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ORIGINAL ARTICLE

Integrating psychiatry into basic clinical skills: A three-year nationwide quantitative assessment of postgraduate training programs

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Abstract

Aim: The aim of this study was to develop quantitative outcome indicators for psychiatric training programs integrated into the General Medicine In-Training Examination (GM-ITE) and to investigate which characteristics correlate with high scores in psychiatry.

Methods: A nationwide cross-sectional study was conducted over 3 fiscal years (2021–2023). An anonymous online questionnaire was distributed to postgraduate year 1 and 2 residents who completed the GM-ITE. The primary outcome was GM-ITE score, with a particular focus on psychiatry. Multiple-choice questions for the psychiatry field were created by board-certified psychiatrists with various subspecialties, then reviewed and piloted. Multiple regression analysis examined correlations between GM-ITE score and various resident and facility characteristics.

Results: A total of 18,226 residents participated over the 3 years, of whom 5%–6% aspired to specialize in psychiatry. Quantitative scores were effective in the psychiatry field across all 3 years. Psychiatry aspirants had lower scores in internal medicine, emergency, and total scores but higher scores in psychiatry. Residents from university hospitals had lower psychiatry scores, while the number of psychiatry beds and supervising psychiatrists did not correlate with higher psychiatry scores. These findings indicate the need for psychiatric training programs distinct from general internal medicine and emergency training.

Conclusion: Based on these quantitative psychiatry scores, this study highlights the necessity of improving physical assessment skills during residency for psychiatry aspirants, who score higher in psychiatry. Future research should identify effective

training programs and facility practices that lead to higher psychiatry scores among residents, and thereby better integrate psychiatry into basic clinical skills.

INTRODUCTION

The integration of mental health into primary care is crucial to addressing the needs of those who require psychiatric care.[1,2] Physical illnesses, including cardiovascular or metabolic disorders, are highly comorbid in patients with psychiatric disorders, a situation that leads to high mortality and recurrence rates. The converse association is also present: psychiatric disorders are frequent in those with physical illness.[3] Accordingly, under the slogan "No health without mental health," psychiatric interventions are emphasized in the treatment of physical illnesses,[4] while the care of physical issues is highlighted in the treatment and research of mental illnesses from the perspective of patient and public involvement (PPI).[5,6]

The Japanese postgraduate residency system aims to cultivate physicianship and enhance clinical skills in primary care, focusing on the treatment of common disorders and the development of physical examination skills. This system also emphasizes the importance of understanding the patient as a whole, including mental health aspects, which are integral to primary care competency.[7] Based on this framework, all medical degree holders are required to rotate through the psychiatry department for at least 1 month during their 2-year residency training period in Japan.

As part of this residency, a robust method is needed to evaluate the effectiveness of psychiatric training programs. However, previous studies have focused on the utilization of competencies in medical education in individual medical students and residents.[8–10] Although qualitative assessment is essential in assessing psychiatric capability, it is also necessary to develop simple and quantitative evaluation indicators for nationwide training program evaluations. To date, however, no such outcome measures have been established worldwide.

The General Medicine In-Training Examination (GM-ITE) is an established examination for residents in Japan, especially in the field of internal medicine.[11] In a previous study, residents aspiring to specialize in a specific clinical field had lower total scores, while those aspiring to specialize in general medicine had higher scores.[12] However, no studies have focused on psychiatric field scores or residents aspiring to specialize in psychiatry.

In this study, we established a method of creating quantitative questions in the psychiatry field. By integrating these questions into the GM-ITE, we aimed to confirm that the questions in the psychiatry field were effective and identified characteristics correlating with performance in the psychiatry field.
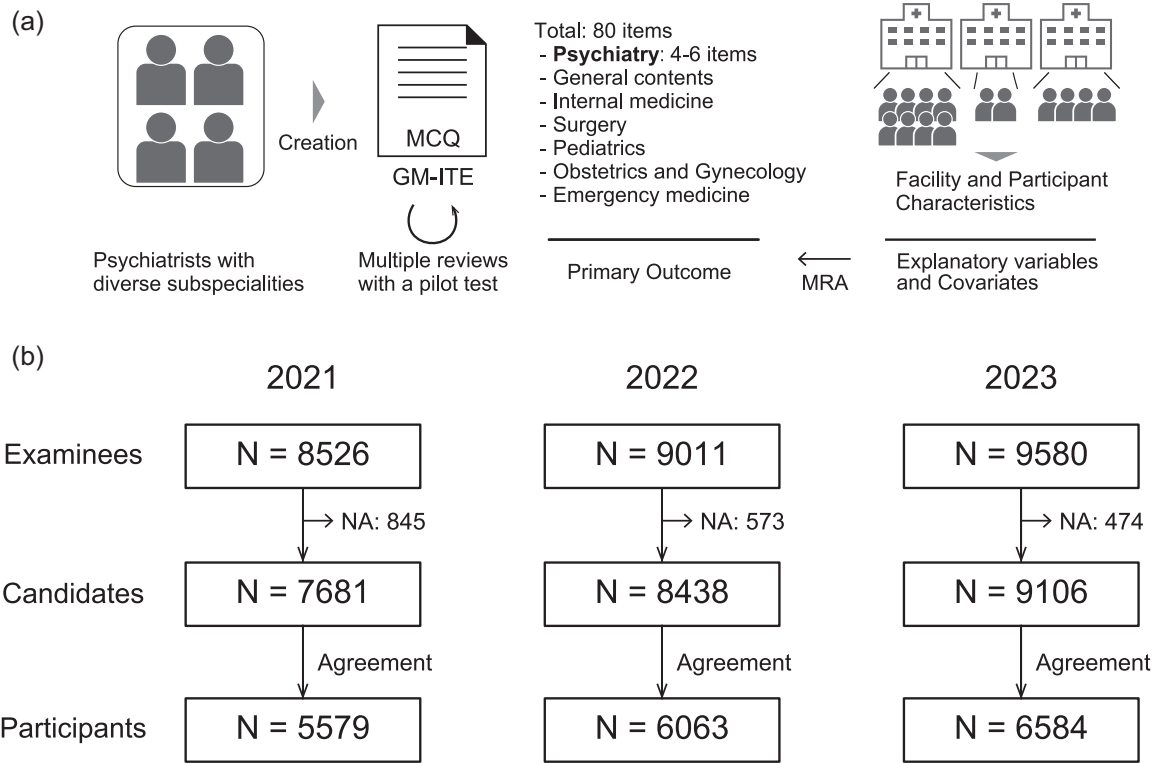
METHODS

Design, setting, and participants

The study was conducted nationwide under a cross-sectional design over fiscal years (FY) 2021, 2022, and 2023. A 2-year training program for postgraduate resident physicians has been mandatory in Japan since 2004, under which postgraduate year 1 (PGY-1) and PGY-2 residents are required to undergo rotations in internal medicine (mostly subspecialty internal medicine divisions), surgery, psychiatry, pediatrics, obstetrics and gynecology (ObGyn), emergency medicine, and community medicine.[11] Psychiatry rotation was elective in FY2010–2019 but has been mandatory since FY2020. During this program, residents are offered the opportunity to take the GM-ITE, developed in 2011 by the Japan Institute for Advancement of Medical Education Program (JAMEP), a nonprofit organization. Currently, more than 50% of residents across Japan take the examination.

For the present study, we prepared an anonymous, online, self-administered questionnaire targeted at PGY-1 and PGY-2 residents who completed the GM-ITE. Residents who took the GM-ITE were invited to complete the questionnaire. Prior to their participation in the study, all candidates read the research document, which informed them of the anonymous and voluntary nature of their involvement in the study. Only those participants who provided informed consent were included in the study.

Preparation of multichoice questions in the psychiatric field

Of the 80 questions in the GM-ITE, the number of questions allocated to each field was determined according to the field's training period, as set in the "Objectives, Strategies, and Evaluation in Residency Training" by the Ministry of Health, Labour and Welfare, Japan. For the psychiatry field, there were six, four, and four questions in FY2021, FY2022, and FY2023, respectively (Figure 1a). The questions were created in the following manner:

1. Themes were determined in accordance with the training objectives, and a question list was compiled. Supplementary questions were prepared in addition to the required number.
2. The Question Creation Committee adjusted the content boundaries with other fields, as well as the content and difficulty level of the questions.

FIGURE 1 Graphical method and participant flowchart. (a) The General Medicine In-Training Examination (GM-ITE) consists of 80 multiple-choice questions across various medical fields, including 4–6 items in psychiatry (six items in fiscal year 2021 and four items in fiscal years 2022 and 2023). Certified psychiatrists with diverse subspecialties prepared the psychiatry questions with multiple reviews and a pilot test. The primary outcome measured was total score, with a particular focus on the psychiatry field. Explanatory variables included total score rank, desired career path, general medicine rotation experience, and several hospital characteristics. Covariates included sex, postgraduate year, number of assigned inpatients, hospital type, and hospital size. (b) Participants were recruited from GM-ITE examinees in fiscal years 2021, 2022, and 2023. Examinees who took the exam at home were excluded. The remaining candidates received an explanation of the study, and those who provided consent were included as participants. MCQ, multiple-choice questions; MRA, multiple regression analysis; NA, not assessed.

3. Multiple preparers created the questions. The members were all certified psychiatrists of the Japanese Board of Psychiatry, with diverse subspecialties, such as consultation–liaison psychiatry, epilepsy, primary care, and neuroscience. These members collaborated to finalize the tentative questions and developed evidence-based explanations.

4. The questions were reviewed by a Review Board comprising experts in primary care, emergency medicine, and other fields who were closely involved in PGY-1 and PGY-2 education. They provided feedback on the content and difficulty of the questions.

5. The preparer made minor revisions based on the reviews, which were further discussed by the Question Creation Committee.

6. A pilot test was conducted among PGY-3 to PGY-6 residents to gather data on accuracy rates and identify any issues with the questions.

7. The Question Creation Committee made final adjustments and determined the actual questions to be used in the examination.

Measures and statistics

The primary outcome was the total score, composed of scores from each field: psychiatry, general, internal medicine, surgery, pediatrics, ObGyn, and emergency medicine, with a particular focus on the psychiatry field (Figure 1a).

Explanatory variables included the total score rank,[13] desired career path (general physician[12] and psychiatrist) and general medicine rotation.[11,14] Further, the number of months spent on the internal medicine rotation,[14] working hours,[15] as well as the number of psychiatry beds, number of board-certified psychiatrists, board-certified consultation–liaison psychiatrists, and board-certified psychosomatic physicians, which were available from a database,[16] were also examined. The most recent data available from FY2021 were extrapolated to FY2022 and FY2023.

The covariates included sex (female or male), PGY, number of assigned inpatients (0–4, 5–9, 10–14, or ≥15), hospital type (community hospital, university branch hospital, or university
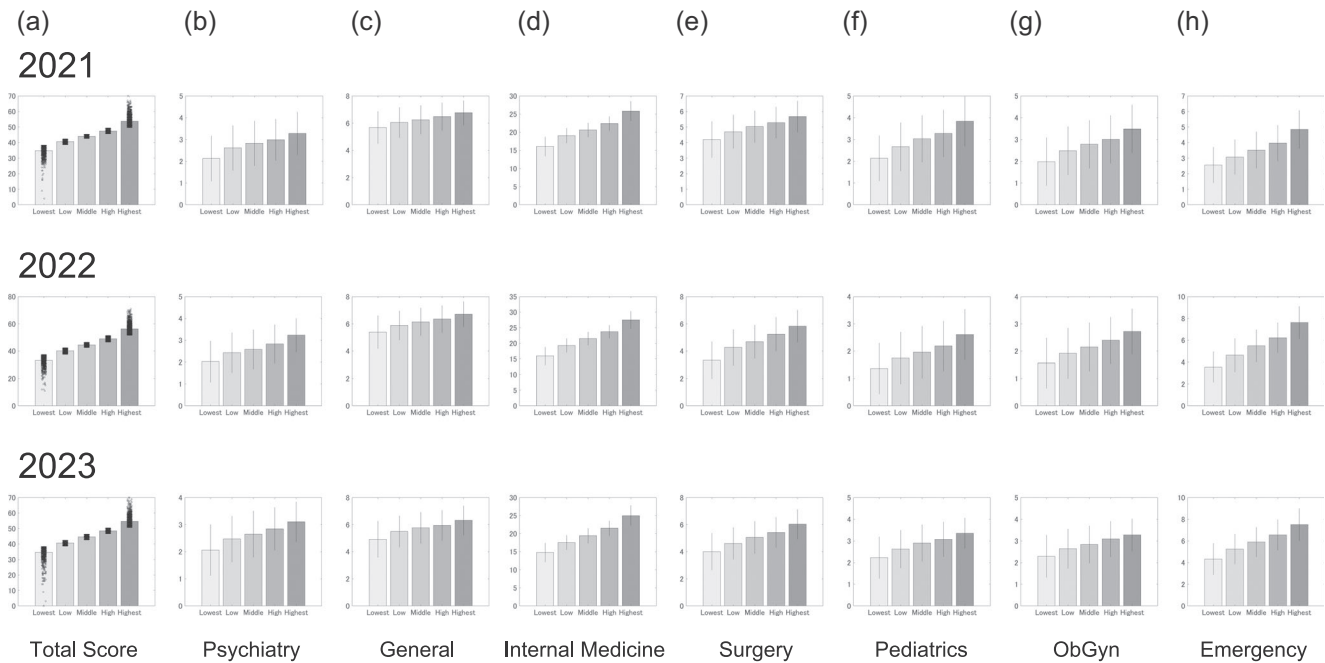
FIGURE 2 Association between total score and each field. Since General Medicine In-Training Examination (GM-ITE) questions are not publicly available, scores for each field are aggregated and presented for fiscal years 2021, 2022, and 2023. The consistently high discrimination indices across all fields each year suggest that quantitative scores are effective, even in the psychiatry field. (a) Total score, (b) psychiatry, (c) general contents, (d) internal medicine, (e) surgery, (f) pediatrics, (g) obstetrics and gynecology, (h) emergency. Each bar plot is represented as the mean ± SD, and raw data are superimposed in (a) Total score.

hospital), and hospital size (<400, 400–499, 500–699, or ≥700), in accordance with previous studies.[11,17] Note that number of assigned inpatients denoted the daily average number of assigned inpatients during their overall residency.

For descriptive statistics, categorical data were reported as frequencies and percentages, while continuous data were reported as means and SDs. To assess the necessity for multilevel analysis, we calculated the intraclass correlation coefficient (ICC) to determine the presence of a clustering effect.[18] In our dataset, nearly all ICCs were found to be less than 10% for the outcome variable. Consequently, we concluded that multilevel analysis was not required, and that the conventional analysis method should be used. We performed multiple regression analysis, with adjustment for possible confounders. When a significant difference was observed in the ANOVA, the Tukey–HSD post-hoc test was conducted. A two-tailed $p < 0.05$ was considered statistically significant. R-4.4.0 was used for all statistical analyses, and MATLAB R2019a was used for data visualization in Figure 2.

Ethical considerations

All participants provided informed consent. The study was approved by the Ethics Review Board of JAMEP (approval numbers: 23-24 and 24-3).

RESULTS

Participant characteristics

The participant flowchart is shown in Figure 1b. Of the 7681, 8438, and 9106 candidates who completed the GM-ITE in FY2021, FY2022, and FY2023, respectively (the same hereafter), 5579 (72.6%), 6063 (71.9%), and 6584 (72.3%) agreed to participate in the study.

Table 1 demonstrates the characteristics of the participants. Most participants were male (67%–69%), PGY-2 (48%–50%), had 5–9 inpatients (49%–55%), worked in a community hospital (81%–83%), and worked in a hospital in a rural area (67%–69%). The major hospital size that participants belonged to was 500–699 beds, with substantial diversity. Regarding desired career path, 319 (5.7%), 312 (5.2%), and 334 (5.1%) aspired to become psychiatrists, while 269 (4.8%), 316 (5.2%), and 272 (4.1%) aspired to become general physicians. A total of 2552 (45.7%), 2696 (44.5%), and 2980 (45.3%) participants had previously rotated through general medicine.

Suitability of psychiatry questions in the GM-ITE

Figure 2 illustrates the suitability of the psychiatry questions in the GM-ITE. In multiple-choice questions, items with high discrimination

TABLE 1 Characteristics of the participants (N = 5579, 6063, and 6584).

	2021n (%)	2022n (%)	2023n (%)
Sex			
Female	1780 (31.9)	1934 (31.9)	2164 (32.9)
Male	3799 (68.1)	4129 (68.1)	4420 (67.1)
PGY			
PGY-1	2821 (50.6)	3142 (51.8)	3432 (52.1)
PGY-2	2758 (49.4)	2921 (48.2)	3152 (47.9)
Number of assigned inpatients[a]			
0–4	1664 (29.8)	2303 (38.0)	2342 (35.6)
5–9	3064 (54.9)	2986 (49.2)	3380 (51.3)
10–14	498 (8.9)	436 (7.2)	505 (7.7)
≥15	155 (2.8)	128 (2.1)	162 (2.5)
Hospital type			
Community hospital	4568 (81.9)	5027 (82.9)	5406 (82.1)
University branch hospital	401 (7.2)	400 (6.6)	389 (5.9)
University hospital	610 (10.9)	636 (10.5)	789 (12.0)
Location of hospital			
Rural	3808 (68.3)	4101 (67.6)	4466 (67.8)
Urban	1771 (31.7)	1962 (32.4)	2118 (32.1)
Hospital size			
<400 beds	1471 (26.4)	1524 (25.1)	1644 (25.0)
400–499 beds	1167 (20.9)	1324 (21.8)	1404 (21.3)
500–699 beds	1708 (30.6)	1946 (32.1)	2130 (32.4)
≥700 beds	1233 (22.1)	1269 (20.9)	1406 (21.4)
Rotation history			
General medicine	2552 (45.7)	2696 (44.5)	2980 (45.3)
Desired career path			
Psychiatry	319 (5.7)	312 (5.1)	334 (5.1)
General medicine	269 (4.8)	316 (5.2)	272 (4.1)

Abbreviation: PGY, postgraduate years.

[a]Total percent in number of assigned inpatients is below 100% due to missing data (<5%).

indices are considered to be effective.[12] As the GM-ITE questions are not publicly available, scores for each field are aggregated and presented for 3 years. The consistently high discrimination indices across all fields each year suggest that quantitative scores are effective (Figure 2a, total score; Figure 2b, psychiatry; Figure 2c, general contents; Figure 2d, internal medicine; Figure 2e, surgery; Figure 2f, pediatrics; Figure 2g, obstetrics and gynecology; Figure 2h, emergency). Since the GM-ITE itself has been validated through strong correlations with the Professional and Linguistic Assessments Board

(PLAB) 1 examination,[19] this result indicates that quantitative scores function well even in the psychiatry field.

Association of GM-ITE score and desired career path or general medicine rotation

Table 2 illustrates the association of GM-ITE score and desired career path or general medicine rotation. As previously reported,[12] residents who desired to become general physicians (general medicine aspirants) scored significantly higher in the internal medicine and emergency fields, and in total score, whereas those simply taking a simple general medicine rotation did not consistently show a significant tendency. Notably, scores in the psychiatry, surgery, pediatrics, Ob-Gyn and emergency fields were not associated with this group.

However, residents who desired to be psychiatrists (psychiatry aspirants) scored significantly higher in the psychiatric field but lower in other fields (internal medicine, emergency) and in total score for all 3 years. Further, scores in the surgery, pediatrics, and ObGyn fields also showed a lower tendency in this group.

Association of GM-ITE psychiatry field score and individual and facility characteristics

Next, we investigated factors correlated with a high score in the psychiatric field. Among resident characteristics, neither PGY, duration of internal medicine department rotations, number of assigned inpatients, nor working hours correlated with a high score (Tables S1–S4). On comparison of psychiatric scores of residents across different types of facility types, residents in university branch hospitals and university hospitals had lower psychiatric scores in FY2022 and FY2023 even after adjustment for various factors (Table 3, same trend in FY2021).

To further investigate which facility characteristics correlate with psychiatric scores, the number of psychiatry beds (Figure 3a), board-certified psychiatrists (Figure 3b), board-certified consultation–liaison psychiatrists (Figure 3c), and board-certified psychosomatic physicians (Figure 3d) was examined. Surprisingly, none of these indicators showed consistent trends with psychiatric scores. Regarding the number of psychiatry beds, while there was a significant difference between groups in all 3 years by analysis of variance (ANOVA), post-hoc tests revealed that the significant difference disappeared in FY2021 and FY2023. In FY2022, only residents in hospitals with 1–10 beds achieved high scores (Figure 3a).

DISCUSSION

This 3-year nationwide cross-sectional study on residents in Japan is to our knowledge the largest such study conducted globally to date and the first to demonstrate that quantitative scores in the psychiatry field within the GM-ITE are effective (Figures 1, 2, Table 1). Although recent

TABLE 2 Association of GM-ITE score and desired career path or general medicine rotation in FY 2021, 2022, and 2023.

	2021 Adjusted[a] mean difference (95% CI)	2022 Adjusted[a] mean difference (95% CI)	2023 Adjusted[a] mean difference (95% CI)
Desired career path: psychiatry			
Total score	−0.92 (−1.69, −0.16)*	−2.12 (−3.02, −1.21)***	−1.53 (−2.28, −0.77)***
Psychiatry	0.38 (0.25, 0.50)***	0.19 (0.08, 0.30)***	0.28 (0.18, 0.38)***
General	0.05 (−0.08, 0.18)	−0.07 (−0.20, 0.06)	0.12 (−0.02, 0.26)
Internal medicine	−0.85 (−1.30, −0.39)***	−1.16 (−1.68, −0.65)***	−0.79 (−1.24, −0.34)***
Surgery	−0.10 (−0.24, 0.03)	−0.41 (−0.59, −0.24)***	−0.34 (−0.49, −0.19)***
Pediatrics	0.01 (−0.13, 0.15)	−0.01 (−0.13, 0.10)	−0.17 (−0.27, −0.07)***
Obstetrics and gynecology	−0.13 (−0.26, 0.01)	−0.13 (−0.24, −0.02)*	−0.08 (−0.18, 0.02)
Emergency	−0.29 (−0.45, −0.13)***	−0.52 (−0.74, −0.30)***	−0.54 (−0.73, −0.35)***
Desired career path: general			
Total score	2.67 (1.84, 3.50)***	2.72 (1.82, 3.61)***	3.10 (2.27, 3.93)***
Psychiatry	0.10 (−0.03, 0.23)	0.18 (0.07, 0.29)**	0.12 (0.01, 0.23)*
General	0.12 (−0.02, 0.26)	0.30 (0.17, 0.43)***	0.29 (0.14, 0.45)***
Internal medicine	1.65 (1.16, 2.14)***	1.41 (0.89, 1.92)***	1.92 (1.42, 2.41)***
Surgery	0.12 (−0.03, 0.26)	0.01 (−0.16, 0.18)	0.10 (−0.07, 0.27)
Pediatrics	0.22 (0.07, 0.37)**	0.08 (−0.04, 0.20)	0.14 (0.03, 0.24)*
Obstetrics and gynecology	0.16 (0.01, 0.31)*	0.15 (0.04, 0.26)**	0.08 (−0.04, 0.19)
Emergency	0.30 (0.12, 0.47)***	0.59 (0.37, 0.81)***	0.45 (0.24, 0.67)***
General medicine rotation			
Total score	4.20 (1.70, 6.71)**	1.56 (0.12, 3.01)*	0.82 (−1.26, 2.90)
Psychiatry	0.58 (0.18, 0.98)**	0.08 (−0.10, 0.26)	−0.16 (−0.43, 0.12)
General	−0.05 (−0.47, 0.36)	0.17 (−0.04, 0.38)	−0.10 (−0.48, 0.28)
Internal medicine	1.95 (0.48, 3.42)**	0.46 (−0.37, 1.28)	0.17 (−1.06, 1.41)
Surgery	0.54 (0.11, 0.98)*	0.37 (0.10, 0.64)**	0.10 (−0.31, 0.51)
Pediatrics	0.75 (0.29, 1.20)**	0.08 (−0.11, 0.27)	−0.01 (−0.28, 0.26)
Obstetrics and gynecology	0.37 (−0.08, 0.82)	0.02 (−0.15, 0.20)	0.03 (−0.26, 0.31)
Emergency	0.07 (−0.46, 0.59)	0.38 (0.02, 0.73)*	0.79 (0.26, 1.32)**

Abbreviations: CI, confidence interval, GM-ITE, General Medicine In-Training Examination.

[a]Adjusted for sex, postgraduate years, number of assigned inpatients, hospital type, location of hospital, and hospital size.

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

findings in internal medicine have shown that certification exam scores, rather than milestone achievements, correlate with patient outcomes,[20] psychiatric capability is difficult to measure with quantitative indicators alone. Given that it includes only six, four, and four questions annually in the psychiatry field, the GM-ITE score in psychiatry is more useful for comparing the characteristics of examinees, facility attributes, and assessing training programs on a group basis rather than for individual evaluation. Furthermore, our dataset has minimal missing data for covariates needed for adjustment.

Using this database, we found that although psychiatry aspirants had lower internal medicine, emergency, and total scores, they had higher scores in the psychiatry field (Table 2). We validated that general medicine aspirants had higher total scores, as previously described.[12] However, even among general medicine aspirants and those who had rotated through general medicine, psychiatry scores did not demonstrate strong superiority, suggesting that psychiatry training requires a separate program which is distinct from those for general internal medicine and emergency. Interestingly, general

TABLE 3 Associations of GM-ITE psychiatry field score and hospital type.

2021	2021 Unadjusted mean difference (95% CI)	2021 Adjusted[a] mean difference (95% CI)
Hospital type		
Community hospital	Ref.	Ref.
University branch hospital	−0.09 (−0.20, 0.02)	−0.10 (−0.22, 0.01)
University hospital	−0.06 (−0.16, 0.03)	−0.07 (−0.17, 0.04)
2022	**2022 Unadjusted mean difference (95% CI)**	**2022 Adjusted[a] mean difference (95% CI)**
Hospital type		
Community hospital	Ref.	Ref.
University branch hospital	−0.27 (−0.37, −0.18)***	−0.32 (−0.42, −0.22)***
University hospital	−0.15 (−0.23, −0.07)***	−0.17 (−0.27, −0.08)***
2023	**2023 Unadjusted mean difference (95% CI)**	**2023 Adjusted[a] mean difference (95% CI)**
Hospital type		
Community hospital	Ref.	Ref.
University branch hospital	−0.16 (−0.25, −0.06)**	−0.15 (−0.25, −0.06)***
University hospital	−0.13 (−0.19, −0.06)***	−0.16 (−0.24, −0.08)***

Abbreviations: CI, confidence interval, GM-ITE, General Medicine In-Training Examination.

[a]Adjusted for sex, postgraduate years, number of assigned inpatients, location of hospital, and hospital size.

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

medicine aspirants also tended to score well in general contents, in contrast with the lack of correlation with rotation experience. This observation may reflect differences in learning approaches, specifically between passive learning and self-directed learning (SDL). SDL has been shown to lead to higher learning effectiveness and learner satisfaction compared to conventional, passive learning methods.[21] General medicine aspirants, who are often highly motivated to learn about various aspects of their field, may engage more in SDL, potentially resulting in higher scores.[22] Taken together, these findings prompt the question of whether interest in psychiatry, length of the training period, or other factors is the most important determinant.

Building upon our previous finding that hospitals with both medical/surgical and psychiatric inpatient beds and high-level emergency care centers were associated with a significant decrease in difficulty in hospital acceptance and shorter prehospital transfer times,[23] we postulated that facilities with more psychiatric beds and supervising psychiatrists would have higher psychiatry scores. In contrast, however, residents from university branch hospitals and university hospitals had lower psychiatry scores (Table 3), and the number of beds or various supervisors was not correlated with psychiatry field score (Figure 3). This may be because university hospitals often prioritize specialized conditions and disorders, which

potentially limit exposure to common psychiatric disorders and consequently affect the breadth of training in general psychiatry when compared to community hospitals.[17] This also indicates that the mere presence of psychiatrists is insufficient for education, rather, it is necessary to examine what kind of training program results in higher scores. This study did not include quantitative or qualitative questions regarding psychiatric training programs, which will be the focus of future research.

The lower internal medicine, emergency, and total scores among psychiatry aspirants are concerning and warrant intervention, particularly in addressing the globally significant issue of multimorbidity in patients with psychiatric disorders. It is shown that residents aspiring to work in highly specialized fields often have lower overall scores, possibly because they may prioritize studying their specialized area over the broader knowledge required for fields like internal medicine and emergency care.[12] Four of 10 key challenges in schizophrenia relate to physical symptoms,[5] and we have also highlighted the necessity for multidisciplinary cooperation in managing multimorbidity and complexity.[6] To reduce the mortality gap, it is crucial to enhance the capacity of psychiatrists to manage physical symptoms.[24] Given the difficulty in improving physical assessment skills after becoming a psychiatrist, it is evident that more effort should be allocated to physical assessment during the 2-year residency training
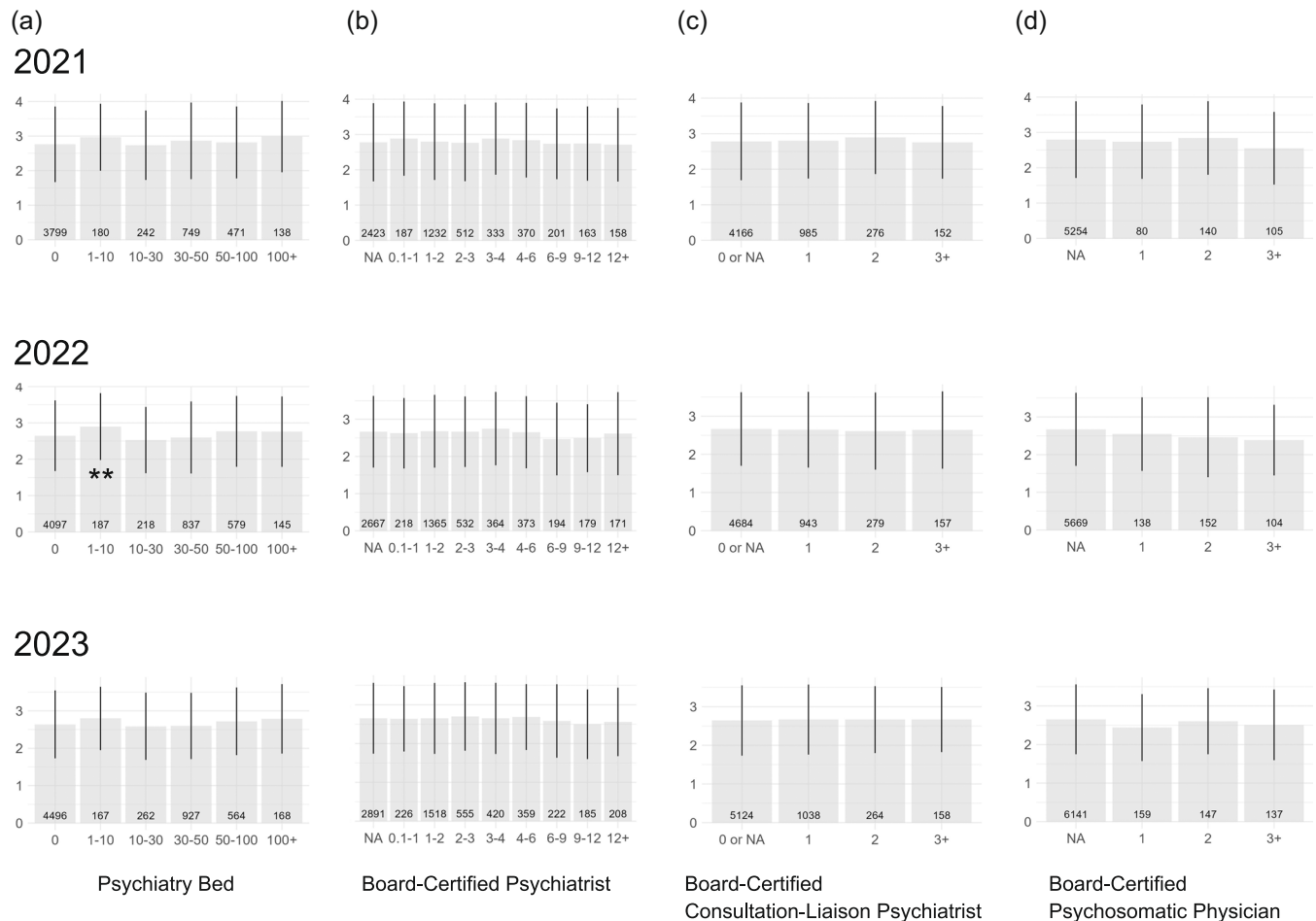
FIGURE 3 Correlation between score of psychiatry field with psychiatric bed number or number of board-certified doctors. (a) Psychiatry beds. (b) Board-certified psychiatrist. (c) Board-certified consultation–liaison psychiatrist. (d) Board-certified psychosomatic physician. The analysis covers the 3 fiscal years of 2021, 2022, and 2023. Each bar plot represents mean psychiatric scores (mean ± SD) with the number of participants indicated at the base of each bar. Despite analysis of variance (ANOVA) showing significant differences in psychiatric scores related to the number of psychiatry beds across all 3 years, post-hoc tests revealed that the significant difference was only sustained in FY2022 for hospitals with 1–10 beds compared to 0 beds, with no consistent trends observed in other years or for other facility characteristics. NA, not applicable.

period, considering the current inadequacies in physical assessment among psychiatry aspirants.

This study also suggests that improving the ability of non-psychiatry aspirants to care for psychiatric symptoms is a significant challenge in clinical training aimed at integrating psychiatry into basic clinical skills. This training should be considered separately from general internal medicine training. Given that psychiatry aspirants scored higher in psychiatry, there might be some factors not clarified in this study that could be used to optimize the training programs themselves. In Japan, the EGUIDE project represents an exemplary initiative that has demonstrated sustained effects in ensuring guideline adherence among psychiatrists.[25,26] Future research should examine the correlation between specific training programs and high psychiatry scores, as well as the efforts being made at facilities where high scorers are concentrated.

We are aware of several limitations of this study. First, the cross-sectional design prevents the assignment of causality between training characteristics and psychiatry scores. Second, the relatively small number of questions in the psychiatry field in GM-ITE might have affected the robustness of the results, nevertheless, the statistical significance and consistent trends across all 3 years support the reproducibility of the findings. Third, we did not assess the rotation history in the psychiatry department due to the limitation of the questionnaire, which we address in subsequent research. Fourth, the study did not consider qualitative aspects of training programs, which could provide deeper insights into the effectiveness of psychiatric education. An integrative and comprehensive approach by quantitative and qualitative mixed methods is required. Lastly, the findings are specific to the Japanese residency training system and may not be generalizable to other countries or healthcare systems.

In conclusion, our study using a large quantitative dataset of psychiatry scores integrated into the GM-ITE highlights the need for specialized psychiatry training programs distinct from general internal medicine and emergency training. Future research should focus on

the identification of effective training methods and facility practices that lead to higher psychiatry scores among residents.

CONFLICT OF INTEREST STATEMENT

H.T., T.Ko., M.Sa., and D.S. have received an honorarium from JAMEP as exam preparers of the GM-ITE. Y.N. has received an honorarium from JAMEP as GM-ITE project manager. Y.T. is the director of JAMEP and has received an honorarium from JAMEP as a speaker at the JAMEP lecture. T.Ka. reports grants from Sumitomo-Pharma outside the submitted work. T.Ka. is an Editorial Board member of *Psychiatry and Clinical Neurosciences Reports* and a co-author of this article. To minimize the bias, he was excluded from all editorial decision-making. The remaining authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author, H.T., upon reasonable request.

ETHICS APPROVAL STATEMENT

This study was approved by the Ethics Review Board of JAMEP (approval numbers: 23-24 and 24-3).

PATIENT CONSENT STATEMENT

All participants provided informed consent.

CLINICAL TRIAL REGISTRATION

N/A

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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