

# A Week Long “PEP” Talk – Initial and 2-3 Year Longitudinal Data on the Ottawa Psychiatry Enrichment Program (OPEP)

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## Research Article

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# Abstract

## ***Background:***

Recruitment to psychiatry has been challenging in Canada and abroad. Historically 4-6% of medical students match to psychiatry in Canada. Novel and innovative measures to increase interest in psychiatry among medical students are needed to meet the increasing demand for psychiatrists given the increasing burden of mental health issues globally. Common barriers include negative attitudes and stigma towards psychiatry and a paucity of knowledge about the field. The study goal was to evaluate the efficacy of the Ottawa Psychiatry Enrichment Program (OPEP), a one-week extracurricular program about psychiatry as a career, developed for 1<sup>st</sup> and 2<sup>nd</sup> year medical students to improve medical students' attitudes towards psychiatry, and increase recruitment.

## ***Methods:***

1<sup>st</sup> and 2<sup>nd</sup> year medical students from Canada applied to OPEP. Attendees completed the Attitudes Towards Psychiatry Questionnaire (ATP-30) before OPEP (PreOPEP), after OPEP (PostOPEP) and after their Canadian Residency Matching Service (CaRMs) match 2-3 years later. OPEP ATP-30 scores were compared to third-year student ATP-30 scores before and after their psychiatry rotation. Data were analysed using Friedman non-parametric ANOVA and post hoc testing by either Wilcoxon rank sum test, Wilcoxon matched pairs signed rank test, or parametric Welch independent t-test as appropriate. Effect sizes of group mean differences were calculated using Cohen's "d".

## ***Results:***

29 students were selected for OPEP from 2017-2018 from across Canada. 100%, 93.1% and 75.8% of students completed the PreOPEP, PostOPEP, and CaRMs ATP-30 surveys respectively. 43% of OPEP attendees matched to psychiatry. PostOPEP ATP-30 scores (mean=133, median=137, SD=10.6) were significantly higher than PreOPEP ATP-30 (mean score=121, median=122, SD=9.3,  $p < 0.001$ ) and CaRMS ATP-30 (mean=126, median=127, SD=12.3,  $p < 0.02$ ) scores. OPEP effect size on ATP-30 scores was large ( $d=1.2$ ) but decreased 2-3 years later ( $p=0.078$ ,  $d=0.44$ ). 97/202 students completed the ATP-30 before and after their psychiatry rotation (clerkship). Clerkship effect size on improvement in ATP-30 was moderate ( $d=0.39$ ). There was a non significant difference between OPEP CaRMS ATP-30 and post clerkship ATP-30 scores (median 127 vs 121,  $p=0.056$ ).

## ***Conclusions:***

OPEP ameliorated attitudes toward Psychiatry, but improvement deteriorated longitudinally. Additional strategies to boost/retain these improvements during clerkship years may be beneficial.

# Background

Globally, 45% of the world's population live in a country without the recommended ratio of 1 psychiatrist per 100,000 people [1]. In Canada, an estimated 1 in 5 individuals will develop a mental illness [2]. Despite these alarming numbers, patients in Canada are often waiting 6 months to 1 year for therapy, highlighting the need for more psychiatrists to bridge this gap in care provision [3]. Recruitment to psychiatry among medical students in Canada has historically been stable at 4-6%, which fails to meet the chronic community need [4]. In an effort to improve recruitment to psychiatry, since 2017, several Canadian schools have initiated "enrichment" programs" to enhance student interest in psychiatry [4]. These extracurricular programs, typically of 3-5 days duration, have invited medical students to learn more about psychiatry as a profession early in their medical school careers, to improve attitudes towards psychiatry and advance interest in the field as a career. Several studies have demonstrated that a more positive attitude towards psychiatry is associated with an increased likelihood of pursuing this as a career [5, 6].

Previous reviews of enrichment initiatives suggest they help with improving attitudes and interest, but there is a paucity of longitudinal data on efficacy for maintaining improved attitudes and increasing recruitment [7, 8]. To date, only 3 programs have longitudinal data on efficacy. The Combined Accelerated Program in Psychiatry (CAPP) introduced in Maryland in the 1970s showed that 70% of their students who ranked psychiatry first in their introductory year went on to train as psychiatrists in residency [9]. In Western Australia, the Claasen program introduced students to psychiatry in 2008 through a week-long session of morning seminars and afternoon community hospital and mental health visits. Over a 6 year follow up, 17/47 (36%) students who were followed were either interested in a psychiatry career, or definitely considering this [10]. The Psychiatry Institute for Medical Students, based in Toronto, Canada, was another week-long program aimed at improving recruitment. This program succeeded in recruiting 76/178 (43%) participants from 1994-2005 to psychiatry residency programs [11]. The Psychiatry Early Experience Program (PEEP), a more intense program developed in Kings College in London, England, paired students in their first year with trainee psychiatrists and had them visit 2 days every 6 months throughout the 5 years of students' medical training [12]. Although unable to determine whether their learners ended up becoming psychiatrists, the authors showed that after a 3 year follow up, improved positive attitudes towards psychiatry were sustained among 22/40 respondents.

The purpose of our study was to evaluate the efficacy of an Ottawa enrichment program in improving the attitudes of Canadian medical students towards psychiatry. We hypothesized that students selected to our enrichment program would have more positive attitudes towards psychiatry compared to students just starting clerkship, and that the OPEP program could further enhance this interest. We speculated that improvements in attitudes to psychiatry would be greater than improvements seen by the clerkship experience at the University of Ottawa, and that such interest could be sustained over medical school leading to increased recruitment to psychiatry.

## Methods

The Ottawa Psychiatry Enrichment Program (OPEP) was initiated in 2017 to 1<sup>st</sup> and 2<sup>nd</sup> year students; those from Ottawa as well as across Canada were invited to apply. Ottawa applicants were recruited through announcements in the preclerkship psychiatry block in the curriculum, as well as through the local psychiatry mental health interest group. Program information was also disseminated nationally through the Canadian Organization of Undergraduate Psychiatric Educators (COUPE) to attract applicants from across Canada. Applicants submitted a 300-word paragraph and optional materials they felt would be helpful. Submissions were evaluated and ranked by a blinded panel of 2-3 staff doctors and 1-2 learners (resident, medical student) based on 1) perceived interest in psychiatry as a field (more heavily weighted) and 2) potential for future clinical and/or academic excellence. The panel was asked to rank the top 10 applicants from Ottawa, and the top 10 from outside Ottawa each year, to potentially offer the opportunity to participate in OPEP. Depending on the year and resources, between 12-16 positions were filled. Approximately 60% of applicants were selected from Ottawa.

Mirroring the Psychiatry Institute of Toronto, OPEP began with morning sessions consisting of interactive seminars given by instructors with reputations for academic excellence and/or excellent student reviews. Instructors were asked to primarily discuss their particular practice and inspiration for psychiatry, though some introduction of didactic material was encouraged. Instructors were primarily paid through departmental funds from each respective hospital, while residents were reimbursed through their resident education fund. Instructors were from mixed backgrounds, with many notable senior instructors having a track record of academic excellence including national and international prizes, along with younger instructors early in their careers with strong teaching evaluations to provide a role model and a varied perspective for students to visualize a potential career in psychiatry. Recruitment of instructors deliberately reflected at least 50% female instructors, with particular attention being paid to recruit female leaders in our department, including our residency training director, and the chair of our department among others. Instructions to speakers were deliberately vague to encourage creative ways of presenting how they became interested in psychiatry and describe their particular specialty/subspecialty, with a suggested time of 40 minutes, and 10-15 minutes for questions, though interactivity throughout their seminars was encouraged. One session was dedicated to a resident panel, where 4 selected residents presented a montage of how they became interested in psychiatry and describing their current training experiences. One session was also devoted to mental health consumers, with selected speakers from a client advisory panel who spoke openly about what it was like to receive psychiatric services, and how their mental health experiences have been impacted by their care givers. The Department of Psychiatry of Ottawa provided lunch each day with selected residents with a history of academic excellence and noted interest in education, in randomized clusters of approximately 3-4 attendees per resident, to have an open time to network and discuss psychiatry as a career in a relaxed setting, without attending staff doctors present.

For afternoon sessions, students were then matched as best as possible based on pretest preferences to outpatient clinical settings for 2-hour observerships, including several subspecialty areas such as forensic psychiatry, child psychiatry, geriatric psychiatry, sleep medicine and others. This provided the

student one on one time with different staff doctors to ask questions, and also gave them an opportunity to see patients with mental health issues (primarily with less severe illness than those seen in inpatients) in a clinical setting.

The Attitudes Towards Psychiatry (ATP-30) survey was used to assess students' sentiments towards mental health and psychiatry as a career. The ATP-30 is a 30 item 5-point Likert-based scale developed by Burra et al. with the intention of encapsulating the attitudes of medical students towards psychiatry [13]. The scoring ranges from 30 – 150, with a score of 90 and above considered indicative of a positive attitude towards psychiatry [6]. Its psychometric properties demonstrate strong test-retest reliability and a Cronbach's alpha of 0.83 [13]. As depicted in a systematic review by Wei et al, the ATP-30 is the only scale measuring healthcare professionals' perceptions towards psychiatry that was created in a Canadian context and specifically tailored towards medical students and residents [14]. Written informed consent was obtained and then students completed the ATP-30 survey prior to OPEP ("PreOPEP"), after OPEP ("PostOPEP"), and then again after they completed the Canadian Residency Matching Program (CaRMS) match 2-3 years later. At this time, they also indicated to what residency program they matched using SurveyMonkey. The Institute for Mental Health Research (IMHR) Research Ethics board approved all experimental methods and protocols for this study.

Two other groups were available for study: the ATP-30 was also administered to the entire 2020 University of Ottawa psychiatry clerkship cohort as well as part of the 2021 cohort, prior to the start of clerkship, as well as right after clerkship 5 weeks later. These students provided informed consent. This latter sample was part of a separate project and was incorporated into this analysis to serve as a comparison to the OPEP students. The University of Ottawa Office of Research and Integrity provided ethics approval and approved all experimental methods for use of these data. ATP-30 survey results from students who had already completed the OPEP program (n=6) were excluded from these clerkship data. *Figure 1* illustrates the temporal sequence of available ATP-30 data. All datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

### ***Statistical Design:***

In order to decide on the use of parametric or non-parametric tests, ATP-30 data from each of the 5 groups noted above were assessed for normality of distribution using the Shapiro-Wilk test; this showed that two groups differed significantly from normality: 1) the PostOPEP group (mean=133, median=137, interquartile range=14.5, Shapiro-Wilk p=0.007); and 2) the BeforeClerkship group (mean=117, median=115, interquartile range=13, Shapiro-Wilk p=0.012). Therefore, to be conservative, non-parametric group comparisons were used throughout. All 5 groups were compared simultaneously using the Friedman non-parametric ANOVA, with post-hoc testing by either the Wilcoxon rank-sum test with continuity correction (non-parametric independent t-test), or the Wilcoxon matched-pairs signed-rank test with continuity correction (non-parametric paired t-test), as appropriate. The required significance level was increased from  $p = 0.05$  to account for multiple comparisons, by means of the Holm-Bonferroni method [15]. Effect sizes of group mean differences were calculated using Cohen's "d" with

acknowledgement that the ATP-30 distribution only approximated normality in the PreOPEP and AfterClerkship group. All analyses were done with the 'R' statistical software, version 6.3.1 [16].

## Results

Between 2017-2018, 24/313 (7.7%) first and second year medical students from the University of Ottawa applied to OPEP from the 2019 and 2020 graduating classes. Applicants also came from the 2021 class but have not been followed as of yet. 29 additional students applied from across Canada, for 29 total positions (13 in 2017, 16 in 2018). Seven students were offered positions but declined, either being unable to come due to travel, competing obligations, or not responding. Two of these students came the following year. This final OPEP group consisted of 19 female and 10 male students. Many positive comments were made on exit evaluations. Students voiced enjoying hearing about choosing psychiatry as a career and learning about subspecialties. Networking with other peers from across the country over a shared passion for psychiatry, as well as having observerships with a 1:1 ratio between staff and student were also other identified positive attributes. See *Table 1* for thematic analysis of comments made regarding the OPEP program.

All 29 OPEP students completed the ATP-30 survey prior to OPEP starting ("PreOPEP scores"); 27 students (93%) filled out the ATP-30 upon OPEP completion ("PostOPEP scores"). 23/29 (79%) students subsequently have graduated and entered the CaRMS match (6 students graduate in 2021). 22/23 (96%) of ATP-30 surveys were collected after the CaRMS match ("CaRMS"). Among these students, 10/23 (43%) students matched to psychiatry, 8 matched to family medicine, and remaining graduates matched to other specialties, and one is unknown. Among the 24 University of Ottawa students who applied to the program from the 2019 and 2020 graduating classes, 14 were accepted to OPEP, and 6/14 (43%) students matched to psychiatry. Among the 10 students who were declined acceptance from these classes, 2/10 (20%) matched to psychiatry programs. 15/289 (5%) of University of Ottawa students from the classes of 2019 and 2020 who did not apply to OPEP matched to psychiatry (see *Figure 2*).

Friedman ANOVA conducted on the ATP-30 median scores showed highly significant differences between the 5 groups ( $p$ -value < 0.001). Post-hoc pair-wise testing of group medians was performed as follows: (PreOPEP, PostOPEP), (PostOPEP, CaRMS), and (PreOPEP, CaRMS) using Wilcoxon rank-sum tests. PreOPEP ATP-30 scores for attendees were high, as expected (mean score=121, median=122, SD=9.3). Following the completion of OPEP, PostOPEP median scores (mean=133, median=137, SD=10.6) were significantly higher than PreOPEP scores (mean=121, median=122,  $p$ <0.001). While ATP-30 scores declined 2-3 years afterwards following CaRMS (mean=126, median=127, SD=12.3), they still showed a moderate effect size improvement compared to PreOPEP ATP scores (Cohen's  $d$ =0.45 SD,  $p$ =0.078). The PostOPEP median was also significantly greater than the CaRMS median score, though to a lesser degree (137 vs. 127,  $p$ =0.02). Median PreOPEP ATP-30 scores were non-significantly lower compared to the median CaRMS ATP-30 scores (122 vs. 127,  $p$ =0.078). See *Figure 3*.

Comparisons were also done between the 3 OPEP groups and the contrast group that only attended their compulsory psychiatry clerkship. A post-hoc Wilcoxon independent t-test showed a significant difference between PreOPEP ATP-30 scores and BeforeClerkship ATP-30 scores (medians 122 vs 115,  $p=0.018$ ). A similar test showed only a non-significant result towards a difference between CaRMS and AfterClerkship ATP-30 scores (median 127 vs 121,  $p=0.056$ ). A Wilcoxon paired t-test showed a significant improvement from BeforeClerkship to AfterClerkship (median 115 to 121,  $p < 0.001$ ) with a moderate effect size (Cohen's  $d=0.39$ ). See *Figure 4*.

## Discussion

These data suggest that over the course of the OPEP experience, attitudes to psychiatry improved considerably, even in a group already favorably disposed. These improvements regressed 2-3 years later, though still tended to be higher than scores prior to starting OPEP and scores of non-OPEP students who had finished clerkship. Since student applications were selected partially based on perceived interest in psychiatry, there is a clear self-selection bias contributing to high ATP-30 scores prior to OPEP starting. These data suggest that the selection process indeed selected candidates for OPEP who had a highly favorable attitude towards psychiatry, as expected. While OPEP was designed to further improve attitudes towards psychiatry, it is also possible that a social desirability bias contributed to the significant increase in ATP-30 scores after OPEP. Despite being reassured of the survey's anonymity, students may have thought that reporting more 'positive' attitudes toward psychiatry made them a more 'desirable' candidate for residency. Also, as students progressed through clerkship, it is unclear whether clerkship would have further increased their ATP-30 scores from their post-OPEP level, or whether there might have been a ceiling effect. With the limited data available, it is difficult to draw meaningful conclusions, though the 6 students who completed both OPEP and clerkship had high average ATP-30 scores (average=137, data not shown). Additionally, as OPEP graduates rotated through various other blocks during clerkship, it is possible that they encountered rotations where psychiatry may be viewed more negatively, and/or other fields became more appealing, possibly contributing to the lower observed attitudes. Clinical clerkship has been shown to improve attitudes towards psychiatry among medical students [17]. While a systematic review by Lyons evaluating the effect of various clerkship programs on attitudes towards psychiatry also showed improvements in these attitudes for medical students, their analysis also showed such improvements decay with the passage of time and no improvements seen in interest in psychiatry as a career option [18]. Previous work from Maidment as well as Baxter have also noted decay in attitudes towards psychiatry during the latter part of medical school [19, 20].

Almost half (43%) of the Ottawa graduates went on to match to psychiatry two to three years later. These results are comparable with results from learners enrolled in other enrichment initiatives such as the Claassen institute (36%) and the Psychiatry Institute from Toronto (43%) [10, 11]. The OPEP data suggest that one third (8/24) of Ottawa students who applied to OPEP ultimately matched to psychiatry, i.e., had already developed some interest in psychiatry in preclerkship as evidenced by their willingness to apply to OPEP, with 6 candidates successfully completing OPEP, while 2 were not selected for the OPEP program. Seventy-five percent (6/8) of these students who were selected to OPEP matched to psychiatry,

suggesting the selection criteria were reasonably specific at selecting students who had high potential to become future psychiatrists. On the other hand, among 23 students that matched to psychiatry from this 2-year cohort of 313 Ottawa students, 15/23 students (65%) never applied to OPEP. Possibly, these students' interest developed later in their medical careers, though it is unclear whether these students may have attended another enrichment program such as the Psychiatry Institute of Toronto (the only other program advertising nationally to students). Additionally, it is possible that some Ottawa students did not apply because of OPEP's novelty, as they might not have known enough about OPEP or possibly were uncertain about its credentials. Furthermore, it is possible that such students were not interested or had competing obligations. Further work could also be considered to enhance selection procedures, since only one third of the Ottawa students who matched to psychiatry were identified through OPEP.

The strengths of our study include the inclusive nature of our longitudinal follow up with a high (96%) response rate after the CaRMS match, and the availability of comparison data with a clerkship class. Unfortunately, however, just under half the clerkship classes completed the ATP-30 before and after clerkship, possibly introducing bias. Additionally, data were captured for those who applied to our program and were selected, those who applied but were not selected, and those who did not apply at all but went on to match into psychiatry. To our knowledge, this is the only study of enrichment programs that has tracked this kind of data.

Limitations of this study include the small sample size. Consequently, caution is warranted in interpreting these results though recruitment results are consistent with other programs and highly significant. Additionally, it is not known if students who did not match to psychiatry possibly ranked psychiatry highly but were not selected. Anecdotally, one OPEP graduate mentioned ranking 3 psychiatry programs before ultimately getting matched to her 4<sup>th</sup> choice in family medicine. As an additional observation, among the 13 students who came from outside of Ottawa to OPEP and matched, none matched to psychiatry in Ottawa. These data consequently suggest that enrichment programs might have more success in attracting internal candidates to internal programs, more so than bringing external candidates to such a program, though numbers are small so caution in interpretation is warranted. Further longitudinal follow-up would be ideal, as 6 students matched in 2019, while 17 matched in 2020; this may increase bias because the majority of candidates followed matched in one year. It would be ideal to have had all the clerkship students fill out the ATP after matching in CaRMS as well, but unfortunately this was not feasible. Such results could help determine the extent to which attitudes might be predicted to decay after clerkship, and may help understand whether enrichment programs like OPEP might "raise the floor" on such patterns of deterioration in attitudes in students endorsing early career interest. The 2021 CaRMS match, however, will likely be far different than any other match in previous memory due to the impact of COVID-19 (e.g., no national electives).

Psychiatry as a field has become more popular as measured by the percentage of students matching to psychiatry in the last 2 years, reaching as high as 7.5% in 2020 [21]. 2020 was the first year where 100% of the psychiatry positions across Canada were filled by the 1<sup>st</sup> iteration. One possible contributing factor is the emergence of several enrichment programs. Since 2017-8, UBC, McMaster, and Western had also

started their own enrichment programs, though they were primarily open only to local medical students [4]. Together with Ottawa and Toronto, this represents 5/17 (29%) of medical schools in Canada. In the future, it may also be helpful to offer such programs for the francophone schools in Canada. Such programs could be viewed as not only increasing but also possibly retaining interest in psychiatry, as students applying already identify early interest. It may also behoove departments to examine deterrents to psychiatry, since these and other data suggest deterioration of attitude and interest over 2-3 years.

Psychiatry, more than other specialties, is prone to stigma, both from patients and our colleagues [22], which threatens recruitment. As we accelerate further into a virtual education world, the incorporation of video conferencing software may render benefit in future OPEP or similar enrichment sessions. Moreover, the Ontario Telehealth Network (OTN), a clinical provincially funded telehealth portal, is widely accessible in Ottawa, and could be used for the observership component of OPEP. Pre-recorded sessions could be available to students after OPEP as well, potentially bolstering its capacity for longitudinal impact. Reminder or “anniversary” emails, akin to similar notifications on social media, may additionally serve as a means of refreshing students’ memories of the OPEP experience, to possibly invigorate steps towards interest in psychiatry. More robust programs such as the PEEP program from the UK offer a glimpse to the possibilities of sustaining improvements in attitudes towards psychiatry with continuous contact with preceptors, but some schools may not have such resources to dedicate to learners. Perhaps some kind of middle ground with an enrichment program added to the aforementioned considerations could be more widely feasible and part of a broader strategy for increasing interest in psychiatry both as a field of medicine and potentially as a career for a larger number of medical school programs. Overall, long term implementation of enrichment programs may be helpful to expose students early in their career to role models in psychiatry, and possibly with further measures might promote development of student/mentor relationships that have been suggested to be helpful for recruitment [20]. Given the climate of COVID, and the difficulty of students travelling for external electives, we urge educators in psychiatry to consider more innovative approaches to help improve recruitment to our field.

## Conclusions

1. An early enrichment program for medical students can identify early interest in psychiatry as a career and can significantly improve attitudes towards psychiatry in those identifying early interest.
2. However, such attitudes are likely to deteriorate by the time students declare their career interests.
3. Future work is needed to develop innovations to sustain improvements and identify factors leading to deterioration in attitudes to psychiatry.

## Declarations

Author Contributions: Elliott Lee, Alexandra Morra, Soojin Chun, and Christopher Taplin contributed to writing of the manuscript and production of the figures. Khalid Bazaid, Abdellah Bezzahou and Kevin Simas compiled/analyzed/provided the clerkship data used in the analysis. Alan Douglass and Jess

Fiedorowicz contributed to the analysis of the results and statistical methods. No funding was used to complete this study. No authors have any disclosures to declare.

All experimental protocols and methods were approved by the Institute for Mental Health Research and the University of Ottawa Office of Research Ethics and Integrity. All participants provided informed consent. All datasets used and/or analysed during the current study available from the corresponding author on reasonable request.

All methods were carried out in accordance with relevant guidelines and regulations in the Ethical Declarations in the Manuscript file.

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Disclosure: On behalf of all authors, the corresponding author declares that there is no conflict of interest.

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## Tables

**TABLE 1:** Summary of Thematic Analysis

What was positive about the OPEP program, and what could be done to improve?

THEME	SAMPLE COMMENTS
<b>Showed variety of areas of psychiatry</b>	<p>“Gave a great snapshot of different areas of psychiatry”</p> <p>“Great that we get to see different areas of psychiatry”</p> <p>“Excellent experience; loved the opportunity to see diversity in field”</p> <p>“Participating in OPEP was very enlightening and changed some of my previous thoughts regarding what a career in psychiatry would be like.”</p>
<b>High quality of teachers</b>	<p>“Favorite part of OPEP was that preceptors were great at teaching and made for a pleasant experience”</p> <p>“Dr. X was an excellent mentor and encouraged me to ask questions and peruse my interests in psychosis”</p> <p>“Fascinating to hear clinical stories. All speakers were clearly passionate about their field.”</p>
<b>Organization &amp; Logistics</b>	<p>“Very well organized”</p> <p>“Ensure physicians have afternoons with patients”</p>
<b>Diversity of Speakers</b>	<p>“Resident panel was most likely the most useful since it is the stage we are closest at.”</p> <p>“Loved having the opportunity to chat with residents in a casual way during lunch.”</p> <p>“Client stories were great; loved the patient panel”</p>
<b>Content of Program</b>	<p>“Add more basic content to teach other skills in psychiatry.”</p> <p>“It may be good to have a psychiatrist who has focus on post partum depression, perinatal issues, eating disorders; [this] is an area I would have been interested to learn more about.”</p>

“Would be great to see ECT conducted”

“Would have been good to learn more about the residency program, and matching to residency programs”

Response rate: 29/29 respondents (100%)

## Figures

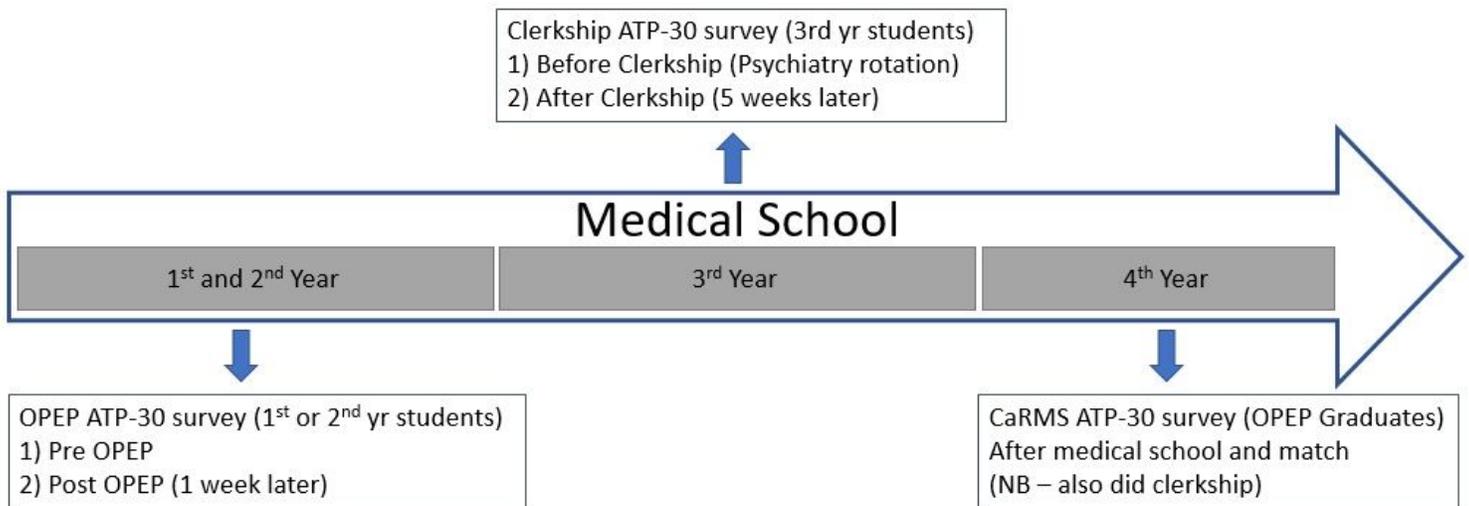
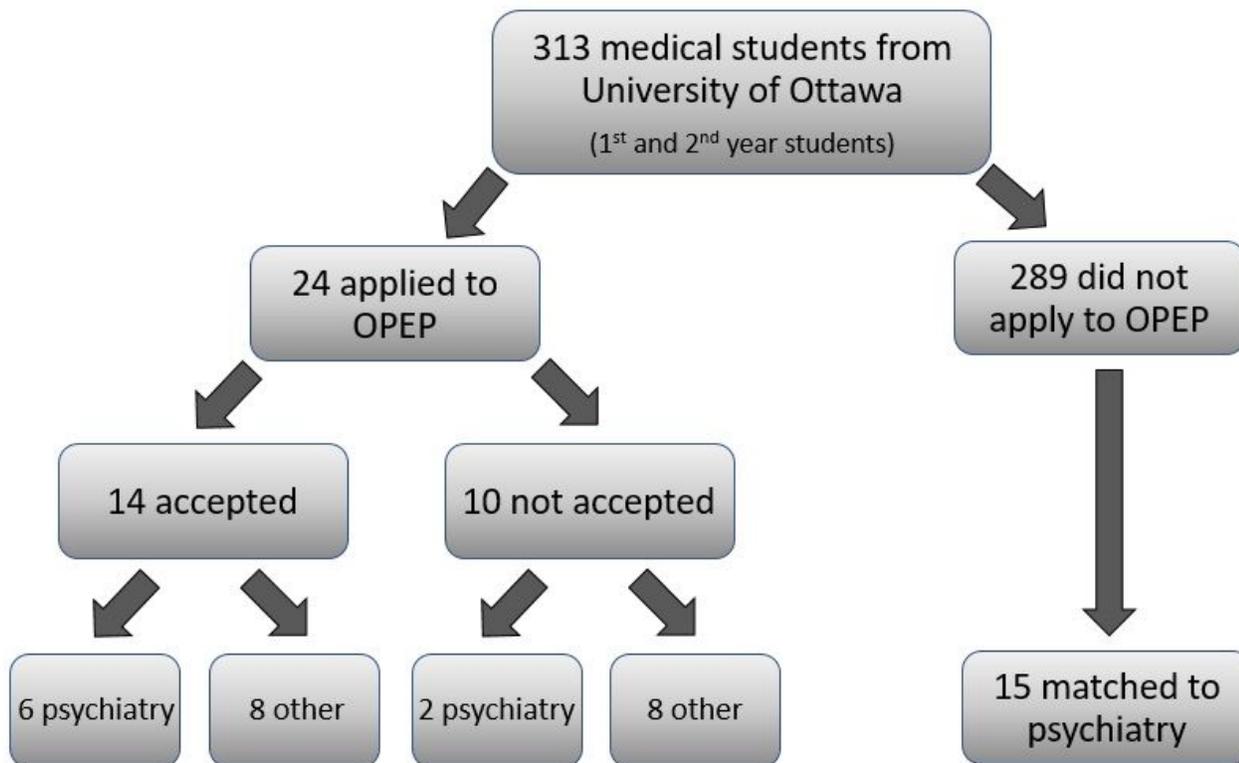


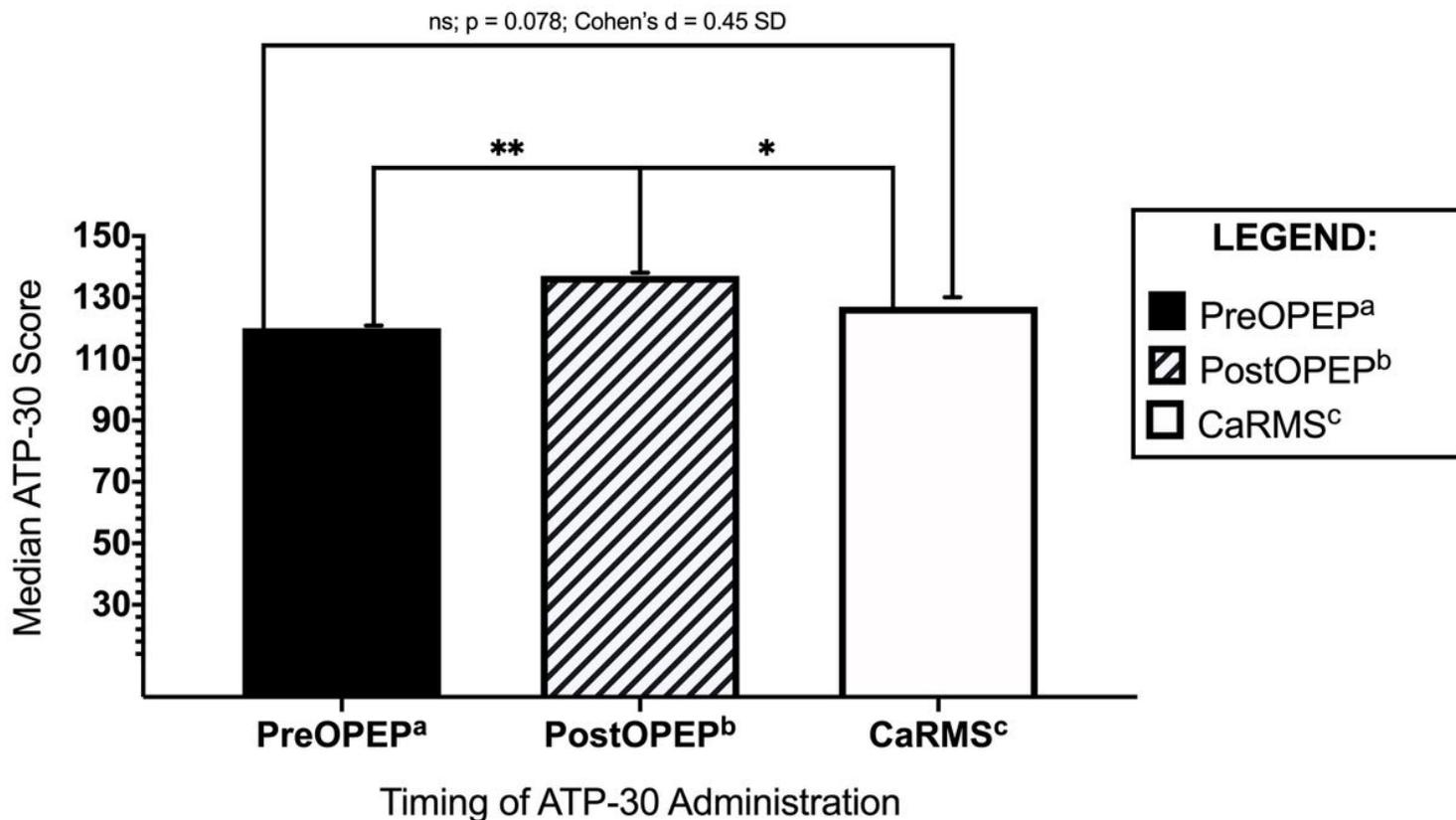
Figure 1

This figure illustrates the timeline of medical school, and when students in each arm of the study received the Attitudes Towards Psychiatry (ATP-30) survey during their medical school experience. OPEP students received the ATP-30 survey at 3 time points, including before and after OPEP which took place at the end of their 1st or 2nd year, and again at 4th year, after they were aware of their Canadian Residency Matching Service (CaRMS) results. Other students completed the ATP-30 survey just before their psychiatry rotation and 5 weeks later after completion (placed within their 3rd year of medical school).



**Figure 2**

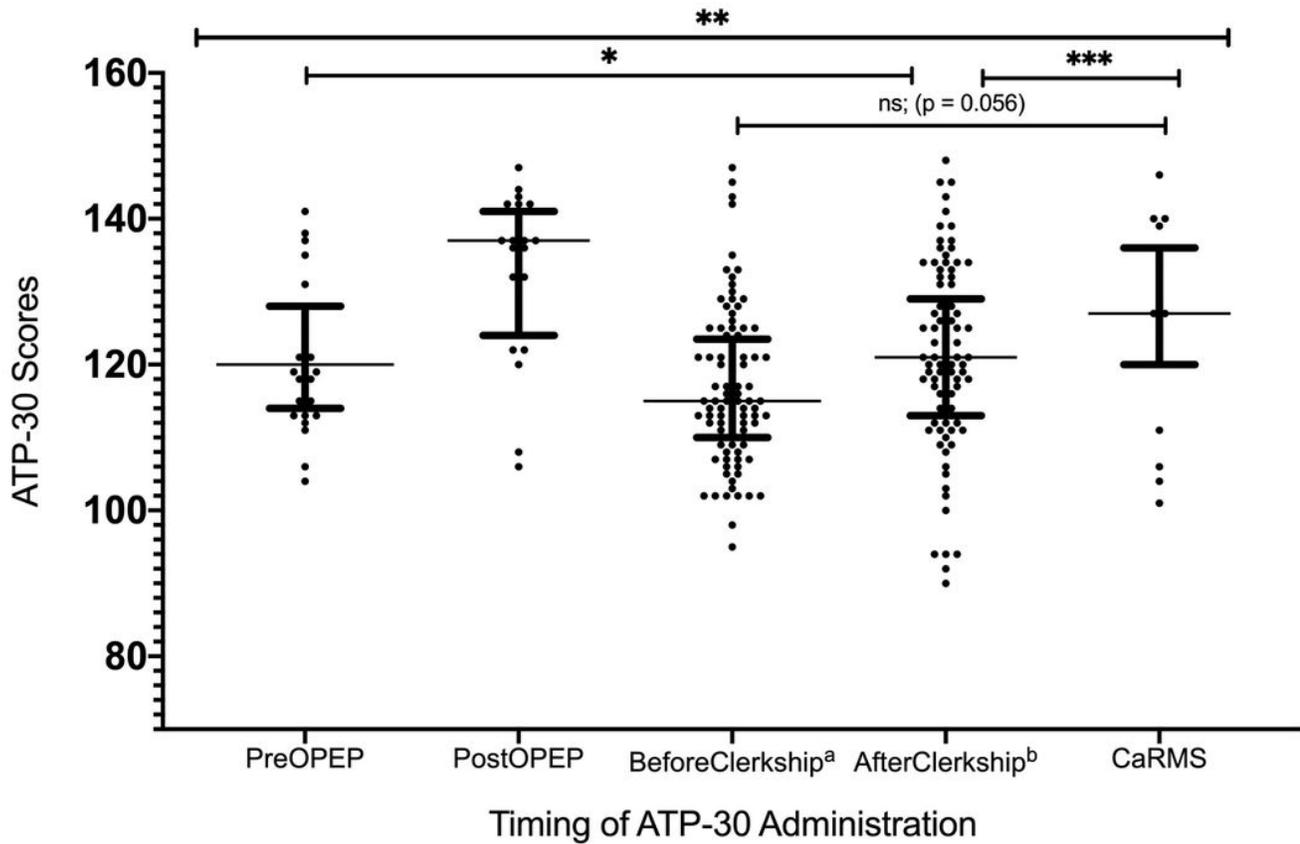
The following figure depicts the path that 2019 and 2020 University of Ottawa medical students followed upon graduation. Students are categorized to those to applied to OPEP, who were further categorized to those accepted versus those that were not accepted. Additionally, students who did not apply were also followed (far right rectangles). Subsequent follow up revealed how many students in each group matched to psychiatry upon graduation (bottom rectangles).



a N = 29; ATP-30 administered prior to OPEP; b N= 27; ATP-30 administered after OPEP (1 week later)  
 c N = 22; ATP-30 administered immediately after completing the CaRMS match process  
 \*\*p-value < 0.001  
 \*p-value = 0.02  
 SD = Standard Deviation

**Figure 3**

This figure represents the median ATP-30 scores of students a) prior to starting OPEP (n=29), and b) after completing the OPEP program (n=27) one week later, as well as 2-3 years later after they completed the Canadian Residency Matching Service (CaRMS) match (n=22). a N=29; ATP-30 was administered prior to starting OPEP; b N= 27; ATP-30 was administered on the final day of OPEP c N=22; ATP-30 was administered immediately after attendees completed the CaRMS match process \*\*=p-value < 0.001 \*=p-value < 0.05



**Figure 4**

This figure depicts the Attitudes Towards Psychiatry (ATP-30) scores for the respective student cohorts. Each dot represents an individual student's ATP-30 score, with the horizontal line representing each cohort's median, and the horizontal bars depicting the 25th and 75th percentile (interquartile range, IQR). a: N=97; ATP-30 was administered prior to starting core psychiatry clerkship rotation b: N=97; ATP-30 was administered after 5 weeks of core psychiatry clerkship rotation \* p-value=0.018. This was determined via Wilcoxon non-parametric independent t-test \*\* p-value < 0.001. This was calculated using Friedman non-parametric ANOVA \*\*\* p-value < 0.001. This was determined via Wilcoxon non-parametric paired t-test