

Making use of an existing questionnaire to measure patient-centred attitudes in undergraduate medical students: A case study

E Archer,¹ BSocSc (Nursing), BCur Hons (ICU), MPhil (Higher Education); J Bezuidenhout,^{1,2} MB ChB, FCPATH (SA), MMed (Anat Path), PhD; M Kidd,³ PhD (Statistics); B B van Heerden,¹ MB ChB, MSc, MMed (Int)

¹ Centre for Health Professions Education, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa

² National Health Laboratory Service, Tygerberg Hospital, Cape Town, South Africa

³ Centre for Statistical Consultation, Stellenbosch University, Stellenbosch, South Africa

Corresponding author: E Archer (elizea@sun.ac.za)

Background. Patient-centred care is widely acknowledged as important to achieve improved patient outcomes in healthcare. Therefore, it is vital that medical schools should foster this attitude in their students. Studies report that students are becoming less patient-centred in the period between entry to medical school and graduation.

Objective. To determine the shift in attitude towards patient-centredness in a group of South African undergraduate medical students. Simultaneously, the reliability and validity of the Patient-Practitioner Orientation Scale (PPOS) in our context were measured.

Methods. A cross-sectional survey was undertaken by asking all the medical students from year 1 to year 6 to complete the PPOS. The mean PPOS score for each cohort was calculated using SPSS for Windows. Reliability and validity testing was conducted using Cronbach's alpha and confirmatory and exploratory factor analysis.

Results. The average return rate across the 6 years of study was 81%. The results indicated low initial scores on the PPOS and a decrease in scores over the years of study, with the most dramatic drop being from year 1 to year 2. The PPOS showed poor validity and reliability in our context.

Conclusion. The study appears to indicate the same decrease in patient-centredness in our students as has been shown in other studies using this tool. However, the low reliability and validity of the PPOS in our environment means that the result should be interpreted with caution. Factors such as our medical students' not having had first-hand experience of the doctor-patient relationship and second-language issues may play a role. It is recommended that the PPOS not be used in our context without further exploration of the factors contributing to this loss of reliability and validity.

AJHPE 2014;6(2):150-154. DOI:10.7196/AJHPE.351



The doctor-patient relationship is a product of the attitudes and expectations both parties bring to the relationship. Two principal models regarding this relationship exist: a patient-oriented and a disease- or doctor-oriented approach.^[1] The traditional model, referred to as doctor-centred or disease-centred, is characterised by an authoritarian doctor-patient relationship. This model originated from the biomedical model of disease, and narrowly defines medical care as the treatment of physical symptoms in a quantifiable way. Subsequently the biopsychosocial model, a more 'holistic' framework of health attempting to incorporate psychosocial and social dimensions as well as physical symptoms, emerged. This model advocates a patient-centred approach that includes giving equal weight to the thoughts, feelings and values of both the doctor and the patient.^[2]

The concept of patient-centredness was already introduced by Balint in 1969 as 'understanding the patient as a unique human being' and since then much research has developed and expanded this idea.^[3] Despite the popularity of the concept, and the fact that the overarching philosophy of patient-centredness is understood by most, how it is defined and how one can make it a reality in everyday clinical practice, is less clear.^[4]

Evidence suggests that patient-centred care is associated with a number of favourable biomedical, psychological and social outcomes.^[5,6] In response, medical educators and some accrediting bodies globally have recommended patient-centred care as a central approach for teaching of clinical practice.^[7-9] Since the importance of patient-centred care was recognised, it is vital that medical schools should foster positive attitudes towards patient-centredness

in their medical students and that a patient-centred agenda should be implemented from the early years of training.^[10] Several studies, however, reported a trend towards a deterioration of students' attitudes between entry in medical school and graduation. Students have been found to become less empathetic^[11,12] and patient-centred, despite attempts to supplement medical curricula with additional courses and experiences.^[13-15]

Measurement instruments for attitudes towards patient-centredness in undergraduate medical students are few. In fact, only two were found in the literature reviewed: the Doctor Orientation Scale^[10] and the Patient-Practitioner Orientation Scale (PPOS).^[16] Of these two the PPOS has been used much more extensively, which is the main reason we selected this instrument in our study.

The PPOS is an instrument developed by Krupat *et al.*^[16] in 1999 to measure the attitudes of practitioners, future practitioners and patients towards patient-centredness. It measures an individual's attitudes towards the doctor-patient relationship along two dimensions termed 'sharing' and 'caring'. Since then many studies have made use of the PPOS; among these are studies reporting on undergraduate medical students,^[13,14,17-20] qualified doctors,^[8,21] and other health professionals.^[22,23] To date, no studies investigating the attitudes of medical students towards patient-centred care in South Africa (SA) have been reported.

Objective

The aim of this study was to validate the PPOS (18 items) in an SA context and then use it to determine the attitudes of undergraduate medical students at our institution towards patient-centredness.

Methods

Instrument used and procedure

The PPOS consists of 18 items measuring two constructs termed 'sharing' and 'caring' on a six-point Likert scale. The sharing dimension is evaluated by nine items determining the degree to which the respondent believes that power and control should be shared by doctor and patients, and the degree to which doctors should share information with the patients. The caring dimension is evaluated by nine items measuring the respondent attitude towards the value of warmth and support in the relationship, and the degree to which the doctor should inquire about psychosocial issues and employ a holistic approach to medical care. Respondents are requested to rate their agreement or disagreement with individual statements. Lower scores reflect an orientation towards a more doctor-centred relationship, whereas higher scores indicate preference for a more patient-centred relationship.^[8] The PPOS instrument was selected because it covers the main components of patient-centred care, it is short, showed acceptable psychometric properties^[20] and it had been used in many studies (Appendix A: PPOS instrument).

Ethics approval was obtained at our institution. The questionnaire was translated into Afrikaans and informed consent was obtained from all the students who participated.

Pilot study

During the pilot study the PPOS questionnaire was administered to 134 final-year (sixth-year) undergraduate medical students, and the internal consistency of the scale was determined using the Cronbach alpha coefficient. This statistical test determines how well the questionnaire items measure the two proclaimed PPOS constructs (caring and sharing). The reliability of the scale increases as alpha values approach 1, and values between 0.7 and 0.9 indicate an acceptable level of reliability.^[24] The alpha value was 0.67 for sharing and 0.63 for caring ($n=134$). This result was regarded as adequate, but to verify the results, it was decided to test it in a larger cohort of students.

Content validity was evaluated by asking eight senior clinician-educators, teaching undergraduate medical students, about the content of the questions. They were satisfied that most of the questions were appropriate but some did raise a concern about the clarity of two items in the survey.

Main study

Following the pilot study a cross-sectional survey was conducted of all the medical students (years 1 - 6) at our institution. The questionnaire was administered during class time.

Statistical analysis

Internal consistency was determined using the Cronbach alpha coefficient followed by confirmatory factor analysis (CFA) and exploratory factor analysis (EFA). CFA, a measure of reliability, forms part of the general class of analyses called structural equations modelling (SEM). SEM consists of two parts, namely the measurement and the structural model. CFA deals with the measurement part of the model and tests whether a known latent (factor) structure is supported by the data.^[25] When using EFA, the required number of components is usually determined using the 'eigenvalue greater than one' rule. However, this is not without its difficulties and we decided on parallel analysis which is based on comparing the current data with cumulated data with no structure.^[26]

Results

Sample

A total of 1 127 completed questionnaires were received from 1 382 students (81% response rate). The class distribution was as follows: first year - 260; second year - 202; third year - 234; fourth year - 107; fifth year - 167 and sixth year - 157.

Internal consistency/reliability

The Cronbach's alpha value for the PPOS was 0.51 overall; 0.58 for the sharing component and 0.41 for the caring component.

Confirmatory factor analysis

CFA was conducted using robust diagonally weighted least squares for estimating the parameters. Before the model was fitted, the sample was randomly split in half; 50% training data and 50% test data. The CFA model was fitted on the training data to identify potential changes needed prior to using the test data. Goodness-of-fit of the model was acceptable with a root mean square error or approximation (RMSEA) of 0.05 and adjusted goodness-of-fit index (AGFI) of 0.95. Acceptable values for RMSEA and AGFI are usually taken as 0.05 and 0.95, respectively.

Closer inspection of the path coefficients indicated that most of the coefficients were less than 0.5 (acceptable level used), and these 'low' coefficient values were also reflected in low variance extracted (0.15 and 0.16 for caring and sharing, respectively). Acceptable variance extracted is usually judged to be above 0.5. Furthermore, construct reliability (a measure similar to Cronbach's alpha coefficient) was found to be 0.54 and 0.61, also lower than the acceptable norm of 0.7. Further CFA models were fitted by selecting the few items that showed reasonable path coefficients, but none of these models indicated acceptable variance extracted and construct reliability on either the training or test data.

Exploratory factor analysis

Following on the CFA analysis, EFA was undertaken using the training data to understand the underlying latent structure exhibited by the data. A parallel analysis was done to determine the number of factors to be selected for the EFA. Three factors were identified, but they only accounted for 31% of the variance in the data, which suggested that there was no clear underlying latent structure in the data. This result was supported by the low variance extraction found in the CFA. For this reason EFA was not pursued further.

Scores of the PPOS

Although the reliability of the instrument was limited in our setting, the PPOS scores were compared between years to determine whether any obvious patterns emerged. As shown in Fig. 1 there was a decrease in the patient-centred attitudes of undergraduate medical students, from 2.65 in first-year students to 2.25 in final-year students. The most pronounced decrease was in the first 2 years of study.

Discussion

This study originally set out to validate the PPOS in a group of SA undergraduate medical students and then use it to determine their attitudes towards patient-centredness. However, on the basis of the results, we are unable to endorse use of the instrument, as it is currently configured, in our setting.

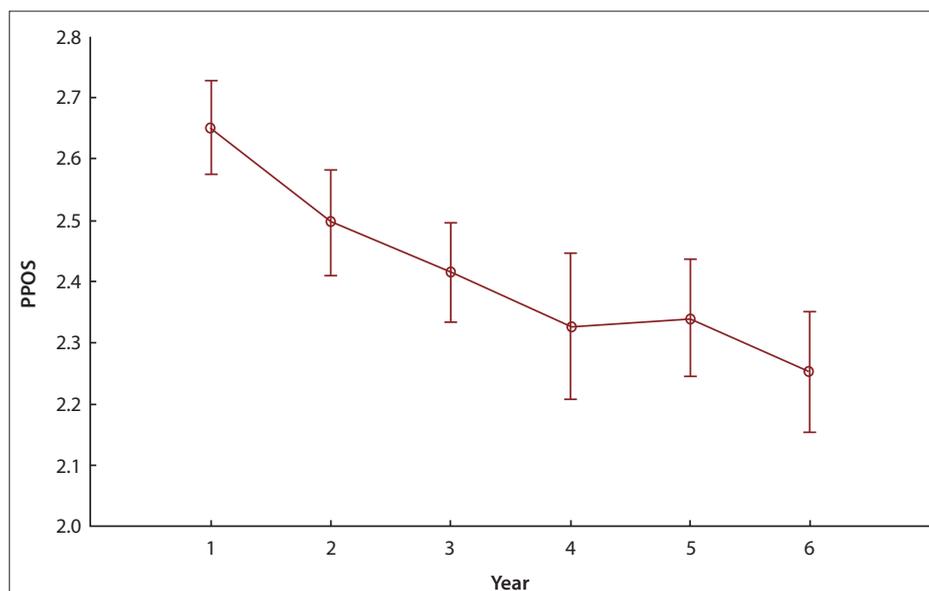


Fig. 1. Comparison of the mean Patient-Practitioner Orientation Scale (PPOS) scores per year group.

Reliability of the PPOS

According to Schuwirth *et al.*,^[27] an instrument is never valid *per se*; instruments that are validated in one context need to be validated again for the context in which a specific study is done, hence the validation tests we performed in our study. While the internal consistency of the data (Cronbach's alpha value) in our study was lower than acceptable levels, it was not possible to compare this result with other work done, as most prior studies have not reported on their internal consistency data.^[14,17,28] Some studies have reported alpha values of 0.75 and 0.88, but these were studies using doctors and patients, not undergraduate medical students.^[13,21] Interestingly enough, a study done in Saudi Arabia with sixth-year undergraduate medical students, reported a Cronbach's alpha value of 0.56, which is in keeping with our results.^[29]

The results of further reliability testing performed in our study emphasise the importance of using factor analysis as part of the process of validating scales, and demonstrate that it is not sufficient to evaluate only the internal consistency of the instrument using a test such as Cronbach's alpha coefficient. The inconsistent factor loadings of some items in our analysis are supported by a recent study done by Pereira *et al.*^[30] where they found that they had inadequate factor loadings in both domains (caring and sharing) and that the factor loading for some items was inconsistent with the current classification (sharing rather than caring) used in the instrument. Pereira *et al.*'s study did, however,

demonstrate a two-factor model as suggested by the original authors.

The suboptimal performance of the PPOS in our study could be due to several factors. First, an understanding of the term 'patient-centredness' is pivotal in the construct validity of the PPOS and so there should be an agreed-upon definition. Mead and Bower^[4] have argued that the definition of patient-centredness is not clear in the literature. Second, to ensure that instruments are valid and reliable, they need to contain questions relevant and appropriate to the study population. The questions in the PPOS focus on the doctor-patient relationship, a situation of which undergraduate medical students do not have first-hand experience, as they usually only observe doctors interacting with patients. Third, while the PPOS was designed to be completed by various role players (doctors, students and patients), it is important to note that individual role players will focus on different aspects of patient-centredness, reflecting their own roles and interests, and so we are unsure whether such diverse groups of role players should be asked the same questions. The notion that medical students and qualified doctors experience the doctor-patient relationship differently is supported by a study done by Williams *et al.*,^[31] where it was evident that newly qualified preregistration house officers in the UK described their relationships with patients as different when compared with the relationships they had had with patients when they were still medical students. These changes were related to aspects such as control in the

relationship, the implicit consent of patients to procedures, changing ideas about what a good doctor is, defensive emotional blunting and the impact of tiredness.

Finally the PPOS may contain items that address issues that are not equally relevant to, or appropriate in, the SA context. This was suggested by some of the clinician educators during the pilot study. The same concern was raised by authors who did studies in Brazil^[17] and Saudi Arabia.^[29]

While the PPOS did not perform well in our study, the observation that the scores declined over time is worthy of consideration. Our results appear to be aligned with previous reports demonstrating that medical students' patient-centred attitudes decline at medical school.^[12] Research highlights that there is often a decline during the first 2 years of medical training once idealism is no longer present and students start to see more patients.^[32] Patient-centred attitudes of undergraduate medical students may also decrease once they are exposed to training in specialty medicine, become reliant on medical technology, learn more about the biomedical aspects of the disease and start having close contact with specialist physician opinions.^[17] The reasons why patient-centredness may have declined in our study are not clear, and further work is needed to explore this issue.

Compared with other studies where the PPOS was used, our first-year students started with a much lower score (2.65) than studies that were done in countries such as Sweden (4.1)^[19] and Brazil (4.6).^[17] It is believed that students enter medical school with their own views of the 'ideal' doctor-patient relationship; such views are shaped by many factors, including cultural and social norms, gender, past experiences as patients, and portrayal of doctors in various mass media.^[33] While SA is indeed very different from First-World countries like Sweden, we thought that we might have more similarities with life in Brazil, another developing country with an emerging economy despite ongoing social inequality. However, the students from Brazil entered medical school with the highest scores of all. This raises questions regarding the factors that influence the views of students towards the doctor-patient relationship and how this may vary in different sociocultural settings.

Strengths and limitations

This study is, to our knowledge, the first report on the attitudes of undergraduate medical students

towards patient-centredness performed in an SA medical school. The use of a sufficiently large sample to conduct the study was a key strength of the work done. There are three significant limitations of this work: (i) the study was cross-sectional rather than longitudinal; (ii) some items in the PPOS may be of limited relevance to life in SA; and (iii) generalisations cannot be made because the data were only collected at one institution.

Conclusion

The PPOS did not perform well in our study and we recommend that the PPOS may need to be adapted for future use in the study of undergraduate medical students in SA.

This research has highlighted various areas that could benefit from further research: the understanding of patient-centredness in various contexts; the best way to measure patient-centred attitudes in undergraduate medical students; the influence of societal norms and values on first-year students' attitudes; and lastly the reasons why patient-centred attitudes change during progression through medical school.

Acknowledgements. We thank Prof. E Krupat for granting permission to use the PPOS and the undergraduate medical students who participated in this study.

References

- Krupat E, Rosenkrahz SL, Yeager CM, Barnard K, Putnam SM, Thomas S. The practice orientations of physicians and patients: The effect of doctor-patient congruence on satisfaction. *Patient Educ Couns* 2000;39:49-59. [http://dx.doi.org/10.1016/s0738-3991(99)00090-7]
- De Vlack C, Bensing J, Bruynooghe R, Batenburg V. Cure-oriented versus care-oriented attitudes in medicine. *Patient Educ Couns* 2001;45:119-126. [http://dx.doi.org/10.1016/s0738-3991(00)00201-9]
- Bardes CL. Defining 'patient-centered medicine'. *N Engl J Med* 2012;366:782-783. [http://dx.doi.org/10.1056/NEJMp1200070.10.1056/NEJMp1200070]
- Mead N, Bower P. Patient-centeredness: A conceptual framework and review of the empirical literature. *Soc Sci Med* 2000;51:1087-1110.
- Street RL Jr, Makoul G, Arora NK, Epstein RM. How does communication heal? Pathways linking clinician-patient communication to health outcomes. *Patient Educ Couns* 2000; 41:145-156. [http://dx.doi.org/10.1016/j.pec.2008.11.015]
- Bauman A, Fardy H, Harris P. Getting it right: Why bother with patient-centred care? *Med J Aust* 2003;179:253-256.
- Stewart M, Brown JB, Weston WW, McWhinney IR, McWilliam CL, Freeman TR. *Patient-Centered Medicine: Transforming the Clinical Method*. Thousand Oaks, Calif: Sage, 1995.
- Krupat E, Bell RA, Kravitz RL, Thom D, Azari R. When physicians and patients think alike: Patient-centered beliefs and their impact on satisfaction and trust. *J Fam Pract* 2001;50:1057-1062.
- Halpern J. What is clinical empathy? *J Gen Intern Med* 2003;18(8): 670-674.
- De Monchy C, Richardson R, Browqn RA, Harden RM. Measuring attitudes of doctors: The doctor-patient rating. *Med Educ* 1988;22:231-239.
- Chen D, Lew R, Hershman W, Orlander J. A cross-sectional measurement of medical student empathy. *J Gen Intern Med* 2007; 22(10):1434-1438.
- Hojat M, Vergare MJ, Maxwell K, et al. The devil is in the third year: A longitudinal study of erosion of empathy in medical school. *Acad Med* 2009;84(9):1182-1191. [http://dx.doi.org/10.1097/ACM.0b013e3181b17e55]
- Haidet P, Dains JE, Paterniti DA, Chang T, Tseng E, Rogers JC. Medical students' attitudes towards patient-centred care and standardized patient perceptions of humanism: A link between attitudes and outcomes. *Acad Med* 2001;76(10):1013-1026.
- Tsimtsiou Z, Kerasidou O, Efsthathiou N, Papaharitou S, Hatzimouratidis K, Hatzichristou D. Medical students' attitudes towards patient-centred care: A longitudinal study. *Med Educ* 2007;41:146-153. [http://dx.doi.org/10.1111/j.1365-2929.2006.02668.x]
- Bombeke K, Symons L, Vermeire D, Schol S, de Winter B, van Royen P. Patient-centeredness from education to practice: The 'lived' impact of communication skills training. *Med Teach* 2012;34(5):e338-e348. [http://dx.doi.org/10.3109/0142159X.2012.670320]
- Krupat E, Hiam CM, Fleming MZ, Freeman P. Patient-centeredness and its correlates among first year medical students. *Int J Psychiatry Med* 1999;29(3):347-356.
- Ribeiro MMF, Krupat E, Amaral CFS. Brazilian medical students' attitudes towards patient-centered care. *Med Teach* 2007;29:e204-e208.
- Moore M. What do Nepalese medical students and doctors think about patient-centred communication? *Patient Educ Couns* 2009;76:38-43. [http://dx.doi.org/10.1016/j.pec.2008.11.018]
- Wahlqvist M, Gunnarsson RK, Dahlgren G, Nordgren S. Patient-centred attitudes among medical students: Gender and work experience in health care makes a difference. *Med Teach* 2010;31:e191-e198. [http://dx.doi.org/10.3109/01421591003657451]
- Lee KH, Seow A, Luo N, Koh D. Attitudes towards the doctor-patient relationship: A prospective study in an Asian medical school. *Med Educ* 2008;42:1092-1099. [http://dx.doi.org/10.1111/j.1365-2923.2008.03157.x]
- Street RS Jr, Krupat E, Bell RA, Kravitz RL, Haidet P. Beliefs about control in the physician-patient relationship: Effect on communication in medical encounters. *J Gen Intern Med* 2003;18:609-616. [http://dx.doi.org/10.1046/j.1525-1497.2003.20749.x]
- Beattie A, Durham J, Harvey J, Steele J, McHandwell S. Does empathy change in first-year dental students? *Eur J Dent Educ* 2011;15:1-6. [http://dx.doi.org/10.1111/j.1600-0579.2011.00683.x]
- Ross EF, Haidet P. Attitudes of physical therapy students towards patient-centered care, before and after a course in psychosocial aspects of care. *Patient Educ Couns* 2011;85:529-532. [http://dx.doi.org/10.1016/j.pec.2011.01.034]
- Tavakol M, Dennick R. Making sense of Cronbach's alpha. *Int J Med Educ* 2011;2:53-55.
- O'Connor BP. SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behav Res Methods Instrum Comput* 2000;32(3):396-402.
- Hair JF, Black WC, Babin BJ, Anderson RE. *Multivariate Data Analysis*. 7th ed. Upper Saddle River, NJ: Prentice Hall, 2009.
- Schuwirth L, Colliver J, Gruppen L, et al. Research in assessment: Consensus statement and recommendations from the Ottawa 2010 conference. *Med Teach* 2011;33:224-233. [http://dx.doi.org/10.3109/0142159X.2011.551558]
- Krupat E, Pelletier S, Alexander EK, Hirsh D, Ogur B, Schwartzstein R. Can changes in the principal clinical year prevent the erosion of students' patient-centered beliefs? *Acad Med* 2009;84(5):582-586. [http://dx.doi.org/10.1097/ACM.0b013e31819fa92d]
- Al-Bawardy R, Blatt B, As-Shohaib S, Simmens SJ. Cross-cultural comparison of the patient-centeredness of the hidden curriculum between a Saudi Arabian and 9 US medical schools. *Med Educ Online* 2009;14:19. [http://dx.doi.org/10.3885/meo.2009.T0000144]
- Pereira CMAS, Amaral CFS, Ribeiro MMF, et al. Cross-cultural validation of the Patient-Practitioner Orientation Scale (PPOS). *Patient Educ Couns* 2013;91(1):37-43. [http://dx.doi.org/10.1016/j.pec.2012.11.014]
- Williams C, Cantillon P, Cochrane M. The doctor-patient relationship: From undergraduate assumptions to pre-registration reality. *Med Educ* 2001;35:743-747. [http://dx.doi.org/10.1046/j.1365-2923.2001.00978.x]
- Haidet P, Dains JE, Paterniti DA, et al. Medical students' attitudes towards the doctor-patient relationship. *Med Educ* 2002;36:568-574. [http://dx.doi.org/10.1046/j.1365-2923.2002.01233.x]
- Howe A. Patient-centred medicine through student-centred teaching: A student perspective on the key impacts of community-based learning in undergraduate medical education. *Med Educ* 2001;35:666-672. [http://dx.doi.org/10.1046/j.1365-2923.2001.00925.x]

| |
|---|
|  <p style="margin: 0;">Stellenbosch University FACULTY OF HEALTH SCIENCES PATIENT-PRACTITIONER ORIENTATION SCALE (PPOS)</p> |
| <p>DEAR STUDENT</p> <p>PLEASE COMPLETE THE FOLLOWING QUESTIONNAIRE BY MAKING A CROSS THAT BEST DESCRIBES YOUR AGREEMENT/DISAGREEMENT WITH EACH STATEMENT.</p> |
| <p>1. Make your marks only within the boundaries of the boxes, e.g. <input checked="" type="checkbox"/> STUDENT NUMBER: _____</p> <p>2. Use a dark pencil or black pen.</p> |

| Assess on a scale ranging from <i>Agree strongly</i> to <i>Disagree strongly</i>: | Strongly agree | Agree | Slightly agree | Slightly disagree | Disagree | Strongly disagree | N.A. |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. The doctor is the one who should decide what is talked about during a visit. | <input type="checkbox"/> |
| 2. Although healthcare is less personal these days, this is a small price to pay for medical advance. | <input type="checkbox"/> |
| 3. The most important part of the standard medical visit is the physical examination. | <input type="checkbox"/> |
| 4. It is often best for patients if they do not have a full explanation of their medical condition. | <input type="checkbox"/> |
| 5. Patients should rely on their doctors' knowledge and not try to find out about their conditions on their own. | <input type="checkbox"/> |
| 6. When doctors ask a lot of questions about a patient's background they are prying too much into personal matters. | <input type="checkbox"/> |
| 7. If doctors are truly good at diagnosis and treatment, the way they relate to patients is not that important. | <input type="checkbox"/> |
| 8. Many patients continue asking questions even though they are not learning anything new. | <input type="checkbox"/> |
| 9. Patients should be treated as if they were partners with the doctor, equal in power and status. | <input type="checkbox"/> |
| 10. Patients generally want reassurance rather than information about their health. | <input type="checkbox"/> |
| 11. If a doctor's primary tools are being open and warm, the doctor will not have a great deal of success. | <input type="checkbox"/> |
| 12. When patients disagree with their doctor, this is a sign that the doctor does not have the patients' respect and trust. | <input type="checkbox"/> |
| 13. A treatment plan cannot succeed if it is in conflict with a patient's lifestyle or values. | <input type="checkbox"/> |
| 14. Most patients want to get in and out of the doctor's office as quickly as possible. | <input type="checkbox"/> |
| 15. The patient must always be aware that the doctor is in charge. | <input type="checkbox"/> |
| 16. It is not that important to know a patient's culture and background in order to treat the person's illness. | <input type="checkbox"/> |
| 17. Humour is a major ingredient in the doctor's treatment of the patient. | <input type="checkbox"/> |
| 18. When patients look up medical information on their own, this usually confuses more than it helps. | <input type="checkbox"/> |

THANK YOU FOR YOUR TIME!