

Does Early Mentorship in Child and Adolescent Psychiatry Make a Difference? The Klingenstein Third-Generation Foundation Medical Student Fellowship Program

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Objective: *There is a critical shortage of child and adolescent psychiatrists in the United States. Increased exposure, through mentorship, clinical experiences, and research opportunities, may increase the number of medical students selecting child and adolescent psychiatry (CAP) as a career choice.*

Method: *Between 2008 and 2011, 241 first-year participants of a program to increase exposure to CAP, funded by the Klingenstein Third-Generation Foundation (KTGF) at 10 medical schools completed baseline surveys assessing their opinions of and experiences in CAP, and 115 second-year participants completed*

follow-up surveys to reflect 1 year of experience in the KTGF Program.

Results: *Students reported significantly increased positive perception of mentorship for career and research guidance, along with perceived increased knowledge and understanding of CAP.*

Conclusions: *Results suggest that the KTGF Program positively influenced participating medical students, although future studies are needed to determine whether these changes will translate into more medical students entering the field of CAP.*

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There is a critical shortage of child and adolescent psychiatrists in the United States. Detailed estimates from the 1980s and 1990s placed the supply of child and adolescent psychiatrists at 10%–45% of the level required to meet the mental health needs of U.S. youth (1–4). The field of Child and Adolescent Psychiatry (CAP) has sought innovative solutions to address this shortage, yet many of these solutions are directed at graduating students who already have an interest in psychiatry (5, 6). Another approach focuses on medical students, who may not have decided on a career path. The Klingenstein Third-Generation Foundation (KTGF) Medical Student Fellowship Program (MSFP) is an example of such a program (for details, see http://ktgf.org/msp_description.html). Although psychiatric interest groups are present in many medical schools, the KTGF/

MSFP focuses primarily on CAP and has grown to include 10 medical schools and a total of 647 medical-student participants nationally since its initiation in 2002. The KTGF/MSFP was established with the short-term goals of providing medical students with: 1) early clinical experiences in CAP; and 2) mentoring from child and adolescent psychiatrists. The long-term goal has been to recruit more medical students into CAP to meet more adequately the growing numbers and needs of children affected by mental illness.

Although each MSFP site operates independently and is given freedom to design its own curriculum, all programs share in common the two goals of providing fellows with a clinical experience in CAP and a CAP mentor. Opportunities for clinical experiences vary across a wide array of settings within CAP; these include outpatient, inpatient, consultation-liaison, therapeutic nursery, community-based clinics, subspecialty clinics, and clinical research settings.

Results presented here represent Phase 1 of the programs' evaluation: assessing outcomes after 1 year of student participation in the KTGF/MSFP, from 2008–2011. In this Phase 1 evaluation, we compared students' attitudes, experiences, and interest in CAP before and after participation in the MSFP for the year. Phase 2 will examine the longitudinal impact of the program, specifically, whether participation in the KTGF/MSFP is associated with a greater likelihood of students' matching into CAP. These data are not currently available because the majority of participants are not yet eligible to begin training in CAP.

Method

Baseline surveys were distributed by e-mail, using Survey Monkey, an online survey tool, to all students who were identified by site coordinators as beginning the KTGF/MSTP in 2008, 2009, or 2010. These surveys were completed within 60 days of beginning the MSFP. Follow-up surveys were then completed 1 year later (2009–2011) by the same individuals. Surveys were collected anonymously, and we can therefore only compare pre- and post-survey responses for the group as a whole. Survey questions were designed to assess a variety of outcomes, including students' attitudes, experiences, and interest in CAP, as well as the importance of mentorship to achieve career goals.

Students were asked at baseline and follow-up about their level of interest, on a scale from No Interest (rated 1) to Enormous Interest (rated 7), in each of the following: desire to become a pediatrician, an adult psychiatrist, a child and adolescent psychiatrist, or to engage in CAP research. Students were asked to rate the importance of mentorship for

career guidance, research guidance, and as a way to learn medicine. Using a scale from No Knowledge Or Understanding (rated 1) to Solid Knowledge And Understanding (rated 7), students were also asked about their level of knowledge and understanding of key concepts in CAP, including child development, pediatric psychosocial issues, and strategies in working with children.

We were especially interested in learning whether specific factors were more influential in students' perception of CAP as a possible career. Using a 3-point scale, from Negatively Influenced (rated 1) to No Influence (rated 2), to Positively Influenced (rated 3), we queried various factors, including lifestyle, stigma, patient interaction, emotional stress, scientific foundation, availability of funding, intellectual stimulation, earning potential, prestige, ability to help patients, presence of the physical aspects of medicine, and advancements in the field. Finally, several open-ended questions were posed to explore other potential factors that encourage or discourage students from careers in CAP. We also explored whether participation in the KTGF/MSFP was associated with an increase in clinical encounters with children with mental health issues, an increase in lectures in CAP, and an increase in exposure to child and adolescent psychiatrists.

SPSS Software, Version 18.1, was used for analysis. Given that all surveys were anonymous, responses from only first-year students were used as baseline data and only from second-year students as follow-up data. This assured that any change from baseline to follow-up represented 1 year of program participation. The Mann-Whitney *U* test was used to analyze the ranked cross-sectional variables; baseline and follow-up samples were treated as independent. An alpha level of 0.05 was used to determine statistical significance.

Results

Baseline and follow-up surveys were sent to a total of 359 students; 241 first-year KTGF participants completed the baseline survey between 2008 and 2010; 115 second-year KTGF participants completed the follow-up survey between 2009 and 2011. All 10 schools were represented in data from both surveys.

When queried at baseline as to why they joined the KTGF/MSFP, 81% reported seeking an early clinical experience; 68% wanted to learn how to interact with children; and 63% stated that they were specifically interested in CAP.

There was no significant change between baseline and follow-up responses in the level of interest in becoming a child and adolescent psychiatrist, a pediatrician, a general psychiatrist, or engaging in CAP research. However, after

TABLE 1. Mean Effects of 1 Year's Experience in KTGF on Student Perceptions

No Effect; 4: Moderate Effect; 7: Maximum Effect	Baseline	Follow-Up	p
Desire to become a pediatrician	4.26	4.30	0.78
Desire to become a general psychiatrist	4.63	4.49	0.41
Desire to become a child and adolescent psychiatrist	4.44	4.56	0.51
Desire to engage in CAP research	4.30	4.22	0.65
Mentorship as a way for me to learn medicine	5.72	5.68	0.72
Mentorship as a way for me to get career guidance	5.72	5.91	0.04*
Mentorship as a way to provide me with research guidance	4.94	5.33	0.02*
Knowledge of child development	3.70	4.54	0.00**
Knowledge of pediatric psycho-social issues	3.68	4.66	0.00**
Knowledge of the field of CAP	3.58	4.77	0.00**
Knowledge of strategies to interact with CAP patients	3.33	4.55	0.00**
Factors that could influence the choice to enter CAP	Baseline	Follow-Up	p
1: Negative Impact; 2: No Impact; 3: Positive Impact			
Stigma	1.96	1.95	0.83
Patient interactions	2.84	2.93	0.08
Ability to help patients	2.86	2.95	0.03*
Prestige of CAP	1.97	1.99	0.55
Emotional stress	1.88	1.98	0.19
Aspect of physical medicine	1.98	1.96	0.79
Intellectual aspect	2.79	2.77	0.72
Funding sources	2.01	2.10	0.00**
Scientific foundation	2.09	2.11	0.71
Earning potential	2.03	2.09	0.21
Lifestyle	2.54	2.60	0.42
Advancements in the field of CAP	2.28	2.45	0.02*

*p < 0.05; **p < 0.01.

program participation, students noted increased positive perception of a number of factors that influence the possibility of choosing CAP as a potential career (see Table 1).

Students reported increased positive perception of the value of mentorship for research guidance ($p < 0.05$) and an increased positive perception of mentorship for career guidance ($p < 0.05$). There was no significant change in opinion about the value of mentorship in learning medicine.

Over 1 year of participation, the KTGF/MSFP also provided students with significantly increased exposure to the field of CAP. Students reported nearly a doubling of the number of encounters with children and adolescents with mental health issues, as compared with their baseline level of experience (11 versus 6 encounters). They also reported a similar increase in the number of lectures about CAP, as compared with their baseline experience (5 versus 3 lectures). Finally, participation in the KTGF/MSFP was associated with increased exposure to child and adolescent psychiatrists, as compared with baseline (4 versus 2 providers).

Discussion

Specialty-specific extracurricular programs have been used by a variety of medical specialties to attract medical

students to specific fields (7, 8). These programs have had varying degrees of success, and, to our knowledge, the KTGF/MSFP is the first such program specifically designed for CAP and organized at a national level. Results from data collected through pre- and 1-year post-participation surveys suggest that the KTGF/MSFP has been effective in a number of areas.

Although the surveys were not able to demonstrate a significant increase in interest in choosing CAP as a career, it is too early in the program's history to be able to assess how many participants will ultimately enter CAP. Students were clearly influenced by their mentorship experience and early clinical exposure to shift their perceptions and knowledge of the field in positive directions. Students became aware that mentorship was an important means to gain career advice and research guidance. This result was consistent with previous studies that have shown mentorship to be paramount in eventual career selection (9, 10).

Moreover, whatever career choice students may ultimately pursue, increased knowledge and understanding of CAP suggests that the MSFP experience may well benefit their care of patients. MSFP participants may be more likely to recognize and refer children in their practices with mental health problems to appropriate resources. These predictions

are especially likely for those students who remain in the MSFP for 3 or 4 years of their medical school experience and do not select CAP training as their career choice. Improved student knowledge and attitudes about childhood mental disorders should motivate other schools to support an MSFP insofar as it may contribute to the academic growth of students, irrespective of final career choice.

Several limitations of this study should be considered. First, the surveys were anonymous, and we were unable to track individual students' trajectory of change over the year. This limitation was addressed by the inclusion of only first-year and second-year MSFP participants for analysis. Second, response bias may exist because the survey was distributed to all 359 participants in the program, and only 241 first-year students completed the baseline survey, and 115 second-year students completed the follow-up response. The response bias might suggest that those students who responded had stronger opinions about the program, whether positive or negative, and may have felt more compelled to complete their evaluation than students who were less involved. Third, selection bias also may have influenced the results. Students who volunteered to participate in the KTGF/MSFP may have been more interested in CAP at baseline, so their attitudes and knowledge about CAP may not have been representative of a randomly-selected sample of medical students. Nevertheless, despite the cross-sectional study design, the significant changes in perception noted over time are genuine. Fourth, the nature of our survey instrument and the duration of measurement may have been insufficient to detect meaningful changes in some parameters. In particular, follow-up surveys were distributed to students who were mainly in their second year of medical school, a time before career decisions are typically solidified. Finally, these data do not provide any information on the likelihood that increased interest in or understanding of CAP will ultimately lead to CAP as a career choice. Follow-up analyses of match data will address this question in the future.

Results of this study suggest that the KTGF/MSFP may be a successful model to positively shift attitudes and perceptions about childhood mental disorders and CAP in medical students. Such a shift should benefit the future care

of all children with mental disorders, regardless of which career path the students choose. Exposure to CAP early in medical school may also help reduce stigma associated with childhood psychiatric illness and potentially attract more medical students to careers in CAP. Future work will focus on tracking the longitudinal career course of KTGF/MSFP participants to determine whether these positive outcomes translate into more child and adolescent psychiatrists entering the field.

References

1. United States Department of Health and Human Services. Report of the Surgeon General's Conference on Children's Mental Health: A National Action Agenda. Sept, 2000
2. Council on Graduate Medical Education: Re-Examination of the Academy of Physician Supply Made in 1980 by the Graduate Medical Education National Advisory Committee (GMENAC), for Selected Specialties. Bureau of Health Professions in Support of Activities of the Council on Graduate Medical Education. Cambridge, MA, ABT Associates, 1990
3. Kim WJ; American Academy of Child and Adolescent Psychiatry Task Force on Workforce Needs: Child and adolescent psychiatry workforce: a critical shortage and national challenge. *Acad Psychiatry* 2003; 27:277–282
4. Thomas CR, Holzer CE 3rd: The continuing shortage of child and adolescent psychiatrists. *J Am Acad Child Adolesc Psychiatry* 2006; 45:1023–1031
5. Gleason MM, Fritz GK: Innovative training in pediatrics, general psychiatry, and child psychiatry: background, outcomes, and experiences. *Acad Psychiatry* 2009; 33:99–104
6. Gray DD, Bilder DA, Leonard HL, et al: Triple board training and new "portals" into child psychiatry training. *Child Adolesc Psychiatr Clin N Am* 2007; 16:55–66, viii
7. Geske JA, Hartman T, Goodman B, et al: Influence of a rural family medicine rotation on residency selection: MS3 versus MS4. *Fam Med* 2011; 43:556–559
8. Julian K, Riegels NS, Baron RB: Perspective: creating the next generation of general internists: a call for medical education reform. *Acad Med* 2011; 86:1443–1447 (E-pub ahead of print)
9. Aagaard EM, Hauer KE: A cross-sectional descriptive study of mentoring relationships formed by medical students. *J Gen Intern Med* 2003; 18:298–302
10. Thakur A, Fedorka P, Ko C, et al: Impact of mentor guidance in surgical career selection. *J Pediatr Surg* 2001; 36:1802–1804