or not they thought their patient had depression. This was used to examine detection rates for depression.

## Analysis

Using a PHQ-9 cut-off score of >9 to define a screened positive case, the prevalence of depression was estimated with a 95% confidence interval taking into account the clustering effect by study doctor.

Proportional differences in help-seeking between the patient subgroups that screened PHQ-9 positive and negative were examined using Chi-square tests of independence.

Multiple logistic regression analyses were conducted to inspect the predictive significance of each of the patient demographic variables and self-reported clinical characteristics towards (i) positive intention to seek help from a healthcare professional (reported at baseline), (ii) having received psychological help from a psychiatrist psychologist, GP or social worker in the past (reported at baseline), and (iii) use of mental health services during the 12-month follow-up period (among the subset of follow-up cohort who screened PHQ-9 positive at baseline). In view of the relatively large sample size and possible data distortion with using missing data

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treatments, complete-case analysis was adopted for all regression models. All patient variables were entered in a single block and all were retained in the final model since the purpose of this study is not to build the most parsimonious predictive models. Nevertheless, the Hosmer and Lemeshow test statistics were reported to show how well each model fit the data, with a non-significant Chi-square goodness of fit at p > 0.05 to indicate an adequate model fit. The statistical software SPSS v.21 was used for all quantitative analysis.

This study received approvals by the Institutional Review Board of the University of Hong Kong/ Hospital Authority Hong Kong West Cluster and all relevant regional and institutional ethics review boards<sup>17</sup>.

## RESULTS

A total of 10,179 patients completed the survey at baseline (response rate of 81.0%). Respondents were recruited from public settings (26.0%) and private settings (74.0%) in alignment with the overall delivery of primary care services in Hong Kong.<sup>18</sup> From the participants of the baseline survey a cohort of 4358 respondents consented to participate in the longitudinal study (response rate of 42.8%) of which 539 screened PHQ-9 positive and 3819 screened PHQ-9 negative. Complete data was available for 518 of the PHQ+ve cohort. The demographic characteristics of the cross-sectional and cohort participants stratified by their PHQ-9 screening status are shown in **Table 1**. In terms of demographic characteristics, the overall cohort sample were marginally older (mean age 49.6 years vs. 49 years); marginally more educated; and there were slightly more females than in the overall baseline sample.

## Prevalence and detection of depression

The cross-sectional prevalence of PHQ+ve screening was 10.69% (95% C.I. 9.71%-11.67%). Amongst the PHQ+ve subjects, study doctors identified 23.1% as having depression. The prevalence of patient self-reported past history of depression diagnosed by a doctor was 6.64%.

## Past help-seeking behaviours

Amongst the cross-sectional survey respondents (N=10,179), 54.1% (n= 5503) overall and 65.6% of those who screened PHQ+ve reported to have sought help from others in the past to cope with their mental health from either friends/family; religious organization; traditional Chinese medicine (TCM) practitioner; community services; GP; psychiatrist; psychologist; social worker; telephone hotline; or 'other not otherwise specified'. From these responses it was observed that 6.9% (n=697) of all respondents and 17.5% of those who screened PHQ+ve reported at least one prior help-seeking action from a healthcare professional (either psychiatrist, psychologist GP, and/ or social worker). A multiple logistic regression identifying the characteristics of patients who had sought help in the past from a psychiatrist, psychologist or GP is shown in **Table 2**. Characteristics of patients who had received

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help in the past from a GP included: lived on Hong Kong Island (relative to living in the New Territories & Outlying Islands; had one or more medical co-morbidities; had a past history of depression or other mental illness; had a PHQ-9 score >9 at baseline; was a public sector patient. Characteristics of patients who had received help from a psychiatrist in the past included: had a past history of depression or other mental illness. Characteristics of patients who had received help mental health care from a psychologist in the past included: younger age; had attained a secondary education or above; non-married (single, divorced or widowed); had a household income >HKD30,000; had a past history of depression or other mental illness. Parallel analyses for social worker could not be reliably estimated due to small group size.

#### Help-seeking preferences and intention to seek help for depression

Amongst the 10,179 cross-sectional survey respondents, 69.6% (n=7080) reported that they would seek help from other people if they thought they were depressed preferring friends and family (46.5%) to a psychiatrist (24.9%), psychologist (22.8%) or a primary care physician (19.9%). Patient's self-reported help-seeking preferences for depression stratified by PHO-9 screening status is shown in **Table 3**. Overall there were no significant differences in the proportion of respondents who screened PHQ-9 positive or negative for any of the healthcare profession categories, however it was observed that those who screened positive for depression were less likely to report that they would seek help from family and friends, but more likely to report that they would seek help from a traditional Chinese medicine practitioner. In relation to the *first hypothesis*, it appears that presence of depressive symptoms may have an impact on patient's intention to seek help from informal and alternative sources but not on their intention to seek help from healthcare professionals.

Characteristics associated with a positive intention to seek help from a healthcare professional (psychiatrist, psychologist, GP or social worker) were identified using logistic regression analysis (Table 4). The most significant predictor of a positive intention to seek help from a healthcare professional was having received help in the past from a healthcare professional. Other demographic factors associated with a positive intention to seek help from a healthcare professional included: higher household income; and family history of mental illness; being female; being aged 18-34 s (compared with being aged >55 year years); higher educational levels; and being married. There was no relationship between PHQ-9 score and intention to seek help from a healthcare professional.

## Predictors for subsequent 12-month mental health service use in patients with depressive symptoms

Baseline respondents who had consented to longitudinal follow-up were receruited into the cohort study and were monitored by telephone interview at 12, 26 and 52 weeks and asked about mental health service use in the previous 3 months. Amongst the cohort sample who had screened PHQ+ve at baseline and who had complete

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follow-up data (N=518), 24.3% (n=126) reported receiving mental health care from a health care professional during the subsequent 12-month follow-up. Cumulatively over 12-months, 21.7% reported that they had consulted a psychiatrist or psychiatric clinic, 11.6% reported to have received psychological treatment or counselling from a GP, and 3.6% from a psychologist. Multiple logistic regression analyses were performed to identify the predictors for subsequent mental health service use from a health care professional (**Table 5**). Predictors included: having a past history of depression or other mental illness; identified as being depressed at baseline by the study doctor; attended a public sector clinic; having received help from a healthcare professional to help with their mental health in the past. In relation to the *second hypothesis*, a positive intention to seek help from a healthcare professional at baseline did not predict subsequent mental health service use and over 12 months, and patients who had indicated a positive intention to seek help from a healthcare professional at baseline did not predict subsequent mental health service use and over 12 months, and patients who had indicated a positive intention to seek help from a healthcare professional at baseline did not predict subsequent mental health service use and over 12 months, and patients who had indicated a positive intention to seek help from a healthcare professional at baseline did not predict subsequent mental health service use and over 12 months, and patients who had indicated a positive intention to seek help from a healthcare professional at baseline to seek help from a healthcare professional at baseline to seek help from a healthcare professional at baseline were not more likely to receive a mental health service.

In relation to the *third hypothesis*, there was no correlation between the PHQ-9 severity and 12-month mental health services and patients with moderately severe or severe symptoms of depression were not more likely to receive a mental health service than those who had only mild or moderate symptoms of depression.

Characteristics of patients who reported having received mental health services from a GP and from a psychiatrist are also shown in **Table 5**. Detection of depression by the primary care doctor was associated with an increased likelihood of receiving 12-month mental health services, however on sub group analysis, detection was not associated with GP-provided mental health services, but was associated with subsequent psychiatrist-provided mental health services. Parallel analyses of health service use from a psychologist or social worker could not be reliably estimated due to small group size and incomplete data.

## DISCUSSION

The purpose of this study was to explore where Chinese primary care patients go to seek help for depression, and to identify the predictors for mental health service. By using a cohort design we were able to test the relationship between intention to seek help and follow the patient over 12 months to see whether or not they subsequently received any mental health services.

# Help-seeking preferences and intention to seek help from a healthcare professional for depression

Our *first hypothesis* was that patients experiencing depressive symptoms are less likely to report a positive intention to seek help from a healthcare professional. On one hand, depression can diminish self-efficacy and make individuals question their ability to accomplish tasks, such as booking a doctor's appointment.<sup>5</sup> On the other hand, depression can cause impairment to quality of life motivating people to seek

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help to alleviate distress. In our study sample, presence of depressive symptoms had no effect on intention to seek help from a healthcare professional. This was similar to a previous study conducted in Hong Kong which found no significant effect of mental health status on help-seeking intention<sup>11</sup>. One possibility is that the social stigma associated with mental illness may be so strong in Chinese culture, that socio-cultural factors have a greater influence on help-seeking intention than actual service need.

Although it was observed that depressive symptoms did not have any effect on intention to seek help from a healthcare professional, our findings revealed that depressive symptoms did affect intention to seek help from family and friends. For most individuals, seeking help from friends and family is less threatening and more readily accessible than seeking professional help and Chinese patients often consult their family to confirm concerns and receive endorsement before seeking professional help.<sup>7</sup> When an individual is not depressed, they may be more optimistic about the effect of family and friends in supporting them to cope with mental health issues. In the presence of a depressed mood however, the associated negative thinking may make individuals less likely to want to share their problems with family and friends as they may feel that they are just an added burden, their perception of the usefulness of family and friends may be altered, or poor quality of life may make them preferentially seek other sources of help.<sup>7</sup>

Although only a small number of subjects reported they would seek help from a Traditional Chinese Medicine (TCM) practitioner, presence of depressive symptoms also appeared to have an effect. This may be related to the nature of TCM which is philosophically more holistic and aims to achieve balance rather than cure. One possibility is that patients who are experiencing depressive symptoms may perceive themselves as feeling 'out of balance' or having a lack of wellbeing, which may make them more likely to report that they would seek help from a TCM practitioner. As many patients in our setting use both western and Chinese medicine, greater exploration is needed to understand why patients may seek TCM help for depression and the role of TCM in the delivery of depression care.

Overall, whilst 70% of respondents reported that they would seek help from others, around 30% appear to not want any outside help. Although this group were not studied in detail, it is apparent that a significant proportion of primary care patients do not intend to seek help from any external source if depressed. The mental health care needs and how this group may be best assisted requires further exploration.

#### Predictors for subsequent 12-month mental health service use

Our *second and third hypotheses* related to predictors for 12-month mental health service utilisation in patients with depressive symptoms. We hypothesised that a positive intention to seek help from a healthcare professional and severity of depression could predict subsequent 12-month mental health service use. From our

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findings however, a positive intention to seek help from a mental health professional and a higher severity of depression had no effect on subsequent mental health service use. Using Ajzen's theory of planned behaviour <sup>6</sup>, an individual's behaviour may be influenced by their own personal beliefs (patient's own attitudes), subjective norms (the social norms) and control beliefs (perceived practical barriers)<sup>6 19</sup>. In our study population, it appears that the patient's intentions regarding help-seeking was an insignificant contributor to subsequent mental health service utilisation. Conversely, identification of depression by a doctor was a very strong predictor for subsequent action. It seems that being told that you have depression by a doctor can enable people who would otherwise not seek help to receive mental health treatments. One explanation is that doctor detection can help patients gain better insight and awareness regarding the need for intervention and are subsequently more open to being treated. Another possibility is that doctor detection facilitates access to care by overcoming some of the practical barriers to treatment such as knowing where to go.

Unfortunately, we found that PHQ severity was not a predictor for subsequent health service utilization and that higher severity of symptoms was not associated with a greater likelihood of receiving subsequent mental health services as hypothesized. This suggests that patients with moderately severe to severe levels of depression, who potentially could benefit the most from mental health interventions, are not more likely to receive mental health services in our setting. Translated to quality of care, this potentially has quite serious repercussions in terms of suicide prevention and poor patient health-related quality of life. It is possible that patients with moderately severe to severe levels of depression are not being adequately identified by doctors and a wider exploration what interventions may help to promote detection, and service uptake for these patients is needed to help reduce the burden of depression in our community.

In the analysis to examine the predictors for 12-month mental health service use it was identified that identification of depression by a primary care doctor was a predictor for subsequent mental health service use, however on further subgroup analysis, no association was found between GP detection and subsequent 12-month GP-provided mental health service use. Instead, GP detection was positively associated with receiving subsequent services from a psychiatrist. This suggests that after patients are diagnosed by the GP, they subsequently receive mental health services from a psychiatrist rather than from the primary care doctor. One possible explanation is that patients in our setting may not be aware that GPs' can play a role in providing mental health services. On the other hand, some GPs may not exhibit sufficient empathy or make efforts to explore patients' psychological problems, making patients less likely to seek treatment from the primary care doctor.<sup>14</sup> The WHO recommends that common mental illness should be treated in primary care and specialist psychiatric services reserved for more severely ill patients.<sup>20</sup> In Hong Kong, the role of the primary care doctor is poorly delineated, and patients can directly consult specialists in the private sector without a GP referral.<sup>14</sup> This has
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significant service implications as patients by-pass the gate-keeping function of the primary care doctor causing further burden to an already stretched specialist psychiatric service sector.<sup>21</sup>

#### Strengths and Weaknesses

This was the first wide scale epidemiological study examining depressive disorders in the Hong Kong's primary care. A major strength of this study was our success in enlisting a large number of primary care doctors to collaborate. Our wide sampling of practice types is reflective of the diverse service options available to patients seeking primary care in Hong Kong.

Our study has a number of notable limitations. Identification of patients with depressive symptoms was based on a screening instrument and not confirmed on a clinical diagnostic interview. We relied on the patient's self-report for collection of information on 12-month mental health service use which incurs a risk of recall bias. It is possible that GPs or other providers may have provided psychological care as part of a general consultation, but that patients did not perceive this as receiving a mental health treatment resulting in an under-estimation of mental health services provided by GPs. Our study was restricted to patients recruited through a primary care research network in Hong Kong, and may not be generalizable to other primary care settings. The cohort sample was self-selected which incurs a risk of self-selection bias. Finally, our study only collected data on patient demographics and preferences for seeking help As we did not include any items to assess personal attitudes to mental health treatments or regarding stigmatism, we were unable to examine the relationship between specific patient attitudes and subsequent health service uptake, which is an area which warrants further study.

#### CONCLUSION

Although much has been written about what influences mental health help-seeking attitudes, much less is known about what influences actual behaviour. Of particular interest to mental health service research is how we can help people who experience mental health problems but who do not receive appropriate medical attention. In Hong Kong, patients prefer to seek help from close family and friends above that of a healthcare professional, and prefer to seek help from a psychiatrist for depression over that of a GP. Almost three quarters of patients experiencing a depressive episode will not receive any mental health services over a year, and patients with more severe symptoms are not more likely to receive medical attention. GPs need to maximize opportunities to enhance the mental health of their patients by improving their detection rates for depression so that delays in initiation of treatment can be reduced.

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## REFERENCES

- 1. Murray C, Vos T, Lozano R, et al. Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet 2012;**380**(9859):2197 223.
- 2. Miller BF, Druss B. The Role of Family Physicians in Mental Health Care Delivery in the United States: Implications for Health Reform. The Journal of the American Board of Family Medicine 2013;**26**(2):111-13.
- 3. Wang PS, Angermeyer M, Borges G, et al. Delay and failure in treatment seeking after first onset of mental disorders in the World Health Organization's World Mental Health Survey Initiative. World psychiatry : official journal of the World Psychiatric Association 2007;**6**(3):177-85.
- 4. Oliver MI, Pearson N, Coe N, et al. Help-seeking behaviour in men and women with common mental health problems: cross-sectional study. The British Journal of Psychiatry 2005;**186**(4):297-301.
- 5. Bell RA, Franks P, Duberstein PR, et al. Suffering in silence: reasons for not disclosing depression in primary care. Ann Fam Med 2011;**9**(5):439-46.
- 6. Schomerus G, Matschinger H, Angermeyer M. Attitudes that determine willingness to seek psychiatric help for depression: a representative population survey applying the Theory of Planned Behaviour. Psychol Med 2009;**39**(11):1855.
- 7. Hui A, Wong P, Fu K-w. Building a model for encouraging help-seeking for depression: a qualitative study in a Chinese society. BMC Psychology 2014;**2**(1):9.
- 8. Coppens E, Van Audenhove C, Scheerder G, et al. Public attitudes toward depression and help-seeking in four European countries baseline survey prior to the OSPI-Europe intervention. J Affect Disord 2013;**150**(2):320-9.
- Kung WW. Cultural and practical barriers to seeking mental health treatment for Chinese Americans. Journal of Community Psychology 2004;32(1):27-43.
- 10. Lee S. Mental health problems in transition: challenges for psychiatry in Hong Kong. Hong Kong Med J 1999;**5**(1):6.
- 11. Mo PKH, Mak WWS. Help-seeking for mental health problems among Chinese. The application and extension of the theory of planned behavior. Social Psychiatry and Psychiatric Epidemiology 2009;**44**(8):675-84.
- 12. Chin W, Chan K, Lam C, et al. Detection and management of depression in adult primary care patients in Hong Kong: a cross-sectional survey conducted by a primary care practice-based research network. BMC Family Practice 2014;**15**(1):30.
- Barbui C, Tansella M. Identification and management of depression in primary care settings. A meta-review of evidence. Epidemiol Psichiatr Soc 2006;15(4):276-83.
- 14. Wun YT, Lam TP, Goldberg D, et al. Reasons for preferring a primary care physician for care if depressed. Fam Med 2011;**43**(5):344-50.
- 15. Lee S. Mental health problems in transition: challenges for psychiatry in Hong Kong. Hong Kong medical journal = Xianggang yi xue za zhi / Hong Kong Academy of Medicine 1999;**5**(1):6-8.

#### **BMJ Open**

Manuscript revision Nov 7 2014

- 16. Lo Y, Lam C, Lam T, et al. Hong Kong primary care morbidity Survey 2007-2008. Hong Kong Practitioner 2010;**32**(1):17-26.
- 17. Chin W, Lam C, Wong S, et al. The epidemiology and natural history of depressive disorders in Hong Kong's primary care. BMC Family Practice 2012;**12**(1):129.
- 18. Food and Health Bureau. My Health My Choice: Healthcare Reform Second Stage Consultation Document. Hong Kong SAR: Government Logistics Department, 2010.
- 19. Ajzen I. The theory of planned behavior. Organ Behav Hum Decis Process 1991;**50**(2):179 211.
- 20. World Health Organization. mhGAP intervention guide for mental, neurologicaland substance use disorders in non-specialized health settings 2010. Secondary mhGAP intervention guide for mental, neurologicaland substance use disorders in non-specialized health settings 2010.

http://whqlibdoc.who.int/publications/2010/9789241548069 eng.pdf.

21. Hong Kong College of Psychiatrists. Submission of the Hong Kong College of Psychiatrists to the Panel on Health Services of the Legislative Council on mental health policy in Hong Kong. Legislative Council Paper No. CB(2)373/07-08(05). Hong Kong, 2007.

#### **BMJ Open**

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## Contributors

CL initially conceived the study. CL, TPL and WYC collectively designed and drafted the study protocol and sought funding and ethical approving. EW led on statistical analyses and contributed to the drafting of the manuscript. CL, TPL, and KC contributed to recruitment and data collection. KC was the project coordinator, recruited and trained the fieldworkers, assisted with recruitment of study doctors, coordinated the data collection, and contributed to the drafting of the manuscript. WYC is PI of the funding application, coordinated the research network and research team, and drafted the manuscript. All authors have read the draft critically and approved the final manuscript.

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Competing interests: None

**Data sharing statement**: Dataset is available on request by emailing the corresponding author at <u>chinwy@hku.hk</u>

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#### Table 1. Characteristics of the cross-sectional and cohort subjects by PHQ-9 status

	Baseline PHQ+ve	Baseline PHQ-ve	Cohort PHQ+ve	Cohort PHQ-ve
	(n=1079)	(n=8791)	(n=518)	(n=3769)
Gender *'				
Female	702 (67.6%)	4896 (56.8%)	353 (68.9%)	2135 (56.9%)
Male	336 (32.4%)	3721 (43.2%)	159 (31.1%)	1620 (43.1%)
Age Group * <sup>†</sup>				
18-34 yrs	316 (31.1%)	2200 (26.0%)	147 (29.0%)	860 (23.1%)
35-54 yrs	371 (36.5%)	3045 (35.9%)	197 (38.9%)	1336 (35.9%)
55+ yrs	329 (32.4%)	3232 (38.1%)	163 (32.1%)	1527 (41.0%)
Education				
Secondary or above	772 (75.0%)	6513 (75.9%)	391 (75.9%)	2834 (75.4%)
Primary or below	258 (25.0%)	2069 (24.1%)	124 (24.1%)	924 (24.6%)
Marital Status **				
Married	354 (34.3%)	2292 (26.7%)	168 (32.7%)	900 (23.9%)
All others (single, divorced, widow)	677 (65.7%)	6289 (73.3%)	346 (67.3%)	2860 (76.1%)
Working Status * <sup>†</sup>				
Employed	583 (57.6%)	5394 (63.5%)	293 (57.9%)	2337 (62.7%)
All others (unemployed, retired, house-maker, student)	430 (42.4%)	3096 (36.5%)	213 (42.1%)	1391 (37.3%)
Household monthly income * <sup>†</sup>				
HKD30,000 (USD3800) or below	676 (75.4%)	4539 (60.6%)	346 (73.9%)	2062 (60.0%)
More than HKD30,000	220 (24.6%)	2950 (39.4%)	122 (26.1%)	1372 (40.0%)
District of residence				
Hong Kong Island	431 (41.9%)	3554 (41.7%)	230 (44.6%)	1618 (43.1%)
Kowloon	227 (220%)	1969 (23.1%)	118 (22.9%)	899 (24.0%)
New Territories & Outlying Islands	372 (36.1%)	3010 (35.3%)	168 (32.6%)	1236 (32.9%)
Service sector *				
Private	761 (70.5%)	6559 (74.6%)	354 (68.3%)	2659 (70.5%)
Public	318 (29.5%)	2232 (25.4%)	164 (31.7%)	1110 (29.5%)
Doctor Identification				
Diagnosed with depression by study doctor at baseline	249 (23.1%)	353 (4.0%)	153 (26.1%)	180 (4.8%)
Presence of Professional HSI				
None	492 (49.1%)	4263 (50.4%)	226 (44.7%)	1680 (45.3%)
At least one	510 (50.9%)	4199 (49.6%)	280 (55.3%)	2030 (54.7%)

Note. Missing value categories are omitted.

\* Proportionately different at *p*<0.05 between Baseline PHQ+ve & Baseline PHQ-ve by Chi-square test.

<sup>+</sup> Proportionately different at *p*<0.05 between Cohort PHQ+ve & Cohort PHQ-ve by Chi-square test. HSI = Health seeking intention (*intention to seek help from a healthcare professional including psychiatrist, psychologist, GP or social worker*) Manuscript revision Nov 7 2014

# Table 2. $\dagger$ Characteristics of patients with past help-seeking actions from a GP, psychiatrist or psychologist

Variable	General		
	Practitioner OR (95% Cl)	Psychiatrist OR (95% Cl)	Psychologist OR (95% Cl)
Gender (Female)			
Male	1.08 (0.80-1.47)	1.30 (0.83-2.04)	0.79 (0.52-1.21)
Age group (18-34 years old)			
35 – 54 years old	0.94 (0.64-1.38)	1.04 (0.60-1.79)	0.76 (0.48-1.20)
55 years old and above	0.93 (0.56-1.53)	0.81 (0.39-1.66)	0.22 (0.09-0.52)*
Education (Secondary and above)			
Primary or no formal education	0.96 (0.63-1.48)	0.71 (0.39-1.30)	0.32 (0.11-0.96)*
Marital status (Married)			
All others <sup>a</sup>	1.32 (0.96-1.81)	1.44 (0.92-2.24)	1.72 (1.10-2.67)*
Employment status (Employed)			
All others <sup>b</sup>	0.96 (0.67-1.37)	1.32 (0.81-2.16)	1.01 (0.61-1.67)
Household monthly income (≤HKD30,000)			
>HKD30,000	1.06 (0.77-1.46)	1.01 (0.63-1.62)	1.73 (1.14-2.62)*
District of residence (Hong Kong Island)			
Kowloon	0.68 (0.47-0.99)*	1.04 (0.62-1.74)	0.80 (0.47-1.35)
New Territories & Outlying Islands	0.59 (0.42-0.83)*	0.74 (0.45-1.23)	0.83 (0.53-1.30)
Physical comorbidities (None)			
At least one	1.51 (1.08-2.12)*	0.67 (0.41-1.09)	1.11 (0.71-1.75)
Family history of mental illness (No)			
Yes	1.42 (0.96-2.09)	1.23 (0.73-2.07)	1.01 (0.58-1.74)
Self-reported diagnosed depression (No)			
Yes	7.45 (5.28-10.52)*	43.85 (27.32-70.38)*	* 7.34 (4.43-12.18)*
Self-reported diagnosed other MI (No)			
Yes	4.25 (2.77-6.52)*	6.88 (4.21-11.26)*	5.32 (3.02-9.35)*
PHQ-9 score at baseline (≤9)			
>9	2.24 (1.59-3.15)*	1.22 (0.75-1.97)	1.00 (0.58-1.72)
Service sector (Public)			
Private	0.47 (0.31-0.71)*	1.27 (0.75-2.18)	0.88 (0.46-1.67)

Note. OR = Odds ratio. Hosmer and Lemeshow Tests suggested adequate model fit for all three models: GP,  $\chi^2$  = 9.973, *p* = 0.267; Psychiatrist,  $\chi^2$  = 10.092, *p* = 0.259; Psychologist,  $\chi^2$  = 4.138, *p* = 0.844.

<sup>a</sup> 'All others' in marital status includes *being single, divorced, or widow*,

<sup>b</sup> 'All others' in employment status includes *being unemployed, retired, house-maker, or student.* 

\* Statistically significant at p < 0.05.

<sup>†</sup>Respondents included all cross-sectional subjects at baseline

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#### Table 3. †Patient help-seeking preferences by PHQ-9 status

	†Overall		Subgroup	
	(n=10179)	PHQ+ve (n=1079)	PHQ-ve (n=8791)	<i>p</i> -value
Friends and family	4738 (46.5%)	444 (41.1%)	4200 (47.8%)	0.001*
Religious organization	852 (8.4%)	90 (8.3%)	740 (8.3%)	0.802
Social worker	1026 (10.1%)	116 (10.8%)	890 (10.1%)	0.304
General practitioner	2023 (19.9%)	216 (20.0%)	1754 (20.0%)	0.541
Community service	313 (3.1%)	41 (3.8%)	267 (3.0%)	0.114
Psychiatrist	2530 (24.9%)	277 (25.7%)	2195 (25.0%)	0.245
Psychologist	2325 (22.8%)	261 (24.2%)	2021 (23.0%)	0.130
Telephone hotline	230 (2.3%)	29 (2.7%)	196 (2.2%)	0.256
Traditional Chinese medicine practitioner	307 (3.9%)	46 (4.3%)	252 (2.9%)	0.006*
Others	81 (0.8%)	6 (0.6%)	74 (0.8%)	0.367

Note. PHQ+ve = PHQ-9 screening score >9; PHQ-ve = PHQ-9 screening score ≤9.

\* Statistically significant at p < 0.05 between groups by Chi-square test.

†Respondents included all cross-sectional subjects at baseline

# Table 4. +Factors associated with patient-reported intention to seek help from a healthcare professional

Variable	Odds Ratio	95% CI Range
Gender (Female)		
Male	0.820*	0.743 - 0.905
Age group (18-34 years old)		
35 – 54 years old	1.095	0.958 - 1.250
55 years old and above	0.679*	0.570 - 0.809
Education (Secondary and above)		
Primary or no formal education	0.657*	0.568 - 0.760
Marital status (Married)		
Being single, divorced, or widow	0.862*	0.770 - 0.965
Employment status (Employed)		
Being unemployed, retired, house-maker, or student	0.935	0.826 - 1.059
Household monthly income (≤HKD30,000)		
>HKD30,000	1.342*	1.206 - 1.492
District of residence (Hong Kong Island)		
Kowloon	0.995	0.875 - 1.130
New Territories & Outlying Islands	1.068	0.951 - 1.200
Physical co-morbidities (None)		
At least one	1.094	0.973 - 1.230
Family history of mental illness (No)		
Yes	1.457*	1.230 - 1.727
Self-reported doctor diagnosed depression (No)		
Yes	0.944	0.739 - 1.206
Self-reported doctor diagnosed other MI (No)		
Yes	0.824	0.596 - 1.138
Presence of past help-seeking action from professional (None)		
At least one	3.400*	2.590 - 4.463
PHQ-9 score at baseline (≤9)		
>9	0.888	0.754 - 1.047
Service sector (Private)		
Public	1.029	0.899 - 1.178

Note. Hosmer and Lemeshow Test suggested adequate model fit,  $\chi^2$  =7.549, *p* = 0.479.

\* Statistically significant at p < 0.05.

† Respondents included all cross-sectional subjects at baseline

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### Table 5. † Factors associated with 12-month subsequent mental health service use

From GP OR (95% CI)	From Psychiatrist OR (95% Cl)	From any healthcare professional <sup>°</sup> OR (95% Cl)
0.58 (0.15-2.21)	1.44 (0.51-4.02)	2.35 (0.92-6.05)
0.41 (0.08-2.25)	0.88 (0.22-3.55)	0.77 (0.22-2.63)
1.31 (0.22-7.67)	1.26 (0.27-5.85)	1.39 (0.34-5.72)
0.21 (0.04-1.11)	0.60 (0.19-1.83)	0.44 (0.14-1.36)
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0.55 (0.15-1.99)	1.00 (0.36-2.76)	0.91 (0.35-2.36)
( / /	( )	( , , , , , , , , , , , , , , , , , , ,
0.88 (0.26-2.97)	0.88 (0.31-2.46)	0.80 (0.30-2.11)
, , , , , , , , , , , , , , , , , , ,		, , , , , , , , , , , , , , , , , , ,
0.76 (0.18-3.18)	0.65 (0.18-2.36)	0.50 (0.16-1.56)
х <i>у</i>		· · · · ·
0.40 (0.10-1.63)	0.93 (0.26-3.27)	2.17 (0.68-6.95)
0.07 (0.01-0.62)*	2.36 (0.78-7.14)	1.65 (0.59-4.57)
· · · · · ·		· · · · ·
0.58 (0.14-2.46)	1.06 (0.32-3.54)	0.51 (0.17-1.55)
( / /	( )	( , , , , , , , , , , , , , , , , , , ,
1.18 (0.30-4.59)	0.93 (0.28-3.15)	0.91 (0.27-3.05)
( / /	( )	( , , , , , , , , , , , , , , , , , , ,
10.88 (2.96-40.01)*	8.86 (3.38-23.22)*	17.86 (6.63-48.12)
	· · · · · ·	,
7.35 (1.50-35.99)*	7.08 (2.05-24.50)*	18.99 (4.66-77.49)
(None)	,	· · · · ·
3.42 (0.98-11.93)	1.13 (0.44-2.89)	1.80 (0.74-4.39)
	( )	( , , , , , , , , , , , , , , , , , , ,
1.37 (0.37-5.04)	2.84 (0.96-8.41)	2.83 (1.07-7.53)*
,	( )	· · · · ·
1.26 (0.41-3.90)	4.02 (1.52-10.62)*	2.85 (1.08-7.49)*
	( )	- (
2.18 (0.72-6.61)	1.28 (0.52-3.14)	1.83 (0.76-4.39)
1.49 (0.44-5.07)	7.25 (2.34-22.48)*	4.21 (1.45-12.20)*
	From GP OR (95% Cl) 0.58 (0.15-2.21) 0.41 (0.08-2.25) 1.31 (0.22-7.67) 0.21 (0.04-1.11) 0.55 (0.15-1.99) 0.88 (0.26-2.97) 0.76 (0.18-3.18) 0.40 (0.10-1.63) 0.07 (0.01-0.62)* 0.58 (0.14-2.46) 1.18 (0.30-4.59) 10.88 (2.96-40.01)* 7.35 (1.50-35.99)* (None) 3.42 (0.98-11.93) 1.37 (0.37-5.04) 1.26 (0.41-3.90) 2.18 (0.72-6.61) 1.49 (0.44-5.07)	From GP OR (95% Cl)From Psychiatrist OR (95% Cl)0.58 (0.15-2.21)1.44 (0.51-4.02)0.41 (0.08-2.25)0.88 (0.22-3.55)1.31 (0.22-7.67)1.26 (0.27-5.85)0.21 (0.04-1.11)0.60 (0.19-1.83)0.55 (0.15-1.99)1.00 (0.36-2.76)0.88 (0.26-2.97)0.88 (0.31-2.46)0.76 (0.18-3.18)0.65 (0.18-2.36)0.40 (0.10-1.63)0.93 (0.26-3.27)0.07 (0.01-0.62)*2.36 (0.78-7.14)0.58 (0.14-2.46)1.06 (0.32-3.54)1.18 (0.30-4.59)0.93 (0.28-3.15)10.88 (2.96-40.01)*8.86 (3.38-23.22)*7.35 (1.50-35.99)*7.08 (2.05-24.50)*(None)3.42 (0.98-11.93)1.13 (0.44-2.89)1.37 (0.37-5.04)2.84 (0.96-8.41)1.26 (0.41-3.90)4.02 (1.52-10.62)*2.18 (0.72-6.61)1.28 (0.52-3.14)1.49 (0.44-5.07)7.25 (2.34-22.48)*

GP model,  $\chi 2 = 10.269$ , p = 0.247; Psychiatrist,  $\chi 2 = 6.369$ , p = 0.606; Any professional,  $\chi 2 = 7.691$ , p = 0.464.

<sup>a</sup> 'All others' in marital status includes being single, divorced, or widow,

<sup>b</sup> 'All others' in employment status includes *being unemployed, retired, house-maker, or student*.

<sup>c</sup>Includes GP, psychiatrist, psychologist, social worker, and other professional.

\* Statistically significant at p < 0.05.

≠ PHQ-9 score: 10-14 = mild to moderately depression; 15-27 = moderately severe to severe depression

 $\ensuremath{\mathsf{T}}$  Respondents included PHQ-screened positive subjects who entered the cohort study

#### STROBE 2007 (v4) checklist of items to be included in reports of observational studies in epidemiology\* Checklist for cohort, case-control, and cross-sectional studies (combined)

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	2
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4
Objectives	3	State specific objectives, including any pre-specified hypotheses	5
Methods			
Study design	4	Present key elements of study design early in the paper	5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5
Participants	6	<ul> <li>(a) Cohort study—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up</li> <li>Case-control study—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls</li> <li>Cross-sectional study—Give the eligibility criteria, and the sources and methods of selection of participants</li> </ul>	5
		(b) Cohort study—For matched studies, give matching criteria and number of exposed and unexposed Case-control study—For matched studies, give matching criteria and the number of controls per case	
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	6
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	6
Bias	9	Describe any efforts to address potential sources of bias	7
Study size	10	Explain how the study size was arrived at	5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6-7
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	6-7
		(b) Describe any methods used to examine subgroups and interactions	6-7
		(c) Explain how missing data were addressed	6-7
		(d) Cohort study—If applicable, explain how loss to follow-up was addressed Case-control study—If applicable, explain how matching of cases and controls was addressed	6-7

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		Cross-sectional study—If applicable, describe analytical methods taking account of sampling strategy	
		(e) Describe any sensitivity analyses	
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	7
		(b) Give reasons for non-participation at each stage	
		(c) Consider use of a flow diagram	
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	17
		(b) Indicate number of participants with missing data for each variable of interest	
		(c) Cohort study—Summarise follow-up time (eg, average and total amount)	
Outcome data	15*	Cohort study—Report numbers of outcome events or summary measures over time	7, 17
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	
		Cross-sectional study—Report numbers of outcome events or summary measures	
Main results	16	( <i>a</i> ) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	7-8, 17-21
		(b) Report category boundaries when continuous variables were categorized	7-8, 17-21
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	7-8, 17-21
Discussion			
Key results	18	Summarise key results with reference to study objectives	9-10
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	10
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	9-11
Generalisability	21	Discuss the generalisability (external validity) of the study results	11
Other information	I		
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	14

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies. **Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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Figure 1. Study design 119x90mm (300 x 300 DPI) **BMJ Open** 

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## Help-seeking intentions and subsequent 12-month mental health service use in Chinese primary care patients with depressive symptoms

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#### ABSTRACT

**Objective:** To identify the factors associated with 12-month mental health service use in primary care patients with depressive symptoms.

Design: Cross-sectional followed by 12-month cohort study.

**Setting and participants**: 10,179 adult patients were recruited from the waiting rooms of 59 primary care clinics across Hong Kong to complete a questionnaire which screened for depression. 518 screened-positive subjects formed the cohort and were telephoned at 3, 6 and 12 months to monitor mental health service use.

#### Primary and secondary outcomes

- Help-seeking preferences
- Intention to seek help from a health care professional
- 12-month mental health service use

#### **Results:**

At baseline, when asked who they would seek help from if they thought they were depressed, respondents preferred using friends and family (46.5%) over a psychiatrist (24.9%), psychologist (22.8%) or GP (19.9%). Presence of depressive symptoms were associated with a lower intention to seek help from family and friends but had no effect on intention to seek help from a healthcare professional. Over 12 months, 24.3% of the screened-positive cohort reported receiving services from a mental health professional. Factors associated with service use included identification of depression by the GP at baseline, having a past history of depression or other mental illness, and being a public-sector patient. Having a positive intention to seek professional help or more severe depressive symptoms at baseline was not associated with a greater likelihood of receiving treatment.

**Conclusion:** Mental health service use appears to be very low in this setting with only one in four primary care patients with depressive symptoms receiving treatment from a psychiatrist, GP or psychologist over a year. To help reduce the burden of illness, better detection of depressive disorders is needed especially for patients who may be under treated such as those with no prior diagnosis of depression and those with more severe symptoms.

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## ARTICLE SUMMARY

## Article focus

- Despite having access to a doctor, many primary care patients experiencing depressive symptoms do not seek professional help for their mental health and fail to be diagnosed or to receive treatment.
- Knowledge about help-seeking attitudes, past patterns of behavior, and other patient characteristics can help contribute to a better understanding of which patients are more likely to receive treatment.

## Key messages

- In this setting, mental health uptake is low with only one in four primary care patients experiencing depressive symptoms receiving mental health services over one year
- The most significant factors associated with receiving mental health services included having a past history of depression or other mental illness, being a patient in the public sector, and being identified as having depression by the GP.
- There is an overuse of specialist services for depression with more patients receiving treatment from a psychiatrist than a GP or psychologist.
- Main limitations: we relied on the patient's self-report for collection of information on help-seeking actions. It is possible that GPs or other providers may have provided psychological care as part of a general consultation, but that patients did not perceive this as receiving a mental health treatment resulting in an under-reporting of mental health service use. The findings are only applicable to our study population any may not reflect the whole of Hong Kong's primary care population

## Strengths and limitations of the study

- Key strengths: subjects were recruited from a wide variety of primary care settings, reflecting the delivery of primary care in Hong Kong, and were monitored prospectively to examine the correlations between intention and subsequent actual behaviour.
- Main limitations: we relied on the patient's self-report for collection of information on help-seeking actions. It is possible that GPs or other providers may have provided psychological care as part of a general consultation, but that patients did not perceive this as receiving a mental health treatment resulting in an under-reporting of mental health service use. The study's findings are only applicable to our study population any may not reflect the whole of Hong Kong's primary care population

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## **INTRODUCTION**

Depression is a common condition affecting quality of life and contributing to the global burden of disease.<sup>1</sup> In many countries, depression is mainly managed in the primary care setting and primary care clinicians are well placed to detect, initiate and coordinate care.<sup>2</sup> Unfortunately, many adults experiencing a depressive episode will not seek help immediately, and worldwide, delays or complete failure in seeking treatment for depression are common.<sup>3</sup> Studies have shown that in those reporting an intention to seek help to overcome depression, most would prefer to receive support from within their social network than from a healthcare provider.<sup>4</sup> As a consequence. even in the primary care setting where patients already have access to a clinician, many patients may not disclose their mood symptoms and subsequently fail to be identified by the doctor as having depression or to receive appropriate medical care.<sup>5</sup>

The decision whether or not to seek help, and who to seek help from, may be influenced by culture, demography, service accessibility, symptom severity and personal attitudes towards mental illness such as the individual's understanding of the illness, their perceived usefulness of treatments and impressions from their own past help-seeking experiences. <sup>6-8</sup> It has been identified that Chinese underutilize mental health services: however low service demand does not necessarily reflect low service need.<sup>9 10</sup>Despite living in a relatively westernized society, the health beliefs and behaviours of most Hong Kong Chinese are strongly influenced by traditional cultural values where emotional problems may not be perceived as an illness and strong stigmatizing attitudes towards mental illness are highly prevalent. <sup>7 11</sup> Aside from personal attitudinal and socio-cultural barriers, there are also many practical barriers to receiving help for mental health. Detection rates for depression are relatively low in primary care <sup>12 13</sup> and access to psycho-social services is difficult due to the user-pay system in the private sector<sup>14</sup>, and long waiting times in the public sector.<sup>1115</sup>

To gain a better understanding about the help-seeking behaviours of Chinese primary care patients, the objectives of this study were to explore where patients prefer to go for psychological care; to identify the factors associated with a positive intention to seek help from a healthcare professional; and to identify the predictors for 12-month mental health service use amongst patients with depressive symptoms.

Our three hypotheses were:

(1) Patients experiencing depressive symptoms are less likely to report a positive intention to seek help from a healthcare professional for their mental health;

(2) In patients experiencing depressive symptoms, a positive intention to seek professional help for mental health is a predictor for subsequent 12-month mental health service use.

(3) Severity of depressive symptoms is a predictor for subsequent 12-month mental health service use.

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## METHOD

This was a cross-sectional followed by a 12-month cohort observational study (Figure 1). It was conducted as part of a larger epidemiological study to examine the naturalistic outcomes of depressive disorders in Hong Kong's primary care.<sup>12 16</sup>

## Subjects & Sampling

Patients were recruited from the waiting rooms of 59 primary care clinicians across Hong Kong and consisted of patients from the private sector, public sector and nongovernmental organisations, reflecting the delivery of primary care services in this setting. The doctors were identified through the mailing list of the Hong Kong College of Family Physicians and joined this study voluntarily as part of a mental health primary care practice-based research network.

All eligible adult patients consulting the study doctor on one randomized day each month over 12 months were consecutively recruited to complete a baseline questionnaire. Subjects who screened positive for depression and who consented to longitudinal follow-up formed the cohort sample and were subsequently monitored by telephone interview at 3, 6 and 12 months. Patients were excluded if they were aged <18 years, unable to communicate in English, Cantonese or Mandarin, or unable to complete the questionnaire due to cognitive difficulties.

## **Study Instruments**

*The Patient Health Questionnaire-9* (PHQ-9): is a nine item questionnaire used to screen, monitor, diagnose and measure the severity of depressive symptoms. A cut-off score >9 was used to define a case of screened-positive depression ('PHQ+ve'). The Chinese version of the PHQ-9 has been validated in Hong Kong amongst 357 adult subjects from 14 primary care clinics using the Chinese Hamilton Depression Scale (CHDS) as the gold standard. Using a cut-off point >9 the PHQ-9 was found to have a sensitivity of 80% and specificity of 92%. The PHQ-9 can also be used to measure severity of symptoms (score 1-4 minimal; 5-9 mild; 10-14 moderate; 15-19 moderately severe; 20-27 severe).<sup>17</sup>

*Items on socio-demography and co-morbidity:* were adapted from previously used health services research surveys on the Hong Kong primary care population.<sup>18</sup>

*Help from others in the past:* To examine past help-seeking behaviours, respondents were asked: "Have you tried any of the following to help you cope with your mental health?" Response options included: friends/family; religious organization; traditional Chinese medicine (TCM) practitioner; community services; GP; psychiatrist; psychologist; social worker; telephone hotline; other (please explain). Respondents were permitted to choose more than one option.

Past help-seeking actions: was defined as a patient's self-report of having received a

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 mental health service from a healthcare professional in the past and was identified by a checked response to the GP, psychiatrist, psychologist or social worker options in the item on 'help from others in the past'.

*Help-seeking preferences.* To examine help-seeking preferences, respondents were asked: "Given a choice, if you had depression, which of the following would you prefer to seek help from?" Response options included: friends/family; religious organization; traditional Chinese medicine (TCM) practitioner; community services; GP; psychiatrist; psychologist; social worker; telephone hotline; other (please explain). Respondents were permitted to choose more than one option.

Intention to seek help from a healthcare professional was defined as a patient's selfreported intention to seek help from a health care professional if they thought they were depressed and was identified as checked response to the GP, psychiatrist, psychologist or social worker options in the item on 'help-seeking preferences'.

Subsequent 12-month mental health service use. Subjects who consented to longitudinal follow up were telephoned at 12, 26 and 52 weeks to monitor for subsequent mental health service use. Respondents were asked to report whether they had received a mental health treatment or psychological counselling from a psychiatrist, GP, psychologist or social worker in the previous 3 months. The subset of the cohort sample who had screened positive for depression at baseline was used to identify predictors for 12-month mental health service use.

*Doctor's case report form.* At baseline, study doctors blinded to their patient's PHQ-9 screening scores were asked to document on a case report form whether or not they thought their patient had depression. This was used to examine detection rates for depression.

## Analysis

Using a PHQ-9 cut-off score of >9 to define a screened positive case, the prevalence of depression was estimated with a 95% confidence interval taking into account the clustering effect by study doctor.

Proportional differences in help-seeking between the patient subgroups that screened PHQ-9 positive and negative were examined using Chi-square tests of independence.

Multiple logistic regression analyses were conducted to inspect the predictive significance of each of the patient demographic variables and self-reported clinical characteristics towards (i) positive intention to seek help from a healthcare professional (reported at baseline), (ii) having received psychological help from a psychiatrist, psychologist, GP or social worker in the past (reported at baseline), and (iii) use of mental health services during the 12-month follow-up period (among the subset of follow-up cohort who screened PHQ-9 positive at baseline). In view of the relatively large sample size and possible data distortion with using missing data

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treatments, complete-case analysis was adopted for all regression models. All patient variables were entered in a single block and all were retained in the final model since the purpose of this study is not to build the most parsimonious predictive models. Nevertheless, the Hosmer and Lemeshow test statistics were reported to show how well each model fit the data, with a non-significant Chi-square goodness of fit at p > 0.05 to indicate an adequate model fit. The statistical software SPSS v.21 was used for all quantitative analysis.

### **Sample Size Calculation**

A previous literature showed that 33% of people with mental disorders were treated in the United States<sup>19</sup>. Applying a well-known rule of thumb (one in ten rule)<sup>20</sup> and with a total of 16 potential predictors considered, at least 485 patients were needed to evaluate the predictors for 12-month mental health service use. The full study protocol including sample size calculations for the larger epidemiological study has been previously published.<sup>16</sup>

## **Ethics Approval**

This study received approvals by the Institutional Review Board of the University of Hong Kong/ Hospital Authority Hong Kong West Cluster and all relevant regional and institutional ethics review boards<sup>16</sup>.

## RESULTS

A total of 10,179 patients completed the survey at baseline (response rate of 81.0%). Respondents were recruited from public settings (26.0%) and private settings (74.0%) in alignment with the overall delivery of primary care services in Hong Kong.<sup>21</sup> From the participants of the baseline survey, 4358 respondents consented to longitudinal follow-up (response rate of 42.8%) consisting of 539 subjects who screened PHQ-9 positive ('PHQ+ve') and 3819 subjects who screened PHQ-9 negative ('PHQ-ve'). Complete data was available for 518 of the PHQ+ve subjects forming the cohort sample for analysis. The demographic characteristics of the cross-sectional and cohort subjects stratified by their PHQ-9 screening status are shown in **Table 1**. In terms of demographic characteristics, the overall cohort sample was marginally older (mean age 49.6 years vs. 49 years); marginally more educated; and there were slightly more females than in the overall baseline sample. In terms of severity, 68.1% of the PHQ+ve cohort were categorized as being of moderate severity (PHQ-9 score 10-14), and 31.9% were categorized as being moderately-severe or severe (PHQ-9 scores 15-19 and 20-27).

### Prevalence and detection of depression

The cross-sectional prevalence of PHQ+ve screening was 10.69% (95% C.I. 9.71%-11.67%). Amongst the PHQ+ve subjects, study doctors identified 23.1% as having depression. The prevalence of patient self-reported past history of depression

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diagnosed by a doctor was 6.64%.

## Past help-seeking behaviours

Amongst the cross-sectional survey respondents (N=10,179), 54.1% (n=5503) overall and 65.6% of those who screened PHO+ve reported to have sought help from others in the past to cope with their mental health from either friends/family; religious organization; traditional Chinese medicine (TCM) practitioner; community services; GP; psychiatrist; psychologist; social worker; telephone hotline; or 'other not otherwise specified'. From these responses it was observed that 6.9% (n=697) of all respondents and 17.5% of those who screened PHQ+ve reported at least one prior help-seeking action from a healthcare professional (either psychiatrist, psychologist GP, and/ or social worker). A multiple logistic regression identifying the characteristics of patients who had sought help in the past from a psychiatrist, psychologist or GP is shown in Table 2. Characteristics of patients who had received help in the past from a GP included: lived on Hong Kong Island (relative to living in the New Territories & Outlying Islands; had one or more medical co-morbidities; had a past history of depression or other mental illness; had a PHQ-9 score >9 at baseline; was a public sector patient. Characteristics of patients who had received help from a psychiatrist in the past included: had a past history of depression or other mental illness. Characteristics of patients who had received mental health care from a psychologist in the past included: younger age; had attained a secondary education or above; non-married (single, divorced or widowed); had a household income >HKD30,000; had a past history of depression or other mental illness. Parallel analyses for social worker could not be reliably estimated due to small group size.

#### Help-seeking preferences and intention to seek help for depression

Amongst the 10,179 cross-sectional survey respondents, 69.6% (n=7080) reported that they would seek help from other people if they thought they were depressed preferring friends and family (46.5%) to a psychiatrist (24.9%), psychologist (22.8%) or a primary care physician (19.9%). Patient's self-reported help-seeking preferences for depression stratified by PHQ-9 screening status is shown in **Table 3**. Overall there were no significant differences in the proportion of respondents who screened PHQ-9 positive or negative for any of the healthcare profession categories, however it was observed that those who screened positive for depression were less likely to report that they would seek help from family and friends, but more likely to report that they would seek help from family and friends, but more likely to report that they mould seek help from a traditional Chinese medicine practitioner. In relation to the *first hypothesis*, it appears that presence of depressive symptoms may have an impact on patient's intention to seek help from informal and alternative sources but not on their intention to seek help from healthcare professionals.

Characteristics associated with a positive intention to seek help from a healthcare professional (psychiatrist, psychologist, GP or social worker) were identified using logistic regression analysis (**Table 4**). The most significant predictor of a positive intention to seek help from a healthcare professional was having received help in the

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past from a healthcare professional. Other demographic factors associated with a positive intention to seek help from a healthcare professional included: higher household income; family history of mental illness; being female; being aged 18-34 years (compared with being aged >55 years); higher educational levels; and being married. There was no relationship between PHQ-9 score and intention to seek help from a healthcare professional.

# Predictors for subsequent 12-month mental health service use in patients with depressive symptoms

Baseline respondents who had consented to longitudinal follow-up were recruited into the cohort study and were monitored by telephone interview at 12, 26 and 52 weeks and asked about mental health service use in the previous 3 months. Amongst the cohort sample who had screened PHQ+ve at baseline and who had complete followup data (N=518), 24.3% (n=126) reported receiving mental health care from a health care professional during the subsequent 12-month follow-up. Cumulatively over 12months, 21.7% reported that they had consulted a psychiatrist or psychiatric clinic, 11.6% reported to have received psychological treatment or counselling from a GP, and 3.6% from a psychologist. Multiple logistic regression analyses were performed to identify the predictors for subsequent mental health service use from a health care professional (Table 5). Predictors included: having a past history of depression or other mental illness; identified as being depressed at baseline by the study doctor; attended a public sector clinic; having received help from a healthcare professional to help with their mental health in the past. In relation to the second hypothesis, a positive intention to seek help from a healthcare professional at baseline did not predict subsequent mental health service use and over 12 months, and there was no association between a positive intention to seek help from a healthcare professional at baseline and subsequent 12-month mental health service use.

In relation to the *third hypothesis*, there was no correlation between the PHQ-9 severity and 12-month mental health services and patients with moderately severe or severe symptoms of depression were not more likely to receive a mental health service than those who had only mild or moderate symptoms of depression.

Characteristics of patients who reported having received mental health services from a GP and from a psychiatrist are also shown in **Table 5**. Detection of depression by the primary care doctor was associated with an increased likelihood of receiving 12-month mental health services, however on sub group analysis, detection was not associated with subsequent GP-provided mental health services, but was associated with subsequent psychiatrist-provided mental health services. Parallel analyses of health service use from a psychologist or social worker could not be reliably estimated due to small group size and incomplete data.

## DISCUSSION

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The purpose of this study was to explore where Chinese primary care patients go to seek help for depression, and to identify the predictors for mental health service. By using a cohort design we were able to examine the factors associated with 12-month mental health service use and test the relationship between intention to seek help and subsequent service uptake.

# Help-seeking preferences and intention to seek help from a healthcare professional for depression

Our *first hypothesis* was that patients experiencing depressive symptoms are less likely to report a positive intention to seek help from a healthcare professional. On one hand, depression can diminish self-efficacy and make individuals question their ability to accomplish tasks, such as booking a doctor's appointment.<sup>5</sup> On the other hand, depression can cause impairment to quality of life motivating people to seek help to alleviate their distress. In our study sample, presence of depressive symptoms had no effect on intention to seek help from a healthcare professional. This was similar to a previous study conducted in Hong Kong which found no significant effect of mental health status on help-seeking intention<sup>11</sup>. One possibility is that the social stigma associated with mental illness may be so strong in Chinese culture, that socio-cultural factors have a greater influence on help-seeking intention than actual service need.

Although it was observed that depressive symptoms did not have any effect on intention to seek help from a healthcare professional, our findings revealed that depressive symptoms did affect intention to seek help from family and friends. For most individuals, seeking help from friends and family is less threatening and more readily accessible than seeking professional help and Chinese patients often consult their family to confirm concerns and receive endorsement before seeking professional help.<sup>7</sup> When an individual is not depressed, they may be more optimistic about the effect of family and friends in supporting them to cope with mental health issues. In the presence of a depressed mood however, the associated negative thinking may make individuals less likely to want to share their problems with family and friends as they may feel that they are just an added burden, their perception of the usefulness of family and friends may be altered, or poor quality of life may make them preferentially seek other sources of help.<sup>7</sup>

Although only a small number of subjects reported they would seek help from a Traditional Chinese Medicine (TCM) practitioner, presence of depressive symptoms also appeared to have an effect. This may be related to the nature of TCM which is philosophically more holistic and aims to achieve balance rather than cure. One possibility is that patients who are experiencing depressive symptoms may perceive themselves as feeling 'out of balance' or having a lack of wellbeing, which may make them more likely to report that they would seek help from a TCM practitioner. As many patients in our setting use both western and Chinese medicine, greater

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exploration is needed to understand why patients may prefer to seek help from a TCM practitioner for depression and the role of TCM in the delivery of depression care.

Overall, whilst 70% of respondents reported that they would seek help from others, around 30% appear to not want any outside help. Although this group were not studied in detail, it is apparent that a significant proportion of primary care patients do not intend to seek help from any external source if depressed. The mental health care needs and how this group may be best assisted requires further exploration.

### Predictors for subsequent 12-month mental health service use

Our second and third hypotheses related to predictors for 12-month mental health service utilisation in patients with depressive symptoms. We hypothesised that a positive intention to seek help from a healthcare professional and severity of depression could predict subsequent 12-month mental health service use. From our findings however, a positive intention to seek help from a mental health professional and a higher severity of depression had no effect on subsequent mental health service use. Using Ajzen's theory of planned behaviour <sup>6</sup>, an individual's behaviour may be influenced by their own personal beliefs (patient's own attitudes), subjective norms (the social norms) and control beliefs (perceived practical barriers) $^{622}$ . In our study population, it appears that the patient's intentions regarding help-seeking was an insignificant contributor to subsequent mental health service utilisation. Conversely, identification of depression by a doctor was a very strong predictor for subsequent action. It seems that being told that you have depression by a doctor can enable people who would otherwise not seek help to receive mental health treatments. One explanation is that doctor detection can help patients gain better insight and awareness regarding the need for intervention and are subsequently more open to being treated. Another possibility is that doctor detection facilitates access to care by overcoming some of the practical barriers to treatment such as knowing where to go.

Unfortunately, we found that PHQ severity was not a predictor for subsequent health service utilization and that higher severity of symptoms at baseline was not associated with a greater likelihood of receiving subsequent mental health services as hypothesized. This suggests that patients with moderately severe to severe depressive symptoms, who potentially could benefit the most from mental health interventions, are not more likely to receive mental health services in our setting. Translated to quality of care, this potentially has quite serious repercussions in terms of suicide prevention and poor quality of life. It is possible that patients with moderately severe to severe levels of depression are not being adequately identified by doctors and a wider exploration what interventions may help to promote detection, and service uptake for these patients is needed to help reduce the burden of depressive illnesses in our community.

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In the analyses of the factors associated with 12-month mental health service use it was identified that detection of depression by a primary care doctor at baseline was associated with subsequent mental health service use, however on further subgroup analysis, no association was found between GP detection and subsequent 12-month GP-provided mental health service use. Instead, GP detection was positively associated with receiving specialist psychiatric services. This suggests that after patients are diagnosed by the GP, they subsequently receive mental health services from a psychiatrist rather than from the primary care doctor. One possible explanation is that the respondents in this study were not aware that their GP provided a mental health service. On the other hand, some GPs may not have exhibited sufficient empathy or skill in treating the patient's mood disturbance, causing them to seek treatment from other sources.<sup>14</sup> The WHO recommends that common mental illness should be treated in primary care and specialist psychiatric services reserved for more severely ill patients.<sup>23</sup> In Hong Kong, the role of the primary care doctor is poorly delineated, and patients can directly consult specialists in the private sector without a GP referral.<sup>14</sup> This has significant service implications as many patients by-pass the gate-keeping function of the primary care doctor causing further burden to an already stretched specialist psychiatric service sector where the population to specialist ratio is approximately 1:44,202.<sup>24</sup> A closer examination of management practices by GPs may be warranted to identify whether it is feasible to transfer the delivery of care for depressive illnesses away from the specialist sector and into the primary care sector.

#### Strengths and Weaknesses

This was the first wide scale epidemiological study examining depressive disorders in the Hong Kong's primary care. A major strength of this study was our success in enlisting a large number of primary care doctors to collaborate. Our wide sampling of practice types is reflective of the diverse service options available to patients seeking primary care in Hong Kong.

Our study has a number of notable limitations. Identification of patients with depressive symptoms was based on a screening instrument and a clinical diagnosis of depression was not confirmed by diagnostic interview. We relied on the patient's self-report for collection of information on 12-month mental health service use which incurs a risk of recall bias. It is possible that GPs or other providers may have provided psychological care as part of a general consultation, but that patients did not perceive this as receiving a mental health treatment resulting in an under-estimation of mental health services provided by GPs. Our study was restricted to patients recruited through a primary care research network in Hong Kong, and may not be generalizable to other primary care settings. The cohort sample was self-selected which incurs a risk of self-selection bias. The findings are only applicable to our study population any may not reflect the whole of Hong Kong's primary care population. Finally, our study only collected data on patient demographics and preferences for seeking help. As we did not include any items to assess personal attitudes to mental

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health treatments or regarding stigmatism, we were unable to examine the relationship between specific patient attitudes and subsequent health service uptake, which is an area which warrants further study.

#### CONCLUSION

Although much has been written about what influences mental health help-seeking attitudes, much less is known about what influences actual behaviour. Of particular interest to mental health service research is how we can help people who experience mental health problems but who do not receive appropriate medical attention. In Hong Kong, patients prefer to seek help from close family and friends above that of a healthcare professional, and prefer to seek help from a psychiatrist for depression over that of a GP. Almost three quarters of patients experiencing a depressive episode will not receive any mental health services over a year, and patients with more severe symptoms are not more likely to receive medical attention. GPs need to maximize opportunities to enhance the mental health of their patients by improving their detection rates for depression so that delays in initiation of treatment can be reduced.

### REFERENCES

- 1. Murray C, Vos T, Lozano R, et al. Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet 2012;**380**(9859):2197 223.
- 2. Miller BF, Druss B. The Role of Family Physicians in Mental Health Care Delivery in the United States: Implications for Health Reform. The Journal of the American Board of Family Medicine 2013;**26**(2):111-13.
- 3. Wang PS, Angermeyer M, Borges G, et al. Delay and failure in treatment seeking after first onset of mental disorders in the World Health Organization's World Mental Health Survey Initiative. World psychiatry : official journal of the World Psychiatric Association 2007;6(3):177-85.
- 4. Oliver MI, Pearson N, Coe N, et al. Help-seeking behaviour in men and women with common mental health problems: cross-sectional study. The British Journal of Psychiatry 2005;**186**(4):297-301.
- 5. Bell RA, Franks P, Duberstein PR, et al. Suffering in silence: reasons for not disclosing depression in primary care. Ann Fam Med 2011;**9**(5):439-46.
- 6. Schomerus G, Matschinger H, Angermeyer M. Attitudes that determine willingness to seek psychiatric help for depression: a representative population survey applying the Theory of Planned Behaviour. Psychol Med 2009;**39**(11):1855.
- 7. Hui A, Wong P, Fu K-w. Building a model for encouraging help-seeking for depression: a qualitative study in a Chinese society. BMC Psychology 2014;**2**(1):9.
- 8. Coppens E, Van Audenhove C, Scheerder G, et al. Public attitudes toward depression and help-seeking in four European countries baseline survey prior to the OSPI-Europe intervention. J Affect Disord 2013;**150**(2):320-9.

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- Kung WW. Cultural and practical barriers to seeking mental health treatment for Chinese Americans. Journal of Community Psychology 2004;32(1):27-43.
- 10. Lee S. Mental health problems in transition: challenges for psychiatry in Hong Kong. Hong Kong Med J 1999;**5**(1):6.
- 11. Mo PKH, Mak WWS. Help-seeking for mental health problems among Chinese. The application and extension of the theory of planned behavior. Social Psychiatry and Psychiatric Epidemiology 2009;**44**(8):675-84.
- 12. Chin W, Chan K, Lam C, et al. Detection and management of depression in adult primary care patients in Hong Kong: a cross-sectional survey conducted by a primary care practice-based research network. BMC Family Practice 2014;**15**(1):30.
- 13. Barbui C, Tansella M. Identification and management of depression in primary care settings. A meta-review of evidence. Epidemiol Psichiatr Soc 2006;**15**(4):276-83.
- 14. Wun YT, Lam TP, Goldberg D, et al. Reasons for preferring a primary care physician for care if depressed. Fam Med 2011;**43**(5):344-50.
- 15. Lee S. Mental health problems in transition: challenges for psychiatry in Hong Kong. Hong Kong medical journal = Xianggang yi xue za zhi / Hong Kong Academy of Medicine 1999;5(1):6-8.
- 16. Chin W, Lam C, Wong S, et al. The epidemiology and natural history of depressive disorders in Hong Kong's primary care. BMC Family Practice 2012;**12**(1):129.
- 17. Kroenke K, Spitzer R, Williams J. The PHQ-9: validity of a brief depression severity measure. J Gen Intern Med 2001;**16**(9):606 13.
- 18. Lo Y, Lam C, Lam T, et al. Hong Kong primary care morbidity Survey 2007-2008. Hong Kong Practitioner 2010;**32**(1):17-26.
- 19. Chisholm D, Flisher A, Lund C, et al. Scale up services for mental disorders: a call for action. The Lancet 2007;**370**(9594):1241-52.
- 20. Peduzzi P, Concato J, Kemper E, et al. A simulation study of the number of events per variable in logistic regression analysis. Journal of clinical epidemiology 1996;**49**(12):1373-79.
- 21. Food and Health Bureau. My Health My Choice: Healthcare Reform Second Stage Consultation Document. Hong Kong SAR: Government Logistics Department, 2010.
- 22. Ajzen I. The theory of planned behavior. Organ Behav Hum Decis Process 1991;**50**(2):179 211.
- 23. World Health Organization. mhGAP intervention guide for mental, neurologicaland substance use disorders in non-specialized health settings 2010. Secondary mhGAP intervention guide for mental, neurologicaland substance use disorders in non-specialized health settings 2010.

http://whqlibdoc.who.int/publications/2010/9789241548069 eng.pdf.

24. Hong Kong College of Psychiatrists. Submission of the Hong Kong College of Psychiatrists to the Panel on Health Services of the Legislative Council on mental health policy in Hong Kong. Legislative Council Paper No. CB(2)373/07-08(05). Hong Kong, 2007.

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#### Contributors

CL initially conceived the study. CL, TPL and WYC collectively designed and drafted the study protocol and sought funding and ethical approving. EW led on statistical analyses and contributed to the drafting of the manuscript. CL, TPL, and KC contributed to recruitment and data collection. KC was the project coordinator, recruited and trained the fieldworkers, assisted with recruitment of study doctors, coordinated the data collection, and contributed to the drafting of the manuscript. WYC is PI of the funding application, coordinated the research network and research team, and drafted the manuscript. All authors have read the draft critically and approved the final manuscript.

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Competing interests: None

**Data sharing statement**: Dataset is available on request by emailing the corresponding author at <u>chinwy@hku.hk</u>

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#### Table 1. Characteristics of the cross-sectional and cohort subjects by PHQ-9 status

	Baseline PHQ+ve	Baseline PHQ-ve	Cohort PHQ+ve	Cohort PHQ-ve
	(n=1079)	(n=8791)	(n=518)	(n=3769)
Gender * <sup>†</sup>				
Female	702 (67.6%)	4896 (56.8%)	353 (68.9%)	2135 (56.9%)
Male	336 (32.4%)	3721 (43.2%)	159 (31.1%)	1620 (43.1%)
Age Group * <sup>†</sup>				
18-34 yrs	316 (31.1%)	2200 (26.0%)	147 (29.0%)	860 (23.1%)
35-54 yrs	371 (36.5%)	3045 (35.9%)	197 (38.9%)	1336 (35.9%)
55+ yrs	329 (32.4%)	3232 (38.1%)	163 (32.1%)	1527 (41.0%)
Education				
Secondary or above	772 (75.0%)	6513 (75.9%)	391 (75.9%)	2834 (75.4%)
Primary or below	258 (25.0%)	2069 (24.1%)	124 (24.1%)	924 (24.6%)
Marital Status **				
Married	354 (34.3%)	2292 (26.7%)	168 (32.7%)	900 (23.9%)
All others (single, divorced, widow)	677 (65.7%)	6289 (73.3%)	346 (67.3%)	2860 (76.1%)
Working Status * <sup>†</sup>				
Employed	583 (57.6%)	5394 (63.5%)	293 (57.9%)	2337 (62.7%)
All others (unemployed, retired,	130 (12 1%)	3006 (36 5%)	213 (12 1%)	1301 (37 3%)
house-maker, student)	400 (42.470)	0000 (00.070)	210 (42.170)	1001 (01.070)
Household monthly income *'				
HKD30,000 (USD3800) or below	676 (75.4%)	4539 (60.6%)	346 (73.9%)	2062 (60.0%)
More than HKD30,000	220 (24.6%)	2950 (39.4%)	122 (26.1%)	1372 (40.0%)
District of residence				
Hong Kong Island	431 (41.9%)	3554 (41.7%)	230 (44.6%)	1618 (43.1%)
Kowloon	227 (220%)	1969 (23.1%)	118 (22.9%)	899 (24.0%)
New Territories & Outlying Islands	372 (36.1%)	3010 (35.3%)	168 (32.6%)	1236 (32.9%)
Service sector *				
Private	761 (70.5%)	6559 (74.6%)	354 (68.3%)	2659 (70.5%)
Public	318 (29.5%)	2232 (25.4%)	164 (31.7%)	1110 (29.5%)
Doctor Identification				
Diagnosed with depression by study	/ 249 (23.1%)	353 (4.0%)	153 (26.1%)	180 (4.8%)
doctor at baseline				
None	402 (40 1%)	4263 (50 4%)	226 (11 7%)	1680 (45 3%)
At least one	492 (49.1%) 510 (50.0%)	4203 (30.4%)	220 (44.7%)	2020 (54.7%)
	510 (50.9%)	4199 (49.0%)	280 (35.3%)	2030 (34.7%)
				2657 (70 59/)
Mild (5.0)	-	0221(70.0%)	-	2057 (70.5%)
wiiu (5-9)	-	2310 (29.2%)	-	1112 (29.3%)
Moderate (10-14)	759 (70.3%)	-	353 (68.1%)	-
Moderately-severe (15-19)	235 (21.8%)	-	118 (22.8%)	-
Severe (20-27)	85 (7.9%)	-	47 (9.1%)	-

Note. Missing value categories are omitted.

HSI = Health seeking intention (*intention to seek help from a healthcare professional including psychiatrist, psychologist, GP or social worker*)

\* Proportionately different at p<0.05 between Baseline PHQ+ve & Baseline PHQ-ve by Chi-square test.

<sup>+</sup> Proportionately different at *p*<0.05 between Cohort PHQ+ve & Cohort PHQ-ve by Chi-square test.

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Table 2. +Characteristics of patients with past help-seeking actions from a GP,psychiatrist or psychologist

Variable	General		
	Practitioner OR (95% CI)	Psychiatrist OR (95% Cl)	Psychologist OR (95% Cl)
Gender (Female)			
Male	1.08 (0.80-1.47)	1.30 (0.83-2.04)	0.79 (0.52-1.21)
Age group (18-34 years old)			
35 – 54 years old	0.94 (0.64-1.38)	1.04 (0.60-1.79)	0.76 (0.48-1.20)
55 years old and above	0.93 (0.56-1.53)	0.81 (0.39-1.66)	0.22 (0.09-0.52)*
Education (Secondary and above)			
Primary or no formal education	0.96 (0.63-1.48)	0.71 (0.39-1.30)	0.32 (0.11-0.96)*
Marital status (Married)			
All others <sup>a</sup>	1.32 (0.96-1.81)	1.44 (0.92-2.24)	1.72 (1.10-2.67)*
Employment status (Employed)			
All others <sup>b</sup>	0.96 (0.67-1.37)	1.32 (0.81-2.16)	1.01 (0.61-1.67)
Household monthly income (≤HKD30,000)			
>HKD30,000	1.06 (0.77-1.46)	1.01 (0.63-1.62)	1.73 (1.14-2.62)*
District of residence (Hong Kong Island)			
Kowloon	0.68 (0.47-0.99)*	1.04 (0.62-1.74)	0.80 (0.47-1.35)
New Territories & Outlying Islands	0.59 (0.42-0.83)*	0.74 (0.45-1.23)	0.83 (0.53-1.30)
Physical comorbidities (None)			
At least one	1.51 (1.08-2.12)*	0.67 (0.41-1.09)	1.11 (0.71-1.75)
Family history of mental illness (No)			
Yes	1.42 (0.96-2.09)	1.23 (0.73-2.07)	1.01 (0.58-1.74)
Self-reported diagnosed depression (No)			
Yes	7.45 (5.28-10.52)*	43.85 (27.32-70.38)*	* 7.34 (4.43-12.18)*
Self-reported diagnosed other MI (No)			
Yes	4.25 (2.77-6.5 <mark>2</mark> )*	6.88 (4.21-11.26)*	5.32 (3.02-9.35)*
PHQ-9 score at baseline (≤9)			
>9	2.24 (1.59-3.15)*	1.22 (0.75-1.97)	1.00 (0.58-1.72)
Service sector (Public)			
Private	0.47 (0.31-0.71)*	1.27 (0.75-2.18)	0.88 (0.46-1.67)
Note. Brackets indicate reference categories			

OR = Odds ratio.

Hosmer and Lemeshow Tests suggested adequate model fit for all three models: GP,  $\chi^2 = 9.973$ , p =

0.267; Psychiatrist,  $\chi^2 = 10.092$ , p = 0.259; Psychologist,  $\chi^2 = 4.138$ , p = 0.844.

<sup>a</sup> 'All others' in Marital status includes being single, divorced, or widow,

<sup>b</sup> 'All others' in Employment status includes *being unemployed, retired, house-maker, or student.* 

\* Statistically significant at p < 0.05.

<sup>†</sup>Respondents included all cross-sectional subjects at baseline

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#### Table 3. †Patient help-seeking preferences by PHQ-9 status

	†Overall		Subgroup	
	(n=10179)	PHQ+ve (n=1079)	PHQ-ve (n=8791)	<i>p</i> -value
Friends and family	4738 (46.5%)	444 (41.1%)	4200 (47.8%)	0.001*
Religious organization	852 (8.4%)	90 (8.3%)	740 (8.3%)	0.802
Social worker	1026 (10.1%)	116 (10.8%)	890 (10.1%)	0.304
General practitioner	2023 (19.9%)	216 (20.0%)	1754 (20.0%)	0.541
Community service	313 (3.1%)	41 (3.8%)	267 (3.0%)	0.114
Psychiatrist	2530 (24.9%)	277 (25.7%)	2195 (25.0%)	0.245
Psychologist	2325 (22.8%)	261 (24.2%)	2021 (23.0%)	0.130
Telephone hotline	230 (2.3%)	29 (2.7%)	196 (2.2%)	0.256
Traditional Chinese medicine practitioner	307 (3.9%)	46 (4.3%)	252 (2.9%)	0.006*
Others	81 (0.8%)	6 (0.6%)	74 (0.8%)	0.367

Note. PHQ+ve = PHQ-9 screening score >9; PHQ-ve = PHQ-9 screening score  $\leq$ 9.

\* Statistically significant at p < 0.05 between groups by Chi-square test.

† Respondents included all cross-sectional subjects at baseline

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## Table 4. $\dagger$ Factors associated with patient-reported intention to seek help from a healthcare professional

Variable	Odds Ratio	95% Cl Range
Gender (Female)		
Male	0.820*	0.743 - 0.905
Age group (18-34 years old)		
35 – 54 years old	1.095	0.958 - 1.250
55 years old and above	0.679*	0.570 - 0.809
Education (Secondary and above)		
Primary or no formal education	0.657*	0.568 - 0.760
Marital status (Married)		
Being single, divorced, or widow	0.862*	0.770 - 0.965
Employment status (Employed)		
Being unemployed, retired, house-maker, or student	0.935	0.826 - 1.059
Household monthly income (≤HKD30,000)		
>HKD30,000	1.342*	1.206 - 1.492
District of residence (Hong Kong Island)		
Kowloon	0.995	0.875 - 1.130
New Territories & Outlying Islands	1.068	0.951 - 1.200
Physical co-morbidities (None)		
At least one	1.094	0.973 - 1.230
Family history of mental illness (No)		
Yes	1.457*	1.230 - 1.727
Self-reported doctor diagnosed depression (No)		
Yes	0.944	0.739 - 1.206
Self-reported doctor diagnosed other MI (No)		
Yes	0.824	0.596 - 1.138
Presence of past help-seeking action from professional (None)		
At least one	3.400*	2.590 - 4.463
PHQ-9 score at baseline (≤9)		
>9	0.888	0.754 - 1.047
Service sector (Private)		
Public	1.029	0.899 - 1.178
Note. Brackets indicate reference categories.		

Hosmer and Lemeshow Test suggested adequate model fit,  $\chi^2$  =7.549, p = 0.479.

\* Statistically significant at p < 0.05.

†Respondents included all cross-sectional subjects at baseline

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#### Table 5. † Factors associated with 12-month subsequent mental health service use

Variable	From GP OR (95% Cl)	From Psychiatrist OR (95% Cl)	From any healthcare professional <sup>c</sup> OR (95% Cl)
Gender (Female)			
Male	0.58 (0.15-2.21)	1.44 (0.51-4.02)	2.35 (0.92-6.05)
Age group (18-34 years old)			
35 – 54 years old	0.41 (0.08-2.25)	0.88 (0.22-3.55)	0.77 (0.22-2.63)
55 years old and above	1.31 (0.22-7.67)	1.26 (0.27-5.85)	1.39 (0.34-5.72)
Education (Secondary and above)			
Primary or no formal education	0.21 (0.04-1.11)	0.60 (0.19-1.83)	0.44 (0.14-1.36)
Marital status (Married)			
All others <sup>a</sup>	0.55 (0.15-1.99)	1.00 (0.36-2.76)	0.91 (0.35-2.36)
Employment status (Employed)			
All others <sup>b</sup>	0.88 (0.26-2.97)	0.88 (0.31-2.46)	0.80 (0.30-2.11)
Household monthly family income (≤HKD3	30,000)		
>HKD30,000	0.76 (0.18-3.18)	0.65 (0.18-2.36)	0.50 (0.16-1.56)
District of residence (Hong Kong island)			
Kowloon	0.40 (0.10-1.63)	0.93 (0.26-3.27)	2.17 (0.68-6.95)
New Territories & Outlying Islands	0.07 (0.01-0.62)*	2.36 (0.78-7.14)	1.65 (0.59-4.57)
Physical co-morbidities (None)			
At least one	0.58 (0.14-2.46)	1.06 (0.32-3.54)	0.51 (0.17-1.55)
Family history of mental illness (No)			
Yes	1.18 (0.30-4.59)	0.93 (0.28-3.15)	0.91 (0.27-3.05)
Self-reported diagnosed depression (No)			
Yes	10.88 (2.96-40.01)*	8.86 (3.38-23.22)*	17.86 (6.63-48.12)
Self-reported diagnosed other mental illne	ess (No)		
Yes	7.35 (1.50-35.99)*	7.08 (2.05-24.50)*	18.99 (4.66-77.49)
Presence of professional help-seeking int	ention (None)		
At least one	3.42 (0.98-11.93)	1.13 (0.44-2.89)	1.80 (0.74-4.39)
Presence of a past help-seeking action (N	one)		
At least one	1.37 (0.37-5.04)	2.84 (0.96-8.41)	2.83 (1.07-7.53)*
Doctor diagnosis of depression at baselin	e (No)		
Yes	1.26 (0.41-3.90)	4.02 (1.52-10.62)*	2.85 (1.08-7.49)*
PHQ-9 severity at baseline (mild-mod)			
Moderately severe to severe depression≠	2.18 (0.72-6.61)	1.28 (0.52-3.14)	1.83 (0.76-4.39)
Service sector (Private)			
Public	1.49 (0.44-5.07)	7.25 (2.34-22.48)*	4.21 (1.45-12.20)*

Hosmer and Lemeshow Tests suggested adequate model fit for all three models. For the GP model,  $\chi^2$  = 10.269, p = 0.247; Psychiatrist,  $\chi^2$  = 6.369, p = 0.606; Any professional,  $\chi^2$  = 7.691, p = 0.464.

<sup>a</sup> 'All others' in Marital status includes *being single, divorced, or widow,* 

<sup>b</sup> 'All others' in Employment status includes *being unemployed, retired, house-maker, or student.* 

<sup>c</sup> Includes GP, psychiatrist, psychologist, social worker, and other professional.

\* Statistically significant at p < 0.05.

 $\neq$  PHQ-9 score: 10-14 = mild to moderate depression; 15-27 = moderately-severe to severe depression

 $\ensuremath{\mathsf{T}}$  Respondents included PHQ-screened positive subjects who entered the cohort study

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#### STROBE 2007 (v4) checklist of items to be included in reports of observational studies in epidemiology\* Checklist for cohort, case-control, and cross-sectional studies (combined)

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	2
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4
Objectives	3	State specific objectives, including any pre-specified hypotheses	5
Methods			
Study design	4	Present key elements of study design early in the paper	5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5
Participants	6	<ul> <li>(a) Cohort study—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up</li> <li>Case-control study—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls</li> <li>Cross-sectional study—Give the eligibility criteria, and the sources and methods of selection of participants</li> </ul>	5
		(b) Cohort study—For matched studies, give matching criteria and number of exposed and unexposed Case-control study—For matched studies, give matching criteria and the number of controls per case	
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	6
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	6
Bias	9	Describe any efforts to address potential sources of bias	7
Study size	10	Explain how the study size was arrived at	5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6-7
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	6-7
		(b) Describe any methods used to examine subgroups and interactions	6-7
		(c) Explain how missing data were addressed	6-7
		(d) Cohort study—If applicable, explain how loss to follow-up was addressed Case-control study—If applicable, explain how matching of cases and controls was addressed	6-7

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		Cross-sectional study—If applicable, describe analytical methods taking account of sampling strategy	
		(e) Describe any sensitivity analyses	
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	7
		(b) Give reasons for non-participation at each stage	
		(c) Consider use of a flow diagram	
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	17
		(b) Indicate number of participants with missing data for each variable of interest	
		(c) Cohort study—Summarise follow-up time (eg, average and total amount)	
Outcome data	15*	Cohort study—Report numbers of outcome events or summary measures over time	7, 17
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	
		Cross-sectional study—Report numbers of outcome events or summary measures	
Main results	16	( <i>a</i> ) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	7-8, 17-21
		(b) Report category boundaries when continuous variables were categorized	7-8, 17-21
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	7-8, 17-21
Discussion			
Key results	18	Summarise key results with reference to study objectives	9-10
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	10
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	9-11
Generalisability	21	Discuss the generalisability (external validity) of the study results	11
Other information	1		
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	14

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies. **Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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Figure 1. Study Design 119x90mm (300 x 300 DPI) Protected by copyright, including for uses related to text and data mining, Al training, and similar technologies