# Impact of training for general practitioners on their mental health services

## *The Hong Kong experience*

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**Background and objectives**
General practitioners (GPs) constitute an important workforce for mental healthcare in the community. However, many GPs receive limited training in mental health. This study compares the practice characteristics of GPs with mental health training to those of other GPs in Hong Kong.

**Method**
A questionnaire survey was conducted among GPs. Of the 516 respondents, 76 (14.7%) had attended a one-year postgraduate mental health training course.

**Results**
The GPs with mental health training saw significantly more patients with mental health problems per week (median class 11–15 versus 6–10) and treated a higher percentage of patients with mental health problems (median class 41–60% versus 21–40%). The differences remained significant, with odds ratios of 2.6 for both indicators after controlling for gender, healthcare setting and years of practice.

**Discussion**
Policies should promote training of GPs as part of the increasing workforce for mental healthcare. Estimated from the results, GPs with mental health training have nearly triple the number of consultations related to mental health, compared with other GPs (340 versus 120 per year).

**IN RECENT YEARS,** the World Health Organization has called for integration of mental health into primary care, in response to the high prevalence of common mental disorders, including depression and anxiety disorders.[1] Because of the gatekeeping role of general practitioners (GPs) in many healthcare systems, the general public tend to visit GPs for their initial contact with mental healthcare.[2] GPs were shown to be the first professional contact in over 70% of cases in Australia.[3] However, GPs, especially those without mental health training, may perceive insufficient knowledge as a barrier to management.[4] Furthermore, some GPs have limited motivation to manage mental health problems.[5,6] While policies such as the Better Access initiative in Australia have increased the rate of management of depression by GPs through enhancing Medicare Benefits Schedule (MBS) claims for mental health treatments,[7] training remains the fundamental strategy to improve GPs' skills, motivation and participation in mental healthcare.

Training outcomes have been reported in different countries. An Australian study found that a four-seminar training program increased GPs' diagnosis rate of mental health problems.[8] Another Australian four-session training program improved GPs' skills in discrete elements of the cognitive behavioural therapy (CBT) approach, such as counselling, stress management and slow-breathing techniques.[9] In the UK, a single training session for junior GPs increased their ability to manage somatic symptoms.[10] In Hong Kong, a one-year program named the Postgraduate Diploma in Community Psychological Medicine (PDCPM) has been organised for GPs since 2002. The program consists of 20 seminars and 20 clinical sessions covering knowledge and skills in diagnosing and managing mental health problems. Both drug treatment and psychotherapy (including CBT and counselling) are taught. The program was shown to improve GPs' confidence, attitudes and skills in treating patients with common mental health problems.[11] Furthermore, a survey using case vignettes found that GPs with mental health training had higher motivation in the management of depression than those without training.[12]

There are currently 370 specialist psychiatrists[13] and around 500 clinical psychologists[14] in Hong Kong, which has a population of 7.3 million people. The ratio of 5.1 psychiatrists per 100,000 people is at an intermediate level by international standards, compared with 14.0 in Australia, 12.0 in Canada, 11.0 in the UK, 9.4 in Japan, 3.5 in South Korea, 2.3 in Singapore, 1.3 in Mainland China and 0.6 in Malaysia.[15] While psychosocial support is provided by some social workers and general counsellors, there are around 6000 GPs who constitute an important workforce for mental healthcare. The healthcare system in Hong Kong has a mixed mode of public–private financing. About 75% of primary care services are provided by the private sector and the rest by the heavily subsidised government general outpatient clinics, which charge a total consultation and medication fee at HK$50 (AU$8.67) per attendance.

While the general public can consult private psychiatrists directly, most visit public psychiatrists at a very low charge; a mandatory referral by a GP or specialist is required to visit a public psychiatrist.

The waiting time for the first appointment ranges from several months to a year, except for urgent cases. The aim of this study, which is part of a large project on enhancing mental healthcare in primary care settings in Hong Kong,[16,17] was to compare the practice characteristics of GPs with mental health training to those of other GPs. The results will have useful implications for mental health services provided by GPs.

## Method

### Sample

We invited all members of the Hong Kong College of Family Physicians (HKCFP) and all the PDCPM graduates to complete a structured questionnaire. As is the case in the US, a GP in Hong Kong can be a family physician, as well as general paediatrician, general internal medicine physician or a physician in some other field practising as a primary care physician. The total number of GPs is around 6000, but there is no government list to classify them as GPs. To set a sampling frame for the survey, we selected all 1394 members from the HKCFP, as they provided the most readily available list of GPs. We selected all 198 PDCPM graduates as GPs with special training in mental health. The contact details of the graduates were available in our department, while HKCFP members were reached with the assistance of the College. To avoid duplication, 85 PDCPM graduates who were also affiliated with the College were removed from the mailing list of the College. A total of three rounds of invitations were sent. Ethics approval was obtained from the local Institutional Review Board of the University of Hong Kong/Hospital Authority Hong Kong West Cluster (UW 09-326).

### Questionnaire

The questionnaire was anonymous but coded with a unique reference number to identify the respondent for subsequent rounds of reminders. The code was known to one research assistant but not available to other members of the research team. The questionnaire was attached to an invitation letter seeking consent from the respondent to fill in the questionnaire.

A completed and returned questionnaire indicated that the respondent consented to participate in the study. The questionnaire included questions about practice characteristics in mental healthcare, barriers and enablers in providing mental healthcare, and personal background. This article focuses on practice characteristics in mental healthcare, including the number of patients whose chief complaint and associated symptoms were mental health problems (defined as 'patients with mental health problems') seen by the GP, treatment rate and referral rate. Numbers, percentages, and Yes/No options were adopted for questions concerning practice characteristics and personal background, whereas Likert scale (1: strongly disagree to 4: strongly agree) was used for the enabler questions. Details of pilot testing were reported elsewhere.[16]

### Statistical analysis

The data were analysed using SPSS (version 24). Frequencies and percentages were used to summarise the responses to the question items. Pearson chi-squared test and Mann-Whitney U test were carried out to compare the discrete and ordinal/continuous variables respectively between respondents trained in community psychological medicine (PDCPM group) and those without this training (non-PDCPM group). Multiple ordinal logistic regression was carried out to estimate the training effect by appropriately adjusting for the effects of other factors: gender, practice setting (private versus public) and number of years since graduation. A $P$ value <0.05 was considered statistically significant.

## Results

### Questionnaire respondents

There were 516 respondents after three rounds of mailing, with an overall response rate of 34.5% (516/1497). Seventy-six questionnaires were returned from the PDCPM group and 440 from the non-PDCPM group, giving response rates of 38.4% (76/198) and 33.9% (440/1299) respectively. Ten GPs from the non-PDCPM group had invalid addresses and were excluded from the analysis.

### Personal characteristics

Compared with the non-PDCPM group, the PDCPM group had a significantly higher proportion of male GPs (80.3% versus 63.0%, $P = 0.003$, Pearson chi-squared test) and GPs working in the private sector (74.7% versus 52.9%, $P < 0.001$, Pearson chi-squared test). There was no significant difference in the median years since graduation (19 [interquartile range (IQR): 12–26] versus 16 [IQR: 10–28], $P = 0.177$, Mann-Whitney U test).

### Involvement in mental healthcare

There were significant differences between the two groups in the number of patients with mental health problems seen per week and the percentages of these patients treated (Table 1). GPs in the PDCPM group saw more patients with mental health problems per week than those in the non-PDCPM group (median class 11–15 versus 6–10, $P < 0.001$, Mann-Whitney U test). GPs in the PDCPM group also treated a higher percentage of patients with mental health problems (median class 41–60% versus 21–40%, $P < 0.001$, Mann-Whitney U test). However, there were no significant differences between the two groups in the percentage of patients with mental health problems referred to psychiatrists (median class 1–20% vs 1–20%, $P = 0.448$, Mann-Whitney U test).

The differences between the two groups in the number of patients with mental health problems seen per week and the percentage treated remained significant after using multiple ordinal logistic regression to control for other factors, including gender, healthcare setting and years of practice.

GPs in the PDCPM group were more likely to be in a higher level for number of patients with mental health problems seen (odds ratio [OR] = 2.62; 95% confidence interval [CI]: 1.67, 4.12) and percentage of patients with mental health problems treated (OR = 2.61; 95% CI: 1.66, 4.10).

### Views on enablers to mental healthcare

We also compared the views on enablers to mental healthcare between the two groups. There were no significant differences in their views on most items, including:

- decreasing stigma for patients with mental health problems to see GPs
- encouraging public campaigns to promote help-seeking
- arranging follow-up consultations
- looking after the patient's family
- being the patient's regular doctor
- providing family support to patients
- arranging regular continuing medical education meetings with psychiatrists to discuss cases (Table 2).

Nonetheless, the PDCPM group showed significantly stronger intensity in agreeing with the enablers regarding postgraduate training in mental health ($P$ <0.001, Mann-Whitney U test) and interest in treating patients with mental health problems ($P$ = 0.017, Mann-Whitney U test).

## Discussion

The results showed that GPs with mental health training saw more patients with mental health problems and treated a higher proportion of them, compared with GPs without this training. The differences remained significant, with ORs of 2.6 for both indicators after controlling for gender, healthcare setting and years of practice. Seeing more patients with mental health problems could mean a higher detection rate of psychological or somatic symptoms presented by the patients as well as more follow-up of patients with mental health problems. The differences between the two groups in their views on enablers were found only in relation to training and interest in mental healthcare. Although the causal relationship between these two factors was not apparent from this study, it is likely to be a bidirectional relationship.

While this study has shown the impact of training, the 198 GPs who graduated from the PDCPM training course represent a small percentage of the GP

**Table 1. Comparison of mental healthcare between GPs with mental health training and other GPs**

| | | PDCPM (Total n = 76) | Non-PDCPM (Total n = 440) | Mann-Whitney U | Adjusted OR (95% CI)* | Multiple ordinal logistic regression† |
|---|---|---|---|---|---|---|
| | | n (%) | n (%) | *P* | | *P* |
| Number of patients whose chief complaint and associated symptoms were mental health problems seen per week | Nil | 0 (0.0) | 15 (3.4) | <0.001* | 2.62 (1.67, 4.12) | <0.001 |
| | 1–5 | 16 (21.1) | 162 (36.8) | | | |
| | 6–10 | 19 (25.0) | 101 (23.0) | | | |
| | 11–15 | 14 (18.4) | 62 (14.1) | | | |
| | 16–20 | 4 (5.3) | 51 (11.6) | | | |
| | 21–25 | 4 (5.3) | 10 (2.3) | | | |
| | 26–30 | 2 (2.6) | 10 (2.3) | | | |
| | >30 | 17 (22.4) | 29 (6.6) | | | |
| Percentage of patients with mental health problems referred by the GP to psychiatrists | 0% | 6 (7.9) | 42 (9.6) | 0.448 | 0.94 (0.58, 1.54) | 0.819 |
| | 1–20% | 48 (63.2) | 247 (56.5) | | | |
| | 21–40% | 9 (11.8) | 54 (12.4) | | | |
| | 41–60% | 10 (13.2) | 48 (11.0) | | | |
| | 61–80% | 3 (3.9) | 25 (5.7) | | | |
| | 81–100% | 0 (0.0) | 21 (4.8) | | | |
| Percentage of patients with mental health problems treated by the GP | 0% | 1 (1.3) | 32 (7.3) | <0.001 | 2.61 (1.66, 4.10) | <0.001 |
| | 1–20% | 14 (18.4) | 171 (39.1) | | | |
| | 21–40% | 8 (10.5) | 60 (13.7) | | | |
| | 41–60% | 16 (21.1) | 58 (13.3) | | | |
| | 61–80% | 26 (34.2) | 84 (19.2) | | | |
| | 81–100% | 11 (14.5) | 32 (7.3) | | | |

**OR adjusted for gender, healthcare setting and years of practice*
*†P value of the variable PDCPM (Yes/No) in the multiple ordinal logistic regression analysis*
*CI, confidence interval; GP, general practitioner; OR, odds ratio; PDCPM, Postgraduate Diploma in Community Psychological Medicine*

population. GPs without this training saw 6–10 patients with mental health problems per week and treated 21–40% of these patients. It may not be possible for most GPs to see and treat a high percentage of patients with mental health problems, considering their workload in managing different kinds of patients.

Despite the lower participation rate in mental healthcare among the non-PDCPM group, their number is still critical to the overall mental health workforce. Estimated from the median classes shown in the results, the number of consultations related to mental health provided by each GP with and without mental health training were approximately 340 and 120 per year, respectively leading to a total of 67,000 and 724,000 such consultations by the GPs in each of the two respective groups. Comparably, the total number of consultations related to mental health provided by the 25,000 GPs in Australia during 2008–09 was 13.2 million,[18] meaning approximately 530 such consultations per GP.

Future research may analyse data from the Medicare Benefits Schedule (MBS) on use of mental health item numbers by GPs with different levels of training. Furthermore, the current PDCPM is a one-year program; it may be helpful to consider if shorter training with an emphasis on common mental disorders would serve the needs of most other GPs, then evaluate the impact of such training on mental health services.

The GPs with mental health training saw more patients with mental health problems, but their referral rates to psychiatrists were similar to the other GPs. They might be expected to have lower referral rates because of their training, but no difference was seen in this study. One possible explanation is that GPs with mental health training are able to identify patients with more serious mental health problems beyond common mental disorders, which require specialist psychiatric care. This is probably a positive outcome but requires further research on the types of patients with mental health problems referred by the GPs.

This study had several limitations. First, the study findings were based on self-reported data. However, the potential recall bias should be minimal because the questions focused mainly on the GPs' daily practice characteristics and experiences. Second, the forms of treatment, such as medications, general counselling and CBT approaches, were not differentiated in this survey. The treatment quality and outcomes need further research. Third, the response rate of this study was 34.5%. It is not high for this kind of study reported in literature, but is already much higher than most other surveys among doctors in Hong Kong.[19–21] Fourth, some GPs in the non-PDCPM group might have undertaken other mental health programs such as counselling or attended occasional mental health seminars or workshops. Finally, the GPs in the PDCPM group might have a special interest in mental health, and the findings of this study should be interpreted with this in mind.

## Conclusions

This study shows that in Hong Kong, GPs with mental health training see and treat a higher percentage of patients with mental health problems, compared with GPs who do not have the same training. However, referral rates to psychiatrists are the same for the two groups. The number of patients with mental health problems seen and treated per GP with mental health training was almost triple the number of patients seen and treated by other GPs. The finding supports policies to promote the upskilling of GPs in mental health as part of the increasing workforce for mental healthcare in the community.

## Implications for general practice

- Mental health problems are common in primary care, and all GPs contribute to the workforce of mental healthcare.
- GPs with special mental health training see and treat more patients with mental health problems, but training may not affect their referral rates to psychiatrists.
- Training can target diagnosis and management of common mental health problems as well as recognition of serious mental disorders.

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**References**

1. World Health Organization. Integrating Mental health into primary care: A global perspective. Geneva: WHO, 2008.
2. Steel Z, McDonald R, Silove D, et al. Pathways to the first contact with specialist mental health care. Aust N Z J Psychiatry 2006;40(4):347–54.
3. Thompson A, Hunt C, Issakidis C. Why wait? Reasons for delay and prompts to seek help for mental health problems in an Australian clinical sample. Soc Psychiatry Psychiatr Epidemiol 2004;39(10):810–17.
4. Richards JC, Ryan P, McCabe MP, Groom G, Hickie IB. Barriers to the effective management of depression in general practice. Aust N Z J Psychiatry 2004;38(10):795–803.
5. Garcia-Campayo J, Sanz-Carrillo C, Yoldi-Elcid A, Lopez-Aylon R, Monton C. Management of somatisers in primary care: Are family doctors motivated? Aust N Z J Psychiatry 1998;32(4):528–33.
6. Oopik P, Aluoja A, Kalda R, Maaroos HI. Family doctors' problems and motivating factors in management of depression. BMC Fam Pract 2006;7:64.
7. Harrison CM, Britt HC, Charles J. Better outcomes or better access – Which was better for mental health care? Med J Aust 2012;197(3):170–72.
8. Naismith SL, Hickie IB, Scott EM, Davenport TA. Effects of mental health training and clinical audit on general practitioners' management of common mental disorders. Med J Aust 2001;175 Suppl:S42–47.
9. Blashki GA, Piterman L, Meadows GN, et al. Impact of an educational intervention on general practitioners' skills in cognitive behavioural strategies: A randomised controlled trial. Med J Aust 2008;188(12 Suppl):S129–32.

**Table 2. Comparison of the views on enablers to mental healthcare between GPs with mental health training and other GPs**

| | | PDCPM* (Total n = 76) | Non-PDCPM (Total n = 440) | Mann-Whitney U |
|---|---|---|---|---|
| | | n (%) | n (%) | *P* |
| **Postgraduate training in mental health** | Strongly disagree | 0 (0.0) | 1 (0.2) | <0.001 |
| | Disagree | 0 (0.0) | 31 (7.1) | |
| | Agree | 40 (52.6) | 328 (74.9) | |
| | Strongly agree | 36 (47.4) | 78 (17.8) | |
| **Less stigma for patients with mental health problems to see GPs** | Strongly disagree | 0 (0.0) | 3 (0.7) | 0.403 |
| | Disagree | 0 (0.0) | 21 (4.8) | |
| | Agree | 52 (68.4) | 282 (64.2) | |
| | Strongly agree | 24 (31.6) | 133 (30.3) | |
| **Public campaign to promote help-seeking for mental health problems** | Strongly disagree | 0 (0.0) | 5 (1.1) | 0.076 |
| | Disagree | 1 (1.3) | 38 (8.7) | |
| | Agree | 58 (76.3) | 313 (71.3) | |
| | Strongly agree | 17 (22.4) | 83 (18.9) | |
| **Interest in treating patients with mental health problems** | Strongly disagree | 0 (0.0) | 1 (0.2) | 0.017 |
| | Disagree | 2 (2.6) | 20 (4.6) | |
| | Agree | 46 (60.5) | 312 (71.1) | |
| | Strongly agree | 28 (36.8) | 106 (24.1) | |
| **Arrange follow-up consultation to focus on the patient's mental health problems** | Strongly disagree | 1 (1.3) | 2 (0.5) | 0.586 |
| | Disagree | 1 (1.3) | 12 (2.7) | |
| | Agree | 51 (67.1) | 304 (69.4) | |
| | Strongly agree | 23 (30.3) | 120 (27.4) | |
| **Looking after other members of the patient's family** | Strongly disagree | 1 (1.3) | 0 (0.0) | 0.305 |
| | Disagree | 1 (1.3) | 33 (7.5) | |
| | Agree | 51 (67.1) | 286 (65.1) | |
| | Strongly agree | 23 (30.3) | 120 (27.3) | |
| **Being the regular doctor of the patient** | Strongly disagree | 0 (0.0) | 0 (0.0) | 0.564 |
| | Disagree | 3 (3.9) | 7 (1.6) | |
| | Agree | 38 (50.0) | 252 (57.4) | |
| | Strongly agree | 35 (46.1) | 180 (41.0) | |
| **Patients who have good family support** | Strongly disagree | 0 (0.0) | 2 (0.5) | 0.950 |
| | Disagree | 5 (6.6) | 14 (3.2) | |
| | Agree | 43 (56.6) | 268 (61.0) | |
| | Strongly agree | 28 (36.8) | 155 (35.3) | |

**Table 2. Comparison of the views on enablers to mental healthcare between GPs with mental health training and other GPs (cont)**

| | | PDCPM* (Total n = 76) | Non-PDCPM (Total n = 440) | Mann-Whitney U |
|---|---|---|---|---|
| | | n (%) | n (%) | *P* |
| **Regular CME meeting with psychiatrists to discuss cases** | Strongly disagree | 4 (5.3) | 2 (0.5) | 0.057 |
| | Disagree | 3 (3.9) | 60 (13.7) | |
| | Agree | 53 (69.7) | 319 (73.0) | |
| | Strongly agree | 16 (21.1) | 56 (12.8) | |

**Items in this table are ordered by the combined percentage of 'agree' and 'strongly agree' responses of the PDCPM group*
*CME, continuing medical education; GP, general practitioner; PDCPM, Postgraduate Diploma in Community Psychological Medicine*


10. Walters P, Tylee A, Fisher J, Goldberg D. Teaching junior doctors to manage patients who somatise: Is it possible in an afternoon? Med Educ 2007;41(10):995–1001.
11. Lam TP, Goldberg D, Tse EY, Lam KF, Mak KY, Lam EW. What do primary care doctors get out of a year-long postgraduate course in community psychological medicine? Int J Psychiatry Med 2011;42(2):133–49.
12. Lam TP, Lam KF, Lam EW, Sun KS. Does postgraduate training in community mental health make a difference to primary care physicians' attitudes to depression and schizophrenia? Community Ment Health J 2015;51(6):641–46.
13. Medical Council of Hong Kong. List of registered medical practitioners. Aberdeen, HK: MCHK, 2016. Available at www.mchk.org.hk/english/list_register/index.html [Accessed 2 March 2018].
14. The Hong Kong Psychological Society. Division of Clinical Psychology. Kowloon, HK: Hong Kong Psychological Society, 2017. Available at www.dcp.hkps.org.hk/ [Accessed 2 March 2018].
15. Jenkins R, Kydd R, Mullen P, et al. International migration of doctors, and its impact on availability of psychiatrists in low and middle income countries. PLoS One 2010;5(2):e9049.
16. Sun KS, Lam TP, Lam KF, Lo TL. Obstacles in managing mental health problems for primary care physicians in Hong Kong. Adm Policy Ment Health 2015;42(6):714–22.
17. Sun KS, Lam TP, Lam KF, Lo TL. Managing common mental health problems: Contrasting views of primary care physicians and psychiatrists. Fam Pract 2015;32(5):538–44.
18. Mental Health Workforce Advisory Committee. National Mental Health Workforce Strategy. Melbourne: Victorian Government Department of Health, 2011.
19. Leung GM, Ho LM, Chan MF, JM MJ, Wong FK. The effects of cash and lottery incentives on mailed surveys to physicians: A randomized trial. J Clin Epidemiol 2002;55(8):801–07.
20. The Harvard Team. Hong Kong private practice survey, special report #4. Wanchai, HK: Harvard Report, 1998.
21. Sit RW, Yip BH, Chan DC, Wong SY. Primary care physicians' attitudes and beliefs towards chronic low back pain: An Asian study. PLoS One 2015;10(1):e0117521.


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