

Patients' perception on prenatal care management at Trinidad & Tobago

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ABSTRACT

The purpose of this study was carried out to investigate and evaluate the factors affecting perceptions of prenatal care management services using the United Nations declaration as the benchmark. This is a quantitative study where a convenient sample of 93 pregnant women either attending a selected private or a public health care hospitals were used from Trinidad & Tobago (T&T). The preliminary results from T&T revealed that 80.6% of women surveyed perceived to be satisfied by the management of both private and public health care sectors. In the public sector, 75.6% were satisfied while 85.4% in the private sector. The majority of satisfied subjects within the public and private sectors are from the secondary (14 yrs) level of education, 47% and 35% respectively. The majority dissatisfied were from the low-income group that attends the public health care facility as oppose to the private sector. In T&T, the private sector patients were more satisfied with conditions than the public sector patients. In the same context, there are some recent studies conducted in T&T on the health care systems but unfortunately no emphasis and demarcation on statistics are given to the private and public sectors as well as in the UAE. Further research on the experience of prenatal care services in the private and public facilities with the 'More Developing Economical Country' (MEDC) needs to be conducted to get a comprehensive view of this experience.

Keywords: *Management, utilization, quality management, perception.*

1. INTRODUCTION

As a signatory to the Declaration for the Survival, Protection and Development of Children, which emanated from the 1990 World Summit for Children, the Government of Trinidad and Tobago (T&T) was mandated to report on the progress made in the attainment of the World Summit goals with regards to improving health status and reducing health disparities (United Nations Children's Fund, UNICEF, 2000). Based upon the Multiple Indicator Cluster Survey, about 95 percent of all women in Trinidad and Tobago received some type of prenatal care service (UNICEF, 2000). Prenatal care services are offered at all maternity and health centers in the primary health care network with a referral system to hospitals for high-risk clients. Specific guidelines set out in the maternal and child health manual are used. In spite of the comprehensive network of health care management facilities, pregnant women generally commence prenatal care at a late stage, starting either during the second or third trimester.

In the current epidemiologic and demographic climate where non-communicable diseases are increasing in tandem with life expectancy, it is very important to prevent or reduce risks that the pregnant state may pose to the woman and her child. This can only be done through early detection and treatment to ensure a satisfactory outcome of pregnancy and a good quality of life for mother and child throughout their life cycles. The importance of prenatal care service takes on a new significance when one reflects on the profound impact it has undoubtedly had on current population trends. Effective prenatal care management ensures more pregnancies result to a satisfactory outcome. Whenever maternal and fetal mortality remained alarmingly high, prenatal care must be considered as the vehicle to change this trend.

2. BACKGROUND OF STUDY

A health care provider may discuss many common concerns and issues such as nutrition and physical activity, what to expect during the birth process, and basic skills for caring for an infant (Penrod & Lantz, 2000). Nevertheless, in fact, should this be the major concern? What about the health care service one receives while pregnant? This is referred to 'prenatal care'. The word 'prenatal' comes from the Latin 'pre', before and 'natus', birth, which is 'before birth'. Studies have also shown that the type of prenatal care delivered to pregnant women will impact positively on the characteristics of its perception. Various medical professionals can provide prenatal care, one of which includes the Obstetrician/Gynecologist (OB/GYN) who is a physician that has specialized in training in the care of women during pregnancy, labor, and delivery (Mikhail, 2000). This service of prenatal care includes health care, alongside with education and counseling on the subject of how to handle different aspects of pregnancy (Krueger & Scholl, 2000). Additionally, health care providers are recommending consultations for preconception care, before getting pregnant (York, Tulman, & Brown, 2000). Although prenatal care services available, the pregnant women are encouraged to start prenatal care management during the first trimester (first three months of pregnancy).

3. PROBLEM STATEMENT

Recent research identified the reasons for inadequate prenatal care varied by social and ethnic group age, and method of payment (Ono, 2006). Statistically, the most common reasons cited was late identification of pregnancy by the patient, lack of money or insurance for such care and the inability to obtain an appointment (Cunningham et al. 2009).

In addition, according to many researchers, the utilization inadequacy and deployment of prenatal care have been deemed to be associated with low birth-weight infants, premature delivery, maternal mortality, and infant mortality (Krueger & Scholl 2000; York, Tulman, & Brown, 2000). Many studies have alerted and focused upon the identification and implementation of programs in addressing the pitfalls and barriers to prenatal care services (Braveman et al. 2000; Northnagle, Marchi, Egerter, & Bravemann, 2000). However, there is limited data existing to document the effectiveness of prenatal care services and the pregnant woman's perspective of these services (Beckmann, Buford, & Witt, 2000).

4. PURPOSE OF THE STUDY

In developing and developed countries, there have been a decrease in the birth rate; therefore governments are actively working to increase the birth rates which in turn will encourage hospitals to be equipped with maternity care service. The importance of prenatal care is to monitor the health of the pregnant mother and fetus. Socioeconomic problems prevent its universal adoption of prenatal care in many developed as well as developing nations, while the availability of prenatal care has considerable personal health and social benefits (Mikhail, 2000). The greatest opportunities for reducing health disparities are empowering individuals to make informed health care decisions and promoting community-wide safety, education, and access to health care (Hayes et al., 2011; Natale-Pereira, Enard, Nevarez, & Jones, 2011; Shi & Singh, 2008). According to reports, almost a century after its introduction, prenatal care has become one of the most frequently used health services in the US (Ayoola, Nettleman, Stommel & Canady, 2010; Cunningham, 2009; Merkatz, Thompson, & Walsh, 1990; Speert 1980). The essence of prenatal care is described by the American Academy of Paediatrics and American College of Obstetrics and Gynaecologists in 2007 as in terms of a four (4) stage process (American Academy of Paediatrics & American College of Obstetricians & Gynaecologists, 2009):

1. Pre-conceptual care
2. Diagnosis of Pregnancy
3. Initial prenatal evaluation
4. Subsequent prenatal visits

Therefore, the purpose of this study is to evaluate the factors associated with utilization and content of prenatal care in public and private sectors in Trinidad and Tobago. The management of all the four stages of prenatal care is of vital importance to the patient; the degree of the prenatal care management will impact immensely on the perception whether private or public.

5. RESEARCH QUESTION AND HYPOTHESIS

What are the factors that affect the perception of prenatal care management and services across Trinidad & Tobago? The independent variables will be demographic data, such as, age, household number, level of education, household income group, number of visits; services utilized. The hypotheses are as follows:

1. Education, number of visits and income has high correlations and significance on the perception of the prenatal care service and type chosen.

2. The provision of adequate, effective prenatal care management services is higher perceived in the private prenatal care sector in contrast to the public.

6. THEORETICAL FRAMEWORK

There are multiple theories in the healthcare management. These include learning theories such as behaviorists, cognitive, social psychodynamic and humanistic (Braungart & Braungart, 2008). There is also the attribution theory, evident-based management theory and utilization management theories, which are considered as types of healthcare management theories (Goldman, 2009). The two key theories that will be discussed in details in terms of healthcare application, and practice are Social Learning Theory (SLT) and the Humanistic Learning Theory (HLT) (Braungart & Braungart, 2008). Firstly, the SLT has been heavily research by the theorist, Albert Bandura, “who mapped out a perspective on learning that includes consideration of personal characteristics of the learner, behavioral patterns, and the environment” (Braungart & Braungart, 2008; Bandura, 2001; Bandura, 1977). There are basic tenants of the SLT. Apart from the SLT being combined principles from both behaviorist and cognitive theories, it is said that this theory has passed through many ‘paradigm shifts’ (Bandura, 2001). Bandura early days of studies on SLT were mainly on the behaviorist and the influence of role models and lately, the focus is also on cognitive considerations (Braungart & Braungart, 2008). As the saying goes, ‘experience is the best teacher’, Bandura disagreed with this statement, assuming that direct experiences do not necessarily allow persons to learn (Braungart & Braungart, 2008; Bandura, 1977). With this assumption, recently Bandura commenced studies on the impact of social factors when learning. In this respects, it is of paramount importance to carefully consider the healthcare environment as a social situation. For instance, it is vital in understanding the perception of prenatal care management across the private versus the public health care sector (Moonesar & Vel, 2010). It is also important to note that there are two concepts of SLT, role modeling and vicarious reinforcement (Bandura, 2001). Extensive research has been done using the SLT (Harzing’s Publish or Perish, 2011). In the healthcare, SLT helps to explain the socialization process between the healthcare professionals and patients, in addition to, the application of this learning as a means of healthcare education (Goldman, 2009). Through the use of SLT, healthcare professionals can devise ways of promoting the well-being and encouraging patients’ feelings of competency all leading to a better quality of care (Pratt, 2010; Barton, 2010).

The second key theory to be discussed is the humanistic learning theory (HLT). The HLT basic assumption is that everyone is unique and has a desire to grow in a positive manner (Braungart & Braungart, 2008). The theorist of the HLT is Abraham Maslow where the theory is also known as the ‘Hierarchy of Needs’ (Maslow, 1987). The HLT is mainly a motivational theory. Maslow’s theory states that a person “does not feel a higher need until that needs of the current level have been satisfied” (Braungart & Braungart, 2008). Maslow’s basic needs are physiological, safety, belonging and love, esteem and self-actualization as illustrated in Figure 1 (Chapman, 2007; Maslow, 1943). These are five need systems, which account for most of our behaviors. Another assumption about HLT or Maslow’s theory is that the lower basic-level needs must be met before individuals can be concerned with learning and self-actualizing (Braungart & Braungart, 2008). In healthcare, it is vital to convey respect for patients and even among the healthcare professionals. For instance, if a health professional is judgmental towards prenatal patients, then there may be lapses in the number of visits and the healthcare advice received may not be adhered to, impacting the mother’s health and even the unborn baby.

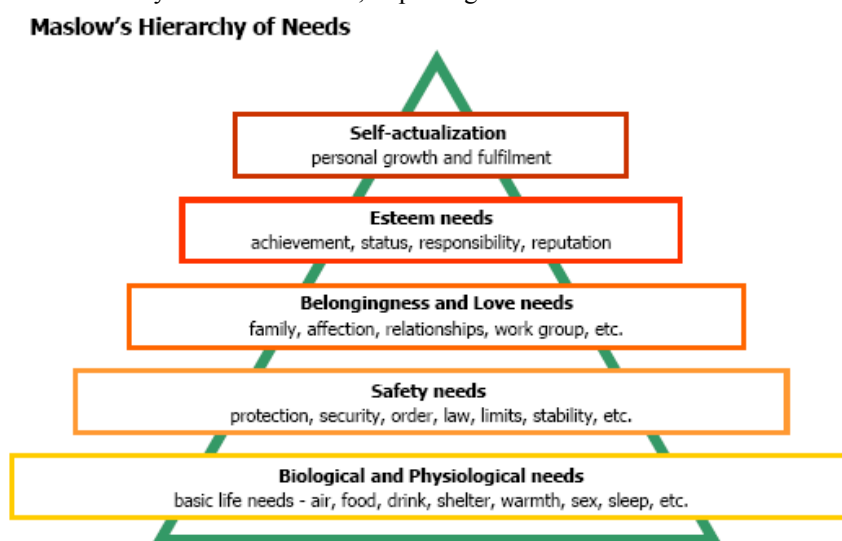


Figure 1: Maslow’s Hierarchy of Needs (Chapman, 2007)

Both the SLT and HLT are geared towards behavior being influenced by motivation. In terms of the healthcare, understanding the behaviors of both the healthcare professionals and patients and how they are influenced by the motivational factors are all vital to the continuous improvement in quality management systems and also on the quality of care delivery. These two learning theories can help to enable individuals to adapt to the demands and changing circumstance, which is crucial in healthcare (Braungart & Braungart, 2008).

Learning theories such as SLT and HLT include new knowledge that is related to something already known but contains a novel and also results in new skills, perspectives and/or a changed sense of self (Goldman, 2009). Therefore, these theories are important to the healthcare management in terms of having shared agreement about the meaning of the theoretical concepts among the relevant scientists (Reynolds, 2007). These theories also provide a sense of understanding of the behaviors involved at the healthcare level, in addition to making it easier to describe new paradigms (Reynolds, 2007). They also suggest a more concise and interrelated organization of scientific knowledge within healthcare management (Reynolds, 2007).

Based on the following debates and current research in the field of prenatal care: assessing the adequacy of prenatal care management (Kessner, Singer, & Kalk, 1973); identification of the reasons for inadequate prenatal care (Ono, 2006); effectiveness of prenatal care (Loudon, 1992); and the efficacy of prenatal care (Herbst et al. 2003) are a few quantitative research methods that were employed. It is important to mention that there are four major evaluation strategies that researchers can employ when assessing which research methods to be used. These strategies would include scientific-experimental models, management-oriented systems models, qualitative/anthropological models and participant-oriented models (Trochim, 2006). All of these evaluation strategies are commonly used to derive relevant the data within the healthcare field, in particular, prenatal care (Harzing's Publish or Perish, 2011).

According to the Harzing's database, there have been over 300 mixed method papers with citations of 24,975 in the field of prenatal care over a 40-year period (Harzing's Publish or Perish, 2011). There have been over 200 qualitative papers with citations of 20,008 in the field of prenatal care over a 33-year period (Harzing's Publish or Perish, 2011). On the other hand, there have been over 500 quantitative papers with citations of 43,539 in the field of prenatal care over a 60-year period (Harzing's Publish or Perish, 2011). Therefore, from this data, it is safe to conclude that the quantitative research methods have established solid creditability in the field of healthcare, in particular, prenatal care. In this quantitative research, the researchers will examine the general and complex laws of thought and behavior and to assess whether these were explained, controlled, predicted and described in terms of the characteristics of prenatal care populations (Creswell, 2009).

7. RESEARCH METHODS

7.1 Data Source

This was a cross-sectional study carried out on pregnant women attending the public and private sectors in Northern Trinidad, Caribbean. The cross-sectional study involved a group of pregnant women observed at a solitary point in time by taking a slice or cross-section at a particular point in time. For the purpose of this study, prenatal women were defined as women at varying stages of pregnancy attending prenatal hospitals operated by the Ministry of Health for the public sector and those operated privately. The term 'perception' was taken of face value when respondents were asked to state their feelings and opinions about the prenatal care services. Study procedures were approved by the Ministry of Health Trinidad & Tobago for the public sector and the CEO of the private sector. An overview of the study was provided and informed consent was obtained from all participants.

For the purpose of this study, quantitative variables were used the both forms: discrete and continuous variables. The discrete variables were whose values are countable; number of visits and household number. The continuous variables were whose values could assume a numerical value; age (years). The variables were classified as dependent variables: the satisfaction with prenatal care services whilst the independent variables: age (years), education (years), household income (TTD \$) (Centre Statistical Office, 2005), geographical area (either urban or rural), household number and number of visits. Inclusion criteria for the sample consisted of pregnant female citizens of the Republic of Trinidad & Tobago in either first, second or third trimesters and attending either a public or private sector within the selected named hospitals.

These selected hospitals provided easy access, covered a large population and provided prenatal services on a weekly basis. The pregnant mothers attending the both hospitals on the scheduled clinic days were informed about the study and what it was entailed. Only those agreeing to accept the study as outlined were considered for the sample frame, therefore this sample was conveniently selected and comprised of all consenting pregnant women attending the selected health care units for prenatal service. The consent rate was 98% in both hospitals.

7.2 Sampling

7.2.1 Type of Sampling

Sampling is the course of action of drawing a sample from a population (Christensen, Johnson & Turner, 2011). There are selection methods for sampling procedures: probability and non-probability (Smith & Albaum, 2010; Trieman, 2009). There are many types of sample, which would include convenience sample, purposive sample, cluster sampling, quota sample, simple random sample, and stratified random sample (Frankfort-Nachmias & Nachmias, 2008). For the purposes of this study, the sampling strategy that can be used is probability and without a doubt, the simple random sample. According to the Harzing's database, there have been over 1,500 research papers with citations of over 1,475,441 and over a 43-year span which used the sampling strategy type of simple random sample (Harzing's Publish or Perish, 2011).

7.2.2 Size

The size of the sample will be strong-minded by the type of data analysis that the researcher plans to carry out and the nature to which conclusions are to be drawn (Davies, 2007; Shaughnessy, Zechmeister & Zechmeister, 2000). According to the World Health Organization (WHO), every 10 years over 0.7 million women become pregnant (WHOSIS, 2011); therefore, it may be safe to say that on average, there are 70,000 pregnant women per annum in Trinidad and Tobago. Accordingly, for this study, where 'N' is as the size of the population is 75,000, then 'n' as the size of the recommended sample as 382 (Krejcie & Morgan, 1970). It is important to note that the sample size of 382 chosen will be based on the 95% confidence level (Krejcie & Morgan, 1970). However for the purposes of this initial study, 'n' will be 93 respondents, since the population of pregnant women at the time was 140.

7.2.3 How the sample will be drawn?

A simple random sample is where each sample element has an identified and equal probability of selection, and each possible sample of 'n' elements have an identified and equal probability of being the sample actually selected. The simple random sample can be drawn by a random process from a sample frame which contains a register of an exclusive and exhaustive record of the entire sample elements (Smith & Albaum, 2010; Frankfort-Nachmias & Nachmias, 2008, p. 165). The following is the basic rules of sampling in a learning context to consider:

- At all times use the correct technical term for the sample gathered (Davies, 2007).
- If the sample has elements of more than one kind of sample, then be sure to identify them accurately and clearly (Davies, 2007).
- Try to move the sampling method in such a way that randomness or representativeness, are both achievable and realistic (Davies, 2007).

For this study, one common practiced method for creating a simple random sample is by uploading the elements of the sample frame onto a spreadsheet, numbering each of the elements, and then using the random-number generator function to pick the sample respondents (Tolmie, Muijs & McAteer, 2011; Trieman, 2009). Though, it is paramount to consider the limitations of simple random sample. Firstly, it is frequently not easy to attain a sampling frame which will allow a simple random sample to be drawn and secondly, the researcher may not want to give all sample units an equal probability of being selected (Smith & Albaum, 2010). At the same time as an absolute representation of locales is accessible via maps, there usually is no comprehensive register of pregnant women in Trinidad and Tobago in a given year.

7.2.4 Sample size and rationale

It is important to note the size of a sample is selected to attain equilibrium involving sample reliability and sample cost (Smith & Albaum, 2010). We often hear researchers say that sampling involves selecting a small group (sample) from a larger group (population) and studying the small group in order to learn about the population (Vogi, 2007). Therefore, as mentioned earlier the sample size of 93 pregnant women can be chosen, which is based on the 95% confidence level for this study (Christensen, Johnson & Turner, 2011; Krejcie & Morgan, 1970). According to the Harzing's database, there have been over 1000 research papers with citations of over 5618 and over a 41-year span which used this one article by Krejcie & Morgan on sample sizes (Harzing's Publish or Perish, 2011). Since there will be hypothesis testing within the study, the power calculations and data analysis have to be considered as well (Shaughnessy, Zechmeister & Zechmeister, 2000).

7.2.5 Survey Questionnaire

The data-gathering instrument was a questionnaire consisting of closed-ended questions using an interview guide technique and a likert scale of five (strongly agree to strongly disagree) as done in previous studies. The survey instrument focused on the two key themes:

1. Relate the management characteristics at which pregnant women attend the public and private prenatal hospitals to the following: demographic and social data, that is, age, household number, level of education, household income group and number of visits;
2. Find out respondents' opinion about prenatal care management system based upon: satisfactory, dissatisfactory and its reasons.

The questionnaire was developed in three modules:

- Demographic data
- Prenatal care/Medical data
- Prenatal perception data

7.2.6 Pre-testing

Pilot testing of the questionnaire was done at the both prenatal sectors with women of similar characteristics as the sample. In addition to learning about the concepts, definitions and instructions for administering the questionnaire, the writer kept in mind, the learnt objectives of the survey and the purpose of the field-testing of the questionnaire. A total of twenty (20) comprised the sample for the pilot in both sectors. An analysis of the pilot survey was undertaken and weaknesses identified in the questionnaire were addressed during the final composition of the questionnaire. The pilot provided useful lessons that emerged out of experiences gained in field operations.

7.2.7 Fieldwork and Processing

The data was collected within the two types of prenatal care sectors: public and private. With an average workload of seven (7) pregnant women each scheduled interviews per each visit. The information pertaining to the pregnancy, which was given by the respondents, was verified from the hospital records and cross checked questions relating to the number of visits, the number of household members and age were used.

Upon collection, the data was subjected to field editing. The writer examined each questionnaire for possible errors made and invalid data. In the event of an error arising out of the examination of the questionnaire, it was classified as invalid data and was to be discarded from the sample. For this reason, the sample size was initially 100 but seven (7) was incomplete and classified as invalid data and omitted from the study analysis, hence resulting the final sample size as 93.

7.2.8 Statistical Data

Data entry was completed using the latest version of the SPSS software.

7.2.9 Statistical Approach

When analyzing the data a SPSS for Windows Manual (George & Mallery, 2005) was used together with Introductory Statistics (Mann, 2007). Standard parametric statistical techniques were applied whenever deemed useful. The tests included independent Levene's t-test, ANOVA and Pearson Correlation coefficient was calculated to study the strength of the linear relationship among variables for perception. The results were presented into tabular formats to represent the data.

8. RESULTS

8.1 Demographics of the Study Sample

The study consists of a sample of 93 pregnant women, ages ranging from 14-43 years with mean and median ages of 27.80 and a mode of 29. The majority of pregnant women interviewed for the survey is in the age group (19-29) and represents 45 % of the sample (Table 1), both in the public and private health care management sectors. The mass of pregnant women interviewed for the survey is has at least 14 years of education with a 52% rate (Table 1). The most popular of pregnant women interviewed for the survey belongs to the urban geographic area with 84% of its sample (Table 1). The preponderance of pregnant women interviewed for the survey is in the low-income group, which embodies 51% of the sample (Table 1). Amongst the pregnant women consulted, low-income group is 71% in the public sector and 33% in the private sector. There is no statistical association between the very high income groups in the public but there is statistical association between the private, 31%. On the other hand, there is no statistical association between the poverty line in the private sector but there is statistical association within the public, 18%. The majority of the sample is within the low-income group, 51%.

Table 1: Demographics: Respondents' Age Group, Education, Geographic Area and Gross Income by Type of Prenatal Management Sector.

Demographics of the Pregnant Patients	Type of Prenatal Sector	
	Public (N=45) %	Private (N=48) %
Age Group (years)		
< 18	18	15
19-29	49	42
30-39	29	31
>40	4	12
Education (years)		
7	22	6
14	60	44
16	18	17
19	0	25
21	0	8
Geographical Area		
Urban	93	75
Rural	7	25
Household Income Category (TTD \$)		
Poverty Line: \$(500-1999)	18	0
Low Income: \$(2000-4999)	71	33
Intermediate Income: \$(5000-7999)	7	15
High Income: \$(8000-10999)	4	21
Very High Income:> \$11000	0	31

8.2 Characteristics of Pregnant Women

According to Table 2a, among the pregnant women interviewed, the mean age (yrs) are 26.62 from the public sector and 28.90 representing the private sector. The mean of level of education in public sector is 12.80 and 15.73 representing the private sector. There is statistical significance means in ANOVA. The household number average is 3.53 within the public sector and 3.23 in the private sector. There is no statistical significance means between the Levene's Test and ANOVA. The mean of number of visits in public sector is 5.80 and 10.58 representing the private sector. There is statistical significance means between the Levene's Test and ANOVA. The mean of household income category in public sector is \$(4000-4999) and \$(10000-10999) representing the private sector. There is statistical significance means between the Levene's Test and ANOVA.

Table 2a: Mean Distribution, Levene's Test & ANOVA Test by the Characteristics of Type of Prenatal Care Sectors.

Characteristics of Pregnant Women	Mean Distribution: Type of Prenatal Care Sector		Levene's t-Test	ANOVA
	Public (N=45)	Private (N=48)		
Age (14-43 yrs)	26.62	28.90	0.642	0.132
Education (7-23 yrs)	12.80	15.73	0.949	0.000*
Household # (2-7)	3.53	3.23	0.147	0.226
# Of Visits (1-20)	5.80	10.58	0.000*	0.000*
Household Income Group	\$(4000-4999)	\$(10000-10999)	0.000*	0.000*

*statistical significance at p-value 0.05

Table 2b: Pearson Correlation of Characteristics of Pregnant women and satisfaction rates of the prenatal care services

Characteristics of Pregnant Women	Satisfied with the prenatal care services	
Age Range	Pearson Correlation	0.181
	Sig. (2-tailed)	0.082
	N	93
Number of Visits	Pearson Correlation	0.166
	Sig. (2-tailed)	0.112
	N	93
Household #	Pearson Correlation	0.154
	Sig. (2-tailed)	0.141
	N	93
Years of education: Mother	Pearson Correlation	0.187
	Sig. (2-tailed)	0.072
	N	93
Income Category	Pearson Correlation	0.146
	Sig. (2-tailed)	0.162
	N	93

8.3 Prenatal Care Management Perception

As attested by Table 3, in the sample 80.6% is satisfied with good management service and care as the core reason and 19.4% is dissatisfied with bad service and care as the major reason. However, 75.6% in the public and 85.4% in the private sector are satisfied. On the other hand, 24.4% in the public and 14.6% in the private sector are dissatisfied.

Table 3: Perception by Type of Prenatal Care Sector

Perception	Type of Prenatal Care Sector		Total %
	Public (N=45) %	Private (N=48) %	
Satisfied Reason: Good Service & Care	75.6	85.4	80.6
Dissatisfied Reason: Bad Service & Care	24.4	14.6	19.4

9. DISCUSSION

9.1 Characteristics Correlations and Significance

In trying to understand what the factors are governing the decision to the type of prenatal sector selected by pregnant women, the household income category correlates significantly. According to Table 2a, among subjects the mean age is 26.62 from public sector and 28.90 representing the private sector. Using the Levene's Test and ANOVA, there is no statistical significance in the means of both sectors. Age, in the private sector shows correlation with the number of visits at the p value 0.05 of significance level. The public however shows no statistical Pearson correlation between age and the other characteristics; according to the age group, a previous study shows a similar age group (Coverston, Franklin & Davis, 2003). The mean of level of education in public sector is 12.80 and 15.73 representing the private sector. There is statistical significance means in ANOVA. The characteristic, education, both in the private and public sectors has Pearson correlations with the number of visits at 0.05 significance level but only the private sector has correlation with the household income at 0.01 significance level. The public sector has no statistical Pearson correlation between education and the other characteristics. Previous studies confirm similar trends for the age and education variables in the Journal of Perinatal Education (Berman, 2006). Therefore, it proves that the trends in Trinidad and Tobago correlate with the worldwide statistics. The household number average is 3.53 within the public sector and 3.23 in the private sector. There is no statistical significance means in both the Levene's Test and ANOVA. The characteristic, household numbers, both in the private and public sectors have no statistical Pearson correlations with the other characteristics. Research in this area is null, therefore the data is new for a developing country as Trinidad and Tobago and the Caribbean region at large. The mean of number of visits in public sector is 5.80 and 10.58 representing the private sector. There is statistical significance means in both the Levene's Test and ANOVA. The characteristic, number of visits, both in the private and public sectors has Pearson correlations with education at p-value 0.05, significance level but only the private sector has correlation with the household income at p-value 0.01, significance level. However, according to the adequacy of prenatal care management, there were least nine visits for pregnant women (Coverston, Franklin & Davis, 2003). Then the public sector deems as inadequate prenatal care and adequate for the private sector. The mean of household income category in public sector is \$(4000-4999) and \$(10000-10999) representing the private sector. There is statistical significance means in both the Levene's Test and ANOVA. The public sector has no statistical Pearson correlation between the household income and the other characteristics but in the private sector, there is correlation with the household income at p value 0.01 of significance level. Studies demonstrate varying income groupings due to the economy of the country.

9.2 Respondents' Household Income toward the Type of Prenatal Management

According to Table 1, amongst the pregnant women consulted, low-income group is 71% in the public sector and 33% in the private sector. Studies within the US show that the majority of low-income pregnant women attend the public health care facility as oppose to the private sector (Byrd, Mullen, Selwyn & Lorimer, 2002). There is no statistical association between the very high-income groups in the public but there is statistical association between the private, 31%. On the other hand, there is no statistical association between the poverty line in the private sector but there is statistical association within the public, 18%. The majority of the sample is within the low-income group, 51%. Therefore, the previous study proves that the trends in Trinidad correlate with the US figures.

9.3 Prenatal Care Service Management

In conformity with Table 3, 100% private sector respondents desire all the services but very minute difference being 1% within the public sector. The public sector respondents desire 99% for all the services. 77% public sector respondents' needs met by the health care unit, whilst 87% private sector needs met. This trend relates correspondingly to Ondimu findings in the International Journal of Health Care Quality Assurance. He indicates two mechanisms through which quality of care affects the decision to seek care, one of which is the satisfaction or dissatisfaction with service received (Ondimu, 2000). In this way, this result proves that trends within Trinidad can correlate to the worldwide statistics. In the same light, with respects to the two variables: nutritional counseling and exercise, which refer to 'prenatal education' to some extent (Berman, 2006). These studies show that exercise is 32.2% and nutritional counseling is 50.8%, in this way again, these result prove that trends within Trinidad show a relationship to the worldwide statistics though there are slight varying percentages.

9.4 Prenatal Care Management Perception

As attested by Table 3, in the sample 80.6% is satisfied with good service management and care as the core reason and 19.4% is dissatisfied with bad service and care as the major reason. However, 75.6% in the public and 85.4% in the private sector are satisfied. On the other hand, 24.4% in the public and 14.6% in the private sector are dissatisfied. According to preceding studies in the USA, good service and care is an important

contributor to satisfaction (Simonet, 2005). The study states that high income patients, in the private sector compared with those with lower income, the public sector have more difficulty obtaining care and their satisfaction is also lower as with the writer's study. Therefore, it is safe to affirm that the trends in Trinidad correlate with that of the USA statistics. In addition to, another study also confirmed that trend (Ondimu, 2000). The other mechanism Ondimu indicates is that the satisfaction or dissatisfaction is dependent upon the effectiveness of the treatment or remedies prescribed and its outcome, in other words its perception.

In this study, the cross-sectional design collects data on relevant variables one time only from a variety of pregnant women subjects or phenomena. The data are collected all at the same time or within a short time frame. A cross-sectional design provides a snapshot of the variables included in the study, at one particular point in time. It may reveal how those variables are represented in a cross-section of a population. Cross-sectional designs generally use survey techniques to gather data. The cross-sectional study design reasons for its usage are very simple, faster, cheaper and ethically safe.

10. CONCLUSION

The provision of adequate, effective prenatal care management services is higher perceived in the private sector. The findings of this survey are consistent with other studies in that, there is reliable statistical evidence to support. The characteristics of the pregnant women correlate significantly among the dependant variables: age, household income, number of visits and years of education. The very high-income level subjects attend the private facility for prenatal care and service. The subjects below the poverty line attend the public facility for prenatal care and service. The prenatal service received meets 87% of the private sector and 77% in public sector. The prenatal perception in the public is 75.6% satisfactory and 85.4% satisfactory in the private sector. Within Northern Trinidad, the subjects are 80.6% satisfied with the prenatal care services. The majority of satisfied subjects within the public and private sectors are from the secondary (14 yrs) level of education, 47% and 35% respectively. The majority dissatisfied were from the low-income group that attends the public health care facility as oppose to the private sector (Byrd, Mullen, Selwyn, & Lorimer, 2002). Though there are studies within the field of prenatal care services, there are limited studies conducted with the Caribbean countries. Therefore, comparison is made with the developed countries worldwide. In the same context, there are three recent studies conducted in Trinidad on the health care systems but unfortunately no emphasis and demarcation on statistics are given to the private and public sectors (Pan American Health Organization, 2007; UNICEF, 2001).

According to the Centers for Disease Control and Prevention (2000), found that half of women with delayed or no prenatal care wanted to begin care earlier. They identified the reasons for inadequate prenatal care varied by social and ethnic group age, and method of payment (Ono, 2006). Statistically, the most common reason cited was late identification of pregnancy by the patient. The second most commonly cited barrier was lack of money or insurance for such care. The third was inability to obtain an appointment (Cunningham, 2009).

Further research on the experience of prenatal care services in the private and public facilities with the 'More Developing Economical Country' (MEDC) needs to be conducted to get a comprehensive view of this experience, in addition to the second part of the study being conducted in UAE in order to harness international business.

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