

The Role of Volunteerism in Medical Student Well-being

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Abstract

Objective: Medical student well-being and motivation are affected by several educational and extracurricular factors, including volunteering. The motivations of medical students to volunteer in conjunction with medical student well-being is an area that has not been extensively researched. We hypothesized that volunteering in medical school positively affects well-being. We also evaluated medical student volunteer motivations and how those may affect well-being scores.

Materials and Methods: Medical students at the University of Rochester School of Medicine and Dentistry were surveyed in this study. We designed a cross-sectional survey that combined questions regarding the type of volunteering that students engage in, the number of hours spent volunteering, motivations for volunteering using the Volunteer Functions Inventory (VFI) scale, and well-being scores using the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS). Descriptive statistics were generated and Analysis of Variance (ANOVA) was used to compare VFI and WEMWBS.

Results: 123 respondents were included in the final analysis, including representation from all four years of medical school as well as medical students completing graduate degrees. 100 (78.7%) of medical students indicated ‘values’ as the number-one ranked motivation for volunteering (chi-square value = 707.28, $p < 0.001$). Medical student well-being was overall slightly lower than the validated average for the WEMWBS scale, and well-being did not significantly correlate with type of volunteering, motivation for volunteering, or number of hours spent volunteering.

Conclusions: This pilot study investigated the association between volunteerism and well-being and assessed medical student motivations for volunteering. For future study, we plan to investigate whether the Volunteer Functions Inventory can be validated in medical student populations. We then hope to extend this study to involve student responses from multiple medical schools in order to positively impact medical curricula and emphasize volunteerism.

Abbreviations

ANOVA: Analysis of Variance; IRB: Institutional Review Board; REDCap: Research Electronic Data Capture; VFI: Volunteer Functions Inventory; WEMWBS: Warwick-Edinburgh Mental Wellbeing Scale

Introduction

It is well studied that medical school training represents a period of significant psychological distress for students. Numerous studies cite symptoms of decreased well-being, burnout and other mental stress among physicians-in-training [1]. Unsurprisingly, the prevalence of these symptoms is consistently higher as compared to the general population and age-matched peers. One study found that both perceived stress and the risk for depression increases from the first to

the third year of medical school [2]. Consequently, strategies have been proposed to facilitate medical student well-being, and many medical schools across the U.S. have implemented wellness programs and well-being curricula [3]. However, volunteering specifically has not been a part of these wellness initiatives.

There are some studies that have investigated the impact of volunteerism on well-being. Volunteering can be motivating for medical students and is described as helping them to “...move beyond the textbook” and deepen their commitment to serving patients with compassion [4]. One study found that people in the general population who volunteer experienced positive effects on self-rated health, functional ability, and even mortality [5]. And still others have shown that volunteer work enhances all aspects of well-being, including happiness, life satisfaction, self-esteem, and sense of control over life, and conversely, people who have greater well-being invest more hours in volunteer service [6]. Therefore, volunteerism may be a critical component of increasing medical student well-being, promoting resiliency, and mitigating burnout through medical school and beyond.

Beyond curricular changes (e.g. pass/fail grading, problem-based learning) and wellness programs (e.g. mindfulness-based stress reduction), [7] strategies that focus on extracurricular activities can reduce anxiety and stress, and develop interpersonal skills [8]. Community service and volunteering constitute a significant part of a medical student’s extra-academic curriculum. While one study showed that such social activities are associated with lower academic efficacy potentially due to time and energy consumption,⁸ another study revealed that volunteering promotes solidarity, social responsibility, and a sense of community, and may contribute to a greater sense of work-life balance [9]. A study conducted with volunteers from the medical student-run free clinic at Sidney Kimmel Medical College showed that non-volunteers demonstrated a significant decline in empathy in medical school and concluded that students may benefit from volunteering [10].

There are several theories of volunteerism, some of which are relevant to discuss here. The exchange theory of volunteerism posits that people do not volunteer for others unless they profit from that exchange [5]. For example, people may volunteer because it provides a means of socializing and emotional connection [5]. Still many would argue that people think of themselves as truly altruistic or the kind of person who helps others regardless of whether they receive something in exchange. Indeed, volunteers often rate working to improve their communities and aiding those less fortunate higher than non-volunteers. However, the relationship between values and volunteering is inconsistent in the literature and in general, “...values are less important in helping decide *who* volunteers than in helping decide *what volunteering means* to the people who do” [5]. Bearing these theories in mind, we sought to understand why medical students volunteer and if their well-being is supported by volunteering. We hypothesized that medical students who volunteer would have higher well-being scores. No study, to our knowledge, has examined the effect of volunteering specifically on medical student well-being, as well as a student’s motivations for volunteering in certain settings.

Methods

Population

At the University of Rochester, medical students have the greatest opportunity to volunteer in their first and second years. Volunteer opportunities range from student-run clinics providing health care services to uninsured and underserved adults, to community outreach services that provide free health care to the homeless, to non-medical engagements such as tutoring and childcare.

At the time that this study was conducted there were 462 medical students at the University of Rochester School of Medicine and Dentistry eligible for participation. This included medical students in all four years of training as well as Medical Scientist Training Program students currently in their graduate research years. Students were contacted via institutional email and were provided with information about the study as well as the study survey.

Subjects had the opportunity to read information about the study via a standard RSRB information sheet in order to make an informed decision regarding their participation. Electronic consent was obtained, in which subjects agreed or disagreed to participate. No signature or subject identifiers were obtained in this consent and no personal identifiers were used in this study.

Instruments

Study data were collected and managed using REDCap electronic data capture tools hosted at the University of Rochester Medical Center. REDCap (Research Electronic Data Capture) is a secure, web-based software platform designed to support data capture for research studies [11,12]. Study respondents indicated their volunteering hours and type of volunteering. Volunteer hours were collected as a continuous variable. Types of volunteering included the following categories: Childcare/Pediatric, Collecting, serving or delivering food or goods, Counseling or providing advice, Providing healthcare, Religious volunteering, Teaching/Mentoring, and Other. Questions were adapted from the Volunteer Function Inventory (VFI), an assessment tool for volunteer motivations. The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) was used to evaluate well-being. This is a widely utilized and extensively published scale used to evaluate and investigate the determinants of mental well-being in a normal population [13]. The VFI is available online for public use. Registration was completed for proper use of the WEMWBS.

The VFI uses a functional approach to motivation [14]. We adapted a similar measure to examine the specific factors that drive medical students to volunteer. The scale included 30 items and each item was rated on a 5-point Likert scale ranging from 1 (not important motivator) to 5 (very important motivator). Each question fits into 1 of 6 motivational factors, including protective, values, career, social, understanding, and enhancement. The answers for each of the 5 questions for each motivational factor were summed together. For each respondent, the motivational factors were then ordered in rank based on highest summed value (most prominent motivator) to lowest summed value (least prominent motivator). Each motivational factor summation was treated as a categorical variable. WEMWBS is a 14-question survey aimed at defining well-being. The 14 questions were previously validated as a single factor score, treated as a continuous variable. Higher scores indicate greater well-being.

See Appendix 1 for further details on survey composition.

Procedures

A cross sectional survey of medical students at the University of Rochester School of Medicine and Dentistry was performed over an eight-week period in Spring 2021. Students who met inclusion criteria received weekly emails over a three-week period to both maximize exposure of the questionnaire and response rate. The questionnaire was entirely voluntary. Inclusion criteria included first, second, third, and fourth year medical students, as well as Medical Scientist Training Program students in their PhD years at the University of Rochester School of Medicine and Dentistry at time of study rollout. Those who were not actively enrolled at the University of Rochester School of Medicine, including alumni, were excluded from this study. The University of Rochester IRB approved the study prior to distribution.

Data analysis

All statistical analyses were performed using STATA 13.0 and Microsoft Excel 16.40. Continuous variables were analyzed using Student's T-test and categorical variables were analyzed using Chi-square analysis. Analysis of Variance (ANOVA) was used to compare WEMWBS with respondent dominant volunteer motivation (as defined by VFI) as well as with the reported number of volunteering hours per month.

Results

Demographics

Of the medical students who met inclusion criteria, 131 survey responses were collected (response rate = 28.3%). Eight responses lacked 50% (2/4) or more of the demographics collected by the survey and were excluded from the final analysis, which included 123 respondents (inclusion rate = 27.3%).

A plurality of respondents were in their fourth year (34.1% of the surveyed population and 36.5% of the class) as described in Table 1. The mean and median age of participants was 26.2 and 26 years, respectively, and 91.1% of survey respondents engaged in volunteering during medical school. 61.0% of respondents volunteered less than 10 hours per month on the average month. The most popular type of volunteering experience was 'providing healthcare' (82.2% of respondents and 86.6% of respondents who volunteer), followed by 'childcare/pediatric' (24.5% and 25.9%) and 'collecting, serving or delivering food or goods' (22% and 23.2%). Of the 11 respondents who indicated that they don't volunteer, 8 (72.7%) indicated that 'there is not enough time in the schedule'.

Volunteer Functions Inventory (VFI)

The VFI psychometric factors were summed and displayed by count of rank order in Table 2. 100 (78.7%) respondents who volunteer scored highest in the 'values' factor, which was followed by 21 (16.5%) respondents who were categorized into the 'understanding' factor. The distribution varied from the expected uniform distribution (Pearson chi-square value = 707.28, $p < 0.001$).

A secondary analysis was done in which VFI rank was categorized such that the top rank was values alone (x), values tied with another rank (y), or another top rank besides values (z). Those categories (x, y, and z) were then compared to the categorical number of volunteer hours per month. In this analysis, there was a significant difference in the distribution of volunteer hours by top VFI rank (Pearson chi-square value=24.42, $p < 0.001$). 7/87 (8%) of those with a VFI consistent with 'values' as the top ranked motivation alone volunteered an average of 20 hours per month or more. When 'values' was not the top ranked motivation for volunteering, 11/23 (48%) respondents volunteered at least 20 hours per month.

Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

The mean score on the WEMWBS portion of the questionnaire was 46.5 (SD 6.6, median 47). On unpaired samples Student's T-test, WEMWBS score was independent of respondents' volunteering statuses ($p=0.46$). On average those who volunteered scored 46.3 (SD 6.49) on the WEMWBS survey and those who did not volunteer scored 46.35 (SD 8.14). On Analysis of Variance (ANOVA), the total WEMWBS score did not significantly vary with the VFI category ($p=0.62$), with volunteer hours ($p=0.59$), and with year in medical school ($p=0.31$).

Discussion

Medical school is a time of significant psychological distress, with students experiencing decreased well-being and burnout at consistently higher rates when compared to the general population and age-matched peers [1]. As a result, many medical schools across the United States

have implemented both wellness programs and well-being curricula [3]. Our study aimed to investigate if volunteerism has an effect on well-being in medical students, as it does in the general population [6]. Overall, this study has shown that medical students spend a substantial amount of their free time volunteering despite busy schedules, which supports volunteerism as a valuable component of medical education. The results of this study also may help to highlight attitudes and behaviors of medical students towards volunteering by delineating their motivations.

The respondents of the survey were overwhelmingly those who indicated they volunteer (91.1%), which is unsurprising given the study was presented as an investigation of the impact of volunteerism on well-being. Those who volunteer may have been more enthusiastic about responding given their present activity level, whereas those who did not volunteer may have felt the survey to be less fruitful or relevant to themselves. Or, this overwhelming response may actually be representative of a medical student population in which volunteerism is prevalent, as education level is the single strongest predictor of volunteering [15]. Students who were farther along in medical school responded at higher rates than those in the first two years, which may simply indicate accumulated volunteer experiences during medical school or more free time to answer the survey.

A small minority of respondents did not volunteer (<10%), leading to a paucity of data to draw conclusions on both the well-being and motivations of those students. In general, those who did not volunteer most often cited their rationale as 'there is not enough time in the schedule'. A medical school curriculum is highly demanding in itself, and often compounded by other extracurricular activities, research projects, and personal living. These responses correlate with the Role Overload Theory put forth by Markham and Bonjean, which predicts a negative relation between paid work hours and volunteer hours [16]. These students may participate in activities other than volunteering, though that data was not specifically collected. The overwhelming portion of respondents who reported volunteering, however, makes this theory less supported in the investigated population, but is a possible contributing factor for the reported time spent volunteering.

The vast majority of respondents who volunteer were motivated the most by 'values' (78.7%). This is largely related to feeling concern and compassion for others, and placing importance on serving those less fortunate. Given that the study's participants were all medical students, it is reasonable to assume that service and compassion are existing attributes in this population, which would further support a value theory of volunteerism. Interestingly, this data is in contrast to the common perception that medical students generally volunteer for resume building or residency application purposes [17], and actually challenges the idea of exchange theory in medical student volunteerism. Prior studies have even found that the number of volunteer activities did not significantly affect residency matching.¹⁸ Given these results, medical schools and volunteer organizations may benefit from advertising volunteering for the purpose of fulfillment and promotion of values, rather than as a requirement for residency.

The second most indicated reason to volunteer was for 'understanding': 16.5% of respondents had VFI scores indicating 'understanding' was as important or more important than 'values' as their motivation. 'Understanding' implies a way to gain knowledge, skills, and abilities, and includes statements such as 'I can learn more about the cause for which I am working', 'volunteering allows me to gain a new perspective on things', and 'Volunteering lets me learn things through direct, hands on experience'. These responses highlight that medical students actively seek out opportunities for experiential learning, and represent at least a secondary or tertiary motivator for most student volunteers.

Despite students finding value in volunteering, there was not

a significant association between volunteering and well-being as originally hypothesized. This may be attributable to a small and not representative sample, and/or an inability for a value experience (i.e. volunteering) to translate into well-being in this population. The timing of measurements may have also preclude detecting an association, since subjects reported well-being at a *present* moment, but reported volunteering from *past* experiences. Despite not finding a significant association, it is important to point out that while the average WEMWBS score of the general population was 50.7, the average WEMWBS scores reported for subjects who do and do not volunteer were 46.3 and 47.9, respectively. These results are consistent with previous studies that report lower well-being among medical students. Overall, the groups of volunteers and non-volunteers had similar well-being scores. While we hypothesized that volunteering would correlate positively with well-being scores, it should also be mentioned that volunteering involves time and energy expenditure. Thus, volunteering may correlate negatively with well-being, perhaps explaining the lack of significant difference in our results. Given the lack of a representative sample size in this study, interpreting the results above should be deferred to a larger analysis.

Limitations

Although well-being did not significantly vary with volunteerism, further analysis of medical student well-being in relation to volunteering should be undertaken as this study had a low, potentially skewed response rate (most responders were in their fourth year). This study has a limited sample size due to evaluating data from a single center. This was exacerbated further by a low response rate of 28%, causing results to be neither representative nor statistically significant. Another limitation, as with all survey-based studies, is selection bias with students responding to the survey self-selecting. This survey also involved reporting well-being in conjunction with average volunteering hours per month. This approach to combining these surveys may be affected by recency bias, which is a known limitation of cross-sectional studies that involve retrospectively reported data.

Conducting this study during the COVID-19 pandemic posed limitations in that both volunteering and student well-being have been affected by the pandemic and consequent restrictions in education and extracurricular activities. The COVID-19 pandemic as a whole may be considered as a confounding factor in this study as it may have caused inherent biases in well-being reporting among students as well as effects on well-being from inability to volunteer. A study involving volunteering habits conducted during a pandemic in which volunteering has been limited may have affected results significantly. It will be helpful in future studies to understand differences in volunteering, motivations, and well-being as more students become vaccinated and restrictions are lifted.

As described in the methods section, this study assessed motivations for volunteering using the Volunteer Function Inventory (VFI). While the VFI is a well-studied tool, validity evidence has yet to be established in a medical student population [19]. We adapted the VFI questions to serve our population and believe the VFI results are still valuable, but have potentially limited external validity when applied to medical students for this reason. We anticipate conducting a subsequent study in order to quantify the psychometric motivational factors found in the VFI for our target population to be able to use in future studies on volunteerism in medical students. This quantification will assist in establishing validity evidence that the VFI can be used in medical student populations.

This project was designed as a pilot study in which the surveys involved were tested on a single center prior to evaluating medical student volunteering behaviors and well-being scores on a larger scale. This group plans to extend a similar study to other medical schools in order to increase the power of the study and broaden its potential use

for medical education impact. A larger sample size with respondents from multiple medical schools would more accurately describe behaviors, attitudes, and well-being scores. This could potentially be useful to educators and administrators in designing curricula that best suit medical student needs and consider volunteering in a values-based context. Other additions will include requirement of numerical values for volunteering hours and broadening of categories for volunteering experiences.

Conclusion

This was a pilot study that investigated the association between volunteerism and well-being and medical student motivations for volunteering. Although volunteerism was not significantly associated with student well-being, this study has illuminated student motivations and found that values is a large driver in medical student volunteerism. For further study, we plan to establish validity evidence on the Volunteer Functions Inventory in medical student populations. We then hope to extend this study to involve student responses from multiple medical schools to hopefully positively affect medical curricula and emphasize volunteerism.

Conflicts of interest

None of the authors have conflicts of interest to disclose.

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