

GENDER DIFFERENCES IN THE PERCEPTION OF PRESENCE OF, AND SEARCH FOR, CALLING DURING MEDICAL SCHOOL

Hadassah Littman-Ovadia, Aryeh Lazar

Ariel University, Ariel, Israel

E-mail: hadassaho@ariel.ac.il, lazara@ariel.ac.il

Tamar Ovadia

Tel-Aviv University, Tel-Aviv, Israel

E-mail: tamarovadia@gmail.com

Abstract

This study focused on the manner in which a sense of calling - presence and search - is perceived by first- and final-year male and female medical students. Differences in level of calling between first-year students and last-year students were predicted, more so for women than for men due to gender bias and family-work integration challenges. A total of 192 medical first and sixth (last) year students at the five Israeli medical schools filled-out a short self-report measure of calling and recorded demographic factors. Discriminate function analysis resulted in one significant discriminate function weighted positively on presence of calling and negatively on search for calling. Group centroids indicate that male medical students perceived presence of calling and search for calling as two poles of a bipolar continuum, whereas first-year students had a distinct feeling of the presence of calling coupled with a low need to search for calling and final-year students had a low feeling of presence of calling coupled with a distinct need to search for calling. In contrast, female medical students - both first-year and final-year - perceived presence and search as two independent dimensions that can coexist. Understanding these differences may be important in helping medical educators find gender-specific ways to maintain and enhance feelings of calling among tomorrow's male and female physicians.

Key words: gender, medical students, presence of calling, search for calling.

Introduction

The idea that work can be understood as a calling is not new (Hardy, 1990). Dik and Duffy (2009) described *calling* as:

A transcendent summons, experienced as originating beyond the self, to approach a particular life role in a manner oriented toward demonstrating or deriving a sense of purpose or meaningfulness and that holds other-oriented values and goals as primary sources of motivation. (p. 247).

These scholars also distinguished between having a sense of calling (presence) and actively seeking a calling (search). However, although calling is a term frequently used in connection with the field of medicine (Borges, Manuel, & Duffy, 2013), existing literature on calling, as it relates to medical students, is limited.

Several studies have shown that a large proportion of college students and adults endorse the construct. Using data from over 5,000 college students, Duffy and Sedlacek (2010) found

that almost half of these students stated that having a calling to a particular line of work was *mostly* or *totally* true of them, with no substantive differences across gender or ethnicity. Similar proportions of working adults also view their careers as a calling (Bunderson & Thompson, 2009; Davidson & Caddell, 1994; Wrzesniewski, McCauley, Rozin, & Schwartz, 1997) suggesting that the term is salient to a broad variety of populations.

As interest in the construct of calling grows, numerous studies have examined its relation to career-related criterion variables. The presence of a calling has been found to correlate positively with career decidedness, vocational self-clarity, career decision self-efficacy, work-related outcome expectations, academic satisfaction, and intrinsic work motivation among students (Dik, Sargent, & Steger, 2008; Duffy, Allan, & Dik, 2011; Duffy, & Sedlacek, 2007), as well as with beneficial work-related variables such as job satisfaction and meaning among working adults (Bunderson & Thompson, 2009; Davidson & Caddell, 1994; Duffy, Dik, & Steger, 2011; Steger & Dik, 2009; Wrzesniewski et al., 1997). To summarize, endorsing higher levels of a calling appears to be related to positive work-related well-being among students as well as among workers.

Problem of Research

Although calling is a term frequently used in connection with the medical profession (Borges et al., 2013), a search of the literature resulted in only two studies that have examined calling among medical students. In a longitudinal survey among a group of medical students, Duffy, Manuel, Borges, and Bott (2011) assessed calling prior to the first year and prior to the third year of medical school. They found that the level of calling among medical students diminished over time. In the second study, Borges et al. (2013) found that first-year medical students were more likely to endorse the presence of a calling than their search for one. These researchers suggested that for medical students, the presence of calling and the search for calling comprise two poles of a bipolar continuum, and that since first-year medical students have a strong feeling that medicine is the career they are called to, they are less likely to engage in a search for a calling. However, no study has examined the dynamics of this perception of calling throughout the years of medical education. Given the decline of a presence of calling among medical students throughout their medical education (Duffy, Manuel et al., 2011) it is not yet clear how the search for a calling develops during the course of medical school. In this context, it should be noted that Israel's most common regimen of medical training comprises six years, directly following secondary school, with no pre-med training program. Typically, in all four of Israel's six-year medical schools, the first three years are devoted primarily to the basic sciences, and the latter three years to clinical training.

An additional question, yet unexplored, relates to possible gender differences in calling among medical students. Although Duffy and Sedlacek (2010) reported no significant gender differences regarding the presence of, and the search for, calling among first-year college students, the gender issue should be examined among medical students throughout their training. Indeed, the manner in which male and female students perceive medical calling may be different and a simple comparison of level of calling may not reveal such differences.

Examining gender differences regarding calling seems to be of particular importance in light of the fact that the number of female students entering medical schools has increased dramatically worldwide in recent years (Kilminster, Downes, Gough, Murdoch & Eaton, & Roberts, 2007), with females accounting for approximately 50–60% of all entrants. Despite their increased number, women physicians, in comparison to their male cohorts, continue to experience significant professional challenges, such as salary and promotion inequities and sexual harassment (Bickel, 1997; Carr et al., 2000; Corbie-Smith, Frank, Nickens, & Elon, 1999; Nonnemaker, 2000). Gender differences have been observed as early as during the pre-clinical years of medical school (Babaria, Bernheim, & Nunez & Smith, 2011) as well as in considerations regarding decisions on internships (Redman, Saltman, Straton, Young, &

Paul, 1994), choice of medical specialty (Lefevre, Roupret, Kerneis, & Karila, 2010), worries about the future (Miller, Kemmelmeier, & Dupey, 2013), and medical students' professional aspirations (Bradford, Anthony, Chu, & Pizzo, 1996; Kaplan et al. 1996; Kruijthof, Leeuwen, Ventevogel, Horst, & Staveren, 1992; Salgueira, Costa, Gonçalves, Magalhães, & Costa, 2012).

On the basis of studies indicating gender differences in various aspects of medical practice, it was anticipated that important differences in the manner in which male and female medical students relate to feelings of calling during their medical training may be revealed. Two possible explanations are offered here for this presumption. First, the various gender differences found at later stages of medical practice may be indicative of basic gender differences in the meaning and importance attributed by men and women to the medical vocation. These differences are likely to be reflected in calling as well. A second explanation is based on the assumption that as medical students approach the end of their basic medical training and stand at the threshold of their medical practice, gender differences in medical practice become more salient and are likely to have an effect on their perceptions of calling. Therefore differences in the sense of calling towards the final year of medical school compared to the first year are to be expected and on the assumption that women face more challenges regarding medical practice such as gender bias as well as difficulties in integrating work and family, such changes would be more substantial for women than for men.

Research Focus

In order to examine possible gender differences in the perception of calling, this study assessed calling—both presence and search—among male and female medical students in their first and final year of medical training. Discriminant function analysis (DFA) was performed to provide an understanding of the data set, as a careful examination of the discriminant function resulting from this multivariate procedure can allow insight into the relation between group membership and the variables used to predict group membership, and in this manner to determine the ways in which different groups of medical students perceive calling.

Methodology of Research

This study utilized internet survey methodology. All first and last year students enrolled in the six medical schools were invited to take part in this study via various internet sites for medical students and by snowballing. After a period of five weeks, 192 medical students, out of a potential sample of 800, responded to the survey and at this point the survey was closed. In order to encourage participation, the survey was kept as brief as possible.

Study Sample

A total of 192 medical students (56.3% female) participated in the study. Age ranged from 18 to 36 years ($M_{age} = 25.6$, $SD = 3.5$). A total of 44.7% of the students were in their first year (41.1% in one of the six-year programs, 3.6% in the four-year program) and 55.2% were in their final year or had completed their final year but had not yet begun internship (54.2% following the six-year program, 1.0% following the four-year program). A small number of students (16.7%) were enrolled in a special army program, where full army service is temporarily deferred in favor of attending medical school. Regarding personal status, most of the students were single (73.4%), 24% were married, 1% reported *other*, and 1.6% did not indicate their personal status. Almost all of the students were Jewish (90.1%), 4.2% Muslim, 2.1% Christian, 0.5% *other*, and 3.1% reported not belonging to any religion. Additional characteristics about the research sample were not available since the survey instrument was kept as short as possible to encourage participation.

Instruments and Procedures

Calling. Calling was assessed by the Brief Calling Scale (Dik, Eldridge, Steger, & Duffy, 2012). This measure consists of two items to measure the presence of a calling ('I have a calling to a particular type of career', 'I have a good understanding of my calling as it applies to my career') and two items to measure a search for a calling ('I am trying to figure out my calling in my career,' 'I am searching for my calling as it applies to my career'). For the purposes of this study the original generic term "my career" in these items was changed to "my career as a medical doctor". A Likert response scale ranging from 1 (not at all true of me) to 5 (totally true of me) was used. The scale was translated into Hebrew by two academics fluent in English and Hebrew, using the translation-back-translation method. Since there is no exact word in Hebrew for calling, the Hebrew word for 'meant' (i.e., "I was meant to be a medical doctor") was used as the closest approximation. In addition, the following explanation was added to insure that the research participants would understand the term 'meant', i.e., calling, in the manner intended by the researchers:

Some people feel that they are 'meant' to work in a particular field. For example, some feel that they are 'meant' to work in a certain field by some Superior Power. Others feel that their destiny is to work in a particular field. Still others feel that they are designated to work in a particular field due to society's needs - that they are 'called to the flag' by society. Others feel that since they have identified special personal potential that they are meant to work in a field - 'I was born to be a ...' Of course, there are individuals who do not feel that they were 'meant' to work in a particular field by any sort of external influence and that their choice of profession is due to personal preference only. In any case, the following questions deal with your feelings that you were 'meant' to work in the field of medicine."

The split-half reliability coefficients, after applying the Spearman-Brown correction (Eisinga, Grotenhuis, & Pelzer, 2013) were of acceptable levels ($r_{sh} = .76$ for presence of calling and $r_{sh} = .77$ for search for calling).

Demographics. Several demographic items were included: year in medical school, name of medical school, gender, age, family status, and religious affiliation.

A research proposal detailing all aspects of the study was submitted to the Institutional Review Board at the corresponding author's institution. After receiving approval, potential participants were contacted via a variety of Internet forums for Israeli medical students and by snowballing. An e-mail invited first and last year medical students to participate in a survey and a link was provided to an Internet questionnaire. After reading an introduction to the survey, participants were requested to give their informed consent to participate in the study. In accordance with the Declaration of Helsinki, participation in the study had no potential harm to the research participants, anonymity was guaranteed and no payment was provided as an incentive for participation.

Data Analysis

Presence of calling (presence) and search for calling (search) scores were first calculated by averaging relevant scale items. Discriminant function analysis (DFA) was then performed. DFA is a multivariate technique that identifies a discriminant function, i.e., a unique combination of variables weighted in a particular manner that best distinguishes among groups. In this study the sample was divided into four groups: male first-year students, male final-year students, female first-year students, and female final-year students.

Results of Research

The Pearson correlation for presence and search was significant and positive but small ($r = .19, p < .01$) indicating that while these two aspects of calling are related, they are essentially independent measures. These two composite calling variables were then entered into the DFA. The analysis resulted in one statistically significant discriminant function ($c^2 = 14.2$, Wilk's $\lambda = .93, df = 6, p < .05$) meaning that one particular combination of the two calling scores was able to differentiate between the four groups of medical students. The structure matrix coefficients for this function, which are the pooled within-groups correlations between the discriminating variables and the standardized canonical discriminant function, are presented in Table 1 along with group means and standard deviations. These coefficients clearly indicate the relation between each discriminant variable and the discriminant function (Kleck, 1980). Group centroids - which are discriminant function group means - are also presented in Table 1.

Table 1. Group means and SD's, and discriminate analysis function (DFA) results.

	Female First-Year Students N=43		Female Final-Year Students N=65		Male First-Year Students N=43		Male Final-Year Students N=41		Structure Matrix Coefficient
	M	SD	M	SD	M	SD	M	SD	
Presence of Calling	3.7	1.1	3.8	1.0	4.2	0.7	3.7	0.9	.81
Search for Calling	3.4	1.2	3.7	1.0	3.5	1.2	3.9	0.9	-.42
Group Centroids	-.02		-.11		.41		-.23		

The matrix coefficients indicate that the function that discriminates between the groups is highly and positively weighted on the presence of calling (Structure Matrix Coefficient = .81) and negatively weighted on a search for calling (Structure Matrix Coefficient = -.42). The intensity of these perceptions is reflected in the level of the group centroid. The group centroids show that the perceptions of male students changed over the years and reversed polarity from highly positive for first-year students to negative for final-year students. In contrast, the perceptions of female students did not perceptibly change over the years, where both first-year and final-year students had group centroids close to zero, though it should be noted that the group centroid for the final-year female students was slightly negative.

Discussion

This is the first study focusing on the two aspects of calling—presence and search—among first- and final-year female and male medical students. In this study the manner in which calling—search for and presence of—is perceived by these medical students at the beginning and at the end of their medical school training was explored in order to more fully understand the role of calling in their lives. Therefore discriminant function analysis (a multivariate technique) was used to analyze the database, since both the discriminant function itself as well as the group means on this function contribute to gaining insight into the meaning of calling, more so than a more straightforward examination of group means through multivariate analyses of variance (MANOVA). In this case the discriminate function can be conceived of as indicating a perception of the two types of calling as being diametrically opposed to one another and a positive score on this discriminant function indicates a feeling of the presence of calling and a distinct lack of a need to search for a calling, In contrast, a score approaching zero would appear to indicate a perception of the search of calling and the presence of calling as two constructs that are not opposed to one another; a negative score on this function continuum indicates an active search for calling coupled with a distinct lack of calling's presence.

The findings of this study indicate that for male medical students—both at the beginning of their medical training as well as in the final stages of training—the presence of calling and the search of calling comprise the poles of a bipolar continuum, i.e., ‘If I have found a feeling of calling, then I have no need to search for it’; ‘If I am lacking a feeling of calling, then I must search for it.’ This would reflect calling as a need or driving force to be satisfied for male medical students. Interestingly, the polarity of this perception changes over the years. Whereas, at the beginning of their medical training males endorse a feeling of calling’s presence, and therefore give little importance to the search for calling, towards the end of their training these students express a need to search for calling with a decline in their previous feeling of a presence of calling. A possible explanation for this change may be that at the beginning of their medical training these students were very idealistic and detached from the more mundane aspects of the medical profession. They may have felt a fulfillment of calling, and therefore sensed no need to search for calling at this stage. However, as these students approached entry into real-life medical practice—finding a job, repaying long-term loans, etc.—their feeling of calling may have ebbed and therefore returned to their need to find a calling.

In contrast, female medical students perceive calling in a very different manner. For female students—both first-year and final-year—the search for calling and the presence of calling are not perceived as two poles of a bipolar continuum but as two more or less independent constructs. This would seem to mean that for female medical students, calling is not a need to be satisfied but rather a positive ideal with two compatible aspects or expressions: a feeling of presence of calling, and a continuing search for a calling. In this manner, calling may not be less important for female students in comparison with male medical students but important in a different way. However, it should be noted that among the final-year female medical students, the notion of presence vs. search does seem to be evident in a moderate manner. Contributing to this is the fact that female students are not impervious to the realities of practicing medicine, particularly in light of the particular challenges female medical students face. In any case, though we predicted substantial changes in their perception of calling, our findings reflected a more stable perception of calling among women over the course of their studies. This may be due to the challenges salient for women at all stages of their medical training and profession, and therefore, no perceptible change in women’s sense of calling was identified.

The results of the present study demonstrate gender differences in perceiving the medicine profession as a calling, and in the stability of these perceptions throughout medical studies. Having and maintaining a satisfying sense of calling is a significant element of tomorrow’s physicians’ career development and general well-being. The results hint that males’ sense of calling may diminish towards the end of their academic medical studies.

A number of limitations of this study should be considered. One important limitation of this study is that it was cross-sectional—the first- and last-year students comprised different individuals—and longitudinal study is needed to explore how the dynamics of the sense of calling develop as they progress through the various stages of their training. In any case, a deeper understanding of the manner in which medical students perceive their profession may help medical educators find ways to heighten the feeling of calling through the various stages of medical training.

A second study limitation is the measure of calling used here, the Brief Calling Scale (BCS). Although this measure was validated by Dik et al. (2012), presence of calling and search for calling are represented by only two items each. In comparison, the Calling and Vocation Questionnaire (CVQ), also developed by Dik et al. (2012), dedicates 12 items to each aspect of calling. In addition, the CVQ also provides sub-scores for three different dimensions of calling presence and search - Transcendent Summons, Purposeful Work and Prosocial Orientation. According to Dik and Duffy’s (2009) conceptualization, a transcendent summons is the experience of a summons to a particular field that originates outside the self (e.g., from a higher power, needs of society, family tradition); purposeful work is work that the individual can derive a sense of purpose or meaningfulness from; prosocial orientation is the

identification of motivation based on other-oriented goals and values. In order to encourage participation in the study, the research instrument was kept as short as possible and therefore the four-item BCS was used. However, the richer conceptualization of calling, as measured by the longer CVQ was sacrificed. Important differences may have been uncovered with the CVQ. For example, the prosocial orientation may be particularly sensitive to changes from the beginning of medical training until its completion. Future research should use the CVQ, or other more multidimensional measures of calling, in conjunction with medical students.

A third study limitation is the size of the research sample. Although there were almost 200 research participants, when broken down into four groups - male and female / first and last year - there were less than 50 participants in each group. Multivariate statistics are particularly sensitive to sample size and therefore caution is to be exercised when drawing conclusions from this study. Future research should strive to recruit larger sample sizes.

It is important to note some of the differences between medical students in Israel and those in other countries such as the United States. In Israel, medical school immediately follows the completion of high school. In comparison, in the US, students first complete an undergraduate program - often in pre-med - together with additional liberal arts courses. In this manner, US students are much more experienced in academic training and have a broader liberal arts background in comparison to their Israeli counterparts. The possibility that the calling of first-year Israeli medical students may be less well based, and therefore more sensitive to change, in comparison to US medical students is feasible. Therefore, examining these issues in different cultures is recommended and may be fruitful.

Conclusions

The results presented here indicate gender differences in perceiving the medical profession as a calling, and the stability of these perceptions throughout medical education. Male medical students seem to perceive medical calling as a need to be satisfied. At the beginning of their medical education, the medical profession is perceived as a calling, and therefore they feel no need to search further for a calling; towards the end of their medical education, this perception appears to lessen, and the need to search for calling arises. For female students both presence and search are two complementary aspects of calling that accompany them throughout their medical education. Understanding these differences may be important in helping medical educators find gender-specific ways to maintain and enhance feelings of calling among tomorrow's male and female physicians.

The results presented here also have important implications for future research focusing on calling. First of all, the gender differences that were uncovered here demonstrate the importance of examining gender differences in calling research. If these differences indicate deeper differences in the manner in which men and women understand calling and relate to this aspect of their work, such differences would presumably also influence the relations between calling and various outcome measures. Therefore, gender should always be included as a possible moderator of the relations between calling and other variables.

In addition, most calling literature seems to assume that perceptions of calling are static and steady. The results of the present study indicate that calling may be much more dynamic and developmental in nature. Additional research is needed to determine what factors may influence an individual's perception of calling.

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Advised by Laima Railienė, Šiauliai University, Lithuania

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Hadassah Littman-Ovadia	PhD, Associate Professor of Psychology, Heads the MA program in Vocational and Organizational Psychology, Ariel University, Ariel P.O. Box 3, 40700, Israel. E-mail: hadassaho@ariel.ac.il
Aryeh Lazar	PhD, Senior Lecturer, Ariel University, Ariel P.O. Box 3, 40700, Israel. E-mail: lazara@ariel.ac.il
Tamar Ovadia	Graduated in 2015 from Sackler Faculty of Medicine, Tel Aviv University and is now an intern in Soroka Medical Center, Be'er Sheva, Israel. E-mail: tamarovadia@gmail.com