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Personality Traits, Prosocial Knowledge, Charismatic Leadership Behavior, and Clinical Performance of Indian Medical Students

by

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Abstract

This study replicates and extends findings reported by Ghosh, Motowidlo, and Nath (2015) that Indian medical students’ prosocial knowledge is positively correlated with their clinical performance. It examines the antecedents of medical students’ charismatic leadership behavior and its contribution to their clinical performance. This study also investigates whether the strongest personality determinant of prosocial knowledge and charismatic leadership behavior is different in a high power distance culture (conscientiousness) than in a low power distance culture (agreeableness). In a sample of 343 Indian medical students, students’ prosocial knowledge positively correlated (.21, \( p < .01 \)) with their clinical performance. Although Indian medical students’ (\( N = 96 – 109 \)) charismatic leadership behavior failed to show significant association with their clinical performance (.14, NS) and prosocial knowledge (.18, NS), it positively correlates with agreeableness (.43, \( p < .01 \)), and conscientiousness (.40, \( p < .01 \)).

Contrary to expectations, conscientiousness failed to show stronger association with knowledge and leadership constructs, than agreeableness in India’s high power distance culture which demonstrates agreeableness’ role as a global predictor of prosocial knowledge. Practical and theoretical contributions of this study are discussed with recommendations for future research.
Chapter 1

Introduction

The present study replicates and extends the findings reported by Ghosh, Motowidlo, and Nath (2015) that prosocial knowledge predicts Indian medical students’ clinical performance. Analyzing the patient-physician dynamics behind physicians’ prosocial aspects of clinical performance, this study seeks to 1) examine whether Indian medical students exhibit charismatic leadership behavior and the extent to which charismatic leadership behavior contributes to their clinical performance, 2) examine whether the strongest personality determinant of prosocial knowledge and charismatic leadership behavior is different in a high power distance culture (conscientiousness) than the strongest personality determinant of these nontechnical constructs in a low power distance culture (agreeableness), 3) examine whether prosocial knowledge is an antecedent of charismatic leadership behavior of Indian medical students.

1.1 Medical Students’ Prosocial Performance and its Knowledge Antecedent

Prosocial Behavior in Medicine

Volunteering, cooperating, and helping, which are some of the integral elements of prosocial behavior (Brief & Motowidlo, 1986) are relevant for medical practice. In clinical settings, physicians’ quality of interpersonal interactions directed towards their patients entails their prosocial aspects of clinical performance (Kell, 2011; Ong, de Hacs, Hoos, & Lammes, 1995; Stewart, 1995). To this point, Ghosh et al. (2015) explain that physicians’ expressions of benevolence and agreeableness figure in their prosocial performance which is the non-technical component of their clinical performance. On the other hand, physicians’ technical aspects of performance is reflected by how they tend to patients’ medical conditions and carry out medical
procedures to restore their health. Although performing these technical behaviors is imperative for medical practice, they are not sufficient for effective patient care (Kell, 2011). Physicians’ prosocial performance significantly contributes to the overall effectiveness of their clinical performance (Ghosh et al., 2015).

Kell (2011) cited seven medical professionalism categories endorsed by National Board of Medical Examiners (NBME) and Association of American Medical Colleges (AAMC) (2002) among which three behavioral categories are relevant for physicians’ prosocial performance. The behaviors represented by these three categories are - *caring and compassion*: treating patient as an individual, compassionately accepting patients’ lifestyle and beliefs, and supporting patients’ idiosyncratic needs; *respect*: respecting patients’ rights, dignity, and personal space, showing tolerance to a variety of behavior and beliefs; and *responsibility and accountability*: maintaining deadlines by completing tasks on time and showing up on time. As shown above, medical authorities explicitly value physicians’ prosocial performance.

*Physicians’ Prosocial Behaviors and Patients’ Outcomes*

In medicine, physicians’ prosocial actions are found to generate favorable patient outcomes. According to Halpern (2001), physician empathy facilitates more accurate diagnosis and care and enhances patient efficacy. When physicians with a higher degree of empathy make an effort to understand their patients by providing medications and recommendations compatible with patients’ lifestyle, patients are more likely to comply with their physicians’ interventions (Weinrieb, Van Horn, McLellan, Volpicelli, Calarco, & Lucey, 2001). Hojat, Louis, Markham, Wender, Robinwitz, and Gonnella (2011) showed that diabetic patients seeking medical care from a physician with a higher degree of empathy possess a better control of blood glucose and lipid
levels. Analytical studies have shown that effective physician-patient communication can reduce patients’ psychological distress (Roter & Hall, 1991), lower patients’ anxiety level (Thompson, Nanni, & Schwankovsky, 1990), and reduce pain level of patients recovering from intra-abdominal surgery (Egbert, Battit, Welch, & Bartlett, 1964).

In spite of the evidences of positive patient outcomes as a result of physicians’ prosocial care, no empirical study has measured physicians’ prosocial performance. Nonetheless, it bears some resemblance to several physician behaviors that have been studied in psychology and medical literature to examine patient-physician relationships. These ‘prosocial’ behaviors entail whether physicians are (1) treating patients as individual human beings instead of medical cases or providing patient-centered care (Henbest & Stewart, 1989), (2) understanding and respecting patients’ points of view (Lovet, Cox, & Abou-Saleh, 1990), (3) warm and making patients comfortable (Fisher, 1971; Koos, 1955), and (4) motivating patients to speak freely and asking questions (Stewart, 1984). In essence, these aforementioned behaviors incorporate some major aspects of prosociality which require some sort of patient-physician interactions.

1.2 Prosocial Knowledge: Antecedent of Prosocial Behavior

Knowledge about Utility of Prosocial Behavior

Existing research has shown that prosocial knowledge or knowledge about utility of prosocial actions predicts interpersonal behaviors saturated with prosocial elements (Martin-Raugh, Kell, Motowidlo, 2016; Motowidlo, Ghosh, Mendoza, Buchanon, & Lerma, 2016; Motowidlo, Martin, & Crook, 2013). Motowidlo and colleagues (Motowidlo & Beier, 2010; Motowidlo, Hooper, & Jackson, 2006) define prosocial knowledge as an implicit trait policy (ITP) or the implicit belief that determines the utility of prosocial behavior across situations. According to Martin-Raugh et
al. (2016), individuals ‘who believe prosocial behavior is “effective” are more likely to behave prosocially than people who do not believe prosocial behavior results in positive outcomes.’ It can therefore be assumed that physicians who believe these prosocial actions are necessary for effective patient care are correct and are believed to possess knowledge about effectiveness of prosocial behavior and ineffectiveness of antisocial behavior in patient care or prosocial knowledge (Ghosh et al., 2015). Thus, physicians with high prosocial knowledge are more likely to act prosocially than physicians with low prosocial knowledge.

Physicians’ prosocial knowledge incorporates knowledge about ethical treatment of patients and colleagues, effective communication skills, and expressions of respect and empathy (Swick, 2000), whereas their technical knowledge comprises of medical subject matters, such as human anatomy, pathology, pharmacology, medical diagnostics and treatment procedures which they learn from their medical course-work. Thus, it can be said that what physicians need to know to act effectively in non-technical or prosocial aspects of clinical performance is different from what they need to know to act effectively in technical aspects of clinical performance (Kell, Motowidlo, Martin, Stotts, & Moreno, 2014). In agreement with this assumption, Kell et al. (2014) showed that American medical students’ technical knowledge explains 14% ($p < .01$) of the variance in their clinical skill, beyond the variance explained by students’ prosocial knowledge. Conversely, medical students’ prosocial knowledge explains 3% ($p < .01$) of the variance in their clinical skill, beyond the variance explained by their technical knowledge.

*Prosociality in a High Power Distance Culture*

Replicating Kell et al.’s (2014) study in a high power distance culture like India (Power Distance Index: 77) (‘Clearly Cultural,’ 2015), Ghosh et al. (2015) documented that prosocial
knowledge is positively associated (17%, $p < .05$) with clinical performance, in their sample of
Indian medical students. It is also the first study measuring Indian medical students’ prosocial
knowledge which explained 2% ($p < .05$) incremental variance in their clinical performance. This
finding is important for ongoing research in the domains of prosociality and culture because
despite India’s high power distance societal norm that “accepts the fact that power in institutions
and organizations is distributed unequally” (Hofstede, 1980, p. 45), Indian medical students have
beliefs about positive outcomes of prosocial actions in patient care or prosocial knowledge which
determines the effectiveness of their clinical performance.

Measurement of Prosocial Knowledge with Situational Judgment Tests (SJTs) in Different
Cultures

Several studies administered some form of situational judgment tests (SJT) to medical
students or physicians to measure their nontechnical knowledge in different cultures. Lievens
and Patterson (2011), showed that physicians’ nontechnical knowledge positively correlated with
a composite of supervisory ratings based on dimensions of clinical effectiveness, such as
empathy, communication, and professional integrity. This study was conducted in the United
Kingdom which has a moderate Power Distance Index of 35 (‘Clearly Cultural,’ 2015). Society
with moderate power distance index believes in equality for each of its citizen (‘Clearly
Cultural,’ 2015). Therefore, display of prosocial benevolence by physicians concur with society’s
level of equality endorsed by both high and less powerful members of the society. In contrast,
Belgium has a high Power Distance Index of 65 (‘Clearly Cultural,’ 2015), where individuals
possess more cure-oriented and less care-oriented attitude (DeValck, Bensing, Bruynooghe,
Batenburg, 2001) and physicians are more likely to be driven by task orientation than people
orientation (Bochner & Hesketh, 1994). However, Belgian medical students’ procedural
knowledge about interpersonal behavior comprising of expressions of consideration and interest, attention towards patients, delivering bad news, reaction to patients’ refusal of prescribed medication, and appropriate explanation of medical jargons at the time of admission successfully predicted their internship performance (7 years after admission) and job performance (9 years after admission) (Lievens & Sackett, 2012). Findings from this study therefore bolster the argument about the importance of prosocial care in high power distance cultures.

Kell, Martin, and Motowidlo (2011) developed a single-response SJT, titled Opinions about Physicians’ Interactions with Patients or OPIP, to measure physicians’ prosocial knowledge about medical professionalism. They developed the SJT using the Critical Incident Technique (Flanagan, 1954) where they interviewed nurses to collect accounts of physicians’ effective and ineffective behaviors across medical situations. The development and validation of OPIP were performed on a sample of American medical students who belonged to a society of moderate power distance (Power Distance Index: 40) (“Clearly Cultural,” 2015). Thus, OPIP measured American medical students’ prosocial knowledge (Kell et al., 2014), as expected. Ghosh et al. (2015) also used the OPIP to measure prosocial knowledge of Indian medical students who belonged to a high power distance culture (Power Distance Index: 77) (“Clearly Cultural,” 2015) where it is less likely that physicians will engage in prosocial behavior (Bond, Wan, Leung, & Giacalone, 1985). Despite India’s high power distance culture, OPIP predicted (.17, p < .05) Indian medical students’ clinical performance (Ghosh et al., 2015).
1.3 Physicians’ Nontechnical Knowledge and Nontechnical Behaviors

Cultural Context of Physician Behavior

Although Indian medical students’ prosocial knowledge predicted their clinical performance, their mean prosocial knowledge score (209.2; SD = 34.0) was much lower than American medical students’ mean prosocial knowledge score (255.9; SD = 15.7). This big difference (Cohen’s $d = 1.76$) in mean prosocial knowledge scores indicates that there might be difference between the meanings of prosocial behaviors in different cultures (Ghosh et al., 2015). This assertion gains support in Comas-Diaz and Jacobsen’s (1991) report that postulates ethnocultural factors can effect individuals’ presentations and interpretations of their medical encounters. Therefore, the same prosocial medical scenario is perceived as highly effective by individuals from low power distance culture, whereas it is perceived as less effective by individuals from a high power distance culture (Ghosh et al., 2015). Therefore, to accurately interpret the interpersonal dynamics of care-giving behavior of Indian medical students, the Indian ‘cultural context’ (Hojat, 2007) needs to be analyzed.

Sociocultural factors influence physician-patient communication (Weissman, Betancourt, Campbell, Park, Kim, Clarridge et al., 2005) too. As an instance, physicians in some cultures inform their terminally ill patients about their health conditions with the belief that it will stir up their fighting spirit and this physician behavior is counted as ethical and empathic (Hojat, 2007). However, in some Asian cultures revealing diagnosis of terminal illness to patients is often considered as inhumane, ruthless, and unempathic (Holland, Geary, Marchini, & Tross, 1987). One of the beliefs guiding this behavior is that fatal diagnosis can generate feelings of hopelessness, even resulting in death of some patients (Richter, 1957). In India, physicians often
convey the details of illness to the spouse/care-giver (Rao, 2015) to protect the patient from the anxiety and stress induced by the diagnosis and to ensure the support required for the patient’s treatment or hospice.

*Physicians’ Nontechnical Behaviors: Beyond Prosociality*

Surgeons (Giddings, 2001) and medical authorities, such as Royal College of Surgeons of Ireland and Great Britain (Giddings & Mansfield, 2000) discuss the importance of nontechnical competencies in medical practice and leadership is considered one of these integral nontechnical competencies. The General Medical Council (GMC) is thinking about revalidating license for doctors on the basis of the core content of Good Medical Practice document (GMC, 2001) and leadership constitutes an important part of the Good Medical Practice document (Yule, Flin, Paterson-Brown, & Maran, 2006). AAMC/NBME (2002) also reported leadership as a category of medical professionalism represented by teaching and helping behavior. In summary, medical communities at large are accepting the importance of leadership behavior in medical practice.

Rao (2015) interviewed a practicing US-based Indian physician who recently volunteered in a rural region in India. According to the physician, even with a limited infrastructure, Indian physicians were doing their best to ensure that their patients receive the necessary medical care. For example, physicians went beyond their own medical specialties to treat serious medical conditions which otherwise would remain untreated. Indian physicians develop case-specific strategies to meet patients’ needs and win compliance of the patients to execute specific treatment plans. As rural patients constitute a major part of Indian Government Hospitals’ patient pool (Bhat, 1999), it can be assumed that the patient-physician interactions in Indian Government Hospitals are quite similar with the above mentioned scenario.
Moser (1984) conducted a survey where 85% percent of the American patients either reported about changing their physicians in last five years or they were thinking about changing their physicians. One of the main reasons behind their decisions or thoughts was their physicians’ inability to inspire confidence in them. According to Koening (2002), patients often perceive their physicians as authority figures while seeking help and this role expectation in physician-patient interactions determines patient-related outcomes (Shapiro & Shapiro, 1984; Turner, Deyo, Loser, von Korff, & Fordyce, 1994). Although the aforementioned nontechnical behaviors require some sort of prosocial interactions, ‘inspirational,’ ‘authoritarian,’ and ‘compliance’ aspects of nontechnical behaviors of physicians are not attributes of their prosocial performance.

Are Prosocial Physicians Charismatic?

Charismatic leadership involves importing moral purpose and commitment to work that goes beyond concentrating on task components (Shamir, House, & Arthur, 1993) and this behavior coincides with physicians’ nontechnical prosocial performance reflected by expressions of care, compassion, and respect, among others (AAMC/NBME, 2002). Physicians’ interpersonal interactions, based on socio-cultural factors, with their patients determine clinical decision making (Weissman et al., 2005), which is also a salient attribute of charismatic leadership as charismatic leaders relate their mission and vision to the strongly held values and aspirations shared by the respective organization’s culture (House, 1977).

Bass (1985) reviewed the theory of charisma and stated that acute and chronic crisis components determine charismatic leaders’ effectiveness. Bigger crisis leads to severe emotional disturbances and this vulnerable emotional state motivates followers to get invested in the savior.
These situations are commonplace in medical practice where anxious patients suffering from prolonged and painful illness invest their faith in their physicians. Therefore, it is possible that feelings of trust and respect by patients towards their physicians enable them to expand their efforts, like followers of charismatic leaders (Yukl, 1989), to pursue the proposed medical interventions. This study integrates physicians’ global non-technical behaviors with the idiosyncratic nontechnical behaviors that are expected to be effective in India’s high power distance culture, and posits that Indian physicians’ nontechnical behavior constitutes aspects of ‘charisma.’

Note that, present study examines physicians’ charismatic leadership behavior and its contribution to physicians’ clinical practice in a sample of Indian medical students. This study reviews the available literature on physicians’ behaviors that are similar with charismatic leaders and presents the case about the antecedent and contribution of charismatic leadership in medical practice. Although the present study discusses India’s societal norms and expectations and describes how it sets the ground for exerting ‘charisma’, it does not assert that charismatic leadership is an unique attribute of Indian physicians which is not a feature of American physicians. As prosocial interaction bears different meaning in different cultures (e.g., high and low power distance cultures) (Ghosh et al., 2015), it might be possible that display of ‘charisma’ has different impact in physicians’ clinical performance in different cultures. This can be a potential avenue for future research.

Accepting the different connotations of nontechnical aspects of medical encounters in a high power distance country, this study postulates its second major proposition that prosocial Indian medical students are charismatic and this ‘charisma’ determines the effectiveness of their clinical performance.
Prosocial Knowledge Antecedent of Physicians’ Charismatic Leadership Behavior

Both prosocial performance and charismatic leadership behavior incorporate elements of value, empathy, benevolence, or prosociality. Therefore, it is highly likely that individuals with prosocial knowledge will behave effectively in these domains. However, examination of the attributes of charismatic leadership suggests that there might be other antecedents that determine the dynamic processes of ‘charisma’ (Bass, 1985). That antecedent might be distinct from prosocial knowledge and saturated with inspirational and motivational attributes because prosocial actions do not necessarily require inspirational attributes.

Notably, this present study does not make any claim that prosocial knowledge will be the strongest predictor of charismatic leadership behaviors. It only examines the prosocial knowledge construct with the expectation that it is an antecedent of medical students’ charismatic leadership behavior.

These relationships between prosociality, charismatic leadership, and clinical performance suggests that medical students with high prosocial knowledge will behave more effectively in the charismatic leadership domain as well as in the clinical performance domain, than medical students with low prosocial knowledge.

1.4 Personality Determinants of Physicians’ Prosocial Knowledge and Charismatic Leadership Behavior

Mechanism of Implicit Trait Policy

Researchers have theoretically explained why personality traits predict behavior (e.g., Ackerman, 1996; McCrae & Costa, 1996; Motowidlo & Beier, 2010). Motowidlo and colleagues
Motowidlo & Beier (2010; Motowidlo, Hooper, & Jackson, 2006) proposed a causal mechanism to explain how individuals’ personality traits shape their implicit beliefs about effectiveness of trait expressions across situations. These beliefs are conceptualized as ITPs that can determine direction and magnitude of personality trait expression in specific occupational or social situations. The concept of ITP draws upon policy capturing literature (Karren & Barringer, 2002) to explain how individuals appraise relevant information while making evaluative judgments.

According to the theoretical framework proposed by Motowidlo and Beier (2010), a prosocial individual will have beliefs that expressions of prosocial trait will produce positive outcomes and expressions of antisocial trait will be ineffective. Accordingly, the prosocial individual will express prosocial trait across situations. However, that prosocial individual can learn exception to this rule if the person’s prior social or occupational experience has taught him/her that disagreeable behavior is effective in such situations. Nonetheless, the person’s own standing on that specific trait will determine the extent of trait alteration.

The ITP hypothesis stems from the concept of dispositional fit explaining effects of personality traits on job performance (Motowidlo, 2003). According to the dispositional fit mechanism, when a situation requires a specific trait expression, say agreeableness, individuals who are high on agreeableness are more likely to “know” that expressions of agreeableness trait are more likely to be effective. This knowledge of weighing agreeableness more heavily can mediate the influence of personality traits on job performance in that specific situation (Lievens & Motowidlo, 2015). Therefore, individuals who weigh prosocial behavior more heavily or possess prosocial knowledge will behave prosocially across situations. Recent empirical studies have documented that prosocial knowledge mediates the relationship between agreeableness and performance (Martin-Raugh et al., 2016; Motowidlo et al., 2013).
**Difference in Strength of Personality Predictors Due to Cultural Variability**

Agreeableness trait has been documented to have strong positive association with prosocial knowledge. Kell et al. (2014) showed that medical students’ agreeableness is positively related (.31, \( p < .01 \)) with their prosocial knowledge. In a sample of volunteers, Motowidlo et al. (2013) found that agreeableness trait is positively associated (.28, \( p < .05 \)) with knowledge scores about effective and ineffective behavior. Graziano and colleagues (Graziano & Eisenberg, 1997; Graziano, Jensen-Campbell, & Hair, 1996) postulate that agreeable individuals are empathic in nature and they opt for constructive interpersonal conflict resolution unlike disagreeable individuals. In summary, agreeableness trait determines quality of interpersonal interactions (Costa & McCrae, 1992). Meta-analytic research (Organ & Ryan, 1995) also showed a marginal correlation between agreeableness trait and altruistic behavior (\( \rho = .10 \)). Therefore, it can be expected that agreeableness trait will predict Indian medical students’ prosocial knowledge.

In addition to agreeable benevolence, charismatic physicians are required to act systematically, diligently, and deliberately (Thompson, 2008) to deliver nontechnical service to patients. *India’s high power distance cultural norm* requires physicians to exhibit these conscientiousness traits for effective patient care. Judge, Bono, Ilies, and Gerhardt (2002) found that conscientiousness correlates .28 with leadership effectiveness, whereas agreeableness correlates .21 with transformational leadership behavior (Bono & Judge, 2004) which is treated synonymously as charismatic leadership behavior in leadership literature (Zehir, Moceldili, Altindag, Sehitoglu, & Zehir, 2014). Although not as consistent as agreeableness, conscientiousness showed positive association (.39, \( p < .01 \)) with prosocial knowledge in a sample of American volunteers (Motowidlo et al., 2013). Therefore, this study proposes that Indian medical students who are high on conscientiousness and agreeableness traits will be high...
on prosocial knowledge and will act effectively in the domain of charismatic leadership behavior across clinical situations.

In view of the relevant literature on high power distance culture, it can be expected that Indian physicians are more likely to be directive with their patients and Indian patients are more likely to defer to their physicians during their clinical encounters (Bochner & Hesketh, 1994). To satisfy patients’ high-order expectations, physicians need to act as role-models. In other words, they need to act as exemplars (Bass, 1985) in a dutiful and disciplined way for their patients which are salient attributes of conscientiousness (Thompson, 2008). Empirical findings from samples of low power distance culture showed that agreeableness is the strongest predictor of prosocial knowledge (Kell et al., 2014; Martin-Raugh et al., 2016; Motowidlo et al., 2013). In a stepwise regression analysis, conscientiousness was associated (explained 24% variance) with high power distance which explains that individuals from high power distance culture are more likely to rate themselves as more conscientious than individuals from low power distance cultures (Hofstede & McCrae, 2004). Henceforth, examining the high power distance cultural context of Indian medical students’ prosocial and charismatic behavior this study indicates towards the possibility that conscientiousness will be a stronger predictor of Indian physicians’ prosocial knowledge and charismatic leadership behavior than agreeableness.

1.5 The Current Investigation

The overall purpose of this study was to examine how Indian medical students’ prosocial knowledge and charismatic leadership behavior contribute to their clinical effectiveness. This study also investigates the strength of personality determinants of prosocial knowledge and charismatic leadership behavior with respect to cultural norm.
This investigation builds upon Ghosh et al.’s (2015) contention that medical students’ prosocial knowledge can contribute to the overall effectiveness of their clinical performance even in a high power distance society like India. Extending the notion of non-technical behaviors in medical practice, this study imports the concept of charismatic leadership behavior from management literature and examines its contribution in a high-stake profession like medicine that requires a great amount of technical expertise. This study empirically examines how medical students’ leadership behavior contributes to the overall effectiveness of their clinical performance. The expected relationships between proposed variables are illustrated in Figure 1.

One important distinction between the present investigation and Ghosh et al.’s (2015) study is that although medical students’ clinical performance criterion is the same for both studies, this current investigation’s criterion content is different from that of the previous study. In this study, students’ respective semesters’ percentage of cumulative total of individual course grades were used as measures of Indian medical students’ clinical performance. Each course’s total grade comprises of grades in theoretical examinations, practical examinations, internal assessments, and oral or viva voce. The total grade for each course and the distribution of theory and practical scores in it vary somewhat inconsistently within and across semesters. The course details are presented in Table 1.

In Ghosh et al.’s (2015) study, Indian medical students’ clinical performance was determined by students’ practical examination grades that comprise of their nontechnical
competence in terms of respectful handling of corpses, effective diagnosis of artificial simulated patients in the form of models of a human body, responsive interaction and diagnosis of real patients, in addition to their technical competence in medical diagnosis and treatment. These nontechnical aspects of performance were expected to correlate with students’ prosocial knowledge scores. In this investigation, these non-technical aspects of performance remained almost the same. However, in addition to practical examinations’ technical competence, medical students’ grades in their theoretical examinations, internal assessment, oral or viva voce are included in the clinical performance criterion.

1.6 Hypotheses

The effectiveness of prosocial physician-patient interactions in high power distance culture gives rise to the first and main proposition (H1) of this study. H1 postulates that Indian medical students’ prosocial knowledge is positively correlated with their clinical performance.

The second major proposition of this study examines the possibility of prosocial medical students’ charismatic leadership behavior and its contribution to their clinical performance. Specifically, H2 is that Indian medical students’ prosocial knowledge is positively correlated with their charismatic leadership behavior. Moreover, the third hypothesis (H3) involves the idea that Indian medical students’ charismatic leadership behavior is positively correlated with their clinical performance. The fourth hypothesis (H4) asserts that Indian medical students’
charismatic leadership behavior mediates the relationship between their prosocial knowledge and clinical performance.

The next set of hypotheses of this study investigates the difference in strength, if any, of the personality antecedents of Indian medical students’ prosocial knowledge construct and charismatic leadership behavior due to India’s high power distance societal norm. The fifth hypothesis (H5) postulates that Indian medical students’ agreeableness and conscientiousness are positively correlated with their prosocial knowledge. The sixth (H6) hypothesis examines the possibility that due to India’s high power distance cultural norms, medical students’ conscientiousness will exhibit a stronger relationship with their prosocial knowledge than agreeableness. The seventh proposition (H7) of this study asserts that Indian medical students’ agreeableness and conscientiousness are positively correlated with their charismatic leadership behavior. The eighth hypothesis (H8) tests whether Indian medical students’ conscientiousness will exhibit a stronger relationship with their charismatic leadership behavior than agreeableness. Additionally, the ninth hypothesis (H9) examines whether Indian medical students’ prosocial knowledge mediates the relationships between their personality traits and charismatic leadership behavior.
Chapter 2

Method

2.1 Sample and Procedure

The sample of the research participants consists of 133 female and 208 male medical students in India. In the total sample of medical students (N = 343), 2 did not report their gender. Students first signed the consent form. Then they filled out the demographic information and three personal characteristics questionnaires in group. By signing the consent, students gave permission to use their examination grades for the present research. Their examination grades were retrieved from their institution. Among the medical student cohorts, 123 students were in their first semester (starting 1st MBBS), 100 students were in their third semester (1st MBBS grades were retrieved), 64 students had finished their fifth semester (2nd MBBS grades were retrieved), 37 students had finished their seventh semester (3rd MBBS Part I grades were retrieved), and 19 students had finished their ninth semester (3rd MBBS Part II grades were retrieved). Students volunteered to participate in this study. They did not receive any research credit or monetary incentive for participation. Since medical students are admitted to medical colleges through an all-India ranking system, the present student sample from the single medical institute represents a national sample.

Because of missing data, sample sizes available for analyses are n = 329 for agreeableness, n = 330 for conscientiousness, n = 316 for charismatic leadership behavior, n = 277 for prosocial knowledge, and n = 208 for their clinical performance. It should be noted that 123 first semester students just started their medical training at the time of data collection, therefore did not have any examination grades to report.
2.2 Measures

*Personality Traits.* Indian medical students’ personality traits were measured using The Big Five Inventory (John & Srivastava, 1999). This inventory was selected because its item content was relevant for Indian culture. The Big Five Inventory consists of 44 items. However, because of the limited time of questionnaire administration only 26 items under the dimensions of agreeableness, conscientiousness, and extraversion were administered on students which were sufficient to test the research hypotheses. Students were instructed to rate each item on a 5 point Likert scale, where 1 = Disagree strongly, 3 = Neither agree nor disagree, 5 = Agree strongly, to indicate the extent of their agreement or disagreement with each of the personality items. Alpha reliabilities for the present sample were: agreeableness (.65), conscientiousness (.74), and extraversion (.64). High score in respective dimensions confirms higher level of specific trait.

*Prosocial Knowledge.* Students’ prosocial knowledge was measured using OPIP which was used by Ghosh et al. (2015) to assess Indian medical students’ prosocial knowledge. Alpha reliability for this present student sample is .88. OPIP consists of 40 interactive situations where physicians are either acting prosocially or antisocially with a patient, patient’s family, or a nurse. Students rated each situation on a 7 point Likert scale where 1 = Very ineffective, 4 = Neither ineffective nor effective, 7 = Very effective. High score in this SJT confirms higher level of prosocial knowledge. The development process and validity information of OPIP can be retrieved from Kell, Martin, and Motowidlo (2011). The mean score in this student sample is 220.71 (SD = 28.62). The OPIP scale appears in the appendix of Ghosh et al. (2015) paper.

*Charismatic Leadership Behaviors.* A 15 item self-rating leadership questionnaire was developed to measure Indian medical students’ charismatic leadership behavior as the existing
leadership scales are not a good fit for physicians. Medical students self-rated their leadership behaviors on a 7 point Likert scale, where 1 = Very inaccurately, 4 = Neither inaccurately nor accurately, 7 = Very accurately, to indicate how accurately the action reflected in the item describe them in their professional life and beyond. The alpha reliability for the present sample is .77. The Charismatic Leadership Questionnaire appears in Appendix A in this report.

Clinical Performance. Indian medical students take four and half years to complete their Bachelor of Medicine and Bachelor of Surgery (MBBS) degree. This full MBBS curriculum is divided into three parts: 1st MBBS, 2nd MBBS, and 3rd MBBS which is further subdivided into 3rd MBBS Part I and 3rd MBBS Part II. The details about the MBBS course work are presented in Table 1. There might be some differences in the medical curriculum of different medical colleges in India. However, all medical students in a specific medical institution are required to follow the same standard curriculum.

1st MBBS requires two semesters and takes one full year to complete. Medical students learn Anatomy, Physiology, and Biochemistry in these 2 semesters.

Medical students learn Pharmacology, Forensic Medicine, Microbiology, and Pathology in their three semesters of their 2nd MBBS which takes one and half years to complete.

During the two semesters of 3rd MBBS part I, students learn Ophthalmology, Otorhinolaryngology (ENT), and Community Medicine which takes one full year to complete. During the two semesters of 3rd MBBS Part II which is also the final year of their medical training, students learn Medicine, Surgery, Pediatrics, and Gynaecology and Obstetrics.

At the end of each MBBS (1st, 2nd, 3rd Part I, and 3rd Part II), they sit for separate theoretical and practical examination for respective courses and the percentage of the total marks
of all courses in their respective MBBSs served as the criterion for medical students’ clinical performance. The theoretical examinations, which are in-class written examinations, measure students’ technical medical knowledge that they learn in the respective MBBSs. As an example, Indian medical students’ theoretical examination for 3rd MBBS Part II covers technical subject matters from Medicine, Surgery, Pediatrics, and Gynaecology and Obstetrics. In addition to a written examination on the theoretical subject matter, students’ technical competence is examined through viva voce or oral questions. Although meant to test technical competence, grades for viva voce are computed separately than theoretical examination which adds up to the course total (e.g., Biochemistry). However, students’ grades in oral examinations which also measure their technical competence are included in their grades in written theoretical examinations (e.g., Pharmacology).

Students’ clinical encounter with real patients gradually increases after they finish their first year in medical college. Their extent of interpersonal interactions in their practical examination reflects on their respective courses. In their 1st MBBS practical examination, students perform autopsy on corpses, do visceral examination, inspect human bones, samples of blood, urine, or stool. They also diagnose disease and identify stage of the disease from various slides.

In their 2nd MBBS practical examination, students also inspect slides to diagnose illness. In addition to that, they review a patient’s case history to diagnose the cause of death and also identify the weapon responsible for the injury in that particular case. They also examine bone sets to diagnose the gender and age. Medical students also examine a sample of poison to identify its features and effects. Students are also inquired about the rationale for a prescribed medication which is often extended into how they will explain and convince patients to take that
particular medication, or convince patients to take an alternate medication especially if they are experiencing any side-effects.

Medical students’ 3rd MBBS Part I and Part II practical examinations require interpersonal interactions with real patients. In their 3rd MBBS Part I practical, students collect case history from patients and do some basic examination on their eye, ear, nose, and throat. Students’ interaction with real patients are more extensive in their 3rd MBBS Part II practical examination where they collect case history from patients and/or patients’ family members, make provisional diagnosis, and prepare a medical intervention for them. Likewise, MBBS Part II’s practical examination provides medical students maximum opportunity of prosocial interpersonal interactions, in comparison to previous MBBSs. In addition to theoretical and practical examination, a part of medical students’ grade in each course is supplemented by their grades in Internal Assessment. In medical college, students’ technical and non-technical competence in clinical practice is closely observed by their instructors. Their overall grade in Internal Assessment is determined by their performance in practical classes or/and in clinical setting when they are treating patients under supervision of their instructors.

In the practical examination, in addition to students’ technical competence students grades are party based on how respectfully they are handling the corpses (1st MBBS), how effectively and realistically they are intervening with patients’ complaints (2nd MBBS), and how responsively they interact with real patients during treatment (3rd MBBS Part I and Part II). Students’ grades in Internal Assessment also reflect on their empathic and motivational approach to patients, effective communication skills, and responsiveness.
During practical examination, students get sufficient opportunity to interact effectively and responsively with real patients (3rd MBBS Part I and 3rd MBBS Part II), addressing and managing patients’ concerns about their medications to their instructors (2nd MBBS), and respectfully inspecting corpses and body parts (1st MBBS). However, at the time of their 2nd MBBS, 3rd MBBS Part I, and 3rd MBBS part II practical examinations medical students get opportunities to understand their patients’ idiosyncratic needs and motivate them to follow the medical intervention. In other words, they get to act as charismatic leaders with real patients or instructors with real patient scenarios. Therefore, relationships between Indian medical students’ charismatic leadership behavior and other constructs (personality traits and clinical performance) were only measured from the 2nd MBBS, 3rd MBBS Part I, and 3rd MBBS Part II cohorts who deal with real patients or real patient scenarios in their practical examinations.
Chapter 3

Results

Correlations between Indian Medical Students’ Prosocial Knowledge, Clinical Performance Charismatic Leadership Behavior, Agreeableness, and Conscientiousness are presented in Table 2.

Insert Table 2 About Here

In the total sample of medical students, prosocial knowledge positively correlated (.21, \(p < .01\)) with clinical performance. Students’ clinical performance negatively correlated (-.17, \(p < .05\)) with students’ semester. On the other hand, both students’ prosocial knowledge (.18, \(p < .01\)) and clinical performance (.25, \(p < .01\)) significantly correlated with gender, in the direction of women scoring higher. Accordingly, partial correlation analysis was performed after controlling for semester and gender. The positive correlation between medical students’ prosocial knowledge and clinical performance remained unaffected (.21, \(p < .05\)). Thus, H1 was supported.

Insert Table 3 About Here
In the selected cohorts of 2nd MBBS, 3rd MBBS Part I, and 3rd MBBS Part II, prosocial knowledge did not significantly correlate (.18, NS) with charismatic leadership behavior. Students’ gender negatively correlated (-.40, p <.01) with their prosocial knowledge, in the direction of women scoring higher. After controlling for gender, this relationship failed to reach statistical levels of significance .09 (NS). Thus, H2 was not supported.

Indian medical students’ charismatic leadership behavior was not significantly correlated (.14, NS) with their clinical performance in the cohorts of 2nd MBBS, 3rd MBBS Part I, and 3rd MBBS Part II students. Therefore, H3 was not supported.

However, a few facts need to be mentioned in the leadership context. The combined 2nd MBBS, 3rd MBBS Part I, and 3rd MBBS Part II cohorts constitute 96 – 109 medical students. This is not a very large sample with a high level of statistical power. However, in the sample of 3rd MBBS Part I students (N = 35) charismatic leadership behavior was significantly correlated (.40, p <.05) with clinical performance. These inconsistent findings indicate towards another factor that during practical examinations medical students do not get the sufficient opportunities to guide the patients over time which might restrict their exercise of charismatic power. Hence, it is a possibility that medical students’ existing clinical performance may be a deficient criterion (Goldstein & Ford, 2001) to tap different aspects of ‘charisma.’
Hypothesis 4 posited that Indian medical students’ charismatic leadership behaviors mediate the relationship between their prosocial knowledge and clinical performance. The standardized beta for the effect of prosocial knowledge on clinical performance did not reach statistical levels of significance (.13, NS). The standardized beta for the effect of prosocial knowledge on charismatic leadership behavior did not reach statistical levels of significance (.18, NS). Furthermore, when both prosocial knowledge and charismatic leadership behavior were submitted to the regression equation to predict clinical performance, the standardized beta for the effect of leadership on clinical performance did not reach statistical level of significance (.17, NS) and the effect of prosocial knowledge on clinical performance remained almost unaffected (.11, NS). Thus, the results failed to satisfy any requirement for Barron and Kenny’s (1986) mediation analyses and H4 was not supported.

In the total sample of medical students, agreeableness (.24, $p < .01$) and conscientiousness (.13, $p < .05$) were positively correlated with prosocial knowledge. Prosocial knowledge was significantly correlated (.18, $p < .01$) with gender, in the direction of women scoring higher and agreeableness was negatively correlated (-.18, $p < .01$) with semester. Therefore, partial correlation analysis was performed after controlling for gender and semester. The positive correlation between agreeableness and prosocial knowledge increased (.34, $p < .01$) after controlling for gender and semester. The positive correlation between prosocial knowledge and conscientiousness failed to maintain statistical levels of significance (.13, $p < .05$) after partialling out the effects of gender and semester. These results showed support for H5.

Both agreeableness (.24, $p < .01$) and conscientiousness (.13, $p < .05$) showed positive correlations with medical students’ prosocial knowledge. However, Steiger’s (1980) z-test that draws upon Fisher’s $r$ to $z$ transformation, showed that agreeableness was not significantly
stronger than conscientiousness in predicting prosocial knowledge \((z = 1.57, \text{NS})\) (Lee & Preacher, 2013). These findings are in disagreement with H6 that postulates conscientious delivery of prosocial benevolence is more important for Indian medical students than agreeableness in India’s high power distance culture.

In the sample of 2nd MBBS, 3rd MBBS Part I, and 3rd MBBS Part II students, agreeableness \((.43, p <.01)\) and conscientiousness \((.40, p <.01)\) were positively correlated with charismatic leadership behavior. Thus, H7 is supported.

Both agreeableness \((.43, p <.01)\) and conscientiousness \((.40, p <.01)\) are positively correlated with medical students’ charismatic leadership behavior. Steiger’s (1980) z-test that draws upon Fisher’s r to z transformation, showed that agreeableness was not significantly stronger than conscientiousness in predicting charismatic leadership behavior \((z = .33, \text{NS})\) (Lee & Preacher, 2013). Therefore, H8 remained unsupported.

Hypothesis 9 posited that Indian medical students’ prosocial knowledge mediates the relationships between their personality traits (conscientiousness and agreeableness) and charismatic leadership behavior. The standardized beta for the effect of agreeableness on charismatic leadership behavior was significant \((.43, p <.01)\). The standardized beta for the effect of agreeableness on prosocial knowledge was also significant \((.29, p <.01)\). However, when both prosocial knowledge and agreeableness were submitted to the regression equation to predict charismatic leadership behavior, the standardized beta for the effect of prosocial knowledge on charismatic leadership behavior did not reach statistical levels of significance \((.05, \text{NS})\) and the standardized beta for the effect of agreeableness on charismatic leadership behavior failed to decrease significantly \((.40, p <.01)\).
On the other hand, the standardized beta for the effect of conscientiousness on charismatic leadership behavior was significant (.40, p < .01). The standardized beta for the effect of conscientiousness on prosocial knowledge did not reach statistical levels of significance (.15, NS). However, when both prosocial knowledge and conscientiousness were submitted to the regression equation to predict charismatic leadership behavior, the standardized beta for the effect of prosocial knowledge on charismatic leadership behavior did not reach statistical levels of significance (.12, NS) and the standardized beta for the effect of conscientiousness on charismatic leadership behavior failed to decrease significantly (.37, p < .01). Therefore, H9 remained unsupported.

A path analysis is conducted using MPlus (Version 7.4; Muthen & Muthen, 2015) to examine the relationship between the variables proposed in the path model (Figure 1). The path coefficients are presented in Figure 2. The fit of this model was not good: $x^2(N = 260; df = 6) = 43.06$, ($p < .01$), the root mean square of approximation (RMSEA) = .17, and the confirmatory fit index (CFI) = .575.

Insert Figure 2 About Here
Chapter 4

Discussion

Although the present study was conducted in a medical setting, the scope of this study is not limited to medicine. First, this is the second study measuring Indian medical students’ prosocial knowledge. The positive association between Indian medical students’ prosocial knowledge and their clinical performance corroborates the findings reported by Ghosh et al. (2015) and affirms the importance of prosocial interaction in medical encounters, even in a high power distance country like India. This finding contributes to the job performance literature by providing empirical support to the existing job performance models that have emphasized the role of job knowledge in predicting job performance (Campbell, 1990; Campbell, Gasser, & Oswald, 1996; Schmidt & Hunter, 1992). Furthermore, it underscores the contribution of nontechnical job knowledge, which individuals can learn without any specific occupational experience (Motowidlo & Beier, 2010), to the overall effectiveness of job performance (Motowidlo, Borman, & Schmit, 1997), even in a highly technical profession like medicine. Therefore, in fields where interpersonal interaction is a requirement (medicine, law, or any service industry), emphasizing prosociality may reduce occupational stress (Motowidlo, Packard, & Manning, 1986) and enhance customer care.

Findings from this study are expected to contribute to medical literature. It will facilitate existing research on similar ‘prosocial’ constructs, such as empathy (Larson & Yao, 2005; Williams, Brown, McKenna, Palermo, Morgan, Nestel, Brightwell, Gilbert-Hunt, Stagnitti, Olaussen, & Wright, 2015), patient-centered care (Henbest & Stewart, 1989), and emotional care (Di Blasi, Harkness, Ernst, Georgiou, & Kleijnen, 2001) and their positive patient outcomes.
Regardless of its outcomes, insufficient human and monetary resources are spent to aid prosocial conduct of medical professionals. Each year in the US, 15 to 19 thousand malpractice cases are brought against physicians (Numberof.net, 2010) and unprofessional behavior is a major component of it. The findings from this study may encourage medical authorities to implement prosocial knowledge training to increase the effectiveness of physicians’ interpersonal interactions that will ultimately facilitate clinical performance and safeguard medical institutions from paying out millions of dollars in legal settlements.

The second major implication of this research is examining physicians’ charismatic leadership behavior in medical setting. Although agreeable and conscientious Indian medical students act as charismatic leaders, their ‘charisma’ was not significantly correlated with their prosocial knowledge and clinical effectiveness. These results indicate towards some possibilities for future research. The existing performance criterion may be deficient to tap the unique attributes of ‘charisma.’ Using different criterion, such as instructor’s rating on medical students’ leadership behavior or patient-related outcomes (e.g., patients adhere to proposed medical intervention) during clinical practice with real patients, patients’ rating on medical students’ leadership behavior can shed some light on this area. Again, Indian patients’ varied levels of education and different native languages can pose serious difficulties in gaining the accurate responses. Translation and back-translation of questionnaires is a time-consuming procedure and require great deal of expertise. However, using multiple criterion measures will be an advice for future researchers. If support is gained for contribution of charismatic leadership in medical students’ clinical effectiveness, one of the recommendations for medical authorities will be to implement leadership training. Crew Management Courses (CMC) of anesthesia (Fletcher,
McGeorge, Flin, Glavin, & Maran, 2000) has already introduced leadership skills training in their curriculum.

Another important contribution of this study is its cultural implication. In agreement with Ghosh et al.’s (2015) study, this study also documented that Indian medical students’ prosocial mean knowledge score is lower (220.71; SD = 28.62) than American medical students’ mean prosocial knowledge score (255.9; SD = 15.7) and still it successfully explains significant variance in their clinical performance. Although this difference (Cohen’s $d = 1.53$) is smaller than the previous study (Cohen’s $d = 1.76$), it is still a big difference indicating different implications of same behavior in different cultures. Flores, Gee, and Kastner (2000) showed that despite the utmost importance of cultural awareness in patient care only 8% medical schools in the US and no medical schools in Canada offer formal courses on cultural issues in patient care. Introduction of new courses on culture and patient care, diversity training, seminars on cross-cultural issues will help to accumulate new knowledge in this domain.

Contrary to the predictions, conscientiousness failed to show stronger association with Indian medical students’ prosocial knowledge and charismatic leadership behavior than agreeableness, which is consistent with prior research conducted in a lower power distance society (Kell et al., 2014; Martin-Raugh et al., 2016; Motowidlo et al., 2013). Therefore, this finding indicates towards agreeableness trait’s global applicability as a predictor of prosocial constructs. This information is very relevant for I/O psychologists. As present work-force consists of very culturally diverse group of employees, practitioners can accurately select predictors for making selection and training decisions. However, before getting at any concrete decision the bandwidth issue needs to be taken into account.
McCrae’s (2002) facet-level personality data across 36 cultures revealed that power distance is mainly associated with the achievement striving and deliberation facets of conscientiousness in comparison to the competence, order, dutifulness, and self-discipline facets of conscientiousness. Medical practice requires great deal of competence, order, self-discipline and dutifulness in a consistent way, which might be a potential reason that the higher strength assumption about conscientiousness was not supported in the present sample of Indian students. Future study with facet-level personality data can confirm the difference in trend of relationship, if any, with medical students’ prosocial knowledge and charismatic leadership behavior.

Some limitations of this study should be mentioned. Although the reliability estimates of the charismatic leadership questionnaire developed to study physicians’ charismatic leadership behavior is quite strong, .77, the questionnaire is not tested for validity. Future research might empirically examine the validity of this measure.

Small sample size in the advanced cohorts of medical students, especially cohorts that treat real patients or real patients’ scenario in their practical examination (2\textsuperscript{nd} MBBS, 3\textsuperscript{rd} MBBS Part I, and 3\textsuperscript{rd} MBBS Part II), lowered the statistical power of the study. During their 3\textsuperscript{rd} MBBS (Part I and Part II), medical students spend the maximum amount of time in practical classes and they have an intense course-load given the limited amount of time. Therefore, because of time constraint it was very difficult to collect the data from a large part of these cohorts, although they were willing to participate in the study.
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Table 1: Medical Students’ Course Duration and Details

<table>
<thead>
<tr>
<th>Grades (Theory, Practical, Internal Assessment, Oral or Viva Voce)</th>
<th>Total Grade</th>
<th>Semesters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; MBBS</td>
<td>600</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; and 2&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td>Anatomy</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Physiology</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Biochemistry</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; MBBS</td>
<td>550</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;, 4&lt;sup&gt;th&lt;/sup&gt;, and 5&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Forensic Medicine</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Microbiology</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Pathology</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; MBBS (Part I)</td>
<td>400</td>
<td>6&lt;sup&gt;th&lt;/sup&gt; and 7&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Otorhinolaryngology (ENT)</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Community Medicine</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; MBBS (Part II)</td>
<td>900</td>
<td>8&lt;sup&gt;th&lt;/sup&gt; and 9&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Medicine</td>
<td>300</td>
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<tr>
<td>Surgery</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Gynecology &amp; Obstetrics</td>
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<td></td>
</tr>
<tr>
<td>Pediatrics</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Note. There might be some differences in the medical curriculum of different medical institutions in India. However, all medical students in a specific medical institution are required to follow the same standard curriculum.
Table 2: Correlations between Indian Medical Students’ Prosocial Knowledge, Clinical Performance Charismatic Leadership Behavior, Agreeableness, and Conscientiousness

<table>
<thead>
<tr>
<th>Prosocial Knowledge</th>
<th>Mean</th>
<th>SD</th>
<th>( r ) with Clinical Performance</th>
<th>( r ) with Charismatic Leadership Behavior</th>
<th>( r ) with Agreeableness</th>
<th>( r ) with Conscientiousness</th>
</tr>
</thead>
<tbody>
<tr>
<td>All semesters (Zero Order)</td>
<td>220.71</td>
<td>28.62</td>
<td>.21** (161)</td>
<td>.23** (260)</td>
<td>.24** (271)</td>
<td>.13* (270)</td>
</tr>
<tr>
<td>All semesters (Partial: Gender &amp; Semester)</td>
<td>219.85</td>
<td>30.32</td>
<td>.21* (145)</td>
<td>.24** (145)</td>
<td>.34** (145)</td>
<td>.14* (145)</td>
</tr>
<tr>
<td>2\textsuperscript{nd} MBBS, 3\textsuperscript{rd} MBBS Part I, &amp; 3\textsuperscript{rd} MBBS Part II (Zero Order)</td>
<td>219.77</td>
<td>30.66</td>
<td>.13 (98)</td>
<td>.18 (96)</td>
<td>.29** (100)</td>
<td>.15 (100)</td>
</tr>
<tr>
<td>2\textsuperscript{nd} MBBS, 3\textsuperscript{rd} MBBS Part I, &amp; 3\textsuperscript{rd} MBBS Part II (Partial: Gender)</td>
<td>220.23</td>
<td>29.57</td>
<td>.07 (87)</td>
<td>.09 (87)</td>
<td>.23* (87)</td>
<td>.03 (87)</td>
</tr>
</tbody>
</table>

*Note. *\( p < .05, **p < .01 \) (two-tailed). Sample sizes appear in parentheses.*
Table 3: *Means, standard deviations, and zero order correlations in the total sample of medical students (N = 161 - 341).*

<table>
<thead>
<tr>
<th></th>
<th>Prosocial Knowledge</th>
<th>Clinical Performance</th>
<th>Charismatic Leadership Behavior</th>
<th>Agreeableness</th>
<th>Conscientiousness</th>
<th>Gender</th>
<th>Semester</th>
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<td>Charismatic Leadership Behavior</td>
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<tr>
<td>Agreeableness</td>
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<td>.04</td>
<td>.42**</td>
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<tr>
<td>Conscientiousness</td>
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<td>.10</td>
<td>.38**</td>
<td>.31**</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Gender</td>
<td>-.18**</td>
<td>-.25**</td>
<td>.03</td>
<td>-.03</td>
<td>.03</td>
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<td></td>
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<td>-.15**</td>
<td>-.18**</td>
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<tr>
<td>Mean</td>
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<td>65.28</td>
<td>80.22</td>
<td>34.31</td>
<td>30.50</td>
<td>.61</td>
<td>3.42</td>
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<td>SD</td>
<td>28.62</td>
<td>6.54</td>
<td>11.22</td>
<td>5.24</td>
<td>6.07</td>
<td>.49</td>
<td>2.40</td>
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</table>

*Note.* *p* < .05, **p** < .01 (two-tailed); Coding for gender: female = 0 and male = 1.
Table 4: Means, standard deviations, and zero order correlations in the cohorts of 2nd MBBS, 3rd MBBS Part I, and 3rd MBBS Part II medical students (N = 96 - 120).

<table>
<thead>
<tr>
<th></th>
<th>Prosocial Knowledge</th>
<th>Clinical Performance</th>
<th>Charismatic Leadership Behavior</th>
<th>Agreeableness</th>
<th>Conscientiousness</th>
<th>Gender</th>
<th>Semester</th>
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<tr>
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<td>Charismatic Leadership Behavior</td>
<td>.18</td>
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<td>.07</td>
<td>.43**</td>
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<td>Conscientiousness</td>
<td>.15</td>
<td>.06</td>
<td>.40**</td>
<td>.41**</td>
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<td>-.15</td>
<td>-.10</td>
<td>-.15</td>
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<tr>
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<td>-.26**</td>
<td>-.07</td>
<td>-.09</td>
<td>-.07</td>
<td>.09</td>
<td>.09</td>
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<td>79.08</td>
<td>33.30</td>
<td>30.43</td>
<td>.60</td>
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<td>SD</td>
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<td>6.47</td>
<td>11.88</td>
<td>5.81</td>
<td>6.33</td>
<td>.49</td>
<td>1.49</td>
</tr>
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</table>

*Note. *p < .05, **p < .01 (two-tailed); Coding for gender: female = 0 and male = 1.*
Figure 1: Anticipated Relationships between Indian Medical Students’ Personality Traits, Prosocial Knowledge, Charismatic leadership behaviors, and Clinical Performance
Figure 2: Path Model of Indian Medical Students’ Personality Traits, Prosocial Knowledge, Charismatic Leadership Behaviors, and Clinical Performance [Numbers refer to standardized path coefficients (**p < .01)]
APPENDICES

Appendix A

Instructions: This questionnaire contains a list of 15 statements that could be applicable to individuals’ professional life as well as personal life. Please write a number from 1 to 7 beside each statement to indicate how accurately it describes you in your life, where…

1 = Very Inaccurately          4 = Neither Inaccurately          5 = Slightly Accurately
2 = Somewhat Inaccurately      5 Nor Accurately                   6 = Somewhat Accurately
3 = Slightly Inaccurately      7 = Very Accurately

1. I help people to make realistic plans for their futures ............
2. I always respect others’ feelings ..............
3. Others don’t find me inspiring ..............
4. I encourage others to engage in superior quality tasks and/or ideas ............
5. I believe in motivating others through my own behaviors rather than just by giving suggestions ............
6. I help people when they are in trouble ............
7. I motivate others to follow their goals ...............
8. I create enthusiastic environment to bring positive attitude in people ............... 

9. I see each and every person’s needs from their own point of view ............... 

10. I don’t show empathy when others need help .................... 

11. I inspire individuals to accept challenging goals in life ............... 

12. People prefer to follow my lead .................... 

13. I suggest individuals not to be ambitious .................... 

14. While interacting with others, I make sure that my body language does not reflect any negative cue .................... 

15. People say that my ideas have helped them to accomplish their goals ...............