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Are medical students becoming less altruistic and more money-oriented? A three wishes survey

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ABSTRACT

PURPOSE In this study we assessed the underlying values and goals of current medical students by examining personal wishes. The authors also aimed to determine the impact of the increased financial burden of medical training on students' motivations by comparing current wishes to those of students from 1999. We also examined the relationships between types of wishes, choice of future medical specialty, and demographic characteristics.

METHOD An anonymous survey with the question: "If you had three wishes, what would you wish for?", and items pertaining to specialization choice and demographics was completed by 418 medical students. Wishes were coded into seventeen categories. Results were compared to a previous survey conducted in 1999.

RESULTS The largest category of wishes was altruism (40% of students) followed by achievement (36%), and money (34%). Significantly more medical students in 2015 had altruistic and achievement wishes compared to 1999. However, there was no significant increase in money-related wishes in the 2015 cohort compared to students from 1999. Final year students were more likely to report power-related wishes and male medical students had significantly more wishes related to power, money, and self-esteem. Students who aspired to be surgeons had more affiliation wishes and fewer knowledge-related aspirations. Conversely, medical students planning to enter internal medicine training were more likely to have wishes related to power and self-esteem. Achievement wishes were more common among individuals wanting to enter family medicine.

CONCLUSIONS There was no evidence that medical students are becoming less altruistic and more money-orientated. Further, individuals did not appear to become less altruistic or increasingly financially driven as they progressed through the medical course.

INTRODUCTION

Medical education plays an important role in defining the values, attitudes, and behavior of the future medical workforce.^{1,2} Research suggests that core constructs of patient-centered care such as empathy,³⁻⁵ altruism, and idealism^{6,7} wane over the course of medical school. Further, when comparing attitudes at the beginning of study to those at completion, medical students report increased cynicism and decreased concern for ‘undeserving’ and marginalized patients.⁸ The reasons underlying such changes are unclear. Some researchers suggest that the shift in attitudes and values serve as a means to cope with stressful clinical situations.⁶ Others implicate professional socialization, disenchantment with the educational process, and the impact of the hidden curriculum.⁹

Similarly, research suggests that medical education is becoming more financially burdensome, which may be modifying the values and attitudes of medical students.^{10,11} In New Zealand, annual fees for the medical programme have increased from \$7980 New Zealand Dollars (NZD) in 1999 to \$14788 NZD in 2016, an increase of 170% after adjustment for inflation.^{12,13} Additionally, the payment of university fees with student loans is commonplace; currently 92% of domestic medical students use government loans with an average debt of \$76,000 NZD compared to \$26,000 NZD in 1999.^{14,15} It is estimated that more than 20% of the current graduating class at the University of Auckland will have a student loan in excess of \$100,000. Similar trends are reported in Australia.¹⁶ In other countries educational debt can be much higher, for example, in the United States average levels of medical student debt exceed \$150,000 USD, with over a quarter of medical students having debt of greater than \$250,000 USD.^{17,18} For the majority of students, medical education is a loan-dependent investment which necessitates considerable financial sacrifice. It follows that current medical students may be more financially-motivated than their predecessors.

The personal values and attitudes of medical students can also influence future career decisions. Research suggests that students who prize connection with others and lifestyle factors have an increased likelihood of entering primary care.¹⁹ Conversely, individuals who cite prestige and income as important personal values are more likely to foresee themselves applying for surgical training programmes. Medical students with an increased focus on achievement-related objectives report greater consideration of internal medicine specialties.^{20,21}

Accurate assessment of the values and attitudes of medical students is a difficult undertaking. The validity of directly questioning individuals about their values is disputed as responses may be influenced by expectations and a social desirability bias.²² An unconventional method that can be employed to somewhat bypass these constraints is the examination of medical students’ wish lists. Wishes are defined as goals that are unconstrained by the limitations of the real world. Additionally, personal wishes may reveal the values held by an individual and can potentially provide insight into the type of person they aspire to be.²³

A previous study conducted at the University of Auckland medical school revealed that the students were likely to have wishes related to happiness (34% of students), money (32%), and altruism (31%), with little variation in the types of wishes over the years of the medical course. Female medical students were more likely than males to make happiness, altruistic, and intimacy wishes. Conversely, men had a greater rate of sexual wishes.²⁴

The present study aimed to analyze the wish lists of medical students at the University of Auckland, by asking the question ‘If you were given three wishes, what would you wish for?’. We sought to explore the following questions:

1. Given the financial burden of the medical course, are medical students becoming more less altruistic and money-oriented?
2. Do students become more money-oriented and less altruistic as they go through the medical programme?
3. Are there any significant relationships between types of wishes, choice of future medical specialty, and demographic characteristics?

METHODS

Study design

All medical students (1194 individuals) at the University of Auckland were emailed a link to an anonymous survey which included the question “If you had three wishes, what would you wish for?” as well as an assessment of demographic variables. The survey administered in the current study is comparable to that used by Petrie and colleagues in 1999. However, there were differences with regard to method of administration. Specifically, students in 1999 completed the survey using pen and paper during a lecture break whereas medical students in the current study completed the questionnaire online and in their own time. In both studies potential participants were not provided any incentive to participate. We collected data over a period of two months from September to November 2015. Wishes were coded by two research assistants into seventeen categories using a scheme derived from King and Broyles (see Table 1).²⁵ This coding scheme was also used in the 1999 study. Inter-rater reliability between the two judges was high (Cohen’s $\kappa = 0.93$). In the case of disagreement, a third coder read the statement and assignment to wish type was resolved by discussion. Wishes could be coded into more than one category, for example the wish ‘to win a Nobel prize for finding the cure to diabetes’ was assigned to categories of ‘achievement’ and ‘altruism’. Participants’ anticipated specialization choice was indexed by dividing specialty into the three broad categories: surgery, internal medicine, and family medicine. This study was approved by the University of Auckland Human Participants Ethics Committee (Protocol No. 015504) and the University of Auckland Medical Programme Directorate.

(Table 1 about here)

Data collection and analysis

Data were collected and collated using Qualtrics Research Suite survey software. Results were analyzed using the Statistical Package for the Social Sciences (version 23). An alpha level of 0.05 was used to denote significance. Subgroup analyses were conducted using Chi-squared tests and logistic regression was used to determine relationships between type of wish, specialization choice, and demographic variables, and to allow for adjustment of confounding variables. Logistic regression results are presented with odds ratios (ORs) and 95% confidence intervals (CIs).

RESULTS

The study sample comprised 418 medical students from the University of Auckland, representing 35% of individuals in the MBChB programme. Demographic characteristics of the sample are

presented in Table 2. The sample was predominantly female, New Zealand European, and had not completed a degree prior to the MBChB programme. Comparison of those who responded to the survey with non-responders highlighted an overrepresentation of female ($p < .001$), and New Zealand European individuals in the study sample ($p < .001$).

(Table 2)

The largest category of wishes was altruism with 161 students (40%) having at least one altruistic wish. Achievement wishes (36%, 151) formed the next largest category, followed by money (34%, 142) and happiness wishes (28%, 118). Twenty one percent of wishes were coded into more than one category.

We examined differences in rates of wishes across different years of the medical school programme. We found no reduction of the proportion of altruistic wishes and no increase in money-related wishes in the latter years of the programme. However, being in the final year of the medical programme was a significant predictor of reporting a power-related wish (OR = 5.01, 95% CI = 1.29-20.0, $p = 0.02$). Significance was maintained after adjusting for gender, demonstrating there was no confounding by sex (OR = 4.78, 95% CI = 1.21-18.89, $p = 0.03$ (see Supplementary Table 1).

A comparison of the proportion of wishes by category between 2015 and 1999 are presented in Figure 1. Achievement, altruism, happiness, and money-related wishes formed a significant proportion of wishes in both cohorts. However, in contrast to expectations, the most popular category of wish has changed from happiness (1999) to altruism (2015) with significantly more medical students in 2015 having an altruistic wish compared to 1999 (40% vs. 31%, $p < 0.01$). Similarly, there were significant increases in the proportion of students with achievement, time, travel, power, affiliation, and knowledge-related wishes. By contrast, the proportion of students with religious wishes had significantly reduced over time ($p = 0.01$).

(Figure 1)

With regard to specialization choice, 42% of the sample (95 students) aspired to become internal medicine specialists, compared to surgeons (30%, 68) and family doctors (28%, 65). Comparisons were made between the three groups (internal medicine specialists, surgeons, and family doctors). Individuals who planned to become surgeons were more likely to have affiliation wishes ($p < 0.01$) and less likely to have knowledge wishes than the other two groups ($p = 0.01$). Those who foresaw themselves practicing in internal medicine were more likely to have wishes related to power ($p = 0.01$) and self-esteem compared to those not interested in internal medicine training ($p = 0.01$). Wishes pertaining to achievement were more common among individuals who wanted to enter family medicine relative to those who desired to enter surgical or internal medicine training ($p = 0.02$).

Power ($p < 0.01$), money ($p = 0.03$), and self-esteem wishes ($p = 0.05$) were more common among male medical students. Interestingly, being male was also found to be a significant predictor of anticipated engagement in a surgical specialty (OR = 3.70, 95% CI = 2.13-6.43, $p < 0.01$).

DISCUSSION

Contrary to expectations, comparison with medical school cohort data from 1999 highlights no increase in money-related wishes. However, a significant increase in altruistic and achievement-related wishes was observed. Altruistic wishes were the most popular category of wish among

current medical students and a high rate of altruistic wishes was demonstrated in all stages of the medical programme. Medical students in the final year of study were significantly more likely to have power-related wishes in comparison to their junior colleagues. With regard to specialization preference, individuals who wanted to be surgeons were more likely to have affiliation wishes and less likely to have knowledge wishes. Conversely, students who wanted to enter internal medicine training were more likely to have wishes pertaining to power and self-esteem. Achievement-related wishes were more common among medical students who saw themselves as future family doctors.

There was a high rate of altruistic wishes among students and no evidence of a decline in altruism with progression through the medical programme. Further, it appears that a significantly greater proportion of medical students in 2015 had altruistic aspirations, relative to the medical school cohort of 1999. The widespread reporting of altruistic wishes among the students surveyed in the present study may be attributed to the current medical school selection process. Currently, there is an increased focus on humanistic characteristics of medical school applicants; a student's academic prowess alone is inadequate to guarantee entry into medical school, academic grades must be supported by engagement in activities which demonstrate social responsibility and concern for the welfare of others.^{26, 27}

Findings from the current study also suggest that achievement-related aspirations are now more pervasive among medical students compared to previous years. It is widely acknowledged that the academic standard of entry for medical school has been rising in comparison to previous decades. Higher scores with regard to standard high school examinations, university grade point averages, and aptitude tests are now necessary to meet the standards required for an interview.¹³ Consequently, the current cohort of medical students are likely to be more achievement-oriented than their past colleagues.^{27, 28} This may impact the specialty aspirations of medical students with fewer individuals wanting to enter training programmes for family medicine. Such a trend is evident in the literature with recent studies of medical graduates highlighting greater interest and engagement in internal medicine and surgical subspecialties relative to family medicine and public health.²⁹

An unexpected finding was the relative stability of money-related wishes when comparing current students to the 1999 cohort. Over the past 16 years, the financial burden of studying medicine has increased dramatically; fees for the medical course have risen exponentially in New Zealand and the use of student loans to fund study is now commonplace. The lack of an increase in financial wishes in spite of increased monetary pressures supports research highlighting altruism and happiness as the main drivers of medical students' values.^{24, 26}

The results of this study also reveal an increased incidence of power-related wishes among students in the final year of the medical programme. The final year is unique in that it aims to immerse the student in the clinical context as a functional but subordinate member of a hierarchical medical team.³⁰ Exposure to such situations may influence students to wish for situations or outcomes where they are able to exert a stronger personal influence over their environment.

We found that male medical students made a greater number of power, money, and self-esteem wishes, than females. Males were also more likely to anticipate entering surgical training, a career which is likely to provide means by which such wishes can be fulfilled. These findings are consistent with other studies of medical students' wishes, as well as the broader scientific

literature concerning gender roles.^{7,31} It is widely accepted in the field of evolutionary psychology that men are more likely than women to engage in pursuits which allow them to establish dominance in a group. Thus greater power, money, and self-esteem wishes may reflect this aspiration.^{32,33}

Student wishes were associated with preferred specialization choice, which suggests that certain specialties attract individuals with particular goals and values. However, the findings of the current study with regard to specialization choice are somewhat counterintuitive as they do not directly reflect the above concept; one would expect a surgical preference to be associated with greater of power and money wishes, and conversely, a preference for family medicine to be related to affiliation and lifestyle aspirations.¹⁹⁻²¹ Thus, it may be that individuals' wishes also reveal means by which they hope to overcome perceived personal weaknesses or shortcomings, rather than reflecting realistic aspirations of a particular specialty.

The strengths of the study are the use of a novel method for assessing student motivation that is likely to be less affected by social desirability bias. A large sample of students across all five years of the medical school course was also obtained. The collection of data from the same medical school programme seventeen years prior allowed the valid comparison of how medical students' wishes have changed over time. Some limitations of the study should be highlighted. It should be noted that response rate differs between the 1999 and 2015 cohorts, with a lower response rate recorded in the latter group. Students in 1999 completed the survey using pen and paper in a lecture break, whereas students in 2015 completed the survey online and in their own time. Thus, the differences in response rate between the 1999 and 2015 cohorts are likely attributable to the differing methodologies of the two studies. It is also important to acknowledge that participants were not provided any incentive to participate in this research, thus responding may be biased towards medical students who were more altruistically motivated. Lastly, the data collected is cross-sectional in nature which restricts the drawing of causal relationships. Longitudinal research is also necessary to determine how financial, altruistic, and other motivations of medical students change once individuals enter the clinical workforce.³⁴

CONCLUSIONS

Asking about personal wishes can provide insight into the values and aspirations of medical students, while minimising compromise due to social desirability bias. Despite increased financial burden, it appears that medical students at the University of Auckland are becoming more altruistic and achievement-oriented with no associated increase in financial motivations, however this requires further research. There is stability of altruistic wishes as students progress through the medical programme.

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FIGURES AND TABLES.

Table 1.

Categories of wishes and examples.

Wish	Examples
Altruism	<i>For all humans to have their desired standard of living. For governments to prioritise people's welfare over the creation of capital.</i>
Achievement	<i>To win a Nobel Prize. To become a world-renowned expert in the field I decide to specialise in.</i>
Money	<i>To have a whole lotta cash. To be financially secure with no student loan or mortgage.</i>
Happiness	<i>To be happy and content always. To remain happy and have stability in my life.</i>
Health	<i>To be as physically fit as possible for my current age. To be healthy and mobile forever.</i>
Intimacy	<i>To meet my soul mate. To marry a beautiful girl who will support me in all my endeavours.</i>
Time	<i>For better time management skills. That I could freeze and unfreeze time at will.</i>
Power	<i>To have control over time, space, and matter. For the power to read minds, especially of my consultants.</i>
Travel	<i>To see Europe and Asia. To travel to (and return from) Mars.</i>
Self-esteem	<i>To defeat this anxiety and depression. I wish I weren't me.</i>
Affiliation	<i>To continue to have a great bunch of people around me. To maintain a good network of friends and colleagues.</i>
Knowledge	<i>To have all the knowledge of our lecturers. To have wisdom – King Solomon style.</i>
Appearance	<i>A permanent natural tan. A big butt.</i>
Undoing	<i>That my grandad was still alive. That I could go back to when I was a little kid.</i>
Religious	<i>That my religion didn't see same sex relationships as 'wrong'. That everyone would know the love of God.</i>
Food	<i>To always eat Michelin star quality food. To have an endless supply of Burger King Rodeo burgers.</i>
Sexual	<i>To 'get with' whomever I wanted. To be a powerhouse in bed.</i>

Table 2.

Demographic characteristics of the study sample (n = 418)

	M (SD)/%
Age	22.7 (3.3)
Gender	
Male	41.2
Female	58.8
Year	
II	24.4
III	26.8
IV	15.3
V	19.1
VI	14.4
Entry	
Undergraduate	70.1
Graduate	29.9
Ethnicity*	
New Zealand European	48.8
Asian	19.4
Maori	10.0
Indian	5.5
Pacific Island	5.0
Other	11.2

*Percentages may not total 100 because of rounding

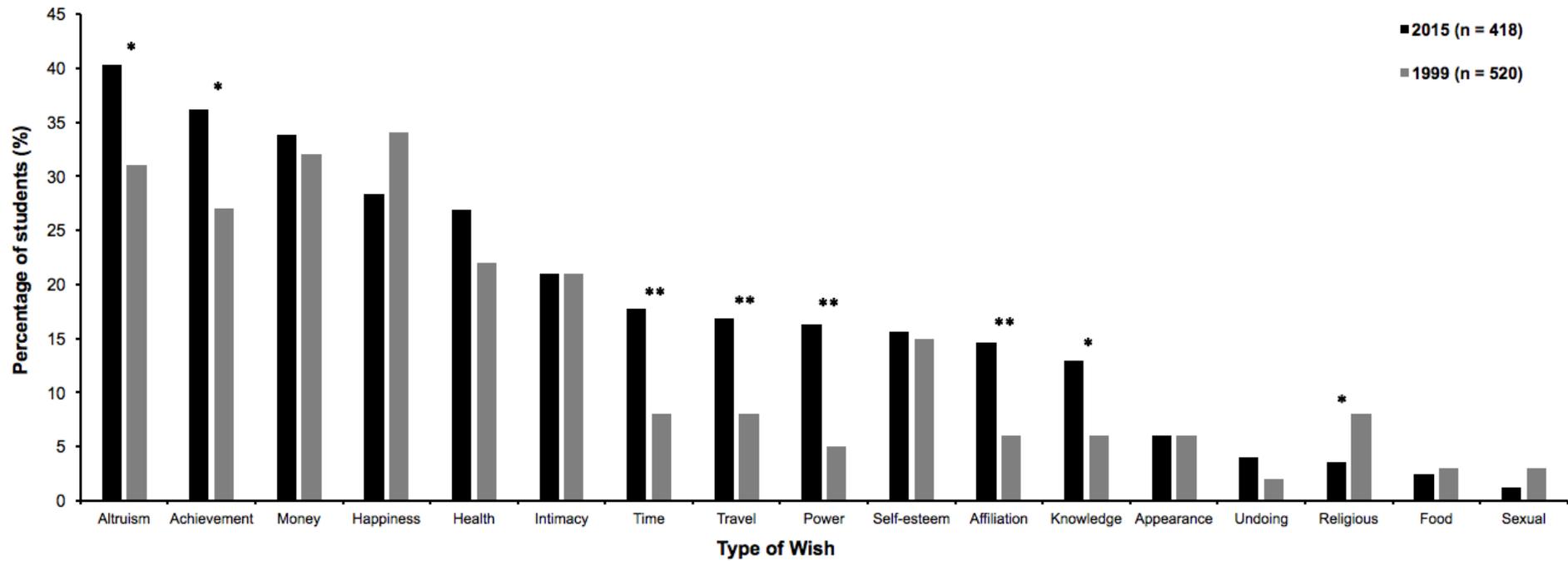


Figure 1. Comparison of medical student wishes in each category (%) collected in 1999 and 2015.

*Denotes significant difference at $p < 0.05$. **Denotes significant difference at $p < 0.001$.

Supplementary Table 1.Power wishes by year of medical school and gender (logistic regression, $N = 417$)

Predictors	Model 1				Model 2			
	β	OR	95% CI	p	β	OR	95% CI	p
Year V (final year) medical student	1.56	5.01	1.29 - 20.0	0.02	1.56	4.78	1.21 - 18.89	0.03
Year IV medical student	0.73	2.29	0.79 - 6.67	0.13	0.73	2.08	0.71 - 6.13	0.19
Year III medical student	1.50	4.76	0.97 - 23.3	0.06	1.50	4.50	0.91 - 22.2	0.07
Year II medical student	0.28	1.38	0.49 - 3.92	0.54	0.28	1.32	0.46 - 3.76	0.60
Year I medical student				Reference				Reference
Gender					0.44	1.56	0.71 - 3.42	0.27