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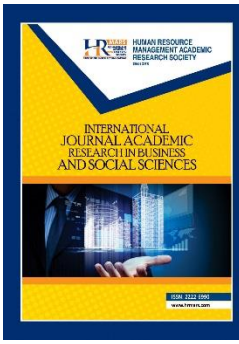
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Factors Influencing Selected Health Outcome among Patients Attending Universiti Teknologi MARA Medical Centre

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Abstract: There is an increasing attention in evaluating patient experiences during medical consultation as a measure of healthcare quality. The objective of this study was to evaluate the level of satisfaction, enablement and adherence and its associated factors among patients attending specialist clinics in Universiti Teknologi MARA Medical Cenre (PPUiTM). A cross sectional sectional study was conducted at four specialist clinics: obstetric & gynaecology, orthopedics, cardiology and respiratory. Data was collected using self administered questionnaire, involving a total of 220 patients. Variables studied were patient centred communication, patient factor (age, gender, education, income and health status) and the selected outcomes were patient satisfaction, enablement and adherence. Results show 91.7% of the resepondents understood their illness after consultation with providers, 88.9% were satisfied with overall services, 56.7% were complied with medication and 55% perceived provider's communication as a patient centred. Three variables showed a significant association with at least one health outcome studied, which were age, health status and patient centred communication, $P<0.05$. Majority of the patient have positive evaluation towards care that they received, consultation with providers successfully enhanced their understanding regarding illness and have a good compliance with medication. Further study should be done to investigate other variables that might affects patient's outcome.

Keywords: *Satisfaction, Enablement, Adherence, Communication*

Introduction

Patient-reported outcomes are considered valuable measures of healthcare and a step in the development of patient-centered care (Kupfer & Bond, 2012). Abundance of evidences showed a positive relationship between a patient's consultation experience and his/her actual health outcomes. Evaluating patient-doctors/health care providers (HCP) can be used to ascertain

limitations, improve health care quality, give empowerment to patients in making decision (Welschen, Kuyvenhoven, Hoes, & Verheij, 2004) and establish accountable care (Kuteyi, Bello, Olaleye, Ayeni, & Amedi, 2010).

Patient centred communication (PCC) is one of the approach that is widely implemented to establish positive health outcome. Comprehensive model of PCC comprises of exchanging information, facilitating the healing process, managing uncertainties, recognizing and responding to emotions, making decision and enabling self-care management (McCormack et al., 2011). Patient-centered communication is a complex construct, aspects of which have differential associations with such outcomes as patient satisfaction (Mead & Bower, 2000) and the control of chronic disease (Michie, Miles, & Weinman, 2003). Meanwhile, patient enablement is the ability of understanding and coping with health problems (Rööst, Zielinski, Petersson, & Strandberg, 2015). This principle is associated with several health outcomes such as self-management of chronic diseases and quality of life.

Medical consultation is at the centre of clinical practice. Satisfaction of a patient with this process is a determinant factor of the clinical outcome (Udonwa & Ogbonna, 2012). A large of body of research found that effective doctor–patient communication during consultation enhanced patient understanding, satisfaction, better treatment compliance and symptom resolution (Levinson, Gorawara-Bhat, & Lamb, 2010) The use of socio-emotional behaviours in communication consultation found to be important determinants of patient understanding in a range of settings (Azizam & Shamsuddin, 2015). These actions make patients feel valued and received genuine care leads to better compliance and patient satisfaction (Kuteyi et al., 2010). Adherence is the extent to which patients follow the recommendations of doctors and it is becoming a noticeable outcome of the process of care. Adherence is one of aspects for achieving positive health outcomes (Jin, Edward Sklar, Min Sen Oh, & Chuen Li, 2008). Poor compliance was reported prevalent among among those with chronic illnesses (Culig, Leppée, Boskovic, & Eric, 2011).

In the present day of privatized health care, a rising number of health settings are promoting patient centered model, in which that doctors or health providers facilitate patient's participation in the decision making. Malaysia is a country with culturally diverse patient, hence, miscommunication is somehow relevant in this country (Azizam & Shamsuddin, 2015). However, existing studies in the Malaysian context have observed that doctors/HCPs were aware of informed consent but few practiced shared decision making (Ng et al., 2013). In addition, Communication Skill Training (CST) has been formalized in medical curriculum, unfortunately, very few organizations have provided Continuous Medical Education (CME) program to medical undergraduates make it difficult to determine whether medical education in this country is evolving towards producing doctors/health professionals that are patient centered in their practice (Lukman, Beevi, & Yeap, 2009). The present study examine the factors influencing health outcomes; patient satisfaction, enablement and adherence to medical care in four specialist clinics; Obstetric & Gynaecology, Orthopedics, Cardiology and Respiratory at Universiti Teknologi MARA Medical Centre (PPUiTM).

Methodology

Design: This was a cross sectional study, investigating the factors influencing health outcomes among patient attending specialist clinics at Clinical Training Centre (CTC), Faculty of Medicine, Univerisiti Teknologi MARA Sungai Buloh Campus.

Reseach Area Background: The study was conducted at four specialist clinics; obstetrics and gynaecology (O&G), orthopaedic, cardiology and general respiratory.

Research Subject: All patients who have completed medical consultation with their doctor/health providers in four specialist clinics; obstetrics and gynaecology (O&G), orthopaedic, cardiology and general respiratory surgery in July 2017. Inclusion criteria includes age 18 years and above, malaysian citizenship, able to understand Malay language, new, referral and follow up patients who have just completed medical consultation with their doctors/health providers at the time of the data collection and willing to participate.

Sample Size: A total of 220 (includes 20% non response rate) was estimated in this study. This was based on the on the previous related to the doctor-patient communication. The outcome variables of interest were used for the calculation with the Power Sample (PS) software version 3.0.

Sampling Method: Respondents were selected via convenience sampling method. This technique was used in several studies on the patient satisfaction (Morisky, Green, & Levine, 1986) (Hazilah Abd Manaf & Siew Nooi, 2007)(Saiboon et al., 2008)**.**

Instruments: A 32-items self administered questionnaire was used for the data collection. The questionnaire is divided into five sections. Section A consists of 8 items, measures socio demographic information (age, gender, ethnicity, education, income, health status, waiting time, duration of consultation. Section B measures patient centred communication using six (6) items questionnaire. This measure had good reliability (Cronbach's α=.89), consistent with previous research (Blanch-Hartigan et al., 2015)**.** Respondents were asked, within the past 12 months, how often did doctors, nurses/healthcare professionals (1) 'give you the chance to ask all the health-related questions that you had?', (2) 'give the attention you needed to your feelings and emotions?' (3) 'involve you in decisions about your healthcare as much as you wanted?', (4) 'make sure you understood the things you needed to do to take care of your health?' and (5) 'help you deal with feelings of uncertainty about your health or healthcare?' respondents are then asked how often, 6) over the past 12 months, they felt they could rely on doctors, nurses or other health professionals to take care of their healthcare needs. Response categories for all six items are (1) 'never', (2) 'sometimes', (3) 'usually' and (4) 'always'. PCC is dichotomized as optimal vs. suboptimal. In order to create an overall PCC scale, we averaged the scores from the individual items and linearly transformed the scale score to a 0–100 format. A score ≥4 indicates optimal and <4 indicates suboptimal.

Section C measures patient satisfaction by using Client Satisfaction Questionnaire (CSQ). The CSQ 8 consists of 8 item (quality of service, kind of service, met needs, recommend to a friend, amount of help, deal with problems, overall satisfaction, and come back). Clients respond to those question-items using a 4-point Likert scale. Their responses are scored from 1 to 4, and thus the possible total scores range from 8 to 32. A score of ≥20 indicates high satisfaction and <20 indicates lower satisfaction (Matsubara et al., 2013). Reliability testing and validation testing of the CSQ-8 have been done in mental-health clinical contexts (Larsen, Attkisson, Hargreaves, & Nguyen, 1979)(Attkisson & Zwick, 1982)(Nguyen, Attkisson, & Stegner, 1983).

Section D measures patient enablement by using Patient Enablement Instrument (PEI). This instrument consists of 6 items, ask whether as a result of information sharing, patients were able to understand and cope with their illnesses better. Patients will be asked to state their perception of their understanding about their illness on three-point scale – "same or less" or "not applicable" (0), "better/more" (1), and "much better/much more" (2) (Howie, Heaney, Maxwell, & Walker, 1998). Results for each questionnaire may vary between 0 and 12 points. A score of 4 and more indicates high enablement and score less than 4 indicates low enablement (Mercer & Watt, 2007)(Ozvacić Adzić et al., 2008)(Hudon, Fortin, Rossignol, Bernier, & Poitras, 2011). Section E measures medication adherence using the Medication Adherence Questionnaire (MAQ). Response categories are "yes" or "no" for items 1 through 7 and Item 8 has a five-point Likert response scale. Each "no" response is rated as 1 and each "yes" response is rated as 0 except for item 5, in which each "yes" response is rated as 1 and each "no" response is rated as 0. For Item 8, the code (0-4) must be standardized by dividing the result by 4 to calculate a summated score. Total scores range from 0 to 8, with scores of ≥6 reflecting medium to high adherences and <6 reflecting low adherence (Okello, Nasasira, Muiru, & Muyingo, 2016)(Morisky et al., 1986).

Data Collection: Data was collected using self-administered questionnaire. The questionnaire will be distributed to the 220 patients, who have visited four specialist clinics (O&G, orthopaedic, cardiology and respiratory general surgery), immediately after consultation with doctor/HCP. Research assistant (RA) will be appointed for the data collection. After a detailed briefing relating to the study is given, RA distribute the consent forms to the respondents before begin the distribution of the questionnaire. Researcher and RA attend to the study setting together as a team, so then the researcher would be present for any queries during the data collection.

Statistical Analysis: "Statistical Package for Social Sciences" (IBM SPSS) version 21 was used to perform statistical analysis. Descriptive analysis describes response rate, level of patient satisfaction, patient enablement and patient compliance. Independent t-test was done to identify factors influencing health ooutcomes, Pearson test was conducted to examine the associations between independent variables (PCC) and outcomes; patient satisfaction, enablement and patient compliance. Multivariate analysis also performed to determine the impact of variables on patient health outcomes.

Ethical Approval: Ethical approval was obtained from ethical committee Faculty of Medicine Universiti Teknologi MARA Sungai Buloh Campus.

Results

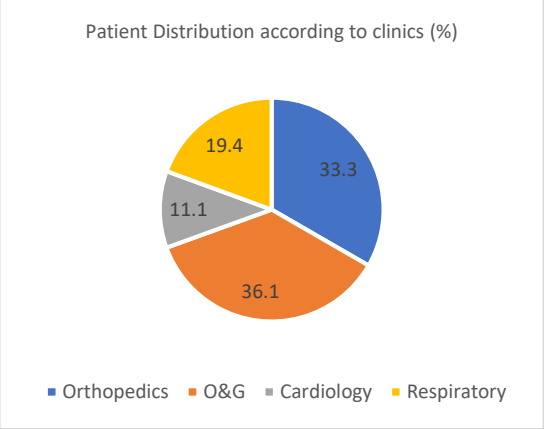
Demographic Characteristics of the Respondents

The respondents were mostly female (77.3%), and the majority aged 33 years old and above (76%). Most of the patients were Malays (79.4%), had high education (diploma degree and masters) (71.7%). Many of the participants were had income more than RM2000.00 (73.3%). Of the 180 respondents, 170 (majority) reported excellent and good health status (Table 1).

Table 1: Demographic Profile of the respondents (n=180)

Variable		N (%)
Gender	Male	48(26.7)
	Female	132(73.3)
Age		
	18-32	43(23.9)
	33 and above	137(76.1)
Race	Malays	43(79.4)
	Non Malays	37(20.6)
Education		
	Low	51(28.3)
	High	129(71.7)
Income		
	Less than RM2000	48(26.7)
	More than RM2001	132(73.3)
Health Status		
	Good	170(94.4)
	Poor	10(5.6)

Figure 1: Patients distribution according to clinics



Most of the respondents sough treatment at obstetric & gynaecology [65, (36.1%)], followed by orthopaedics [60, (33.3%)], cardiology [20, (11.1%)] and respiratory [35, (19.4%)] (Figure 1)

Figure 2: Level according to domain

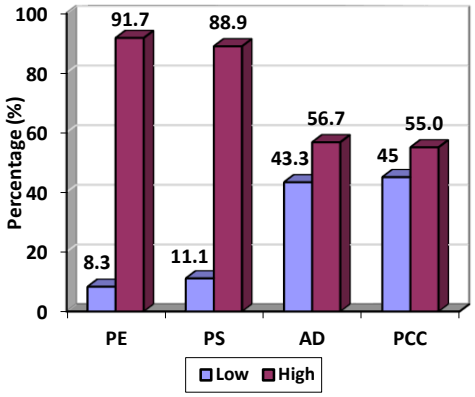


Figure 2 provides information on the percentage of patients score on patient centred communication, satisfaction, enablement and adherence. 91.7% of the patients understood regarding their illness after consultation, 88.9% were satisfied with treatment received, 56.7% complied with the medication and 55% of the patient perceived their provider's communication as patient centred.

Factors Associated with Selected Health Outcomes

Table 2: Factors associated with Patient satisfaction, enablement and adherence

Variables	Satisfaction		Enablement		Adherence	
	X^2	P	X^2	P	X^2	P
Age	0.978	0.323	0.136	0.712	5.044	**0.025***
Gender	0.799	0.371	0.000	1.000	1.185	0.276
Income	0.511	0.475	0.000	1.000	2.041	0.153
Education	0.492	0.483	0.201	0.654	0.135	0.713
Race	1.229	0.268	0.374	0.541	2.180	0.140
Health status	8.047	**0.018***	0.184	0.912	2.529	0.282
PCC	9.245	**0.002***	0.018	0.892	3.401	0.065

Chi Square test, asteriks denotes significant difference, P<0.05

According to Table 2, three variables showed significant association with at least one outcomes which were age with adherence, health status and PCC with satisfaction, P<0.05.

Discussion

This study examined the factors associated with selected health outcomes; patient satisfaction, enablement and adherence. Generally, patients rated higher satisfaction (70%), enablement (91%) and adherence towards medical care that they received in PPUiTM, suggesting patient's expectation has been fullfiled by health professionals. Another feasible reason for this might be due to the

avoidance of expressing critical comments about health providers and public facilities as they only pay a minimal payment to get treatment. Hence, they know what to expect from health professionals and came out being more satisfied. Also, the the study was conducted in specialist clinics, suggesting that health providers have high technical ability and communication competence in explaining the illness, treatment options thus increased patient's enablement. Furthermore, level of familiarity with the health care provider is another reason for the high enablement score. This is especially true as PPUiTM only serves referral patients from other hospitals. Previous evidences demonstrated that patients who experienced low enablement did not know the providers well (Howie et al., 1998) (Mead, Bower, & Roland, 2008).

The findings also suggested that PCC had significant association with enablement score. This is especially relevant as PCC focuses the physician's interpersonal aspects such as empathy, promotes self care management, technical competency and proper use of communication cues in delivering information regarding patient's illness (Azizam & Shamsuddin, 2015)(Mead et al., 2008). Doctors who showed more empathic response as perceived by patients were reported to have an impact on patients' understanding about their illness and health outcomes (Street, Gordon, Ward, Krupat, & Kravitz, 2005).

In this study, we found significant association between age and adherence to medication. This is especially relevant as patients attending PPUiTM specialist clinics requires extensive medical care for their chronic diseases. The presence of various comorbidities especially in chronic disease patients demand medication compliance for the control of the diseases (Coelho et al., 2013).

As reported in a prior research, low-income patients have limited access to medical care, thus might affect their satisfaction and enablement (DeVoe, Wallace, & Fryer Jr, 2009) (Fiscella, Franks, Gold, & Clancy, 2000) (Hussey et al., 2007). Furthermore, health provider also reported communicate poorer, provide less information regarding their illness to the lower income group (Siminoff, Graham, & Gordon, 2006). In contrast to those evidences, we found no significant association between income group and enablement and satisfaction score. The main reason might be because of the difference in income classification used in previous studies lead to inconclusive findings. Another reason might be because of the attitude of health providers which was unaffected by the patients' social class or demographic characteristics when consulting their patients make patient felt respected and genuinely care for their patients thus increases their understanding and compliance.

Previous studies (Mercer, Jani, Maxwell, Wong, & Watt, 2012) (Dyah & Abdul Manaf, 2006) have acknowledged the importance of health status in predicting patients' level of satisfaction. Patients with chronic illness usually needs more information and ask more questions during consultation, and this affect their rating on the (Lang, Floyd, & Beine, 2000). Hence, providing relevant information during consultation to help these patients cope with their illness could statistically affect their level of satisfaction (Udonwa & Ogbonna, 2012). In addition, it might be because of the practice of PCC by providers that foster healing process, reduce stress, increases patients' confidence so that they can comply with their treatment, as well as obtain improved health (Jagosh, Donald Boudreau, Steinert, MacDonald, & Ingram, 2011) (Clark et al., 2008).

In contrast to previous studies (Azizam & Shamsuddin, 2015)(Sudore et al., 2009), we found that low and high educational level patients had equal score on satisfaction, enablement and adherence. This might be because of an accurate estimation of patients' literacy level by health providers in such a way that is effortlessly comprehensible to be learnt by both high and lower educated patients to increase their status of empowerment and self care (Shaw, Ibrahim, Reid, Ussher, & Rowlands, 2009). Culture and ethicnicity have great influences towards patients' perception on health outcome score (Ezat, Noor, Ningseh, & Izzah S, 2010) (Nor Hayati, Nor A, Sharifa Ezat, Rizal, & Noor Aizuddin, 2010). However, we found otherwise. Living in multicultural countries like Malaysia, makes health providers familiar with patient's specific cultures and managed to establish good rapport with patient from different ethinicity thus enhanced enablement and compliance.

This study subjected to some limitations.

The evaluation relied on patients' self-reported perceptions with the health care service. The scores could have been affected by characteristics that were specific to the patients such as personality, gender concordance, waiting time, length of consultation and previous experience with doctors rather than overall health care services, In addition, the finding of this study cannot be generalized to the Malaysian hospitals as the study was conducted in a single setting and the respondents are not representative of all patients in Malaysia or of clients of private healthcare facilities. However, the findings of this study is helpful to the health providers to improve the quality of health services considering patient's experience.

Conclusion

Majority of the respondents have positive evaluation for the care received in PPUiTM. The important findings from this study suggest that age, health status and PCC appeared to be significant variables in influencing patient's outcome. However, further study shoud be conducted to investigate other variables that might affects patient outcome.

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