Indian Orthopaedic surgeons are less burned out than their Western colleagues

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\textbf{Abstract}

Background: Burnout is a tridimensional psychological syndrome, the consequences of which in surgeons can be devastating. A preliminary review of the literature has demonstrated a paucity of validated studies measuring the levels of surgeon burnout throughout Asia. The purpose of this paper was to assess the prevalence and factors associated with burnout in Indian orthopedic surgeons and compare them to their western colleagues.

Materials & methods: This nationwide cross-sectional study was conducted at the Indian Orthopaedic Association Annual Meeting, via a validated burnout assessment instrument. Variables were compared using the chi-square, Mantel-Haenszel and Mann-Whitney-U tests. Variables associated with burnout subscales and overall burnout were explored using multiple linear and logistic regression.

Results: There were 299 responses to the survey. 23.1\% of the surgeons were allocated burnout status. No significant association between burnout, all measures of satisfaction and health. This association also existed for half-days in public practice (p<0.03) and marital status (p<0.001).

Conclusion: This is the first study to assess burnout among orthopedic surgeons in Asia. The use of a validated instrument facilitates future cross study comparisons. There were low levels of burnout in the Indian orthopedic profession, when compared to western countries, albeit a variety of sociocultural factors may play a role. There was evidence to suggest that the number of half-day sessions per week in public practice was associated with burnout, possibly attributed to longer hours and less flexibility. Satisfaction with training pathway was consistently significantly associated with all burnout subscales, a focus for future interventions. A strongly significant association persisted with our previous Australian study between burnout and marital status, emotional support and family stability critical for burnout minimization.

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1. Introduction

Burnout is a tridimensional psychological syndrome of emotional exhaustion, inter-personal depersonalization and a reduced self-evaluation of accomplishment.\textsuperscript{1} Doctors and other allied health professionals are especially susceptible to burnout, when compared to the general population.\textsuperscript{2} This was suggested as an “inevitable consequence” of the maladaptive adaptation to the demands of working in the health care system.\textsuperscript{3} The long hours, emotional patient interactions and high-pressure environment, responded to with low prioritization of self-care and denial of individuals own emotions.\textsuperscript{4,5}

The principal symptoms of burnout in doctors are the objectification of patients and colleagues, emotional and physical exhaustion, poor judgment, cynicism and depersonalization in relationships.\textsuperscript{6} Burnout in doctors, particularly surgeons is of critical importance as the consequences can be devastating for the individual, patients and institution.\textsuperscript{6,7} Orthopedic surgeons were placed in the top five most burnout specialties when compared with other doctors and hospital staff.\textsuperscript{7}
A review of burnout described the consequences for doctors to include emotional and physical illness, reduced satisfaction, drug abuse and poor health (such as hypertension, sleep disturbance and myocardial infarction). Manifesting institutionally as poor performance, increase turnover and medical errors and associated deficits in quality of medical care and safety for patients.

Previously the prevalence of burnout in surgeons has been reported as 30–38% and 50–60% in orthopedic surgeons, compared to 28% in throughout the general US working population. This was found to be consistently higher in residents and trainees. Our team has found that 53% of Australian orthopaedic trainees were burned out. Analyzing the positive or negative association between work-related (including career position and satisfaction with work-life balance) and non-work-related (demographic data) factors with burnout. A preliminary review of the literature has demonstrated a paucity of validated studies measuring the levels of burnout in doctors throughout Asia and the sub-continent. This study is the first to assess the prevalence and factors associated with burnout in Indian orthopedic surgeons.

2. Methods

2.1. Design, participants and setting

This nationwide cross-sectional study was conducted at the Indian Orthopaedic Association Annual Meeting, in December 2013. A hard copy survey was distributed to attendees throughout each session and completed forms collected at the end of each session. 2200 copies of the survey were distributed and there were 299 responses. All participants had complete data pertaining to burnout assessment. Ethics approval was obtained from the 'Institutional Ethics Approval of Dr. D.Y. Patil Hospital and Research Centre'.

2.2. Data collection

In November 2013 a pilot survey was trialed by 10 consultants at our institution, assessing the overall ambiguity, comfort and feasibility of questions. Preliminary feedback was satisfactory and no modifications were made. The survey was divided into two sections; a self-developed questionnaire and a validated burnout assessment tool.

The self-developed questionnaire assessed a variety of work related and non-work related factors potentially associated with burnout (Table 2). It comprised of 12 questions related to participant demographics, four items measuring satisfaction with career, work-life balance, income and training pathway and a subjective self-assessment of overall health (adapted from the short-form-health survey – SF-36).

The Maslach Burnout Inventory (MBI)–Human Services Survey was the validated burnout assessment instrument of choice. It consists of three subscales and corresponding dimensions: nine items quantifying emotional exhaustion (stress dimension), five items measuring depersonalization (interpersonal context dimension) and eight items calculating personal achievement (self evaluation dimension).

2.3. Statistical analysis

The overall scores of participants in each subscale were categorized into low, medium and high levels of burnout, subject to a priori guidelines by MindGarden Inc. (Menlo Park, CA, USA). A correlation exists between burnout and high levels of emotional exhaustion and depersonalization, albeit personal achievement is inversely proportional. Consistent with previous studies, we have defined participant burnout as high emotional exhaustion or depersonalization subscale scores (Table 2).

Characteristics of participants were first analysed according to final burnout status (Table 2). Nominal categorical variables were presented as proportions and compared using the chi-square test. Ordered categorical variables with >2 categories (age, current position, years worked as an orthopaedic surgeon, half-day sessions per week in public practice, half-day sessions per week in private practice, income bracket compared to peers in orthopaedic surgery) were analysed for evidence of a trend for increasing or decreasing proportions of the outcome from the first to the last category using the Mantel-Haenszel test for trend. Where a trend was confirmed this was then tested for significant departures from the observed trend. All continuous variables were non-normally distributed. These variables were presented as medians with inter-quartile ranges (IQR), and compared using the Mann-Whitney U test.

Variables associated with each of the three-burnout subscales were explored using multiple linear regression. Variables evaluated are listed in Table 4. The univariate association between each of the three burnout subscales and these variables was first explored using simple linear regression. Dummy variables were created for categorical variables with more than 2 categories. Those variables whose association with the subscale had a p < 0.20 were then included in the multivariate model. Using stepwise backward elimination, variables were removed until only variables with p < 0.05 remained in the model.

Variables associated with burnout were explored using logistic regression. Those variables whose univariate association with burnout had a p < 0.20 were then included in the multivariate model. Using stepwise backward elimination, variables were removed until only variables with p < 0.05 remained in the model. Variables that had a significant association with burnout after controlling for the confounding effect of other variables are presented in Table 6.

3. Results

There were 299 (13.6%) responses from the 2200 copies of the survey distributed. Overall 15%, 17% and 38% of participants scored high levels of emotional exhaustion, depersonalization and low personal accomplishment respectively; resulting in 69 (23.1%) of the surgeons allocated a burnout status (Table 1).

The association between burnout status and participant demographics is illustrated in Table 2. There was a significant (p < 0.001) association between burnout and all measures of satisfaction and health. This association also existed for half-days
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