



# Do Student Run Free Clinics Influence Chinese Medical Students' Career Interests in Primary Care?

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## Abstract

*Background and Objectives:* The Sunshine and Love Free Clinic (SLFC) was founded in 2010, and is currently only student-run free clinic (SRFC) in China. With China being only in the early stage of developing and promoting primary care nationally, SLFC serves as the earliest primary care model for the urban poor. It also is one of the only exposures to primary care for its medical student volunteers. The United States researches on the impact of volunteering at SRFCs have not shown a statistically significant impact on volunteers' career choices. Our study explores the influence of volunteering at SLFC on student volunteers' interest in primary care among Chinese medical students.

*Methods:* We surveyed 34 volunteers who have spent various length of time volunteering at SLFC regarding their interests in primary care before and after volunteering. We used chi-square to analyze the significance of this influence.

*Results:* 27 volunteers had an increase in their interests in choosing primary care, and 8 more students are considering primary care as a career than before volunteering. Given our sample size, this increase in primary care interest was found to be statistically significant ( $p < 0.05$ ).

*Conclusions:* SLFC is one of the earliest primary care clinic model for China's urban poor, in the back ground of the absence of primary care in China. Volunteering at SLFC has a positively influence students to consider primary care as their future career paths. Promoting SRFCs nationally can be a good thing for the future of primary care in China.

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## Background

As China and the United States are dominant players in the international stage, various comparisons regarding the differences in their infrastructure have been drawn throughout the years. In regards to the state of primary care, both countries cannot be more different; primary care is still in its infancy in China while the United States has been swept up in a movement to reform its healthcare policy with a focus on primary care. In order to better understand the cause of this striking difference, one must compare the healthcare education systems of both countries.

First, in China, students typically apply to medical school right after high school and the only factor taken into consideration for admission is the College Entrance Examination.<sup>1</sup> In the United States, students must obtain a college-level education, pass the Medical College Admission Test, and show that they have strong interpersonal, research, and leadership abilities.<sup>2</sup> In terms of clinical training, education in medical ethics and humanities is still under discussion for education reforms in China.<sup>3-5</sup> In the United States, community-based education has been a prominent theme across all health educational boards since 1995.<sup>6</sup> In addition, an outpatient primary care rotation is

required in almost every medical school in the United States and additional community outpatient rotations can be arranged for students interested in pursuing a career in primary care.

Based on the comparisons above, it can be argued that the culture of medical education in China trends towards specialization at the cost of primary care. This deficit was clearly demonstrated in the roster of 138 graduates from the 2014 class of Peking University Health Science Center (PKUHSC). Out of 66 new physicians, 18 (27%) were assigned to primary care roles. Although those routes included obstetrics/gynecology and pediatrics, family medicine, the core of primary care, was simply not an option.<sup>7</sup> Essentially, all graduates from these programs will continue into specialized fields of medicine.

The Sunshine and Love Free Clinic (SLFC) was established in 2010 as an affiliation with Peking University Health Science Center (PKUHSC) after its founder learned about the concept of student-run free clinics (SRFC) from the United States in 2009. The clinic is entirely run and managed by medical students from PKUHSC. With many in China lacking access to family medicine, SLFC serves not only as the first and so far only SRFC in the country, but also one of the first attempts to provide primary care for the underserved. Although SRFCs are commonplace in the United States, SLFC is the first of its kind in China. In addition to a lack of primary care education, since the late 1970s, the Chinese healthcare system was centralized to the urban areas and privatized. As a result, clinics and smaller hospitals have significantly decreased in number, outcompeted and replaced by urban large hospitals. Patients heavily utilize the ED of these hospitals for acute illnesses of all kinds. It is common that during every hospital visit, a patient sees a different provider who knows very little about the patient beyond what is on the record. Getting to know a patient beyond his/her chief complaint seems nonproductive. As a result,

majority of the population do not have their personal physician, continuity of care is lost, and no time is spared for patient advocacy, counseling, or education. SLFC has over 100 regular student volunteers with 40 being active core members. Most volunteers are in the third year of their eight year medical training as volunteering becomes limited once students start their clinical rotations in their fourth year. Currently the clinic has 38 patients, each staying with the clinic for at least a year. On average, two new patients are enrolled in SLFC every month.

Most patients of SLFC are migrant workers between ages 40-60 who work on or near campus. Every month, both new and enrolled patients who have particular concerns are seen. The most commonly seen conditions at the clinic are hypertension, diabetes, and musculoskeletal complaints such as back pain, muscle aches and joint pathologies. Visits typically range from 45 minutes to an hour. For those patients who have seen other physicians or have any other medical expenses within the PKUHSC system, they are able to come for reimbursement for any out of pocket payment. At the clinic, each patient is assigned a medical student volunteer as their student provider, who stays with the patient for the entirety of the year. Patients are able to communicate with their student providers via texting, phone calls, or face-to-face conversations regarding their health concerns whenever convenient, allowing patients to be seen “unofficially” even on the days when the clinic isn’t operating. This has been vital in providing continuity of care, especially for those who suffer from chronic diseases.

The objective of this study is to observe the impact of volunteering with SLFC on students’ interests in primary care. This study focuses on students’ interest in going into primary care if primary care became a feasible career choice for medical graduates.

## Methods

We distributed an online survey to PKUHSC students who volunteered at SLFC. A total of 34 responses were recorded between August 23rd 2015 and September 6th 2015. Below are the survey questions and results.

### 1. How long have you been volunteering?

	number of volunteers	percentage of volunteers
<1 year	12.0	35.3
1-2 years	9.0	26.5
>2 years	13.0	38.2

### 2. What is your interest in primary care since volunteering at SLFC compared to before volunteering?

	number of volunteers	percentage of volunteers
Increased	27.0	79.4
Decreased	0.0	0.0
No Change	7.0	20.6

### 3. Were you thinking about a career in primary care before volunteering?

	number of volunteers	percentage of volunteers
Yes	7.0	20.6
No	27.0	79.4

### 4. Have you thought about a career in primary care after volunteering?

	number of volunteers	percentage of volunteers
Yes	15.0	44.1
No	19.0	55.9

## Results

From the responses to Questions 3 and 4, we find that an additional 8 students expressed interest in primary care after volunteering at SLFC. The chi-square test was used in order to assess whether or not there is a

possible correlation between volunteering at SLFC and consideration for a career in primary care. Thus, the null hypothesis ( $H_0$ ) is: The additional students considering a career in primary care is independent of exposure to volunteering at SLFC. The alternative hypothesis ( $H_a$ ) is: The additional students considering a career in primary care is associated with exposure to volunteering.

In order to accept or reject the null hypothesis, we establish that the predetermined alpha level of significance = 0.05. We then calculate for the degree of freedom, expected frequencies, and test statistic in order to determine the P-value (probability of observing a sample statistic as extreme as the test statistic). If the P-value is below the significance level of 0.05, then we cannot accept the null hypothesis. From Table 1, we calculated degrees of freedom ( $df$ ) = 1. From Table 2, the chi-square statistic = 4.302. According to the chi-square distribution table, the corresponding probability (P) for and is Since P is smaller than the significance level 0.05, it is statistically significant and a conclusion can be made that the additional number of students considering a career in primary care is associated with their exposure to volunteering at SLFC.

## Discussion

The American Association of Family Physicians (AAFP) defines “primary care” to be provided by a personal physician, emphasizing continuity of care and patient advocacy and including “health promotion, disease prevention, health maintenance, counseling, patient education, diagnosis and treatment of acute and chronic illnesses in a variety of health care settings”. At SLFC, the patient membership and personal student provider systems ensure continuity of care. Patient

education and counseling are provided during almost every encounter between patient and their provider. Group health maintenance, prevention and education sessions are also organized for all patients periodically. More importantly, student providers frequently take on the role of patient advocators in collaborating with other health professionals within the PKUHSC system. SLFC meets the definition of primary care practice except for that the personal providers are medical students but physicians. In any sense, SLFC is the closest model of primary care in China, especially for the urban poor.

Herold, et al.'s randomized controlled trial looked at 201 graduates' career choices, 93 students spent one half-day at a community based free clinic for all four years of medical school. Their data suggests that there is no statistical significance in the two groups in terms of choosing primary care as career.<sup>8</sup> Tong, et al.'s survey also did not find any statistical significance among students' interest in primary care graduating from schools that have SRFCs versus those that don't.<sup>9</sup> However, with a corresponding probability

of 0.0380 (below the significance level of 0.05), our data shows that volunteering at SLFC did make a statistically significant difference in the interest of primary care among volunteers in this small study.

Several different factors may have contributed to this development including, but not limited to, the introduction of primary care as a new concept in China, the harsh physician-patient relationship in China, and limited incentives for volunteering at a free clinic for Chinese medical students.

In the United States, two primary factors exist that discourages students from pursuing a career in primary care: inadequacy of financial compensation and the pre-conceived notion that only underachievers go into primary care. The former is based off of the fact that the current reimbursement system leans heavily on compensation for specialized procedures while preventive medicine, which is the majority of primary care, is harder to quantify and therefore less focused in terms of compensation. The latter stems from the current mentality that every medical student

	Number of students considering a career in primary care	Number of students not considering a career in primary care	Row Total
Before Volunteering	7	27	34
After Volunteering	15	19	34
Column Total	22	46	Grand Total = 68

Table 1. A 2 × 2 Contingency Table for Responses to Questions 4 and 5.

Observed (O)	Expected (E)	
7	11	1.455
27	23	0.696
15	11	1.455
19	23	0.696

Table 2. The Observed, Expected, and Values for Cell Values in Table 1.

should seek specialization until no longer possible. This way of thinking may also stem from the current compensation system. In contrast, because primary care is still budding in China, these issues are non-existent or at the very least not as dramatic as in the United States.

As stated above, the emphasis in volunteering or humanitarian experiences upon admission to medical schools is lacking in China. Similarly, having volunteering experience on one's resume does not help one's chance of getting into residency programs or practices after medical school. Students, therefore, are more likely to volunteer motivated by selfless reasons, such as interest in the management of chronic disease or continuity of care, which are the cores of primary care.

In terms of any limitations of the study, the most apparent is that a confounder is present. The volunteers at SLFC may have been the ones who were more interested in managing chronic conditions, considering most of what is done in SLFC is chronic condition management and well checks. These students may be more likely to go into primary care to start with. Secondly, since the data regarding students' interest in primary care before volunteering at SLFC was collected after they have started volunteering, recall bias exists, especially considering the majority of surveyed students have volunteered for more than a year. Lastly, the sample size of this study is relatively small (n=34). Further studies should be conducted in a larger scale, include surveys done prior to volunteering experience, and include students who are non-volunteers.

## Conclusion

SLFC serves as one of the earliest primary care clinic model for China's urban poor, in the back ground of the absence of primary care in China. Our survey shows that volunteering at the SLFC increases medical students' interest in choosing primary care as a career path. With China's medical reform underway, it is only a matter of time when primary care such as

family medicine will be implemented on a systemic level. However, the current education system doesn't promote understanding or interest in such fields. It is SLFC's ambition to promote SRFCs to the point of a national movement in China because development of more SRFCs can only be a good thing for cultivating students' interest in primary care.

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