



THE PATIENT-CENTEREDNESS OF THE CONSULTATION AMONG PATIENTS
WITH CHRONIC DISEASE: A CROSS-SECTIONAL STUDY OF THE ST. JOSEPH
CLUSTER OF HEALTH CENTRES IN TRINIDAD AND TOBAGO.

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ABSTRACT

Thesis title: The patient-centeredness of the consultation among patients with chronic disease: A cross-sectional study of the St. Joseph Cluster of health centres in Trinidad and Tobago.

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Background: Several studies demonstrate patient-centered care enhances patient satisfaction, quality of care and health outcomes while decreasing health care costs and discrepancies in health care. The aims were to measure consultation length, patient's perception of patient centeredness (PPPC) and patient enablement instrument score (PEI) and to determine the patient factors associated with them.

Method: A cross-sectional study was conducted over 2 months at four clinics. collecting data from 180 patients (82% response rate) attending. The interviewers timed the consultation as the patients entered and exited the doctor's room. The post-consultation questionnaire comprised demographics, consultation parameters, the PPPC survey (14 questions scored 1-4) and the PEI survey (6 questions scored 0-2).

Results: The response rate was 82.5% with a sample of 180 patients. The average, median and mode of quality measures: PPPC average (3.67, 3.86 and 4), PEI score (5.93, 6 and 6) and consultation length (8.5, 7.74 and 10). The PPPC Average was higher in

patients without stroke ($p=0.022$), those with more than 2 consultation interruptions ($p=0.015$) and those who knew the doctor very well ($p=0.015$). The PEI score was higher in patients without heart disease ($p=0.022$). The consultation length was longer in those with tertiary education ($p=0.044$) and those with two consultation interruptions ($p=0.032$). PPPC Average and PEI Score correlated well ($p=0.408$, $p<0.001$). The consultation length correlated with the PPPC Average ($p=0.168$, $p=0.025$).

Conclusion: The PPPC Average, PEI Score and consultation length were above average compared internationally. The implementation of a 15-minute appointment system and training programmes for staff in patient-centeredness may improve care for patients. Future study should determine cut-off values for the surveys to assess standard of care.

Keywords: patient-centeredness; consultation length; patient enablement; quality care;

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CHAPTER 1: INTRODUCTION

Ischaemic heart disease and stroke are the number one killers over the past 15 years. These two diseases accounted for 15 million deaths in 2015. The Non-communicable diseases (NCDs) accounted for 70% of deaths globally, “ranging from 37% in low-income countries to 88% in high-income countries” as stated in the World Health Organisation’s fact sheet in 2015.¹ The burden of NCDs is widespread and international efforts are focusing on improving health outcomes attributed to them. NCDs cause on average 80% of total deaths in Trinidad and Tobago according to a World Health Organisation NCD Country Profiles in 2014.²

This heavy burden of NCDs as seen in the above World Health Organisation data in Trinidad and Tobago could be due to the lack of patient-centeredness in the interaction of the physician and patient. In the Caribbean there has not been an assessment of the quality of care we provide in primary care. The local health centres are the main line of defense against NCDs. The lack of research in the patient-centeredness of our primary health care systems and the rise in uncontrolled NCDs is unlikely to be a coincidence.

Patient-centered care (PCC) is defined as “the use of adequate consulting skills in identifying patients’ priorities and concerns and the appropriate involvement of patients in making decisions about their care”.³ This was the start of a revolution of the doctor-patient relationship. In this approach the patient’s beliefs and characteristics take emphasis in their care instead of the disease-centered approach where the doctor decides. The first to coin the term patient-centered was Balint in his book *The Future General*

Practitioner.⁴

In assessing the consultation at this stage the physician was shown to interrupt the patient within 18 seconds of the patient's consultation.⁵ It was also determined at that time, 45% of patient concerns and 54% of patient problems were not extracted by the physician or revealed by the patient.⁶ These are only some of the problems in doctor-patient communication which required attention.

Patient-centered care is determined by the quality of the communication between doctors and patients. At its core patient-centeredness envelops therapeutic relationships founded with enhanced communication and trust. Patient-centeredness is defined by McWhinney's philosophy with three core values: "(1) considering patients' needs, wants, perspectives and individual experiences; (2) offering patients opportunities to provide input into and participate in their care; and (3) enhancing partnership and understanding in the patient-physician relationship"^{7,8}.

There are numerous studies that demonstrate patient-centered care improves patient satisfaction, quality of care, and health outcomes while decreasing discrepancies in health care and health care costs.⁹⁻¹⁷ Patient-centered care in health systems should therefore be instituted, promoted and maintained. The patient-centered approach encourages communication in which doctors discover patients' values and likings; assist patients and their relatives in making clinical choices; familiarise patients with proper care; and facilitate difficult change in behaviours needed to preserve health. This form of

interaction aims to create a state of mutual deliberation, shared information and a united mind.

The PPPC Average has been proven to correlate with audiotaped consults assessed with a patient-centered score covering the above three core values of patient-centeredness¹⁸. The questionnaire contains 4 questions pertaining to component 1, 1 question for component 3 and 9 questions for component 3. The consultation length has been studied as a measure of patient-centeredness^{19, 20}. This survey was identified as the best out of thirteen measurement instruments in a systematic review. The PEI score is an outcome measure of patient-centeredness. This means that the more patient-centered a consultation is, “the greater the enablement of the patient to cope with life, understand and cope with their illness, and keep themselves healthy as a result of their healthcare”²¹. Enablement was shown to be associated significantly with “interest in effect on life, health promotion, and positive approach”²².

There are no studies thus far assessing the patient-centeredness of care in the Caribbean. There was only one study thus far that determined partially the patient-centered care offered to patients 20 years ago in Trinidad and Tobago²³. After determining the level of patient-centeredness in Trinidad we were able to shed light on this important phenomenon. The information from this study will influence further research in primary care and hopefully implement changes required to facilitate patient-centered care.

The pervasive decline in health outcomes of common NCDs in Trinidad and Tobago may

improve after implementing changes to this key area that needs improvement. A change in the system to patient-centered care will unburden the primary care physicians and the patients. It is time for a transformation in the services provided to our patients, families and friends.

CHAPTER 2: RESEARCH QUESTION, AIMS AND OBJECTIVES

RESEARCH QUESTION

What is the quality of the consultation between doctor and patient in Non-Communicable Disease clinics in the Local Health Centres of the St. Joseph Cluster of North Central Regional Health Authority in Trinidad?

AIM

To measure the quality of consultation in chronic disease clinics in Trinidad and Tobago in order to obtain information to improve the patient-centeredness for patients.

OBJECTIVES

- 1.To determine the quality of the consultation in primary care by measuring the consultation length, patient's perception of patient centeredness and patient enablement of the patients at the Local Health Centres of the St. Joseph Cluster.
- 2.To determine the patient factors associated with the different levels of the quality of consultation.

CHAPTER 3: LITERATURE REVIEW

Search strategy

The literature review of this study was conducted via online search of PubMed, Google scholar, MedCarib, the Latin American Center on Health Sciences Information (BIREME) and the University of the West Indies Library Online Database System. These online systems were searched using key word descriptors. These included associated terms of 'patient-centeredness,' 'primary care consultation quality', 'family medicine', 'family health', 'family practice' and 'general practice'. The language was confined to English.

PubMed was the initial source used resulting in over 54012 items related. The results were combed through searching titles and abstracts. This required a significant length of time and patience. After thoroughly sifting through the pages of articles there were some articles that proved difficult to access the full content. This is where the UWI Library Online Database System (UWILinC) was used to access articles that needed subscription. The number of relevant articles after gaining access was 68.

This second online source, UWI Library Online Database System was then thoroughly searched using the same key words. This produced only 8 more relevant articles. The results from the PubMed search were seen repeated in this search. The equivalent search conducted through BIREME, MedCarib and the West Indian Medical Journal revealed no

relevant articles. The articles found were conducted in United Kingdom, Canada and Europe. There were no relevant articles found conducted in the Caribbean or Latin America.

After consulting the experts in the field accessible to myself, there was one additional article identified as relevant. This was a study conducted by a foreign doctor visiting Trinidad and Tobago in 1998²³.

Patient-centeredness

Patient-centered care has six components; “(1) The first is exploring the patients’ disease and four dimensions of the illness experience including: their feelings about being ill, their ideas about what is wrong with them, the impact of the problem on their daily functioning, and their expectations of what should be done. (2) The second is having an integrated understanding of the patient’s world. (3) The third is finding common ground on diagnosis and management. (4) The fourth is enhancing prevention and health promotion. (5) The fifth is enhancing the continuing relationship between patient and doctor. (6) The sixth is that patient-centered care be realistic”⁸. This is a multidimensional concept that requires education, practice and effort to implement by the practitioner.

Health Outcomes associated with Patient-centeredness, Consultation length and Enablement

The patient-centered approach has been tested in a large cohort study described by

Stewart et al in 2000.⁹ They examined 39 doctors with 315 patients. The visits were audiotaped and the patients' perception of patient-centeredness was assessed by a 14-item questionnaire. Positive perceptions were associated with superior health outcomes. It showed that when the patient is educated in the history and management plan, the health outcomes are improved. These health outcomes included emotional status, pain, level of function, patients' adherence to treatment, blood pressure and blood glucose level.

In 2001 Little et al conducted a larger survey of 865 patients to measure patients' perception of patient-centeredness and their relation to perceptions of outcomes.¹⁰ The factors assessed as patient-centeredness were "questions on communication and partnership, personal relationship, health promotion, positive and clear approach to the problem and interest in effect on life"¹⁰. The outcomes measured were enablement, satisfaction and symptom burden. In the analysis it was shown that satisfaction was predicted by patients' perception of communication and partnership and a positive doctor approach. Enablement was predicted by patients' perception of doctors' interest in the effect of the problem on life and health promotion and a positive approach. A decrease in symptom burden was predicted with a positive approach. Referrals were increased if the expectations of a personal relationship were not met.

A systematic review of family medicine attributes, which influenced health, costs and satisfaction was done in 2006 by Sans-Corrales et al²⁴. This study identified continuity of care, length of consultation and components of the patient-centered approach, as mentioned above, were associated with increased satisfaction of the patients. Similarly

continuity of care was associated with better health indicators such as hospital visits, hospital stays, lipid profiles, blood pressure, smoking cessation, diet and weight. The length of consultation of at least 10 minutes resulted in achievement of better control in diabetic, asthmatic and heart disease patients. The cost of health care was more efficient with application of continuity of care, longer consultations, patient-centered communication and health promotion of preventative measures.

Wilson et al conducted a thorough systematic review to assess the effect of consultation length on process and outcome measures in 2002²⁵. It assessed 10 studies that compared doctors with different average consultation length. These were located in the UK, the Netherlands, Sweden and U.S.A. This described longer consultations to have more health promotion and lower prescription rates. These longer consultations also achieved higher enablement and satisfaction among patients. The effect on referral and investigation rate was mixed. There were many confounders establishing whether consultation length was the significant variable or others such as psychosocial problems of the patient lengthening the consult or doctor characteristics such as sex, postgraduate training or other attributes.

A systematic review of 25 randomised control trials was conducted to determine if the doctor-patient relationship had a therapeutic effect independent of treatment given²⁶. The significant heterogeneity among the studies resulted in the inability to combine results. Increasing patients' expectations by delivering positive information about treatment or medical problems and at the same time providing support significantly influenced health outcomes. This was shown in three studies. In ten studies doctors who tried to impact

patients' beliefs about treatment effects resulted in significantly better health outcomes of patients.

In 2004, Griffin et al identified thirty-five randomised trials that determined the effects of different methods implemented to enhance the doctor-patient relationship on patients' health outcomes²⁷. Most of the studies were carried out in USA and UK with the others coming from Canada, Australia, Sweden and Norway. There were eleven studies focused on patient intervention, sixteen focused on doctor intervention and eight used a combination of both. Favourable outcomes in the intervention groups were exposed in three quarters of the studies. It showed that at least one worse outcome was associated with almost one half of the doctor interventions. This was conversely found in the patient intervention studies. The studies by Greenfield et al and Kaplan et al showed significant improvement in HbA1c and blood pressure control respectively in the patient intervention arms of their studies. They both showed improvement in functional status as an illness experience in the patient-centered approach. This review stated that due to the heterogeneity, among the patients, outcome measures and intervention measures, a meta-analysis was impossible. There is a need for rigorous trials with specific interventions to better assess the objective.

In a large observational study of 822 recorded consultations of 38 doctors by Orton, a distinct relationship between consultation length and patient-centeredness was shown¹⁹. The patient-centeredness was measured using the Stewart et al method of analysis of the communication. Female doctors had consultations on average 1.63 minutes longer than

male doctors. Those doctors practicing longer were shown to have shorter consultations. The only significant patient characteristic identified was sex, that showed shorter consultations were associated with male patients. The longer consultations were also assessed as more patient-centered. In this study they also assessed the effect of emotional exhaustion on doctors. This was shown to affect males and females differently. Females had consultations on average 2.2 minutes longer when they were not exhausted. Conversely males who were exhausted had longer consultation by an average of 1 minute.

In a paper by Epstein et al in 2005 he addressed the issues with measuring patient-centeredness²⁸. It is an arduous task to attempt to describe examination of the doctor-patient consultation. There is the objective direct observational method and the subjective method of assessing the doctors' and patients' experiences. Therefore a combination of methods is usually used and a standard measurement has low validity throughout all studies. The direct observation only analyses what is said in the consultation. In this way perception and thoughts unsaid will not be revealed. There were three validated measures of assessing direct observation described. These included the Euro-communication scale by Mead and Bower 2000, measurement of patient-centered communication by Brown, Stewart and Ryan 2001 and Roter interaction analysis system patient centeredness subscale 1996. There were eight validated patient survey measures assessed. These survey measures are affected by patient factors such as personality, preferences and trust which are unaccounted for. There is need for more robust randomized trials and longitudinal studies to ascertain the effect of patient-centeredness.

In 2001, Campbell et al collected data from 60 practices to assess the quality of care in chronic disease management²⁹. The items used in clinical scores were derived from clinical notes of control and outcomes of asthma, diabetes and angina. The major finding was those practices with a booking interval of at least 10 minutes had superior scores for all chronic diseases. Teamwork as assessed by the staff was associated with greater access to care by patients, continuity of care and general satisfaction by patients.

Quality of care was assessed in a Scottish study of 49 practices in 1997³⁰. This study was conducted using a pre-questionnaire on health problems and post-questionnaire that assessed satisfaction and enablement score. In addition, the consultation length was measured to correlate as a measure of quality. This showed a strong correlation between mean consultation length and mean enablement score. This was irrespective if the medical problem addressed was psychological, social or physical. This correlation was shown when comparing at the level of the doctor and practices.

Howie et al completed a large cross-sectional study of 221 physicians in 53 practice with 25994 consultations assessed in 1999³¹. The mean patient enablement score was shown to be 3.1. The mean consultation length was shown to be 8 minutes. This showed once again that enablement scores correlated well with consultation length. Those patients with psychological problems, female patients and patients older than 65 years had longer consultations. Interruptions in consultations increased the length of consultations by an average of 2 minutes. High patient-centeredness was shown to be associated with longer

duration of consultation.

A systematic review to appraise the ability of interventions to improve communication between doctor and patient on cardiovascular-related outcomes was done in 2014³².

Fifteen randomized control studies were analysed. The controls were usual care. Seven of the interventions were patient oriented, seven were doctor oriented and one included both. In the patient oriented intervention studies, two showed significant decrease in HbA1c as a measure of diabetic control. One of these also showed patients' low-density lipoproteins were lower and blood pressure targets were met in the intervention groups. Only one study in the doctor oriented intervention showed a significant decrease in modifiable risks of coronary heart disease (-18.5% , 95%CI: $-35.5, -1.4$; $p=0.03$) and 10-year risk of coronary heart disease (-1.4 , 95% CI: $-2.1, -0.8$, $p\text{-value}< 0.001$).

Measurement of Patient-Centeredness

The mean consultation length has been described as a statistic of quality of care. Current research has revealed that patient enablement of the patient is directly correlated with lengthening of the consultation³¹. The mean consultation lengths in the United Kingdom, Canada and Sweden are 8.4 minutes, 15 minutes and 21 minutes respectively³³⁻³⁵. The

only recording of the consultation length in Trinidad and Tobago was in 1999 and the average consultation length was 3.2 minutes²³. The consultation length has been shown to be significantly related to the doctor's level of patient-centeredness¹⁹. This is an important aspect of quality of care provided.

The PPPC has been proven to correlate with audiotaped consults assessed with a patient-centered score¹⁸. The development of the measure of patient-centered communication started in the early 1980s from audio and videotaped doctor-patient encounters. This method coded the consultation into phrases and identified the key components in the patient-centered clinical method. These components were “(1) Exploring both the disease and illness experience, (2) Understanding the whole person and (3) Finding common ground”¹⁸. The validity was assessed through correlation with the MPCC ($r=0.16$, $p=0.01$, $n=315$). The inter-item reliability of the 14 PPPC was determined as adequate (Chronbach's $\alpha = 0.71$, $n=315$).

The PPPC is designed specifically to assess the behaviours of patients and doctors ascribed by the patient-centered clinical method. The questionnaire contains 4 questions pertaining to component 1, 1 question for component 3 and 9 questions for component 3. Each of the 14 questions has a 4- point Likert scale for responses. The sum of the responses divided by 14 is the final score. The score will range from 1-4. The higher a score the more patient-centered the consultation. This questionnaire has been identified as one of two instruments that best measure patient-centered care in a well-conducted systematic review²². This systematic review on measurement of patient-centeredness

stated it is more important that the patient perceives patient-centeredness for better health outcomes. The observational assessment may clarify and code the consult into layers of patient-centeredness but the patient may not interpret the same consultation as patient-centered. The surveys however are affected by personal preferences and personality³⁶.

It is difficult to assess patient-centeredness, as it is a triangulation of the objective observational assessment and the subjective assessments by patient and doctor. The three usually do not correlate well, especially the subjective assessment of patient and doctor³⁶. The observational method has proven to be essential to the training of family medicine students. The usefulness has not been translated well into clinical practice.

A recent study showed a three-way association among patient-centeredness, consultation length and costs²⁰. As stated in the literature review the cost benefits associated with the PCC are substantial. The cost of doctors' time to facilitate this model has not been assessed.

The PEI contains six components encompassing “the ability to understand their illness and cope with it, and the degree to which they feel able to cope with life, keep themselves healthy, feel confident about their health and help themselves after seeing the physician”³⁷. Answers were assigned a score based on a Likert scale ranging from “much better” (2), “better”(1), “same or less ” (0) and “not applicable” (0) ³⁷. The highest score was 12 for this instrument.

The PEI score is an outcome measure of patient-centeredness. It therefore indirectly measures patient-centeredness. The study has shown that the more patient-centered a consultation is, the greater the enablement of the patient³⁸. Enablement was shown to be associated significantly with “interest in effect on life, health promotion, and positive approach”²⁹. This measure allowed for correlation with PPPC. Internal reliability of the PEI determined by Cronbach’s alpha was 0.922-0.935 irrespective of timing of administration³⁷. The measurement of patient-centeredness with another instrument allowed us to better achieve the overall assessment of quality of care.

Local studies

A previous study assessed the effect of a short continuing medical education programme on the primary care consultation in Trinidad and Tobago 20 years ago²³. The audiotapes of the 75 patients prior to the training and 71 after the training were assessed. The patients were also given an exit interview based questionnaire that included satisfaction, health status and demographic items. The patients sampled were from chronic disease clinics at the health offices of 15 doctors. This study showed that the consultation length tended to be longer, doctor-patient talk was more balanced and patient satisfaction higher in those trained. My study determined the transformation in the patient-centeredness of the consultation between the doctors and patient in Trinidad and Tobago over the years.

Locally the patient satisfaction in health centres was assessed by a survey in 1999³⁹. In this survey 1451 patients attending the chronic disease and antenatal clinics were surveyed. The questionnaire included demographics and assessments of the doctor, nurse

and pharmacist. This showed 75% of patients were satisfied with the courtesy and consideration by doctors. There was a 75% satisfaction level with the doctors' willingness to listen to patients. This also showed that 73.1% of patients were satisfied with the doctors' advice. However this was a descriptive study of satisfaction and did not include a measurement of patient-centeredness. The demographics of patients have changed over the years.

In Trinidad and Tobago the proportion of patients with adequately controlled blood pressures was 51% in 1994 with the cut-off level as $<160/95\text{mmhg}$ ⁴⁰. In a survey of the medical records from 1993 and 2003 were compared from 23 local health centres⁴¹. This showed no improvement in documented blood glucose, blood pressure or body weight over 10 years. This is congruent with the past two decades of health care in the primary care sector. The health service provided has been adhering to guidelines and continuing with didactic consultation with no improvement in health outcomes.

In order to effect change we must assess the quality of care presently. The consultation length allows the time for the patient to convey their symptoms and describe how they feel. This time also allows the doctor to decipher the fears, ideas, feelings and expectations of the patient. The consultation time afforded to patients is directed by the health services where there are more than 30 patients for each doctor in a clinic. The cost of providing this time will require another study to be done. It is time for a change in our approach to achieve improvements in the health outcomes of our NCD patients.

CHAPTER 4: METHODOLOGY

Study Design & Location

This was a cross-sectional study. It was used to determine the mean consultation length, the mean score of Patient Perception of Patient-Centeredness (PPPC) and the mean Patient Enablement Instrument (PEI) score among adults attending the Chronic Disease Clinics (CDC) at the local health centres of the St. Joseph Cluster of the North Central Regional Health Authority. The associated factors of the patients with different levels of quality measures were also determined.

The study aimed to identify the quality of care in the local health centres as a snap shot in time that is best identified in a cross-sectional design. This study design allowed the assessment of associations between patient factors and different measurements of quality of the consultation. After the consultation, each patient was interviewed and surveyed with an exit questionnaire to assess patient-centeredness. The consultation was timed by the independent interviewers with a stopwatch as the patients entered and exited the

doctor's room.

The participants were from four local health centres in the St. Joseph Cluster. These were the St. Joseph Enhanced Health Centre, Tacargiua Health Centre, Macoya Health Centre and the Arouca Health Centre. The patients were selected consecutively from the chronic disease clinics. The patients for each clinic day are not related to each other.

The inclusion criteria for participants in the study were:

- 1.Age at least 18 years
- 2.Non-communicable disease patient of the local health centres being assessed.
- 3.English speaking

The exclusion criteria were:

- 1.Intellectual disability
- 2.Cognitive impairment
- 3.Unstable Psychiatric disorder
- 4.Pregnant patients

Sample size calculation

Cochran formula is the most convenient

$$z = 1.96$$

$$p = 0.1 \text{ (10\% of the population had consultations longer than 15 minutes)}^{42}$$

$$q = 1 - p = 0.9$$

$$e = 0.05$$

If you substitute values in the above formula, the sample size is **138**

The expected non-response rate is 0.20. Therefore the corrected sample size needed to complete the survey was determined as below.

Formula for Correction of Sample size due to dropout/; non-response rate;

$$= n \times [1 / (1 - \text{dropout rate})]$$

$$= 138 \times [1 / (1 - 0.20)]$$

$$= 172.5$$

Therefore 173 participants will be required.

Data collection Instrument

The instrument used was a questionnaire with 4 sections. The answer sheet used was numbered accordingly to these questions. The first section collected data on demographics including age, gender, marital status, religion, ethnicity, education level, household income and employment status. Section 2 collected information pertinent to the consultation including number of medical problems to discuss, number of interruptions to consultation, medical condition, number of medications, doctor familiarity and self-perceived general health status. These questions were constructed as part of associated factors with quality of the consultation from previous studies^{8, 14, 23, 30, 43}.

The third part of the questionnaire entailed the Patient Perception of Patient-Centeredness survey. Each of the 14 questions has a 4- point Likert scale for responses. The sum of the

responses divided by 14 is the final score. The score ranged from 1-4. The higher a score the more patient-centered the consultation.

The fourth section was the Patient Enablement Instrument, which includes six questions. Responses were given a score based on a Likert scale ranging from “much better” (2), “better”(1), “same or less ” (0) and “not applicable” (0) ⁴⁰. The greatest score was 12 for this instrument.

Measurement of Consultation Length

The consultation length was measured by one of the interviewers as the patients entered and exited the doctor’s room with a stopwatch. Each interviewer was instructed that the start time of the consultation was as the patient entered the room and stop time when they exited the consultation room. This was recorded in minutes and seconds on the answer sheet for the questionnaire.

Pilot

Pilot testing of the questionnaire and consultation length measurement was conducted after the approval of the proposal from the Faculty of Medical Sciences’ Ethics Committee was given on the 11th of September 2018. This was performed at the Arouca Health Centre with a convenient sample of 10 CDC patients on the 27th of September. This aided in trouble-shooting of problems identified such as the timing of the consultation by the doctors. This was inconvenient and frequently a source of error as they often forgot to start or stop the stopwatch and adjustments to the survey were made.

It also aided in gauging the response rate of included participants.

Ethical Issues

This study was carried out under the authority of the University of the West Indies and under the North Central Regional Health Authority. Therefore approvals were attained from the Faculty of Medical Sciences' Ethics Committee, the North Central Regional Health Authority and the Ministry of Health of Trinidad and Tobago.

A meeting with the nurses and staff was conducted prior to the start of data collection at each health centre. They were given the pertinent information needed for the proper and amicable conduction of the study throughout the health centres.

The major advantage of a cross-sectional study is that there are minimal ethical concerns. The main concern is confidentiality, which was assured and maintained by the investigators. The written informed consent of the respondents was collected prior to administering the survey. **There was no number associated with the consent forms.** This required informing the participants on the nature and purpose of the study. The patients were assured that the information divulged would remain anonymous since there were no identifying data recorded such as name, date of birth and address. They were assured that the information was kept confidential and only accessible to the investigators. The

completed questionnaires and consent forms were collected in sealed envelopes at the end of the clinic and placed in a secure locked cabinet. Only the investigators were allowed entry to the locked cabinet. The data was saved on a password-protected laptop only accessible by the investigators.

Data Collection & Analysis

The instrument being used was a face-to-face interview to the participants after the consultation. The interviewers were volunteer medical doctors who were trained prior to the study. This ensured that participants understood the questions being asked and answered accurately. The interviewers were able to check for understanding and repeated the question in different words if necessary. This was necessary due to the high rate of illiteracy of 23% in Trinidad and Tobago. The study divided the patients into functionally illiterate (15%) and illiterate (8%)⁴⁴. This meant that on average 1 out of 4 persons in Trinidad and Tobago are incapable to manage with everyday reading and writing. The proportion of illiteracy is expected to be higher in the older age groups attending the CDCs at the local health centres.

After approval from the North Central Regional Health Authority a meeting was held at each of the health centres. The nature of the research, objective and relevance to practice was explained explicitly. Data collection was over a 2-month period that started on the 3rd October 2018 and ended on the 22nd November 2018.

Mean consultation length was measured by an investigator using a stopwatch outside the doctor's room. Each patient was approached after they exited the room with the consent form. The details of the study including the aims, objectives and assurance of confidentiality were described to each patient. The patients who consented were then administered the questionnaire by the interviewer. The consent forms and the answer sheets were collected at the end of the clinic in separate envelopes and sealed. They were stored in a locked cabinet in the office at the Family Medicine Department.

The data collected was analysed with the computer program called Statistical Package for the Social Sciences (SPSS) Version 23. The main outcomes determined were the mean consultation length, mean PPPC score and mean PEI score. The frequencies of possible associated factors were tabulated against the ranges for these scores. The associations between patient factors and PEI scores, PPPC Average and consultation length were determined by using the Mann-Whitney U tests and Kruskal-Wallis tests. The correlations among continuous variables were tested with the bivariate Spearman's correlation coefficient. The significance level in these tests was at 0.05.

CHAPTER 5: RESULTS

This study was observational, prospective and cross-sectional in nature and enrolled 180 patients who are patients attending the chronic disease clinics at the health centres in the St. Joseph cluster of northern Trinidad. The period of study was over two month from 3rd October to 22nd November 2018. The response rate was approximately 82.5% among the health centres. The response rate varied among the health centres with 100% in health centre 1, 80% in health centres 2 and 3, and 70% in health centre 4.

Demographics

The sample's demographic characteristics are described in the table below (Table 1).

Table 1. Demographics of sample

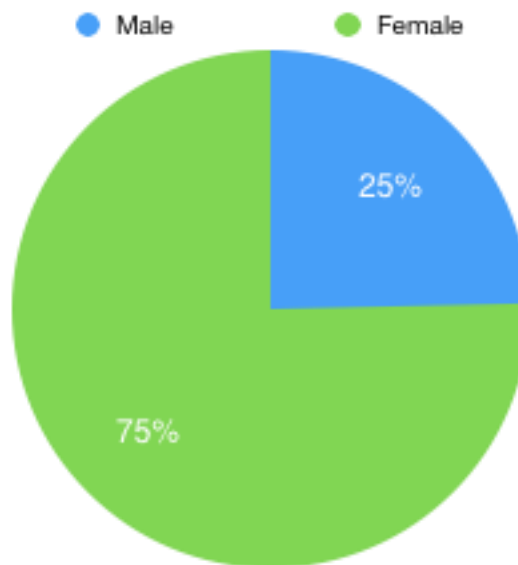
Variable	N= 180	%	n
Sex	Male	24.4	44
	Female	75.6	136
Age	18-35	1.7	3
	36-45	6.7	12
	46-55	11.1	20

	56-65	30	54
	>65	50.6	91
Ethnicity	East Indian	52.2	94
	African	27.8	50
	Mixed (East Indian and African)	11.1	20
	Mixed (Other)	7.8	14
	Caucasian	1.1	2
Religion	Christian	60.6	109
	Hindu	26.7	48
	Muslim	4.4	8
	Baptist	2.2	4
	Jehovah's Witness	1.1	2
	Seventh Day Adventist	2.2	4
	Other	2.8	5
Marital Status	Married or Co-habitant	51.1	92
	Widowed or divorced or separated	33.9	61
	Single	15	27
Education level	None	3.9	7
	Primary School	49.4	89
	Secondary School	37.2	67
	University or tertiary level	8.9	17
Household monthly Income	<\$6000	65.6	118
	\$6000-10000	23.9	43
	\$10001-15000	6.7	12
	15001-20000	2.2	4
	> \$20000	1.7	3

Employment status	Employed	24.4	44
	Unemployed	75.6	136

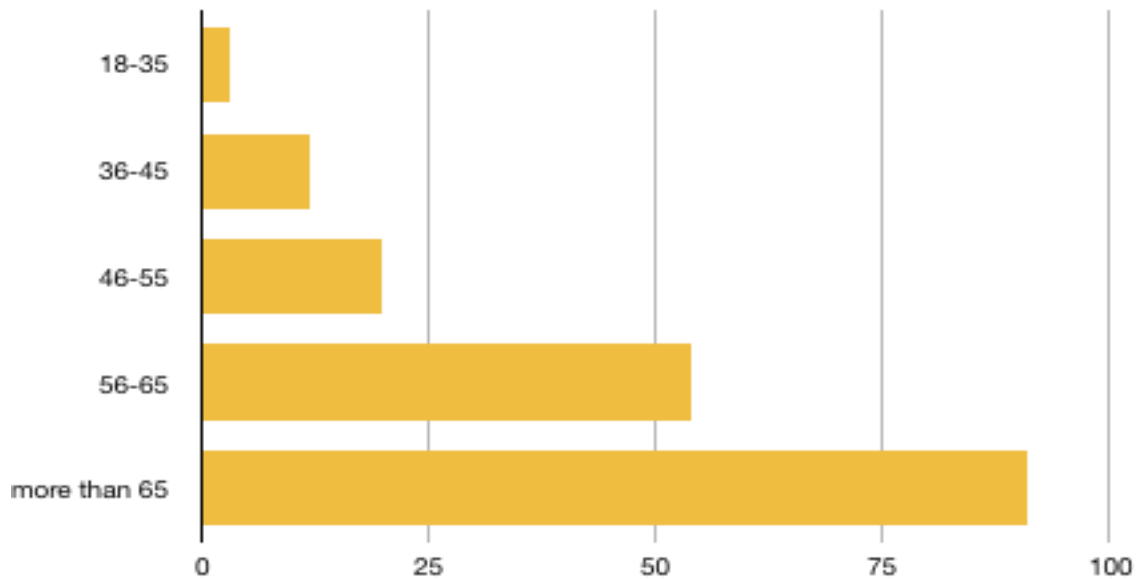
The population's distribution of gender was 75.6% female and 24.4% male (Figure 1). This is presumably due to most patients seeking health care in primary care being females as seen in the previous study by Roter et al with females comprising 72% of the sample¹⁶.

Figure 1. Distribution of gender.

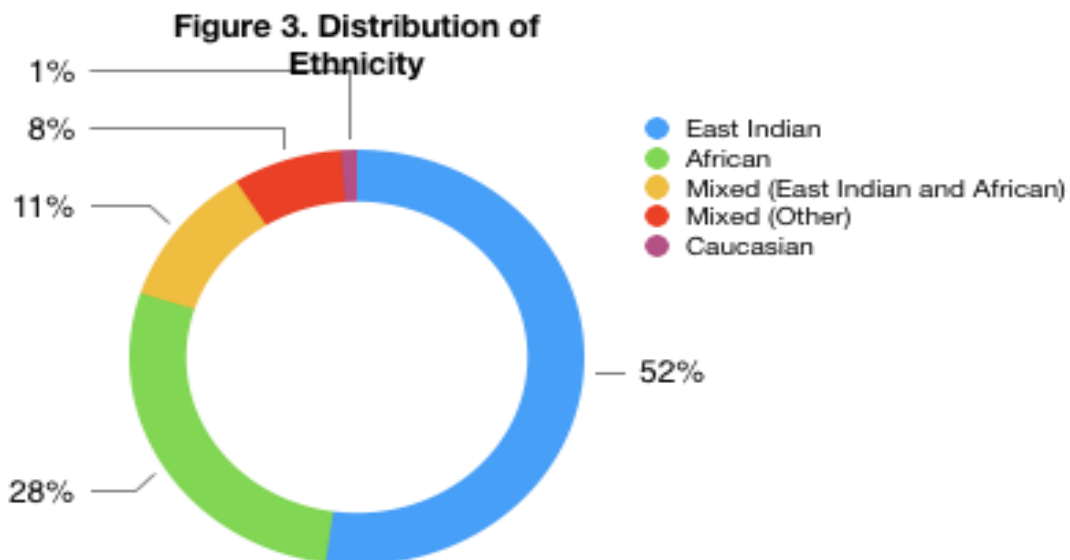


The age was separated into 5 groups including 18-35 (1.7%), 36-45 (6.7%), 46-55 (11.1%), 56-65 (30%) and over 65 (50.6%) (Figure 2). Most patients were older than 65 years (50.6%) due to the greater incidence of non-communicable diseases in this age group.

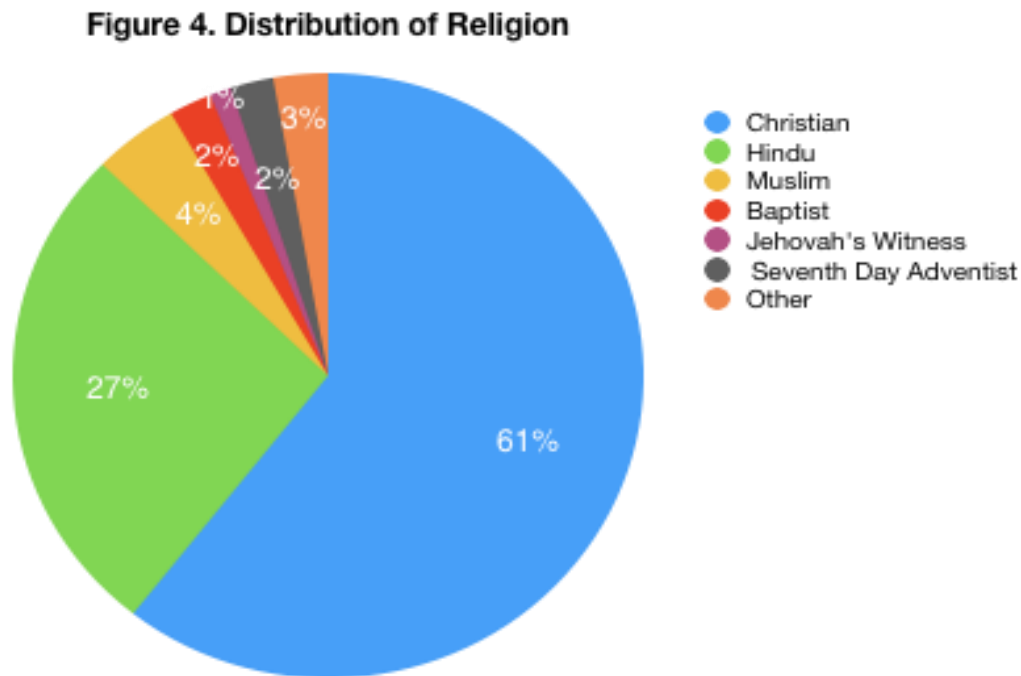
Figure 2. Distribution of Age



The ethnicity of the population was distributed as 52.2 % East Indian, 27.8% African, 11.1% Mixed (East Indian and African), 7.8% Mixed (Other) and 1.1% Caucasian (Figure 3). This is representative of the area the patients were selected from.

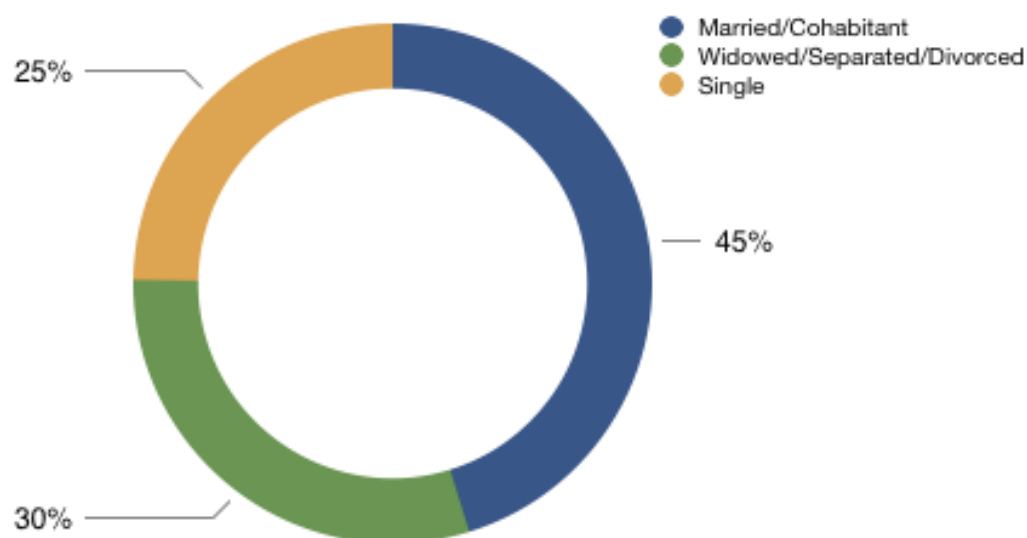


The religion of the population was distributed as follows: 60.6% Christian, 26.7% Hindu, 4.4% Muslim, 2.2% Baptist, 1.1% Jehovah's Witness, 2.2% Seventh Day Adventist and 2.8% Other (Figure 4).



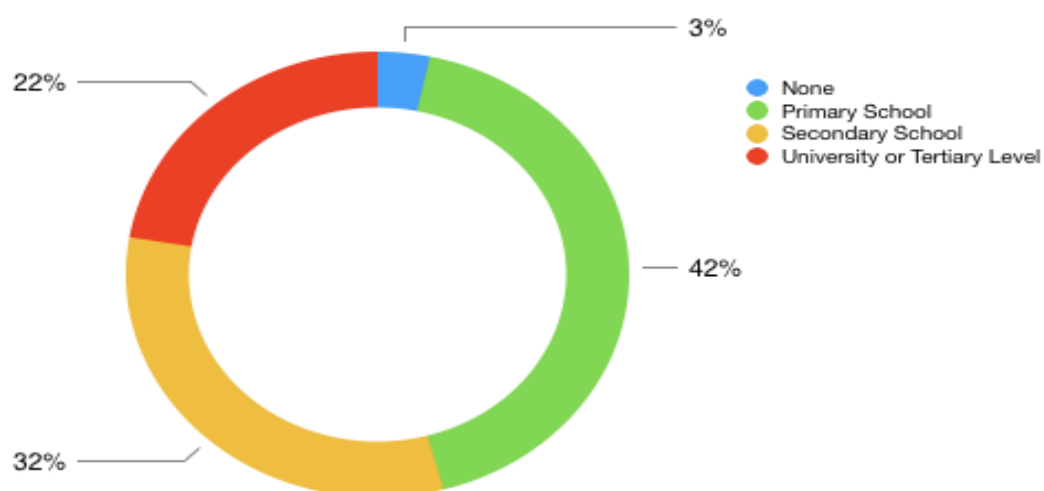
The marital status of the population was 51.1% Married or had Cohabitant, 33.9% were Widowed, separated or divorced and 15% were single (Figure 5).

Figure 5. Distribution of Marital Status

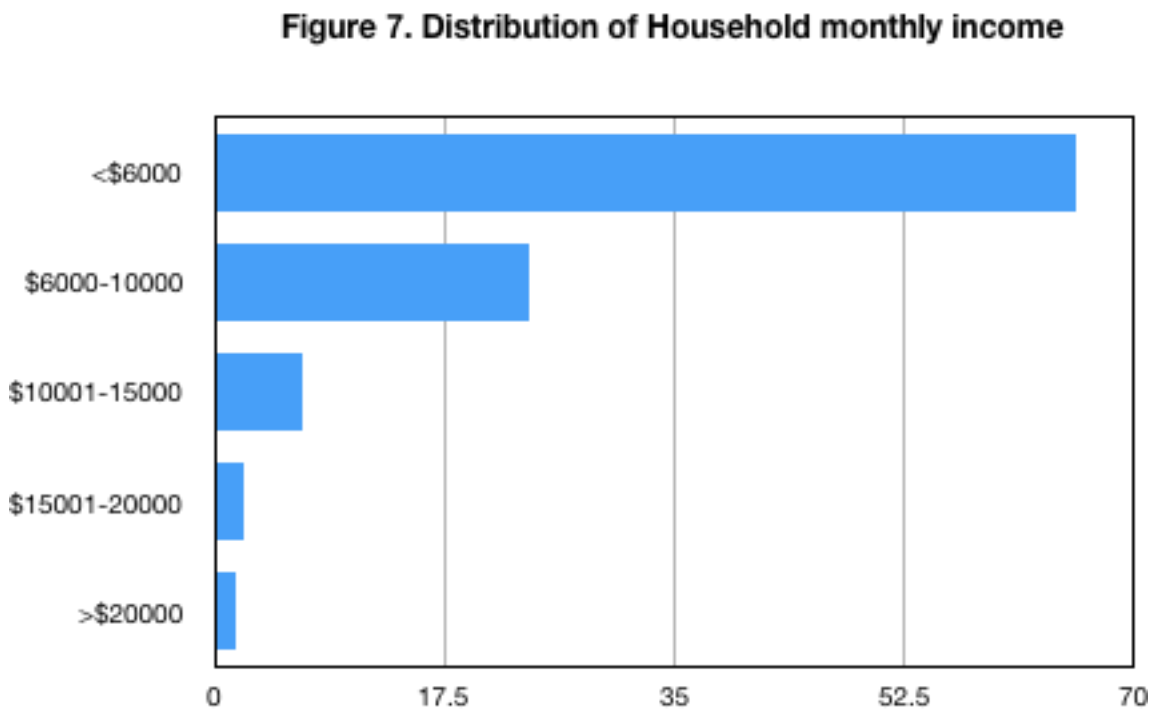


The education level of the population consisted of the following: 3.9% None, 49.4% Primary School level, 37.2% Secondary school level and 8.9 % University or Tertiary level (Figure 6).

Figure 6. Distribution of Education level

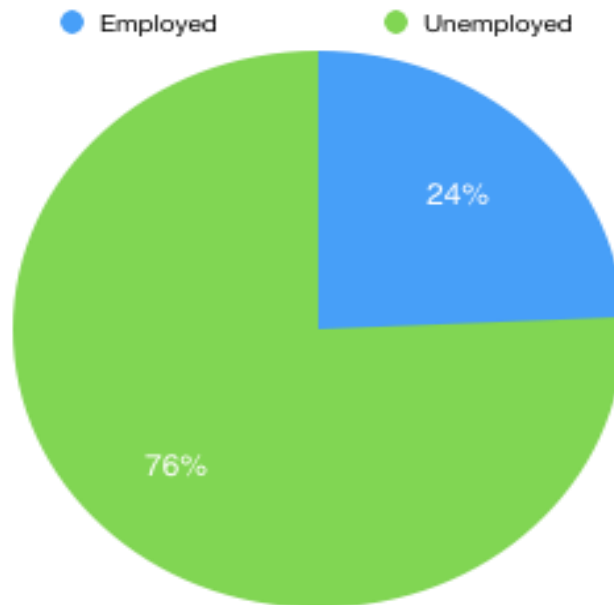


The household monthly income was distributed as 65.6% less than \$6000, 23.9% between \$6000-10000, 6.7% between \$10001-15000, 2.2% between \$15001-20000 and 1.7% more than \$20000 (Figure 7).



The employment status was distributed 24.4% Employed and 75.6% Unemployed (Figure 8). This is possibly because 50.6% of the sample was more than 65 years, which is the age of retirement.

Figure 8. Distribution of Employment status



Consultation Parameters

The consultation parameters explored in this study were the number of medical problems to be discussed, number of consultation interruptions, number of medications used, general health rating and doctor familiarity. These were described in the table 2 below with the majority (34.4%) of patients having 2 medical problems to be discussed, the majority (80%) having zero consultation interruptions, the majority (31.7%) using more than 4 medications, the majority (47.8%) giving a general health rating as good and the majority (34.4%) not knowing the doctor at all.

Table 2. Consultation Parameters

Variable	% (n), [N=180]	
Medical Problems to discuss	0	5 (9)
	1	31.1 (56)
	2	34.4 (62)
	More than 2	29.4 (53)
Number of Consultation interruptions	0	80 (144)
	1	12.2 (22)
	2	5 (9)
	More than 2	2.8 (5)
Number of Medications	1	8.3 (15)
	2	17.2 (31)
	3	19.4 (35)
	4	23.3 (42)
	More than 4	31.7 (57)
General Health Rating	Poor	4.4 (8)
	Fair	31.7 (57)
	Good	47.8 (86)
	Very Good	12.2 (22)
	Excellent	3.9 (7)
Doctor familiarity	Not at all	34.4 (62)
	Somewhat	28.9 (52)
	Well	20 (36)
	Very well	16.7 (30)

The consultation length did not have any trend with regards to the PEI Score or PPPC Average when grouped into 0-9 minutes, 10-15 minutes and more than 15 minutes (Table 3). There was no ascending or descending trend of the continuity of care with PEI score or consultation length. The PPPC Average increased as the patient's familiarity with the doctor increased. As the number of consultation interruptions increased from 0 to more than 2, the consultation length increased. The consultation interruptions did not show any

trend with the PEI score or PPC Average. The general health rating did not show any trend with consultation length, PEI Score or PPC Average. The number of medications the patients used was positively related with the PPC Average. There was no trend seen with the number of medication, PEI Score and consultation length. The number of medical problems the patient had to discuss did not show any trend with PEI Score, PPC Average or consultation length.

Table 3. Consultation Parameters and Patient-centered Measures

Characteristic	No. of patients (%)	PEI Score	PPPC Average	Consultation Length
Consultation length (minutes)				
0-9	130	5.88 (3.56)	3.65 (0.422)	
10-15	37	6.59 (3.66)	3.70 (0.074)	
>15	13	4.62 (3.48)	3.69 (0.377)	
Doctor familiarity				
Not at all	62	5.71 (3.83)	3.57 (0.465)	8.16 (3.71)
Somewhat	52	6.17 (3.81)	3.67 (0.445)	7.98 (3.97)
Well	36	5.58 (3.65)	3.74 (0.341)	8.84 (5.69)
Very well	30	6.40 (2.53)	3.79 (0.350)	9.69 (4.79)
Consultation Interruptions				
0	144	5.93 (3.48)	3.68 (0.405)	7.96 (3.72)
1	22	5.77 (4.42)	3.49 (0.547)	9.97 (5.75)
More than 1	14	6.21 (3.51)	3.78 (0.341)	11.7 (6.85)
General health rating				
Poor	8	7.38 (2.26)	3.78 (0.224)	8.61 (1.87)
Fair	57	5.11 (3.46)	3.55 (0.565)	9.18 (4.25)
Good	86	6.14 (3.83)	3.74 (0.343)	8.27 (4.66)
Very good	22	6.5 (3.07)	3.66 (0.254)	8.55 (4.84)
Excellent	7	6.71 (3.68)	3.7 (0.439)	5.5 (2.74)
Number of medications				
1	15	6.73 (4.01)	3.59 (0.53)	8.38 (4.5)

2	31	6.16 (3.45)	3.62 (0.438)	8.83 (3.69)
3	35	7.09 (3.58)	3.64 (0.479)	8.25 (3.81)
4	42	6.07 (3.74)	3.7 (0.41)	7.86 (3.82)
More than 4	57	4.79 (3.21)	3.71 (0.364)	8.97 (5.5)
Medical problems to discuss				
0	9	5.22 (3.19)	3.48 (0.668)	9.13 (7.67)
1	56	6.66 (3.74)	3.67 (0.418)	8.16 (3.5)
2	62	5.50 (3.64)	3.64 (0.455)	8.25 (4.19)
More than 2	53	5.79 (3.39)	3.74 (0.329)	9.03 (4.93)

The distribution of the mean, median and mode of consultation length in minutes, Patient Enablement Instrument score and Patient's Perception of the Patient Centeredness score average are as follows (Table 4). The average, median and mode PPPC average were 3.67, 3.86 and 4. The average, median and mode PEI score were 5.93, 6 and 6 respectively. The average, median and mode Consultation length were 8.5, 7.74 and 10 respectively.

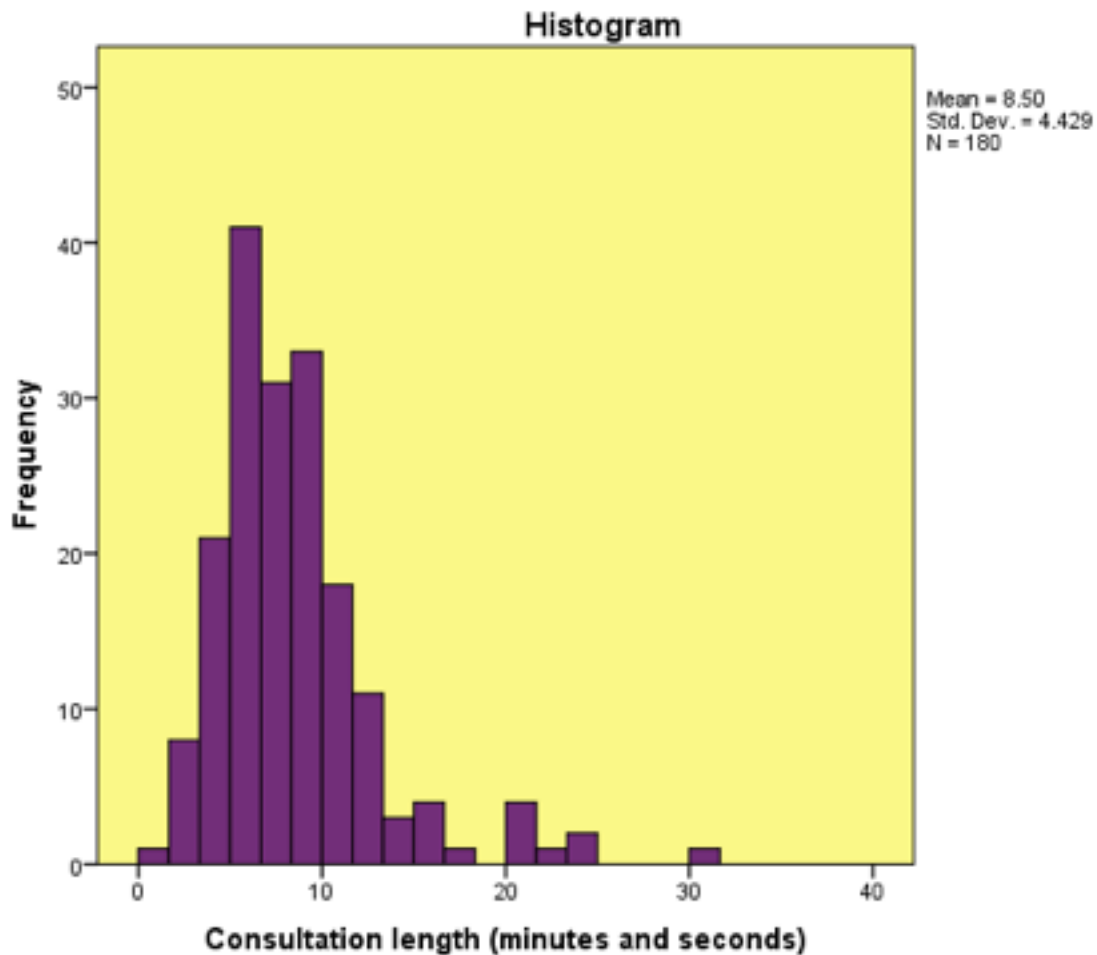
Table 4. Descriptive Statistics of Patient-centered Measures

Variable	Mean	Median	Mode
PPPC Average (4)	3.67	3.86	4
PEI Score (12)	5.93	6	6
Consultation length (mins)	8.5	7.74	10

Consultation Length

The consultation length was distributed between 1.32 and 31.22 minutes. The interquartile range was 4.28 and the median was 7.74 minutes. The average consultation length was 8.5 minutes. The consultation length was positively skewed (Figure 9).

Figure 9. Histogram of Consultation length and frequency



The analysis of the consultation length with patient characteristics including the demographics and the consultation parameters of each patient was done using the Mann Whitney U test and Kruskal-Wallis test due to the skewed distribution of the data. (Table 5 and 6) This revealed nil difference in the consultation length among gender, employment, medical conditions, age, ethnicity, religion, marital status, income, number of medical problems to discuss, number of medications used, general health rating and doctor familiarity.

There was a significant difference in consultation length between University or Tertiary level education (11.32 ± 5.78 , 10.10) and Primary school level (7.59 ± 3.11 , 6.83) with $p= 0.044$. The health centre 4 (11.39 ± 6.30 , 9.63) had significantly longer consultation than health centre 1 (7.85 ± 3.21 , 7.55) and health centre 2 (6.14 ± 2.42 , 5.93) where $p= 0.017$ and $p< 0.001$ respectively. The consultation length in health centre 3 (8.61 ± 3.06 , 8.37) was significantly longer than health centre 2 (6.14 ± 2.42 , 5.93) with $p= 0.001$. The consultation length in those with no consultation interruptions (7.96 ± 3.72 , 7.41) was found to be significantly shorter than those with two consultation interruptions (12.58 ± 7.37 , 11.17) with $p= 0.032$.

Table 5. Comparison of Consultation length and Patient Characteristics with 2 groups

Variable		Consultation length (mean $\pm$ SD, Median)	Significance value
Gender	Female	8.36 ± 4.30 , 7.53	$p= 0.478$
	Male	8.91 ± 4.83 , 8.40	
Employment	Employed	8.43 ± 3.06 , 8.18	$p=0.366$
	Unemployed	8.52 ± 4.80 , 7.55	
Medical Conditions	No		$p> 0.050$
	Yes		

* Mann Whitney U test

Table 6. Comparison of Consultation length and Patient characteristics with more than 2 groups

Variable		Consultation length (mean $\pm$ SD, Median)	Significance value
Age	18-45	10.17 $\pm$ 2.83, 9.87	p= 0.509
	46-55	8.92 $\pm$ 4.36, 7.54	
	56-65	7.60 $\pm$ 4.50, 6.18	
	More than 65	8.66 $\pm$ 4.56, 8.13	
Ethnicity	East Indian	8.35 $\pm$ 4.67, 6.78	p= 0.510
	African	8.57 $\pm$ 3.74, 8.21	
	Mixed (East Indian and African)	8.09 $\pm$ 5.15, 9.37	
	Other	6.66 $\pm$ 3.25, 6.54	
Religion	Christian	9.10 $\pm$ 5.11, 8.27	p= 0.272
	Hindu	7.56 $\pm$ 2.93, 6.71	
	Other	7.61 $\pm$ 2.96, 8.00	
Marital status	Married/ Co-habitant	8.34 $\pm$ 4.13, 7.89	p= 0.187
	Single	9.49 $\pm$ 4.80, 8.78	
	Widowed/ Divorced/ Separated	8.30 $\pm$ 4.71, 6.70	
Education	None	11.64 $\pm$ 6.51, 10.00	Vs Primary school p= 0.044
	Primary school	7.59 $\pm$ 3.11, 6.83	
	Secondary school	8.66 $\pm$ 4.91, 8.00	
	University/ Tertiary level	11.32 $\pm$ 5.78, 10.10	
Income	Less than \$6000	8.37 $\pm$ 3.93, 7.68	p= 0.968
	\$6000-10000	8.94 $\pm$ 5.87, 8.00	
	More than \$10000	8.27 $\pm$ 3.73, 7.60	
Health Centre	Health Centre 1	7.85 $\pm$ 3.21, 7.55	Vs Health centre 4 p= 0.017
	Health Centre 2	6.14 $\pm$ 2.42, 5.93	Vs Health Centre 4 p< 0.001
	Health Centre 3	8.61 $\pm$ 3.06, 8.37	Vs Health Centre 2 p= 0.001
	Health Centre 4	11.39 $\pm$ 6.30, 9.63	
Medical problems to discuss	0	9.13 $\pm$ 7.67, 6.72	p= 0.568
	1	8.16 $\pm$ 3.50, 8.07	
	2	8.25 $\pm$ 4.19, 7.10	
	More than 2	9.03 $\pm$ 4.93, 8.60	

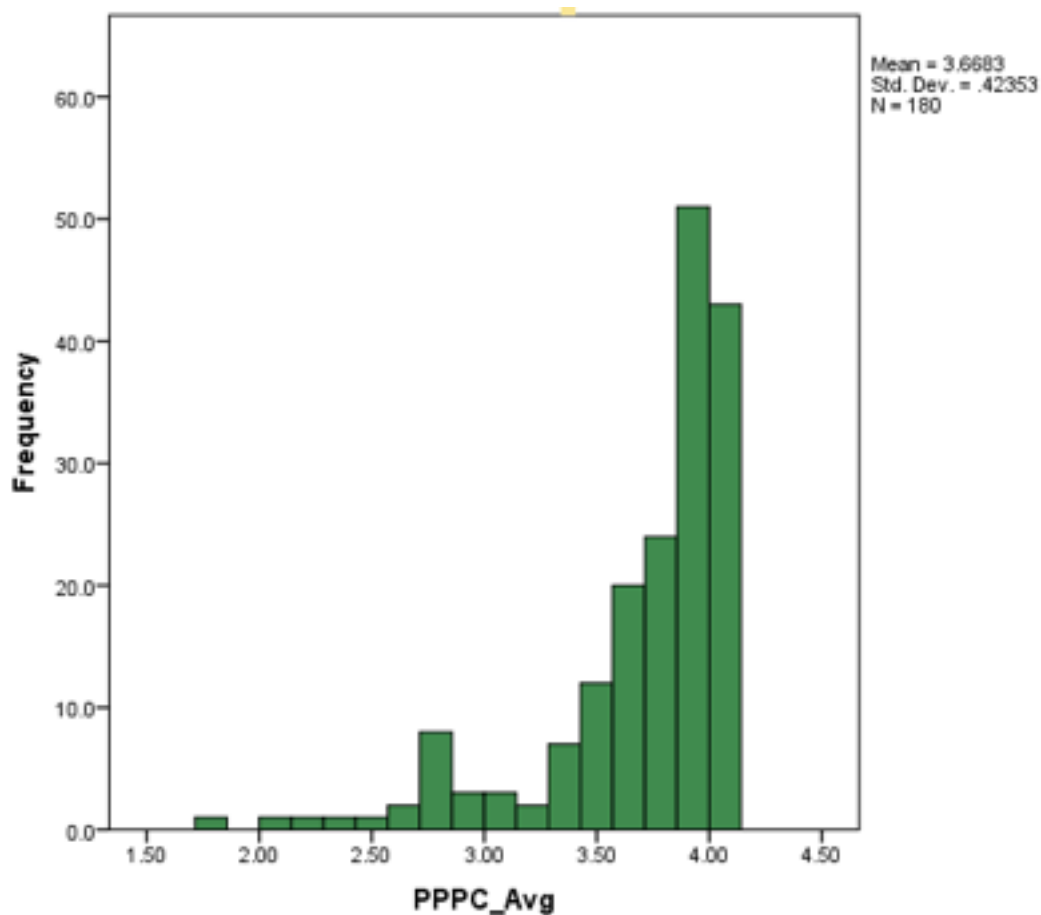
Number of consultation interruptions	0	7.96 ± 3.72, 7.41	Vs 2 p= 0.032
	1	9.97 ± 5.75, 9.17	
	2	12.58 ± 7.37, 11.17	
	More than 2	10.11 ± 6.27, 8.40	
Number of medications used	1	8.38 ± 4.50, 7.00	p= 0.712
	2	8.83 ± 3.69, 8.37	
	3	8.25 ± 3.81, 7.75	
	4	7.86 ± 3.82, 6.52	
	More than 4	8.97 ± 5.50, 8.33	
General health rating	Poor	8.61 ± 1.87, 9.00	p= 0.072
	Fair	9.18 ± 4.25, 8.00	
	Good	8.27 ± 4.66, 7.04	
	Very good	8.55 ± 4.84, 7.25	
	Excellent	5.50 ± 2.74, 5.20	
Doctor familiarity	Not at all	8.16 ± 3.71, 8.02	p= 0.380
	Somewhat	7.98 ± 3.97, 7.40	
	Well	8.84 ± 5.69, 6.49	
	Very well	9.69 ± 4.79, 8.78	

* Kruskal-Wallis test

PPPC Average

The PPPC Average was distributed between 1.79 and 4.00. The interquartile range was 0.36 and the median was 3.86. The mean was 3.67 with a standard deviation of 0.42. The PPPC Average was negatively skewed (Figure 10).

Figure 10. Histogram of PPPC Average and frequency



The analysis of the patient perception of patient-centeredness with patient characteristics including the demographics and the consultation parameters of each patient was done using the Mann Whitney U test and Kruskal-Wallis test due to the skewed distribution of the data (Table 7 and 8). This revealed nil difference in the patient perception of patient-centeredness among gender, employment status, age, ethnicity, religion, marital status, education, income, number of medical problems to discuss,

number of medications used and general health rating.

The PPPC Average was determined to be higher in those without stroke (3.68 ± 0.42 , 3.86) than those with stroke (3.10 ± 0.39 , 3.07) with a p value of 0.022. The PPPC Average was significantly higher in health centre 4 (3.76 ± 0.41 , 3.93) than health centre 1 (3.57 ± 0.49 , 3.79) with p value of 0.017. The PPPC Average was higher in those with more than 2 consultation interruptions (3.99 ± 0.03 , 4.00) than those with one consultation interruption (3.49 ± 0.55 , 3.64) with $p=0.015$. The PPPC Average was significantly higher ($p=0.015$) with continuity of care. The PPPC Average in those patients that knew the doctor very well (3.79 ± 0.35 , 3.93) was higher than those who did not know the doctor at all (3.57 ± 0.47 , 3.71).

Table 7. Comparison of PPPC Average and Patient characteristics with 2 groups

Variables		PPPC Avg (mean $\pm$ SD, Median)	Significance value
Gender	Female	3.68 ± 0.43 , 3.86	p=0.655
	Male	3.64 ± 0.42 , 3.86	
Employment	Employed	3.71 ± 0.39 , 3.86	p=0.311
	Unemployed	3.65 ± 0.43 , 3.86	
Stroke	No	3.68 ± 0.42 , 3.86	p=0.022
	Yes	3.10 ± 0.39 , 3.07	

* Mann Whitney U test

Table 8. Comparison of PPPC Average and Patient characteristics with more than 2 groups

Variables		PPPC Avg (mean $\pm$ SD, Median)	Significance value
Age	18-45	3.54 ± 0.68 , 3.86	p=0.509
	46-55	3.51 ± 0.58 , 3.68	
	56-65	3.68 ± 0.37 , 3.79	
	More than 65	3.72 ± 0.35 , 3.86	
Ethnicity	East Indian	3.69 ± 0.41 , 3.86	p= 0.329

	African	3.63 ± 0.45, 3.79	
	Mixed (East Indian and African)	3.73 ± 0.43, 3.93	
	Other	3.61 ± 0.40, 3.75	
Religion	Christian	3.69 ± 0.41, 3.86	p= 0.453
	Hindu	3.63 ± 0.47, 3.82	
	Other	3.66 ± 0.42, 3.79	
Marital status	Married/ Co-habitant	3.68 ± 0.44, 3.86	p=0.247
	Single	3.75 ± 0.35, 3.86	
	Widowed/ Divorced/ Separated	3.62 ± 0.43, 3.79	
Education	None	3.67 ± 0.44, 3.86	p= 0.685
	Primary school	3.70 ± 0.34, 3.79	
	Secondary school	3.64 ± 0.47, 3.86	
	University/ Tertiary level	3.66 ± 0.59, 3.93	
Income	Less than \$6000	3.63 ± 0.44, 3.79	p= 0.070
	\$6000-10000	3.74 ± 0.44, 3.79	
	More than \$10000	3.76 ± 0.38, 3.93	
Health Centre	Health Centre 1	3.57 ± 0.49, 3.79	Vs Health Centre 4 p= 0.017
	Health Centre 2	3.65 ± 0.38, 3.79	
	Health Centre 3	3.69 ± 0.39, 3.86	
	Health Centre 4	3.76 ± 0.41, 3.93	
Medical problems to discuss	0	3.48 ± 0.67, 3.64	p= 0.495
	1	3.67 ± 0.42, 3.86	
	2	3.64 ± 0.46, 3.86	
	More than 2	3.74 ± 0.33, 3.86	
Number of consultation interruptions	0	3.68 ± 0.40, 3.86	Vs more than 2 p= 0.015
	1	3.49 ± 0.55, 3.64	
	2	3.66 ± 0.38, 3.79	
	More than 2	3.99 ± 0.03, 4.00	
Number of medications used	1	3.59 ± 0.53, 3.86	p= 0.473
	2	3.62 ± 0.44, 3.79	
	3	3.64 ± 0.48, 3.86	
	4	3.70 ± 0.41, 3.89	
	More than 4	3.71 ± 0.36, 3.86	
General health rating	Poor	3.78 ± 0.22, 3.82	p= 0.393
	Fair	3.55 ± 0.57, 3.86	
	Good	3.74 ± 0.34, 3.86	
	Very good	3.66 ± 0.25, 3.68	
	Excellent	3.70 ± 0.44, 3.86	

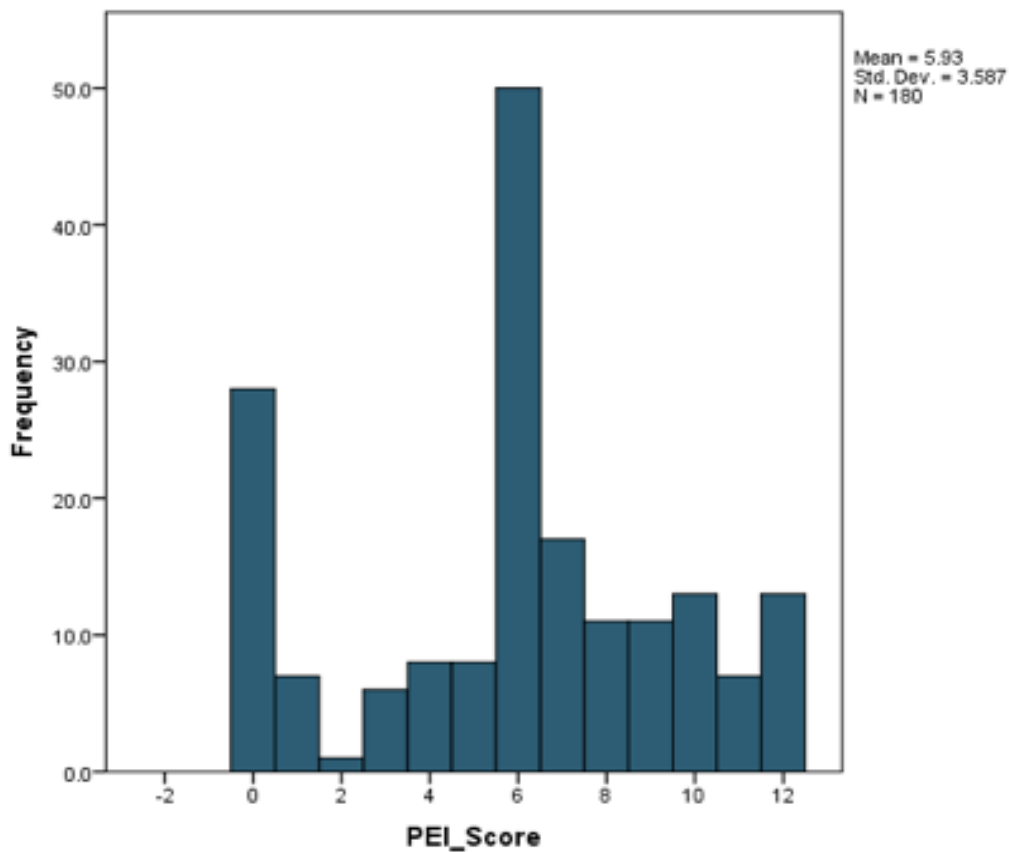
Doctor familiarity	Not at all	3.57 ± 0.47, 3.71	Vs Very well p= 0.015
	Somewhat	3.67 ± 0.44, 3.86	
	Well	3.74 ± 0.34, 3.86	
	Very well	3.79 ± 0.35, 3.93	

* Kruskal-Wallis test

PEI Score

The PEI score was distributed between 0 and 12. The interquartile range was 4 and the median was 6.00. The mean was 5.93 and the standard deviation was 3.59. The distribution may be seen in Figure 11.

Figure 11. Histogram of PEI Score and frequency



The analysis of the patient enablement score with patient characteristics including the demographics and the consultation parameters of each patient was done using the Mann Whitney U test and Kruskal-Wallis test due to the skewed distribution of the data (Table 9 and 10). This revealed nil difference in the patient enablement score among gender, employment status, age, ethnicity, religion, marital status, education, income, number of medical problems to discuss, number of consultation interruptions, number of medications used, general health rating and doctor familiarity.

The PEI score of those without heart disease (6.24 ± 3.61 , 6.00) was significantly ($p= 0.022$) higher than those with heart disease (4.45 ± 3.15 , 6.00). The PEI score of those in health centre 1 (6.58 ± 3.76 , 6.65) was significantly ($p= 0.049$) higher in health centre 3 (4.96 ± 3.74 , 6.00). The PEI score in health centre 4 (6.96 ± 3.57 , 6.00) was significantly ($p= 0.032$) higher than health centre 3 (4.96 ± 3.74 , 6.00).

Table 9. Comparison of PEI Score and Patient characteristics with 2 groups

Variable		PEI Score (mean $\pm$ SD, Median)	Significance value
Gender	Female	6.10 ± 3.52 , 6.00	$p=0.305$
	Male	5.41 ± 3.77 , 6.00	
Employment	Employed	6.48 ± 3.29 , 6.00	$p=0.311$
	Unemployed	5.76 ± 3.67 , 6.00	
Heart disease	No	6.24 ± 3.61 , 6.00	$p=0.020$
	Yes	4.45 ± 3.15 , 6.00	

* Mann Whitney U test

Table 10. Comparison of PEI Score and Patient characteristics with more than 2 groups

Variable		PEI Score (mean $\pm$ SD, Median)	Significance value
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Age	18-45	6.67 ± 3.74, 7.00	p=0.603
	46-55	5.40 ± 3.82, 5.50	
	56-65	6.06 ± 3.80, 6.00	
	More than 65	5.86 ± 3.41, 6.00	
Ethnicity	East Indian	5.90 ± 3.47, 6.00	p= 0.510
	African	5.56 ± 3.64, 6.00	
	Mixed (East Indian and African)	6.85 ± 3.87, 6.50	
	Other	6.13 ± 3.88, 7.00	
Religion	Christian	6.24 ± 3.61, 6.00	p= 0.263
	Hindu	5.08 ± 3.51, 6.00	
	Other	6.26 ± 3.51, 6.00	
Marital status	Married/ Co-habitant	5.70 ± 3.84, 6.00	p= 0.634
	Single	5.52 ± 2.99, 6.00	
	Widowed/ Divorced/ Separated	5.95 ± 3.43, 6.00	
Education	None	4.29 ± 3.86, 6.00	p= 0.061
	Primary school	6.46 ± 3.37, 6.00	
	Secondary school	5.84 ± 3.85, 6.00	
	University/ Tertiary level	4.24 ± 3.01, 5.00	
Income	Less than \$6000	5.92 ± 3.76, 6.00	p= 0.946
	\$6000-10000	5.79 ± 3.37, 6.00	
	More than \$10000	6.32 ± 3.09, 6.00	
Health Centre	Health Centre 1	6.58 ± 3.76, 6.65	Vs Health Centre 1 p= 0.049 Vs Health Centre 3 p= 0.032
	Health Centre 2	5.24 ± 2.92, 6.00	
	Health Centre 3	4.96 ± 3.74, 6.00	
	Health Centre 4	6.96 ± 3.57, 6.00	
Medical problems to discuss	0	5.22 ± 3.19, 6.00	p= 0.178
	1	6.66 ± 3.74, 7.00	
	2	5.50 ± 3.64, 6.00	
	More than 2	5.79 ± 3.64, 6.00	
Number of consultation interruptions	0	5.93 ± 3.48, 6.00	p= 0.920
	1	5.77 ± 4.42, 6.00	
	2	5.67 ± 4.09, 6.00	
	More than 2	7.20 ± 2.17, 6.00	
Number of medications used	1	6.73 ± 4.01, 6.00	p= 0.050
	2	6.16 ± 3.45, 6.00	
	3	7.09 ± 3.58, 7.00	
	4	6.07 ± 3.74, 6.00	
	More than 4	4.79 ± 3.21, 6.00	

General health rating	Poor	7.38 ± 2.26, 6.50	p= 0.472
	Fair	5.11 ± 3.46, 6.00	
	Good	6.14 ± 3.83, 6.14	
	Very good	6.50 ± 3.07, 6.00	
	Excellent	6.71 ± 3.68, 6.00	
Doctor familiarity	Not at all	5.71 ± 3.83, 6.00	p= 0.716
	Somewhat	6.17 ± 3.81, 6.50	
	Well	5.58 ± 3.65, 6.00	
	Very well	6.40 ± 2.53, 6.00	

*Kruskal-Wallis test

Spearman's Correlations

The Spearman's correlation was chosen due to the non-normal distribution of the continuous variables (Table 11). The correlation coefficient $p = 0.408$ was significant, $p < 0.001$ showing that PPPC Average correlated well with PEI Score. This was in keeping with all literature thus far. The consultation length correlated with the PPPC Average. The correlation coefficient was $p = 0.168$ which was significant with $p = 0.025$. The PEI Score did not correlate with consultation length significantly with the correlation coefficient $p = 0.092$ and the significance $p = 0.220$.

Table11. Correlations among Quality measures

Continuous Variables		Spearman's Rho, p	Significance Level
PPPC Avg	PEI Score	$p = 0.408$	$p < 0.001$
PPPC Avg	Consultation length	$p = 0.168$	$p = 0.025$
PEI Score	Consultation length	$p = 0.092$	$p = 0.220$

In summary the response rate was 82.5% with a sample of 180 patients. The average, median and mode of quality measures: PPPC average (3.67, 3.86 and 4), PEI score (5.93, 6 and 6) and consultation length (8.5, 7.74 and 10). The PPPC Average was higher in patients without stroke ($p=0.022$) than those without, those with more than 2 consultation interruptions ($p=0.015$) than those with 1 consultation interruption and those who knew the doctor very well ($p=0.015$) than those who did not know the doctor at all. The PEI score was higher in patients without heart disease ($p=0.022$) than those without heart disease. The consultation length was longer in those with tertiary education ($p=0.044$) than those with primary school education and longer in those with two consultation interruptions ($p=0.032$) than those with nil consultation interruptions. PPPC Average and PEI Score correlated well ($p=0.408$, $p<0.001$). The PPPC Average also correlated with the consultation length ($p=0.168$, $p=0.025$).

CHAPTER 6: DISCUSSION

This study was able to explore the local PPPC Average and PEI score of consultations for patients with chronic diseases and primary care physicians in the local health centres of Trinidad and Tobago in the North Central area. This study was also able to make an objective time record of the duration of the consultation for assessment of correlation with PPPC Average and PEI scores. The patient factors associated with PPPC Average and PEI scores were also assessed. This has never been achieved locally or regionally thus far.

Patient Perception of Patient-Centeredness Score

The average patient perception of patient-centeredness in Canada in 2000 was 1.5 ($\pm$ 0.37) with a sample size of 315 patients of 39 family physicians⁹. Our PPPC score was significantly higher than theirs. This can presumably be explained by the postgraduate training in family medicine, which was completed by 90% of our doctors in the clinics at the health centres.

The average PPPC score in Japan was 3.19 ($\pm$ 0.48) and the consultation length average was 10.5 ($\pm$ 5.5)⁴⁵. This was comparable to our local setting where our average PPPC score 3.67 ($\pm$ 0.42) was and consultation length mean was 8.5 minutes ($\pm$ 4.43). In this study the length of visit was also positively related to patient-centeredness level. This reinforces the point that time is necessary for patient-centeredness.

The PPPC Average was higher in those without stroke, which may be due to patients with stroke desiring more time and specific attention. The number of patients with more than 2 interruptions was only 5 and the number with no consultation interruptions was 22, which may explain the significant difference in PPPC Average. The PPPC Average was significantly higher in health centre 4 probably due to the lower patient load and longer length of consultations than health centre 1 (7.85 minutes vs 11.39 minutes respectively). This was shown in previous studies such as by Howie et al³⁰.

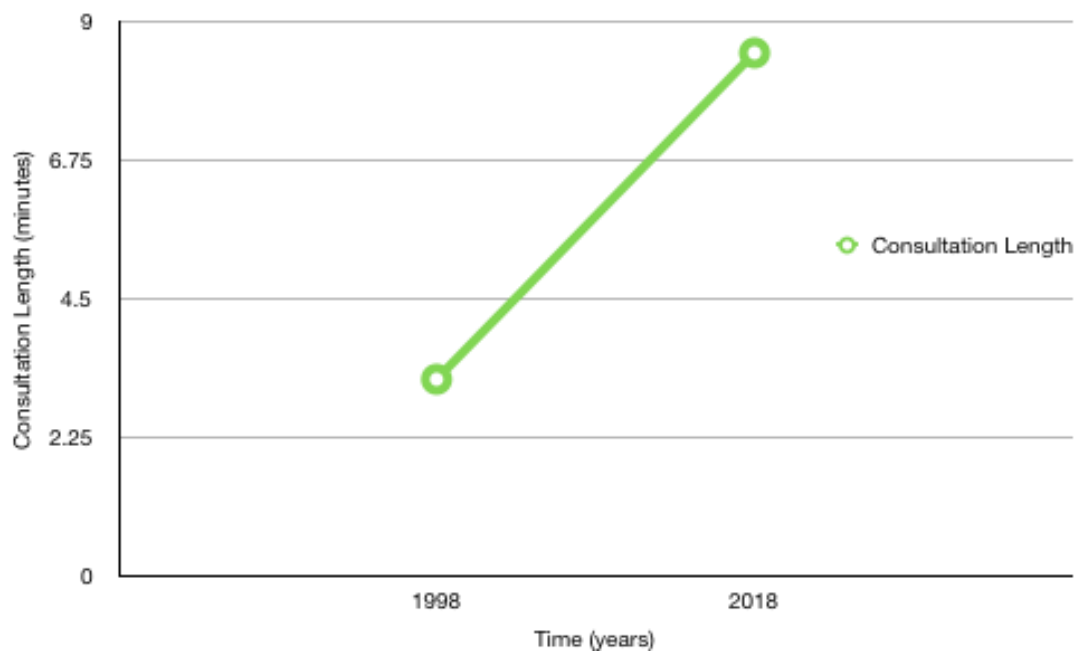
As shown in previous studies including Sans-Corrales et al, continuity of care results in greater patient-centeredness²⁴. This was seen with a significant higher PPPC Average in those that knew the doctor very well versus those who did not know the doctor at all. The doctor-patient relationship is essential in the patient-centeredness model of care. This continuity of care further corroborates this theory in Trinidad and Tobago.

Consultation Length

The consultation length average of 8.5 minutes was more than twice the consultation length of the previous study 20 years prior with 3.2 minutes in which Roter et al determined the efficacy of a short CME programme²³. The sample size included 75 patient interviews and 15 doctors. This showed a great improvement in quality of care for the patients of Trinidad and Tobago. There are guidelines for NCDs that are followed to the best of the doctors' ability compared to previously. These include a few more steps to complete in the consultation and examination that require time. On average 2/3 of the

doctors in the cluster had post-graduate training in family medicine. There are also monthly teachings as a cluster with updates in management. The difference in consultation length can be seen in the Figure 12 below.

Figure 12. Consultation length in Trinidad and Tobago in Primary care.



The consultation lengths in primary care consultations of 67 countries were reviewed by Irving et al in 2017⁴⁶. The table 12 showed that the majority, 25 countries, average consultation was 5-9.9 minutes. Only 16 countries had consultation lengths on average more than 15 minutes. The range of consultation length was between 48 s in Bangladesh and 22.5 min in Sweden. The countries with the shorter consultation lengths had the greatest health needs. There was an association between average consultation length and

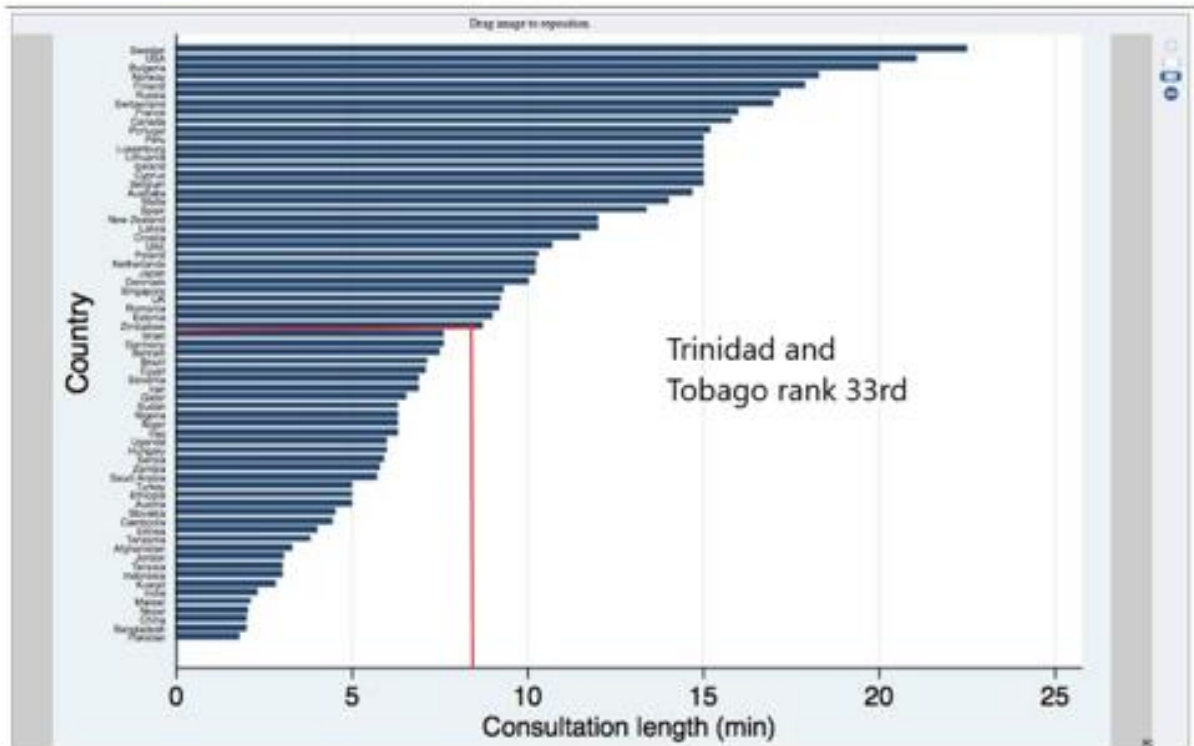
per capita healthcare spending, which reinforces the assertions that shorter consultation length can be used as measure of poverty. This proposes a dilemma of resources since insufficient input into primary care with increasing populations and escalating treatment prospects would likely overwhelm us.

Table 12. Average consultation length internationally.

Countries (67)	Consultation length (mins)
15	<5
25	5-9.9
11	10-14.9
13	15-19.9
3	≥20

The average ranking of Trinidad and Tobago is 33rd among the 67 countries in this international study (Figure 13). This places us at the 50% benchmark when compared internationally.

Figure 13. Distribution of Consultation length and Countries



Short consultation lengths are likely to negatively affect patient care and the workload and pressure of the consulting physician. The variances among countries are explained by factors relating to politics, labour force, access, continuity, comprehensiveness and management. The least effective consultation length is on average 5 minutes, which at most included a greeting and a prescription. These shorter consultation lengths were shown to result in increasing polypharmacy, misuse of antibiotics and inferior communication with patients⁴⁷⁻⁴⁹.

Insufficient time in the consultation is an egregious constraint on delivery of primary care⁵⁰. There is a significant association between shorter consultation and physician burnout. This is postulated to be due to inadequate personal accomplishment in these shorter consultations, which leads to doctors feeling less effective and capable of managing complex multi-morbid patients. This essential asset of time for patients with

complex needs and multi-morbidity needs to be addressed for effective management in primary care.

The consultation length in those with University or Tertiary level education was higher than those with Primary school level. This may possibly be due to the greater understanding of their condition which will likely result in more discussion. The health centre 4 had significantly longer consultation than health centre 1 and health centre 2 which may be explained by the greater patient burden in health centre 1 than the others. The consultation length in those with no consultation interruptions was found to be significantly shorter than those with two consultation interruptions, which was one of the determinants of longer consultations.

There are many factors to consider that could affect the consultation time. There are many patient factors of which some were accounted for in the survey. These included number of problems to discuss, number of medical conditions, number of medications used and demographic factors. One factor that was not assessed was the presence of a third party to the consultation, relative or caretaker or friend.

The other dimension not assessed was the individual doctor. The sex, age, level of Family Medicine postgraduate training, level of physician burnout and years of experience have been shown to contribute to consultation length. In a previous study by Orton et al, less experience and burn-out in males was correlated with longer consultations¹⁹. The postgraduate study, less experience and burn-out in females was associated with longer

consultations. These are important factors that may be assessed in another study along with individual consultation length times, PEI scores and PPPC Average score.

The remaining set of determining factors that affect consultation length are the primary care management of services. This includes all levels of staff and the facilities offered. The major contributing factor is patient load. This was seen at the different health centres where those with higher patient load had shorter consultation lengths. This was seen by the list of patients attending the chronic disease clinics at each health centre. This is a factor that is imposed on the doctor. The ability to effect change with a longer consultation is also more gratifying for the doctor which reduces burn-out⁵¹. There is an association relating to efficiency supports studies that increasing workload may be a significant causative factor in burnout⁵². There are many factors that contribute to burnout but this key change can be implemented in our health system, which will benefit both patients and doctors. Another pressure on doctors is to re-write prescriptions by hand and any other required forms during this consultation. The majority of time may be done doing this when there is a heavy patient load waiting. Therefore less time is given to promoting health, developing the doctor-patient relationship and finding common ground.

There are no appointment systems of time scheduled per patient at the clinic. Therefore most patients are waiting for long periods of time. This also affects the consultation time as patients are usually impatient to leave when they have been waiting for extended periods of time. This average waiting time varies at each health centre but is roughly 2-3

hours.

Patient Enablement Instrument Score

Our study did not find a correlation of PEI with consultation time, which was also found to be an insignificant correlating factor in some previous studies^{53,54}. This may be due to almost 25% having the response being same or less or not applicable.

The PEI score was lower in those with heart disease, which may be due to those with heart disease requiring more detailed attention with multiple medical conditions. The variations in PEI among the health centres were not correlated with consultation length or PPPC score.

In the United Kingdom Howie et al performed a survey of 25,994 adults which demonstrated a mean PEI score of 3.1 (95% CI: 3.1-3.1)³¹. Another study of 54 patients

in United Kingdom in 2006 resulted in a mean patient enablement score of 3.62 (95% CI: 2.89-4.76)⁵⁵. A mean PEI score of 3.65 (95% CI not provided) was reported in a Scottish study of 323 patients⁵⁶. A mean PEI score of 3.7 (95% CI: 3.2-4.2) was shown in another study of 187 new outpatients at a Glasgow homeopathic hospital⁵⁷. The mean patient enablement scores of 3,044 patients were reported to be 4.0 ± 3.8 and 3.9 ± 3.5 from most deprived areas and least deprived areas respectively, in another study conducted by Mercer and Watt in 2007 in Scotland⁵⁸. In 2008 Mercer et al performed another study with 323 patients in which the PEI was determined to be 3.65. The results from studies conducted in the United Kingdom in large populations are relatively constant.

A study of 7,924 adults in 2002 in Poland, that included a Polish version of the patient enablement instrument, showed the mean patient enablement was 4.0 (95% CI not given)⁵⁹. In 2009 a polish study determined the consultation length average and PEI to be 10.3 (SD= 5.4) and 4.0 (SD=3.3) respectively⁶⁰.

The result of a Portuguese study using a translated version of the PEI on patients with asthma showed a mean PEI score of 7.85 (SD=3.13)⁶¹. This study had 142 participants and determined a good reliability of Cronbach's alpha was 0.87 for the Portuguese version. This was the highest result for the PEI published.

A Swedish study of 142 patients determined the average PEI score to be 3.48 (SD=3.21)⁶². The Cronbach's alpha coefficient of internal reliability was suitable at 0.85 of the Swedish version of the patient enablement instrument. The PEI score was unexpectedly

low since the average consultation length was more than 20 minutes.

The average PEI in community clinics of Hong Kong was determined to be 3.72 in a study of 390 patients⁶³. This study compared hospital based clinics to community. The average PEI score of hospital based clinics was 4.92. The average consultation length was 4.81 minutes in community clinics and 10 minutes in hospital based clinics. This may have been due to the greater confidence in hospital clinics for their perceived higher quality of services and doctors.

The mean PEI score in french Canada was 5.06 (95% CI: 4.30-5.81)⁶⁴. This was a study that included 110 patients and determined the reliability to be excellent (Cronbach α coefficient = 0.93) of the french version of the PEI. A Chinese-speaking sample of 152 adults demonstrated an average PEI score of 4.65 (95% CI: 4.21-5.10)⁶⁵. The Croatian study of 5.527 adult patients obtained a much higher mean PEI score of 6.6⁶⁶.

The mean PEI score was 5.93 in our study, which was comparable to the French and Chinese populations. This may be due to the difference in culture. The sample size was also small in comparison but it was sufficient to achieve the objectives of this study.

The PEI in our study, 5.93, was third out of the 9 countries above (Table 13). This is shown in the table 13. The differences in enablement in the above countries could be explained by varied primary care needs in diverse populations, cultural variances in inclination to report negative responses, dissimilar understandings of the “enablement”

concept, confidence in the doctors in primary care, confidence in the health system and its' benefits, continuity of care or genuine variations in the quality of delivered care.

Table 13. International Comparison of PEI Scores and Consultation length

	PEI score 0-12 (SD)	Consultation length (mins) (SD)
Portugal ⁶¹ (2017, n=142)	7.85 (3.13)	*15.2 (2014, n=155)
Croatia ⁶⁶ (2008, n=5527)	6.6 (3.3)	11.5 (5.5)
Canada ⁶⁴ (2011, n=110)	5.06 (3.97)	*15.8 (1994, n=424)
China ⁶⁵ (2010, n=152)	4.65	*2 (2015, n=1135)
Poland ⁶⁰ (2009, n=6208)	4.0 (3.3)	10.3 (5.4)
Scotland ⁵⁶ (2008, n=323)	3.95	*8.71 (4.40) (2001, n=107)
Hong Kong ⁶³ (2015, n=390)	3.72	4.81
Sweden ⁶² (2015, n=142)	3.48 (3.21)	*21 (1989, n=160)
England ⁵⁵ (2006, n=52)	3.62	8.0 *9.22 (2014, n=13381772)

A significant number of responses to the PEI was same or less or not applicable, 25% of all responses. This may be due to the patients not perceiving the questions as relevant to their situation. This may result from the fact that the questions were not specified to the type and duration of disease. For example a newly diagnosed patient with a chronic disease will have a greater learning curve and more development of a doctor patient relationship than a patient coping with longstanding disease. Also the severity, physical effect and psychological effects of the disease impact on the applicability of the questions. This may have been clarified better in this study with an interviewer assisting the survey.

The patient enablement score has to be established as different from patient satisfaction. This patient enablement score was correlated with self-efficacy as patients are able to take certain health measures of their own. This means that higher patient enablement should be more predictive of future behaviour, whereas satisfaction is generally a static outcome at one point in time⁶⁷. Therefore to further validate and determine an acceptable gold standard for the PEI score, studies should be done about the clinical and behavioural effects of various PEI scores. This will establish a benchmark that can be used to compare the clinical practices around the world. Also the PEI scores before and after the consultation would be valuable while taking into account various factors. This will greater determine the effect of the doctor's effort in the consultation and the factors that were used in the consultation that resulted in higher PEI scores. The greatest determining

factor of higher PEI scores should be greater patient-centered care.

The determinants and factors that predict the PEI have yet to be determined. It has been thought that situational, patient and doctor factors generally are linked to PEI scores. However in a study that determined the factors that predicted the PEI score, only 16% of the variance was determined by these known factors⁶⁸. Therefore further studies have to be done to specify the factors that determine an acceptable standard level of the PEI Score. The association between family medicine postgraduate study and health outcomes of chronic disease patients should be included in these further studies. Another factor may be patients who are more driven and interested in health issues since they may possibly have higher enablement scores.

Strengths and Weaknesses

This study was the first of its' kind in the Caribbean and was met with minimal opposition from the staff at the local health centres. This study attempted to assess quality of the consultation via patients' perception of patient-centeredness, consultation length and patient enablement score.

- The patients may not have participated in the study as well due to time-constraints, displeasure with the health system or non-desire.
- The main limitation with every cross-sectional study is that it examines one point in time and it was convenient sampling. This means all patients attending the CDCs will not be given the chance to be assessed.
- The major bias with all questionnaires is assuming the responses to the questions are

the truth. The patients may have said the answers that they think the interviewer wanted to hear. They may have over estimated the patient-centeredness of the doctor. The inaccurate data may lead to a false analysis of the actual quality of care assessment in Trinidad.

- The setting chosen may not have been representative of the rest of Trinidad and Tobago due to differences in the population to other areas. The demographics of the patients of the clinic are unlikely to differ significantly from the general population. The socio-economic distribution may not have been representative due to those of higher income usually attending private health care.
- There are confounding variables that are difficult when assessing the quality of primary care;

1.The doctor factors not measured include their years of experience, post-graduate studies and burnout. The other confounder not assessed were differences in first languages of the doctors and the patients. Also the sex difference between doctor and patient were not assessed.

2.The other factors associated with patient-centeredness are the health system factors. They were not addressed and this will be made clear to the patients when describing the study. These include environment, courtesy of staff, waiting times and access to care.

The efforts instituted to minimise the effects of the above limitations included:

- The sample size was calculated to assess at a significance level of 0.05 and this was increased 20% above the calculated number. This was to account for non-responders.

This allowed for the objectives to be reliably achieved with this study by reducing chance.

- The questionnaire was designed to be comprehensive but concise. This ensured that the least possible time was needed from the participants.
- Reassuring participants that all information remained confidential and anonymous encouraged full involvement.
- The recall bias associated with cross-sectional was not as significant since the consultation they just participated in was the one evaluated.
- The patients were assured that there would have been no penalty for non-participation.
- The participants were encouraged to be as honest with their answers as possible. They were informed that negative responses will not hinder their care or become known to the doctors of the clinic.
- The patients were asked to separate their opinion of the service at the health centre from the consultation with the doctor which is the actual variable being assessed.

This study was able to accurately assess patient-centeredness in Trinidad and Tobago.

This is novel and the results can further be used to encourage patient-centeredness in Trinidad and Tobago. This can also be used as the first step for further research in this area.

The study was generalisable to other public local health centres but not to private institutions. The management of health systems and the experience of staff are similar among the public health centres. The number of doctors with post-graduate study should

also be similar.

The instrument used was validated and the reasoning behind use was given. The steps of the methodology were detailed and can be reproduced. The method of interviewing and consultation length measuring chosen, was significant and reduced sources of error.

The data analysis was rigorous and explained in detail. The findings were explicit, compared internationally and concluded the study's objectives. The results were clearly shown descriptively and the analyses were explained. The summary of the results was adequate and surmised the aims of the study.

Recommendations

The care of non-communicable disease patients is usually complex with multiple levels of staff involved. Studies have highlighted the importance of individualised and culturally adapted care. Dorr et al advised on regular development of an individualised plan for each patient by all layers of staff in a study⁶⁹. This may be taken one level higher to include family and the relative's needs in this care plan as done in a study by Eakin et al⁷⁰. The patient should be given all the pertinent information about their care including prevention, treatment and access to other areas of health care including psychosocial services. This is emphasised in the patient-centred model by M Stewart et al¹⁸. This should be done while eliciting and respecting the patient's desires, beliefs and preferences.

Small group workshops lead by peers such as in the diabetes society may encourage the

self-management by patients. Health care utilisation should be encouraged and information on health services advised. This was described as a Chronic Disease Self-Management Program by Ory et al⁷¹. This may also be encouraged with once a year nurse and physician meetings about support for self-management including medication, medical conditions and psychiatric care as described by Katon et al⁷².

The training of all health care providers in patient-centeredness has been shown in multiple studies to maximally improve health outcomes of the patients^{9, 10, 15, 16, 23, 26, 27, 32}. The importance of frequent team meetings among healthcare professionals was emphasised in many of these studies. The most essential and common component found was the interdisciplinary synchronisation of healthcare providers, care and services. The goals of the health care professionals in the team include the ability to communicate effectively, to attain respect and trust, to determine shared values and goals, to effectively share information, to constructively receive feedback, to distribute responsibilities equally, to be held accountable, to be aware of one's power, limitations and priorities.

The majority of benefit seen for patient health outcomes was in training of the physicians in patient-patient-centred care^{73, 74}. This was seen in the short CME programme conducted 20 years ago by Roter et al. In this study, those doctors that received training were “less likely to dominate the visit verbally, used more open-ended questions, more facilitations, and tended to use more emotionally responsive talk”²³. The quality of care improved as shown by the consultations of trained doctors lengthening by 20 seconds and the input of the patients in the consultation significantly increasing. Training can include

general communication skills including verbal and non-verbal behaviours.

The intervention of consultation appointment lengthening alone was unsuccessful in lengthening the actual consultation length. Also the number of referrals, investigations requested by the doctor and numbers of medications prescribed were not affected by consultation length⁷⁵. This review revealed that doctors who had longer consultations prescribed less and frequently gave lifestyle advice and preventative care. These doctors also discussed more problems and more information was exchanged. An observational study also revealed that booking intervals of ten minutes was the most influential predictor of the quality of management of chronic disease⁷⁶.

In summary the combination of providing the required appointment system at the health centres and the training programmes for the doctors and staff in patient-centeredness would be the most beneficial for the patients. The recommendation for family practice is a 15-minute length consultation⁴². These proposals are needed, as extended time for consultation length alone is insufficient to provide better health outcomes for the patient alone⁷⁷.

Future research

The research forward should be a randomised control trial of postgraduate family medicine trained doctors or the effect of a training programme in patient-centeredness as the intervention and the health outcomes associated with NCDs. This will determine the efficacy of a postgraduate training programme in patient-centeredness in Trinidad and

Tobago. This can also assess the doctors' characteristics associated with greater patient-centeredness.

Another avenue of study would be to determine cut-off values for the measurements of patient-centeredness. This includes the lowest acceptable level of the PPPC Average, PEI score and consultation length for better health outcomes in NCDs. This will be useful to audit and develop guidelines to improve patient-centeredness in health care.

What's next?

The concept of patient-centeredness and the consultation has not been discussed with patients in clinics of Trinidad and Tobago. This is necessary to determine the desires, beliefs, opinions and aspects of grievance with the consultation in primary care. This is a developing country and therefore resources are limited. This study will aim to focus on what the patient determines is patient-centered and ways to help the patients improve in self-care. Interviews will be conducted across the regions of Trinidad and Tobago with select patients in non-communicable disease clinics. Patients will be interviewed in focus groups and depending on the feedback the study will take different avenues. There are many novel ideas that may be determined by this form of study.

Conclusion

The average score of Patients' Perception of Patient Centeredness was above average

compared to the other countries studied. The PPPC Average was significantly higher in those without stroke and in those that knew the doctor very well as seen in prior studies. The average consultation length ranked 33rd when compared with 67 other developing and developed countries. The consultation length improved remarkably when compared to the previous study 20 years ago in which the consultation length was less than half. The consultation length in those with Tertiary level education was higher than those with Primary school level. The patient enablement score was above average among the 9 other countries studied. The PEI score was lower in those with heart disease. The PPPC Average correlated well with the PEI score and the consultation length. This further supports the recommendation of the combination of the 15-minute appointment system at the health centres and the training programmes for the doctors and staff in patient-centeredness. This study has brought much needed attention to the patient-centeredness in primary care in Trinidad and Tobago.

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APPENDICES

APPENDIX 1: Letter of Ethical Approval



THE UNIVERSITY OF THE WEST INDIES

ST AUGUSTINE, TRINIDAD AND TOBAGO, WEST INDIES

CAMPUS RESEARCH ETHICS COMMITTEE

TEL.: (1-868) 662-2002 ext. 82755 E-mail: campusethics@sta.uwi.edu

September 11 2018

Dr. Rohan Maharaj (Reisa Rahaman)

Department of Para-Clinical Sciences

Faculty of Medical Sciences

Email: Rohan.Maharaj@sta.uwi.edu; reisa.rr@gmail.com

Dear Dr. Maharaj

Ref: CEC692/08/18

The Assessment of the Quality of the Consultation in Primary Care in Trinidad and Tobago.

I am pleased to advise that your application for research on the above captioned topic has been approved on behalf of Campus Research Ethics Committee, St. Augustine.

Sincerely

Surendra Arjoon (Prof.)

Chairman

Campus Ethics Committee

/tf

APPENDIX 2: Consent Form



THE UNIVERSITY OF THE WEST INDIES
ST. AUGUSTINE, TRINIDAD AND TOBAGO, WEST INDIES
CAMPUS ETHICS COMMITTEE
CONSENT TO PARTICIPATE IN RESEARCH
Phone: 645-3232 Ext: 5021 Email: campusethics@sta.uwi.edu

Complete Protocol Title	A cross-sectional study of the quality of the consultation in chronic disease clinics of the St. Joseph Cluster of North Central Regional Health Authority in Trinidad and
Principal Investigator	Dr. Rohan Maharaj
Co-Investigators	Dr. Reisa Rahaman
Research Site(s)	The Health Centres of St. Joseph Cluster
Sponsors	Not applicable.

Why is this research being done?

The education of primary care physicians in the family medicine programme entails the patient-centered model of care. The consultation is where quality care is provided and where we can improve our service to the patients in the local health centres of Trinidad and Tobago. The results of this study can be used as the basis for further studies on the consultation in Trinidad and Tobago.

What is the duration of taking part in the study (for each subject)?

Average of 10-15 minutes

What will happen to me?

An interview will be conducted whereby you will share information about the consultation that you had with your doctor. This will remain anonymous and confidential. The doctor will not be made known of your answers.

What is in it for me?

The benefit for you, your family and friends is improvement in quality of care to the patients and therefore their health outcomes. This information is invaluable in advancing our health care.

What will happen if I drop out of the study early?

There will be no adverse consequences.

What are my responsibilities if I join and what about confidentiality?

Your only responsibility is to answer the questions honestly and to the best of your ability.

What if I get hurt in the study?

There is no risk to you as a participant.

CONSENT

I have read and understood this explanation. The researcher has also explained the study to me. I have had a chance to ask questions and have them answered to my satisfaction. I agree to take part in this study. I have not been forced or made to feel like I had to take part.

I have read the attached experimental Subject's Rights, which contain some important information about research studies. I have also read the Authorisation to use my Private Health Information. **I must sign this Consent Form, the Experimental Subject's Rights and the Authorisation to use my Private Health Information. I will be given a signed copy of each to keep.**

Print Name of Subject

Signature of Subject

Date

Signature of Person conducting the informed consent discussion

Date

Role of person named above in the research project

Signature of Second Witness

Date

This document was approved by
Campus Ethics Committee on:

September 11 2018

By Chairman:



This document expires on:

September 10 2019



EXPERIMENTAL SUBJECT'S RIGHTS

If I am asked to consent to participate as a subject in a research study involving a medical experiment, or if I am asked to consent for someone else, I have the right to:

1. Learn the nature and purpose of the experiment (also called "study" or "clinical trial").
2. Receive an explanation of the procedures to be followed in the study, and any drug or device used.
3. Receive a description of any discomforts and risks that I could experience from the study.
4. Receive an explanation of any benefits I might expect from the study.
5. Learn about the risks and benefits of any other available procedures, drugs or devices that might be helpful to me.
6. Learn what medical treatment will be made available to me if I should be injured as a result of this study.
7. Ask any questions about the study or the procedures involved.
8. Quit the study at any time, and my decision will not be used as an excuse to withhold necessary medical treatment.
9. Receive a copy of the signed and dated consent form.
10. Decide to consent or not to consent to a study without feeling forced or obligated.

If I have questions about a research study, I can call the contact person listed on the consent form. If I have concerns about the research staff, or need more information about my rights as a subject, I can contact the Principal Investigator, The University of the West Indies at:

By signing this document, I agree that I have read and received a copy of this document.

Signature of Subject or Legal Representative

Date

REQUEST FOR PERMISSION TO USE AN INDIVIDUAL'S PRIVATE HEALTH INFORMATION

Name of Study:

A cross-sectional study of the quality of the consultation in the chronic disease clinics of the St. Joseph Cluster of North Central Regional Health Authority in Trinidad and Tobago

Investigators:

Dr. Rohan Maharaj, Dr. Reisa Rahaman

What is private health information?

Private health information is any information that can be traced back to you. We need your permission to use your private health information in this research study. The type of private health information that will be used and shared for this study includes:

- Your past and present physical and mental health information
- Information that can be used to contact you
- Results of your medical tests and DNA
- Questionnaires and information on your drug/alcohol usage and that of your family.

Who else will see my information?

Only the investigators will be allowed access to your information.

How long will the investigators use and share my information?

The information will be stored for one year or until the study is completed

What if I change my mind about sharing my research information?

The information will be discarded at once.

Do I have the right to see and copy my research information?

No.

If you agree to share your information, you should sign this form below. You will receive a copy of this form.

I agree to share my information as described in this form

Print Name

Signature

Date

If you have questions or concerns about your privacy and the use of your personal medical information, please contact the investigator at the telephone number listed in the consent form.

APPENDIX 3: Questionnaire

ST. JOSEPH CLUSTER NORTH CENTRAL REGIONAL HEALTH AUTHORITY

Please choose one answer to each of the following questions.

Please indicate by ticking (✓) the appropriate box.

All information shared will be treated with the strictest of confidence.

SECTION 1. DEMOGRAPHICS

1. How old are you? a) 18 to 35 b) 36 to 45 c) 46 to 55 d) 56 to 65 e) More than 65	2. What is your sex? a) Female b) Male
3. What is your ethnicity? a) East Indian b) African c) Mixed (East Indian and African) d) Mixed (Other than East Indian and African) e) Caucasian f) Chinese g) Syrian/Lebanese h) Indigenous i) Other	4. What is your religion? a) Christian b) Hindu c) Muslim d) Baptist e) Jehovah's Witness f) Seventh Day Adventist g) Other
5. What is your marital status? a) Married/ co-habitant b) Single c) Widowed/divorced/separated d) In a relationship	6. What is your completed level of education? a) None b) Primary School c) Secondary School d) University or Tertiary level e) Post-Graduate

7. What is your household's combined monthly income? a) Less than \$6,000 b) \$6,000 to 10,000 c) \$10,001 to 15,000 d) \$15,001 to 20,000 e) More than \$20,000	8. Are you presently employed (partial/fulltime)? a) Yes b) No
SECTIN 2. CONSULTATION/ HEALTH CONDITION	
9. How many medical problems did you want to discuss? 1) 0 2) 1 3) 2 4) More than 2	10. How many times was your consultation interrupted? 1) 0 2) 1 3) 2 4) More than 2
11. What medical condition(s) do you suffer from? a) Diabetes b) Pre-diabetes c) Chronic respiratory disease (Asthma/ COPD) d) Cancer e) Heart disease f) Stroke g) Hypertension h) Hypercholesterolaemia i) Overweight/Obesity	Please tick as many that is appropriate. j) Thyroid disorder k) Arthritis l) Blood dyscrasia (e.g. SCD, Thalassemia etc.) m) Seizure Disorder n) Dementia o) Prostate disease p) Psychiatric Illness (e.g. Depression, Anxiety, Bipolar) q) Other
12. How many medications do you use presently? 1) 1 2) 2 3) 3 4) 4 5) More than 4	13. How will you rate your health in general? 1) Poor 2) Fair 3) Good 4) Very Good 5) Excellent

14. To what extent do you know the doctor?

- 1) Not at all
 - 2) Somewhat
 - 3) Well
 - 4) Very well
-

SECTION 3. PATIENT PERCEPTION OF PATIENT CENTEREDNESS

1. To what extent was your main problem(s) discussed?

- 4) Completely
- 3) Mostly
- 2) A little
- 1) Not at all

2. Would you say that your doctor knows that this was one of your reasons for coming today?

- 4) Yes
 - 3) Probably
 - 2) Unsure
 - 1) No
-

3. To what extent did the doctor understand the importance of your reason for coming in today?

- 4) Completely
- 3) Mostly
- 2) A little
- 1) Not at all

4. How well do you think your doctor understood you today?

- 4) Very well
 - 3) Well
 - 2) Somewhat
 - 1) Not at all
-

5. How satisfied were you with the discussion of your problem?

- 4) Very satisfied
- 3) Satisfied
- 2) Somewhat satisfied
- 1) Not satisfied

6. To what extent did the doctor explain this problem to you?

- 4) Completely
 - 3) Mostly
 - 2) A little
 - 1) Not at all
-

7. To what extent did you agree with the doctor's opinion about the problem?

- 4) Completely
- 3) Mostly
- 2) A little
- 1) Not at all

8. How much opportunity did you have to ask your questions?

- 4) Very much
- 3) A fair amount
- 2) A little
- 1) Not at all

9. To what extent did the doctor ask about your goals for treatment? 4)Completely 3)Mostly 2)A little 1)Not at all	10. To what extent did the doctor explain treatment? 4)Very well 3)Well 2)Somewhat 1)Not at all
11. To what extent did the doctor explore how manageable this (treatment) would be for you? He/she explored this. 4)Completely 3)Mostly 2)A little 1)Not at all	12. To what extent did you and the doctor discuss your respective roles? (Who is responsible for making decisions and who is responsible for what aspects of your care?) 4)Completely 3)Mostly 2)A little 1)Not at all
13. To what extent did the doctor encourage you to take the role you wanted in your own care? 4)Completely 3)Mostly 2)A little 1)Not at all	14. How much would you say that this doctor cares about you as a person? 4)Very much 3)A fair amount 2)A little 1)Not at all

SECTION 4. PATIENT ENABLEMENT INSTRUMENT

As a result of your visit to the doctor today do u feel you are	Scale			
	Much better	Better	Same or Less	Not Applicable

1. Able to cope with life?	2	1	0	0
2. Able to understand your illness?	2	1	0	0
3. Able to cope with your illness?	2	1	0	0
4. Able to keep yourself healthy?	2	1	0	0
	Much more	More	Same or Less	Not Applicable
5. Confident about your health?	2	1	0	0
6. Able to help yourself?	2	1	0	0

LENGTH OF CONSULTATION

_____ **Minutes**

_____ **Seconds**

Your answers will be kept entirely confidential and will not be shown to anyone else.

Thank you for your participation!

